



REVIEW OF ENVIRONMENTAL FACTORS

INSTALLATION OF FOUR (4) NEW SPORTS LIGHTING POLES AND  
ASSOCIATED LIGHTING AT JESSE STEWART RESERVE, CNR GREENLEES  
AVENUE & RHONDA PLACE, CONCORD

LOT 3 DP 1161664

MARCH 2017

Prepared by  
Milestone (AUST) Pty Limited

Contacts  
Jonathan Archibald  
Lisa Bella Esposito

© Milestone (AUST) Pty Limited 2017

This document has been prepared for the City of Canada Bay Council by Milestone (AUST) Pty Limited  
Reproduction of all or part of this document is prohibited without the prior permission of Milestone (AUST) Pty Limited.

Development Management  
Town Planning

**MILESTONE (AUST) PTY LIMITED**  
**ABN 29 123 048 162**

93 Norton Street, Leichhardt NSW 2040  
PO Box 288, Leichhardt NSW 2040  
T 02 9518 3666 F 02 9518 3933  
[www.milestonemanagement.com.au](http://www.milestonemanagement.com.au)

Construction

**MILESTONE CONSTRUCTION (AUST) PTY LIMITED**  
**ABN 74 154 644 925 Lic 245110 C**

## FOREWORD

Milestone (AUST) Pty Limited (Milestone) has prepared this Review of Environmental Factors (REF) for the City of Canada Bay Council. This REF assesses the potential environmental impacts that could arise from the installation of four (4) new sports lighting poles and associated lighting at Jesse Stewart Reserve, located at the corner of Greenlees Avenue and Rhonda Place, Concord (Lot 3 DP 1161664).

The REF has been prepared in accordance with the relevant provisions of the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment Regulation 2000*.

On the basis of a site inspection by the authors of the REF, consideration of key environmental, economic and community aspects, and the information presented in this REF, it is concluded that by adopting the mitigation measures and recommendations contained in this assessment it is unlikely that there would be significant adverse environmental impacts associated with the proposed works.

## CERTIFICATION

This REF provides a true and fair assessment of the proposed activity in relation to its potential effects on the environment. It addresses all matters affecting or likely to affect the environment as a result of the proposed activity.

Name of the person(s) and who prepared the REF: Lisa Bella Esposito and Jonathan Archibald

Position of the person(s) who prepared the REF: Director and Planner

Signature:

Date: 3 March 2017



I have examined this REF and the certification and accept the REF on behalf of City of Canada Bay Council.

Name of the Reviewing Officer:

Position of the Reviewing Officer:

Signature:

Date:

## PART 5 DETERMINATION

City of Canada Bay Council as the determining authority determines that the Proposal can proceed as described in the REF.

Name of City of Canada Bay Council Delegated Officer:

Designation:

Signature:

Date:

## TABLE OF CONTENTS

1	INTRODUCTION.....	1
2	PROPOSED ACTIVITY .....	1
2.1	Project Objectives .....	1
2.2	Location of Activity .....	1
2.3	Description of the Activity .....	2
2.4	Licenses .....	4
2.5	Reasons for the Activity and Consideration of Alternatives.....	4
2.6	Stakeholder Consultation .....	4
2.7	Community Consultation .....	5
3	THE SITE .....	5
3.1	The Site and its Context .....	5
4	PLANNING CONTEXT .....	6
4.1	Environmental Planning Assessment Act 1979.....	6
4.2	Threatened Species Conservation Act 1995 .....	7
4.3	Contaminated Land Management Act 1997.....	7
4.4	Protection of the Environment Operations Act 1997 .....	7
4.5	Waste Avoidance and Resource Recovery Act 2001 .....	7
4.6	State Environmental Planning Policy (Infrastructure) 2007 .....	8
4.7	State Environmental Planning Policy No. 55 – Remediation of Land.....	8
4.8	Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 .....	8
4.9	Canada Bay Local Environmental Plan 2013 .....	9
4.10	Canada Bay Local Development Control Plan 2013 .....	12
5	ENVIRONMENTAL IMPACTS AND MANAGEMENT .....	13
5.1	Visual Amenity.....	13
5.2	Acoustic Amenity.....	15
5.3	Traffic and Transport.....	15
5.4	Community Consultation .....	16
5.5	Heritage.....	16
5.6	Flora and Fauna .....	17
5.7	Flooding and Stormwater .....	17
5.8	Socio Economic Impacts .....	17
5.9	Soils and Geotechnical Impacts .....	17
5.10	Spoil and Waste Management .....	18
5.11	Environmental Planning and Assessment Regulation 2000.....	18
6	CONCLUSION .....	19
6.1	Summary of Impacts .....	19
6.2	Summary of Recommendations .....	19

## APPENDICES

Appendix A:	Lighting Plan, prepared by Gary Roberts and Associates Pty Ltd dated 31 October 2016
Appendix B:	Light Spill Compliance Certificate, prepared by Gary Roberts and Associates, dated 31 October 2016
Appendix C:	Assessment of Traffic and Parking Considerations, prepared by Parking and Traffic Consultants Pty Ltd, dated 1 March 2017
Appendix D:	Noise Impact Assessment prepared by Wilkinson Murray, dated February 2017
Appendix E:	Statement of Heritage Impact, prepared by Heritage 21, dated February 2017
Appendix F:	Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 – Assessment prepared by Milestone (AUST) Pty Limited dated March 2017

## 1 INTRODUCTION

### 1.1 Brief Description Of The Proposed Activity

This Review of Environmental Factors (REF) has been prepared by Milestone (AUST) Pty Limited for the City of Canada Bay Council (Council) to assess the likely environmental impacts that could arise from the installation of four (4) new sports lighting poles and associated lighting at Jesse Stewart Reserve, located at the corner of Greenlees Avenue and Rhonda Place, Concord (Lot 3 DP 1161664) (the site). An outline of the site and location of proposed works is held at Figure 1.

### 1.2 Permissibility and Type of Approval Sought

This REF has been prepared in accordance with the requirements of Clause 111 of the *Environmental Planning and Assessment Act 1979* (the EP&A Act). It includes an analysis of the subject site and the proposed activity in the context of the relevant State and local planning policy and instruments. It also identifies potential environmental impacts including integration with existing land use and infrastructure and details mitigation measures proposed.

### 1.3 Supporting Documentation

This report has been prepared with reference to the following:

- Lighting Plan, prepared by Gary Roberts and Associates Pty Ltd dated 31 October 2016 (Appendix A);
- Light Spill Compliance Certificate, prepared by Gary Roberts and Associates, dated 31 October 2016 (Appendix B);
- Assessment of Traffic and Parking Considerations, prepared by Parking and Traffic Consultants Pty Ltd, dated 1 March 2017 (Appendix C);
- Acoustic Impact Assessment, prepared by Wilkinson Murray, dated February 2017 (Appendix D);
- Statement of Heritage Impact, prepared by Heritage 21, dated February 2017 (Appendix E); and
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 – Assessment prepared by Milestone (AUST) Pty Limited dated March 2017 (Appendix F).

## 2 PROPOSED ACTIVITY

### 2.1 Project Objectives

The main objective of the proposal is to provide for new light poles and floodlighting to facilitate greater flexibility for sport training and recreation opportunities during evening periods, particularly in winter.

### 2.2 Location of Activity

The site is located at the Jesse Stewart Reserve sports oval at the corner of Greenlees Avenue and Rhonda Place, Concord (Lot 3 DP 1161664). The site currently accommodates a single large oval however is also interspersed with open and grassed recreation areas (refer Figure 1).

The site also accommodates a section of public pathway to the west of the site which connects a number of sporting fields within the locality including Queen Elizabeth Park and Rothwell Park to the south of the site and Greenlees Park to the north. The site does not have any associated or dedicated car parking.

The proposed works are located generally to the four corners of the existing oval site. Please refer to the layout plan held at Appendix A for further details.



Figure 1: Aerial View of Jesse Stewart Reserve, Concord (indicative location of proposed poles marked in orange).  
Source: Sixmaps 2016

### 2.3 Description of the Activity

The proposed activity includes the installation of four (4) new sports lighting poles and associated lighting at the site. The proposed activity comprises the following physical works:

#### Installation of New Light Poles

- Installation of four (4) new outdoor floodlighting poles approximately 18.0m in height and located generally to the corners of the existing central oval/playing field.

Refer to the layout plan held at Appendix A for specific pole locations and details. An extract of pole locations is however provided at Figure 2 (as annotated for clarity) below.

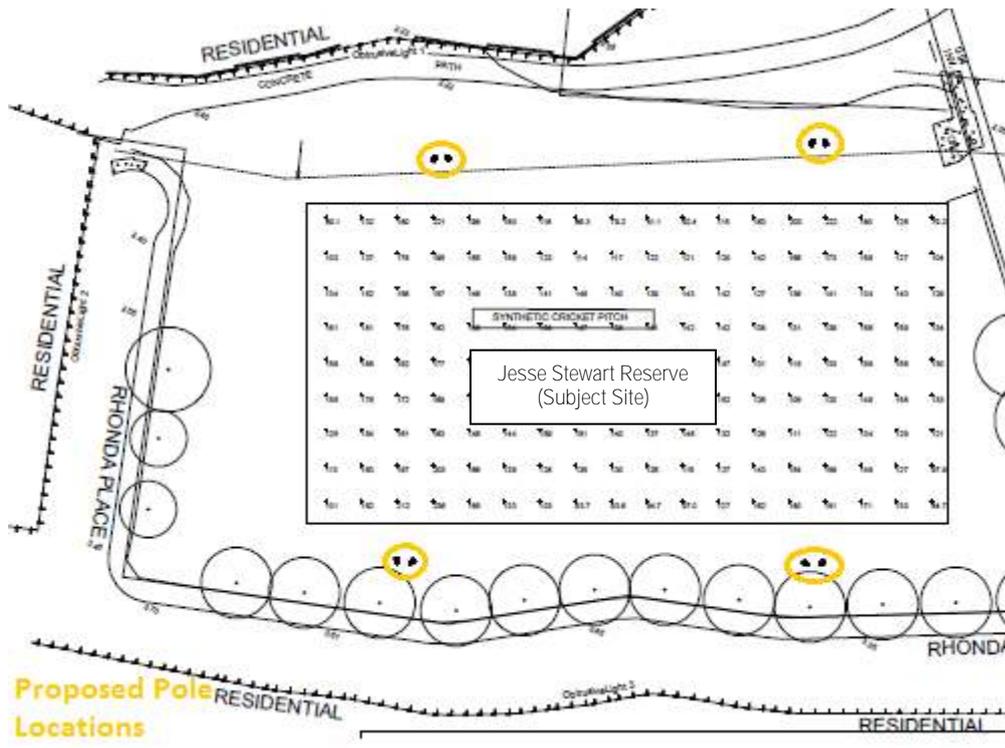


Figure 2: Extract of proposed lighting plan (annotated by Milestone for clarity)

The proposed installation of lighting will be used for weekday afternoon and evening training in accordance with the following existing or extended operational aspects associated with the use of the site.

#### Typical Playing Schedule

A typical playing schedule for the site includes:

- Summer Sports: Cricket;
- Winter Sports: Football (soccer) (proposed);
- Training: Weeknights (in winter months as required, refer hours of illumination below); and
- Competition: Saturdays (day only, no change to existing circumstances).

#### Hours of Illumination

The proposed floodlighting illumination hours will be restricted to the following hours:

- Monday: 5:00pm to 9:15pm;
- Tuesday: 5:00pm to 9:15pm;
- Wednesday: 5:00pm to 9:15pm;
- Thursday: 5:00pm to 9:15pm; and
- Friday: 5:00pm to 9:15pm.

No floodlighting is proposed on Saturday or Sunday evenings.

#### Floodlighting for Training Purposes Only – No Competition on Weekdays

For clarity, proposed sports lighting is to operate in accordance with the above hours of illumination only and for weekday evening training purposes only. No competition games currently occur on weekdays and are not proposed as part of this application.

## Parking

The site does not have any dedicated car parking, with all parking associated within the site accommodated within the surrounding street network, as detailed in the review of traffic matters held at Appendix C. The proposal does not seek any change to this existing arrangement.

## Access and Waste Management

All machinery and equipment to be utilised for the installation of proposed works will be transported to the site via the existing vehicle access point along Rhonda Place to the south west of the site. The number of vehicles, vehicle movements and specific quantities of waste and recycling materials generated by the proposed works will be determined prior to the commencement of the works and upon the successful appointment of a qualified contractor.

It is understood that free and full public access to all other areas of the site not subject to proposed works is to be maintained during the course of construction works, including in particular the existing pedestrian thoroughfare to the east of the site

## Construction Hours and Timeframe

The proposed works are scheduled to commence in the second half of 2017 and will occur between standard construction hours of 7:00am and 5:00pm, Monday to Saturday, for a duration of approximately 2 weeks. Works are not proposed on Sundays or Public Holidays. It is anticipated that new lighting poles and associated outdoor lighting will be completed by the end of 2017.

## 2.4 Licenses

The site is not known to contain any species or endangered communities classified under the *Threatened Species Conservation Act 1995* and therefore the proposed activity does not require a Section 91 licence from the NSW Office of Environment and Heritage prior to the commencement of works. The proposed activity is not located within proximity to any waterfront land. On this basis, no licences are required to be obtained for the proposed activity.

## 2.5 Reasons for the Activity and Consideration of Alternatives

The proposed provision sports lighting poles and associated lighting is considered necessary to satisfy the aims contained within the Canada Bay Local Planning Strategy (2010) **and Council's Recreation and Facilities Strategy** (2013) including, however not limited to, provision of facilities, and increased utilisation of and visitation to parks, sporting and recreation facilities.

Having regard to the objectives of these documents, the provision of lighting to Jesse Stewart Reserve will enhance the use of this asset in evenings and during winter months, and the provision of additional managed lighting will provide a tangible health and recreation benefit to the local community and regional sporting groups and is considered to be in the public interest.

Accordingly, **the only alternative to the proposed activity is to 'do nothing'**. This would result in the continued underutilisation of this key public asset, and would be contrary to the objectives of the EP&A Act to achieve orderly, economic and sustainable development and use of land. This alternative would also be contrary to the objectives of the Local Government Act 1993 (LG Act) for the provision, management, improvement and development of goods, services and facilities, appropriate to the current and future needs of local communities and of the wider public, as well as contrary to the objectives of the **Council's planning and recreation strategies**.

## 2.6 Stakeholder Consultation

The proposed development is located wholly within the site and does not impact the provision of any existing facilities or infrastructure operated or owned by other Government agencies or utility providers. Liaison with the relevant sewer, electricity and gas providers will be undertaken prior to and during works on the site. Stakeholder consultation with Government agencies is not required for the proposed activity.

## 2.7 Community Consultation

Milestone has not been provided with details of any community consultation process for proposed works. Accordingly, this REF is issued to Council on the conditional basis that:

- Community consultation to local residents is undertaken prior to the commencement of works; and
- Should concerns be raised as a result of the community consultation process, that these be addressed, with design revisions made if deemed necessary by Council Officers in order to mitigate or eliminate possible environmental impacts identified in a revised final REF.

Additionally it is recommended a site hoarding or fencing is to be erected on the site prior to works commencing, and is to include details of the proposed works, development plans as well as details of the contractors (including contact details) available for the duration of construction works. The hoarding must also ensure adequate pedestrian circulation and access to all other areas of the site not subject to proposed works.

## 3 THE SITE

### 3.1 The Site and its Context

The site is located at the Jesse Stewart Reserve sports oval at the corner of Greenlees Avenue and Rhonda Place, Concord (Lot 3 DP 1161664). The site currently accommodates a single large oval however is also interspersed with open and grassed recreation areas (refer Figure 1).

The site also accommodates a section of public pathway to the west of the site which connects a number of sporting fields within the locality including Queen Elizabeth Park and Rothwell Park to the south of the site and Greenlees Park to the north. The site does not have any associated or dedicated car parking. The proposed works are located generally to the four corners of the existing oval site. Please refer to the layout plan held at Appendix A for further details.

Existing development surrounding the site consists of predominately established low density residential dwellings to the east and south of the site along Rhonda Place as well as an existing two storey apartment building located immediately to the west of the site at 2 Greenlees Avenue. It is noted that a number of these dwellings are within close proximity of the proposed light poles, being approximately 10m from the apartment building adjoining the site to the west accessible from Greenlees Avenue as well as approximately 25m from nearby residential dwellings to the east of the site addressing Rhonda Place.

The site is also within close proximity to Greenlees Park, another long standing park and recreation area located across Greenlees Avenue to the north of the site. It is noted that Greenlees Park already holds existing sports lighting.



Photo 1: View of existing Jesse Stewart Reserve from south west corner of the site facing north.



Photo 2: View of existing Jesse Stewart Reserve from north west corner of the site facing south.



Photo 3: View of existing Jesse Stewart Reserve from southwest corner facing east towards existing dwellings along Rhonda Place.



Photo 4: View from existing Jesse Stewart Reserve facing north towards Greenlees Park and existing sports lighting.



Photo 5: View of existing Jesse Stewart Reserve from southern boundary/Rhonda Place facing north west towards existing residential apartment building.



Photo 6: View from southern boundary of Jesse Stewart Reserve/Rhonda Place facing south east towards existing dwellings.

#### 4 PLANNING CONTEXT

The following Section provides an appraisal of the proposed activity having regard to the relevant State and any Commonwealth legislation applicable to the proposed activity as well as any provisions in statutory planning instruments that are relevant to the proposed activity.

##### 4.1 Environmental Planning Assessment Act 1979

The EP&A Act establishes a framework for the assessment of environmental impacts associated with development. The EP&A Act establishes Environmental Planning Instruments (EPI) to control development activities including State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs) some of which include provisions relevant to the proposal. This section addresses the relevant legislation and EPI provisions that are relevant to the proposed demolition.

Under the EP&A Act, Council is **classified as a 'proponent' and 'a determining authority'** (under Part 5 of the EP&A Act) and must assess an activity under Part 5 of the EP&A Act if it may be carried out without development consent. The project is unlikely to have a significant impact on the environment and consequently an environmental impact statement is not required pursuant to Section 112 of the EP&A Act.

Section 111 of the EP&A Act requires that a determining authority in its consideration of an activity has a duty to consider the environmental impacts of the activity. Clause 228 of the Environmental Planning Assessment Act 1979 Regulation lists those factors that must be taken into account when considering the likely impact of an activity on the environment. This REF addresses those heads of consideration and meets the requirements of the Act and regulations in relation to the assessment of development under Part 5 of the EP&A Act, contained within Section 5 of this report.

#### 4.2 Threatened Species Conservation Act 1995

Council holds information on flora and fauna in the Local Government Area (LGA), contained within the following documents:

- Fauna of the City of Canada Bay LGA 2013-2014, prepared by InSight Ecology, dated August 2014, and;
- City of Canada Bay Flora Inventory, prepared by Gingra Ecological Surveys, dated 3 August 2009.

These reports provide a review of any vulnerable, endangered or critically endangered fauna and flora species in the City of Canada Bay LGA as listed in the Threatened Species Conservation Act 1995 (Threatened Species Act). Neither the flora nor fauna reports indicate the presence of any vulnerable, endangered or critically endangered fauna and flora species at the site.

Having regard to these reports, there are no fauna or flora species recorded on the site as being listed as critically endangered under the Threatened Species Act. On this basis a Seven Part Test is not required to be prepared for the proposed activity as part of this REF.

#### 4.3 Contaminated Land Management Act 1997

In NSW, the management of contaminated land is also dealt with under the Contaminated Land Management Act 1997, the major objective of which is to *“establish a process for investigating and (where appropriate) remediating land that the Environmental Protection Authority (EPA) considers to be contaminated significantly enough to require regulation.”*

The site is not listed on the EPA Contaminated Land Register and the Section 149 Planning Certificate provided to Milestone (Ref. PC2016/1800) does not indicate that the site is contaminated. No other documentation provided by Council indicates that the site is contaminated. On this basis there is no evidence to suggest that the site is contaminated.

#### 4.4 Protection of the Environment Operations Act 1997

The Protection of Environment and Operations Act 1997 (POEO Act) addresses water, land, air and noise pollution and waste management, making it illegal to pollute or cause or permit pollution of waters, and an offence to wilfully or negligently cause any substance to leak, spill or otherwise escape in a manner that harms or is likely to harm the environment. If a pollution incident occurs during an activity and **it causes or threatens ‘material harm’ to the environment**, by law the appropriate regulatory authority – either the local council or the EPA must be notified. As noted within Section 4.3 of this report there is no known environmental contamination present at the site.

#### 4.5 Waste Avoidance and Resource Recovery Act 2001

The Waste Avoidance and Resource Recovery Act 2001 (WARR Act) provides the following objectives to moderate and reduce the impacts of waste on the environment:

- 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.”*

Having regard to Part 4.4 of this report, it is recommended that a Waste Management Plan be prepared by the principal contractor for the proposed activity prior to the commencement of work to ensure that no offensive noise,

spills, leaks or discharge to the stormwater occurs as a result of the proposed activity and to ensure that all waste recovered from the site will be managed appropriately during the construction phase.

#### 4.6 State Environmental Planning Policy (Infrastructure) 2007

The State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) seeks to facilitate the efficient development of infrastructure and service facilities. It establishes a planning regime that aims to provide regulatory certainty and efficiency by identifying the environmental assessment category into which development falls and identifying matters to be considered in the assessment of development.

The proposed development comprises the provision of sports lighting on land owned and operated by Council. The proposed works can proceed without development consent pursuant to Clause 65(3)(d) of the Infrastructure SEPP and Part 5 of the EP&A Act 1979, as outlined below:

- (3) *Development for any of the following purposes may be carried out by or on behalf of a council without consent on a public reserve under the control of or vested in the council:*
- (a) *roads, cycleways, single storey car parks, ticketing facilities and viewing platforms,*
  - (b) *outdoor recreational facilities, including playing fields, but not including grandstands,*
  - (c) **information facilities such as visitors' centres and information boards,**
  - (d) *lighting, if light spill and artificial sky glow is minimised in accordance with AS/NZS 1158: 2007, Lighting for Roads and Public Spaces,*
  - (e) *landscaping, including irrigation schemes (whether they use recycled or other water),*
  - (f) *amenity facilities,*
  - (g) *maintenance depots,*
  - (h) *environmental management works.*

#### 4.7 State Environmental Planning Policy No. 55 – Remediation of Land

The State Environmental Planning Policy No. 55 Remediation of Land (SEPP 55) seeks to ensure that the potential for contamination of land is considered by the Consent Authority through the rezoning or Development Application process. It establishes a planning regime that aims to provide regulatory certainty and efficiency by requiring the consideration of a preliminary contamination assessment. SEPP 55 requires that the Consent Authority needs to be satisfied that any contaminated land will be remediated and made suitable for the purpose for which the development is proposed to be carried out, before the land is used for that purpose.

Pursuant to Clause 7(1) and 7(2) of SEPP 55 the provisions of SEPP 55 are only applicable to development that requires the consent of a consent authority. The provisions of SEPP 55 are therefore not required to be considered for the proposed works or activity under Part 5 of the EP&A Act. Having regard to Section 4.3 of this report, the site is not identified as being contaminated and is considered acceptable with regard to the provisions of SEPP 55.

#### 4.8 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

The Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (SREP 2005) applies to the site and is a deemed SEPP. The site is located within the Sydney Harbour Catchment under SREP 2005 (refer Figure 3). The proposed development will satisfy the aims of the SREP 2005 and will not result in any significant adverse heritage, environmental, social or economic impacts on the site or the locality.

The proposal includes the installation of four (4) new sports lighting poles and associated lighting. Pursuant to Clause 20(b) of the SREP 2005, the provisions **in Division 2 "matters for consideration" in SREP 2005** must be considered for the proposed works or activity under Part 5 of the EP&A Act.

An assessment of matters for consideration within Division 2 have been addressed in detail and are held at Appendix F. The assessment concludes that the proposed installation of new light poles will not adversely impact on the quality and amenity of Sydney Harbour Catchment and will achieve a high level of compliance with the requirements of SREP 2005.

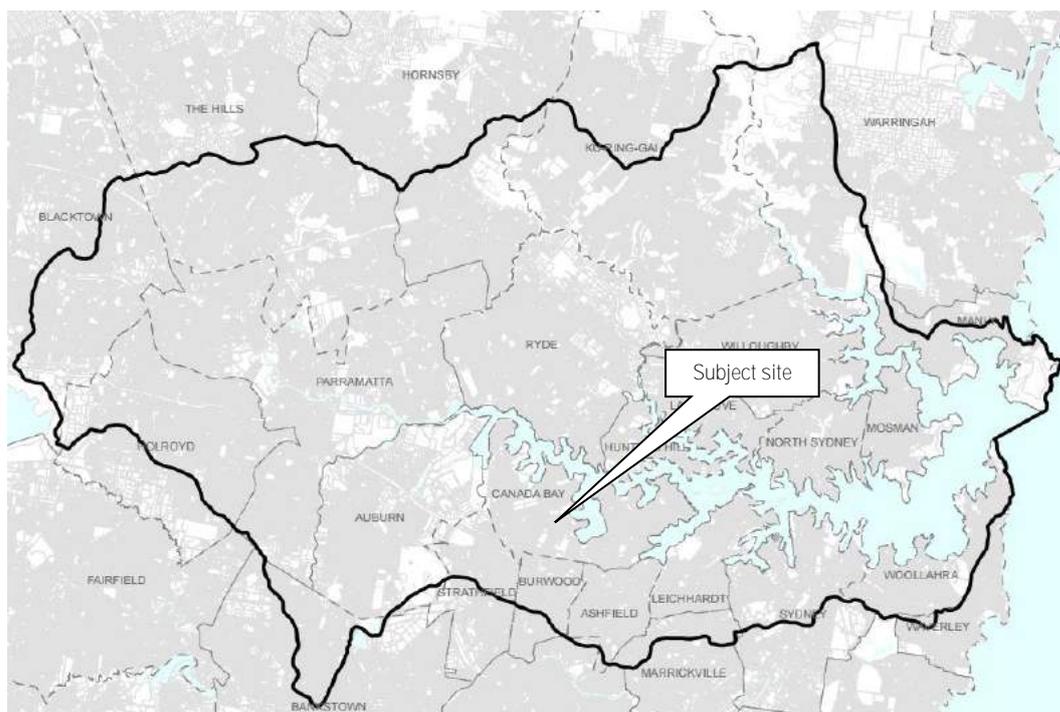


Figure 3: Sydney Harbour Catchment Map  
Source: SREP 2005

#### 4.9 Canada Bay Local Environmental Plan 2013

##### Zoning and Permissibility

The site is zoned RE1 Public Recreation pursuant to Canada Bay Local Environmental Plan 2013 (LEP 2013) (refer to Figure 4). The objectives of the RE1 Zone are:

- *“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.*
- *To facilitate public access to and along the foreshore.*
- *To conserve public open space that enhances the scenic and environmental quality of Canada Bay.”*

The proposal satisfies the objectives of the RE1 Public Recreation Zone.

The proposed works comprise the installation of four (4) new sports lighting poles and associated lighting at the site. The proposed works seek alterations to the existing recreation area, and are permitted with consent in the RE1 Public Recreation **Zone under the “recreation area” land use definition** as follows:

*“Recreation area means a place used for outdoor recreation that is normally open to the public, and includes:*

- (a) A children’s playground, or*
- (b) An area used for community sporting activities, or*
- (c) A public park, reserve or garden or the like,*

*And any ancillary buildings, but does not include a recreation facility (indoor), recreation facility (major) or recreation facility (outdoor).”*



Figure 4: Extract of LEP 2013 Zoning Map  
Source: LEP 2013

#### Height of Building

There are no maximum building heights applicable to the site under LEP 2013. The proposed outdoor lighting poles have a maximum height of 18.0m, which are considered to be generally consistent with other existing light poles installed to other recreation facilities throughout the LGA, including in particular existing light poles located at Greenlees Park located across Greenlees Avenue immediately to the north of the site.

The proposed lighting poles are within the vicinity of residential areas surrounding the site, including in particular a number of established single detached dwellings to Rhonda Place as well as an existing residential apartment building to Greenlees Avenue which abut the eastern and western boundaries of the site respectively.

Given the height of poles (18.0m), poles will be visible from surrounding streets and residential areas off Greenlees Avenue, Gallipoli Street and Rhonda Place. Please refer to an assessment of visual impact within Section 5 of this report.

Having regard to a discussion of amenity matters contained further within this report, and as light spill certification provided by a suitably qualified electrical engineer (Appendix B), proposed lighting poles are not anticipated to result in any significant adverse visual, amenity, overshadowing, obtrusive light spill or view impacts and are therefore consistent with the objectives of Clause 4.3(1) of LEP 2013.

#### Heritage

The subject site is not identified as a heritage item pursuant to Clause 5.10 of the LEP 2013, however is within proximity to a nearby heritage items, provided in Table 1 below. The site is not located within, nor within proximity to, any Heritage Conservation Area (HCA).

Whilst the site is not identified as a heritage item, given the proximity to the nearby heritage listed Greenlees Park, a Statement of Heritage Impact (SOHI) has been prepared for the proposed works and is held at Attachment E, which concludes (p22) that:

***“The proposed lighting poles and associated services would generate a neutral impact on heritage items within the vicinity of the site. There would be no physical impact on any of the surrounding heritage items due to the distance between the proposed works and said items.”***

On this basis, it is considered that the proposed activity is unlikely to result in any detrimental heritage impact to the nearby heritage item and will be consistent with controls and objectives contained within Clause 5.10 of the LEP 2013.

Table 1: Heritage Items within proximity to Rothwell Park

Item No.	Item Description	Address	Listing	Distance from proposed Works (Approximate)
I488	Greenlees Park—landscape and former Arnott's cottage	2B Wellbank Street, Concord	Local	Approximately 40m from northernmost light poles

An extract of the LEP 2013 Heritage Map is provided in Figure 5 below.

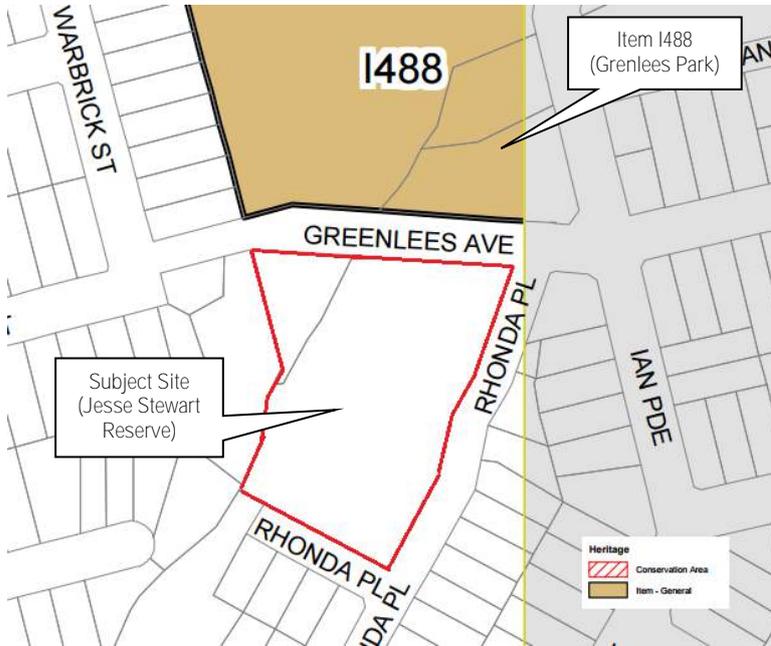


Figure 5: Extract of LEP 2013 Heritage Map  
Source: LEP 2013

On the basis of the SOHI it is considered that the proposed activity is unlikely to result in any detrimental heritage impact to the nearby heritage item and will be consistent with controls and objectives contained within Clause 5.10 of the LEP 2013.

#### Terrestrial Biodiversity

The site is not located within the vicinity of biodiversity land pursuant to Clause 6.3 of the LEP 2013.

#### Acid Sulphate Soils

The location of the proposed works is located wholly within a Class 2 Acid Sulphate Soils (ASS) area (refer to Figure 6). The proposal includes minor excavation works associated with the installation of the light poles themselves and is considered unlikely to result in the lowering of the water table pursuant to Clause 6.1(2) of the LEP 2013 below.

*“(2) Development consent is required for the carrying out of works described in the Table to this subclause on land shown on the Acid Sulphate Soils Map as being of the class specified for those works.*

*Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum and by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.”*

On this basis the proposed development is considered to be consistent with Clause 6.1 of the LEP 2013 and the preparation of an Acid Sulfate Soils Management Plan is not required.

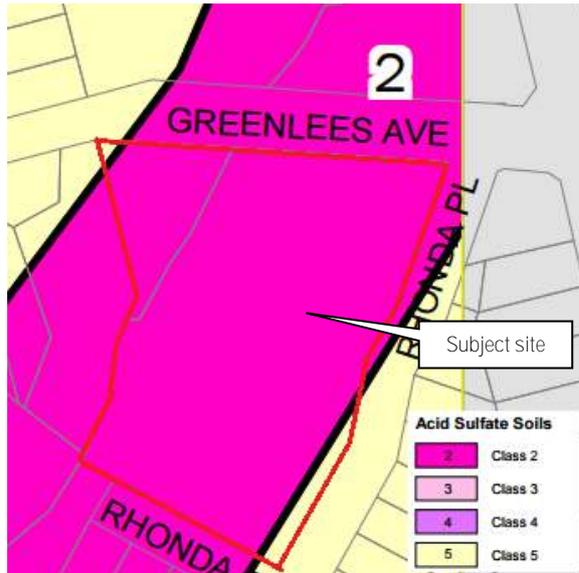


Figure 6: Extract of LEP 2013 ASS Map  
Source: LEP 2013

There are no other provisions of the LEP 2013 applicable to the proposed development.

#### 4.10 Canada Bay Local Development Control Plan 2013

The following sections of DCP 2013 are relevant to the proposal:

##### Part 3 (Section 3.3) – Stormwater, Detention and Sediment control

Part 3 (Section 3.3) of the DCP 2013 relates to stormwater, detention and sediment control. Controls within this section have been reviewed, with proposed works involving minor boring and minor excavation to facilitate the installation of light poles and associated services infrastructure only, and will not alter existing overland flow or stormwater provisions at the site.

##### Part 3 (Section 3.4) – Contamination

Part 3 (Section 3.4) of the DCP 2013 relates to contamination and provides the following controls:

Control	Proposal
<p>C1 For all development applications involving industrial, commercial, more than 2 residential dwellings or major redevelopment of sites, an initial evaluation for potential contamination must occur. The evaluation must address the following:</p> <p>(a) was or is the site currently zoned for industrial or defence purposes;</p> <p>(b) Do existing records held by Canada Bay Council show an activity listed in Table 2:</p> <p>(c) Is the site currently used for an activity listed in Table 2; and</p> <p>(d) Is Council aware of information concerning contamination impacts on land immediately adjacent the site which could affect the subject land? If after carrying out the above initial evaluation none of the enquiries suggest that the land might be contaminated, the planning process should continue in the normal way. If contamination is, or may be present, the applicant must investigate the site and provide Council with the information it needs to carry out its planning functions. It should be noted that Council may at any stage in the process, require a preliminary investigation to be undertaken if Council believes there is a possibility of contamination on the site.</p>	<p>Having regard to Sections 4.3 and 4.7 of this report, the site is not listed on the EPA Contaminated Land Register and the Section 149 Certificate provided to Milestone (Ref PC2016/1800) does not indicate that the site is contaminated. No other documentation provided by Council indicates that the site is contaminated. On this basis there is no evidence to suggest that the site is contaminated.</p>

### Part 3 (Section 3.5) – Acid Sulphate Soils

Part 3 (Section 3.5) of the DCP2013 relates to acid sulphate soils and provides the following controls:

Control	Proposal
<p>C1 If your property is within a potential acid sulphate area (Check <b>Council's Acid Sulphate Soil Maps</b>) and you intend to undertake building works that could disturb acid sulphate soils (i.e. if excavation at or below the ground water table is required) an evaluation of whether or not acid sulphate soils are present will need to be undertaken. Where acid sulphate soils are found to exist, an acid sulphate soils management plan will be required detailing the means which will be employed to minimise the impacts of the development on the wider environment from the soil.</p>	<p>Further to matters within Section 4.9 of this report, the site is located wholly within a Class 2 Acid Sulphate Soils (ASS) area under LEP 2013 (refer to Figure 6).</p> <p>The proposal includes minor excavation works associated with the installation of the light poles themselves and is considered unlikely to result in the lowering of the water table pursuant to Clause 6.1(2) of the LEP 2013 below.</p>

### Part 3 (Section 3.8) – Preservation of Trees and Vegetation

Part 3 (Section 3.8) of the DCP 2013 relates to the preservation of trees and vegetation. The proposed development does not include the removal of any trees or vegetation at the site. It is recommended that appropriate measures to be implemented through the course of installation/construction to protect trees and vegetation at the site, particularly relating to access to and storage of materials during construction. On this basis the proposed development is considered acceptable with regard to Part 3 (Section 3.8) of the DCP 2013.

Having regard to the structure of the DCP 2013, being specific development types on private land, given that the proposed works are located wholly on public land, no other sections are relevant to the proposal.

## 5 ENVIRONMENTAL IMPACTS AND MANAGEMENT

### 5.1 Visual Amenity

The proposed works are accompanied by a Light Spill Compliance Certificate, prepared by Gary Roberts and Associates, dated 31 October 2016, held at Appendix B. Having regard to this assessment, matters relating to visual privacy, including obtrusive light spill and views, relating to the installation of light poles fields are provided below.

### Visual Privacy

The proposed works are within the vicinity of a number of residential dwellings to the east and west of the site along Rhonda Place and Greenlees Avenue respectively.

It is noted that a number of properties to the eastern side of Rhonda Place and Ian Parade that address the subject site, as well as an existing residential apartment building located at 2 Greenlees Avenue which shares a side boundary to the west of the site.

These properties benefit from significant dwelling setbacks and areas and separation as a result of both Rhonda Place to the east and south, or the existing pedestrian thoroughfare to the west of the site, however are otherwise within close proximity and hold a partial outlook over the broader Jesse Stewart Reserve and oval to the centre of the site. These properties are within proximity to the location of the proposed light poles, and it is anticipated that by virtue of the height of proposed poles (18.0m) that all proposed poles will be visible to varying extents from these surrounding residential properties.

Despite this, the provision of sports lighting poles does not alter the types of sporting activities currently undertaken on the site, however will extend the opportunity for such activities to be undertaken during weekday evenings, where this has previously not been the case. It is however noted that the provision of lighting is for the purposes of weekday evening training only and that no competition games will be held during the week.

Whilst residential properties identified above are within close proximity to Jesse Stewart Reserve, it is considered that the undertaking of sports training at the site is otherwise limited to within the central oval and portions of the site, with separation otherwise provided by the public thoroughfare or screening provided by boundary fencing and existing vegetation surrounding the site. Given the proposal does not seek to alter the use of the site, other than to provide for extended weekday training, the proposed installation of light poles or extended hours of use at the site is not likely to result in any reduction in visual privacy to surrounding properties.

In this regard, and subject to any matters raised following undertaking of public consultation processes, the proposal will not present unreasonable visual privacy impacts to surrounding properties.

### Obtrusive Light Spill

The Light Spill Compliance Certificate, prepared by Gary Roberts and Associates, dated 31 October 2016, held at Appendix B confirms the placement and intensity of the proposed lights attached to the lighting poles achieves a **"Pass" grade on Illuminance and Luminous Intensity. In accordance with the requirements of Clause 65(3)(d) of the Infrastructure SEPP**, any impacts of light spill and artificial sky glow are to be minimised in accordance with AS/NZS 1158: 2010 (formerly 2007), *Lighting for Roads and Public Spaces* as well as AS 4282-1997, *Control of the obtrusive effects of outdoor lighting* (Schedule 1 of the Infrastructure SEPP). Whilst the proposed development will result in additional lighting to the site, this lighting is only to operate until 9:15pm on select weekday evenings, being a maximum of approximately 5.25 hours on a given day.

Based on results of the light spill certificate and subject to the requirements of Clause 65(3)(d) being adhered to during the installation and operation of the proposed poles and lighting, the proposed lighting on the site will not have any significant adverse impacts on nearby residential dwellings and the surrounding area.

### Views

The site and immediately surrounding residential areas are not subject to any iconic or significant views or vistas.

It is noted that a number of properties to the eastern side of Rhonda Place, specifically properties numbered 2 through 14 and 1 through 7 Rhonda Place and No. 12 Ian Parade address the subject site, as well as an existing residential apartment building located at 2 Greenlees Avenue which shares a side boundary to the west of the site currently enjoy an outlook over the site which may be partially obscured or varied by the provision of the proposed light poles. The proposed light poles are however to be slim and non-bulky in design, will not obscure any significant or iconic views and will not result in any adverse visual imposition to surrounding properties. In this regard the proposed poles and sports lighting is considered to be a reasonable form of development for the site.

As the site and surrounding residential areas are not subject to any iconic or significant view or vistas, an assessment against view loss principles within **the Views (General Principles) Planning Principle** (*Tenacity Consulting v Warringah Council [2004] NSWLEC 140*) is not considered necessary in this instance.

Any minimal view obstruction of this outlook to, over or across Jesse Stewart Reserve is not considered unreasonable under the circumstances as the degree of the impact is negligible and the extensive parkland views enjoyed by surrounding properties will be substantially retained and the proposed works will therefore not present an unreasonable impact to surrounding properties in this regard.

## 5.2 Acoustic Amenity

The proposed works are accompanied by an analysis of acoustic matters, prepared by Wilkinson Murray, dated February 2017, held at Appendix D. Having regard to this assessment, matters relating to acoustic amenity, during both the construction phase and relating to the ongoing use of field are provided below.

### During Construction

Works associated with the installation of new light poles and lighting will give rise to minor noise and vibration impacts over a short duration of time. This impact is considered acceptable given both its temporary nature, its short duration and the need to upgrade the facilities. Demolition and construction will occur within standard construction work hours permitted by Council.

### Ongoing Use of Fields

The proposed works are within proximity to residential development surrounding the site, as detailed in Section 5.1 of this report. The proposed development seeks to provide for sports lighting at the site and does not seek alteration to existing access arrangements, car parking or sports activities at the site, other than to provide for extended (illuminated) weekday evening training and use of the site as detailed in Section 2.3 of this report

The acoustic analysis undertaken by Wilkinson Murray at Appendix D provides details of noise monitoring and data logging of the locality, **against anticipated noise impacts generated by the NSW Environmental Protection Authority's** Environmental Noise Control Manual (ENCM), which provides guidance in establishing a noise criteria regarding noise from public places and sporting activities.

This acoustic assessment concludes (p9) that:

*“Facilities are a necessary and important part of any residential community and as such, noise emissions are generally tolerated by surrounding residents.*

*The noise levels currently received at nearby residences during training and sporting events at Jessie Stewart Reserve are likely to increase as a result of the proposed modifications. The proposed use as a soccer venue will extend the current summer season usage to year-round. Provision of sports lighting will enable training to be held at the ground (as required) until 9.15pm Monday through Friday evenings.*

*Predicted noise levels from training and competitive fixtures are predicted to exceed the recommended assessment criteria for weekend and evening operations when play occurs near the edge of the field in closest proximity to these receivers. Training and competition games generally achieve the recommended assessment criteria when players are located at typical distances to receivers, away from the sidelines.”*

Having regard to the above, it is acknowledged that whilst the proposed development will result in additional noise at the site, and that minor exceedances to acoustic criteria may occur for activities undertaken at the perimeter extremities, that the proposed installation of sports lighting and use of the site for weekday evening training purposes will not present any unreasonable acoustic impact to surrounding properties.

## 5.3 Traffic and Transport

### Construction

All machinery and equipment to be utilised for the proposed works will be transported to the site via the existing vehicle access point along Rhonda Place to the south west of the site. The number of vehicles, vehicle movements and specific quantities of waste and recycling materials generated by the proposed works will be determined prior

to the commencement of the works and upon the successful appointment of a qualified contractor. Accordingly, it is recommended that a Construction Management Plan be prepared to determine these matters prior to the undertaking of works.

#### Ongoing Use of Fields

The proposed works have been accompanied by a review of traffic and parking matters prepared by Traffic and Parking Consultants Pty Ltd and is held at Appendix C.

As noted within this review:

***"The existing parking conditions are considered readily able to accommodate the proposal, with considerable remaining capacity. Similarly, the road network is also anticipated to be able to accommodate the anticipated traffic generation, which will be primarily limited to the regional road network.***

*The assessment has identified however, that upon installation of the field lights, the road network should be observed for a period, to determine whether the overlap of general commuter traffic and park associated traffic leads to any notable impacts – this is considered a best practice precaution. If issues are noted, training should be regulated during the commuter period, being either minimised or avoided as necessary. Outside the commuter period however, no notable traffic impacts are expected to arise as a result of the proposal."*

On this basis it is considered the proposed development will not present an unreasonable impact to traffic or parking within the locality.

#### 5.4 Community Consultation

Milestone has not been provided with details of any community consultation process for the proposed works. Accordingly, this REF is issued to Council on the conditional basis that:

- Community consultation with local residents is undertaken prior to the commencement of works; and
- Should concerns be raised as a result of the community consultation process, that these be addressed, with design revisions made if deemed necessary by Council officers in order to mitigate or eliminate possible environmental impacts identified in a revised final REF.

Additionally it is recommended a site hoarding or fencing is to be erected on the site prior to works commencing, and is to include details of the proposed works, development plans as well as details of the contractors (including contact details) available for the duration of construction works. Hoarding must also ensure adequate pedestrian circulation and access to all other areas of the site not subject to proposed works.

#### 5.5 Heritage

##### Aboriginal Heritage

A search of the NSW Office of Environment and Heritage (OEH) Aboriginal Heritage Information Management System (AHIMS) was undertaken on 2 December 2016. This search indicated that no Indigenous heritage items have been recorded within the site or immediately adjacent to the site. The proposal is located in an area that has been highly modified for a range of urban and recreational uses and therefore it is considered unlikely that any Indigenous heritage items would be located in the vicinity of the proposal, due to the past history of disturbance.

If previously unidentified Indigenous heritage items are uncovered during the work, all work in the vicinity of the find would cease and appropriate advice be sought from OEH by the contractor in order to mitigate potential impacts.

##### European Heritage

Having regard to section 4.9 of this report, the subject site is not identified as a heritage item however is within proximity to a nearby heritage item, being 1488 'Greenlees Park' located approximately 40m north of the site pursuant to Schedule 5 of the LEP 2013. The site is not located within, nor within proximity to, any Heritage Conservation Area (HCA).

Given the heritage significance of the site and surrounds, a SOHI has been prepared for the proposed works and is held at Attachment E, which concludes (p22) that:

*"The proposed lighting poles and associated services would generate a neutral impact on heritage items within the vicinity of the site. There would be no physical impact on any of the surrounding heritage items due to the distance between the proposed works and said items."*

...

*The proposed development complies with the pertinent heritage controls and would have an acceptable level of impact on the significance of heritage items in the vicinity."*

On the basis of the above and the SOHI prepared by Heritage 21 and held at Appendix E, it is considered that the proposed activity will not present any unreasonable heritage impact to the nearby heritage item.

## 5.6 Flora and Fauna

The site does not contain any significant flora and fauna and consequently the proposed works will not give rise to any adverse impact on flora and fauna. The proposed development does not involve the removal of any trees or vegetation at the site other than grass. There is also limited disturbance within the soil related to excavation. It is acknowledged that the provision of light at the site may affect patterns of existing fauna (e.g. birds, bats etc.) however that any impact is not unreasonable under the circumstances given the established urban nature of the locality.

## 5.7 Flooding and Stormwater

Milestone has not been provided within any flooding or stormwater details for proposed works. The proposed works will result in a minor increase in impervious surfaces, being the concrete slab base of proposed lighting poles only, and will not significantly alter stormwater infrastructure at the site.

Additionally, it is recommended that sediment and erosion control measures be implemented by the principal contractor to Council's requirements during demolition and construction works.

## 5.8 Socio Economic Impacts

### Construction

The construction works to provide the new light poles and associated lighting is unlikely to have an adverse socio-economic impact. Any noise generated during the construction phase is temporary and will be undertaken during the daytime only.

It is recommended that free and full public access to all other areas of the reserve not subject to proposed works is to be maintained during the course of construction works.

### Ongoing Use of Fields

The ongoing use of the playing fields and operation of the proposed lighting is unlikely to detrimentally affect the socio-economic context of the surrounding areas. The proposed sports lighting will contribute to the ongoing use and management of the reserve, and will provide a safe recreation facility into the future, with minimal environmental impacts in accordance with the objectives of **Council's Recreation and Facilities Strategy (2013)** and the Canada Bay Local Planning Strategy 2010 - 2031 (June 2010).

The provision of sports lighting will provide a positive contribution to the community, by way of the increased usage and patronage to Jesse Stewart Reserve, a key sports facility and place of public recreation within the area. The increased usage of the facilities promotes positive health benefits for the community.

## 5.9 Soils and Geotechnical Impacts

The proposed development has not been submitted with any geotechnical assessment for the site. Notwithstanding, it is considered that proposed works are minor in scale, with minimal bore drilling and minimal excavation works only and are not likely to have any geotechnical impacts at the site.

## 5.10 Spoil and Waste Management

It is recommended that an Environmental Waste Management Plan be prepared by the principal contractor for the proposed activity prior to the commencement of work to ensure appropriate spoil and waste management.

## 5.11 Environmental Planning and Assessment Regulation 2000

Division 1 Clause 228 of the Environmental Planning and Assessment Regulation 2000 (Regulation) provides factors to be taken into account when consideration is being given to the likely impact of an activity on the environment. Pursuant to Clause 228(2) of the Regulation the following matters must be taken into account:

Clause	Matters for Consideration	Section Reference
228(2)(a)	<i>any environmental impact on a community,</i>	5.1 through 5.7
228(2)(b)	<i>any transformation of a locality,</i>	5.1 through 5.3
228(2)(c)	<i>any environmental impact on the ecosystems of the locality,</i>	4.2, 4.7, 4.8, 4.9, 5.1
228(2)(d)	<i>any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality,</i>	4.8, 4.9, 5.1, through 5.4
228(2)(e)	<i>any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations</i>	4.8, 4.9, 5.1, through 5.4
228(2)(f)	<i>any impact on the habitat of protected fauna (within the meaning of the <u>National Parks and Wildlife Act 1974</u>),</i>	4.2, 4.8, 4.9, 5.5
228(2)(g)	<i>any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air,</i>	4.2, 4.8, 4.9, 5.5
228(2)(h)	<i>any long-term effects on the environment,</i>	4.1 through 5.9
228(2)(i)	<i>any degradation of the quality of the environment,</i>	4.1 through 5.9
228(2)(j)	<i>any risk to the safety of the environment,</i>	5.1 through 5.9
228(2)(k)	<i>any reduction in the range of beneficial uses of the environment</i>	2.5
228(2)(l)	<i>any pollution of the environment,</i>	5.1 through 5.9
228(2)(m)	<i>any environmental problems associated with the disposal of waste,</i>	4.5, 5.9
228(2)(n)	<i>any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply</i>	5.1 through 5.9
228(2)(o)	<i>any cumulative environmental effect with other existing or likely future activities,</i>	5.1 through 5.9
228(2)(p)	<i>any impact on coastal processes and coastal hazards, including those under projected climate change conditions.</i>	4.8, 5.6

Having regard to the matters contained within this report, and referenced in the table above, the proposal is considered to comply with the factors to be taken into account, pursuant to Clause 228(2) of the EP&A Regulations.

## 6 CONCLUSION

This REF concludes that the proposed installation of four (4) new sports lighting poles and associated lighting at Jesse Stewart Reserve, located at the corner of Greenlees Avenue and Rhonda Place, Concord (Lot 3 DP 1161664) can be undertaken without resulting in any significant adverse environmental impacts, subject to the recommendations of this report. In the absence of any significant adverse environmental impacts as a result of the proposed activity, and considering the broader social and economic benefits of the proposed redevelopment of the site, it is considered a satisfactory proposal.

### 6.1 Summary of Impacts

The proposed activity is considered to be in the public interest, as the provision of sports lighting at the site will provide a tangible benefit to the local community and regional sporting groups, and contribute to the enhanced management and utilisation of key public assets. The increased in availability for use of the site at night times for various sporting uses will promote positive health benefits for the community.

The proposed works will not have any detrimental impacts on the nearby heritage item and the increased availability and use of the site will have a positive impact on for the community as a key public asset.

Minor impacts associated with the construction of the proposed physical works will include noise, vibration and limited additional vehicular movements which will be temporary in their duration. During works Council will provide information on the hoarding of the site to visitors advising of the location of alternative facilities. It is recommended that free and full public access to all other areas of the reserve not subject to proposed works be maintained during the course of construction works. The proposed activity will create some permanent noise from the additional use in the winter months, however it is the conclusion of the acoustic analysis (held in Appendix D) that increased noise levels will be in compliance with relevant noise standards.

The proposal will result in a minor visual amenity impact as a result of installation of light poles and illumination within proximity to residential dwellings, however the degree of the impact is considered to be minimal and acceptable in the context of the use of the site for public recreation.

Based on the conclusions of this comprehensive review of environmental impact the overall effect of the proposed activity is considered acceptable in terms of the site and its context, subject to the recommendations provided in Section 6.2.

### 6.2 Summary of Recommendations

This REF is prepared on the scope of works identified in the accompanying site plan, attached at Appendix A, on the conditional basis that the following recommendations are undertaken prior to the commencement of proposed works at the site:

1. An Environmental Waste Management Plan be prepared;
2. A Construction Management Plan be prepared;
3. A Sediment and Erosion Control Plan to be prepared;
4. That the approved lighting design is revised to include a timing device as to ensure compliance with the approved hours of operation;
5. The proposed lighting is installed in accordance with AS/NZS 1158:2010, *Lighting for Roads and Public Spaces* and AS 4282-1997, *Control of the obtrusive effects of outdoor lighting*;
6. That community consultation of the proposal be consistent with provisions of Section 2.1.3 of the Canada Bay Development Control Plan 2013;
7. All recommendations or requirements of items one (1) through six (6) of this section be adopted prior to, and implemented during, any construction at the site; and
8. That any substantial design revisions be required as an outcome of the fulfilment of item seven (7) of this section, that Milestone be engaged to review these changes and provide a revised REF (as required).

The above recommendations are provided in order to minimise any potential adverse environmental impacts on the site and the surrounding properties and to preserve amenity to the locality.

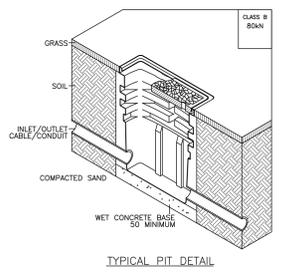
MILESTONE (AUST) PTY LIMITED

APPENDIX A:

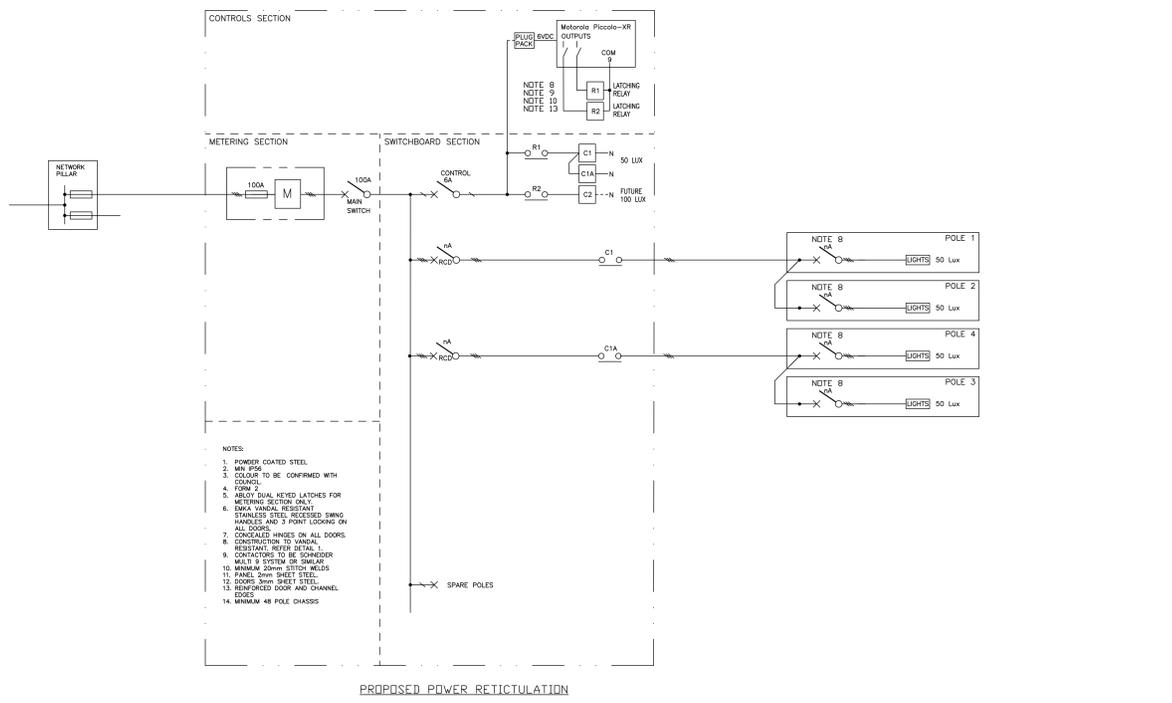
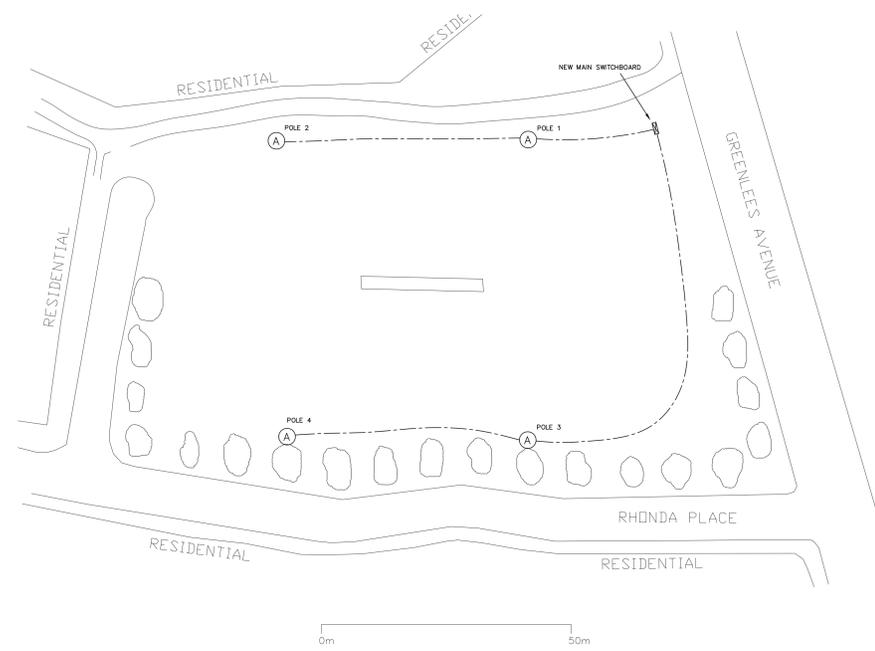
LIGHTING PLAN, PREPARED BY GARY ROBERTS AND ASSOCIATES PTY  
LTD DATED 31 OCTOBER 2016

**LEGEND**

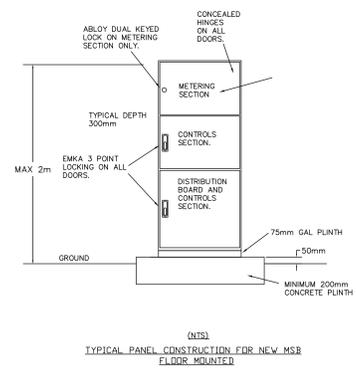
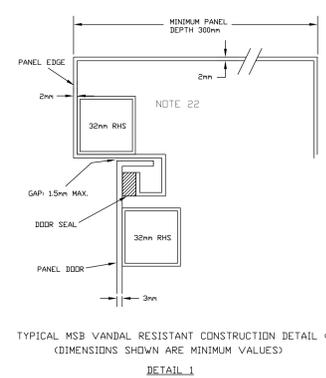
- PROPOSED NEW CONDUIT/CABLE ROUTES
- (A) PROPOSED NEW LIGHTING POLE  
POLE HEIGHT 18m  
TYPICALLY 20W METAL HALIDE  
BEAM WIDTH TO SUIT  
REMOTE 15W 2000W LUMEN MULTIVAPOR  
LAMP: 2000W 220000 LUMEN MULTIVAPOR
- [LIGHTS] POLE MOUNTED LIGHT FITTINGS
- [NEW PULLING PIT THIS CONTRACT]
- [LIGHTING SWITCHBOARD]
- [100A] CIRCUIT BREAKER
- [CIRCUIT BREAKER CURRENT RATING DETERMINED BY LOAD]
- [FUSE]
- [R1] RELAY COIL
- [C2] CONTACTOR COIL
- [3 PHASE]
- [KEY] MANUAL KEYED BYPASS SWITCH
- [O C2 O] NORMALLY OPEN CONTACTS
- [O C2 O] NORMALLY CLOSED CONTACTS



- NOTES:**
- SEAL ALL NEW CONDUITS THAT ENTER PITS WITH DRAWDING FOAM ON COMPLETION.
  - CONDUIT ROUTES SHOWN ARE INDICATIVE ONLY.
  - CONFIRM CONDUIT ROUTES WITH COUNCIL PRIOR TO INSTALLATION.
  - PROVIDE FALL LEVEL PROTECTION TO CODE AND LOCAL AUTHORITY REQUIREMENTS.
  - CONFIRM LOCATION OF EXISTING SERVICES ON SITE.
  - CONFIRM ALL DIMENSIONS ON SITE. REFER TO COUNCIL FOR SCALED SURVEY PLAN.
  - PULLING PITS PROVIDED AS REQUIRED. FINISH FLUSH WITH GRASS SURFACE. CONFIRM PIT LOCATING WITH COUNCIL PRIOR TO INSTALLATION. MINIMUM CLASS B 80 IN POINT LOADING.
  - PROVIDE MULTICORE MIN 25mm<sup>2</sup> PIGTAIL CONTROL CABLE TO PILES AS SHOWN.
  - CIRCUIT BREAKERS SIZED FOR STARTUP LOAD.
  - NEW ELECTRICAL WORKS TO COMPLY WITH THE LATEST SERVICE AND INSTALLATION RULES OF NSW.
  - NA.
  - NA.
  - PROVIDE SURGE SUPPRESSION AT THE MAIN SWITCHBOARD.
  - PROVIDE MINIMUM 2MM GALVANIZED COVER BRACKETS WHERE CONDUITS ARE EXPOSED TO PUBLIC CONTACT AS REQUIRED.
  - ALL EXTERNAL CONDUITS INSTALLED BETWEEN GROUND LEVEL AND 3M ABOVE GROUND LEVEL THAT ARE IN PUBLIC AREAS SHALL BE GALVANIZED.
  - MOTOROLA PICCOLLO XR OUTPUT VOLTAGE IS A DC PULSE THROUGH A TWO WIRE CIRCUIT SUITABLE FOR ACTIVATING DC LATCHING COILS. DEFAULT OUTPUT VOLTAGE IS 12V. RELAY NUMBERS ARE FOR GUIDANCE ONLY. CONFIRM PIN NUMBER AND OUTPUT WIRE COLOUR. PROVIDE INTERLOCKING RELAYS IF REQUIRED. CONFIRM ALL DETAILS OF THE IRBNET SYSTEM (PICCOLLO XR) PRIOR TO TENDER SUBMISSION.
  - REFER TO CONTRACTOR - GRANT SIMPSON (04) 321 219 [contracts@granttech.com.au](mailto:contracts@granttech.com.au)
  - EACH LIGHT FITTING TO BE WIRED SEPARATELY FROM THE BOTTOM OF THE POLE. DO NOT LOOP AT THE TOP.
  - CONFIRM LOCATION OF NEW LIGHTING SWITCHBOARD WITH COUNCIL PRIOR TO INSTALLATION.



- NOTES:**
- POWDER COATED STEEL.
  - MIN 50%.
  - COLOR TO BE CONFIRMED WITH COUNCIL.
  - FORM 2.
  - ALLOY DUAL KEYED LATCHES FOR METERING SECTION ONLY.
  - EMKA VANDAL RESISTANT STAINLESS STEEL RECESSED SWING HANDLES AND 3 POINT LOCKING ON ALL DOORS.
  - CONCEALED HINGES ON ALL DOORS.
  - CONSTRUCTION TO VANDAL RESISTANT REFER DETAIL 1.
  - CONTACTORS TO BE SCHNEIDER.
  - MINIMUM 20mm STITCH WELDS.
  - PANELS 3mm SHEET STEEL.
  - DOORS 3mm SHEET STEEL.
  - REINFORCED DOOR AND CHANNEL EDGE.
  - MINIMAX 48 POLE CHASSIS.



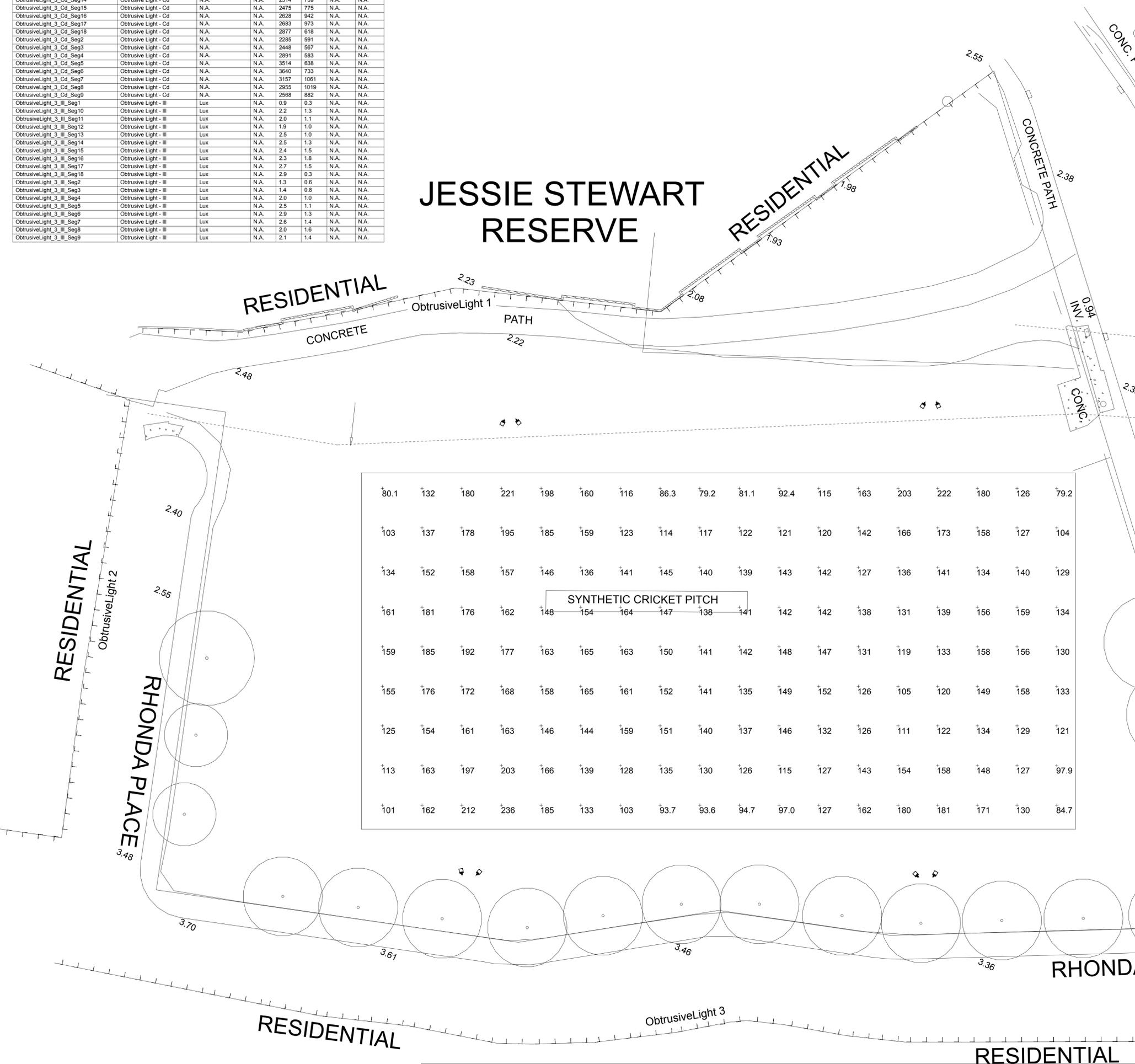
No.	DATE	Description	Drawn
PI	23/08/16	Preliminary issue.	CC

Electrical Engineer <b>GRA</b> GARY ROBERTS & ASSOCIATES PTY LTD ACN 064 331 086 PHONE (02) 9457 6488 MOBILE (0412) 442 671 E-mail <a href="mailto:grassoc@optusnet.com.au">grassoc@optusnet.com.au</a>	Client: CANADA BAY COUNCIL Project: JESSE STEWART RESERVE RHONDA PLACE CONCORD NSW 2137 2016 LIGHTING UPGRADE	Drawing: ELECTRICAL SERVICES LIGHTING LAYOUT Date: 23/08/16 Drawn: G.C. Checked: Proj.No: 371 Scale: 1:500@AO	Drawing No: Issue: E-1 P1
---	--	--	------------------------------

Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
☐	8	SR4H757A2 Raptor 1270W NB gla	SINGLE	136000	0.800	SR4H757A2 NB_0

Label	CalcType	Units	Avg	Max	Min	Min/Avg	Min/Max
CalcPts_1	ILLUMINANCE	Lux	144.20	236	79.2	0.55	0.34
ObtrusiveLight_1_Cd_Seg1	Obtrusive Light - Cd	N.A.	N.A.	2587	671	N.A.	N.A.
ObtrusiveLight_1_Cd_Seg2	Obtrusive Light - Cd	N.A.	N.A.	2815	722	N.A.	N.A.
ObtrusiveLight_1_Cd_Seg3	Obtrusive Light - Cd	N.A.	N.A.	2893	854	N.A.	N.A.
ObtrusiveLight_1_Cd_Seg4	Obtrusive Light - Cd	N.A.	N.A.	3062	565	N.A.	N.A.
ObtrusiveLight_1_III_Seg1	Obtrusive Light - III	Lux	N.A.	0.9	0.3	N.A.	N.A.
ObtrusiveLight_1_III_Seg2	Obtrusive Light - III	Lux	N.A.	3.8	0.7	N.A.	N.A.
ObtrusiveLight_1_III_Seg3	Obtrusive Light - III	Lux	N.A.	4.7	1.7	N.A.	N.A.
ObtrusiveLight_1_III_Seg4	Obtrusive Light - III	Lux	N.A.	2.3	0.2	N.A.	N.A.
ObtrusiveLight_2_Cd_Seg1	Obtrusive Light - Cd	N.A.	N.A.	0	0	N.A.	N.A.
ObtrusiveLight_2_Cd_Seg2	Obtrusive Light - Cd	N.A.	N.A.	7013	560	N.A.	N.A.
ObtrusiveLight_2_Cd_Seg3	Obtrusive Light - Cd	N.A.	N.A.	4783	985	N.A.	N.A.
ObtrusiveLight_2_III_Seg1	Obtrusive Light - III	Lux	N.A.	0.0	0.0	N.A.	N.A.
ObtrusiveLight_2_III_Seg2	Obtrusive Light - III	Lux	N.A.	3.1	0.7	N.A.	N.A.
ObtrusiveLight_2_III_Seg3	Obtrusive Light - III	Lux	N.A.	0.6	0.1	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg1	Obtrusive Light - Cd	N.A.	N.A.	1804	587	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg10	Obtrusive Light - Cd	N.A.	N.A.	2107	713	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg11	Obtrusive Light - Cd	N.A.	N.A.	1850	707	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg12	Obtrusive Light - Cd	N.A.	N.A.	1763	704	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg13	Obtrusive Light - Cd	N.A.	N.A.	2535	743	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg14	Obtrusive Light - Cd	N.A.	N.A.	2314	759	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg15	Obtrusive Light - Cd	N.A.	N.A.	2475	775	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg16	Obtrusive Light - Cd	N.A.	N.A.	2628	942	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg17	Obtrusive Light - Cd	N.A.	N.A.	2683	973	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg18	Obtrusive Light - Cd	N.A.	N.A.	2877	618	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg2	Obtrusive Light - Cd	N.A.	N.A.	2285	591	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg3	Obtrusive Light - Cd	N.A.	N.A.	2448	587	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg4	Obtrusive Light - Cd	N.A.	N.A.	2891	583	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg5	Obtrusive Light - Cd	N.A.	N.A.	3514	638	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg6	Obtrusive Light - Cd	N.A.	N.A.	3640	733	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg7	Obtrusive Light - Cd	N.A.	N.A.	3157	1061	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg8	Obtrusive Light - Cd	N.A.	N.A.	2955	1019	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg9	Obtrusive Light - Cd	N.A.	N.A.	2568	882	N.A.	N.A.
ObtrusiveLight_3_III_Seg1	Obtrusive Light - III	Lux	N.A.	0.9	0.3	N.A.	N.A.
ObtrusiveLight_3_III_Seg10	Obtrusive Light - III	Lux	N.A.	2.2	1.3	N.A.	N.A.
ObtrusiveLight_3_III_Seg11	Obtrusive Light - III	Lux	N.A.	2.0	1.1	N.A.	N.A.
ObtrusiveLight_3_III_Seg12	Obtrusive Light - III	Lux	N.A.	1.9	1.0	N.A.	N.A.
ObtrusiveLight_3_III_Seg13	Obtrusive Light - III	Lux	N.A.	2.5	1.0	N.A.	N.A.
ObtrusiveLight_3_III_Seg14	Obtrusive Light - III	Lux	N.A.	2.5	1.3	N.A.	N.A.
ObtrusiveLight_3_III_Seg15	Obtrusive Light - III	Lux	N.A.	2.4	1.5	N.A.	N.A.
ObtrusiveLight_3_III_Seg16	Obtrusive Light - III	Lux	N.A.	2.3	1.8	N.A.	N.A.
ObtrusiveLight_3_III_Seg17	Obtrusive Light - III	Lux	N.A.	2.7	1.5	N.A.	N.A.
ObtrusiveLight_3_III_Seg18	Obtrusive Light - III	Lux	N.A.	2.9	0.3	N.A.	N.A.
ObtrusiveLight_3_III_Seg2	Obtrusive Light - III	Lux	N.A.	1.3	0.6	N.A.	N.A.
ObtrusiveLight_3_III_Seg3	Obtrusive Light - III	Lux	N.A.	1.4	0.8	N.A.	N.A.
ObtrusiveLight_3_III_Seg4	Obtrusive Light - III	Lux	N.A.	2.0	1.0	N.A.	N.A.
ObtrusiveLight_3_III_Seg5	Obtrusive Light - III	Lux	N.A.	2.5	1.1	N.A.	N.A.
ObtrusiveLight_3_III_Seg6	Obtrusive Light - III	Lux	N.A.	2.9	1.3	N.A.	N.A.
ObtrusiveLight_3_III_Seg7	Obtrusive Light - III	Lux	N.A.	2.6	1.4	N.A.	N.A.
ObtrusiveLight_3_III_Seg8	Obtrusive Light - III	Lux	N.A.	2.0	1.6	N.A.	N.A.
ObtrusiveLight_3_III_Seg9	Obtrusive Light - III	Lux	N.A.	2.1	1.4	N.A.	N.A.

# JESSIE STEWART RESERVE



APPENDIX B:

LIGHT SPILL COMPLIANCE CERTIFICATE, PREPARED BY GARY ROBERTS  
AND ASSOCIATES, DATED 31 OCTOBER 2016

# Obtrusive Light - Compliance Report

AS 4282-1997, Pre-Curfew, Residential - Light Surrounds

Filename: Jesse Stewart New survey 4

31/10/2016 5:45:15 PM

## Illuminance

Maximum Allowable Value: 10 Lux

Calculations Tested (25):

Calculation Label	Test Results	Max. Illum.
ObtrusiveLight_1_III_Seg1	PASS	1.2
ObtrusiveLight_1_III_Seg2	PASS	4.8
ObtrusiveLight_1_III_Seg3	PASS	5.9
ObtrusiveLight_1_III_Seg4	PASS	2.9
ObtrusiveLight_2_III_Seg1	PASS	0.0
ObtrusiveLight_2_III_Seg2	PASS	3.9
ObtrusiveLight_2_III_Seg3	PASS	0.7
ObtrusiveLight_3_III_Seg1	PASS	1.1
ObtrusiveLight_3_III_Seg2	PASS	1.7
ObtrusiveLight_3_III_Seg3	PASS	1.8
ObtrusiveLight_3_III_Seg4	PASS	2.5
ObtrusiveLight_3_III_Seg5	PASS	3.1
ObtrusiveLight_3_III_Seg6	PASS	3.6
ObtrusiveLight_3_III_Seg7	PASS	3.2
ObtrusiveLight_3_III_Seg8	PASS	2.4
ObtrusiveLight_3_III_Seg9	PASS	2.7
ObtrusiveLight_3_III_Seg10	PASS	2.7
ObtrusiveLight_3_III_Seg11	PASS	2.5
ObtrusiveLight_3_III_Seg12	PASS	2.3
ObtrusiveLight_3_III_Seg13	PASS	3.1
ObtrusiveLight_3_III_Seg14	PASS	3.1
ObtrusiveLight_3_III_Seg15	PASS	3.0
ObtrusiveLight_3_III_Seg16	PASS	2.9
ObtrusiveLight_3_III_Seg17	PASS	3.4
ObtrusiveLight_3_III_Seg18	PASS	3.6

## Luminous Intensity (Cd) Per Luminaire

Maximum Allowable Value: 7500 Cd

Control Angle: 83 Degrees

Luminaire Locations Tested (8)

Test Results: **PASS**

All Luminaire Locations (8):

Lum.No.	Label	Cd	Tilt	Roll	Spin
1	SR4H757A2 Raptor 1270W NB gla	817	0	0	0
2	SR4H757A2 Raptor 1270W NB gla	817	0	0	0
3	SR4H757A2 Raptor 1270W NB gla	817	0	0	0
4	SR4H757A2 Raptor 1270W NB gla	817	0	0	0
5	SR4H757A2 Raptor 1270W NB gla	817	0	0	0
6	SR4H757A2 Raptor 1270W NB gla	817	0	0	0
7	SR4H757A2 Raptor 1270W NB gla	817	0	0	0
8	SR4H757A2 Raptor 1270W NB gla	817	0	0	0

APPENDIX C:

ASSESSMENT OF TRAFFIC AND PARKING CONSIDERATIONS, PREPARED  
BY PARKING AND TRAFFIC CONSULTANTS PTY LTD, DATED 1 MARCH  
2017



**PARKING & TRAFFIC**  
CONSULTANTS

*Driving success through valuable advice*

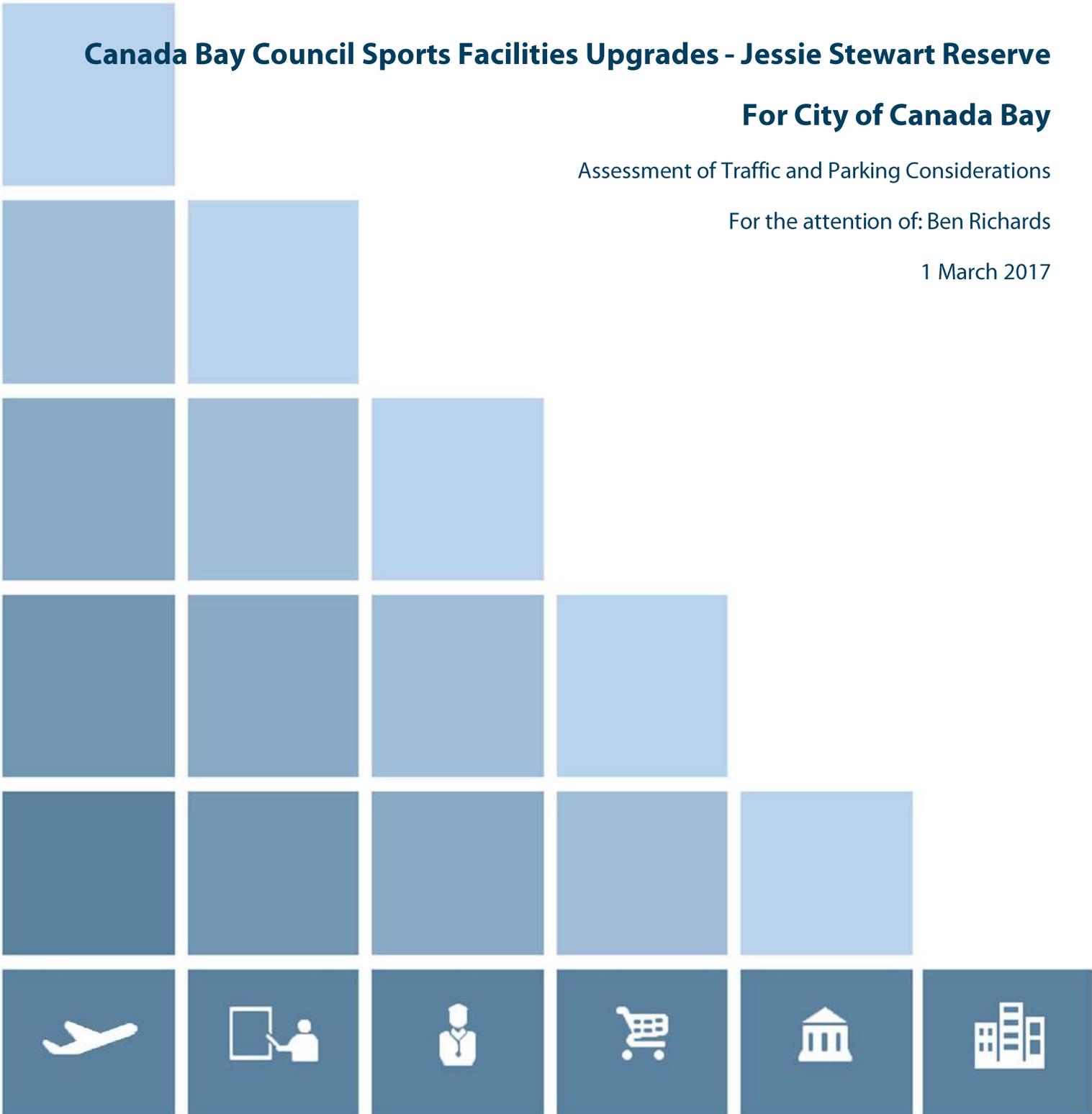
# Canada Bay Council Sports Facilities Upgrades - Jessie Stewart Reserve

## For City of Canada Bay

Assessment of Traffic and Parking Considerations

For the attention of: Ben Richards

1 March 2017



## Document Control

Our Reference: T2-1850, Canada Bay Council Sports Facilities Upgrades - Jessie Stewart Reserve, Assessment of Traffic and Parking Considerations

ISSUE	DATE	ISSUE DETAILS	AUTHOR	REVIEWED
1	05/12/2016	Draft for Comment	MY/TR	AM/SB
2	06/12/2016	Issued Final	MY	AM
3	14/02/17	Issued Final (Revised)	CS	AM
4	01/03/17	Issue Final (Revised)	HL	AM

## Contact

Andrew Morse  
02-89200800  
[Andrew.morse@parkingconsultants.com](mailto:Andrew.morse@parkingconsultants.com)

COMMERCIAL IN CONFIDENCE

The information contained in this document, including any intellectual property rights arising from designs developed and documents created, is confidential and proprietary to Parking & Traffic Consultants (PTC).

This document may only be used by the person/organisation to whom it is addressed for the stated purpose for which it is provided and must not be imparted to or reproduced, in whole or in part, by any third person without the prior written approval of a PTC authorised representative. PTC reserves all legal rights and remedies in relation to any infringement of its rights in respect of its intellectual property and/or confidential information.

© 2016

PARKING & TRAFFIC CONSULTANTS  
Suite 102, 506 Miller Street  
Camberay NSW 2062

Ph. +61 2 8920 0800  
Fax +61 2 8076 8665

Suite 2.09, 838 Collins Street  
Docklands VIC 3008

Ph. +61 3 9020 7333

# Contents

<b>1</b>	<b>Introduction.....</b>	<b>1</b>
1.1	Study Approach.....	1
1.2	Purpose of the Report.....	2
<b>2</b>	<b>Proposal.....</b>	<b>3</b>
2.1	Site Description.....	3
2.1.1	Sporting Fields.....	3
2.2	Development Proposal.....	4
<b>3</b>	<b>Existing Transport Facilities.....</b>	<b>6</b>
3.1	Road Hierarchy.....	6
3.2	Public Transport.....	10
3.2.1	Trains.....	10
3.2.2	Bus Stops.....	11
3.3	Bicycle Facilities.....	13
3.4	Pedestrian Facilities.....	13
<b>4</b>	<b>Travel Characteristics.....</b>	<b>14</b>
4.1	Parking Occupancy Survey.....	14
4.2	Intercept Survey.....	15
4.3	Travel Mode Analysis.....	20
<b>5</b>	<b>Parking &amp; Traffic Impact Assessment.....</b>	<b>23</b>
5.1	Visitor Demand.....	23
5.2	Parking Demand & Impact Assessment.....	23
5.3	Traffic Generation & Impact.....	23
5.4	Summary.....	23
<b>6</b>	<b>Conclusion.....</b>	<b>25</b>
	Figure 1 – Park Location.....	1
	Figure 2 - Site Plan.....	3
	Figure 3 – Summer Bookings.....	4
	Figure 4 - Proposed Installation Locations.....	4
	Figure 5 - Road Hierarchy.....	6
	Figure 6 – Majors Bay Road (southbound).....	7
	Figure 7 – Crane Street (southwest bound).....	8
	Figure 8 – Greenless Avenue (eastbound).....	8
	Figure 9 – Rhonda Place (northbound).....	9
	Figure 10 – Ian Parade (northbound).....	10
	Figure 11 – Distance to Burwood Railway Station.....	10
	Figure 12 - Bus Stop Location.....	12
	Figure 13 - Bicycle Routes (Source: Sydney Cycleways).....	13
	Table 1 – Existing Road Network – Majors Bay Road.....	7
	Table 2 – Existing Road Network – Crane Street.....	7
	Table 3 – Existing Road Network – Greenlees Avenue.....	8
	Table 4 – Existing Road Network – Rhonda Place.....	9

Table 5 – Existing Road Network – Ian Parade.....	9
Table 6 – Bus Service .....	12
Table 7 –On-street parking occupancy results .....	14

# 1 Introduction

## 1.1 Study Approach

Parking and Traffic Consultants (PTC) has been engaged to assess a parking and traffic implications relating to the installation of four (4) lights at Jessie Stewart Reserve to enable extended use of the park during the evenings.

The study has been carried out on the basis of relevant guidelines and standards such as the Roads and Maritime Services (RMS) Guide to Traffic Generating Developments, Standards Australia and Canada Bay Council Development Control Plans. The following additional surveys were performed to quantify the impacts of introducing lighting at the park.

- **Occupancy Surveys** – used to understand the existing parking conditions in the immediate locality. They provide such information as the total number of parking spaces and their fluctuations in demand over time (hourly), allowing for an insight into the local parking demand.
- **Intercept Surveys** – these surveys provide insight into the travel characteristics of the Park patrons, and will assist in predicting the traffic generation, parking demand, and pedestrian flows associated with the Park.

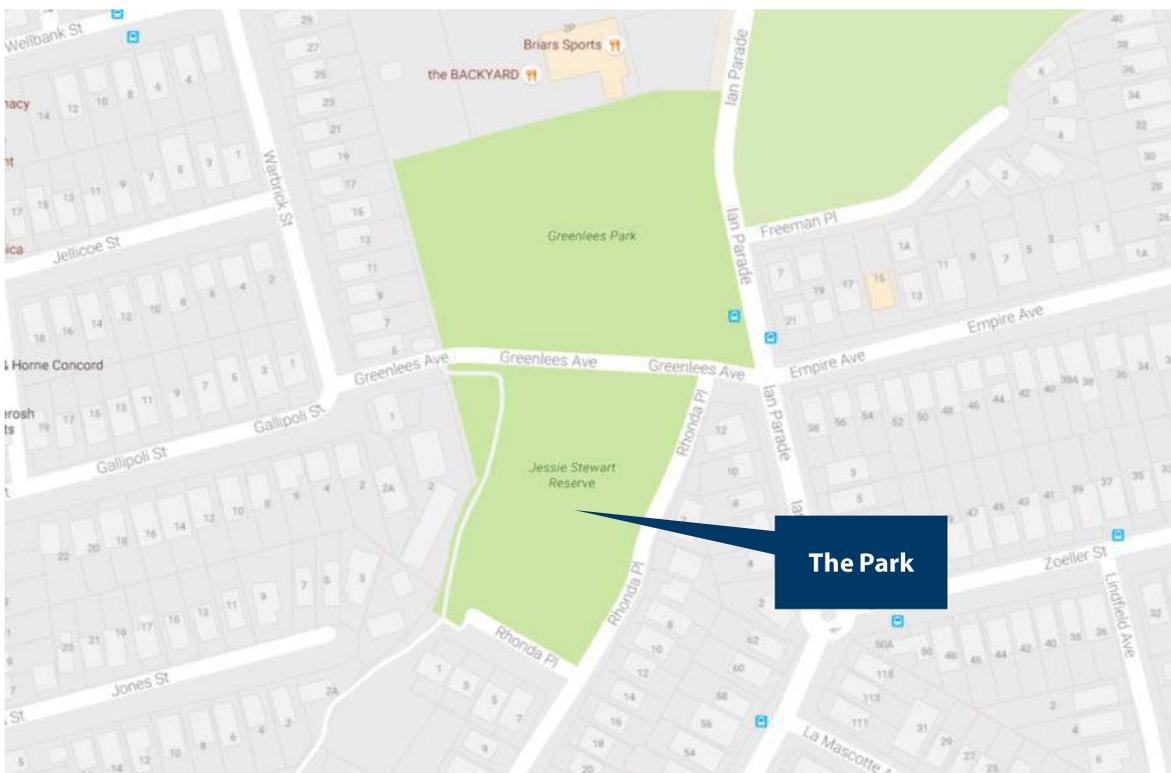


Figure 1 – Park Location

## 1.2 Purpose of the Report

This report presents the following considerations in relation to the Assessment of Traffic and Parking Considerations the Proposal:

- Quantify the Reserve's existing traffic generation within the local road network;
- Quantify the Reserve's existing parking demand;
- Identify existing and potential impacts of the parking demand generated by the park, including;
  - An assessment of the flow of traffic;
  - An assessment of parking demand; and
  - Identify and advise on any key issues or constraints arising from these assessments.

## 2 Proposal

### 2.1 Site Description

The Jessie Stewart Reserve is located southwest of the intersection of Greenlees Avenue and Rhonda Place in Concord and is approximately 500m from the town centre as presented in Figure 2.



Figure 2 - Site Plan

The reserve (Lot 3 of DP1161664) is generally rectangular in shape and has a total area of approximately 1 ha (source: NSW Planning & Environment) and is bounded by Greenlees Avenue, Rhonda Place and Ian Parade. Jessie Stewart Reserve includes a small year round synthetic cricket wicket. Junior teams from the inner West Harbour Cricket Association train and play at the ground during the summer season whilst personal trainers are able to use the area year round.

#### 2.1.1 Sporting Fields

One playing field is available for clubs to utilise at any one time during the day time and no lights are installed at present.

It is understood that the Inner Western Suburbs Cricket Club currently utilises the oval for the different competition grades on weeknights up to 7pm. Council have made available the following typical roster schedule:

- Summer Bookings (Five Dock Park, Cricket):
  - 4pm-7pm, Tuesday – Thursday
  - 8am-6pm, Saturday & Sunday

- Winter Bookings (Jessie Stewart):
  - Not Used

Summer Seasonal Bookings 2016/17								
DAY/PARK	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	TOTAL HOURS
Jessie Stewart Cricket		Inner Western Suburbs Cricket Association 4pm - 7pm	Inner Western Suburbs Cricket Association 4pm - 7pm	Inner Western Suburbs Cricket Association 4pm - 7pm		Inner Western Suburbs Cricket Association 8am - 6pm	Inner Western Suburbs Cricket Association 8am - 6pm	IWHCA 19Hrs  Total = 19Hrs
Note: - For wet weather park closures contact 9911 6375 - Please notify Council of any contact changes								

Figure 3 – Summer Bookings

## 2.2 Development Proposal

The development proposal includes installation of four (4) new light poles to facilitate evening usage of the oval. The proposed locations of the lights are shown in Figure 4.

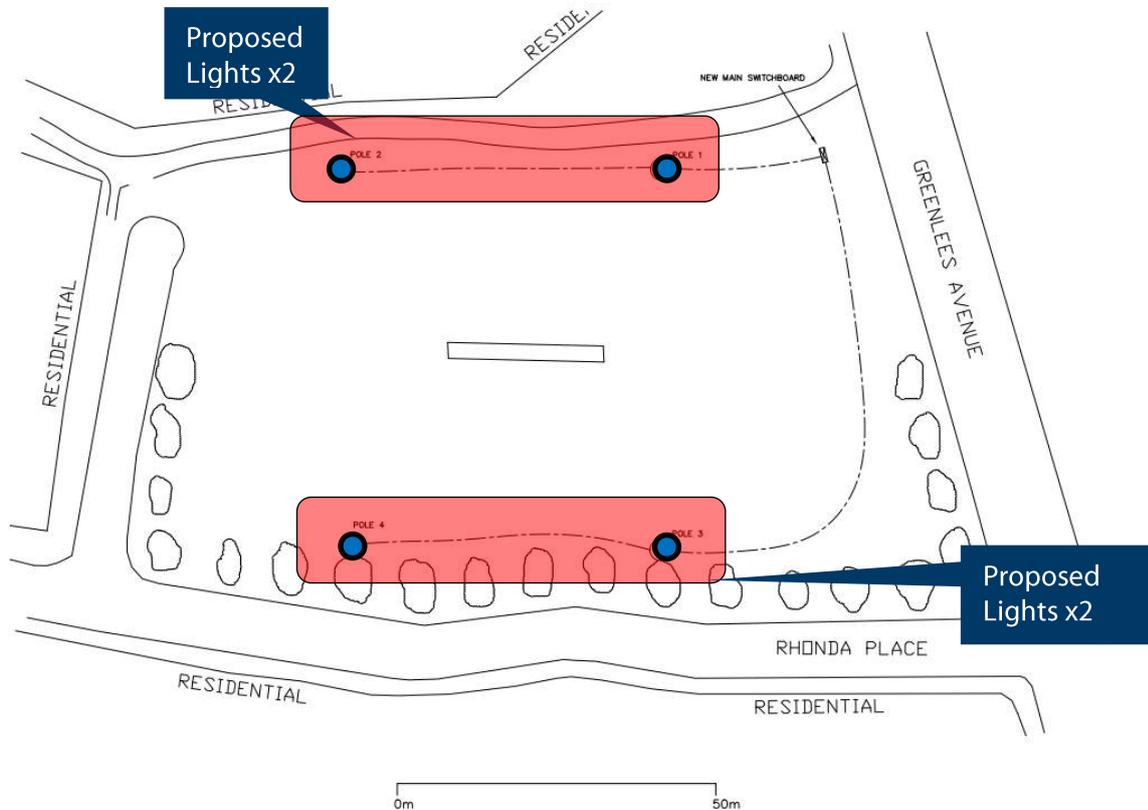


Figure 4 - Proposed Installation Locations

The proposed lighting installations will permit the oval to be used during evenings, after sunset. It is proposed that the lighting would operate on weekdays between 5:00pm and 9:15pm. This results in an increase in available operating time at the oval in summer and makes the oval available in the evenings during the winter.

## 3 Existing Transport Facilities

### 3.1 Road Hierarchy

The park is located in the suburb of Concord and is serviced by Greenlees Avenue, Rhonda Place and Ian Parade. The road network in this area comprises local streets providing direct access to the surrounding area and the regional road network.

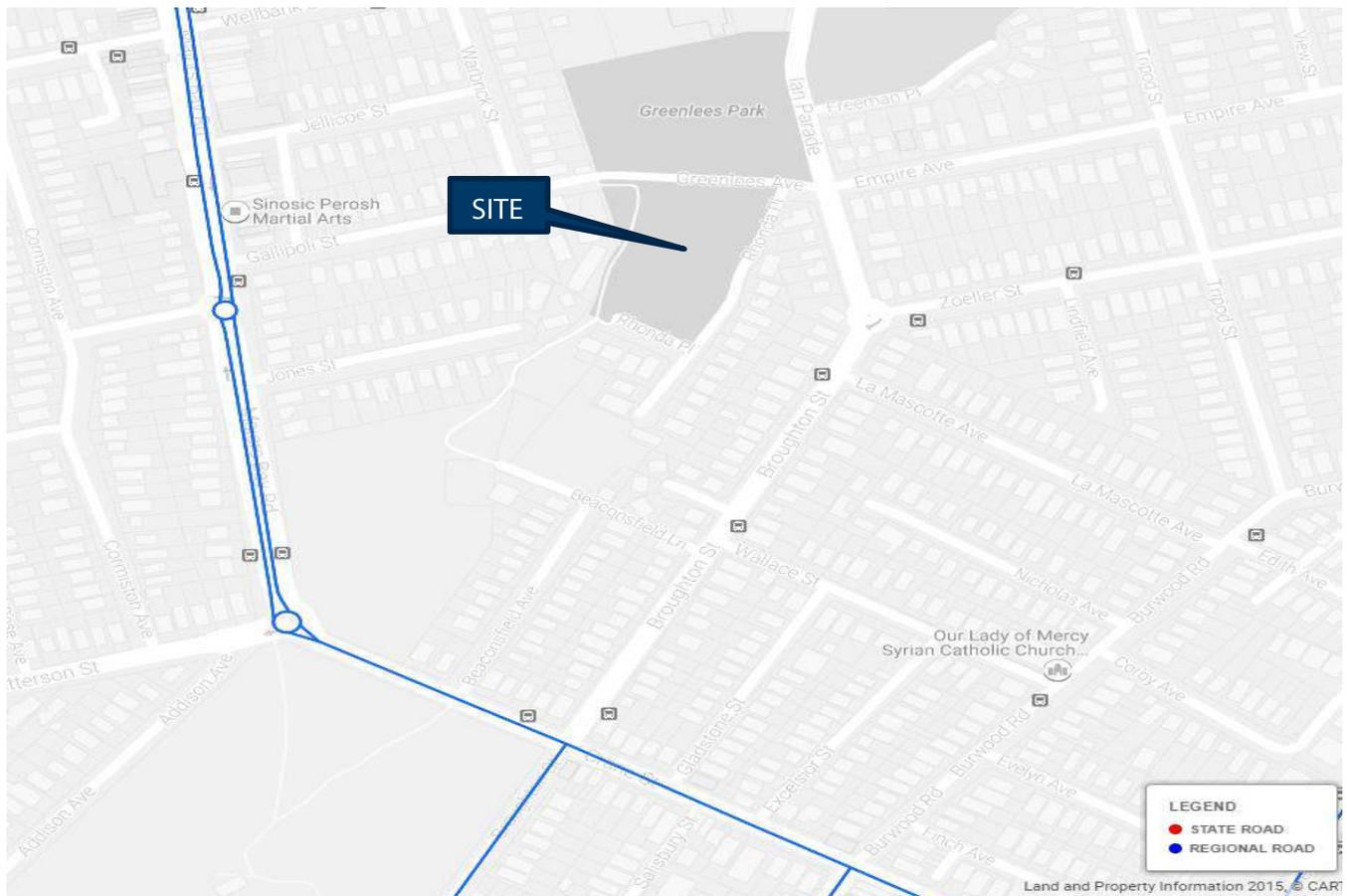


Figure 5 - Road Hierarchy

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

- **State Roads** - Freeways and Primary Arterials (RMS Managed)
- **Regional Roads** - Secondary or sub arterials (Council Managed, Part funded by the State)
- **Local Roads** - Collector and local access roads (Council Managed)

The immediate road network servicing the site includes:

Table 1 – Existing Road Network – Majors Bay Road

<b>Majors Bay Road</b>	
Road Classification	Regional Road
Alignment	North - South
Number of Lanes	1 lane in each direction
Carriageway Type	Divided
Carriageway Width	11 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	Restricted parking on both sides of carriageway (1 P)
Forms Site Frontage	No



Figure 6 – Majors Bay Road (southbound)

Table 2 – Existing Road Network – Crane Street

<b>Crane Street</b>	
Road Classification	Regional Road
Alignment	Northwest – Southeast
Number of Lanes	2 lanes in each direction
Carriageway Type	Un-divided
Carriageway Width	12 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	No parking and no stopping on both sides of carriageway.
Forms Site Frontage	No



Figure 7 – Crane Street (southwest bound)

Table 3 – Existing Road Network – Greenlees Avenue

### Greenlees Avenue

Road Classification	Local Road
Alignment	West - East
Number of Lanes	1 lane in each direction
Carriageway Type	Un-divided
Carriageway Width	12 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	Un-restricted on both sides of carriageway
Forms Site Frontage	Yes



Figure 8 – Greenlees Avenue (eastbound)

Table 4 – Existing Road Network – Rhonda Place

<b>Rhonda Place</b>	
Road Classification	Local Road
Alignment	North - South
Number of Lanes	1 lane in each direction
Carriageway Type	Un-divided
Carriageway Width	8 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	Un-restricted on both sides of carriageway
Forms Site Frontage	Yes



Figure 9 – Rhonda Place (northbound)

Table 5 – Existing Road Network – Ian Parade

<b>Ian Parade</b>	
Road Classification	Local Road
Alignment	North - South
Number of Lanes	1 lane in each direction
Carriageway Type	Divided
Carriageway Width	12 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	Un-restricted on both sides of carriageway
Forms Site Frontage	No



Figure 10 – Ian Parade (northbound)

### 3.2 Public Transport

The following section summarises the existing public transport routes within the vicinity of the park.

#### 3.2.1 Trains

The park is located approximately 2.8km north of Burwood railway station. It takes approximately 13 minutes from the station by bus (Route 464, 466 or M41) as shown in Figure 11.



Figure 11 – Distance to Burwood Railway Station

Services on this line operate along the T1 North Shore, Northern & Western line and T2 Inner West & South Line and run approximately every 15-30 minutes during the peak periods. Services operate between the hours of 03.40am and 23.50pm.

### 3.2.2 Bus Stops

The park is also serviced by bus services as outlined in Figure 12, with a bus stop located west of the park.

The NSW Planning Guidelines for Walking and Cycling (2004), suggests a distance of 400m is a walkable catchment to regular bus services. A review of bus timetable information indicates that during the peak, a bus would arrive and depart the bus stop every 10 minutes. As such, the site is highly accessible by public transport within an acceptable walking distance (350m) to bus stop that is served by frequent bus services.

Table 6 – Bus Service

Route No.	Route Coverage	Approximate Service Interval
439	Mortlake to City (Martin Place)	30 minutes in peak times
462	Ashfield to Mortlake	Service operates early morning and evening daily. 50 minutes in peak times
464	Ashfield to Mortlake	10-15 minutes in peak times
466	Ashfield to Cabarita Wharf	10-20 minutes in peak times
L39	Mortlake to City (Martin Place)	30 minutes in peak times
M41	Hurstville Station to Macquarie Park	10 minutes in peak times



Figure 12 - Bus Stop Location

It is noted that the public transport services reduce in frequency following the commuter peak period and therefore may not offer such an attractive option for evening users, compared with daytime users. This is somewhat reflected in the results of the travel mode surveys.

### 3.3 Bicycle Facilities

There is currently a separate dedicated cycleway surrounding the park. This provides alternative sustainable transport options for residents and visitors to the park.



Figure 13 - Bicycle Routes (Source: Sydney Cycleways)

### 3.4 Pedestrian Facilities

Concrete footpaths are located on eastern side of Rhonda Place, the northern side of Greenlees Avenue and continue to surrounding streets.

## 4 Travel Characteristics

This section examines the travel characteristics associated with Jessie Stewart Reserve patrons through analysis of the intercept survey data. Specifically, this data assisted in identifying mode split (i.e. car, cycling, walking), trip lengths and the purpose of the trip itself. These patterns could then be applied to the reserve as a whole to assist in predicting pedestrian and traffic flows in addition to associated parking demands for both existing scenarios and future projections.

### 4.1 Parking Occupancy Survey

To ascertain the parking activity surrounding Jessie Stewart Reserve during the evening periods, an on-street parking survey was performed along the peripheral roads to the park. The roads surveyed include:

- Gallipoli Street (Warbrick Street to Majors Bay Road),
- Greenlees Avenue (Rhonda Place to Warbrick Street),
- Rhonda Place (Greenlees Avenue to End), and
- Ian Parade (Zoeller Street to Greenlees Avenue)

The survey was performed between 6:00pm to 9:00pm on Wednesday, 26 October 2016. This period was selected as it was representative of the typical times in which the park would generate the greatest parking demand from a sports club utilising the playing field following the installation of lights. During the survey, it was observed that there were some sport training events occurring at the oval.

The on-street parking survey results are summarised in Table 8 below.

Table 7 –On-street parking occupancy results

Street	From	To	Capacity	6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	8:00-8:30	8:30-9:00
<b>Gallipoli Street</b>	Warbrick Street	Majors Bay Road	43	58.1%	53.5%	44.2%	53.5%	86.0%	83.7%
<b>Greenlees Avenue</b>	Rhonda Place	Warbrick Street	35	48.6%	51.4%	34.3%	34.3%	2.9%	2.9%
<b>Rhonda Place</b>	Greenlees Avenue	End	71	22.5%	26.8%	29.6%	23.9%	19.7%	19.7%
<b>Ian Parade</b>	Zoeller Street	Greenlees Avenue	23	0.0%	0.0%	0.0%	0.0%	4.3%	4.3%
		<b>TOTAL</b>	<b>172</b>	<b>38.4%</b>	<b>34.9%</b>	<b>30.2%</b>	<b>30.2%</b>	<b>30.8%</b>	<b>30.2%</b>

In reviewing the results the closest streets to the sports field include Greenlees Avenue and Rhonda Place. However, the results indicate that Gallipoli Street recorded the greatest demand for parking throughout the survey period. This may be due to the street's close proximity to Concord shopping precinct along Majors Bay Road. Overall, it has been identified that the demand for parking along all streets is well within the available capacity of 172 spaces, peak use was recorded as 66 cars leaving 106 vacant spaces. Therefore, there is available space on street to accommodate additional parking demand if required.

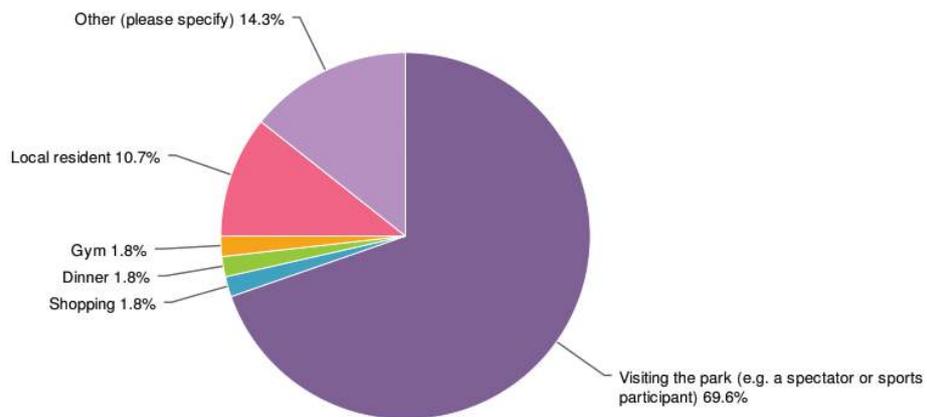
## 4.2 Intercept Survey

At the time of the parking occupancy survey, we also undertook an intercept survey at the Oval. This period had no official schedule of training or sporting sessions at the park, although a group of patrons were using the oval.

The survey involved conducting questionnaires with random park patrons to gain first-hand insight into typical travel behaviour.

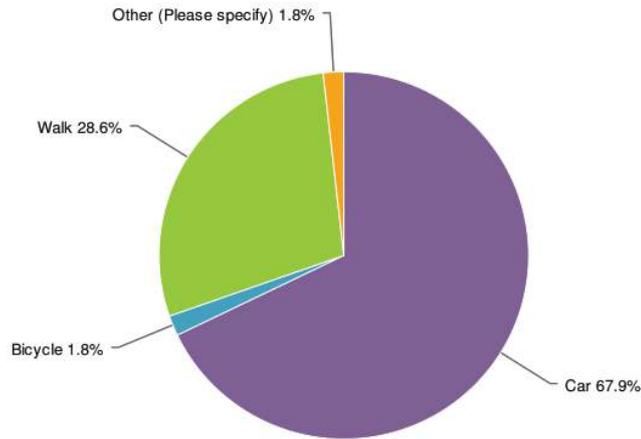
Within the survey period, a total of 56 intercept surveys were conducted, which is considered a reasonable sized survey sample and suggest that the park was moderately busy on the day of the survey. The findings of the surveys are illustrated below.

### 1. What is the purpose of your visit today?



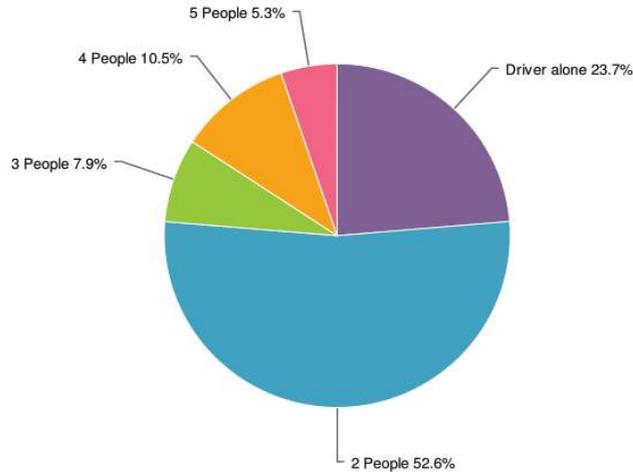
Value	Percent	Count
Visiting the park (e.g. a spectator or sports participant)	69.6%	39
Shopping	1.8%	1
Dinner	1.8%	1
Gym	1.8%	1
Local resident	10.7%	6
Other (please specify)	14.3%	8
<b>Total</b>		<b>56</b>

2. What was your principal mode of transport today?



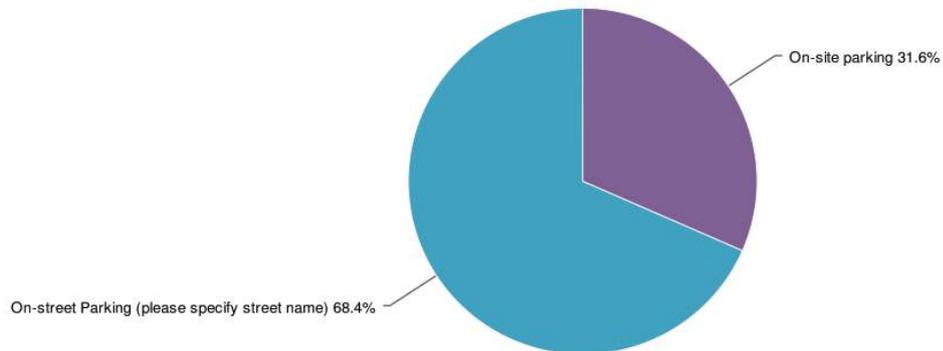
Value	Percent	Count
Car	67.9%	38
Public Transport (Bus)	0.0%	0
Taxi	0.0%	0
Bicycle	1.8%	1
Walk	28.6%	16
Other (Please specify)	1.8%	1
	<b>Total</b>	<b>56</b>

3. You indicated you travelled by car, how many people were in the car (including the driver)?



Value	Percent	Count	Statistics
Driver alone	23.7%	9	Sum <b>84</b>
2 People	52.6%	20	Average <b>2.21</b>
3 People	7.9%	3	StdDev <b>1.0</b>
4 People	10.5%	4	Max <b>5.0</b>
5 People	5.3%	2	
Total		<b>38 cars</b>	

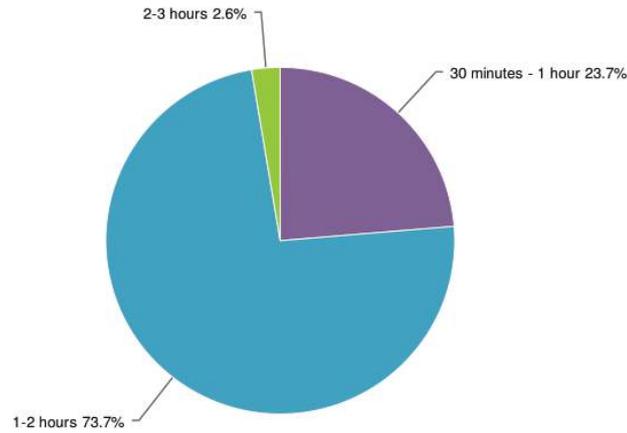
#### 4. Where did you park?



Value	Percent	Count
Dropped off (didn't park)	0.0%	0
On-site parking	31.6%	12
On-street Parking (please specify street name)	68.4%	26
Total		38

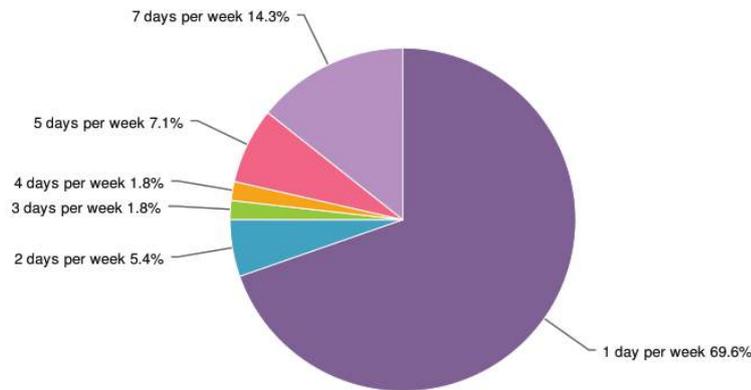
Responses "On-street Parking (please specify street name)"	Count
Left Blank	30
Greenlees Av	13
Rhonda Pl	3
majors bay rd	8
na	2
Responses "Off-street Car Park (please specify car park location)"	Count
Left Blank	56

5. How long do you expect your visit today?



Value	Percent	Count
Less than 30 minutes	0.0%	0
30 minutes - 1 hour	23.7%	9
1-2 hours	73.7%	28
2-3 hours	2.6%	1
More than 3 hours	0.0%	0
Total		38

6. How often do you visit the park?

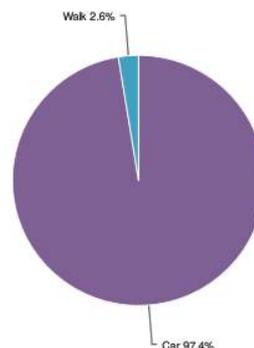


Value	Percent	Count
Never visit	0.0%	0
1 day per week	69.6%	39
2 days per week	5.4%	3
3 days per week	1.8%	1
4 days per week	1.8%	1
5 days per week	7.1%	4
6 days per week	0.0%	0
7 days per week	14.3%	8
Total		56

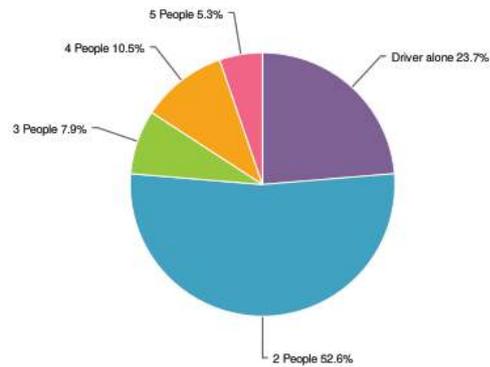
**4.3 Travel Mode Analysis**

In reviewing the intercept survey we have aggregated the survey data to focus only on trips specifically made to the park (this accounted for 69.6% of the survey participants). The intercept survey provided an insight into how many trips were made for the purpose of participating in a sport, spectating sport, or attending the park for other reasons (i.e. playground, recreation, etc.). The summary of those attending the park are presented below:

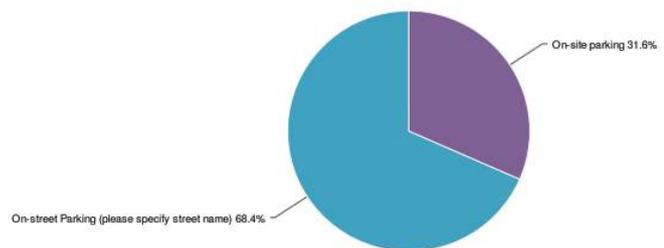
**2. Principal Mode of Transport**



**3. If they drove how many people in Car (including driver):**

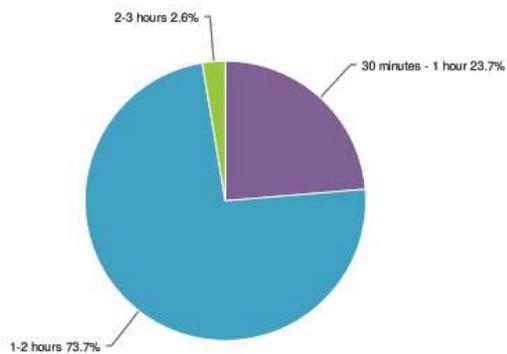


**4. Where they parked the car:**

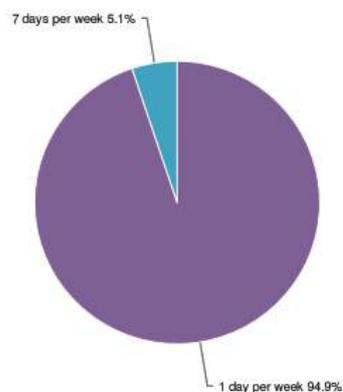


Responses "On-street Parking (please specify street name)"	Count
Left Blank	13
Greenlakes Av	13
Rhonda Pl	3
majors bay rd	8
na	2

**5. Duration of their visit:**



**6. How often they visit the park:**



From this data, the following key points were observed:

- More than half of car trips identified appear to be associated with the sporting event at the Park
  - *Note:* of the “other” responses, relate to residents.
- There is an average car occupancy rate of 2.2 persons per car; and
- The majority of car parking occurred along Greenlees Ave.

The findings of the analysis indicate that the majority of those driving to the park, park along Greenlees Ave are attending training at the sports park.

## 5 Parking & Traffic Impact Assessment

---

### 5.1 Visitor Demand

Typically, changes to a land use or the use of existing facilities have the potential to bring about some change to the parking demand and traffic movements associated with the property. Therefore, in these instances it is important to assess these changes in the context of the surrounding road network, available parking supply and any impacts on the amenity of surrounding residents or businesses.

In regards to this proposal, the provision of lighting between 5:00pm-9:15pm will allow for formal sports-training to occur during these times.

It is assumed that no more than four teams would be practicing at any one time during these hours, with an average attendance of 18 people per team<sup>1</sup>, which is considered conservative. This would amount to a total of **72** visitors using the field for training at any one time.

### 5.2 Parking Demand & Impact Assessment

When referring to the driving mode share from Section 4.3, 97% has been assessed at the higher end of likely rates – for example, PTC have carried out surveys in similar residential areas found that the driving rate for park visitors can reach as low as 40%. Notwithstanding, assuming that 97% of the 72 prospective visitors access the park by vehicle, and that there is an average car occupancy rate of 2.2 people, this amounts to **32** vehicles generating parking demand within an hour of peak training activity.

Considering the results of the parking occupancy survey (Section 4.1), it is noted that the current parking demand during this evening period within the immediate area of Jessie Stewart Reserve reaches a maximum of 38.4%, or, a vacancy of **106** spaces.

As such, it is noted that even at peak evening training periods resulting from the proposal, the local on-street parking is able to absorb the parking demand, reaching a parking occupancy rate of 57%. Given the low occupancy rate, the proposal is not anticipated to cause adverse impacts to the parking conditions of the locality.

### 5.3 Traffic Generation & Impact

Based on the estimated 32 vehicles determined in Section 5.2, the proposal is anticipated to generate up to **32** arrival trips during a peak hour of evening training, counting entering and exiting trips separately.

This is a notable increase in traffic generation; however, the majority of traffic will be focused along the regional roads (Patterson Street, Crane Street and Majors Bay Road) which have been designed to handle high traffic volumes.

### 5.4 Summary

The above assessment is considered to be a conservative estimate of the possible traffic and parking demands generated by increased training activity during the evening, facilitate by the proposed lighting. This conservativeness is borne from the following points:

---

<sup>1</sup> Based on a 15 player rugby team, adjusted to account for coach and parents

- The vehicle mode share (97%) is considered high in comparison to previous studies undertaken by PTC, and could be found lower if a larger survey sample were captured;
- Sports training was already observed on this field during some of the surveys. Without artificial lighting, this is likely towards the early evening (5:00pm-7:30pm), overlapping with the commuter peak, being the critical period. As such, whilst the scale of this existing (informal) training is unknown, it will result in a lower **net** increase in traffic/parking demands.

Notwithstanding, the existing parking conditions are considered readily able to accommodate the proposal, with considerable remaining capacity. Similarly, the road network is also anticipated to be able to accommodate the anticipated traffic generation, which will be primarily limited to the regional road network.

The assessment has identified however, that upon installation of the field lights, the road network should be observed for a period, to determine whether the overlap of general commuter traffic and park-associated traffic leads to any notable impacts –this is considered a best-practice precaution. If issues are noted, training should be regulated during the commuter period, being either minimised, or avoided as necessary. Outside the commuter period however, no notable traffic impacts are expected to arise as a result of the proposal.

## 6 Conclusion

---

Parking and Traffic Consultants reviewed the traffic and parking considerations associated with the use of a number of sports facilities, one of these facilities was Jessie Stewart Reserve in which the proposal considers the installation of four (4) lights to enable extended evening usage during the summer and open the playing fields for use during the winter evenings. It assumes that the evening use of the park be limited to team sports training only and not for any other use.

In the case of the proposed works within Jessie Stewart Reserve, as there is no lighting currently at the site, the proposed lighting will facilitate extended hours in the evening where this was otherwise not possible. In this regard the proposed new lights will result in some additional parking demand and traffic activity although there is ample parking availability and road capacity to accommodate this activity.

Based on the proposal to provide lighting for night time activity, it is concluded that there will be no notable traffic and /or parking implications associated with this proposal.

APPENDIX D:

NOISE IMPACT ASSESSMENT PREPARED BY WILKINSON MURRAY, DATED  
FEBRUARY 2017

# JESSIE STEWART RESERVE

## NOISE ASSESSMENT OF PROPOSED MODIFICATIONS

**REPORT NO. 16314-3**  
**VERSION B**

FEBRUARY 2017

**PREPARED FOR**

MILESTONE (AUSTRALIA) PTY LTD  
93 NORTON STREET  
LEICHHARDT NSW 2040

## DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
B	Final	7 February 2017	Lee Hudson	Neil Gross
A	Final	14 November 2016	Lee Hudson	Neil Gross
A	Draft	18 October 2016	Lee Hudson	Neil Gross

### Note

All materials specified by Wilkinson Murray Pty Limited have been selected solely on the basis of acoustic performance. Any other properties of these materials, such as fire rating, chemical properties etc. should be checked with the suppliers or other specialised bodies for fitness for a given purpose. The information contained in this document produced by Wilkinson Murray is solely for the use of the client identified on the front page of this report. Our client becomes the owner of this document upon full payment of our **Tax Invoice** for its provision. This document must not be used for any purposes other than those of the document's owner. Wilkinson Murray undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.

### Quality Assurance

We are committed to and have implemented AS/NZS ISO 9001:2008 "Quality Management Systems – Requirements". This management system has been externally certified and Licence No. QEC 13457 has been issued.



Quality  
ISO 9001  
SAI GLOBAL

### AAAC

This firm is a member firm of the Association of Australian Acoustical Consultants and the work here reported has been carried out in accordance with the terms of that membership.



### Celebrating 50 Years in 2012

Wilkinson Murray is an independent firm established in 1962, originally as Carr & Wilkinson. In 1976 Barry Murray joined founding partner Roger Wilkinson and the firm adopted the name which remains today. From a successful operation in Australia, Wilkinson Murray expanded its reach into Asia by opening a Hong Kong office early in 2006. 2010 saw the introduction of our Queensland office and 2011 the introduction of our Orange office to service a growing client base in these regions. From these offices, Wilkinson Murray services the entire Asia-Pacific region.



Wilkinson Murray Pty Limited · ABN 39 139 833 060

Level 4, 272 Pacific Highway, Crows Nest NSW 2065, Australia • **Offices in Orange, Qld & Hong Kong**

t +61 2 9437 4611 • f +61 2 9437 4393 • e [acoustics@wilkinsonmurray.com.au](mailto:acoustics@wilkinsonmurray.com.au) • w [www.wilkinsonmurray.com.au](http://www.wilkinsonmurray.com.au)

## TABLE OF CONTENTS

	<b>Page</b>
<b>GLOSSARY OF ACOUSTIC TERMS</b>	
<b>1 INTRODUCTION</b>	<b>1</b>
<b>2 SITE DESCRIPTION, EXISTING &amp; PROPOSED SPORTING ACTIVITIES</b>	<b>3</b>
<b>3 AMBIENT NOISE ENVIRONMENT</b>	<b>4</b>
<b>4 ASSESSMENT CRITERIA</b>	<b>5</b>
<b>5 ASSESSMENT OF NOISE LEVELS</b>	<b>7</b>
<b>6 CONCLUSION</b>	<b>9</b>

## GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies, largely as a result of road traffic. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. These descriptors, which are demonstrated in the graph below, are here defined.

**Maximum Noise Level ( $L_{Amax}$ )** – The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

**$L_{A1}$**  – The  $L_{A1}$  level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the  $L_{A1}$  level for 99% of the time.

**$L_{A10}$**  – The  $L_{A10}$  level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the  $L_{A10}$  level for 90% of the time. The  $L_{A10}$  is a common noise descriptor for environmental noise and road traffic noise.

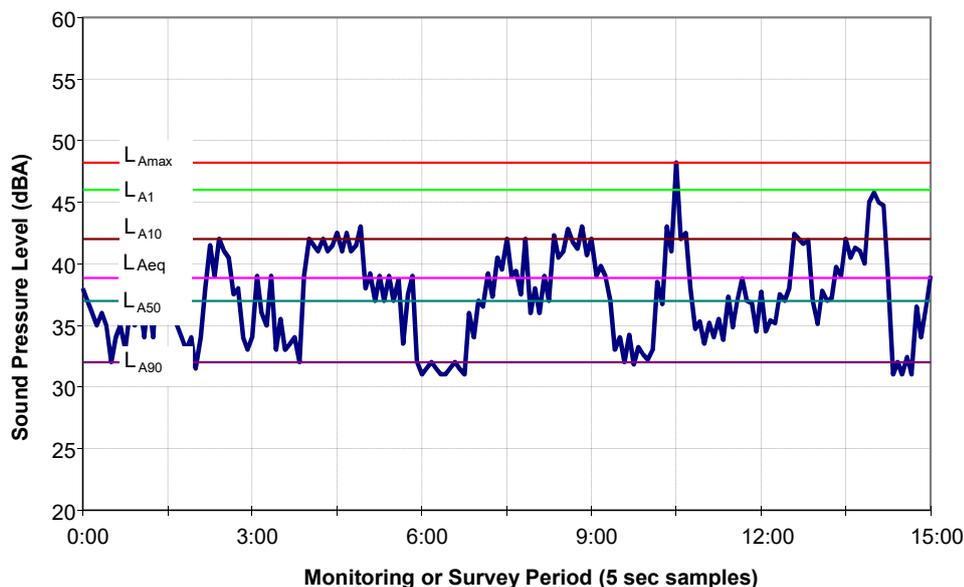
**$L_{A90}$**  – The  $L_{A90}$  level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the  $L_{A90}$  level for 10% of the time. This measure is commonly referred to as the background noise level.

**$L_{Aeq}$**  – The equivalent continuous sound level ( $L_{Aeq}$ ) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.

**ABL** – The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day. It is determined by calculating the 10<sup>th</sup> percentile (lowest 10<sup>th</sup> percent) background level ( $L_{A90}$ ) for each period.

**RBL** – The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.

Typical Graph of Sound Pressure Level vs Time



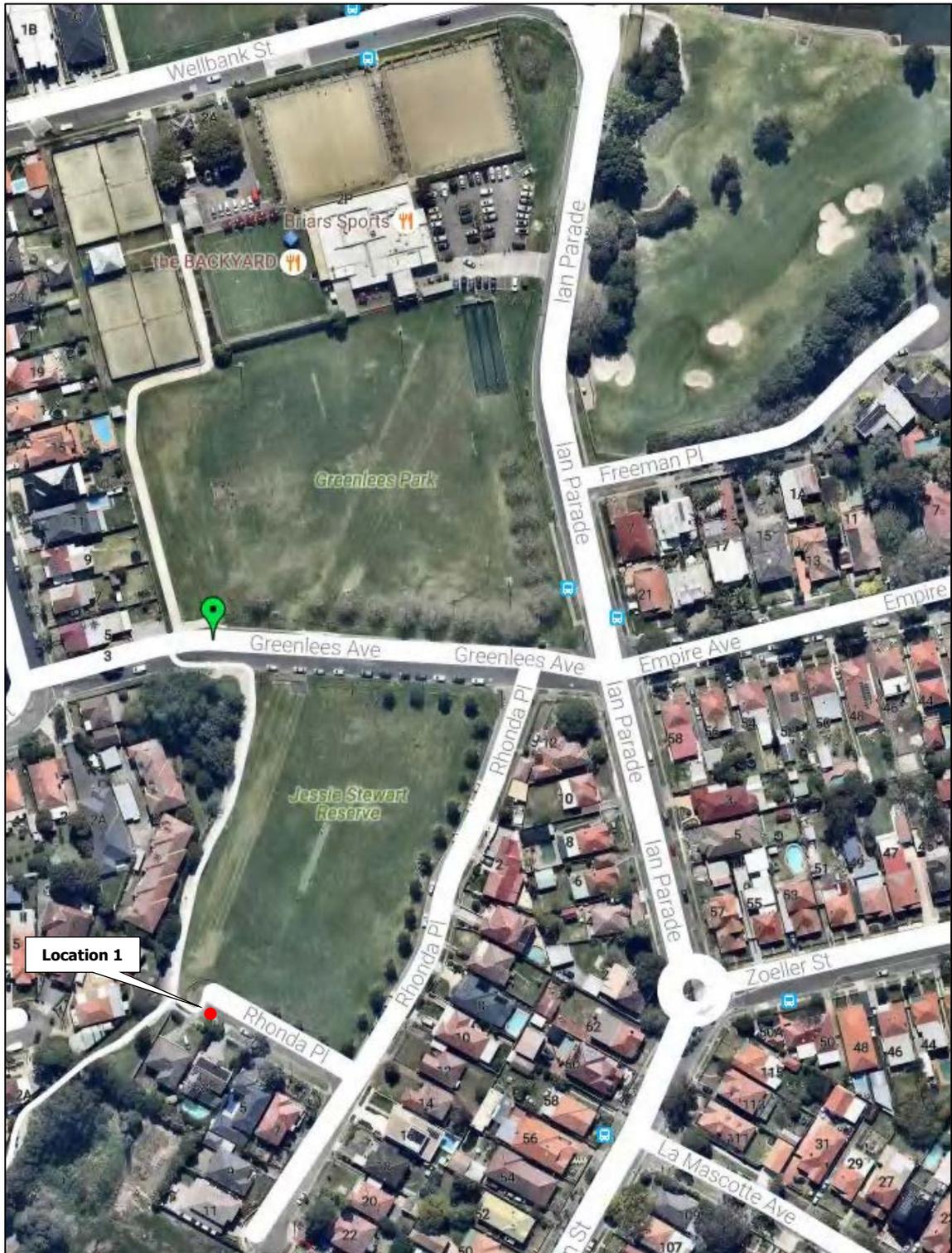
## **1 INTRODUCTION**

---

The City of Canada Bay Council currently own and lease Jessie Stewart Reserve, Greenlees Avenue, Concord as shown in Figure 1-1. Council propose to modify the sporting facility by installing sports lighting. In addition to its current use as a cricket ground during the summer months, the field is also proposed to be used as a junior soccer venue.

This report addresses the potential noise impacts associated with the possible increased use of the playing field as a result of the new sports lighting. The assessment focuses on noise generated by sporting activities.

**Figure 1-1 Site Location**



Aerial image courtesy of © 2016 nearmap

## 2 SITE DESCRIPTION, EXISTING & PROPOSED SPORTING ACTIVITIES

Jessie Stewart Reserve is bounded by Greenlees Avenue to the north and Rhonda Place to the south and east. A pedestrian walkway, linking Crane Street and Rothwell Park to the south with Wellbank Street and the Briars Sports Club to the north, runs along the western side of the sports reserve. The surrounding area is residential and includes a number of recreational and sporting facilities. Briars Sports Club and Greenlees Park Tennis Club are located to the north with access off Wellbank Street. Greenlees Park and Massey Park Golf Club are also located to the north and Rothwell Park lies to the south.

Typical distances to residences from the centre and edge of playing field are summarised in Table 2-1.

**Table 2-1 Residential Receiver Distances, metres**

General Receiver Areas	Jessie Stewart Reserve	
	Centre	Edge
Rhonda Place (east)	60	30
Rhonda Place (south)	80	35
Greenlees Avenue (west)	45	18

The current and proposed usage of the sporting facility is summarised in Table 2-2.

**Table 2-2 Current and Proposed Sporting Field Usage**

Field	Existing Use & Leasing	Existing Hours of Operation	Proposed Modifications	Future Use & Leasing	Proposed Hours of Operation
Jessie Stewart Reserve	Cricket Inner Western Suburbs Cricket Association. Training Tues-Thurs 4pm -7pm and matches on weekends.	Sat & Sun and Tue, Wed, Thu evenings Summer season only.	Installation of four new light poles	Junior soccer and cricket. Concord Junior Soccer, Inner Western Suburbs Cricket Association. Training weekdays and matches on weekends.	Sat & Sun 8am-6pm and Mon-Fri 5pm-9.15pm

### 3 AMBIENT NOISE ENVIRONMENT

Unattended long-term monitoring has previously been conducted within the Canada Bay Council area, around the nearby St Lukes sporting facilities at Concord. The area is of similar residential nature, with generally one principal arterial roadway and other local roads. The previous survey results are shown in Table 3-1 below. Only the Day and Evening periods are presented as these are the periods relevant for the operation of the sporting facilities.

**Table 3-1 INP Time Periods & Ambient Noise Levels**

Period	Time of Day	Rating Background	
		Level (RBL) $L_{A90}$ dB	$L_{Aeq}$ dB
Day	0700-1800hrs	43	58
Evening	1800-2200hrs	42	53

The background and ambient noise levels shown in Table 3-1 are typical of a suburban residential receiver area and are considered an acceptable basis on which to determine assessment criteria. A series of short-term attended noise level measurements were conducted around the Canada Bay area on Tuesday 11 October 2016. A location in Rhonda Place at the southern end of Jessie Stewart Reserve was selected to establish the typical background and ambient levels during the evening. The measurements location is shown in Figure 1-1 and the measurements are presented in Table 3-2 below.

**Table 3-2 Attended Measurement Results – Jessie Stewart Reserve**

Location	Time of day	RBL $L_{A90}$ dB	$L_{Aeq,15min}$ dB
Rhonda	1945hrs	41	56
Place	2115hrs	39	49

The  $L_{eq}$  noise levels for the time period shown in Table 3-2, measured during the previous unattended long-term survey ranged between 52-56 dBA. As can be seen from the attended measurement results, noise levels surrounding Jessie Stewart Reserve were generally around this range.

Attended measurements previously undertaken during the Sunday morning period around the St Lukes sporting facility resulted in background  $L_{A90}$  and ambient  $L_{Aeq}$  noise levels at surrounding residential receivers ranging between 44dBA-47dBA and 49dBA-62dBA, respectively. The weekday evening and the Sunday morning levels were found to be within a similar range around St Lukes and it is therefore likely that weekday evening and Sunday morning noise levels would also be similar around Jessie Stewart Reserve, particularly at residences around the southern end which are less affected by traffic on Greenlees Avenue.

## 4 ASSESSMENT CRITERIA

City of Canada Bay Council has no specific criteria to address noise from sporting activities in public parks or recreation spaces. Furthermore no other applicable policies address such noise.

The EPA’s *Noise Guide for Local Government* (NGLG) provides some guidance in assessing intrusive noise and relies on the *Industrial Noise Policy* (INP) which applies to the assessment of commercial and industrial noise sources but is not intended for the assessment of social or community sporting activities.

However, in the absence of any other nominated criteria we have referred to the *INP* for guidance on desirable limits of acoustic intrusiveness and amenity in the suburban context.

The *INP* aims to control industrial noise sources with respect to two criteria, firstly to address short-term intrusive noise impacts and secondly to maintain noise level amenity for an area. The intrusiveness criterion is applicable to residential receivers only. The purpose of the amenity criterion is to prevent the existing background noise level gradually increasing (“background creep”) due to noise generated by successive industrial developments. Given sports fields only generate noise whilst in operation during evening training and weekend games (and any other periodic daytime usage, such as local school events), the issue of “background creep” is not relevant and the associated amenity criteria are therefore unnecessary.

The *INP* criteria for intrusive impacts are based on a background +5dB assessment. To determine the criteria for assessing the potential intrusiveness of noise from the sporting facilities, the background levels measured during the attended weekday evening monitoring and attended and unattended monitoring previously carried out around the St Lukes facility, have been adopted. The resulting Intrusiveness Criteria are detailed in Table 4-1 below.

**Table 4-1 Intrusiveness Criteria**

Receiver	Time of Day	Intrusive Criteria, dB
		L <sub>Aeq,15min</sub>
Rhonda Place (east)	Day	46
	Evening	44
Rhonda Place (south)	Day	46
	Evening	44
Greenlees Avenue (west)	Day	46
	Evening	44

Whilst the intrusiveness criterion is a means by which to gauge audibility, it is intended to apply to "industrial"-type noise emissions that are of a continuous nature. Noise that is more familiar in character to a receiver (and to which they are able to relate) and which is non-continuous or occurs over shorter, less frequent periods is less likely to cause disturbance or annoyance. For outdoor activity noise, a criterion of Background + 10dBA has previously been applied to assess potential impact. It is considered that this criterion is a more appropriate basis upon which to assess the potential impact of noise from the sporting field at nearby residents. A summary of the recommended limiting criteria for noise generated by the sporting activities is shown in Table 4-2.

**Table 4-2 Recommended Limiting Criteria for Sporting Activities**

Receiver	Time of Day	Recommended Criteria, dB
		$L_{Aeq,15min}$
Rhonda Place (east)	Day	51
	Evening	49
Rhonda Place (south)	Day	51
	Evening	49
Greenlees Avenue (west)	Day	51
	Evening	49

## 5 ASSESSMENT OF NOISE LEVELS

The proposed modifications to Jessie Stewart Reserve involve the installation of sports lighting comprising four new light poles and the additional use of the field as a soccer venue throughout the winter season. The proposed lighting will enable the field to be used for evening training by junior soccer teams during the winter season. There are no changes proposed to the times at which the sporting field will be used over the weekend, however year-round usage would then take place. The current on-street carparking arrangements will continue.

Noise levels generated by sport are highly variable and are influenced by the level of competition, which affects the vocal efforts of players, and the number and enthusiasm of spectators, officials and coaching staff.

Measurements of noise emissions from sporting events have established typical sound power levels ranging from 90dBA for rugby/soccer training to 95dBA for a competition game with approximately 250 spectators.

Table 5-1 summarises the range of noise levels expected at residential receivers surrounding Jessie Stewart Reserve during soccer usage which is considered to represent the worst case usage scenario. Exceedances of the associated criteria are also shown.

**Table 5-1 Predicted Noise Emissions from Jessie Stewart Reserve, dBA**

Activity	Sound Power Level $L_{Aeq,15min}$	Predicted $L_{Aeq,15min}$ Noise Level		Exceedance			
		Distance, m		Daytime		Evening	
		Closest	Typical	$L_{A90+5}$	$L_{A90+10}$	$L_{A90+5}$	$L_{A90+10}$
<b><i>Rhonda Place (East)</i></b>							
Training	90	52	46	0-6	0-1	2-8	0-3
Game	95	57	51	5-11	0-6	NA <sup>1</sup>	NA <sup>1</sup>
<b><i>Rhonda Place (South)</i></b>							
Training	90	51	44	0-5	0	0-7	0-2
Game	95	56	49	3-10	0-5	NA <sup>1</sup>	NA <sup>1</sup>
<b><i>Greenlees Avenue (West)</i></b>							
Training	90	57	49	3-11	0-6	5-13	0-8
Game	95	62	54	8-16	3-11	NA <sup>1</sup>	NA <sup>1</sup>

Note 1: Competitive games will not be held during weekday evenings.

The noise emissions currently experienced at surrounding residences during cricket practice and matches will likely achieve recommended background+10dBA criteria. During the proposed future usage by junior soccer teams, received levels may exceed the recommended criterion by up to 3dBA at the closest receivers in Rhonda Place (east), up to 5dBA at Rhonda Place (south) and up to 11dBA at Greenlees Avenue (rear of residences to the west) during competitive games when players are in closest proximity to these residences. During training, only marginal (2-3dBA) exceedances are predicted when players are located in closest proximity to Rhonda Place residences. Exceedances of up to 8dBA may at times occur at the rear of the closest residences to the western side of the field, when players are adjacent the western sideline. When play occurs away from the sidelines, the recommended assessment criteria are generally achieved at surrounding residences during both training and game scenarios.

Noise emissions associated with individual vehicles will be unchanged however vehicular activity associated with the field usage will extend to the winter season and can be expected to occur until around 9.15pm-9.30pm weekday evening following training.

## 6 CONCLUSION

---

This study was conducted to assess the potential noise impacts resulting from the proposed modifications to the existing sporting facilities at Jessie Stewart Reserve. The noise emissions assessed from the development include:

- Participant and spectator noise.
- Vehicular noise.

The noise impact assessment gives consideration to the following criteria and control guidelines:

- The EPA's *Industrial Noise Policy*, and
- The EPA's *Noise Guide for Local Government*.

The site benefits from several planning features in terms of limiting the impact of noise emissions:

- The site is an established sporting and recreational facility.
- Intervening roadways and landscaped buffer zones around the perimeter.

The conclusions of our assessment are as follows:

### **Participant and Spectator Noise**

Noise emissions from participants and spectators are an integral part of sporting facilities. These facilities are a necessary and important part of any residential community and as such, noise emissions are generally tolerated by surrounding residents.

The noise levels currently received at nearby residences during training and sporting events at Jessie Stewart Reserve are likely to increase as a result of the proposed modifications. The proposed use as a soccer venue will extend the current summer season usage to year-round. Provision of sports lighting will enable training to be held at the ground (as required) until 9.15pm Monday through Friday evenings.

Predicted noise levels from training and competitive fixtures are predicted to exceed the recommended assessment criteria for weekend and evening operations when play occurs near the edge of the field in closest proximity to these receivers. Training and competition games generally achieve the recommended assessment criteria when players are located at typical distances to receivers, away from the sidelines.

### **Vehicular Noise**

Whilst there would be no change in existing vehicular noise emissions expected to result from the proposed modifications, movements are expected to occur slightly later on weekday evenings due to the extension in training times made possible by sports lighting. In addition, the proposed use of the venue by junior soccer clubs will result in associated vehicular activities occurring throughout the winter sporting period.

APPENDIX E:

STATEMENT OF HERITAGE IMPACT, PREPARED BY HERITAGE 21, DATED  
FEBRUARY 2017

# STATEMENT OF HERITAGE IMPACT

**Proposed works at  
Jessie Stewart Reserve  
CONCORD**



Job No. 2727  
February 2017

**Heritage 21**  
CULTURAL BUILT HERITAGE IN THE 21ST CENTURY

RAPPOPORT PTY LTD ©  
CONSERVATION ARCHITECTS AND HERITAGE CONSULTANTS  
Suite 48, 20-28 Maddox Street, Alexandria, NSW 2015  
(02) 9519 2521  
reception@Heritage 21.com.au

---

Heritage Impact Statements

Conservation Management Plans

On-site Conservation Architects

Photographic Archival Recordings

Interpretation Strategies

Expert Heritage Advice

Fabric Analyses

Heritage Approvals & Reports

Schedules of Conservation Work

## TABLE OF CONTENTS

<b>1.0 INTRODUCTION</b>	<b>4</b>
1.1 BACKGROUND	4
1.2 SITE IDENTIFICATION	4
1.3 HERITAGE STATUS	4
1.4 PURPOSE	6
1.5 METHODOLOGY	6
1.6 AUTHORS	7
1.7 LIMITATIONS	7
1.8 COPYRIGHT	7
<b>2.0 SITE INVESTIGATION</b>	<b>8</b>
2.1 LOCAL HISTORY	8
2.2 SITE HISTORY	9
2.3 PHYSICAL DESCRIPTION	11
<b>3.0 HERITAGE SIGNIFICANCE</b>	<b>15</b>
3.1 ESTABLISHED SIGNIFICANCE	15
<b>4.0 IDENTIFICATION &amp; ASSESSMENT OF IMPACT</b>	<b>17</b>
4.1 PROPOSAL DESCRIPTION	17
4.2 HERITAGE MANAGEMENT FRAMEWORK	18
4.3 HERITAGE IMPACT ASSESSMENT	21
<b>5.0 CONCLUSION &amp; RECOMMENDATIONS</b>	<b>22</b>
5.1 IMPACT SUMMARY	22
5.2 GENERAL CONCLUSION	22
<b>6.0 SOURCES</b>	<b>23</b>

Cover page: Subject site Jessie Stewart Reserve, viewed from the corner of Rhonda Place and Greenlees Avenue facing south-west (Source: Heritage 21,26.09.16).

Issue	Description	Date	Written by	Reviewed by	Issued by
1	Draft report (D1) issued for comment.	04.10.16	AE	MA	AE
2	Report issued (RI)	11.11.16	AE	-	AE
3	Report issued (RI2)	15.02.17	AE	-	AE

## 1.0 INTRODUCTION

### 1.1 Background

This Statement of Heritage Impact ('SOHI' or 'report') has been prepared for Milestone Management, on behalf of the City of Canada Bay Council, to submit a development application for proposed works at the site.

### 1.2 Site Identification

The subject site, Jessie Stewart Reserve, falls within the boundaries of the City of Canada Bay Local Government Area. The site comprises Lot 3 DP 1161664 and is bordered by Greenlees Avenue to the north and Rhonda Place to the east, as depicted in Figure 1 below.

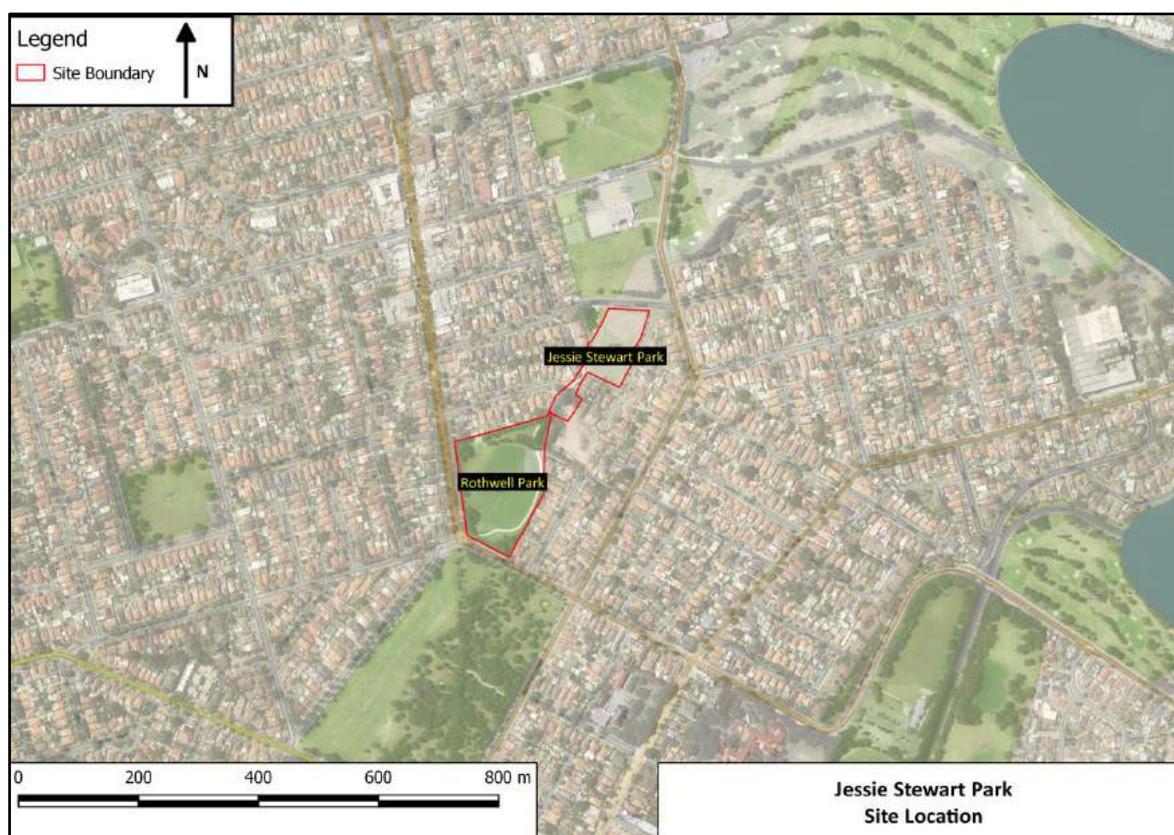


Figure 1. Aerial view of the subject site (Source: Heritage 21 and available NSW LPI Data).

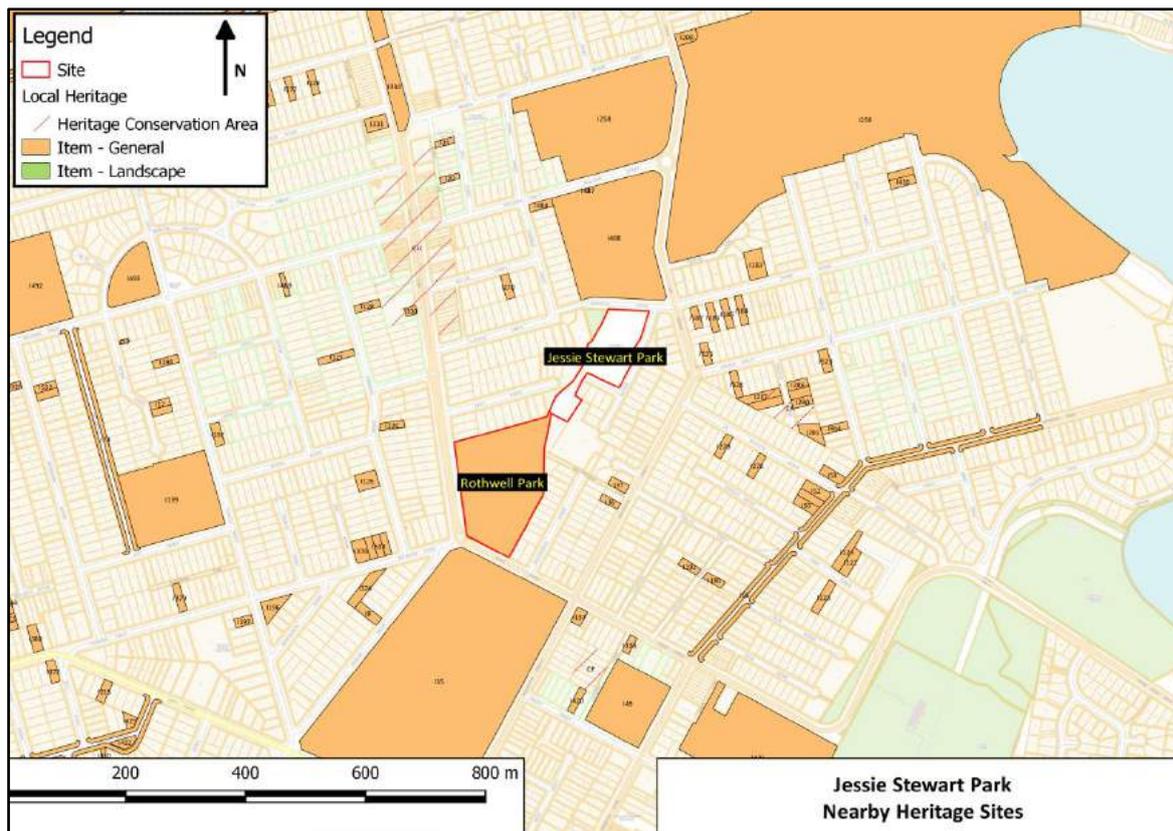
### 1.3 Heritage Status

The subject site is not listed as an item of environmental heritage in the City of Canada Bay Local Environmental Plan 2013 (CBLEP 2013). It is not listed in the NSW State Heritage Register, the National Heritage List, the Commonwealth Heritage List or the Register of the National Trust of Australia (NSW).

The subject site is not located within the boundaries of any Heritage Conservation Area as listed under the CBLEP 2013.

The subject site is within the vicinity of or within the visual catchment area of the following items of environmental heritage as listed in the CBLEP 2013:

Item Name	Address	Significance	Item no
Substation	2A Wellbank Street	Local	I487
Greenlees Park—landscape and former Arnott's cottage	2B Wellbank Street	Local	I488
Rothwell Park	25P Crane Street	Local	I333
Shops	42-46 Crane Street	Local	I137
House, "Marsham"	56 Empire Avenue	Local	I187
House	55 Zoeller Street	Local	I525
Shops	42-46 Crane Street	Local	I137
House	8 Jellicoe Street	Local	I270



**Figure 2.** Subject site outlined in red, heritage items shown in tan and heritage conservation areas by red hatching (Source: Heritage 21 and NSW LPI Data).

## 1.4 Purpose

The subject site is located within the vicinity of a number of heritage items listed under Schedule 5 of the CBLEP 2013. Sections 5.10(4) and 5.10(5) of the CBLEP 2013 requires Council to assess the potential heritage impact of non-exempt development, such as the proposed works (refer to Section 4.1), on the cultural significance of items within the vicinity of heritage items. This report has been prepared to enable the City of Canada Bay Council to ascertain whether or not the proposal will have a negative, neutral or positive impact upon the significance of these heritage items

## 1.5 Methodology

The methodology used in this SOHI is consistent with *Statements of Heritage Impact* and *Assessing Heritage Significance* published by the Heritage Branch of the NSW Office of Environment and Heritage and has been prepared in accordance with the principles contained in the most recent edition of *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*.

## 1.6 Authors

This Statement of Heritage Impact ('SOHI' or 'report') has been prepared by Alida Eisermann, overseen by Paul Rappoport and Matt Alexander of Heritage 21.

## 1.7 Limitations

- This SOHI is based upon an assessment of the heritage issues only and does not purport to have reviewed or in any way endorsed decisions or proposals of a planning or compliance nature. It is assumed that compliance with non-heritage aspects of Council's planning instruments, the BCA and any issues related to services, contamination, structural integrity, legal matters or any other non-heritage matter is assessed by others.
- This SOHI essentially relies on secondary sources. Primary research has not necessarily been included in this report, other than the general assessment of the physical evidence on site.
- It is beyond the scope of this report to address Indigenous associations with the subject site.
- It is beyond the scope of this report to locate or assess potential or known archaeological sub-surface deposits on the subject site or elsewhere.
- It is beyond the scope of this report to assess items of movable heritage.
- Heritage 21 has only assessed aspects of the subject site that were visually apparent and not blocked or closed or to which access was not given or was barred, obstructed or unsafe on the day of the arranged inspection.

## 1.8 Copyright

Heritage 21 holds copyright for this report. Any reference to or copying of the report or information contained in it must be referenced and acknowledged, stating the report's name, date and Heritage 21's authorship.

## 2.0 SITE INVESTIGATION

### 2.1 Local History

The Canada Bay area was originally occupied by the Wangal clan, whose name is believed was derived from the word 'wanne', meaning west.<sup>1</sup> They were a clan of the Darug (or Dharug) language group in the Eora Nation.<sup>2</sup> *A number of formally recorded Aboriginal places have been identified within the City of Canada Bay, with the majority located in the vicinity of the river foreshores.*<sup>3</sup> According to the City of Canada Bay Historical Society, the earliest recorded contact between the Wangal clan and Europeans occurred on the 5 February 1788 when Captain John Hunter led an exploratory expedition along the Parramatta River.<sup>4</sup>

The first land grants in the area were distributed to free settlers, who had arrived on the *Bellona* in January 1793, which are now the suburbs of Flemington, Homebush and Strathfield.<sup>5</sup> Later the same year, further land grants in the Concord area were granted to six non-commissioned officers, an ex-marine and three other free settlers. These grants were in the area now occupied by the Concord Golf Course and north up to Cabarita.<sup>6</sup> The area was known as Liberty Plains in the early years of settlement but was planned to be named as Concord as early as 1793.<sup>7</sup> Further land grants were distributed to members of the NSW Corps, emancipists, convicts and free settlers from 1794, through to the early 1800s.<sup>8</sup>

The Canada Bay area has had a long industrial history which can be roughly divided into four periods. The first period (1792-1886) was characterised by small scale agricultural industries, including dairying and crop cultivation.<sup>9</sup> The second period occurred towards the end of the nineteenth century and it marked the beginning of large scale industrial development occurring in the area. The area was attractive to large scale industries due to its proximity to the river and railway for transport and inexpensive land prices during this period.<sup>10</sup> The subsequent two periods of industrial development occurred post World War I and World War II, when factors such as war rationing, assisting in the war effort, increasing population and suburbanisation stimulated industrial growth.<sup>11</sup>

Many of these former industrial sites which portray the development of the local area are no longer present with many sites now residential or recreational areas after having undergone substantial

---

<sup>1</sup> City of Canada Bay Heritage Society, 'Aborigines: Original Occupants of the Area', 2016, <http://www.concordheritage.asn.au/concord-history/aborigines> accessed 16 March 2016.

<sup>2</sup> City of Canada Bay Heritage Society, 'Concord History', 2016, <http://www.concordheritage.asn.au/concord-history/overview>.

<sup>3</sup> Gregory Blaxell, *A Pictorial History of City of Canada Bay* (Alexandria: Kingsclear Books, 2010), 3.

<sup>4</sup> City of Canada Bay Heritage Society, 'Aborigines: Original Occupants of the Area' accessed 16 March 2016.

<sup>5</sup> Gregory Blaxell, *A Pictorial History of City of Canada Bay.*, 4.

<sup>6</sup> *Ibid.*, 5.

<sup>7</sup> City of Canada Bay Heritage Society, 'Concord History'.

<sup>8</sup> Gregory Blaxell, *A Pictorial History of City of Canada Bay.*, 5-7.

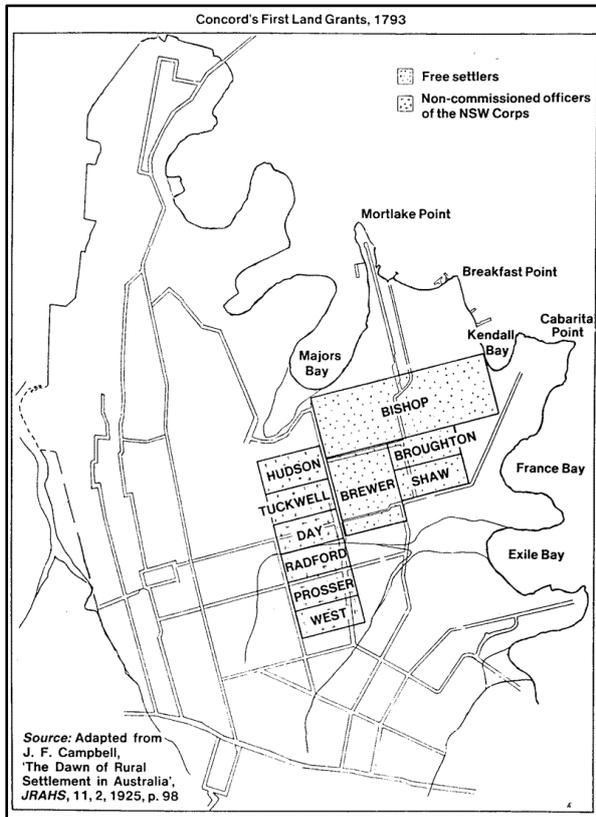
<sup>9</sup> *Concord Heritage Study: Thematic History* (Perumal, Wrathall & Murphy Pty. Ltd., 1986), 1.

<sup>10</sup> *Ibid.*

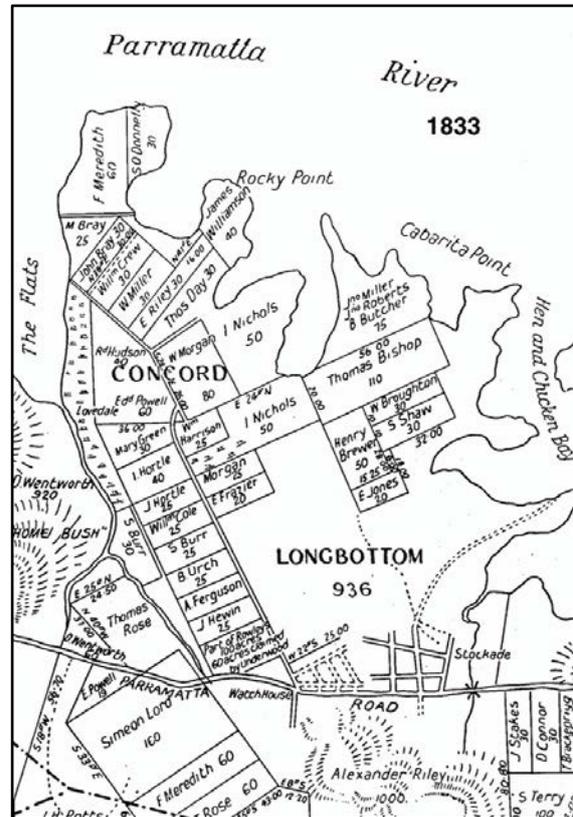
<sup>11</sup> *Ibid.*, 54.

redevelopment.<sup>12</sup> A monument commemorating Concord’s industries is currently located at Bayview Park, Concord.<sup>13</sup>

The Municipality of Concord was formed on 11 August 1883 and in 2000, the Concord and Drummoyn Councils combined, forming the Canada Bay Council.<sup>14</sup>



**Figure 3.** Map of Concord’s First Land Grants, c. 1793 (Source: City of Canada Bay Heritage Society, ‘Early Land Grants’).



**Figure 4.** Map of Concord’s Later Land Grants, c. 1833 (Source: City of Canada Bay, ‘Concord History’).

## 2.2 Site History

It is evident from a Parish map, dated from the early 1800s, that the subject site formed part of the Longbottom Stockade land area (see Figure 5).

The government set aside an area for a farm known as the Longbottom Government Farm on the eastern side of the Concord area, but it was not utilised as a farm until 1819. Instead, this land was used for a convict stockade for housing convicts at the half-way point of their journey between Sydney and Parramatta. Once farming began on the land, convicts became employed in various

<sup>12</sup> City of Canada Bay Heritage Society, ‘Concord’s Industrial Development’, 2016, <http://www.environment.nsw.gov.au/heritageapp/heritagesearch.aspx> accessed 16 March 2016.

<sup>13</sup> NSW Office of Environment and Heritage, ‘Bayview Park’, *State Heritage Inventory*, accessed 17 March 2016, <http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2890319>.

<sup>14</sup> City of Canada Bay Heritage Society, ‘Concord History’.

activities, including shell collecting, charcoal burning, shingling and timber-getting. Governor Macquarie saw this work as an important aspect of his public works initiative. His replacement, Governor Bigge, did not support this work, and so work at the farm declined until there were only 5 convicts left in 1828. The buildings at Longbottom Farm were reused again for the convicts working on the construction of Parramatta Road in 1830.<sup>15</sup>

Longbottom Farm became the detention centre for French Canadian political exiles in 1840. By 1844 all the exiles had been pardoned, aside from the two who died during their exile, the majority of whom returned to Canada.<sup>16</sup>

By 1915, the area of the subject site was in private ownership, owned by Henry Machen and George Frederick (Figure 6). By 1943, the land appears to have been cleared and set aside for a public reserve (Figure 7), but has since been further subdivided (Figure 7). Jessie Stewart Reserve is named after a local resident who was actively involved in volunteering.<sup>17</sup>

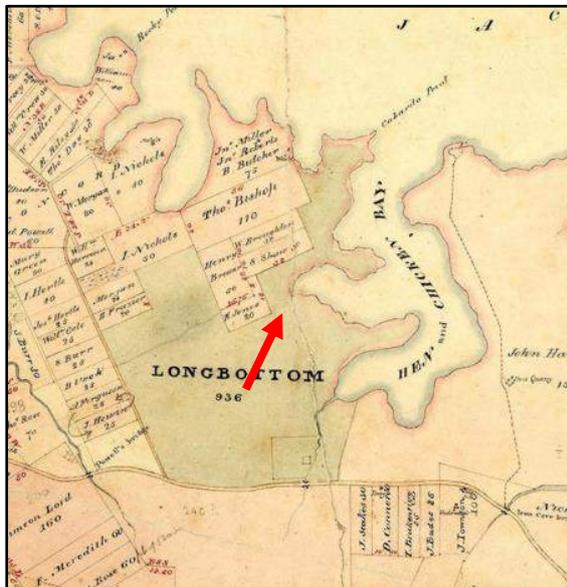


Figure 5. Detail from Concord Parish map (c.1800s) with the approximate location of the subject site indicated (Source: NSW Land and Property Information, 'Historic Land Records Viewer').

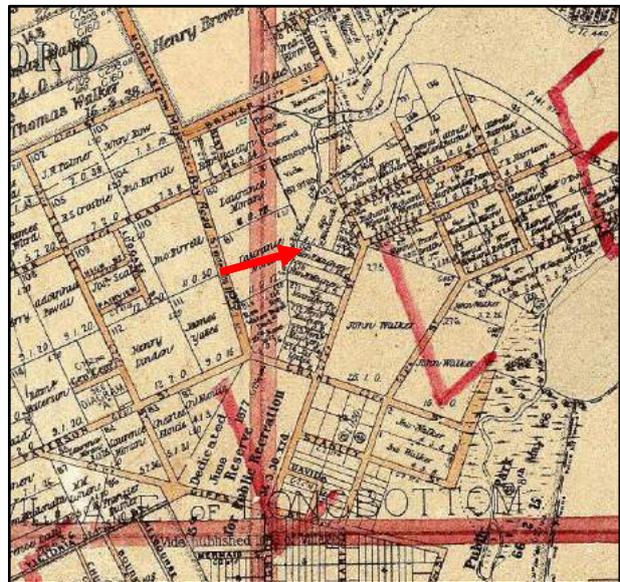


Figure 6. Detail from parish map (c. 1915) with the approximate location of the subject site indicated in by arrow (Source: NSW Land and Property Information, 'Historic Land Records Viewer').

<sup>15</sup> Gregory Blaxell, *A Pictorial History of City of Canada Bay.*, 7-8, 75.

<sup>16</sup> City of Canada Bay Heritage Society, 'Concord History'.

<sup>17</sup> City of Canada Bay Heritage Society, 'Parks and Reserves', *City of Canada Bay Heritage Society*, 2016, <http://www.concordheritage.asn.au/concord-history/parks-and-reserves>.



**Figure 7.** 1943 aerial photograph showing Jessie Stewart Reserve (Source: NSW Land and Property Information, 'Six Maps').



**Figure 8.** 2016 aerial photograph showing Jessie Stewart Reserve (Source: NSW Land and Property Information, 'Six Maps').

## 2.3 Physical Description

### 2.3.1 Locality

Concord is suburb of Sydney located in the inner-west, located approximately 15 kilometres from the Sydney Central Business District (CBD). Concord features a high street on Majors Bay Road where shops and restaurants dominate. Overall, the suburb is predominantly residential, featuring free standing domestic dwellings.

### 2.3.2 Streetscape

Jessie Stewart Reserve and Greenlees Park dominate the streetscape of Greenlees Avenue. The park is bordered by Rhonda Place to the east and south of the park, and Greenlees Road to the north. Rhonda Place features freestanding domestic dwellings of a variety of architectural styles. The green space of Jessie Stewart Reserve and the mature trees located in the park create an aesthetically pleasing streetscape.

### 2.3.3 Views

Although Jessie Stewart Reserve is a dominant feature within the locality, there are limited views to and from the reserve for the heritage items in the vicinity. The significant views of Jessie Stewart Reserve are from the streets bordering the park. Jessie Stewart Reserve presents a significant view, as it is an open green space in the Concord area.

### 2.3.4 Setting

Jessie Stewart Reserve is positioned within a suburban setting; it is a part of the extensive parkland of the Concord area, with Greenlees Park located to the north and Rothwell Park to the south. The

park features a central oval. The park is bordered by mature trees along Rhonda Place and a pedestrian path is positioned along the western boundary of the park.

### 2.3.5 Condition and Integrity

The park is well maintained and features a cricket pitch in the centre of the oval.

The following photographs, taken by Heritage 21 on 26 September 2016, provide a visual survey of the site and its setting.



**Figure 9.** Jessie Stewart Reserve viewed from the corner of Greenlees and Avenue and Rhonda Place viewed facing south-west.



**Figure 10.** View from Jessie Stewart Reserve to Rhonda Place facing east, approximate locations of proposed lighting indicated by arrows.



**Figure 11.** View from Jessie Stewart Reserve facing north-west, approximate location of proposed lighting indicated by arrows.



**Figure 12.** View from path bordering Jessie Stewart facing east to Rhonda Place, approximate location of proposed lighting poles indicated by arrows.



Figure 13. Jessie Stewart Reserve viewed from reserve path facing east towards Rhonda Place.



Figure 14. Heritage listed substation (I487).



Figure 15. View from substation (I1487) to subject site (indicated by arrow).



Figure 16. View from Jessie Stewart Reserve north to Greenlees Park (I488).



Figure 17. View from heritage listed Rothwell Park (I333) to subject site (indicated by arrow).



Figure 18. Heritage listed shop (I137).



Figure 19. View from shop (I137) to subject site (indicated by arrow).



Figure 20. Heritage listed house at 56 Empire Street (I187).



Figure 21. View from heritage listed house (I187) to subject site (indicated by arrow).



Figure 22. Heritage listed house at 55 Zoeller Street (I525).



Figure 23. View from heritage listed house (I525) to subject site (indicated by arrow).



Figure 24. Heritage listed house at 8 Jellicoe Street (I270), approximate location of subject site indicated by arrow, no view of site from this location.

## 3.0 HERITAGE SIGNIFICANCE

### 3.1 Established Significance

The following Statements of Significance are available for the items of environmental heritage which are located in the vicinity of the subject site have been sourced from State Heritage Inventory.<sup>18</sup>

#### 3.1.1 Sub-station (I487)

*Small Inter-War period pumping station with architectural interest.*

#### 3.1.2 Greenlees Park and Former Arnotts Cottage (I488)

*Greenlees Park was developed as an Inter-war period reclamation site. It is an important example of one of the parks created by the reclamation of large areas of foreshore land in the Concord Area during the twentieth century that have created a legacy of large areas of green space in the Concord area.*

*The former Arnotts Administration Cottage was relocated to the Park in 2003 and now functions as the tennis clubhouse. It was one of three cottages on the former Arnott's site which was established 1907 in Homebush. As a former Arnotts Administration Cottage, it was an important component of one of the areas most important industries during the twentieth century. It is a good example of an early twentieth century vernacular cottage that retains much of its original fabric.*

#### 3.1.3 Rothwell Park (I133)

*Park conserving early remnant indigenous Turpentine, Sydney Pink Gum and Red Mahogany which have significance at Local, State and National levels.*

*The native trees are remnant components of the Sydney Turpentine-Ironbark Forest community, a scheduled endangered ecological community under the EPBC Act 1999 and TSC Act 1995 (refer to listing for Queen Elizabeth Park).*

*Park is a notable element in local landscape, with fenced oval surrounded by traditional picket fence. Has a long association with cricket at a local level.*

---

<sup>18</sup> NSW Office of Environment and Heritage, 'State Heritage Inventory', *Search for NSW Heritage*, n.d., <http://www.environment.nsw.gov.au/heritageapp/heritagesearch.aspx>.

**3.1.4 Shops – 42-44 Crane Street (I137)**

*Good example of an early twentieth century commercial/residential building, now rare. Prominent corner site with original shopfront. Landmark value.*

**3.1.5 Marsham – 56 Empire Street (I187)**

*Good, intact, modest, Inter-War Bungalow set in a cohesive and unbroken streetscape of similar houses.*

**3.1.6 House – 55 Zoeller Street (I525)**

*Part of an extensive and varied streetscape of modest Inter-War Bungalows, epitomising 1930s suburban development.*

**3.1.7 House – 8 Jellicoe Street (I270)**

*Intact, representative example of a double-gabled Inter-War Bungalow.*

## 4.0 IDENTIFICATION & ASSESSMENT OF IMPACT

### 4.1 Proposal description

#### 4.1.1 Works

The proposed development would include:

- Installation of four lighting poles (approximately eighteen metres in height), as part of a flood lighting upgrade; and
- Installation of associated electrical services.

#### 4.1.2 Drawings

Specific details of the proposed development are shown in by the drawing by GRA Electrical Engineers, dated 21 August 2016, received by Heritage 21 on 22 November 2016. This is partly reproduced below at small scale for reference purposes; the full-size drawing accompanying the application should be referred to for any details.

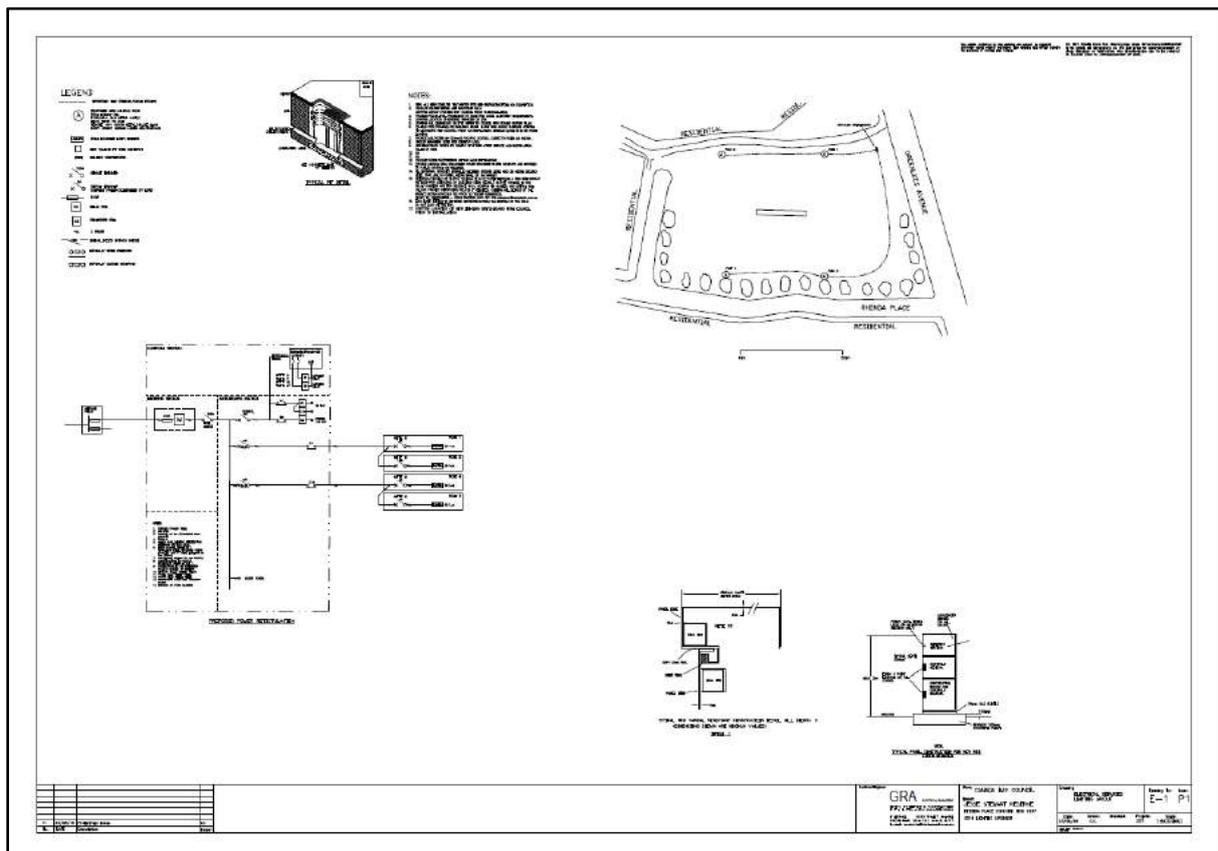


Figure 25. Drawing Number E1, Issue P1, Electrical services lighting layout, Jessie Stewart Reserve

## 4.2 Heritage Management Framework

Below we outline the heritage-related statutory and non-statutory constraints applicable to the subject site including the objectives, controls and considerations which are relevant to the proposed development as described in Section 4.1 above. These constraints and requirements form the basis of our Heritage Impact Assessment in Section 4.3 of this report.

### 4.2.1 Canada Bay Local Environment Plan 2013

The statutory heritage conservation requirements contained in Section 5.10 of the Canada Bay Local Environment Plan 2013 (CBLEP 2013) are pertinent to any heritage impact assessment for future development on the subject site. The relevant clauses for the site and proposal are outlined below:

#### **(1) Objectives**

*The objectives of this clause are as follows:*

- (a) to conserve the environmental heritage of Canada Bay,*
- (b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,*
- (c) to conserve archaeological sites,*
- (d) to conserve Aboriginal objects and Aboriginal places of heritage significance.*

#### **(2) Requirement for consent**

*Development consent is required for any of the following:*

- (a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):*
  - (i) a heritage item,*
  - (ii) an Aboriginal object,*
  - (iii) a building, work, relic or tree within a heritage conservation area,*
- (b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,*
- (c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,*
- (d) disturbing or excavating an Aboriginal place of heritage significance,*
- (e) erecting a building on land:*
  - (i) on which a heritage item is located or that is within a heritage conservation area,*  
*or*
  - (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,*
- (f) subdividing land:*
  - (i) on which a heritage item is located or that is within a heritage conservation area,*  
*or*

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.

**(4) Effect of proposed development on heritage significance**

The consent authority must, before granting consent under this clause in respect of a heritage item or heritage conservation area, consider the effect of the proposed development on the heritage significance of the item or area concerned. This subclause applies regardless of whether a heritage management document is prepared under subclause (5) or a heritage conservation management plan is submitted under subclause (6).

**(5) Heritage assessment**

The consent authority may, before granting consent to any development:

- (a) on land on which a heritage item is located, or
  - (b) on land that is within a heritage conservation area, or
  - (c) on land that is within the vicinity of land referred to in paragraph (a) or (b),
- require a heritage management document to be prepared that assesses the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or heritage conservation area concerned.

**4.2.2 Canada Bay Development Control Plan**

Our assessment of heritage impact also considers the heritage-related sections of the Canada Bay Development Control Plan (CBDPC) that are pertinent to the subject site and proposed development. This includes:

**Part 4 Heritage**

4.3 Development in the vicinity of heritage items.

#### 4.2.3 NSW Office of Environment & Heritage guidelines

In its guidelines for the preparation of Statements of Heritage Impact, the NSW Office of Environment & Heritage provides a list of considerations in the form of questions aiming at directing and triggering heritage impact assessments.<sup>19</sup> These are divided in sections to match the different types of proposal that may occur on a heritage item, item in a heritage conservation area or in the vicinity of heritage. Below are listed the considerations which are most relevant to the proposed development as outlined in Section 4.1 of this report.

##### ***New services (e.g. air conditioning, plumbing)***

- *How has the impact of the new services on the heritage significance of the item been minimised?*
- *Are any of the existing services of heritage significance? In what way? Are they affected by the new work?*
- *Has the advice of a conservation consultant (e.g. architect) been sought? Has the consultant's advice been implemented?*
- *Are any known or potential archaeological deposits (underground and under floor) affected by the proposed new services?*

#### 4.2.4 Other Heritage Considerations

Other general heritage matters which may not have been addressed in heritage controls or requirements by the local Council or the NSW Office of Environment & Heritage are likely to include considerations as to whether:

- The historical use of the site would be maintained and if not, if the proposed new use would be suitable to the heritage significance;
- The historical setbacks and boundaries of the site would be retained as existing; and
- Any significant views to and from significant buildings or elements, or across significant areas would be impacted.

---

<sup>19</sup> NSW Office of Environment and Heritage, 'Statements of Heritage Impact' (Heritage Office and Department of Urban Affairs & Planning, 1996), NSW Heritage Manual, <http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf>.

### 4.3 Heritage Impact Assessment

Below we assess the impact that the proposed development would have upon heritage items in the vicinity. This assessment is based upon the Site Investigation (refer to Section 2.3), the Heritage Significance (refer to Section 3.0), the Proposal Description (refer to Section 4.1) and a review of the Heritage Management Framework (refer to Section 4.2).

#### 4.3.1 Assessment of works on surrounding heritage items

The proposed lighting poles and associated services would generate a neutral impact on heritage items within the vicinity of the site. There would be no physical impact on any of the surrounding heritage items due to the distance between the proposed works and said items.

The topography of the site and the surrounding area ensures that the proposed eighteen metre poles would not be visibly prominent from any of the heritage items located within the vicinity of the subject site. The introduction of the proposed lighting would allow for the illumination of the park Monday to Friday between the hours of 17.00 and 21.15. The minimal visual impact of the poles would be offset by the positive contribution the proposed lighting poles would generate for the local community, as installation of improved lighting at the site would encourage community engagement.

## 5.0 CONCLUSION & RECOMMENDATIONS

### 5.1 Impact Summary

The NSW Office of Environment & Heritage's guidelines require the following aspects of the proposal to be summarised.<sup>20</sup> This is based on the assessment of impact provided in 4.3 of this report.

#### 5.1.1 Aspects of the proposal which respect or enhance heritage significance

In our view, the following aspects respect the heritage significance of the heritage items in the vicinity:

- Additional lighting at the park would allow for greater community access to the park;
- Due to distance the proposed poles would have no physical impact on heritage items within the vicinity; and
- Due to distance and/or topography the proposed poles would have a minimal visual impact on heritage items within the vicinity.

#### 5.1.2 Aspects of the proposal which could have detrimental impact on heritage significance

In our view, there are no aspects of the proposal which would generate an unacceptable level of impact to the significance of the subject site and heritage items within the vicinity. The neutral/positive impacts of the proposal have been addressed above in Sections 4.3 and 5.1.

### 5.2 General Conclusion

Heritage 21 is therefore confident that the proposed development complies with pertinent heritage controls and would have an acceptable level of impact on the significance of heritage items in the vicinity.

---

<sup>20</sup> NSW Office of Environment and Heritage, 'Statements of Heritage Impact' (Heritage Office and Department of Urban Affairs & Planning, 1996), <http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf>.

## 6.0 SOURCES

- Apperley, Richard, Robert Irving, and Peter Reynolds. *A Pictorial Guide to Identifying Australian Architecture Styles and Terms from 1788 to the Present*. Sydney: Angus & Robertson, 1994.
- Australia ICOMOS. 'The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance'. Australia ICOMOS, 2013. <http://australia.icomos.org/publications/charters/>.
- City of Canada Bay Heritage Society. 'Aborigines: Original Occupants of the Area', 2016. <http://www.concordheritage.asn.au/concord-history/aborigines>.
- . 'Concord History', 2016. <http://www.concordheritage.asn.au/concord-history/overview>.
- . 'Concord's Industrial Development', 2016. <http://www.environment.nsw.gov.au/heritageapp/heritagesearch.aspx>.
- . 'Parks and Reserves'. *City of Canada Bay Heritage Society*, 2016. <http://www.concordheritage.asn.au/concord-history/parks-and-reserves>.
- Concord Heritage Study: Thematic History*. Perumal, Wrathall & Murphy Pty. Ltd., 1986.
- Gregory Blaxell. *A Pictorial History of City of Canada Bay*. Alexandria: Kingsclear Books, 2010.
- NSW Office of Environment and Heritage. 'Assessing Heritage Significance'. NSW Heritage Office, 2001. NSW Heritage Manual. <http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/listings/assessing-heritagesignificance.pdf>.
- . 'Bayview Park'. *State Heritage Inventory*. Accessed 17 March 2016. <http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2890319>.
- . 'State Heritage Inventory'. *Search for NSW Heritage*, n.d. <http://www.environment.nsw.gov.au/heritageapp/heritagesearch.aspx>.
- . 'Statements of Heritage Impact'. Heritage Office and Department of Urban Affairs & Planning, 1996. NSW Heritage Manual. <http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf>.
- . 'Statements of Heritage Impact'. Heritage Office and Department of Urban Affairs & Planning, 1996. <http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf>.
- Pollon, Frances, ed. *The Book of Sydney Suburbs*. Sydney: Cornstalk, 1996.
- 'Sydney Subdivision Plans'. State Library of NSW, n.d. Mitchell Map Collection. <http://www.sl.nsw.gov.au/>.

APPENDIX F:

SYDNEY REGIONAL ENVIRONMENTAL PLAN (SYDNEY HARBOUR  
CATCHMENT) 2005 – ASSESSMENT PREPARED BY MILESTONE (AUST) PTY  
LIMITED DATED MARCH 2017

REVIEW OF ENVIRONMENTAL FACTORS FOR THE INSTALLATION OF FOUR (4) NEW SPORTS LIGHTING POLES AND ASSOCIATED LIGHTING AT JESSE STEWART RESERVE, CNR GREENLEES AVENUE & RHONDA PLACE, CONCORD (LOT 3 DP 1161664)

ASSESSMENT OF PROPOSAL PURSUANT TO THE SYDNEY REGIONAL ENVIRONMENTAL PLAN (SYDNEY HARBOUR CATCHMENT) 2005

Clause	Matter for Consideration	COMPLIANCE
Clause 21 – Biodiversity, ecology and environment protection.	(a) A development should have a neutral or beneficial effect on the quality of water entering the waterways.	Complies. The proposed will not alter the quality of water entering waterways.
	(b) Development should protect and enhance terrestrial and aquatic species, populations and ecological communities and, in particular, should avoid physical damage and shading of aquatic vegetation (such as seagrass, saltmarsh and algal and mangrove communities).	Complies. No impact on the ecology of the area arises from current proposal.
	(c) Development should promote ecological connectivity between neighbouring areas of aquatic vegetation (such as seagrass, saltmarsh and algal and mangrove communities).	Complies Proposed works are to be located within and continue the use of existing areas of public recreation and do not seek alteration to, maintain significant distance from, and therefore will not impact neighbouring areas of aquatic vegetation.
	(d) Development should avoid indirect impacts on aquatic vegetation (such as changes to flow, current and wave action and changes to water quality) as a result of increased access.	Complies. Existing access routes are maintained to the site with no increase in activity within the aquatic environment resulting from the proposed minor internal works.
	(e) Development should protect and reinstate natural intertidal foreshore areas, natural landforms and native vegetation.	Complies. All works are located within the bounds of the existing public recreation area, with no new impacts to the existing waterways.
	(f) Development should retain, rehabilitate and restore riparian land.	Not applicable. No works to riparian land are proposed.
	(g) Development on land adjoining wetlands should maintain and enhance the ecological integrity of the wetlands and, where possible, should provide a vegetative buffer to protect the wetlands.	Not applicable. No works to riparian land are proposed.
	(h) The cumulative environmental impact of development.	Complies. The proposed works are compatible with the existing use of the site for public recreation and no significant additional impact will arise as a result of the proposal.
	(i) Whether sediments in the waterway adjacent to the development are contaminated, and what means will minimise their disturbance.	Complies No impact on the adjoining waterways will result from the proposed works.
Clause 22 - Public access to use of foreshores and waterways.	(a) Development should maintain and improve public access to and along the foreshore, without adversely impacting on watercourses, wetlands, riparian lands or remnant vegetation.	Complies. The proposal will have no impact on existing access arrangements at the site.

Clause	Matter for Consideration	COMPLIANCE
	(b) Development should maintain and improve public access to and from the waterways for recreational purposes (such as swimming, fishing and boating), without adversely impacting on watercourses, wetlands, riparian lands or remnant vegetation.	Complies. The proposal will have no impact on existing access arrangements at the site.
	(c) If foreshore land made available for public access is not in public ownership, development should provide appropriate tenure and management mechanisms to safeguard public access to, and public use of, that land.	Complies The proposal will have no impact on existing access arrangements at the site.
	(d) The undesirability of boardwalks as a means of access across or along land below the mean high water mark if adequate alternative public access can otherwise be provided.	Not applicable. The proposal will have no impact on existing access.
	(e) The need to minimise disturbance of contaminated sediments.	Not applicable. The proposal will not involve direct disturbance of any sediments.
Clause 23 - Maintenance of working harbour	(a) Foreshore sites should be retained so as to preserve the character and functions of a working harbour, in relation to both current and future demand.	Not applicable.
	(b) Consideration should be given to integrating facilities for maritime activities in any development.	Not applicable.
	(c) In the case of development on land that adjoins land used for industrial and commercial maritime purposes, development should be compatible with the use of the adjoining land for those purposes.	Not applicable
	(d) In the case of development for industrial and commercial maritime purposes, development should provide and maintain public access to and along the foreshore where such access does not interfere with the use of the land for those purposes.	Not Applicable
Clause 24 - Interrelationship of waterway and foreshore uses	(a) Development should promote equitable use of the waterway, including use by passive recreation craft.	Not Applicable
	(b) Development on foreshore land should minimise any adverse impact on the use of the waterway, including the use of the waterway for commercial and recreational uses.	Not Applicable
	(c) Development on foreshore land should minimise excessive congestion of traffic in the waterways or along the foreshore.	Not Applicable
	(d) Water-dependent land uses should have priority over other uses.	Not applicable. The proposal does not constitute a water dependent use.

Clause	Matter for Consideration	COMPLIANCE
	(e) Development should avoid conflict between the various uses in the waterways and along the foreshores.	Complies. No waterways conflict will arise as a result of the proposed development.
Clause 25 - Foreshore and Waterways Scenic Quality	(a) The scale, form, design and siting of any building should be based on an analysis of: (i) the land on which it is to be erected, and (ii) the adjoining land, and (iii) the likely future character of the locality.	Complies. The proposed activity is acceptable in terms of scale, form, design and siting. Refer to the Review of Environmental Factors Assessment for details.
	(b) Development should maintain, protect and enhance the unique visual qualities of Sydney Harbour and its islands, foreshores and tributaries.	Complies The current proposal will not impact on the visual qualities of the Harbour.
	(c) The cumulative impact of water-based development should not detract from the character of the waterways and adjoining foreshores.	Complies. No impact on the character of the waterways will arise from the proposed development.
Clause 26 - Maintenance, protection and enhancement of views	(a) Development should maintain, protect and enhance views (including night views) to and from Sydney Harbour.	Complies. The site does not hold and is not subject to views to and from Sydney harbour
	(b) Development should minimise any adverse impacts on views and vistas to and from public places, landmarks and heritage items.	Complies. The site is not subject to any significant or iconic views.
	(c) The cumulative impact of development on views should be minimised.	Complies. No impact arises with respect to view impacts.
Clause 27 - Boat Storage Facilities	(a) Development should increase the number of public boat storage facilities and encourage the use of such facilities.	Not applicable.
	(b) Development should avoid the proliferation of boat sheds and other related buildings and structures below the mean high water mark.	Not applicable.
	(c) Development should provide for the shared use of private boat storage facilities.	Not applicable.
	(d) Development should avoid the proliferation of private boat storage facilities in and over the waterways by ensuring that all such facilities satisfy a demonstrated demand.	Not applicable.
	(e) Boat storage facilities should be as visually unobtrusive as possible.	Not applicable.
	(f) In the case of permanent boat storage, the safety and utility of the development should not be adversely affected by the wave environment, and the development should avoid adverse impacts on safe navigation and single moorings.	Not applicable.