

Urnsurf Sydney Servicing Statement

A. Introduction

This document presents an engineering review of the current plans for utilities and services for the Urnsurf Sydney wave park development.

In particular, the report responds to the SEARS requirement for the development application to:

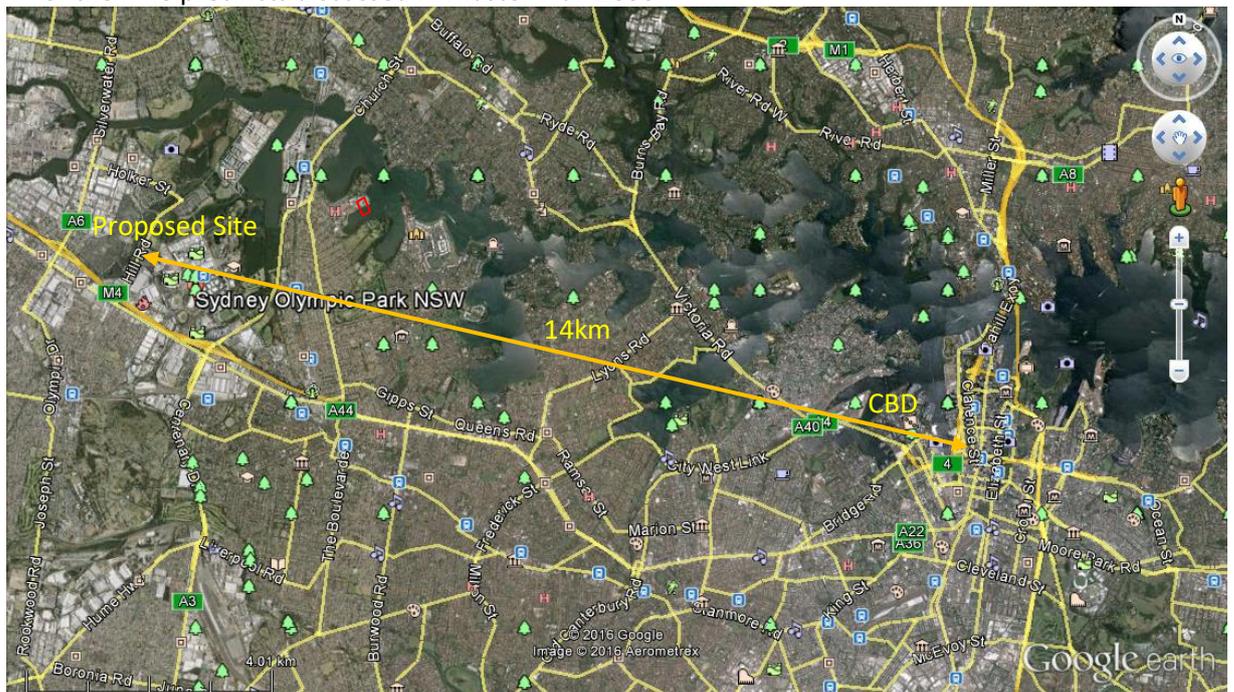
- Address the existing capacity and any augmentation requirements of the development for the provision of utilities, including staging of infrastructure and additional license/approval requirements in consultation with relevant agencies.
- Identify any potential impacts of the proposed construction and operation on existing utility infrastructure and service provider assets, and demonstrate how these will be protected or impacts mitigated.

While plans are well developed, it is understood that the detailed engineering phase may alter the details of the services and utilities works that will be required for the development.

B. Site and general

Location

- The site is 14km (as the crow flies) west-north-west of the CBD (19km and 30 minutes by car).
- Local Government: City of Parramatta Council.
- Whilst the site is under SOPA management, it is not specifically discussed or allocated in any of the nine precincts discussed in Master Plan 2030.



Site Identification

The site is known as portion of Lot 2005 Hill Road, Sydney Olympic Park 2140 (DP 1192085, or 2005/1192085)).

According to NSW Land & Property Information, the property is affected by 2 easements for redundant services (R= Watermain DP229640 and Y= Transmission Line 30 wide DP931539). It is understood that these pose no encumbrance on the proposed land use

Existing structures/demolition

A number of services traverse the site (predominantly local drainage) and will be made redundant requiring removal and disposal. It appears no essential services exist in the project area (with except for the services (including sewer) running along the west and northern boundaries including a substation which must be protected). The power, comms and drainage can all be terminated with little to no impact of adjoining services. Drainage is isolated and directed to Narrawang wetlands.

C. Services/utilities required

The proposed development will require the following utilities/services:

- Water Supply
- Sewer
- Storm Water Drainage
- Electricity Supply
- Telecommunications
- Gas

D. Items to be addressed for SEARS

- Requirements
- Existing capacity
- Staging
- Licenses/Approvals required
- Construction impacts
- Operations impacts
- Mitigation methods

E. Reference Documents

- 170320 Water Management Plan (Urbaqua Report)
- 160630 Sydney Water Pressure Statement
- 16061 Sewer Plan SWC
- 160503 Ausgrid Request Response
- 161221 SYD Conflicting Services Plan
- Sewer Loading Calculation

Item	Service/ Utility	Requirements	Existing capacity	Staging	Licenses/ Approvals required	Construction impacts	Operations impacts	Mitigation methods
1	Water Supply	<p>Initial fill of the lagoon will require 22ML of potable water from SWC service main.</p> <p>Urbaqua advise that the peak daily top up (to combat operational evaporation) will be 127KL per day (=3L per second in 12 hour day – To be confirmed) and annual top up of 37ML PA. Main Water consumption components:</p> <ol style="list-style-type: none"> 1. Annual loss through evaporation: 37ML. 2. Loss through water treatment backwash is estimated to be 5kL per day (or 2.51ML PA). 3. Further annual consumption for amenities excluding the surfing lagoon being: <ul style="list-style-type: none"> * 4.52 ML potable * 3.62ML non-potable <p>Assuming water top-up to be carried out in daily 12 hour periods, the required flow rate is 3.02 L/second</p>	<p>A pressure and flow application to Sydney Water (30/6/16 on file) advised that a 300mm water main on Hill Road would provide up to 120L/s.</p>	<p>Main Water supply not needed until initial fill of lagoon. Nonetheless, it is envisaged that connection to the existing 300mm water main would be carried out early in the construction schedule so that water is available for site facilities and dust suppression.</p>	<p>Must engage a WSC to apply for Section 73 Compliance Certificate which will include a Notification of Requirements (NOR).</p> <p>SWC application 89872 has been approved</p>	<p>Water required for site sheds during construction – 1,800 litres per day. Dust suppression during bulk earthworks will consume up to 240,000 litres per day (on hot days, 8 hours suppression, 30,000m2, with application rate of 1 litre per hour per m2 per hour).</p>	<p>Assuming maximum permissible draw of 120L/s can be obtained, first fill will take approximately 52 hours. During this time there may be an impact on the SWC water main.</p> <p>Will require connection to 300mm water supply line on Hill Road to be available for whole of operational phase for ongoing top-up and potable water requirements.</p>	<p>Impacts are within the normal envelope; hence no special mitigation methods are required. However, recommend notification to SWC prior to first fill.</p>



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2	Sewer	<ol style="list-style-type: none"> 1. Connection of ablutions. 2. Connection for construction phase. 3. Connection for trade waste (residuals from water treatment plant). <p>Ablution flow estimate is 10kL/day (61 EP).</p> <p>Construction phase flow estimated to be 6.5kL/day (39 EP).</p> <p>Estimate of treatment plant residuals flow not available.</p> <p>See attached Sewer Loading Calculation spreadsheet.</p>	<p>There is an existing 150mm sewer main running along and into the western portion of the site with a Sewer Pump Station being located in the NW corner near the site access point. A 90mm rising main departs the pump station directly west.</p>	<p>No particular staging requirements envisaged. Temporary connection to sewer may be feasible during construction phase.</p>	<p>Must engage a WSC to apply for Section 73 Compliance Certificate which will include a Notification of Requirements (NOR).</p> <p>SWC Wastewater discharge application 89874 is on hold. May need modification once water treatment plant residuals requirement is further developed.</p>	<p>Temporary connection to existing sewer during construction phase for ablution blocks. Male : Urinal (4 stall), plus 6 toilets and 4 showers. Female: 4 toilets plus 4 showers. Site sheds 4 sinks.</p>	<p>Expected daily flow volume 10,000 litres, plus treatment plant residuals disposal (to be confirmed).</p>	<p>None required.</p>

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3	Storm Water Drainage	<p>The Urbaqua report indicates that the existing site has adequate storm water facilities for the existing hardstand finish. “The system provides capacity for 20 year ARI events within a system of vegetated open swales and culverts “.</p> <p>The proposed development will significantly reduce the storm water load, hence the existing discharge pathways to Narawang wetlands will be adequate.</p> <p>The new development will require a new lagoon discharge point (“flushing” point), which will make use of the existing pathways to along Hill Road, east to the Nuwi Wetland – an open unconfined water body, used for drainage, connecting to Haslams Creek and Parramatta River. If the discharge is controlled to 500L/s then the peak discharge capacity of the pathways is within the 20 year ARI event parameters, and the lagoon can be emptied within 14 hours.</p>	<p>From Urbaqua report, existing capacity is: 1 year ARI – 0.33m³/s 20 year ARI – 0.87m³/s 100 year ARI – 1.01m³/s</p>	<p>The existing hardstand will be ripped up and removed early in the construction phase. After the lagoon is constructed and new hardstand areas completed, they will progressively connected to the existing discharge pathways to Nuwi Wetlands and Haslams Creek.</p>	<p>Must engage a WSC to apply for Section 73 Compliance Certificate which will include a Notification of Requirements (NOR). The NOR is likely to include requirements for treatment of the lagoon water for emergency discharge.</p>	<p>The Urbaqua report section 7 details the construction phase soil and water management plan (in accordance with “Blue Book”).</p>	<p>The Urbaqua report section 8 details the ongoing monitoring and maintenance plan for the storm water drainage system.</p>	<p>Development of an Operational Management Plan that prescribes specific measures, including pre-discharge water quality monitoring and water correction measures (if required) in water treatment plant facility design, along with emergency discharge pump system sized for flow of 500L/s.</p>



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4	Power Supply	<p>Electrical Loads are:</p> <ul style="list-style-type: none"> • Lighting – 70kVA • Water Treatment – 100kVA • Facilities & heating – 200kVA • Wave Generator - 2500kVA <p>Total Load – 2,840 kVA</p>	<p>The existing 132kV line adjacent to the site does not have adequate capacity.</p> <p>The existing Car Park lighting substation does not have adequate capacity.</p> <p>The zone substation located on Bennelong Parkway has 10.8 MVA spare capacity, with load forecasts to 2024 indicating that adequate capacity is available in the medium to long term.</p> <p>Connection to the development would be at 11kV, fed from the Ausgrid substation located on Hill Road (700 metres away), via underground cable.</p> <p>Building rooftops are available to support solar generation.</p>	<p>No particular staging requirements, but implementation of the power feed would be advantageous as early as possible.</p> <p>Onsite generation through solar may be staged with the initial construction of 300sqm of solar PV cells provided for on building rooftops (providing 100kW).</p>	<p>Level 3 design works to be carried out by Energy Australia, with Level 1 installation works completed by an accredited provider.</p> <p>Ausgrid reference number 1900063165 applies.</p> <p>Correspondence with Ausgrid indicates that there are no material impediments to provision of adequate power via the nominated route.</p>	<p>Construction of the electrical works will require trenching along approx. 700m of roadway, which will have impact on traffic (both road and pedestrian).</p> <p>Adequate management of this disruption should be provided.</p> <p>Power to the site prior to completion of the power supply system will be provided by temporary portable diesel generators and construction power supply distribution boards.</p>	<p>Design of the incoming power supply will be based on a design load of 3.5MVA, with an expected maximum demand of 2.84 MVA, giving spare capacity of 23%.</p> <p>The proposed solar array on the building rooftop will provide for approximately 35% of the amenity building requirements (see ESD report by Kinesis).</p>	<p>Temporary diesel generators to be used during construction phase to be fitted with noise attenuation.</p>



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5	Telecomms	<p>High speed internet (ADSL) is required for the Wave Generator and water treatment plant control system for remote monitoring.</p> <p>A multi-line cable for telecommunications is required for the facility.</p> <p>The mechanical elements of the surf lagoon and water treatment plant will be connected by fibre to a control room.</p>	<p>Existing Telstra and Optus cables run along Hill Road adjacent to the development. Details of spare capacity not known at this time.</p>	<p>Early implementation of telecommunications will assist during the construction phase.</p>	<p>None.</p>	<p>None envisaged</p>	<p>None envisaged</p>	<p>None required.</p>



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6	Gas	Reticulated gas required for proposed kitchen/cooking facilities.	A 100mm diameter gas main runs along the southern side of Hill Road and is expected to provide sufficient capacity for the development. Details of spare capacity not available this time.	No particular requirement, Installation must be inspected by AGL prior to connection.	Licensed gasfitter to be used for all works, including supply of meter (from AGL). If design indicates Type 2 installation (indoor), then Hazardous Area classification is required.	None expected.	Cannot connect until passed by AGL.	Engage suitably qualified gasfitter to ensure that no issues will be encountered.