



Milson Park Boat Ramp Upgrades

Review of Environmental Factors

May 2018

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North Sydney NSW 2060
Australia

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1 Introduction

1.1 Background

Milson Park boat ramp is located on the waterfront at the foot of Milson Park, McDougall St, upon Sydney Harbour. The park was created in the reclamation of the head of Careening Cove during the 1890s, where the area was previously used as a rubbish dump. Originally known as Kirribilli Park, it was renamed in 1912 to Milson Park.

The boat ramp is located along the seawall adjacent to the Sydney Flying Squadron and provides access to the water. The ramp is to be upgraded to improve overall safety and non-powered vessel access for users. The preferred upgrade option as agreed upon between the Roads and Maritime Services (RMS), Sydney Flying Squadron (SFS) and North Sydney Council (Council) is to flatten the gradient of the boat ramp and extend it, enhancing safety at the toe of the ramp. Along with widening the ramp by 1 m to the NE, the addition of stepped access on the side of the ramp, following its gradient, will be constructed.

In accordance with Clause 68(13) of the State Environmental Planning Policy (Infrastructure) 2007 the proposed development (port facilities, as defined in the North Sydney Local Environment Plan 2013) can be undertaken by or on behalf of a public authority without consent on any land. Therefore, the planning approval pathway for the Project is covered under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Assessment under Part 5 of the EP&A Act requires the preparation of a Review of Environmental Factors (REF) and has been completed accordingly.

1.2 Site Location and Existing Environment

Milson Park boat ramp is located on the waterfront at the foot of Milson Park, McDougall St, upon Sydney Harbour (refer to **Figure 1 Site Plan**). The ramp is encompassed as part of the approximately 65m seawall along the southern edge of the park. The existing facility supports a single lane concrete ramp for launching small sail and other non-powered vessels, and is backed by a recreation reserve.

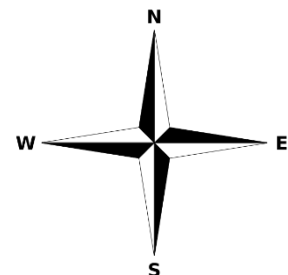


Figure 1 Site Plan



The seawall is constructed from sandstone blocks typically 1-2 m long, 0.5 to 1.0 m each way in section with some smaller blocks, rocks and ad-hoc concrete topping as infilling. Two stormwater pipes are positioned SW of the ramp along the wall and are damaged at their outlets.

The ramp is in reasonable condition with some wearing on the groove patterns. The single ramp is 4 m wide and silty sand covers the lower portion of the deck, making the surface difficult for launching and receiving vessels. The water is shallow at the toe of the ramp, further increasing the difficulty of access to the water with craft. The lip at the crest of the ramp is a safety concern for the public wishing to launch from the ramp, especially for SFS who regularly use the facility.. As an example, more force is required by SFS sailors to push the boat and trolley over the 'lip' which is immediately followed by steep downward gradient. This poses safety issues for the sailors at the bow of the vessel and trailer who are trying to control the pace at which the vessel is lowered down the ramp.

For the general public access to the foreshore, the ramp is steep and poses a potential safety risk.



2 Project Proposal

2.1 Preferred Project Proposal

The boat ramp upgrade would aim to meet the slope, width and surface recommendations of the NSW Boat Ramp Facility Guidelines (RMS, 2015). As a result, this would improve the usability of the ramp which was the main concern from the SFS. The option taken to detailed design includes the following:

- removal of the existing concrete ramp leaving the subgrade if it is suitable
- flattening the grade of the ramp to 1V:7H to suit existing shallow nearshore conditions
- widening the entire ramp to the NE such that there is at least 5 m of usable width (1 m more than the current configuration) for safer launching and retrieving of vessels
- removal and rebuilding of NE sandstone wall immediately adjacent to the existing ramp to accommodate for widening of the ramp and to retain the heritage structure
- extending the toe of the ramp to RL -1.0 m AHD that provides a water depth of ~0.5 m at MLW, and is accommodating to the existing bed profile
- anchoring the ramp with mass concrete at the toe
- cast-in-situ concrete construction (approx. 200 mm deep) above MWL (approximately RL 0 m AHD), and precast concrete planks (also approx. 200 mm deep) below
- concrete would be cast with deep grooves moulded into the surface to promote self-cleansing by allowing drainage of excess water and debris
- rock scour protection along the exposed edges of the ramp, which would be grouted between individual rocks to improve trafficability and covered with sand where possible
- 1 m wide concrete stepped access alongside the ramp to allow public access onto the foreshore.

The detailed design Drawings are provided in **Appendix A**.

2.2 Construction Method

2.2.1 Construction Access

Vehicle access from McDougall Street Road can access the site via the driveway north of SFS. This vehicle access can be used by construction vehicles such as small excavators, dump trucks and concrete trucks. The access is typically gated and only accessible for maintenance vehicles.

2.2.2 Construction Sequence

It is expected that the proposed works would be constructed by hand, light machinery or small excavator.



The general recommended construction sequence for the boat ramp upgrade is as follows.

1. Area is closed to general public and traffic controls established.
2. Temporary access for construction equipment onto the site is constructed.
3. Document existing sandstone seawall in accordance with the recommendations of the Statement of Heritage Impact (SoHI).
4. Install a silt curtain around the work area to prevent siltation of the harbour during construction.
5. Demolition and removal of existing boat ramp.
6. Excavate to a batter no steeper than 1V:1.5H on northern side of ramp behind section of seawall to be removed. As the soil has been found to be contaminated, the material is not suitable for reuse in public open space and should be disposed of to an EPA approved landfill facility.
7. Remove existing seawall on northern side of ramp and stockpile sandstone blocks nearby for re-use in re-constructed seawall.
8. Excavate the boat ramp area to a slope of 1V:7H and to the levels indicated on the Drawings, and apply surface compaction. Dispose of excavated material in accordance with the site-specific construction environmental management plan (CEMP).
9. Re-instate removed seawall from Step 7 adjacent to the boat ramp in accordance with the design of the existing seawall using stockpiled sandstone blocks obtained from the earlier dismantling of the seawall.
10. Install drainage behind the seawall and weephole drainage through the seawall.
11. Backfill behind reconstructed seawall with free draining, washed, durable, single size gravel ('blue metal').
12. Apply engineered fill to the excavated boat ramp surface as indicated on the Drawings to achieve an even, compacted subgrade surface.
13. Lay non-woven geotextile fabric onto the engineered fill as indicated in the Drawings, allowing sufficient overlap to provide underlay for the proposed scour protection. Geotextile fabric should be laid onto the compacted subgrade surface with minimum overlap between adjacent geotextile rolls of 1 m.
14. Lay gravel subgrade to the levels and thicknesses indicated on the Drawings, and provide nominal compaction using an excavator bucket.
15. Place scour protection rock around the base of the boat ramp as indicated in the Drawings, with geotextile to be wrapped into the scour protection toe as indicated in the Drawings.
16. Pour mass concrete toe and place anchor bars in position.
17. Lay pre-cast concrete planks in position with stainless steel connector straps cast into the planks as indicated in the Drawings, working upward from the toe. Connect each plank as per the detail in the Drawings.
18. Place pre-cast concrete panels from upper portion of the ramp into position and complete connections as indicated in the Drawings.
19. Pour grout into the gaps between individual planks as indicated on the Drawings.
20. Provide formwork for the mass concrete steps adjacent to the ramp and pour mass concrete to provide access steps as indicated in the Drawings.
21. Turf provided at the crest of the seawall in the areas disturbed during construction.



22. Area is opened to general public.

2.2.3 Excavation Work

Excavation Extent

Material would be excavated from behind the existing seawall north of the ramp and below and around the boat ramp, with the batter to be determined by the Contactor.

The excavation would be approximately 20 m wide (perpendicular to the foreshore) and extend a distance of approximately 10 m along the foreshore. It is estimated that less than 100 m³ of fill material would be excavated.

Nature of Material

The material to be removed includes concrete, sandstone blocks, fill material and marine sediments. Generally, the fill material comprises silty sand and sandy material. The marine sediments comprise black silty sands and shells.

The report *Milson Park Boat Ramp, Preliminary Contamination Site and Acid Sulfate Soil Investigation* (Appendix B, Advisian 2018) indicated that the material exceeded the Health Investigation Levels C for public open space (HIL C) for lead and carcinogenic PAHs (relative to Benzo(a)pyrene TEQ), and potential acid sulfate soil material may be encountered.

Method of Removal, Transport and Disposal of Material

It is expected that conventional land-based plant and equipment such as excavators would be utilised in the excavation.

Sandstone blocks from the existing seawall would be reused in the realigned seawall.

Excavated material is not suitable for reuse in public open space due levels exceeding the HIL C criteria. Any excess fill destined for offsite disposal would be tested for potential contamination, classified, stored, transported, and disposed of at an appropriate waste facility in accordance with the NSW EPA (2014) Waste Classification Guidelines (refer **Section 4.6**). The excavated material is envisaged to be transported offsite by trucks.

2.2.4 Duration and Timing

As the site is relatively small, the duration of the site works including site establishment, excavation, construction works and site disestablishment, would not be expected to exceed 2 to 3 months.



2.3 Consideration of Alternative Options

2.3.1 The Do Nothing Option

If no action is taken, the boat ramp would continue to pose a risk to public safety as it is too narrow and steep to launch and retrieve safely large heavy vessels, and does not provide safe water access for the community.

2.3.2 Alternative Options Considered

As part of the Concept Phase, three layout options were developed initially in consultation with RMS:

- Option 1: On-ramp Pontoon NE Side of Ramp
- Option 2: Floating Rectangular Pontoon with Gangway
- Option 3: On-ramp Pontoon SW Side of the Ramp

Each of the three options has an A and B variation with regards to the location of the crest (and toe) of the ramp:

- Variation A: Move crest of ramp landward 2m and the toe of the ramp 5.5m seaward
- Variation B: Leave crest in its current position and extend the toe of the ramp seaward by 7.5m.

Following review of the options, SFS and Council both agreed that the use of a pontoon structure (Options 1, 2 and 3) is unfavourable for the following reasons:

- a pontoon would obstruct manoeuvring of SFS sailing vessels and potentially other vessels in the area
- widening the ramp to accommodate an on-pontoon is considered to encroach too far into community green space.

Both the SFS and Council have agreed that the use of stepped foreshore access would be a viable alternative. Both parties also agreed the usable ramp width of 5m proposed by Advisian would be suitable.

The Preferred Concept Design Option involved widening the ramp to the NE by 1m. This will allow for the 5m usable boat ramp width whilst also minimising intrusion into community green space. A 1.2 m wide set of sandstone access steps was originally to be constructed adjacent to the battered NE Wall of the ramp. The access steps would allow SFS club members and the general public to access the sandy foreshore area.

While the original Preferred Concept Design Option involved provision of access steps parallel to and offset from the ramp, an alternative was discussed at the Inception Meeting for the Detailed Design Phase which involves installing a 1 m wide concrete stepped access immediately adjacent



to the ramp with long runs and shallow risers to follow the grade of the ramp. The access steps would allow SFS club members and the general public to access the sandy foreshore area as well as improve safety when launching vessels. As the access steps are constructed at the same grade as the ramp, there would not be a significant fall height to the ramp, and therefore there would be no requirement to install a handrail. This alternative forms the basis of the preferred project proposal described in **Section 2.1**.



3 Environmental Planning

The NSW environmental planning legislative framework provides for the classification of developments, and the assessment of impacts from developments and activities. This framework comprises:

- Environmental Planning and Assessment Act (*EP&A Act*) 1979
- Environmental Planning and Assessment Regulation (*EP&A Regulation*) 2000
- Environmental Planning Instruments (EPIs) made under the *EP&A Act* (i.e. State Environmental Planning Policies (SEPPs), Regional Environmental Plans (REPs), and Local Environmental Plans (LEPs))
- other planning codes, policies, guidelines and strategies that relate to any proposed development of a particular site including Development Control Plans (DCPs) and Council codes and policies.

The North Sydney LEP 2013 and Sydney Regional Environmental Plan (SREP) (Sydney Harbour Catchment) 2005 both contain a variety of clauses that identify the requirement of consent for the proposed works.

Note the legislative framework for contaminated land and acid sulfate soil is covered in the report titled *Milson Park Boat Ramp, Preliminary Contamination Site and Acid Sulfate Soil Investigation* (Advisian, 2018) (refer **Appendix B**). For disposal of material off-site to an EPA approved landfill facility, compliance with NSW EPA guidelines would be required.

Further details on the legislative framework for heritage is provided in the *Statement of Heritage Impact, Milson Park Boat Ramp Upgrades* (Advisian 2018) (refer **Appendix C**)

3.1 State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)

ISEPP aims to facilitate the effective delivery of infrastructure across NSW.

Clause 68(4) of ISEPP permits development on any land for the purpose of wharf or boating facilities to be carried out by or on behalf of a public authority without development consent.

The proposed ramp access upgrade works would be considered as development of a port facilities associated with "(d) refuelling, launching, berthing, mooring, storage or maintenance facilities for any vessel" and "(e) sea walls or training walls" under ISEPP, and is to be carried out by North Sydney Council. Therefore, development consent is not required and the works are classified as an activity and can be assessed under Part 5 of the EP&A Act. Development consent is not required.

The proposal is not located on land reserved under the *National Parks and Wildlife Act 1974* (NPW Act) and does not affect land or development regulated by State Environmental Planning Policy No. 14 -Coastal Wetlands, State Environmental Planning Policy No. 26 -Littoral Rainforests, State



Environmental Planning Policy (State and Regional Development) 2011 or State Environmental Planning Policy (Major Development) 2005.

Part 2 of the ISEPP contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development.

3.2 State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)

SRD SEPP provides that development for the purpose of port and wharf facilities or boat facilities (not including marinas) carried out by or on behalf of a public authority that has a capital investment value of more than \$30 million is State significant infrastructure and would require approval from the Minister for Planning and Infrastructure under Part 5.1 of the EP&A Act.

The proposed Milson Park boat ramp has a capital investment value of less than \$30 million and does not trigger the State significant infrastructure provisions of the SRD SEPP.

3.3 State Environmental Planning Policy Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (SEPP)

The seawall is located within the boundary of the SEPP *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005* (SREP).

Under the SREP, the site is located within the zone *W1 Maritime Waters* and is in the vicinity of the *W8 Scenic Waters Active Use* zone.

The proposed development is consistent with the objectives of the SEPP as follows:

- Zone 'W1 Maritime Waters' including:
 - (a) *to give preference to and protect waters required for the effective and efficient movement of commercial shipping, public water transport and maritime industrial operations generally*
The proposal protects and maintains the effective movement of water transport to and from Sydney Harbour.
 - (b) *to allow development only where it is demonstrated that it is compatible with, and will not adversely affect the effective and efficient movement of, commercial shipping, public water transport and maritime industry operations*
The proposal would not result in any ongoing adverse impacts on the environment of the land or water. Appropriate safeguards would be applied to the work to minimise impacts in both construction and operation.
 - (c) *to promote equitable use of the waterway, including use by passive recreation craft*
The proposal would improve access and use of Sydney Harbour including by passive recreation craft.



■ **Zone W8 Scenic Waters: Passive Use:**

- (a) *to give preference to unimpeded public access along the intertidal zone, to the visual continuity and significance of the landform and to the ecological value of waters and foreshores*

The works are primarily water-based and therefore would not interfere with accessibility to the foreshore in operation. There would be some disruptions to public access to the foreshore during the construction period; however, this would not be long term. The ecological value of waters and foreshores would not be adversely affected in the long term. An aquatic ecology assessment has been undertaken which indicates that there would be no major long term harm to marine species as a result of the proposal. Marine and terrestrial ecology issues are discussed in section 4.3 and section 4.4 respectively. Any changes to access of the boat ramp as a result of construction works would be communicated to stakeholders and the community ahead of the work commencing.

- (b) *to allow low-lying private water-dependent development close to shore only where it can be demonstrated that the preferences referred to in paragraph (a) are not damaged or impaired in any way, that any proposed structure conforms closely to the shore, that development maximises open and unobstructed waterways and maintains and enhances views to and from waters in this zone.*

The replacement of an existing boat ramp with a boat ramp in a similar location ensures that access along the intertidal zone is not affected by the proposal and the visual continuity of the area is not adversely affected. The ecological values of the waterway will be maintained in the long term.

- (c) *to restrict development for permanent boat storage and private landing facilities in unsuitable locations*

The boat ramp would be used for access to and from the water.

- (d) *to allow water-dependent development only where it can be demonstrated that it meets a demonstrated demand and harmonises with the planned character of the locality*

The proposal is the replacement of an existing boat ramp. The need for the proposal is considered in Section 2.

- (e) *to ensure that the scale and size of development are appropriate to the locality and protect and improve the natural assets and natural and cultural scenic quality of the surrounding area, particularly when viewed from waters in this zone or areas of public access*

The scale and size of the development is appropriate to the locality. Visual impacts have been considered for the proposal and are discussed in section 4.8.

Under the SREP, the consent authority for land/water interface development is North Sydney Council. In addition, under the SREP, developments comprised of 'demolition (other than demolition of a heritage item)' and 'general restoration works', may be carried out without development consent. Under the SREP, development comprised of 'boat launching ramps (public)' may be carried out only with development consent.

However it is noted that development consent is not required under the SREP as the provisions of the ISEPP prevails.



No heritage items listed under the SREP are in the direct vicinity of the project or are at risk from the project.

3.4 North Sydney LEP 2013

The site of the Milson Park boat ramp lies within the boundary of the North Sydney LEP 2013. The LEP was gazetted on 13 September 2013 and was most recently updated on 17 January 2014.

The LEP lists Milson Park (I0301) as a heritage item which falls within the land use zone of *RE1 Public Recreation*.

The proposed works adhere to the following objectives of the zone *RE1 Public Recreation*:

- *To enable land to be used for public open space or recreational purposes.*
- *To provide a range of recreational settings and activities and compatible land uses.*
- *To protect and enhance the natural environment for recreational purposes.*
- *To ensure sufficient public recreation areas are available for the benefit and use of residents of, and visitors to, North Sydney*

It is noted that development consent is not required under the LEP as the provisions of the ISEPP prevail.

3.5 Other Relevant State and Commonwealth Legislation

3.5.1 Threatened Species Conservation Act (TSC Act) 1995

The *Threatened Species Conservation Act (TSC Act) 1995* outlines the protection of threatened species, communities and critical habitat in NSW. Schedules 1, 1A and 2 of the *TSC Act 1995* list endangered, critically endangered and vulnerable species and ecological communities. Schedule 3 of the *TSC Act 1995* lists key threatening processes (defined as processes that could adversely affect threatened species, populations or ecological communities or that cause a species, population or ecological community to become threatened). Part 3 of the *TSC Act 1995* allows for declaration of critical habitat for endangered species, populations and ecological communities and critically endangered species and ecological communities.

The *TSC Act 1995* also provides information on Species Impact Statements (SIS). The *EP&A Act 1979* requires a SIS be prepared in the event that an activity is being undertaken within a declared critical habitat or is likely to significantly affect threatened species, populations or ecological communities, or their habitats. In order to determine whether an activity is likely to significantly affect threatened species, populations or ecological communities, a seven-part test under Section 5A of the *EP&A Act 1979* is required for threatened species, populations or ecological communities that have the potential to be impacted by a proposal.

The potential impact of the proposal on threatened species has been assessed in **Section 4.3**. The proposed works would not have a significant impact on any species or community listed under the



Threatened Species Conservation Act 1995 (TSC Act), and therefore a Species Impact Statement is not required.

3.5.2 Fisheries Management Act 1994

The *Fisheries Management Act 1994* is administered by Department of Primary Industries (Fisheries NSW) and includes the need for permits under Part 7 for the following activities:

- dredging and/or reclamation
- temporarily or permanently obstructing fish passage
- harming marine vegetation.

Minor dredging would be required for the boat ramp foundation, toe and rock scour protection. No marine vegetation exists at the Site and no obstruction to fish passage is proposed.

Under Part 7 Section 200 of *Fisheries Management Act 1994*:

200 Circumstances in which a local government authority may carry out dredging or reclamation

- (1) *A local government authority must not carry out dredging or reclamation work except under the authority of a permit issued by the Minister.
Maximum penalty: 2,000 penalty units.*
- (2) *This section does not apply to:*
 - (a) *work authorised under the Crown Lands Act 1989, or*
 - (b) *work authorised by a relevant public authority (other than a local government authority).*
- (3) *This section has effect irrespective of any other Act to the contrary.*

As a local government authority, North Sydney Council requires a permit under Part 7 for dredging and/or reclamation and is required to consult with Fisheries NSW and consider matters raised for the proposed works.

3.5.3 Environmental Protection and Biodiversity Conservation Act (EPBC Act) 1999

The Federal Government enacted the *Environment Protection and Biodiversity Conservation Act (EPBC Act)* in 1999. The *EPBC Act* requires that proposals for development or “actions” that have, will have, or are likely to have a significant impact on any matter of national environmental significance are to be referred to the Commonwealth Environment Minister for consideration and, if appropriate, approval sought.

The *EPBC Act* identifies the following matters of national environmental significance:

- World heritage
- National heritage



- Wetlands of international importance
- Listed threatened species and communities
- Listed migratory species
- Protection of the environment from nuclear actions
- Marine environment.

The proposed would not have a significant impact on any of the above. Therefore, preparation of an Environmental Impact Statement (EIS) and referral to the Minister for approval are not required.

3.5.4 Confirmation of Statutory Position

An assessment of the relevant statutory planning instruments has concluded that the proposal can be carried out as development without consent under ISEPP and can be assessed under Part 5 of the EP&A Act by Roads and Maritime as a determining authority.

3.5.5 Construction Approval

Development and construction approval from Roads and Maritime is required for all waterside structures on Roads and Maritime land under the *Maritime Services Act (MS Act) 1935* and the *Management of Waters and Waterside Lands Regulation*.

For projects carried out by public authorities that do not require development consent, the authority has an obligation to assess the environmental impact of the project such as in the form of a REF. The final REF including plans and description of the project is to be provided to Roads and Maritime.

Prior to construction, a written confirmation to Roads and Maritime is required that the proposed development would comply with all relevant building standards and technical standards. The *Milson Park Boat Ramp Detailed Design Basis* (Advisian, 2018) prepared for Roads and Maritime has a statement of compliance to relevant standards.

Council, as proponent for the works, would be required to enter into a Licence to Construct and Licence to Use (AFL) with Roads and Maritime. All documents required under the AFL would need to be provided prior to any works commencing, e.g. Council and Contractor insurances. Notification from Council of commencement of the works is to be in line with the notification period outlined in the AFL.

3.6 Licenses and Approvals

The licences and approvals that must be obtained before development may be lawfully carried out are provided in Table 3-1.

**Table 3-1** **Summary of any licences and approval required**

Organisation Responsible	Approval/ Licence/ Compliance Required
EPA	Compliance for disposal of material off-site to an EPA approved landfill facility
Department of Primary Industries (Fisheries NSW)	Permit from Fisheries NSW on the proposed dredging.
RMS	<p>During development phase, provide a copy of final REF, including plans</p> <p>Prior to construction, provide written confirmation that the development will comply with all relevant building codes and technical standards.</p> <p>Council, as proponent for the works, would be required to enter into a Licence to Construct and Licence to Use (AFL) with Roads and Maritime as noted in Section 3.5.5.</p>



4 Assessment of Environmental Effects of the Proposal and Indicative Mitigation Measures

4.1 Air Quality

4.1.1 Existing Situation

The site is located approximately 2 km from Sydney's CBD. As such, air quality at the site is currently affected by emissions from a range of sources including cars, buses, trucks, boats and ferries etc.

4.1.2 Potential Impact

The excavation works would generate minimal amounts of dust. However, there is potential for dust to be produced from stockpiles of material.

Construction plant and equipment exhaust emissions would be similar to the emission from the ferries which pass within 350 m of the site daily, and the trucks which pass along the Bradfield Highway/Cahill Expressway within 300 m of the site daily. As such, the additional vehicles and construction equipment are expected to have a minor impact on the air quality at site.

4.1.3 Indicative Control Measures

The Contractor would be required to detail appropriate control measures for the potential impacts in the site-specific construction environmental management plan (CEMP). Indicative control measures are provided as follows:

- Stockpiles of excavated spoil and construction material would be kept to a minimum.
- Disturbed areas would be stabilised as soon as possible to prevent windblown dust. If required, water spray would be used to dampen stockpiles.
- All truck loads would be covered when moving spoil off site.
- All construction equipment and plant would be maintained in accordance with manufacturer's specifications.
- All work vehicles would be maintained.

4.2 Water Quality

4.2.1 Existing Situation

Local water quality is currently affected by stormwater pipe outlets located SW of the boat ramp, boat activity in Careening Cove and the overall conditions of Sydney Harbour in general. Soil and sediment disturbance is limited by a protective floating attenuator at the Royal Sydney Yacht



Squadron (Wudyong Point) and there are no signs of sand build up on one side of the ramp (that is typically observed at boat ramps that interrupt sediment transport processes).

4.2.2 Potential Impacts

During construction there is the potential for a reduction in water quality at the site due to increased sediment loads in the water. This would be caused by the disturbance of bed sediments and introduction of foreign sediment from excavation spoil and construction material. Foreign sediments could enter the water via runoff from stockpiled excavation spoil/construction material and the demolition and excavation of sections of the wall and ramp creating dust and/or spilling material into the water.

The project would have no significant long term effect on water quality at the site as the completed ramp and steps would not provide any new access for runoff or material that affects water quality. Geotextile filter fabric is proposed to prevent washout of bed material below the boat ramp and rock scour protection.

4.2.3 Indicative Control Measures

The Contractor would be required to detail appropriate control measures for the potential impacts in the site-specific construction environmental management plan (CEMP). Indicative control measures are provided as follows:

- Areas disturbed by excavation would be stabilised, and stockpiles removed as soon as practicable. While stockpiles remain on site, spray water will be used to minimise dust as required, or they will be covered to avoid erosion. Stockpiles will be placed as far away from the water's edge as is practical and with consideration to limiting impact on public areas.
- A sediment fence would be placed around any stockpiles to prevent sediment run-off into the Harbour.
- Regular inspection and maintenance of sediment fences and erosion controls would be conducted. Inspections would also take place after rainfall events.
- Plant and equipment would be inspected regularly to minimise the risk of oil and fuel leaks.
- No refuelling of plant or equipment would be undertaken onsite.
- A floating boom and silt curtain would be installed within the Harbour around the entire works to prevent the migration of fine sediments disturbed during construction activities. Regular inspection and maintenance would take place, or after rainfall events, during the construction works.
- Geotextile would be used to prevent dispersion of material where appropriate.
- Works would be postponed in the event of heavy or prolonged rainfall.



4.3 Marine Ecology

A desktop study was undertaken of available information and included searches of several online databases:

- *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (<http://www.environment.gov.au/erin/ert/epbc/index.html>);
- NSW Atlas of NSW Wildlife database (http://www.environment.nsw.gov.au/atlaspublicapp/UI_Modules/ATLAS_atlasreport.aspx#) and
- *Fisheries Management Act 1974*, Schedule 4 to 6 search (<https://legislation.nsw.gov.au/#/view/act/1994/38/full>)

A walkover visual inspection was undertaken on 19 October 2017.

A search of the NSW Wildlife Atlas (refer **Appendix D**), which reports recordings of threatened plant and animal species, indicated that there have been sightings of four threatened marine fauna species within a 10km² region around the site. None of these species are discussed further as the proposed works on the Milson Park boat ramp would not affect these species. No threatened marine flora species were identified in the study area.

A search of the site with a 1 km buffer in the *EPBC Act* protected matters database indicated that there are 13 threatened and/or migratory marine fauna species, or habitat for those species are likely to occur in the study area (refer **Appendix E**). The search results included two cetaceans (whales), three fish, three shark species and five turtles. None of these species are discussed further as the proposed works on the Milson Park boat ramp would not affect these species.

Several of the above mentioned species listed under the *EPBC Act* are also listed under the NSW *TSC Act* with the addition of one turtle, the New Zealand Fur-Seal, the Australian Fur-Seal and Dugong. The proposed works on the Milson Park boat ramp would not affect any of the additional species listed under the *TSC Act* so these are not discussed further.

Threatened species scheduled under the *FM Act* were identified via NSW Legislation online (refer **Appendix F**). The Milson Park boat ramp does not provide habitat for any of these species.

No populations or communities scheduled under the *FM Act* were identified in the study area. There were no threatened ecological communities scheduled under the *TSC Act* in the study area. However, all aquatic vegetation is protected under this *Act*.

A review of the NSW Primary Industries Estuarine Habitat Mapping and the onsite inspection does not indicate the presence of estuarine habitat in the Site area. The closest seagrass bed identified by the study was a seagrass bed of *Zostera* located in Neutral Bay approximately 450 m from the study site. The seagrass bed would not be impacted by the proposed boat ramp works.

4.3.1 Existing Situation

The intertidal zone of the existing boat ramp and seawall consists of weathered sandstone blocks and a concrete ramp. The most common organisms on the exposed surface of the seawall and ramp in the intertidal zone are limpets (*Cellana tramoserica*), acorn barnacles (*Chthamalus antennatus*) and Sydney rock oysters (*Saccostrea glomerata*).

The wall and most of the ramp are not submerged in low tide conditions (refer Figure 2) and provide minimal subtidal habitat to any threatened marine species.



Figure 2 Intertidal Zone of Boat Ramp and Seawall with limpets, barnacles and oysters

4.3.2 Potential Impacts and Indicative Control measures

The proposed works on the Milson Park boat ramp would result in the loss of some limpets (*Cellana tramoserica*), acorn barnacles (*Chthamalus antennatus*) and Sydney rock oysters (*Saccostrea glomerata*) from the worked sections of seawall and ramp.

All other threatened marine species listed in **Appendices D, E and F** would not be affected by the construction works and the proposed new ramp and stair sections of the seawall.

Generally, the aquatic habitat conditions at the site – particularly any aquatic vegetation, water depth, and permanence of water flow, would not be affected by the proposed works.

The Contractor would be required to detail appropriate control measures for the potential impacts in the site-specific construction environmental management plan (CEMP). Provided that



appropriate control measures are implemented there will be no significant impact on the marine ecology of the study site.

4.4 Terrestrial Ecology

A desktop study was undertaken of available information and included searches of several online databases:

- *Environmental Protection and Biodiversity Conservation Act 1999* Protected Matters Search Tool (<http://www.environment.gov.au/erin/ert/epbc/index.html>);
- NSW Atlas of NSW Wildlife database (http://www.environment.nsw.gov.au/atlaspublicapp/UI_Modules/ATLAS_/atlasreport.aspx#)

A walkover visual inspection was undertaken on 19 October 2017.

A search of the NSW Wildlife Atlas (refer **Appendix D**), which reports recordings of threatened plant and animal species, indicated that there had been sightings of:

- 4 threatened species of Terrestrial mammals
- 27 threatened species of birds.

A search of the site with a 1 km buffer in the EPBC (refer **Appendix E**) protected matters database indicated that there are:

- 4 threatened terrestrial mammal species or habitats for the species that are likely to occur in the area
- 34 threatened bird species or habitats for the species that are likely to occur in the area
- 2 threatened frog species or habitats for the species that are likely to occur in the area
- 10 threatened plant species or habitats for the species that are likely to occur in the area.

None of these species are discussed further as the proposed works on the Milson Park boat ramp and foreshore would not affect these species.

4.4.1 Existing Situation

The grass reserve behind the seawall can be seen in Figure 3. There are a number of mature trees located on the grassed reserve behind the seawall. However these trees are some 40 m from the Site.



Figure 3 **Grassed area behind the seawall**

4.4.2 Potential Impact

There is to be little impact to terrestrial ecology as the works will only effect a small area of the surrounding park. It is expected that at completion of the project, new grass will be laid to replace any damaged on excavated sections. No terrestrial fauna or endangered flora will be impacted.

4.4.3 Indicative Control Measure

A large strip of grassed area would be removed during the excavation. This grass is not of any specific natural significance and will be replanted after the completion of the project.

4.5 Noise and Vibration

4.5.1 Existing Situation

The boat ramp is located in Milson Park which people visit to enjoy the natural surroundings and atmosphere. The acoustic environment at the site comprises of the natural noises of the surrounding environment and anthropogenic noises from activities in and around the site. Man-made noise at the site includes activity from the Sydney Flying Squadron, Flying Bear Cafe, activity from the Kirribilli Marina, recreational boats, maintenance of the gardens and grassed areas at the site and car movements on McDougall St and Bradley Ave.

4.5.2 Potential Impacts

Noise during the construction phase has the potential to impact on the local environment. It is envisaged that construction would be carried out by excavators and trucks. Construction tasks which are likely to create the most disruption to acoustic amenity include:



- Demolition of existing seawall and ramp
- Excavation of soil and sediment
- Pumping of concrete.

Ground surface movements and vibration has the potential to damage or de-stabilise the existing seawall and structures adjacent to the site.

There are no anticipated long term effects of the project on noise and vibration.

4.5.3 Indicative Control Measures

The Contractor would be required to detail appropriate control measures for the potential impacts in the site-specific construction environmental management plan (CEMP). Indicative control measures are provided as follows:

- Construction activities would be undertaken during the following general hours as specified in the Interim Construction Noise Guideline (DECC, 2009b):
 - Monday – Friday – 7am – 6pm
 - Saturday – 8am – 1pm (where works are audible at a residence)
 - Sundays and public holidays – no work.
- Neighbours would be advised of the nature and duration of any works proposed to be undertaken outside these hours
- Workplace Health and Safety Regulations regarding workplace noise conditions would be met
- Any noise complaints received by the project manager would be assessed and directed to the Contractor for immediate action
- Sudden stop and start movements of tracked equipment shall be avoided to reduce transmission of ground vibrations
- If excessive vibration is occurring, demolition and excavation shall cease and further advice sought
- Detailed dilapidation report shall be undertaken on adjacent structures
- Silencing mechanisms should be used on construction equipment if possible.

As this area is of particular natural value to the community, additional efforts would be made to reduce the noise impacts from construction. The noise impacts from these activities are considered to be minor and temporary and there is no practical noise reduction control measure available apart from reducing the durations of the activity. All efforts will be made to limit noise producing activities to as short duration as possible.



4.6 Contamination

4.6.1 Existing Situation

A Preliminary Contamination Site Investigation has been undertaken for the proposed project area (refer **Appendix B**).

Based on the results of the investigation, the following can be concluded:

- Elevated concentrations of Pb exceeding the HIL C guidelines primarily occur in surface samples collected at boreholes and throughout the 1m of marine sediment sampled.
- Elevated concentrations of carcinogenic PAHs exceeding the HIL C occur throughout the sampled profile in terrestrial boreholes (0.0 to 2.1mBGL) and the 1m of marine sediment sampled.
- The detection of elevated concentrations of Pb and carcinogenic PAHs indicates soil and sediment material are not suitable for reuse on site and mobile concentrations of Pb may require remediation prior to disposal.

4.6.2 Potential Impacts

The disturbance of contaminated terrestrial soils and marine sediments can potentially have negative environmental consequences at a range of spatial and temporal scales. The remobilisation or exposure of contaminated sediments can allow previously bound chemicals to become aqueous and bioavailable to a localised trophic food web (Burton and Johnston 2010). Heavy metal contamination can bioaccumulate in the tissues of organisms and propagate through trophic levels posing risks to human health (Tao *et al.* 2012).

During construction, disturbed terrestrial soils can subside or be eroded involving deposition of soils into the intertidal zone. Intertidal excavation can disturb and resuspend marine sediments. This could result in both a potential turbidity and contamination issue with localised degradation of surface water quality with associated impacts on the intertidal and subtidal ecological communities possible.

Once work is completed, the proposed ramp upgrade and stepped access would provide a boat ramp that is 1 m wider and extends to -1.0 m AHD. This would reduce direct contact with sediments during launching of boats.

4.6.3 Indicative Control Measures

The Contractor would be required to detail appropriate control measures for the potential impacts in the site-specific construction environmental management plan (CEMP). Indicative control measures are provided below.



- A floating boom and silt curtain would be installed within the Harbour around the entire works to prevent the migration of fine sediments disturbed during construction activities. Inspection and maintenance would take place regularly, or after rainfall events, during the construction works.
- Excavation and construction works should be staged such that exposed underlying sediments can be covered as soon as practicable.
- Stockpiles will be placed as far away from the water's edge as is practical and with consideration to limiting impact on public areas.
- A sediment fence would be placed around any stockpiles to prevent sediment run-off into the Harbour.
- For disposal of material off-site, additional insitu and stockpile analytical testing would be required prior to disposal to an EPA approved landfill facility. The material would also need to comply with EPA's Waste Classification Guidelines Part 4: Acid Sulfate Soils.

4.7 Acid Sulfate Soils

4.7.1 Existing Situation

A Preliminary Acid Sulfate Soil (ASS) Investigation has been undertaken for the proposed project area (refer **Appendix B**). A summary of the findings is provided below.

Actual ASS was not encountered, however, potential ASS was identified in marine like soils located below 1.5 m within terrestrial boreholes and marine sediments with %sulfur (%S) greater than the Acid Sulfate Soil Manual guideline of 0.03 %S in seven samples. The %S however, is neutralised by shell carbonate content resulting in net acidity less than the laboratory detection level of 0.02 %S in all but two samples: BH01/2.3-2.45 and PC01/0.8-1.0). The net acidity for these two samples was above the Acid Sulfate Soil Manual action criteria of 0.03 %S and would require liming rates of 21 kg CaCO₃/t and 12 kg CaCO₃/respectively.

4.7.2 Potential Impacts

Exposure of soils with ASS risk could occur during the excavation and construction works. These soils contain iron sulphide material and can pose a considerable environmental risk when exposed to air for extended periods.

When exposed acid sulfate soils are re-immersed, toxic concentrations of metals stripped from the soil are released into water bodies, altering the pH of the waterways. This can potentially affect water quality and may adversely impact on aquatic organisms (Ahern *et al.*, 1998).

4.7.3 Indicative Control Measures

As the ASS results exceeded the ASSM action criteria, an ASSMP would need to be developed. However as the proposed disturbance is likely to be less than 1000 tonnes, the ASSMP would not be required to be very detailed.



The ASSMP would be developed in accordance with EPA guidelines and the Acid Sulfate Soil Manual (Stone *et al.*, 1998) and would include the following:

- review of all relevant investigations studies completed for the site on acid sulfate soils;
- development of an acid sulfate soils classification system appropriate to the site;
- establishment of the extent and relative environmental risk of acid sulfate soils to be encountered by the works;
- description of strategies and procedures to prevent, mitigate and manage acid sulfate soils;
- development of a preferred strategy for managing acid sulfate soils encountered during the completion of the works;
- design of a monitoring program to assess the effectiveness of these strategies and provide early warning of potential problems; and
- development of contingency procedures to minimise potential adverse effects arising from a failure of these strategies to predict or control acid generation.

4.8 Access/Traffic

4.8.1 Existing Situation

The boat ramp is located within a recreation park area which people visit to enjoy the natural surroundings. Road access for the Site is a driveway off McDougall Street located west of SFS with restricted access. The users of this section of McDougall Street are generally local residents accessing their houses or visitors to the park and Sydney Flying Squadron.

Harbour access from the park is available via the boat ramp along the waterfront. SFS access the water via the ramp mainly at weekends for competition.

4.8.2 Potential Impacts

Construction vehicles are envisaged to access Milson Park via an access road on McDougall Street next to the SFS. This would not affect street parking along McDougall Street but would affect the use of the park within the construction work zone.

The upgrade works on the boat ramp area would inhibit public users from accessing the water with or without craft from the park.

4.8.3 Indicative Control Measures

The Contractor would be required to detail appropriate control measures for the potential impacts in the site-specific construction environmental management plan (CEMP). Indicative control measures are provided below.

- Adjacent landholders would be notified of potential traffic disruptions prior to construction



- Park users and SFS members would be notified of closure of the ramp and construction work zone
- Work should be completed during periods of lower ramp usage, e.g. winter
- Construction work zone to be closed to public with appropriate fencing and signage
- Construction vehicles to park in designed parking areas approved by the Council.

4.9 Visual Impact

4.9.1 Existing Situation

Milson Park is a green space that overlooks Sydney Harbour from Careening Cove. The park itself features a palm tree line at the SW end of the park, approximately 50m from the seawall, as well as two large garden beds further into the park. It is considered to hold natural beauty and importance to the local surroundings.

4.9.2 Potential Impact

The upgraded structure will have little consequence to the overall visual outlook of Milson Park. Plans for the rebuilt seawall to match the existing seawall with the same or similar sandstone blocks will help the upgraded structure blend in with the original wall. The proposed ramp upgrade and concrete step would provide visual improvement to the existing concrete ramp.

The works and excavation will destroy some turf on the foreshore which may not be visually pleasing during the construction period.

Visual impacts may occur during the construction period as the works zone will prohibit some views of Careening Cove from Milson Park. The impact is considered to be minor and is only temporary.

4.9.3 Indicative Control Measure

The Contractor would be required to detail appropriate control measures for the potential impacts in the site-specific construction environmental management plan (CEMP). Indicative control measures are provided below.

- Best efforts to mimic the existing seawall will be made in the reconstruction of new sections using existing sandstone blocks.
- The works zone will be kept to one side of the seafront, leaving plenty of room for unobstructed views of Sydney Harbour.
- Any turf destroyed under construction will be replaced, aiming to keep the foreshore a green space.



4.10 Heritage Impact

An Assessment of Significance and a Statement of Significance has determined that Milson Park is considered to be *"historically"*, *"aesthetically"* and *"socially representative regionally"*. A Statement of Heritage Impact has been prepared and deemed the proposed works as suitable under the relevant legislative and statutory framework (refer **Appendix C**).

4.10.1 Existing Situation

The site is located within the curtilage of the heritage listed (landscape) *"Milson Park"* (Item I0301) listed in Schedule 5 of the NSLEP 2013.

The following physical description of *"Milson Park"* is an excerpt from its LEP listing (NSLEP 2013):

"A flat grassed area of open space bound by roadways and a seawall at Careening Cove. It contains garden and trees in landscaped beds bound by low walls of bush rock (sandstone) and has two small amenities blocks. It is bordered by a continuous line of trees around the boundary."

Based on the abovementioned physical description, it may be ascertained that the following three (3) significant landscape and precinct elements comprise *"Milson Park"*:

- Seawall
- Landscaped beds (containing garden and trees)
- Line of Trees (bordering the boundary).

The Milson Park site is located in the immediate vicinity of the following heritage items, listed in Schedule 5 Part 1, of the North Sydney Local Environmental Plan 2013 (the NSLEP 2013), namely:

- "Low Level Sewage Pumping Station No 33" (Item No I0267);
- "Sydney Flying Squadron Ltd building" (Item No I0268);
- "Ensemble Theatre" (Item No I0269); and
- "Careening Cove slipways and seawall east end" (Item No I0184).

The site is also located within the *"Careening Cove Heritage Conservation Area"* (CA10), listed under Schedule 5, Part 2, of the NSLEP 2013.

4.10.2 Potential Impact

The proposed development will have no impact on the heritage conservation values of *"Milson Park"*. Rather, it is considered the proposed Upgrade will ensure it improves its user functionality and thus further enhancing its social and cultural significance to the LGA of North Sydney.

Minor and temporary impacts will only occur to the Seawall within *"Milson Park"* with a small area proposed for minor demolition to extend and widen the boat ramp to the north-east by 1m and



for the construction of access steps so patrons can gain safe access to the sandy foreshore area. The reuse of the dismantled sandstone to enlarge the Ramp is a sound conservation practice.

There are no known archaeological sites or Aboriginal sites and places that are expected to be impacted by the proposed development.

Therefore, it is considered that on heritage grounds, the proposed development is supported.

4.10.3 Indicative Control Measure

The Contractor would be required to detail appropriate control measures for the potential impacts in the site-specific construction environmental management plan (CEMP).

The construction, while being supported under heritage grounds, should aim to protect the cultural importance of the seawall. As such, a number of mitigation measures are recommended in dealing with this risk.

Prior to construction, an archival photographic record should be prepared in accordance with the relevant requirements of the NSW Heritage Office (2006) guidelines for the *Photographic Recording of Heritage Items Using Film or Digital Capture*.

As part of the deconstruction of the seawall, all useable sandstone blocks will be removed in a way that reduces total damage. This is so that the existing sandstone blocks can be put back into place along the new boat ramp and step boundary, aiming to reduce historical impact. If additional blocks are required, best efforts to procure and replicate the surrounding sandstone are to be made.

In the event that any potential archaeological 'relics' are disturbed and identified within the site during works, all work in the area shall cease and the Heritage Division along with a qualified archaeologist are to be consulted to determine an appropriate course of action. This protocol is to be included in the CEMP.

4.11 Waste

4.11.1 Existing Situation

The site is affected by relatively small quantities of general rubbish and debris from recreational users of the park and waterways.

4.11.2 Potential Impact

The proposed works would generate the following waste:

- Concrete and sandstone block/boulders unsuitable for reuse
- Excavated fill material unsuitable for reuse
- Cleared vegetation and plant material



- General construction waste.

4.11.3 Indicative Control Measures

The Contractor would be required to detail appropriate control measures for the potential impacts in the site-specific construction environmental management plan (CEMP). Indicative control measures are provided below.

- Soils destined for offsite disposal would be tested for potential contamination, classified, stored, transported, and disposed of at an EPA approved waste facility in accordance with the NSW EPA (2014) Waste Classification Guidelines
- Sandstone blocks would be reused in the rebuilding of the seawall as much as practicable
- Waste would be managed in accordance with the philosophy of the waste minimisation hierarchy as follows:
 - avoidance, where possible;
 - treated, as required and reused onsite;
 - recycled, either within the site or offsite; and
 - where other alternatives are not possible, wastes would be disposed of at an EPA approved waste facility.



5 Consideration of Impacts

5.1 Clause 228 of the EP&A Regulation 2000

Clause 228 of the *EP&A Regulation 2000* provides a list of factors that must be considered in determining the likely impacts of an activity on the natural and built environment and therefore the necessity for an EIS.

Following review of Clause 228 Factors in the section below, the proposed works are not considered to result in significant detrimental environmental impacts. Therefore it is concluded that an Environmental Impact Statement (EIS) is not required and this REF is considered adequate.

5.1.1 Consideration of Clause 228 of the EP&A Regulation 2000 Factors

a. Any Environmental Impact on a Community?

There would be no adverse environmental impacts on the community (refer **Section 4.9**). Safety, visual and recreational amenity at the site would be increased as a result of the proposal.

b. Any Transformation of a Locality?

The proposal would lead to a positive transformation of the site. This would include the widening of the current boat ramp and concrete steps to enhance safety for ramp users.

c. Any Environmental Impact on the Ecosystems of the Locality?

There would be both beneficial and potentially detrimental impacts on the ecosystem of the locality. However, by implementing the appropriate control measures as described in **Section 4.3** and **4.4**, no net change to the ecosystem of the locality will result from the proposed works.

Generally, the aquatic habitat conditions at the site – particularly any aquatic vegetation, water depth, and permanence of water flow, would not be affected by the proposed boat ramp upgrade works.

A loss of marine growth on the sections of wall and ramp requiring removal would occur. However, the large majority of the seawall adjacent to the boat ramp would remain unchanged and the effect on the ecosystem is considered minor.

A review of the NSW Primary Industries Estuarine Habitat Mapping and the onsite inspection does not indicate the presence of estuarine habitat in the Site area. The closest seagrass bed identified by the study was a seagrass bed of *Zostera* located in Neutral Bay approximately 450 m from the study site. The seagrass bed would not be impacted by the proposed boat ramp works.



d. Any Reduction of the Aesthetic, Recreational, Scientific or Other Environmental Quality or Value of a Locality?

There would be no reduction in the aesthetic, recreational, scientific or other environmental quality or value of the locality (refer **Sections 4.8, 4.9 and 4.10**).

If anything, the proposal would increase the aesthetic, recreational and environmental quality and value of the locality. This would be due to:

- The increased recreational quality, value and safety of the boat ramp by increasing accessibility by means of a widened ramp and new steps adjacent to the ramp
- The environmental effects on the area as described in **Section 5.1.1c**.

e. 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?

There would be no harm to any items of significance (refer **Section 4.9**).

f. Any Impact on the Habitat of Protected Fauna (Within the Meaning of the National Parks And Wildlife Act (NP&W Act) 1974)?

There would be no impact on the habitat of protected fauna (refer **Section 4.3 and 4.4**).

g. Any Endangering of Any Species of Animal, Plant or Other Form of Life Whether Living on Land, In Water or In the Air?

There would be no endangering of any species of animal, plant or other form of life (refer **Section 4.3 and 4.4**).

h. Any Long Term Effects on the Environment?

The proposal would lead to long term positive effects on the environment by providing an upgraded ramp and seawall.

i. Any Degradation of the Quality of the Environment?

There would be no long term degradation of the quality of the environment. Short term degradation to water quality and air quality are possible but these would be controlled through the implementation of appropriate control measures as described in **Section 4.1 and 4.2** of this REF.

j. Any Risk to the Safety of the Environment?

There would be a potential short term risk to the safety of the environment during the construction works. However, this risk would be minimised by the implementation of the controls and appropriate control measures as described in **Section 4** of this REF.



k. Any Reduction in the Range of Beneficial Uses of the Environment?

There would be a short term reduction in the beneficial uses of the environment as the grassed strip of land behind the boat ramp, the boat ramp area and use of the boat ramp would be inaccessible to the public during construction.

The long term effect of the construction would be that the park and waterfront will be more safely accessible via the boat ramp and adjacent steps.

l. Any Pollution of the Environment?

There would be potential short term water, air and noise pollution of the environment during the construction works. However, potential impacts would be minimised by the implementation of the controls and appropriate control measures as described in **Sections 4.1, 4.2 and 4.4** of this REF.

m. Any Environmental Problems Associated with the Disposal of Waste?

Disposal of waste would be managed with the controls and appropriate control measures as described in **Section 4.11** of this REF and is not expected to cause any environmental problems. Any material destined for offsite disposal would be tested for potential contamination, classified, stored, transported, and disposed of at an appropriate waste facility in accordance with the NSW EPA (2014) Waste Classification Guidelines.

n. Any Increased Demands on Resources (Natural or Otherwise) that are or are Likely to Become in Short Supply?

The proposed works may require the sourcing of sandstone blocks to supplement the existing sandstone blocks on site. However, the sourcing of this material would not result in the increased demand of resources that are or are likely to become in short supply.

o. Any Cumulative Environmental Effect with Other Existing or Likely Future Activities?

There would be several beneficial cumulative environmental effects. These include the reduction of safety and environmental risks, accessibility via the new steps and improved access by SFS.

5.2 Environment Protection and Biodiversity Conservation Act (EPBC Act) Act 1999

Matters of National Environmental Significance must be considered as a requirement of the *EPBC Act 1999*. No matters of National Environmental Significance would be triggered by the proposed works.



5.2.1 Consideration of Commonwealth *EPBC* Act 1999 Factors

a. Any Environmental Impact on a World Heritage Property?

There would be no impact on any World Heritage property.

b. Any Environmental Impact on a National Heritage Place?

There would be no impact on any National Heritage place.

c. Any Environmental Impact on Ramsar Wetlands of International Importance?

The proposal would not impact any Ramsar wetlands of international importance.

d. Any Environmental Impact on Commonwealth Listed Threatened Species and Ecological Communities?

There would be no impact on Commonwealth listed Threatened Species or Ecological Communities.

e. Any Environmental Impact on Commonwealth Listed Migratory Species?

There would be no impact on Commonwealth listed Migratory Species.

f. Does Any Part of the Project Involve a Nuclear Action?

This project does not involve a nuclear action.

g. Any Environmental Impact on the Commonwealth Marine environment?

There would be no impact on the Commonwealth Marine environment.

h. Any Impact on Commonwealth Land?

There would be no impact on Commonwealth land.



6 Construction Environmental Management Plan

A site-specific construction environmental management plan (CEMP) would be prepared and implemented by the Contractor prior to construction, with control maintained for the duration of works. The Contractor is responsible for selecting the appropriate control measures for the potential impacts in the CEMP. The CEMP would incorporate all control measures required for the potential impacts and would be approved by North Sydney Council (or a representative appointed by Council) prior to commencement of construction.

The site-specific CEMP would ensure that:

- Appropriate control measures for the potential impacts are implemented on the site;
- Activities are carried out with due diligence; and
- All activities comply with relevant environmental legislation including conditions of approval, Acts and Regulations, and Standards and Best Management Practices.



7 References

Ahern, C.R., Stone, Y., and Blunder B (1998) 'Acid Sulfate Soils Assessment Guidelines', Published by the Acid Sulfate Soil Management Advisory Committee, Wollongbar, NSW, Australia.

Burton GA, Johnston EL (2010) Assessing contaminated sediments in the context of multiple stressors. *Environmental Toxicology and Chemistry* **29**, 2625-2643.

Tao Y, Yuan Z, Xiaona H, Wei M (2012) Distribution and bioaccumulation of heavy metals in aquatic organisms of different trophic levels and potential health risk assessment from Taihu lake, China. *Ecotoxicology and Environmental Safety* **81**, 55-64.