THE STAR ENTERTAINMENT GROUP LIMITED (SEGL)

THE STAR MODIFICATION 13

ADDENDUM NOISE REPORT

NOVEMBER 2018

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The Star Modification 13
Addendum Noise Report

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1 INTRODUCTION

This addendum report has been prepared to address the noise related submissions made to the Department of Planning and Environment (DPE) with regards to the MP08_0098 Mod 13 application by Star Entertainment Group Limited (SEGL). The submissions relevant to the noise assessment made by various parties include:

- Items raised by Department of Planning and Environment (DPE):
  - Construction noise impacts (see Section 2)
- Items raised by The City of Sydney R/2016/1/C MP 08_0098 MOD 13 dated 9 October 2018:
  - Site-wide noise strategy (see Section 3)
  - Apartment Design Guide natural ventilation requirements (see section 3.2)
- Items raised in community submissions (see Section 4):
  - Operational noise impact from the proposed Level 05 terrace to residents of the Astral residence
  - Operational noise emission from Jones Bay Road new restaurants
  - Operational noise increasing as a result of the modifications experienced at existing surrounding receivers
  - Operational noise from patrons and vehicles accessing The Star
  - Construction noise

This addendum report should be read in conjunction with the Noise Impact Assessment (NIA) as Appendix K of the Environmental Assessment Report (EAR) of the State Significant Development (SSD) Modification 13 application prepared by WSP and additional documents where referenced.

2 DEPARTMENT OF PLANNING AND ENVIRONMENT SUBMISSION

DPE issued a request for response to submissions dated 23 October 2018. The DPE identified that further consideration was required on matters including amenity, traffic, lighting and construction impacts. This addendum noise report seeks to address issues relating to impacts on the acoustic environment in the community and agency submissions. Item 20 of the DPE request relates to construction impacts and states:

> *20. The Department notes the NIA predicts construction noise impacts up to 80 dB(A) at nearby sensitive receivers, which exceeds the ICNG's 'highly-affected' noise threshold (75 dB(A)). Provide further analysis of construction impacts and potential methods for managing / mitigating noise impacts during construction.*

The construction airborne noise assessment in Section 15 of NIA presented noise levels from typical construction equipment as the construction methodology has not yet been defined to a level of detail for the purposes of a detailed noise assessment.

Section 15.1 of the NIA presents a construction noise assessment with conservative predicted noise levels at a distance of 20 metres using typical equipment with no shielding or additional mitigation considered in the calculation. The highest typical predicted noise level in the NIA at 20 metres was 80 dBA. At a distance of 35 metres, accounting for distance attenuation, the noise level of the same activity is 75 dBA. The closest residential receivers, 2 Jones Bay Road, 91 and 93 Pyrmont Street and 31 Union Street are between 20 to 30 metres from the proposed modification construction areas Therefore, these receivers may be at risk of exceeding the highly noise affected management level within the Interim Construction Noise Guideline (ICNG) (DECC, 2009).

For the other surrounding residential receivers, which are located 35 or more meters away, the calculations indicate that a level of 75 dBA would not be exceeded. As such, the closest receivers identified (2 Jones Bay Road, 91 and 93 Pyrmont Street and 31 Union Street) are most at risk of experiencing noise levels of more than 75 dBA.

As detailed in Section 15.3 of the NIA and required by Condition B21, a construction noise and vibration management plan (CNVMP) is to be developed by the construction contractor. As part of this CNVMP, specific reasonable and feasible mitigation measures will need to be nominated to reduce the potential noise impacts from constructing the proposal. Those activities identified as being at risk of causing exceedances of the highly noise affected should be considered for respite periods or limiting hours when these activities can be conducted.

For example, stationary intensive noise sources such as a jackhammer could use a temporary barrier, where reasonable and feasible, to shield it from receivers. Temporary barriers when installed correctly, can give reductions of between 5-10 dB meaning that a noise level of 80 dBA could be reduced to 75 dBA or less. Where this is not reasonable and feasible other measures must be investigated including use of respite periods.

The CNVMP will outline measures to reduce the noise impact from construction activities. Reasonable and feasible noise mitigation and management measures to be considered may include:

- notification and consultation of community and stakeholders of nature, duration, timing and location of works
- maintaining a project information line and construction response line.
- monitoring and complaints protocols to be developed.
- scheduling work within standard hours and limiting times of use or respite periods for noise intensive items/activities.
- avoiding any unnecessary noise when carrying out manual operations and when operating plant.
- avoiding/limiting simultaneous operation of noisy plant and equipment within discernible range of a sensitive receiver where practicable.

- switching off any equipment not in use for extended periods e.g. heavy vehicles engines would be switched off whilst being unloaded.
- avoiding deliveries at night/evenings wherever practicable.
- minimise idling of delivery trucks.
- ensuring spoil and materials is placed and not dropped into awaiting trucks.
- using drop off or delivery locations located away from sensitive receivers.
- keeping truck drivers informed of designated vehicle routes, parking locations and acceptable delivery hours for the site.
- minimising talking loudly; no swearing or unnecessary shouting, or loud stereos/radios onsite; no dropping of materials from height where practicable, no throwing of metal items and slamming of doors.
- maximising the offset distance between noisy plant and adjacent sensitive receivers and determining safe working distances.
- using the most suitable equipment necessary for the construction works at any one time.
- selecting equipment based on the lowest noise generating item suitable for the work.
- use of quieter and less vibration emitting construction methods where feasible and reasonable.
- using equipment fitted with noise attenuation such as residential grade silencers.
- directing noise emitting plant away from sensitive receivers.
- use of temporary noise barriers, enclosures, site building, stockpiles or other structures to shield construction work from receivers.
- regularly inspecting and maintaining plant to avoid increased noise levels from rattling hatches, loose fittings and the like.
- using non-tonal reversing/movement alarms such as broadband (non-tonal) alarms or ambient noise-sensing alarms for all plant used regularly onsite (greater than one day), and for any out of hours works.

3 CITY OF SYDNEY SUBMISSION

City of Sydney Council (CoS) has raised concerns relating to the proposed site-wide noise strategy as part of their submission dated 9 October 2018. An excerpt of the relevant noise related items is presented below, together with a response.

3.1 PRECINCT WIDE NOISE STRATEGY

Precinct Wide Noise Strategy

The proposed site-wide acoustic monitoring strategy (for entertainment noise, mechanical plant and operational noise) is supported in principle. However, given that either the Department, the City or a private certifier will be responsible for assessing future DAs or applications for complying development certificates, for a cumulative site-wide noise criteria to work, the site-wide noise strategy that gives basis to a cumulative criteria used by both the Department and the City must be the same

Although there could potentially be a cumulative noise control level (a noise level that the overall contribution of noise from all venues would not cause to exceed), this will be required to be disseminated back to individual premises. The site-wide acoustic monitoring strategy should also allocate maximum patron capacities and amplified noise levels at reference locations on each premise that can be tested in the absence of noise interference from adjacent premises.

For this to work, the Department will need to commit to this strategy, ensure that accurate patron capacities are kept for all approvals, and ensure that all future Department determinations comply with the strategy.

In addition to the above, the following comments require further attention and clarification:

- *It is not clear as to how the submitted report proposes to control objective issues associated with the development. It will need to identify matters that cause noise impact and address them in a way that can be simply managed in individual consents under an over structure.*
- *Technical requirements will need to be developed alongside standardised conditions of consents developed specifically for the precent.*

3.1.1 WSP RESPONSE

The key items raised in the CoS submission are as follows:

- In principal support for a site-wide cumulative criteria
- The need for the DPE and CoS noise conditions to be the same
- Using noise controls for individual premises such as maximum patron capacities
- The method for control of objective issues that have the potential to cause noise impacts
- Technical requirements for the standardised conditions of consent

The following sections provide responses to these key issues.

SITE-WIDE ACOUSTIC CRITERIA

The existing approval conditions contain a requirement for licensed premises to be assessed cumulatively in Condition F5. This means that the total noise emitted by all onsite licensed premises must meet the site-wide criteria and are not subject to individual criteria set for each licensed premises and receiver. The premises specific conditions in the current Approval Conditions (Conditions F1C, F1D, F1F and F3) also reference the requirement to meet the cumulative noise limits in Condition F5. In the proposed conditions of consent, Condition F5A in Appendix A of the NIA sets out the

cumulative noise criteria for licensed premises which have been retained as the basis of the site-wide criteria. These criteria are based on the standard CoS noise criteria for licensed premises as follows:

Cumulative noise caused by the licensed premises when measured or assessed outside the boundary must comply with the following criteria:

1. *The use must not result in the transmission of "offensive noise" as defined in the Protection of the Environment Operations Act 1997 to any place of different occupancy outside the boundary.*
2. *The L_{10} noise level emitted from the use must not exceed 5dB above the background (L_{90}) noise level in any Octave Band Centre Frequency (31.5 Hz to 8kHz inclusive) between the hours of 7.00am and 12.00 midnight when assessed at the boundary of the nearest affected property. The background noise level must be measured in the absence of noise emitted from the use.*
3. *The L_{10} noise level emitted from the use must not exceed the background (L_{90}) noise level in any Octave Band Centre Frequency (31.5 Hz to 8kHz inclusive) between the hours of 12.00 midnight and 7.00am when assessed at the boundary of the nearest affected property. The background noise level must be measured in the absence of noise emitted from the use.*
4. *Notwithstanding compliance with (1) and (2) above, the noise from the use must not be audible within any habitable room in any residential property between the hours of 12.00 midnight and 7.00am.*
5. *The L_{10} noise level emitted from the use must not exceed the background noise level (L_{90}) in any Octave Band Centre Frequency (31.5 Hz to 8kHz inclusive) by more than 3dB when assessed indoors at any affected commercial premises*

It is recognised that any consents still held by the CoS and those areas under the DPE SSD Approval require the same criteria in order for the site-wide criteria to be effective. If two different licensed premises have different criteria, then it may introduce inconsistencies such that one premises may comply with one condition, but not the other.

The Star commits to reviewing these existing conditions and applying for a modification to any existing CoS conditions to make them consistent with the Modification 13 approval conditions in consultation with CoS.

NOISE CONTROLS FOR INDIVIDUAL PREMISES

There are a number of existing conditions that relate to noise control for individual premises and objective noise issues, such as amplified music or gaming machines including the following:

- E1 (A) Certification of noise mitigation measures – this condition requires any proposed acoustic mitigation measures to be certified that they meet the conditions of approval, that is, comply with the site-wide noise criteria.
- F1 No speakers or music outside – limits the use of speakers or music outside
- F1B Level 3 Outdoor Pool Deck – contains specific noise controls for this area
- F1C Level 3 Pirrama Road Entertainment Deck – contains specific noise controls for this area
- F1D use of speakers in outdoor areas – contains specific limits for speakers in outdoor gaming areas

As stated in Appendix A of the NIA, these conditions relate to existing premises and are proposed to be retained with no changes proposed. For the proposed Modification 13 changes, dissemination back to individual premises is not required as The Star is considered to be one entity and therefore has control over each noise emitting source so that it can ensure the cumulative noise at a receiver meets the site-wide criteria in Condition F5A.

Conceptually, to disseminate back to individual premises would require individual premises-specific noise criteria to apply. One approach would be to apply individual premises noise criteria established based on standard conditions of consent. This is the current situation with existing DA conditions. However, this introduces noise creep at receivers.

For example, at any arbitrary receiver, the noise level at the receiver may be contributed to by number of premises. Each of the individual premises would have their individual noise criteria “X” dB established based on standard conditions of consent. If multiples of these noise contributing premises operate simultaneously at their complying noise limits of “X” dB, then two premises operating simultaneously would result in a noise level of “X” + 3 dB at the receiver, four premises would result in “X” + 6 dB, eight premises would result in “X” + 9 dB, and so on. This results in noise creep at the receiver location despite each individual premises complying with their own noise limits.

The proposed site-wide approach eliminates the potential for noise creep as it uses one established site-wide criteria "X" dB that applies to the total noise level from all premises. This also demonstrates that the site-wide cumulative criteria are more stringent than the individual premises-specific approach.

In addition, unlike other precinct within the City of Sydney, such as Barangaroo, The Star is one entity which operates multiple uses and multiple instances of those uses within its site. When dealing with a precinct such as Barangaroo which is made up of multiple individual businesses, the assignment of contributions from each separate business is critical as they are unrelated businesses operating in proximity to each other. In this case, individual criteria for each businesses premises are required so that each individual business can be held responsible for their own noise emissions and any related mitigation measures required.

In the case of The Star, however, the premises are all controlled by The Star and therefore there is no requirement to condition each individual premises in order to have a policy lever to control noise from licensed premises. The site-wide criteria are the responsibility of The Star to comply and it will therefore control the cumulative noise level from all premises on its site to within the site-wide criteria.

In a precinct such as Barangaroo, an individual business has no obligation to change its operation to suit its neighbours preferred operational configuration and therefore needs to be conditioned so that it does not result in an unreasonable restriction on another business. In the case of The Star, it has control of all premises within its site so it can control and manage each premises to meet the site-wide criteria using different operational configurations. For example, if the outdoor Level 05 deck is being used with amplified music it might mean that another outdoor space needs to either be closed or have its operations restricted so that it can accommodate the change in noise emission from Level 05 within the cumulative criteria. The site still meets the site-wide criteria and operates within its approved use without additional impact to receivers.

As a result it is not considered necessary to condition each individual premises as the cumulative noise level from all premises on the site is controlled by The Star which is subject to the site-wide criteria.

CONTROL OF OBJECTIVE NOISE ISSUES

The recommended conditions in Appendix A of the NIA require control of objective noise issues through two conditions, B5 and B5A. Site-wide noise will be controlled by Condition B5 Noise Management Plan which states the following:

> *B5 Noise Management Plan*
>
> *An Operational Noise Management Plan (ONMP) is to be prepared for the site in consultation with the City of Sydney. The ONMP is to be submitted to the Department for approval prior to issue of a Construction Certificate for above-ground works associated with Modification 13 and is to incorporate the following:*
>
> - *Document location of noise sensitive receivers*
> - *Document noise emission criteria at noise sensitive receivers*
> - *Document management strategies*
> - *Performance verification protocols*
> - *Complaint handling procedures*

In addition to this, Condition B5A Noise Verification Plan, provides further requirements for control of objective noise issues as follows:

> *B5A Noise Verification Plan*
>
> *A Noise Verification Plan (NVP) is to be prepared for the site. The NVP is to be submitted as part of the Operational Noise Management Plan as required by Condition B5.*
>
> *The NVP shall nominate Noise Control Points (NCP) on The Star site. The NCPs should be located where they will be representative of a sound source (or group of sound sources) contributing to the cumulative noise level controlled by Condition F5A at the most exposed off site noise sensitive receivers.*

The NVP will nominate an L_{10} octave band sound pressure level Noise Control Level (NCL) at each NCP such that where the sound level satisfies the NCL, it will also satisfy the relevant criteria of Condition F5A at the receiver it represents, taking into account the cumulative total from all relevant noise sources.

Condition F5A - Noise (Licenced Premises) is verified if the measured L10 octave band sound pressure levels at the NCP do not exceed the NCL

The NVP shall be prepared by an appropriately qualified Acoustic Consultant who has full membership of the Australian Acoustic Society or who is employed by a member firm of the Association of Australasian Acoustical Consultants

These two conditions require The Star to prepare these plans in consultation with the CoS and be approved by DPE prior to issue of a construction certificate. Both Condition B5 and B5A demonstrates that objective noise issues will be controlled using documented management measures and the performance against the conditions managed using the NVP.

Furthermore, the recommended Condition F6 Acoustic Review in Appendix A requires an acoustic review of the proposed new areas to be carried out to ensure that their noise emission comply with the conditions of approval in accordance with the ONMP. This provides further evidence that objective noise issues will be controlled by The Star as they are required to report on the acoustic performance of the proposed new areas.

TECHNICAL REQUIREMENTS FOR THE STANDARDISED CONDITIONS OF CONSENT

The technical requirements for the standardised conditions of consent are provided in the recommended conditions of consent set out in Section 17 and Appendix A of the NIA. As stated in Section 17.3 of the NIA, the technical basis for the noise criteria for licensed premises are from the CoS standard conditions for licensed premises.

For operational noise that excludes entertainment noise which covers mechanical plant and other operational noise such as on site traffic, the recommended conditions have only altered the existing conditions of consent so that other operational noise is considered cumulatively with mechanical plant noise. The technical requirements of the criteria have not been altered in any other way.

These conditions, which include technical requirements such as noise descriptors, frequency content, definition of background noise and assessment time period are defined in Appendix A of the NIA.

STREAMLINING ASSESSMENT AND COMPLIANCE

In addition to the above, it is considered that the site-wide noise criteria will enable more streamlined assessment and simplify determination of compliance.

- Adopting the site-wide cumulative approach will standardise and streamline assessment processes of future applications by the Department, the City, or private certifiers. The total noise emission from any new premises and all existing premises would be required to meet one set of site-wide criteria.
    - This simplifies the process as the site-wide criteria remain constant and is therefore not influenced by differences in assessments or subsequent changes such as new or changed licensed premises.
- Regulators (CoS, DPE etc.) have one set of consistent site-wide criteria to assess the site against, which are more stringent than the current conditions.
    - The site wide criteria developed in Section 6 of the NIA present one set of criteria for the cumulative noise emission from one type of noise source (entertainment or mechanical/operational). This has simplified the previous approach which conditioned each licensed premises with separate criteria leading to many similar conditions for the one site.
- Assessing The Star's multiple licensed premises noise emission as one premises by using the site-wide cumulative criteria meets the intention of the Office of Liquor and Gaming (OLGR) standard noise emission criteria. Using

separate conditions for each licensed premises does not align with the intention of the OLGR criteria as they permit exceedances of the criteria via noise creep.

- Section 17.1 and 17.2 have recommended conditions for Operational Noise Management Plan (Condition B5) and Noise Verification Plan (Condition B5A) to be developed which will address noise management strategies and assessment methods taking into consideration the cumulative approach for the site.
  - The NVP is specifically designed to ensure that assessing compliance will be simplified by pre-determining assessment locations which can be used for compliance purposes so that consistent measurements can be taken of noise from the site only.

3.2 APARTMENT DESIGN GUIDE (ADG)

City of Sydney has also raised the following noise-related issue regarding the design of the apartments

> *The Noise Impact Assessment states that all residential windows will need to remain closed with mechanical ventilation relied upon to meet required internal noise levels. This solution does not comply with Objective 4B-1 in the ADG requiring all habitable rooms to be naturally ventilated.*

3.2.1 WSP RESPONSE

Section 13.2.3 of the NIA states that ventilation requirements would be met using a combination of mechanical ventilation and attenuated natural ventilation paths. The report does not state that mechanical ventilation will need to be relied upon.

The attenuated natural ventilation paths would be designed to meet natural ventilation requirements in consideration of the ADG and CoS draft guidelines "Alternative natural ventilation of apartments in noisy environments."

In addition, allowances for an attenuated natural ventilation path has been incorporated into the FJMT façade design of the residential tower. The proposed design consists of linear spandrel grilles on the façade where acoustically rated fresh air intake paths can be designed and located in detail at the next design stage. Acoustically rated paths can include the following noise reduction design elements:

- Lined convoluted paths
- Lined plenum
- Proprietary noise reduction products such as Silenceair, trickle vents, etc.

4 COMMUNITY SUBMISSIONS

4.1 SUBMISSION 281100

Property owners at numbers 851 and 852 of the Astral Residence at 80 Pirrama Road, Pyrmont, raised concerns relating to the noise impacts from the proposed Level 05 Terrace. An excerpt of the noise-related items is presented below.

Level 5 Terrace

Noise

- *Modification 13 will intensify the noise impacts on the residents of the Astral building through the activation of uses on Level 5, including 'flexible events/designated event spaces'*

A Noise Impact Assessment is provided as Appendix K of the SSD Modification 13

- *The assessment anticipates the installation of eight (8) speakers for the indoor event space and another eight speakers for the outdoor event space over a duration of 7am to midnight and midnight to 7am.*
    - *The Modification 13 proposal appears to have only anticipated impacts to receivers outside of the Star development site, whereas impacts of occupants within the Star development site will also occur and require consideration and appropriate amendment mitigation*
    - *The assessment has minimal regard to sensitive receivers within the Star's own development site*

Conclusion

We request that the Department consider the proposed Modification 13 with respect to the visual, noise and privacy impacts that it will introduce for existing and future residents.

Should the Department be of the view to support the application, we request our client's concerns are addressed through:

- *Ensuring all amenity impacts associated with the proposal have been considered including appropriate conditions in any future consent to safeguard our client's residential amenity*
- *Placing a restriction on the hours of operation for Level 5 uses.*

4.1.1 WSP RESPONSE

No loudspeakers are proposed to operate between midnight and 7am for the Level 05 Terrace, as detailed in Section 11.3.1 of the NIA. Management of the loudspeaker operations will be incorporated into the ONMP.

4.1.1.1 ASSESSMENT OF LEVEL 05 TERRACE IMPACTS ON THE ASTRAL RESIDENCE

A comparison of the noise impacts resultant from the operation of the proposed Level 05 Terrace against the existing noise environment has been undertaken. A three-dimensional noise model, developed as part of the Noise Impact Assessment (outlined in Section 11.1 of the Noise Impact Assessment), has been used to assess the increase in noise levels compared with the existing situation at the façade most likely to be impacted by the Level 05 Terrace (northern façade).

The assessment of the noise impacts from the Level 05 Terrace aligns with the methodology outlined in Section 11.3 of the Noise Impact Assessment. This is assessed with respect to the worst-case scenario involving the greatest increase in noise sources due to the proposed Level 05 Terrace development, which aligns with the 7am to midnight scenario outlined in Table 11.9 of the NIA.

Predicted noise levels at the Northern façade of the Astral Residences indicate that future noise impacts are similar to the existing noise impacts at the onsite residences, with the highest predicted increase to be less than 2 dB, which is not considered a significant change in noise level.

In addition to the above, it is a recommendation of the NIA and Condition B5 that an ONMP be prepared. The ONMP will include considerations for noise control at existing noise sensitive receivers.

4.2 SUBMISSION 281102

WSP has summarised the key items to be addressed as follows:

1) Potential noise from stationary or queueing vehicles on Pyrmont Street
2) Potential noise from patrons on Pyrmont Street
3) Potential noise emission from new restaurant fronting Jones Bay Road
4) Acoustic reflectivity of façade material used for modified sections
5) Potential noise impacts and sleep disturbance during construction of proposal
6) Potential noise emissions from Jones Bay Road entry modifications
7) Consideration of architectural treatments for 16 Pyrmont Street for operational noise.

The following sections provide WSP's response to each of these items.

4.2.1 ITEM 1

Items relating to the management of traffic are to be addressed by the site's traffic management plan.

4.2.2 ITEM 2

Control of patrons entering or leaving The Star is to be managed using a combination of behavioural and educational techniques to ensure patrons minimise the potential for noise impacts to occur when entering or leaving The Star.

4.2.3 ITEM 3

WSP has conducted further assessments of the potential noise impacts at the nearest residential receivers to the new restaurant spaces on Jones Bay Road frontage.

An assumption of 200 patrons and background music has been assessed. Patron noise levels assume a male raised voice, as outlined in American Standard ANSI 3-5-1997, with 1 in every 2 patrons speaking. Background music has been assumed to be 83 dBA, as per previous WSP measurements.

The recommended minimum façade sound insulation performances required to meet environmental noise criteria as detailed in Section 6 of the NIA, are outlined in Table 4-1. Actual requirements will be dependent on the intended operating hours of the restaurants, with higher performance facades required for those operating after midnight. For areas which operates beyond midnight the more stringent sound insulation performance recommended below is required.

Table 4-1 Façade performance of restaurant and retail spaces on Jones Bay Road expected to meet environmental noise criteria

PERIOD OF OPERATION	OCTAVE BAND MINIMUM TRANSMISSION LOSS (dB)								EXAMPLE GLAZING CONSTRUCTION
	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
7am to Midnight	-	11	23	31	29	26	30	36	— 10.38mm laminate
Midnight to 7am	7	19	32	38	37	35	38	45	— 10mm float, 12mm air gap, 12.8mm laminate

4.2.4 ITEM 4

The 3D noise model used for the predictions of noise emissions from The Star in Section 11 of the NIA considered the acoustic reflectivity of structures, buildings and ground surfaces. The assessment concluded that The Star's noise emissions can comply with the noise limits in the conditions of approval and therefore consideration of acoustic absorption the façade is not required.

4.2.5 ITEM 5

Noise and vibration impacts, including the potential for sleep disturbance during the construction for the proposal is to be managed by the Construction Noise and Vibration Management Plan (CNVMP) as set out in Section 15 of the NIA and required by Condition B21. The hours of construction work are limited by condition D11 to daytime hours only, except in limited circumstances.

The CNVMP will detail the predicted impacts and noise and vibration emission criteria according to the approval conditions and the EPA's guidelines. It will also detail the reasonable and feasible mitigation measures that will be applied to the work to reduce the potential for noise and vibration impacts. The CNVMP is to be developed when the construction methodology has been developed further to allow sufficient detail for input into the CNVMP.

4.2.6 ITEM 6

Noise impacts from the addition of a car park entry on Jones Bay Road was assessed to identify if any additional noise impacts would occur as a result of additional traffic on Jones Bay Road in Section 12 of the NIA. In addition, any on site traffic noise generated from the new car park entry would be required to meet the cumulative criteria for mechanical and other operational noise detailed in Section 17.4 of the NIA. The current conditions do not include a provision for controlling on site transportation noise, however the Modification 13 NIA has proposed to introduce criteria in to control noise from onsite transportation as set out in Section 17 and Appendix A of the NIA.

4.2.7 ITEM 7

The NIA demonstrated that the noise emission from The Star can meet the noise criteria at the surrounding residential receivers. Where The Star is compliant with these noise levels, no further investigation of mitigation measures, such as architectural treatment to individual properties is required.

4.3 OTHER COMMUNITY SUBMISSIONS

Table 4-2 presents additional submissions from the community which have been summarised by the key items raised in the submissions. A response to these submissions by key item has been provided.

Table 4-2 Other community submissions

KEY ITEM	SUBMISSION ID	SUBMISSION	WSP RESPONSE
Amplified music/restrictions for outdoor area	278407	The only one concern I have is that no entertainment-related noise is introduced from open areas and terraces within the development. It is therefore critical for local residents and neighbours that there are strict limitations to sound levels produced by any speakers at open bars and that operating hours for outdoor areas including bars and outdoor eating areas are strictly controlled so as to reduce night-time disturbance. The proposal considers 2am closing time for the outdoor areas which is much better than the current premises are allowed to stay open till and we would like that restricted to close much earlier.	The NIA addressed potential for noise impacts from entertainment noise in Section 11 of the NIA and included a number of mitigation measures to control noise within the criteria in Section 11.4 which included limiting the noise emission of loudspeakers and operating hours.
	280248	The only mitigation that I regard as important is that the current restrictions on operating hours and noise in general and, in particular on amplified music audible externally, should be maintained.	
Patrons/vehicles entering or leaving The Star	280640	Currently there is frequent and excessive noise from cars due to visitors to The Star driving vehicles with very loud engines, specifically during the evenings and weekends. Local residents have been woken up in the early hours of the morning and it's a frequent occurrence. The social impact statement assessment has overlooked the issue completely by stating that the primary noise source is not the Star Casino. This statement, whereas true, appears to be providing facts and assessing the impacts in a manner biased towards the successful approval to the modification. It fails to acknowledge that the visitors to the star casino and its hotels are often the source of noise, albeit not on the casino premises.	Noise from patrons entering or leaving the site will be controlled by behavioural and educational techniques. Vehicles entering or leaving the site are to be managed by site's the traffic management plan. Noise from individual vehicles on public roads are subject to the EPA's noise controls for individual vehicle noise emissions.

	280789	Pirrama Road gets quite noisy with drivers revving engines and loud conversations prior to leaving.	
	281044	Noise – I am already impacted by people leaving the casino loudly where they park in our street so a development of this nature will only exacerbate this.	
Increased noise	280663	Noise problems	The potential for noise increases at surrounding residences as a result of the proposal has been addressed in section 11, 12 and 16 of the NIA assessing road traffic noise, mechanical plant and onsite transportation and entertainment (music and patron) noise. With the recommended mitigation measures outlined in Section 11.4 of the NIA, the NIA demonstrated that the proposal can meet it both the existing approval conditions and the more stringent proposed conditions. The proposed food and beverage premises on the Jones Bay Road frontage has been addressed in Section 4.2 of this report and appropriate acoustic controls for the proposed glazing have been recommended. In addition, the recommended conditions of approval require The Star to develop and implement an operational noise management plan with a noise verification plan which will both control noise and demonstrates it meets the approval condition noise limits.
	280622	Increased noise	
	281104, 2811106, 280956, 281114, 281110, 281136, 281134, 281116, 281120, 281118, 281132, 281130, 281124, 281122	Major increase in late night noise on Jones Bay Road determinantal (sic) to residents of the Watermark complex and other local residences.	

5 CONCLUSION

WSP has reviewed and responded to submissions from government agencies and the community on the Modification 13 NIA. Key themes raised in the submission were identified as follows:

- Increase in operational noise from The Star as a result of the modification
- Implementation of the site-wide cumulative noise criteria
- Patron and vehicle noise whilst accessing the site
- Noise impacts during construction

This addendum report has provided clarifications from the NIA and included additional information or analysis as required to respond to the submissions.

As a result it can be concluded that the modifications proposed will be managed by the proposed site wide acoustic controls and conditions, the ONMP and CNVMP, and will not result in significant additional environmental acoustic impact.