

White Bay Cruise Terminal
**Operational Noise
Management Plan**

Cruise Operations

April 2023 v9.0

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VERSION HISTORY

Reference	Date	Prepared	Comment
FINAL ONMP v1.0	1 March 2013	Port Authority	Version approved by DPE.
DRAFT ONMP v2.0	20 September 2016	Port Authority	Plan updated based on consideration of available noise monitoring data, effectiveness of existing noise mitigation and management measures, and the resulting Noise Impact Mitigation Strategy investigations which identified further reasonable and feasible mitigation measures. These additional measures have been included in this version of the ONMP. DRAFT for DPE Review and Comment.
DRAFT ONMP v3.0	18 November 2016	Port Authority	DRAFT issued for consultation with community and stakeholders.
FINAL ONMP v4.0	11 April 2017	Port Authority	Version submitted to DPE following community and stakeholder consultation.
FINAL ONMP v5.0	19 September 2017	Port Authority	Version submitted to DPE following review by DPE to address their feedback.
FINAL ONMP v6.0	3 October 2017	Port Authority	Final version submitted to DPE to address comments dated 19 September 2017
FINAL ONMP v7.0	5 December 2017	Port Authority	Final version submitted to DPE to address comments on the Noise Restriction Policy
FINAL ONMP v8.0	29 June 2017	Port Authority	Final version submitted to DPE to amend page 11 of ONMP and Appendix B (Noise Restriction Policy) as requested by DPE in letter dated 12 December 2017, and to incorporate stakeholder feedback into ONMP Appendix B
DRAFT ONMP v9.0	April 2023	Port Authority	Version submitted to DPE with current role names and minor amendments to upgraded noise monitoring program, including permanent non-attended noise monitoring

1 Introduction

1.1 Background

The Port Authority of NSW (Port Authority) manages the White Bay Cruise Terminal (WBCT) within the White Bay Port Precinct on the Balmain Peninsula. The development was approved (MP 10_0069) by the Minister for Planning in February 2011. The WBCT was constructed during 2012 and the first quarter of 2013 and the then Sydney Ports Corporation (now Port Authority) commenced cruise operations at the WBCT in April 2013.

On cruise ship days, the WBCT is used for the processing of passengers embarking and disembarking cruise ships berthed at White Bay Wharf 5 (WB5) and associated activities. On non-cruise ship days, the facility is available for use for a variety of functions such as exhibitions and community and/or corporate events or for other port activities. The approval also provides for a temporary cruise terminal to be located at White Bay Wharf 4 (WB4).

1.2 Purpose of Plan

This Operational Noise Management Plan (ONMP) is a Sub Plan of the *WBCT Operational Environmental Management Plan (OEMP)* for Cruise Operations. This Sub Plan relates to the operations of the WBCT when it is being used for cruise ships at WB5 and/or WB4 (a separate ONMP applies to the use of the Cruise Passenger Terminal for functions).

The purpose of this ONMP is to outline the method of compliance with statutory requirements for management of noise, and realising the specific noise limits set out in the Project Approval. The ONMP is intended to detail methods available to mitigate noise during the use of the WBCT, including:

- Maintenance of all equipment to ensure correct working order;
- Selection of quiet equipment and plant where practicable;
- Use of quieter or alternative reversing alarms on mobile plant and equipment permanently on the site;
- Appropriate training of all staff in relation to noise issues;
- Maintenance of internal roads;
- Provision of direct treatment (attenuation program) to receivers;
- Behavioural noise controls (regarding music and non-safety announcements); and
- Restrictions related to cruise ship noise.

1.3 Approval and Compliance

The preparation and implementation of an ONMP is a commitment made by the Port Authority as part of the environmental assessment documentation, and is also required under Condition D16 (b) of the Project Approval.

This ONMP has been prepared in accordance with Condition D16 (b) as it relates to operations at the WBCT associated with cruise ships berthing at WB5, with the use of a temporary cruise terminal associated with cruise ships berthing at WB4 simultaneous to the cruise use of WB5. A compliance checklist is provided in **Appendix A**.

In accordance with Wilkinson Murray Report 08209-R (which was prepared as part of the environmental impact assessment of the development) a noise barrier involving a wall on the northern side of the providing storage area, forming a 3.5m high noise barrier, is provided at the WBCT.

1.4 Legal and Regulatory Requirements

The WBCT was assessed and approved under the *Environmental Planning and Assessment Act 1979*. As part of that assessment and approval the facility was assessed in accordance with the former Industrial Noise Policy (now superseded with the Noise Policy for Industry). The Project Approval gives force to the outcomes of the noise impact assessment which was carried out as part of the environmental impact assessment, and the Port Authority is required to comply with the various conditions set out in the Project Approval. The relevant conditions are described below.

Conditions D1, D2 and D3 of the Project Approval establish the requirements for management of noise and vibration impacts from the WBCT. Condition D11 of the Project Approval specifies the monitoring and reporting requirements in relation to noise.

Operation Noise Limits – Cruise Ship Days

- D1. The Proponent must design, construct, operate and maintain the project using all reasonable and feasible precautions and measures to achieve the objective that noise contributions from activities on Cruise Ship Days associated with the project do not contribute to an exceedance of the noise criteria specified in Table 1, at those locations and during those periods indicated. The criteria apply under:
- wind speeds up to 3 ms^{-1} (measured at 10 metres above ground level); or
 - temperature inversion conditions up to 3°C per 100 metres and wind speeds up to 2 ms^{-1} (measured at 10 metres above ground level).

Table 1 – Noise Criteria (dBA)

No.	Location	Day		Evening		Night		$L_{A1,1\text{minute}}$
		$L_{Aeq,15\text{min}}$ dBA	$L_{Aeq,period}$ dBA	$L_{Aeq,15\text{min}}$ dBA	$L_{Aeq,period}$ dBA	$L_{Aeq,15\text{min}}$ dBA	$L_{Aeq,period}$ dBA	
1	Grafton Street, Balmain	56	N/A	54	N/A	49	N/A	55
2	Donnelly Street, Balmain	54	N/A	52	N/A	49	N/A	59
3	Dockside Apartments	60	N/A	57	55	53	46	63
4	Refinery Drive, Pyrmont	55	N/A	53	47	51	42	61
5	Oxley Street, Glebe	58	N/A	47	N/A	47	43	57
6	Camerons Cove, Balmain	50	N/A	48	N/A	45	42	55

Where these criteria cannot be met, the Proponent must take appropriate measures to limit any impacts and must submit a report to the Director General upon the implementation of those measures. These measures may include operational changes, further on-site mitigation to infrastructure or off-site mitigation measures. The Proponent must notify

Leichhardt Council [now Inner West Council] and properties at which the noise criteria was exceeded as to the circumstances that led to the exceedance and measures to be implemented to address potential future exceedances.

- D2. For the purpose of assessment of noise contributions specified under condition D1 of this approval, noise from the project must be:
- measured at the most affected point on or within the site boundary at the most sensitive locations to determine compliance with $L_{Aeq(15\text{-minute})}$ and $L_{Aeq,(period)}$ noise limits;
 - measured in the free field at least 3.5 metres from any vertical reflecting surface in line with the worst-affected dwelling facade to determine compliance with $L_{A1(1\text{-minute})}$ noise limits; and
 - subject to the modification factors provided in Section 4 of the New South Wales *Industrial Noise Policy* (EPA, 2000), where applicable.

Notwithstanding, should direct measurement of noise from the project be impractical, the Proponent may employ an alternative noise assessment method deemed acceptable by OEH (refer to Section 11 of the New South Wales *Industrial Noise Policy* (EPA, 2000)). Details of such an alternative noise assessment method accepted by OEH must be submitted to the Director-General prior to the implementation of the assessment method.

- D3. Notwithstanding conditions D1 and D2, the terminal buildings are to be designed and constructed to incorporate the noise mitigation measures committed to in the documents listed in condition A1 and noise emissions from mechanical plant associated with the building shall be limited to a maximum sound power level of 92dBA.
- D5. The Proponent must only undertake setup, dismantling, delivery or removal of temporary structures, and amusement rides associated with the project that would generate an audible noise at any residential premises during the following hours:
- 7:00am to 6:00pm, Mondays to Fridays, inclusive;
 - 8:00am to 1:00pm on Saturdays; and
 - at no time on Sundays or public holidays.

Noise Monitoring – Cruise Ship Days

- D11. The proponent must within 12 months of operation undertake monitoring of noise levels from a representative sample of cruise ships, as defined in the Operational Noise Management Plan. The monitoring must confirm that the project is meeting the noise criteria listed in Condition D1. If the noise monitoring indicates an exceedance of the noise levels identified in Condition D1, the Proponent must implement further reasonable and feasible measures (where required) in accordance with the procedures outlined in the Operational Noise Management Plan.
- The Proponent must submit a copy of the outcome of the monitoring results to the Director-General within one month of monitoring being undertaken.
- D16. As part of the Operational Environmental Management Plan for the project required under condition D15 of this approval, the Proponent shall prepare and implement:

- (b) an Operational Noise Management Plan is to be prepared in consultation with council. The plan is to detail measures to manage the operational noise impacts for the project, including but not limited to:
- i) identification of noise sources and scenarios associated with the operation of the project, including for cruise ship days and functions;
 - ii) noise mitigation measures to be applied during the use of the project during cruise ship days and functions;
 - iii) selection of quiet equipment and plant consistent with the noise limit requirements of this approval;
 - iv) maintenance regimes of all equipment to ensure correct working order;
 - v) a monitoring and recording regime for cruise ship operations and functions; and
 - vi) a procedure for handling noise complaints that includes recording, investigating, reporting and follow-up action.

1.5 Noise Impact Mitigation Strategy and Update to ONMP

The commencement of the WBCT operations resulted in appreciable noise complaints from the local community (primarily located in Balmain to the north of the terminal). These concerns have been generally supported by noise monitoring results, which demonstrate cruise ships can generate operational noise levels in excess of the noise criteria specified in condition D1.

As a result, in accordance Project Approval (MP 10_0069) condition D1, which states “where these criteria cannot be met, the Proponent must take appropriate measures to limit any impacts and shall submit a report to the Director General upon the implementation of those measures. These measures may include operational changes, further on-site mitigation to infrastructure or off-site mitigation measures” Port Authority prepared an initial report outlining potential noise mitigation and management measures for investigation as presented in the *Noise Impact Mitigation Strategy (NIMS) Cruise Operations* dated September 2014. Following the progress of these investigations, Port Authority prepared a follow-up NIMS Cruise Operations *Interim Findings Report* dated April 2015.

Following preparation of the initial report (September 2014) and the interim report (April 2015), noise mitigation investigations were completed and options were assessed resulting in preparation of a draft for consultation NIMS Cruise Operations report (November 2016) outlining the rationale for the proposed elements of the strategy. Community consultation was then conducted to seek feedback on the proposed strategy.

The community consultation period was open from 22 November 2016 to 31 January 2017. The consultation comprised the distribution of community letters and factsheets, drop-in sessions, website information including the draft for consultation NIMS Cruise Operations report and the draft for consultation ONMP Cruise Operations, together with the briefing of agencies and Inner West Council.

Port Authority received 55 formal submissions in response to the public exhibition of the draft for consultation NIMS Cruise Operations report and ONMP. Submissions were received from a mix of individual residents, resident groups, Inner West Council, government authorities and industry organisations.

Following consideration of the submissions, a response to each submission was prepared and has been documented in a Response to Submissions Report prepared by Port Authority dated September 2017. The top 10 issues of concern raised in the submissions are summarised as follows:

- noise from vessel engines/fans;
- preferred solution to install shore power;
- air quality, impacts of emissions on health;
- suggested use of clean fuel, encourage cleaner ships;
- noise from announcements and external amplified music;
- noise from ships at night and/or very early in morning;
- low frequency noise/vibration;
- eligibility for treatment and requesting further investigation of options;
- shutting windows/doors, feeling shut in; and
- fix noise problem at the source, not at residences.

Based on the submissions, the following amendments were made to the NIMS Cruise Operations Report (November 2017) and included in the updated ONMP Cruise Operations:

- An email notification system has been introduced by Port Authority of any changes to shipping movements to be sent to registered community members who wish to receive it. The website for registering is <https://www.portauthoritiesnsw.com.au/community/community-notifications/>;
- Noise treatments for courtyards and external areas (in addition to the internal areas) at eligible properties would be considered on a case by case basis where possible;
- Ongoing communication by Port Authority with cruise lines regarding the future deployment of ships to WBCT and noise impacts on the community;
- Removal of 100 m distance criteria for treatment eligibility; and
- The loss of priority penalty has been removed from the second non-compliance in the Noise Restriction Policy.

These amendments are outlined in Section 4 of this Cruise Operations ONMP.

The updated Cruise Operations ONMP was amended to ensure that the environmental management framework adequately addresses any identified issues (i.e. noise impacts), and includes appropriate additional mitigation measures identified in the SLR NIMS Cruise Operations Report and through community consultation.

1.6 Authority and Community Consultation

The original version of this ONMP was prepared in consultation with Council as required by Condition D16(b). The NIMS was prepared in consultation with Council, the community and key state agencies.

1.7 Complaints Handling

Noise complaints are managed through an integrated 24 hour complaints handling system managed on behalf of the Port Authority. The details of the current system are provided on the

Port Authority website (<https://www.portauthoritynsw.com.au/community/community-complaints-procedure/>).

1.8 Auditing and Compliance Reporting

In accordance with the project Compliance Tracking Program a full environmental audit was carried out at the end of the first year of operations, and the recommendations of the audit were considered in the revised ONMP.

2014 Audit Finding

Opportunity for improvement: The OEMP refers to the noise levels from gasoline and diesel powered forklifts, however LPG models are primarily used.

Recommendation: The OEMP should be updated to reflect that LPG forklifts are used including the noise level ratings.

Change to ONMP: this finding is noted in Section 2.1. Noise level ratings for forklifts are included in Section 4.

In accordance with the Project Approval, Compliance Tracking Reports were provided to the DP&E during the first 5 years of operation.

2 Description of Operations and Activities

Noise from the cruise operations of the WBCT is limited to cruise ships days. Most ships visiting White Bay arrive in the morning and depart the same day (late afternoon).

The potential noise impacts arise from ships at berth, land based equipment servicing the ship, passengers and plant in the terminal building, and road vehicles delivering goods (providoring) or passengers to the ship, as described in the following sections.

2.1 Port Operations

Ships and Ship Movements

The WBCT environmental assessment noted that based on predicted growth forecasts at the time (2009) and the height limitation of the Sydney Harbour Bridge, it is expected that approximately 170 cruise ships per year could use the facility. The environmental assessment also noted that approximately 10 times per year two ships would be berthed concurrently at White Bay, one berthed at WB4 and one at WB5.

Noise monitoring conducted since operations commenced has indicated that noise emissions from WBCT are generally dominated by operation of the ships' engines and ventilation fans. The engine drives an on-board generator which powers other noise sources including ventilation systems for the engine room, propulsion room and also climate control for the accommodation. Noise monitoring results are presented in Section 2.4.

Providoring

Providore vehicles drive from the Robert Street entrance then enter the truck parking area located west of the car park, from where they can obtain direct access to the wharf to park near the ship for loading and unloading activities. Traffic using Robert Street is predominately associated with vans and heavy vehicles (e.g. providore trucks). Most ships are providored during the daytime period.

Providoring typically requires the use of up to 7 gas powered (small) forklifts and one large (potentially diesel powered) forklift. The independent operational environmental compliance audit (DECA, May 2014) undertaken after the first year of operations, reported that LPG forklifts are primarily used on site in preference of gasoline or diesel models.

Providoring noise sources include trucks and forklifts, and occasional instances of unloading noise (bangs and other impact noises). The specifications for the forklifts used on site indicate a sound power level at the operator's ear of between 78 dB and 79.5 dB for the gasoline models and between 80 dB and 85 dB for the diesel models.

Staff vehicles also enter through the Robert Street entrance.

2.2 Passenger Ground Vehicle Traffic

Development traffic using James Craig Road mostly involves light vehicles and passenger buses. The noise contribution from on-site vehicle flows is based on a busy operational hour at the WBCT, and includes passenger vehicles (cars and buses) within the car park.

2.3 Terminal Building Noise Emission

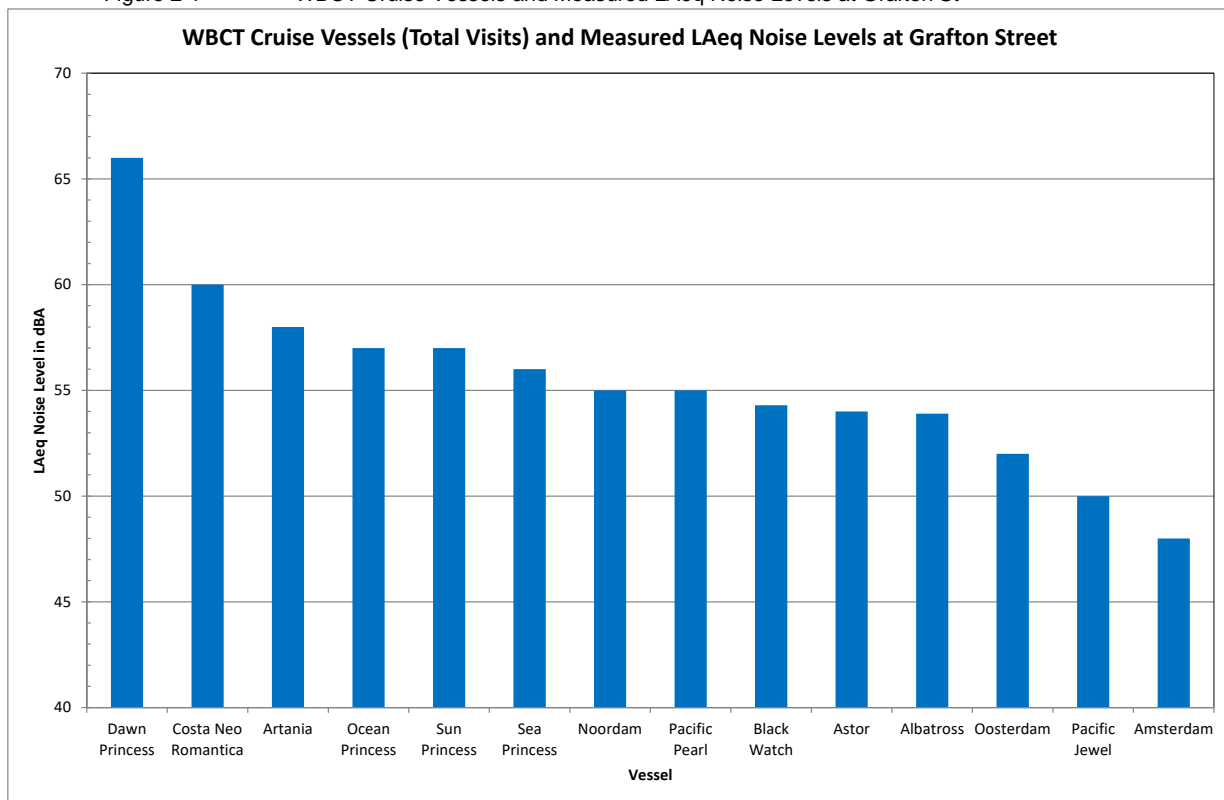
External mechanical plant associated with the terminal building is located to the south-east of the building and is designed not to exceed a total sound power level (L_{AW}) of 92 dBA.

There may also be mechanical plant associated with the infrequent use of a temporary terminal at WB4. Noise from this plant would affect different residences from the plant associated with the WB5 terminal. Similarly, this plant would be selected so that its total L_{Aw} does not exceed 92 dBA, which ensures that its contribution to the total sound level from the site is negligible.

2.4 Noise Emissions

The historical noise emissions levels associated with WBCT operations, including noise from both landside and ship operations, based on monitoring undertaken at the nearest monitoring location in Grafton St, are provided in Figure 2-1.

Figure 2-1 WBCT Cruise Vessels and Measured LAeq Noise Levels at Grafton St



Monitoring has shown that measured noise levels are dominated by ship noise sources rather than landside sources.

All current noise monitoring results (i.e. from April 2022) indicate vessel noise is generally below 58dBA (LAeq) and reports are available on the Port Authority website:

<https://www.portauthoritynsw.com.au/sustainability/noise/vessel-noise-operating-protocol-and-noise-restriction-policy-noise-monitoring-reports/>

3 Roles and Responsibilities

As the owner of the WBCT, the Port Authority has overall responsibility for compliance with and implementation of the OEMP, including this ONMP.

On cruise ship days at the WBCT the following personnel are responsible for ensuring compliance with this ONMP:

Port Authority – Senior Manager Cruise & Security (SMCS)

The Senior Manager Cruise & Security (SMCS) is responsible for the overall security of the cruise operations.

Port Authority - Mobile Patrol Security

The Port Authority Mobile Patrol Security is responsible for managing the gatehouse on a 24/7 basis and ensuring that vehicles entering the site via Robert Street or the Port Access Road are suitably authorised.

Port Authority – Harbour Master (HM)

The Harbour Master is appointed by the Minister with powers under Section 88 of the *Marine Safety Act 1998* to direct and control the time and manner in which any vessel may enter or leave the port. A complete list of Harbour Master's Directions (Sydney Harbour) can be found on the Port Authority website.

In relation to this ONMP the HM is responsible for implementation of the Noise Restriction Policy (Appendix B) consequences including issue of Strike 1, Strike 2 and 3 letters, instruction to require relocation of vessels or removal of a vessel's permission to berth at WBCT.

Port Authority – General Manager Cruise (GMC)

The GMC is responsible for overall management of all cruise ship day activities including compliance with the OEMP, including documentation, implementation and maintenance of the OEMP during all stages of project operation.

Port Authority – Duty Manager Cruise Operations (DMCO)

The DMCO is generally present whenever a cruise ship is at the Terminal. The DMCO is responsible for ensuring that the cruise activities are undertaken efficiently and effectively including for the OEMP compliance in relation to activities taking place within the WBCT. The DMCO is responsible for delivering a notification to the 'Staff Captain' or 'Deputy Captain' of all cruise ships berthing at the WBCT, with requirements related to this OEMP and reminding them of the proximity of the Terminal to residential areas and outlining certain expectations of the ships whilst berthed, such as:

- No all deck announcements or music from open decks are permitted while in port, with the exception of safety announcements. All music and non-safety announcements must be kept to internal ship areas until well clear of the berth.
- Ensure ship generators/engines are maintained and operated efficiently to help reduce noise and air emissions while in port.
- Ships are to run on minimum generator/engine power required whilst at berth.

Cruise Ship Operators

On days when the WBCT is being used for cruise activities, the Cruise Ship Operators are responsible for carrying out their activities in a manner that is compliant with the OEMP. Compliance of Cruise Ship Operators with the OEMP will be overseen by the DMCO.

Port Authority – Senior Manager Environment (SME)

The SME provides advice on environmental matters to the DMCO. The SME is responsible for reporting non-conformances and incidents externally (e.g. EPA, DPE) as required under the planning approval or State legislation. The EOM is also responsible for the ongoing review of this OEMP as required, and managing environmental monitoring programs (voluntary or required under the Project Approval) during site operations..

Port Authority – Community & Stakeholder Relations Manager (CSRM)

The CSRM is responsible for registering cruise operations related complaints in the Port Authority Complaints Register. The CSRM assists the DMCO resolving complaints and responding to complainants. The CSRM has responsibilities related to the implementation of the Community Complaints Procedure (for details refer to Section 2.4).

Port Authority – Work Health and Safety Manager (WHSM)

The WHSM is responsible for emergency management.

Port Authority – General Manager Asset Management (GMAM)

The GMAM is generally responsible for documentation, implementation and maintenance of the OEMP in relation to building maintenance, landscaping, heritage and fixed plant and equipment within and surrounding the building, during days when the WBCT is not being used for cruise ship activities.

4 Operational Mitigation Measures

Table 4-1 lists the operational noise measures to be implemented. The measures must be implemented at all times or as necessary in the case of maintenance. As discussed in Section 1.5, additional mitigation measures developed in response to the requirements of Condition D1 of the Project Approval, as described in the NIMS Cruise Operations Report (SLR, November 2017), have been included in this version of the ONMP. These include the Noise Attenuation Program, Noise Restriction Policy, ongoing communications with cruise lines and email notification system.

Table 4-1 Operational Mitigation Measures

Operational Division	Mitigation Measure	Responsibility
General	Ongoing communications with cruise lines regarding future deployments to WBCT and noise impacts on the community	GMC Cruise Ship Operator
	All staff and sub-contractors will undergo noise and vibration awareness training (e.g. as part of general site induction and/or tool-box talks).	GMC
	Maintain internal access roads in an acceptable condition.	GMAM, SMCS
	Maintain providing storage area noise barrier.	GMAM, DMCO
	Maximum sound power level from all stationary mechanical plant at the terminal is limited to 92 dBA (including plant associated with the temporary WB4 cruise terminal).	GMAM
	Any activities associated with the setup, dismantling, delivery and removal of the temporary terminal for WB4 that generate an audible noise at any residential premises will take place during the following times: <ul style="list-style-type: none"> - 7:00am to 6:00pm, Mondays to Fridays, inclusive; - 8:00am to 1:00pm on Saturdays; and - at no time on Sundays or public holidays. 	GMC, DMCO Cruise Ship Operator

Operational Division	Mitigation Measure	Responsibility
Equipment	Equipment permanently on site will be fitted with alternatives to standard reversing alarms (such as “squawker” alarms, flashing lights, video cameras, or equivalent) or, if identified during operation, removed and replaced with equipment with alternatives to standard reversing alarms.	GMC Cruise Ship Operator
	Regular and effective maintenance of stationary and mobile equipment will be conducted. As a minimum plant and equipment will be inspected every 6 months or, if deemed required, as a result of a specific complaint.	GMC, Cruise Ship Operator
	Machinery not in use will be turned off.	DMCO Cruise Ship Operator
	Selection of quiet equipment for initial operations and when selecting replacement plant where practicable.	DMCO Cruise Ship Operator
	Plant and equipment will be procured for operations and maintenance with consideration given to its noise level and character.	GMC Cruise Ship Operator
	Large forklifts will be fitted with noise control kits where necessary (appropriate sound power level is 95 dBA). The specifications for the forklifts used on site indicate a sound power level at the operator’s ear of between 78 dB and 79.5 dB for the gasoline models and between 80 dB and 85 dB for the diesel models.	GMC Cruise Ship Operator
	All equipment will be maintained in correct working order, including noise mitigation features such as mufflers.	GMC Cruise Ship Operator
	When ships are berthed at WB4 and WB5, providing may occur simultaneously, however there will be no more than one large forklift in operation at any one time.	GMC, DMCO Cruise Ship Operator

Operational Division	Mitigation Measure	Responsibility
Operational Procedures	Providing procedures will consider noise emission. For example forklifts should be used where possible in front of the covered awning which provides shielding to residences.	GMC, DMCO
	Garbage trucks are not permitted to access the site prior to 7am.	Cruise Ship Operator, DMCO
	Ground service equipment (e.g. baggage cages) are to be moved and prepared the evening before rather than in the early morning hours before the arrival of a cruise ship in the case of consecutive cruise ship days.	Cruise Ship Operator, DMCO
Email Notification System	An email notification, which identifies any changes to shipping movements, is to be sent to registered community members who wish to receive it. The website for registering is https://www.portauthoritynsw.com.au/community/community-notifications/	SMCA
WBCT Noise Restriction Policy	The WBCT Noise Restriction Policy will be implemented as outlined in Appendix B. This policy includes penalties for non-safety announcements, and on-deck music, and other Excessive Noise as defined in the Policy including but not limited to, engine, generator or ventilation noise.	HM, GMC, DMCO, EOM, SMCS Cruise Ship Operator
WBCT Noise Attenuation Program (NAP)	The WBCT NAP will be implemented, as outlined in the SLR NIMS Report (SLR, November 2017). The NAP aims to provide noise mitigation treatments for eligible properties where cruise ship noise has been identified as exceeding the eligibility trigger for WB CT.	SME, GMAM
Monitoring and Reporting	Noise monitoring and reporting will be undertaken in accordance with the program and procedures of Sections 6 and 7.	SME
	Port Authority will provide the Department of Planning and Environment with a register which contains the list of breaches issued to vessels	COO & HM, SME

Operational Division	Mitigation Measure	Responsibility
	under the Noise Restriction Policy. The list is to be provided on a quarterly basis.	
	The outcome of any review of a breach of the Noise Restriction Policy will be forwarded to the Department of Planning and Environment within 14 days of the date of determination.	SME

5 Vibration Management

No operational activities cause significant vibration. There may be some impacts during ship loading if a load is dropped from a forklift. This would be rare and at such a distance from residences that the vibration criteria are not predicted to be exceeded.

Vibration assessment and mitigation may be undertaken as a result of valid complaints if appropriate.

Noise monitoring undertaken to date has identified that low frequency noise is a factor for some cruise ships (SLR, November 2017), however this is not considered to be ground borne vibration, rather airborne low frequency noise which has the potential to generate vibration of some building elements. Low frequency noise has been considered in the development in the Noise Attenuation Program.

6 Monitoring

6.1 Monitoring Location

Residential receiver locations have been identified around the WBCT. The closest residential receivers are described in Table 6-1.

Table 6-1 Closest Residential Receivers to the Site

No.	Location	Description
1	Grafton Street, Balmain	Double story houses have full view of terminal building, shielded from ground traffic.
2	Donnelly Street, Balmain	Double story houses overlook the site.
3	Dockside Apartments	Multi story building overlooks western end of site.
4	Refinery Drive & Bowman Street, Pyrmont	High rise apartments.
5	Oxley Street, Glebe	These homes represent the nearest receivers to the south across Rozelle Bay.
6	Apartments fronting Camerons Cove (Grafton Street, but facing east)	Multi story apartments

The location of the closest residential receivers is presented in Figure 6-1.

Operator-attended monitoring conducted during 2013-2016 has indicated that operating noise levels are generally in compliance at Locations 3, 4 and 5, hence ongoing operator-attended monitoring at these locations was discontinued in 2016.

Operator-attended monitoring has been maintained at Locations 1, 2 and 6 when required, and further supplemented at other locations as recommended by an acoustic consultant.

Figure 6-1 Residential Receivers (potential attended noise monitoring locations)



6.2 Monitoring Program

Monitoring is conducted to assess the noise level of cruise ship and associated activities. The monitoring also takes into account the timing of peak traffic volume of providing and passenger vehicles.

The following monitoring strategies including operator-attended or unattended monitoring are adopted:

- **Operator-attended Monitoring** – an operator attended period of at least 15 minutes. Noise levels to be measured using a hand-held sound level meter. Noise contribution from Port Activities to be estimated if not dominant. Record noise from all source and estimated contribution from port activities.

The locational options of the operator-attended noise monitoring when there is one cruise vessel berthed at WB5, and the parameters of measurement are given in Table 6-2. The frequency reported in version 1.0 of the ONMP included 2 cruise ships in the first year, however significant additional monitoring was undertaken during the first year of operations as reported in the NIMS and as reported on the Port Authority website. Operator-attended noise monitoring was also undertaken on the first two occasions of two ships being berthed at WBCT (WB5 and WB4 simultaneously), and reported on the Port Authority website.

Table 6-2 Operator-attended Noise Monitoring Locations and Timing

Number	Location	Monitoring Strategy	Duration*	Frequency
1	Grafton Street, Balmain	Operator-attended	One fifteen minute period for each of day, evening and night time period respectively	As required to correlate with continuous noise monitoring, focussing on previously unmonitored ships or as recommended by the SME
2	Donnelly Street, Balmain	Operator-attended	One fifteen minute period for each of day, evening and night time period respectively	As required to correlate with continuous noise monitoring, focussing on previously unmonitored ships or as recommended by the SME
3	Dockside Apartments	No longer required	No longer required	No longer required
4	Refinery Drive, Pymont	No longer required	No longer required	No longer required
5	Oxley Street, Glebe	No longer required	No longer required	No longer required
6	Camerons Cove, Balmain	Operator-attended	One fifteen minute period for each of day, evening and night time period respectively	As required to correlate with continuous noise monitoring, focussing on previously unmonitored ships or as recommended by the SME

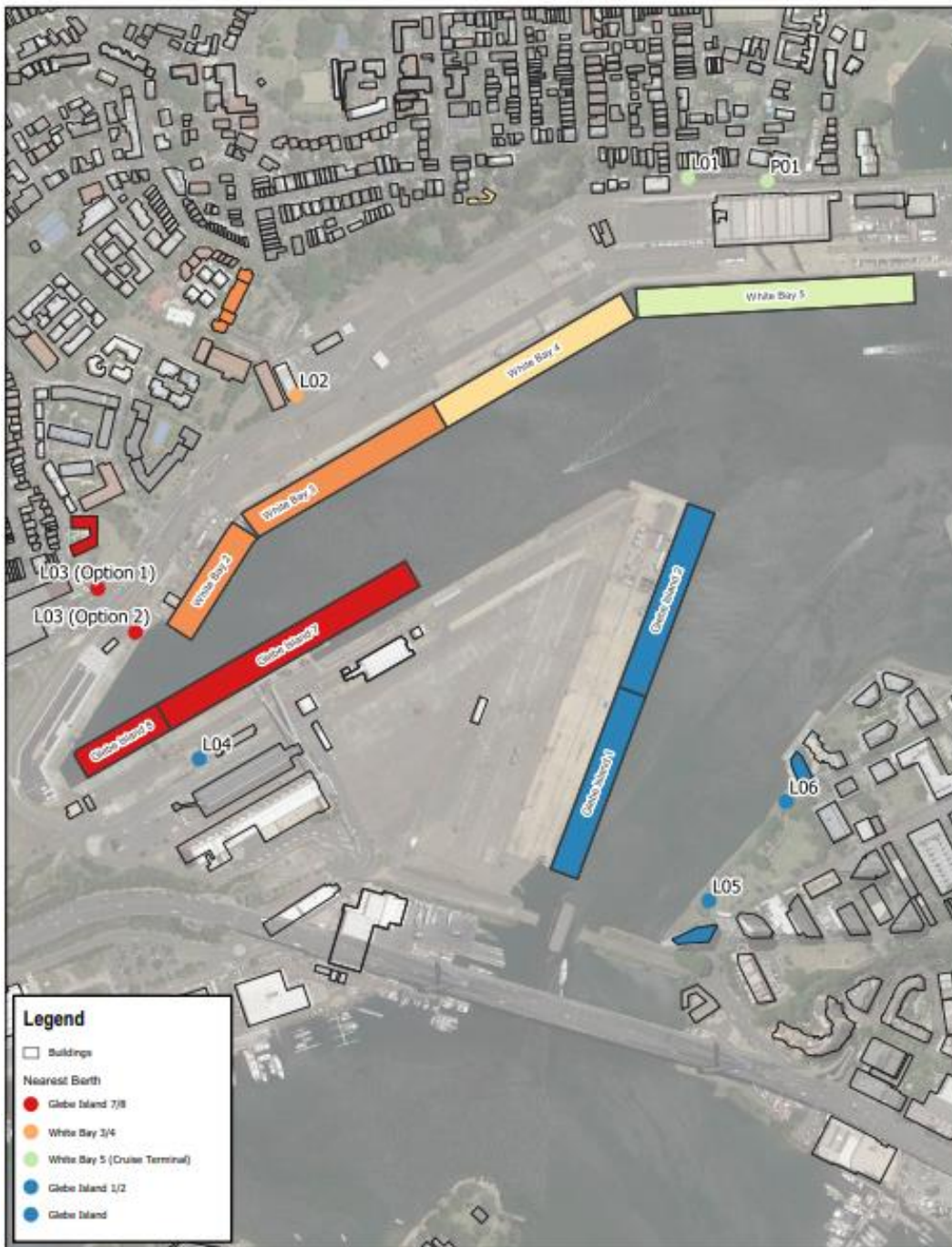
*Evening and Night time monitoring will only occur if the ship is berthed during all or part of these periods

Noise monitoring has been undertaken on a representative sample of cruise ships, including the largest ships (in number of passengers) and potentially oldest ships, and during key operational activities (such as ship loading, passenger disembarking, etc.). The focus of further attended noise monitoring will be to gather information about cruise ships operating at night time, for ships where noise data is currently not available.

- **Continuous Unattended Noise Monitoring** – this provides ongoing noise level information of each ship visiting WBCT to support the operator-attended information which has been collected since the commencement of operations at WBCT. The data provides a record of noise from all sources and an estimated contribution from port activities. Port Authority will provide a periodic summary of results on the Port Authority website.

The locations of the unattended continuous noise monitoring locations are shown in Figure 6.2. Table 6-2 describes the unattended continuous noise monitoring locations in White Bay. These locations have been selected to be representative of the receiver areas most frequently affected by cruise ship noise activities.

Figure 6.2: Unattended Continuous Noise monitoring locations



L: Unattended Monitoring location, P: Potential Unattended Monitoring location

Table 6-3 Continuous Noise Monitoring Locations and Timing (White Bay)

Number	Location	Monitoring Strategy	Duration	Frequency
L01	Grafton Street (west), Balmain	Continuous Noise Monitoring	24hr / 7 days per week	All ship visits in accordance with Noise Restriction Policy
L02	Maintenance Building in WB	Continuous Noise Monitoring	24hr / 7 days per week	All ship visits in accordance with Noise Restriction Policy
L03	Mansfield St or adjacent to WB2	Continuous Noise Monitoring	24hr / 7 days per week	All ship visits in accordance with Noise Restriction Policy

Port Authority will undertake continuous (unattended) noise monitoring as required in accordance with the Noise Restriction Policy.

6.3 Noise Monitoring Procedures

Personnel

Measurements to be undertaken by a suitably qualified and experienced acoustic consultant. Measurement to be undertaken in accordance with the procedures of Australian Standard 1055 – *Acoustics-Description and Measurement of Environmental Noise*.

Equipment

Sound measuring equipment for attended measurement to conform to Australian Standard 61672.1 *Electroacoustics – Sound Level Meters Specifications* as Class 1 or Class 2.

Sound measuring equipment for long-term measurement to conform to Australian Standard 61672.1 *Electroacoustics – Sound Level Meters Specifications* as Class 1.

Procedures

Measurements to be A-weighted and the time weighting of equipment set to “Fast”.

Equipment to be calibrated in the field before and after measurement.

Records

As a minimum the following are recorded for attended monitoring:

- Pre and post calibration status of the sound level meters;
- Measurement period;
- Qualitative assessment of the noise environment – for example note if the noise emission from White Bay 4 is the dominant noise at the measurement location;
- $L_{A_{Max}}$, L_{A1} , L_{A10} , L_{A90} and L_{Aeq} levels over the measurement period; and
- For attended measurement, contribution of major noise sources should be recorded or estimated.

As a minimum the following are recorded for the continuous monitoring:

- Continuous L_{Aeq} measurements with an integration time periods between 10 seconds to 1-2 minutes; and converted to estimated L_{Aeq} levels for each ship.

Compliance

Previous noise monitoring has identified there is likely to be ongoing exceedance of the Project Approval noise limits in Table 1, particularly at night time, as a result of cruise related activities. The investigations undertaken for the NIMS have determined the cause and extent of the exceedances, and the appropriate feasible and reasonable mitigation measures have been identified. These mitigation measures, including the NAP and the Noise Restriction Policy have been incorporated into this version of the ONMP (further details are provided in Section 4).

Operator-attended noise monitoring may be undertaken at the discretion of Port Authority as a result of noise complaint(s) as shown in Table 6-2, if the complaint investigation undertaken under the Complaint Response Procedure determines that the complaint(s) is related to the WBCT and the source of the noise may have resulted in further exceedance(s) of the attenuation eligibility trigger of the NAP, based on the permanent continuous noise monitoring results. Continuous monitoring results will be used to investigate the complaint. Additional monitoring may be undertaken for multiple/repeated valid noise complaints, as determined during the noise complaint investigations.

Timing

Attended monitoring has been conducted during the establishment of the continuous monitoring operation in order to adequately correlate the measured noise levels and ensure consistency between the measurement systems. Beyond that, any further attended monitoring would be undertaken to confirm noise levels, as deemed required by the Port Authority and as described in Section 6.2.

Maintenance

Where possible, scheduled maintenance of the continuous monitoring equipment will be undertaken on non-ship days to avoid loss of data.

7. Reporting

Noise monitoring reports will be provided to the Department of Planning and Environment (DPE), Inner West Council and the Glebe Island and White Bay Community Liaison Group (CLG) in accordance with the following schedule.

Type of Record	Timing	Responsibility
Noise monitoring results	A monthly summary of monitoring results will be made available on Port Authority website	SME
Noise Monitoring Compliance Reports to the DPE	As discussed in Section 6 - Quarterly	GMC, SME
Summary of noise monitoring results to Council and the CLG	Quarterly via the CLG meetings	SME

Appendix A

Compliance Check

Condition	Where Addressed in OEMP
D1 Noise limits for Cruise Ships	Section 1.2, 1.4, 1.5, 4, 6 and 7
D2 Noise Measurement Locations	Section 6.1
D3 Construction of terminal building and noise limits for mechanical plant	Section 2.3
D5 Set up and dismantling of temporary structures	Table 4-1
D11 Monitoring of Cruise Ship operations and reporting	Sections 6 and 7
D16(b) Operational Noise Management Plan is to be prepared in consultation with Council.	Section 1.6
<ul style="list-style-type: none"> i) identification of noise sources and scenarios associated with the operation of the project, including for cruise ship days and functions; ii) noise mitigation measures to be applied during the use of the project during cruise ship days and functions; iii) selection of quiet equipment and plant consistent with the noise limit requirements of this approval; iv) maintenance regimes of all equipment to ensure correct working order; v) a monitoring and recording regime for cruise ship operations and functions; and vi) a procedure for handling noise complaints that includes recording, investigating, reporting and follow-up action. 	<ul style="list-style-type: none"> i) Sections 2 and 4, for cruise ship days (function noise is addressed in the WBCT OEMP (Functions) and its sub-plans) ii) Section 4, for cruise ship days (function noise is addressed in the WBCT OEMP (Functions) and its sub-plans) iii) Section 2.3 and 4 iv) Section 4 v) Section 6 (for cruise operations) vi) Section 1.7

Appendix B

WBCT Noise Restriction Policy



White Bay Cruise Terminal Noise Restriction Policy

Title	White Bay Cruise Terminal – Noise Restriction Policy
Document Date	26 June 2018 26 June 2018
Effective Date	1 October 2018 (with reference to the Noise Management Plan - Cruise Operations (2023))

Background

Port Authority of NSW has developed a Noise Mitigation Strategy for White Bay Cruise Terminal (WBCT) to provide reasonable and feasible noise mitigation and management measures, to address the requirements of the Project Approval¹. The Noise Mitigation Strategy is designed to address noise at the receiver (homes) as well as noise at the source (cruise vessels) and comprises the following three elements:

- a) Noise Attenuation Program;
- b) Noise Restriction Policy; and
- c) Noise Monitoring.

Policy

This Noise Restriction Policy aims to ensure that restrictions to on-board announcements and music are strictly observed and that noise from cruise ships utilising WBCT does not trigger the need for further noise mitigation, beyond that currently identified in the Noise Impact Mitigation Strategy Report².

The current Harbour Master's Directions in relation to the use of WBCT expressly prohibits external non-safety announcements³ and/or music on-deck whilst at berth.

This policy works in conjunction with the current Harbour Master's Directions. Port Authority will enforce this policy by imposing consequences on vessels which do not observe the restriction to external non-safety announcements and music (defined in this policy as Excessive Noise).

Port Authority have committed to a program of providing noise attenuation to residences in the vicinity of WBCT (the Noise Attenuation Program), based on an expected maximum ship noise level (including noise from WBCT cruise ship engines, generators and ventilation). Port Authority will provide attenuation to a defined area of residences where noise modelling⁴ indicates that current noise levels reach or exceed

¹ Project Approval MP 10_0069 dated 2 February 2011 (as modified).

² As described in the SLR Consulting Australia Pty Ltd report *White Bay Cruise Terminal, Noise Impact Mitigation Strategy, Cruise Operations*, November 2017.

³ The Harbour Master's Directions (available on the Port Authority website: portauthoritiesnsw.com.au) state that testing of ships horns / whistles prior to sailing or safety drill alarms or announcements are permitted. All deck announcements and music from open decks is not permitted. Safety drill announcements are permitted to all decks prior to departure. All music and non-safety related announcements must be kept to internal ship areas until well clear of the berth.

⁴ As described in the SLR Consulting Australia Pty Ltd report (November 2017).

55dBA at night ('attenuation eligibility trigger'). Cruise ship noise which causes further residences than those currently identified to exceed the attenuation eligibility trigger will also be considered to be Excessive Noise, and may result in limitations to such a vessel's future use of WBCT.

Excessive Noise as defined in this policy⁵ therefore applies to noise originating from a passenger vessel, as follows:

- a) external non-safety announcements or music played on-deck; and
- b) any noise including but not limited to engine, generator or ventilation noise which causes further residences than those currently identified to exceed the attenuation eligibility trigger.

Port Authority will consider exempting incidents of Excessive Noise that are otherwise unavoidable on a case-by-case basis. This could include instances of equipment malfunction or failure beyond the control of the cruise ship operator.

Consequences for Breaches of Excessive Noise part a): external non-safety announcements or music played on-deck

Under the Port Authority's Schedule of Port Charges, Site Occupancy Charges for WBCT, a "Good Neighbour" Charge would be imposed by Port Authority for the use of WBCT, but would be rebated to the vessel for compliance with the Excessive noise requirement part a) of the Noise Restriction Policy.

- **First Breach: Warning Letter**

If noise reasonably considered by Port Authority to have originated from a passenger vessel constitutes Excessive Noise for the first time, a warning letter is issued to the vessel master and copied to the relevant cruise line/cruise company as a notice of a breach of the noise restrictions set in this policy. The "Good Neighbour" Charge would be rebated in this instance.

- **Subsequent Breaches: Forfeit of "Good Neighbour" Rebate**

If following a first breach, noise reasonably considered by Port Authority to have originated from a passenger vessel constitutes subsequent Excessive Noise (a subsequent breach), a letter will be issued to the vessel master and copied to the relevant cruise line/cruise company, advising of the subsequent breach of the noise restrictions set in this policy. Subsequent occurrences of Excessive Noise by a vessel will have the consequence that the "Good Neighbour" Rebate would be forfeited in full for each subsequent breach.

At any time, Port Authority may request a vessel which has breached the noise restrictions to demonstrate that subsequent occurrences of Excessive Noise will not occur at the WBCT facility. If a vessel does not demonstrate improvements, Port Authority may not permit the vessel to utilise the WBCT facility until such time as improvements can be demonstrated.

⁵ Note that Excessive Noise as defined in this policy does not refer to non-compliance with Noise Criteria as described in the Project Approval MP 10_0069 dated 2 February 2011 (as modified).

Consequences for Breaches of Excessive Noise part b): engine, generator or ventilation noise

- **First Breach: Warning Letter**

If noise reasonably considered by Port Authority to have originated from a passenger vessel constitutes Excessive Noise for the first time, a warning letter is issued to the vessel master and copied to the relevant cruise line/cruise company as a notice of a breach of the noise restrictions set in this policy.

- **Second Breach: Overnight Relocation**

If noise reasonably considered by Port Authority to have originated from a passenger vessel constitutes Excessive Noise for the second time, a second letter will be issued to the vessel master and copied to the relevant cruise line/cruise company, advising of the second breach of the noise restrictions set in this policy. If this second occurrence of Excessive Noise occurs between the hours of 2200 and 0700, it may have the consequence that the vessel will also be notified that future overnight stays will be required to be relocated (at the vessel's cost) to an anchorage between the hours of 2200 and 0700 (subject to availability).

- **Third Breach: White Bay Cruise Terminal Ban**

If noise reasonably considered by Port Authority to have originated from a passenger vessel is Excessive Noise for the third time, a third letter will be issued to the vessel master and copied to the relevant cruise line/cruise company, advising of the third breach of the noise restrictions set in this policy. A third occurrence of Excessive Noise by a vessel will have the consequence that the vessel will no longer be permitted to utilise the WBCT facility.

If a vessel serving a third breach has a pre-existing booking within the cruise season cycle (1 July to 30 June), current at the date of issue of the Third Breach letter the vessel may be permitted to use WBCT for the turnaround process⁶ only within the cruise season cycle, and not stay overnight. However, the vessel may be moved to an anchorage (as available) for the balance of the slot.

Each breach by a vessel is recorded at the time it occurred. The breach tally is cumulative and a vessel remains on record for Excessive Noise for the first, second or third occurrence until such time as the vessel receives approval from Port Authority for review of the breach status.

Application to request review of breach status

A request may be made on behalf of a vessel for Port Authority to review its record of breach(es) by demonstrating implementation of an adequate change, which may be combined with adequate policy or procedural change. The standard required will be change to a level which demonstrates to Port Authority a likelihood of averting future recurrence, and may include the following measures:

- a) A physical change such as completion of engineering works to vessel to reduce engine/generator and/or ventilation noise. This would require documentation to be provided by the cruise ship operator to demonstrate reduced noise level following the works.

⁶ Turnaround means the process of disembarking all the vessel's incoming passengers at the end of their journey and embarking onto the vessel the new outgoing passengers to commence their journey.

- b) Demonstrated changes to ensure music no longer played to open deck areas, and/or announcements are only made in relation to safety to open deck areas.

Only after applying to request review of breach status and demonstrating to Port Authority the changes mentioned in a) and b) above, will Port Authority consider reinstating a vessel's eligibility to berth at WBCT.

Monitoring

In administering this policy, Port Authority will utilise a real time audio recording device to capture noise and a continuous (unattended) monitoring device to measure noise levels⁷.

Operator-attended noise monitoring may be undertaken at a number of locations in response to complaints or as required, to correlate with continuous noise monitoring for previously unmonitored ships.

General

This policy is to be read in conjunction with the Port Authority's Cruise Booking Policy and terms and conditions governing berthing of passenger vessels and Port Authority facilities. To the extent of any inconsistency, these terms will prevail.

⁷ As described in the White Bay Cruise Terminal Operational Noise Management Plan - Cruise Operations (~~June 2018~~ April 2023)