NSW EPA

Your reference SSI 6727
Our reference: EF13/5146, SF15/839
Contact: J Goodwin 9995 6838

Andrew Hartcher
Department of Planning and Infrastructure
GPO BOX 39
SYDNEY 2001

Dear Mr Hartcher

**SSI 6727 – BARANGAROO FERRY TERMINAL EIS**

I am writing to you in reply to your invitation to the EPA dated 10 December 2014 to comment on the EIS for Barangaroo Ferry Terminal construction and operation phases of the project.

The EPA has identified the following site specific concerns based on the information in the Environmental Impact Statement as obtained from the Department's Major Projects web site:

(a) construction and construction-related noise and vibration impacts (including recommended standard construction hours and intra-day respite periods for highly intrusive noise generating work);

(b) construction phase dust control and management, including controls for works over harbour waters

(c) construction phase runoff and sediment control and management of a harbour side work site;

(d) construction related waste handling and management, particularly concrete waste and rinse water;

(e) construction phase chemical handling and storage,

(f) construction phase air quality impacts;

(c) operational noise and vibration impacts, including vessel 'overnighting' and maintenance; and

(d) operational fuel storage and handling, effluent storage and discharge, and energy efficiency.

The EPA expands on its concerns in Attachment A to this letter.

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Should you require clarification of any of the above please contact John Goodwin on 9995 6838.

Yours sincerely

10-2-15

**FRANK GAROFALOW**
**Manager, Metropolitan Infrastructure**
**NSW Environment Protection Authority**

**encl. Attachment A**

## ATTACHMENT A

## - ENVIRONMENT PROTECTION AUTHORITY COMMENTS –

## BARANGAROO FERRY TERMINAL

### 1. General

The EPA considers that the project comprises distinct phases of construction and operation and has set out its comments on that basis.

The EPA notes the proximity of surrounding residences and tourist accommodation on both sides of Darling Harbour, including residences nearing completion at Barangaroo and likely to become occupied during the course of construction.

The EPA emphasises that it does not review or endorse environmental management plans or the like for reasons of maintaining regulatory 'arms length'. And, has not reviewed the environmental management plans forming part of or referred to in the EIS.

### 2. Construction phase

The EPA anticipates that construction and construction-related activities will be undertaken in an environmentally responsible manner with particular emphasis on –

- compliance with recommended standard construction hours,
- intra-day respite periods from high noise generating construction activities (including jack hammering, rock breaking, pile boring or driving, saw cutting),
- feasible and reasonable noise and vibration minimisation and mitigation,
- effective dust control and management for both landward and on/over water activities,
- runoff and sediment control and management of a harbour-side work site,
- waste handling and management, particularly concrete waste and rinse water,
- chemical handling and storage (including self-bunded storage facilities protected from rainfall ingress and secure against unauthorised access),
- air quality impacts.

2.1 <u>noise and vibration</u>

EIS Appendix E *Technical Paper: Noise and Vibration Impact Assessment* provides a detailed assessment of construction and construction-related noise and vibration impacts predicted during the course of the project.

The EPA considers that the project is likely to generate significant noise and vibration impacts on surrounding residences and other noise sensitive land uses during construction. The EPA provides guidance material available on its web site including downloadable copies of –

- the Interim Construction Noise Guideline (2009), and

- Assessing Vibration: a technical guideline (2006).

*2.1.1 general construction hours*

EIS Appendix E section 2.3.2 (last para, p.14) indicates that it is proposed to install 30 piles for each of the 2 wharves comprising stage 1 of the ferry hub project. And, Table 4 outlines the nature and duration of work involved to install each of those piles.

EIS section 6.1.4 (4th dot point, p.130) adopts the recommended standard construction hours set out in Table 1 to the Interim Construction Noise Guideline (ICNG). However, the EIS goes on to indicate the prospect that certain construction and construction-related work may need to be undertaken at night particularly where on water activities require calm wind and sea conditions typically occurring at night.

The EPA has (in relation to other infrastructure projects) raised with both the proponent and RMS the expectation that 'out of hours' work (and especially night work) be kept to an absolute minimum and then only when fully justified on grounds other than production.

The EPA is concerned that the proponent:

(a) proposes an undefined rather than a targeted extension of construction hours without adequate justification; and

(b) may not have adequately investigated work methods that would obviate the need to undertake 'out of hours' work, especially at night.

EIS section 4.2.1 (p.67) provides an unclear commitment to respite nights. If night work is undertaken, the EPA considers that–

- there should not be more than 2 nights of work during any single week,
- night work should not be undertaken during a public holiday,
- night work should not be undertaken on any Sunday night (i.e. 10.00pm Sunday through to 7.00 am Monday morning), and
- there should be not less than a 3 night respite between the last night of work during on e week and the first night of work during the following week.

EIS Appendix E section 2.3.2 (p.15) under the heading 'Mooring of barges' refers to the potential to use a jack-up barge on which to site the piling rig. The EPA understands that jack-up barges raise the barge to provide a stable work platform above the influence of wave action. And thus, is unclear why any piling would need to be undertaken during evening or night-time (i.e. 'out of hours').

The EPA understands that a number of piles (including the piles for each vessel arrestor system) may be able to be undertaken by means of a land-based piling rig. And, would not support such piles being installed other than during standard hours.

**Recommendation**

The proponent be required to :

(a) comply with the standard construction hours as recommended in Table 1 Chapter 2 of the Interim Construction Noise Guideline, July 2009 except where any deviation from those hours is -

  (i) fully justified in consultation with surrounding residents, and

(ii) limited to specific high noise impact works subject to an explicitly limited duration in the context of the justification referred to in (i) above;

(b) undertake night-time work on not more than 2 nights during any single week and then only to undertake such work as is unable to be undertaken during standard hours due to wind and sea conditions;

(c) not undertake night work on a Sunday night/Monday morning or during a public holiday;

(d) provide respite of not less than 3 nights between the last night of work during one week and the first night of work during the week immediately following;

(d) undertake as much of the piling work as is practicable from the land and or a jack-up barge so as to avoid the limitations wind and sea conditions would impose on piling rigs mounted on barges; and

(e) only undertake impact or hammer piling during standard hours and under no circumstances during night-time.

*2.1.2 intra-day respite periods*

ICNG section 4.5 specifies construction activities proven to be particularly annoying and intrusive to nearby residents and school students. The EPA anticipates that those activities generating noise with particularly annoying or intrusive characteristics would be subject to a regime of intra-day respite periods where –

(a) they are only undertaken after 8.00 am,

(b) they are only undertaken over continuous periods not exceeding 3 hours with at least a 1 hour respite every three hours, and.

(c) 'continuous' means any period during which there is less than an uninterrupted 60 minute respite between temporarily halting and recommencing any of the work referred to in ICNG section 4.5

**Recommendation**

The proponent be required to schedule intra-day 'respite periods' for construction activities identified in the Interim Construction Noise Guideline as being particularly annoying to noise sensitive receivers, including surrounding residents and tourism destinations.

*2.1.3 queuing and idling construction vehicles and vessels*

The EPA is aware from previous major infrastructure projects that community concerns are likely to arise from noise impacts associated with the early arrival and idling of construction vehicles (including concrete agitator trucks) at the development site and in the residential precincts surrounding that site.

**Recommendation**

The proponent be required to ensure construction vehicles (including concrete agitator trucks) and vessels involved in construction and construction-related activities do not arrive at the project site or in surrounding residential precincts outside approved construction hours.

2.1.4 demolition of existing wave baffle

The EPA understands that the King Street wave baffle and deck above is proposed to be demolished.

The EPA further understands that noise impacts associated with pile hammer extraction of piles can be avoided by using divers to cut off piles at sea bed level.

**Recommendation**

The proponent be required to remove piles associated with demolition of the King Street wave baffle using the least noisy feasible and reasonable method.

2.2 Air quality impacts

The EIS indicates that emissions to air during construction are likely to include:

- particulate matter from various construction related activities (loading and transfer of material from trucks or barges, and potential demolition of the King Street Wharf wave baffle); and
- emissions from the combustion diesel and petrol within construction vehicles, vessels, plant and equipment.

**Recommendation**

The proponent be required to ensure –

(a) Diesel fuel combusted in mobile plant has a maximum fuel sulphur content of 10 mg/kg (10 ppm); and

(b) all non-road diesel plant and equipment complies with the relevant requirements of the *NSW Government Resource Efficiency Policy*.

dust

Whilst the EPA understands that the proponent does not anticipate significant dust, the EPA considers dust control and management to be an important air quality issue during any site excavation and subsequent construction.

**Recommendation**

The proponent should commit to:

(a) minimising dust emissions on the site, and

(b) preventing dust emissions from the site.

2.3 Runoff and sediment control and management

The Managing Urban Stormwater Soils and Construction, 4th Edition published by Landcom (the so-called 'Blue Book') provides guidance material for achieving effective erosion and sediment control on construction sites.

The EPA is mindful that construction will occur over and in immediate proximity to harbour waters and that excavation is likely to be of a minor nature. Nevertheless, the EPA emphasises the importance of daily inspection of erosion and sediment controls which is fundamental to ensuring timely maintenance and repair of those controls.

2.4 Acid Sulfate Soils

EIS section 6.12.1 acknowledges the risk of encountering acid sulfate soils and potential acid sulfate soils during project construction. And, section 6.12.2 acknowledges the risk that construction may disturb acid sulfate soils.

Any potential acid sulfate soils that need to be excavated or disturbed as part of the site redevelopment must be managed in accordance with the *Waste Classification Guidelines Part 4: Acid Sulfate Soils* which are available at the following web page:

http://www.environment.nsw.gov.au/resources/waste/08446acidsulfsoils.pdf

If Acid Sulfate Soils (ASS) or Potential Acid Sulfate Soils (PASS) are to be removed from the site for disposal there is only one landfill currently licensed to accept that type of waste.

**Recommendation**

Consideration be given to requiring the proponent to assess and manage any acid sulfate soil (ASS) and potential acid sulfate soil (PASS) in accordance with:

(a) the 1998 *Acid Sulfate Soils Manual* published by the NSW Acid Sulfate Soil Management Advisory Committee (ASSMAC) and ;

(b) the EPA's *Waste Classification Guidelines Part 4: Acid Sulfate Soils*.

2.5 Waste control and management (general)

All wastes generated during the project must be properly assessed, classified and managed in accordance with the EPA's guidelines to ensure proper treatment, transport and disposal at a landfill legally able to accept those wastes.

The EPA anticipates that during the course of the project concrete deliveries and pumping are likely to generate significant volumes of concrete waste and rinse water. The proponent should ensure that concrete waste and rinse water is not disposed of on the project site and instead that –

(a) waste concrete is either returned in the agitator trucks to the supplier or directed to a dedicated watertight skip protected from the entry of precipitation, and

(b) concrete rinse water is directed to a dedicated watertight skip protected from the entry of precipitation or a suitable water treatment plant.

The EPA further anticipates that, without proper site controls and management throughout the course of the project –

(a) construction materials and waste may be introduced into or onto harbour waters, and

(b) mud and waste may be tracked off the site.

**Recommendation**

The proponent should be required to ensure that :

(1) all waste generated during the project is assessed, classified and managed in accordance with the "*Waste Classification Guidelines Part 1: Classifying Waste*" (Department of Environment Climate Change and Water, December 2009);

(2) material is not placed or stored on the project site (including on a vessel, work boat or barge engaged in project construction or construction-related work) in a position where it is likely to fall, descend, be washed, be blown or percolate into the harbour;

(3) a dedicated self-propelled work boat is available on the project site at all times to provide a timely response to the containment and clean up of any spills or leaks into or onto harbour waters;

(4) concrete waste and rinse water are not disposed of on the development site;

(5) the body of any vehicle, trailer, barge or vessel, used to transport waste or excavation spoil from the premises, is covered before leaving the premises to prevent any spill or escape of any dust, waste, or spoil from the vehicle, trailer, barge or vessel; and

(6) mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorised plant leaving the site, is removed before the vehicle, trailer or motorised plant leaves the project site.

## 3. Operational phase

The Ferry Terminal will represent a significant long-term infrastructure investment with potentially enduring long-term environmental impacts.

The EPA considers that environmental impacts that arise once the new ferry terminal commences operation can largely be averted by responsible environmental management practices, particularly with regard to:

(a) feasible and reasonable noise avoidance and minimisation; and

(b) ferry re-fuelling operations being undertaken at the ferry base at Mort Bay,

(c) sewage effluent pump out,

(d) ferry and wharf cleaning and maintenance, and

(e) energy and water conservation.

### 3.1 Noise and vibration impacts (general)

EPA is aware from long experience that significant risks of unacceptable noise impact arise from inadequate noise management and mitigation measures in conjunction with the operation of infrastructure projects. The EPA has been obliged to undertake extensive investigation of ongoing complaints about avoidable noise impacts from poorly designed and managed public infrastructure.

The EPA understands from EIS section 4.2.2 (p.71) that navigational rules require ferry masters to use the ferry horn to signal certain vessel manoeuvres, including reversing.

EIS section 4.2.2 (p.70) indicates that a number of vessels will layover at night and that start up procedures would typically occur from about 5.30 am each morning but occasionally as early as 4.30 am.

The EPA acknowledges that vessels on 'extended' layover are proposed to be connected to shore-based power during that layover. However, the EIS does not appear to define what is meant by the term 'extended layover although.

The EPA strongly encourages the proponent to ensure that feasible and reasonable operational noise control and management measures include establishing and fostering a good relationship with noise sensitive receivers, especially surrounding residents. And that the proponent –

(a) facilitates the logging of noise complaints, and

(b) provides an active and timely response to any such complaints.

**Recommendation**

The proponent be required to avert unacceptable noise impacts on surrounding noise sensitive receivers by undertaking the following:

(a) developing and implementing an effective community consultation and communication strategy (incorporating a responsive noise complaints management process);

(b) undertaking a noise monitoring program to 'ground truth' noise impact predictions at set periods following commencement of operation of the new facilities and to use the monitoring results to guide improved noise mitigation and management measures;

<u>deliveries and waste collection</u>

The EPA receives a number of complaints each year about noise impacts arising from 'out of hours', (especially late night and early morning) deliveries to and waste collection from public infrastructure.

**Recommendation**

The proponent be required to ensure that deliveries and waste collection are undertaken during 'day-time', being the hours of -

(i) 7.00 am to 6.00 pm Monday to Saturday, and

(ii) 8.00 am to 6.00 pm Sundays and public holidays; and

<u>leaf blowers, blower vacuums and the like</u>

The EPA considers that leaf blowers, blower vacuums and the like generate a significant and unacceptable noise impact on surrounding noise sensitive receivers. (see also section 3.2 water quality impacts)

**Recommendation**

The proponent be required to ensure that leaf blowers, blower vacuums and the like are not used to clean or maintain wharves and associated concourse areas and walkways.

<u>public address system</u>

The EPA anticipates that well-designed public address systems would typically comprise –

- an amplifier with no more than 30 watts of power,

- more lower power speaker horns in preference to a few higher power speaker horns,
- provision for zoned announcements to limit noise to only those zones essential to the particular announcement,
- speaker horns located only in essential control areas rather than throughout the ferry hub.
- speaker horns pointed in the appropriate direction within the ferry hub, and
- speaker horns inclined downwards at an angle of 45 degrees.

**Recommendation**

The proponent be required to ensure that the ferry hub public address system is designed and operated to minimise noise impacts on surrounding residents, particularly during evening and night-time.

3.2 Water quality impacts

The EPA emphasises that it is an offence to pollute waters and that pollute waters includes cause or permit the pollution of waters.

The EPA considers that vessel re-fuelling and heavy maintenance (other than emergency repairs) should only be undertaken at the ferry fleet base and not at the ferry hub.

The EIS identifies a number of potential source of water pollution that may arise during the course of operating the ferry wharves, vessels served by those wharves, and landward support infrastructure.

The EPA is particularly concerned about water quality impacts that may arise in conjunction with –

- Sewage pump outs from vessels,
- Fuel and oil spills, especially from vessels, and
- Cleaning and maintenance of wharves, pedestrian concourses and vessels

The EPA considers that a number of feasible and reasonable controls and management measures can be adopted to avoid water quality impacts arising from operation of the ferry hub, including –

(a) installing appropriate pollution control measures and equipment to prevent spills and leaks into and onto harbour waters,

(b) adopting and implementing of procedures to prevent spills and leaks into and onto harbour waters,

(c) adopting, testing and implementing appropriate contingency measures in the event of plant or equipment breakdown or failure so as to minimise the impact of spills and leaks.

(d) provision of a dedicated self-propelled work boat, floating boom, spill kits and other equipment for the containment and clean up of any spills or leaks causing or threatening to pollute harbour waters,

(e) training ferry and wharf personnel in –

(i) spill containment and clean up procedures and practices, and

(ii) their reporting obligations concerning spills and leaks that are not of trivial nature,

3.3 Energy and Water Conservation

The EPA emphasises that energy and water conservation are essential components of ecologically sustainable development particularly pursuant to the principle of inter-generational equity.

The EPA considers the design stage of the project to be the optimum time to integrate measures to achieve-

- energy efficiency (with resultant running cost savings),
- water conservation through stormwater collection, treatment and re-use for non-potable purposes such as toilet flushing, and
- water efficiency

*The EPA acknowledges that EIS Section 6.13.1* Sustainability in design proposes a number of broad initiatives to conserve energy and water during operation of the ferry terminal.

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