



Your reference      SSD 7534  
Our reference:    EF13/5057, DOC16/358505-02  
Contact:          J Goodwin 9995 6838

Mr Peter McManus  
Department of Planning and Environment  
GPO BOX 39  
SYDNEY 2001

Dear Mr McManus

**SSD 7534 – WESTERN SYDNEY STADIUM CONCEPT PLAN & DEMOLITION – EIS**

I am writing to you in reply to your invitation to the EPA to provide a submission in respect of the project EIS for the new stadium and future development area.

The EPA understands that the application applies to the concept plan for the stadium and related facilities and for the staged demolition of existing facilities on the site, including the Parramatta swimming pool complex. The EPA further understands that construction will be the subject of a separate assessment process.

The EPA requests that the following advice be considered together with its letter dated 17 March 2016 concerning the draft SEARs for the project.

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.

The EPA anticipates that the stadium may be used for outdoor concerts, festivals, cinematic and theatrical events and sporting events, which involve the use of sound amplification equipment as part of the activity. And, would expect the proponent to implement noise mitigation and management measures akin to those implemented at the Sydney Cricket Ground and other 'outdoor entertainment activity' venues.

The EPA notes the proximity of noise-sensitive receivers, including –

- local residences,
- Our Lady of Mercy college and convent,
- 'Kiddie Garden' child care centre and pre-school,
- St Patricks Cathedral and presbytery,
- the proposed O'Connell Street public school (Old Kings School site), and
- 77 residences approved on lot 5 (corner of O'Connell Street and Victoria Road).

The EPA is concerned that:

- (a) background noise monitoring does not appear to have been undertaken at the most affected noise sensitive receivers representative of the various noise sensitive land uses in the locality,
- (b) the EIS does not adequately define the frequency, type and duration of events to be held at the new stadium and associated facilities;
- (c) the EIS 'Technical Working Paper: Noise and Vibration' does not identify surrounding noise sensitive land uses as either consultation stakeholders or community; and
- (d) the EIS 'Technical Working Paper: Noise and Vibration' does not identify any concrete crushing plant in the list of demolition plant nor provide an assessment of noise impacts associated with that activity which is mentioned in the EIS Executive Summary (p. xiv) under the heading 'Air quality'.

The EPA notes with concern that EIS section 3.3 in respect of demolition methodology and impacts does not appear to mention proposed on-site concrete screening and crushing or identify the deployment of concrete crushing/grinding plant. Whilst, the EIS Executive Summary and section 5.1.2 to EIS Appendix M 'Air Quality Technical Working Paper' appears to indicate that on-site screening and crushing is proposed to be undertaken. Thus, the EPA recommends that in the absence of a detailed assessment of concrete demolition waste crushing impacts (other than air quality impacts), all concrete waste be removed from the site for processing at a site legally able to accept and process that waste.

The EPA notes that the EIS indicates that different contractors may be engaged to undertake various stages of the project (e.g. demolition, site preparation, bulk earthworks and construction). Accordingly, the EPA recommends that appropriate measures are adopted to ensure a seamless transition of environmental impact mitigation measures between those stages.

The EPA has identified the following site specific concerns based on the information available on the Department of Planning and Environment web site:

- (a) a detailed assessment of potential site contamination, including information about groundwater;
- (b) handling, transport and disposal of any asbestos waste encountered during the project;
- (c) demolition, site preparation, bulk earthworks and construction phase noise and vibration impacts (including recommended standard construction hours and intra-day respite periods for highly intrusive noise generating work) on noise sensitive receivers such as surrounding residences and schools;
- (d) demolition, site preparation, bulk earthworks and construction phase dust control and management,
- (e) demolition, site preparation, bulk earthworks and construction phase erosion and sediment control and management;
- (f) operational noise impacts on noise sensitive receivers (especially surrounding residences, schools, churches and childcare centres) arising from operational activities, including from –
  - amplified sound equipment during sound checks, rehearsals and event/performance,
  - the nature, scale and number of times per year that each type of activity is proposed to occur,
  - the days and the times at which each type of activity is proposed to occur,
  - delivery and removal of plant and equipment required for various types of events and activities,
  - work involved in setting up and breaking down for the various types of events and activities,
  - positioning of pyrotechnic displays and the times at which they are proposed to occur,
  - waste collection service location and times,



- goods delivery location and times, and
  - mechanical plant and equipment, including air conditioning plant;
- (g) operational water quality impacts on the Parramatta River with particular regard to the relevant NSW Water Quality Objectives – refer <http://www.environment.nsw.gov.au/ieo/SydneyHarbour/index.htm>;
- (h) operational air quality impacts, including from pyrotechnic displays;
- (i) practical opportunities to implement water sensitive urban design principles, including stormwater harvesting and re-use;
- (j) practical opportunities to minimise consumption of energy generated from non-renewable sources and to implement effective energy efficiency measures; and
- (k) justification of the total number of car parking spaces (existing and proposed) required to serve the project with particular regard to noise and air quality impacts associated with –
- induced modal shift from public transport as the preferred mode for meeting the primary transport task (especially in conjunction with major sporting and entertainment events), and
  - local and regional road network congestion (especially in conjunction with major sporting and entertainment events).

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

Yours sincerely



**MIKE SHARPIN**  
**Acting Manager, Metropolitan Infrastructure**  
**NSW Environment Protection Authority**

Attachment A

## ATTACHMENT A

### - ENVIRONMENT PROTECTION AUTHORITY COMMENTS -

#### WESTERN SYDNEY STADIUM CONCEPT PLAN, SITE ESTABLISHMENT AND STAGED DEMOLITION

##### 1. General

The EPA considers that the project comprises two distinct phases (construction and operational) and has set out its comments on that basis.

##### 2. Construction phase

The EPA anticipates a range of environmental impacts during the construction phase of the development which should be comprehensively addressed in detail by the environmental assessment. And, notes the proximity of surrounding residences.

The EPA anticipates that demolition, site preparation, bulk earthworks, construction and construction-related activities will be undertaken in an environmentally responsible manner with particular emphasis on –

- detailed site contamination investigation and remediation,
- compliance with recommended standard construction hours,
- waste management consistent with the hierarchy of re-use, recycle and then disposal as the last resort,
- 'special waste' management (i.e. asbestos),
- feasible and reasonable noise and vibration minimisation and mitigation,
- intra-day respite periods from high noise generating construction activities (including jack hammering, rock breaking, pile boring or driving, saw cutting and vibratory rolling),
- effective dust control and management, and
- effective erosion and sediment control.

##### 2.1 Site investigation and remediation

The Environment Protection Authority (EPA) advises that the land between 11 and 13 O'Connell Street Parramatta (i.e. Lots 951, 952, 953, 954, 955, 956, 957, 958, 959, 961, 962, 963 in DP 42643 and Crown Land Lot 80) that is the subject of the proposed development is not currently regulated by EPA under the *Contaminated Land Management (CLM) Act*. Accordingly, any contamination issues associated with the development are addressed under the planning process and implementation of *State Environmental Planning Policy 55*. Nonetheless, the proponent must ensure the proposed development does not result in a change of the pre-existing contamination of the land so as to result in significant contamination, which would warrant regulation of the site under the CLM Act.

Note: A licence issued to the Parramatta Stadium Trust under the Protection of the Environment Operations Act (Licence number 4864) was surrendered in August 2002. The Licence was for wet weather discharge from the Parramatta Stadium. Infrastructure associated with stormwater discharges to the adjoining /nearby Parramatta River remain beneath the site.

EIS Appendix K Environmental Site Assessment shows that the 9.2 hectare development site encompasses the existing Stadium and surrounds as well as Parramatta Swim Centre. The swim centre is located on the south eastern part of the site and comprises approximately 2.4 hectares of land that has not been included in the investigations as reported in Appendix K. Accordingly, the Parramatta swim centre site will need further investigation.

The site history shows that the site uses have remained generally similar from the 1930s onwards. It appears to have been used as a sporting facility with added spectator stands and further oval developments since that time. The EPA considers it likely that there would have been major soil movements/earthworks across



the land area consistent with the development of ongoing sporting facilities since the 1930s as evidenced by a large earth mound to the south east of the stadium site and which appears to be located within the swim centre boundary.

EIS Appendix K indicates that site investigation to date focussed on a depth of between 0.2 and 1.3m below the existing ground level and revealed that:

- the site is underlain by fill from surface down to generally 1 and 4 metres below ground level (mbgl) and in some parts to the northern portion of the site this fill extends down to about 6 mbgl;
- the fill material contains asbestos [asbestos containing material and friable and non-friable (bonded) asbestos], as well as other materials such as rubble, ceramic and concrete fragments (noting also that some test pits were terminated for occupational health and safety reasons because of the presence of asbestos);
- asbestos is the main concern with reported concentrations of total recoverable hydrocarbons, benzene, toluene, ethyl benzene, xylenes, organochlorine and organo-phosphate, herbicides and polychlorinated biphenyls in the fill being less than the relevant health and ecological investigation levels; and
- copper and nickel concentrations in some samples of fill marginally exceeded ecological investigation levels; and
- the concentration of polycyclic aromatic hydrocarbon in one sample exceeded the relevant Ecological Investigation Level.

The EPA notes however that detailed intrusive investigations below the fill on the site have not been undertaken. And, importantly that the EIS is not clear about the extent of soil excavation and re-contouring of soils on the site during the redevelopment.

Section 12.2 to EIS Appendix K recommends developing a Remedial Action Plan (RAP) in accordance with regulatory requirements. The EPA considers that a site auditor accredited under the Contaminated Land Management Act 1997 should be appointed to review and approve the RAP and to ensure the site is made suitable for the proposed development.

The EPA suggests that consideration be given to engaging the same site auditor as engaged for the O'Connell Street Public School project particularly given –

- (a) that it is essential that protocols, particularly those relating to contaminants migration management issues, be applied consistently across both sites, and
- (b) the need for community awareness that appropriate management protocols have been developed and are being consistently applied.

### **Recommendation**

The proponent be required to engage a site auditor accredited under the Contaminated Land Management Act 1997 for the various stages of the project

### **Recommendation**

The proponent be required to develop a Remedial Action Plan (RAP) with particular attention to development of detailed data quality objectives and decision rules as well as to the inclusion of the following:

1. Hazardous materials audit of existing structures and infrastructure prior to demolition and removal of all hazardous materials (asbestos, lead paints, PCB capacitors, mercury components etc) at the direction of an appropriately qualified occupational hygienist prior to the demolition in order to prevent future soil contamination;
2. Investigation of the likelihood of soil and groundwater contamination at the Parramatta Swim Centre (as this has not been investigated as part of the current proposal);
3. soil and groundwater investigation under and around buildings if any are proposed to be demolished as part of the redevelopment;
4. detailed protocols be prepared for earthworks/landscaping management and this should include plans to manage unexpected finds and acid sulfate soils;
5. Preparation and implementation of a works site management plan with stringent management and monitoring protocols to prevent any off site migration of contaminants, in particular, via dust and water, particularly given the close proximity of -
  - (i) the Parramatta River,
  - (ii) Our Lady of Mercy College, and
  - (iii) the proposed O'Connell Street Public School (former Kings School site); and

#### **Recommendation**

The proponent be required to refer the Remedial Action Plan for review and approval by a site auditor accredited under the Contaminated Land Management Act 1997.

#### **Recommendation**

The proponent be required to undertake further assessment of soil contamination following demolition of existing structures and prior to undertaking any earthworks.

#### **Recommendation**

The proponent be required prior to commencing any work (including demolition) to prepare and implement an appropriate procedure for identifying and dealing with unexpected finds of site contamination, including asbestos containing materials and lead-based paint, particularly in respect of the existing buildings and their curtilage.

#### **Recommendation**

The proponent be required to satisfy the requirements of the Protection of the Environment Operations (Waste) Regulation 2014 with particular reference to Part 7 'asbestos wastes'.

**Note:** The EPA provides additional guidance material at its web-site

<http://www.environment.nsw.gov.au/waste/asbestos/index.htm>.

#### **Recommendation**

The proponent be required to consult with Safework NSW concerning the handling of any asbestos waste that may be encountered during the course of the project.



## 2.2 Waste control and management (general)

The proponent should manage waste in accordance with the waste management hierarchy. The waste hierarchy, established under the Waste Avoidance and Resource Recovery Act 2001, is one that ensures that resource management options are considered against the following priorities:

**Avoidance** including action to reduce the amount of waste generated by households, industry and all levels of government

**Resource recovery** including reuse, recycling, reprocessing and energy recovery, consistent with the most efficient use of the recovered resources

**Disposal** including management of all disposal options in the most environmentally responsible manner.

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 further anticipates that, without proper site controls and management, mud and waste may be tracked off the site during the course of the project.

### **Recommendation**

The proponent 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) the body of any vehicle or trailer, 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 or trailer; and
- (3) 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 premises.

### 2.2.1 Waste control and management (concrete and concrete rinse water)

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.

### **Recommendation**

The proponent be required to ensure that concrete waste and rinse water are not disposed of on the development site.

### 2.3 Dust control and management

The EPA considers dust control and management to be an important air quality issue during demolition, site preparation, bulk earthworks and subsequent construction. For instance, demolition and bulk earthworks inevitably generate dust as a result of –

- (a) the breaking down of existing structures and structural elements,
- (b) excavation, processing and handling of excavation spoil,
- (b) wind action on demolition waste and excavation spoil stock piles, and
- (c) wind action on and plant movement across areas bare of vegetation or other cover.

#### **Recommendation**

The proponent be required to :

- (a) minimising dust emissions on the site, and
- (b) preventing dust emissions from the site.

### 2.4 Erosion and sediment control

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

The EPA emphasises the importance of –

- (a) not commencing earthmoving or vegetation removal until appropriate erosion and sediment controls are in place, and
- (b) daily inspection of erosion and sediment controls which is fundamental to ensuring timely maintenance and repair of those controls.

### 2.5 noise and vibration

The EPA notes the proximity of noise sensitive receivers including Our Lady of Mercy College.

The EPA considers that the project is likely to generate significant demolition, site preparation, bulk earthworks, construction and construction-related noise and vibration impacts on surrounding residences and other sensitive receivers.

The EPA provides the following guidance material for the assessment of noise and vibration impacts -

- Interim Construction Noise Guideline (2009), and
- Assessing Vibration: a technical guideline (2006).

The proponent may download a copy of the above mentioned guidance material via the following link –

<http://www.epa.nsw.gov.au/noise/>



### 2.5.1 *recommended standard construction hours*

The EPA notes that EIS section 3.3.4 (p.47) proposes that demolition be undertaken during the standard hours recommended in table 1 to the Interim Construction Noise Guideline (ICNG).

However, section 3.3.4 goes on to suggest that some night work might be required and work outside standard hours to complete tasks more efficiently. The EPA emphasises that it does not consider productivity or efficiency to be adequate grounds to justify works outside standard hours.

#### **Recommendation**

The proponent be required to ensure that demolition, site preparation, bulk earthworks, construction and construction-related work is undertaken only during the standard construction hours recommended in Table 1, Chapter 2 of the Interim Construction Noise Guideline, July 2009.

### 2.5.2 *construction hours (including respite periods)*

ICNG section 4.5 specifies construction activities proven to be particularly annoying and intrusive to nearby residents and which are considered at least as annoying to the nearby schools. 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 over continuous periods not exceeding 3 hours with at least a 1 hour respite every three hours,
- (b) 'continuous' means any period during which there is less than an uninterrupted 60 minute respite between temporarily halting and recommencing any of the types of work referred to in ICNG section 4.5, and
- (c) the timing of respite periods is determined in close liaison with nearby schools.

#### **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;
- (b) scheduled intra-day 'respite periods' for construction activities identified in the Interim Construction Noise Guideline as being particularly annoying to surrounding residents and other noise sensitive receivers.

### 2.5.2 *reversing and movement alarms*

The EPA has identified the noise from 'beeper' type plant movement alarms to be particularly intrusive and is aware of feasible and reasonable alternatives. Transport for NSW (nee Transport Construction Authority), Barangaroo Delivery Authority/Lend Lease and Leighton Contractors (M2 Upgrade project) have undertaken safety risk assessments of alternatives to the traditional 'beeper' alarms. Each determined that adoption of 'quacker' type movement/reversing alarms instead of traditional beepers on all plant and vehicles would not only maintain a safe workplace but also deliver improved outcomes of reduced noise impacts on surrounding residents.

Interim Construction Noise Guideline Appendix C provides additional background material on this issue.

The proponent should commit to undertaking a safety risk assessment of construction activities to determine whether it is practicable to use audible movement alarms of a type that would minimise the noise impact on surrounding noise sensitive receivers, without compromising safety.

### 2.5.3 *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) involved in demolition and site establishment activities do not arrive at the project site or in surrounding residential precincts outside approved construction hours.

## **3. Operational phase**

The project represents a significant long-term infrastructure investment with concomitantly long-term environmental impacts.

The EPA considers that environmental impacts that arise once the stadium and associated development commences operation can largely be averted by responsible environmental management practices, particularly with regard to:

- (a) feasible and reasonable noise avoidance and minimisation;
- (b) back-up generator associated underground petroleum storage system design, installation, documentation and use;
- (d) water sensitive urban design;
- (e) minimising on-site parking for private vehicles to encourage the use of public transport by event patrons; and
- (f) identifying and adopting practicable opportunities for energy efficiency and conservation.

### 3.1 Operational noise impacts

The EPA anticipates that the stadium may be used for outdoor concerts, festivals, cinematic and theatrical events and sporting events, which involve the use of sound amplification equipment as part of the activity. And, would expect the proponent to implement noise mitigation and management measures akin to those implemented at the Sydney Cricket Ground and other 'outdoor entertainment activity' venues.

The EPA is the Appropriate Regulatory Authority for all public authorities, including Venues NSW, for the purposes of the environment protection legislation.

#### *Background noise monitoring*

The *NSW Industrial Noise Policy, January 2000* (INP) provides guidance material on noise impact assessment and anticipates feasible and reasonable noise mitigation and management measures.

The EPA emphasises that properly establishing background noise levels in accordance with guidance material in the New South Wales Industrial Noise Policy (INP) is fundamental to a consistent approach to the quantitative assessment of noise impacts of development.



The EPA is concerned that monitoring to establish background noise levels in the locality may not have been undertaken in accordance with the guidance material provided in the INP. In particular, the EPA is concerned that background noise monitoring may not have been undertaken at the most affected noise sensitive receivers for each of the affected noise sensitive land use categories (i.e. residences, schools, churches, child care).

The EPA notes that the most affected noise sensitive land uses in the locality, include –

- Our Lady of Mercy college and convent,
- a residence at 44 O'Connell Street,
- 'Kiddie Garden' child care and pre-school at 1C Grose Street (with frontage to O'Connell Street),
- an approved residential development of 77 dwellings (corner of O'Connell Street and Victoria Road),
- St Patricks Cathedral and presbytery,
- the proposed O'Connell Street public school (Old Kings School site),
- residences in 'Marsden Apartments' at 101 Marsden Street, and
- residences in Park Avenue Westmead.

The EPA further notes that the background noise monitoring sites identified in EIS 'Technical Working Paper: Noise and Vibration' do not appear to be the most affected noise sensitive receivers for the various sensitive land use categories.

EIS 'Technical Working Paper: Noise and Vibration' incorrectly –

- identified most of the cathedral complex on lot 1 corner of Marist Place and Victoria Road as a school (the complex contains two churches, office and residential space, but no school),
- identified the approved multi-unit residential development, on lot 5 corner of O'Connell Street and Victoria Road as a church,
- identified part of the proposed O'Connell Street Public School as a commercial receiver, and
- did not identify passive recreation areas as noise sensitive receivers.

The EIS 'Technical Working Paper: Noise and Vibration' derived criteria for noise catchment area 1 are based on rating background levels measured at either 1 or 3-5 Grose Street Parramatta. However, those rating background levels are likely to be higher than actual rating background levels in the southern part of the locality as:

- they were up to 10 dBA higher than those measured at, and adopted for, the O'Connell Street Public School project which indicates that the environmental noise conditions are significantly different at the two sites; and
- the southern part of noise catchment area 1 is less built up than the northern part, with more open green space and the Parramatta River to the south.

## Recommendation

The proponent be required to identify the most affected noise sensitive receivers by name, sensitive land use type and street address.

## Recommendation

The proponent be required to:

- (a) justify that the background noise monitoring (undertaken in May 2016) and reported in the EIS 'Technical Working Paper: Noise and Vibration' is consistent with the guidance material provided in the New South Wales Industrial Noise Policy and Practice Notes; or
- (b) undertake background noise monitoring at the most affected noise sensitive land uses surrounding the development site in accordance with the guidance material provided in the New South Wales Industrial Noise Policy and Practice Notes.

### *Events and community consultation*

The EPA is concerned that the EIS does not adequately define the frequency, type and duration of events to be held at the new stadium and associated facilities. For instance, EIS:

- (a) section 3.2.2 (p.33) indicates the prospect of a function centre and entertainment activities on the 'future development area';
- (b) section 3.2.7 (p.44) in relation to operating hours refers to the time restrictions applicable to certain events under the Noise Management Plan for the existing stadium followed by a vague suggestion that "... the hours of operation may alter in order to respond to the types of events held." and the development of a noise management plan for "... changes to the frequency, type and duration of events.";
- (c) Table 3-1 indicates a doubling of the current number of sporting events and advises that "...the exact schedule of future events to be held at the Western Sydney Stadium would be developed in consultation with event organisers and sporting associations" which appears to exclude surrounding noise sensitive receivers and appropriate noise impact assessment;
- (d) section 5.1.2 overlooks surrounding noise sensitive receivers as either stakeholders or community;
- (e) section 5.2 confirms that surrounding noise sensitive receivers were not consulted as stakeholders; and
- (f) section 5.4 confirms that surrounding noise sensitive receivers were not consulted as community.

## Recommendation

The proponent be required to clearly identify the type, frequency and duration of proposed events.

## Recommendation

The proponent be required to consult with surrounding noise sensitive receivers in identifying the type, frequency and duration of proposed events and related noise mitigation and management measures.

### *Overlooked impact assessment*

EIS 'Technical Working Paper: Noise and Vibration' provides event noise emission goals at residential, commercial, industrial and recreational receivers, but not schools or churches. It assumed that events would take place between 2.00 pm and 12.00 am. The operational noise impact assessment in the paper does not seem to have considered impacts on the approved residential development (cnr. of O'Connell Street and Victoria Road), the existing presbytery and churches, or nearby schools.



EIS 'Technical Working Paper: Noise and Vibration' proposes an operational noise management plan for all events, and states that architectural acoustic treatments would be considered during detailed design of the stadium.

### **Recommendation**

The proponent be required to assess the operational noise impact on the approved residential development (cnr. of O'Connell Street and Victoria Road), the existing presbytery and churches, Our Lady of Mercy college and convent and the proposed O'Connell Street public school.

#### *Sleep disturbance*

The New South Wales Industrial Noise Policy identifies 'night-time' as 10.00 pm to 7.00 am

EIS 'Technical Working Paper: Noise and Vibration' states:

- Noise from sporting events will reach 64 dBA at the most affected receivers up to 42 times a year, within 2 dBA of noise from the existing stadium (66 dBA);
- The loudest events, rock music, will reach 73 dBA at the most affected receivers one day a year; and
- Depending on time of day and type of event, stadium noise will exceed nominated operational noise goals at 90 to 400 receivers.

The EPA notes for context that the predicted noise levels from the loudest events were greater than allowed at smaller Moore Park venues, but less than allowed at the Sydney Cricket Ground and Sydney Football Stadium.

The EPA further notes that operational noise from the project is predicted to exceed the sleep disturbance criteria at up to 915 residences, and the sleep awakening criteria at 508 residences. Thus, the EPA considers that a 10.00 pm rather than a 12.00 am curfew may be warranted for loud music and sports events.

### **Recommendation**

The proponent be required to provide detailed justification for allowing loud music and sports events to occur after 10.00 pm.

#### *Feasible and reasonable noise mitigation and management*

The EPA further notes that mechanical plant, car parking, loading dock and event set up and break down activities may occur at any time of day, they should be assessed against the night time project specific noise levels during the next stage of the project. However, EIS 'Technical Working Paper: Noise and Vibration' proposes that compliance with the noise goals adopted in the paper would mean that no further treatment would be provided to those receivers, and that receivers expected to receive noise above the goals would be eligible only for "reactive management": noise monitoring and complaints handling. The EPA does not accept that proposition and anticipates instead that the proponent would adopt all feasible and reasonable operational noise mitigation and management measures.

## Recommendation

The proponent be required to assess operational noise impacts at all nearest noise sensitive receiver locations and include all feasible and reasonable noise mitigation measures for receivers expected to receive noise above the nominated criteria.

### *Amenity criteria*

EIS 'Technical Working Paper: Noise and Vibration' states that noise at receiver locations was generally dominated by transportation, urban hum and "other sources which would not be classified as industrial". and further, that the acceptable amenity criteria were used without modification. As the amenity criteria will be used to assess commercial activities and mechanical plant at the stadium, the existing  $L_{Aeq(period)}$  should be adopted as the existing "industrial" contribution.

## Recommendation

The proponent be required to revise the amenity criteria used for operational noise assessment based on measured ambient noise levels

## Recommendation

The proponent be required to undertake noise compliance monitoring in accordance with the New South Wales Industrial Noise Policy to confirm that noise impacts from each type of event held at the stadium and in the future development area do not exceed the relevant criteria

## Recommendation

The proponent be required to:

- (a) design waste collection areas to avoid or minimise the activation of vehicle reversing alarms during use of those facilities;
- (b) restrict waste collection services and standby emergency generator testing activities to 'day-time' as defined in the NSW Industrial Noise Policy, January 2000; and

### 3.2 Back-up Generator and Underground Petroleum Storage System

The EPA anticipates that the stadium may be served by a back-up generator served in turn by an Underground Petroleum Storage System (UPSS).

The proponent may only use a UPSS in accordance with the requirements of the Protection of the Environment Operations (Underground Petroleum Storage System) Regulation 2014. And, any such UPSS must be designed, installed and operated with regard to Guidelines issued by the EPA.

## Recommendation

The proponent be required to design, install, document and operate any underground petroleum storage system in accordance with the requirements of the Protection of the Environment Operations (Underground Petroleum Storage System) Regulation 2014

### 3.3 Water sensitive urban design

EIS sections 15.2.2 and 15.4.3 outline a sustainable design approach to implementing practicable water efficiency and conservation measures, including harvesting of stormwater and application of Water Sensitive Urban Design (WSUD) principles.



## **Recommendation**

The proponent be required to implement water sensitive urban design principles in conjunction with the operation of the project including the collection, treatment and re-use of stormwater for non-potable consumption such as landscaping and grounds maintenance.

-----

