



**SYDNEY METRO - WESTERN SYDNEY AIRPORT  
STATION BOXES AND TUNNELLING WORKS**

# Bringelly tunnelling support – Environmental Review

Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works

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## Document approval

Rev	Date	Prepared by	Reviewed by	Approved by
00	17/06/2024	██████████	██████████	██████████
Signature:			██████████	██████████

## Details of Revision Amendments

### Document Control

The Project Director is responsible for ensuring that this plan is reviewed and approved. The Project SMWSA CPBG Director is responsible for updating this plan to reflect changes to construction, legal and other requirements, as required.

### Amendments

Any revisions or amendments must be approved by the Project Director and/or client before being distributed/implemented.

### Revision Details

Revision	Details
00	Issued to Client as Rev 00 for signature





# Planning Approval Environmental Review Form

SM-22-00008046

Sydney Metro – Metro Body of Knowledge (MBoK)

<b>Assessment Name:</b>	Sydney Metro Western Sydney Airport – Bringelly Tunnelling Support Activities
<b>Prepared by:</b>	CPBG
<b>Prepared for:</b>	Sydney Metro
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# Environmental Review

## 1. Proposed works and justification

An environmental review is applicable to design changes which are consistent with the conditions of approval and would have negligible impacts on the community and/or the environment. This environmental review is required to demonstrate compliance with the conditions of approval and Sydney Metro – Western Sydney Airport Environmental Impact Statement, Submissions Report and EPBC Act Final Environmental Impact Assessment of off-airport proposed action (off-airport Final EIA). A description of activities is listed in Table 1 and an assessment provided in Section 2.

Table 1 Description of proposed works

Description	Overview
Location of works	<p>The proposed works would occur at the Sydney Metro – Western Sydney Airport (SM-WSA) Bringelly Services Facility (BSF) construction site. The site is located at the northern end of Derwent Road at 40 Derwent Road (Lot 181, DP 806012) Bringelly, and covers an area of approximately 39,000m<sup>2</sup>.</p> <p>The site is included within the approved construction footprint and in the approved CEMP. No changes to the approved construction footprint are required for the proposed works.</p>
Scope of works	<p>The proposed works would involve the use of the BSF construction site for tunnelling support activities. Tunnelling support activities to be undertaken at-surface would comprise the following:</p> <ul style="list-style-type: none"> <li>• <b>Tunnel lining support works</b> – A concrete delivery point, for cross passages and tunnel invert lining via the use of a concrete drop pipe. Concrete agitators would be required at-surface to supply concrete for underground tunnel works.</li> <li>• <b>Spoil Haulage</b> – Spoil generated during cross-passage construction would be removed from the tunnels via the Bringelly shaft, temporarily stockpiled and removed from site.</li> </ul> <p>The works would include installation of noise mitigation measures to reduce the impact on local receivers. This scope would include the construction of a temporary acoustic enclosure.</p>
Justification for works	<p>CPBG have identified an opportunity to improve the construction interfaces with other construction activities along the alignment, which would provide for more efficient operations and improve safety outcomes for workers within the tunnel alignment by reducing people and plant interaction.</p> <p>Since the approval of the project, further construction methodology planning for the tunnel boring machine sequencing, cross passages and tunnel support has been updated.</p> <p>The proposed works would facilitate a change in the construction sequencing across the southern tunnel alignment.</p> <p>The existing construction sequencing relies on the use of Airport Terminal Station (ATL) as the only means of access into the tunnel for the supply of materials in and out. The proposed methodology would use Bringelly Services Facility to remove cross passage spoil and drop concrete into the tunnel via a concrete drop box. Upon the breakthrough of TBMs at Bringelly, the tunnel invert works will commence in the tunnel between ATL and Aerotropolis Core. Tunnel agitators would be used to deliver concrete to the pour location within the tunnel.</p>

Description	Overview
	<p>Figure 8-33 in Chapter 8 Project description Construction of the EIS shows that indicative construction program, however CPBG have identified an opportunity to improve the construction interfaces with other construction activities along the alignment, which would provide for more efficient operations and improve safety outcomes for workers within the tunnel alignment by reducing people and plant interaction.</p> <p>The proposed works would not have an impact on receivers over that already identified in the planning approval. The proposed changed works will reduce the safety risk within the tunnel for construction workers. Removing cross passage (XP) material from the tunnel at BSF will provide an alternate area to separate contaminated material (with concrete) from the clean VENM spoil which will be placed at FS01.</p>
<p><b>Timeframe for works</b></p>	<p>The proposed works would commence in mid 2024 and would continue until tunnel completion estimated to occur in Q4 2024. The Construction activities overview in Section 2.1, of the Submissions Report Appendix B – Revised project description and performance outcomes and mitigation measures shows that tunnel construction will be occurring from Q4 2022 until Q1 2025.</p>
<p><b>Work hours, workforce and equipment / machinery</b></p>	<p>The works would be considered a tunnelling support activity and as such would be undertaken 24 hours a day, 7 days a week as a prescribed activity permitted under CoA E41 and EPL Condition L5.10.</p> <p>There would be no increase in the construction workforce of the approved project as a result of tunnelling support activities at the Bringelly construction site. The EIS indicates that the workforce requirements for the Bringelly construction site would be around 70 during the peak construction activities. Proposed tunnelling support activities at the Bringelly construction site would require a peak workforce of around 30 for both day and night shifts onsite personnel.</p> <p>An indicative list of the plant and equipment that would be required to undertake tunnelling support activities at the Bringelly construction site is provided below. The plant and equipment required for the proposed activities is largely consistent with the required plant identified at the Bringelly construction site in Appendix B of the Submissions Report (Figure 2-39).</p> <ul style="list-style-type: none"> <li>• Mobile Crane</li> <li>• Concrete Truck</li> <li>• Concrete drop box</li> <li>• Concrete Pump</li> <li>• Hand tools</li> <li>• Water Pump</li> <li>• Forklift</li> <li>• Telehandler</li> <li>• Heavy Vehicles</li> <li>• Light Vehicles</li> </ul> <p>However, CPBG will need to use mobile cranes and concrete agitators and trucks to undertake the proposed work. At the time of the EIS it was not expected that mobile cranes or concrete agitators would be required for works at BSF, as shown in the indicative plant list in Figure 2-39. However, as explained in the justification section above, the benefit to efficiency of XP construction to have concrete supply and retrieval of spoil at BSF has made these plant requirements necessary. This aligns with the statement in Section 8.7 of the EIS which states that “The construction sites would be confirmed by the construction contractor(s) when appointed.”</p> <p>Section 3 (below) provides expected noise impacts from this additional plant as per modelling done specifically for post-TBM activity at BSF.</p> <p>This modelling found that there would not be any additional noise impacts on receivers with the implementation of mitigation measures identified as being required for the additional plant. This can be found in the BSF DNVIS SMWSASBT-CPG-AEC-SN450-EN-RPT-293011.</p>

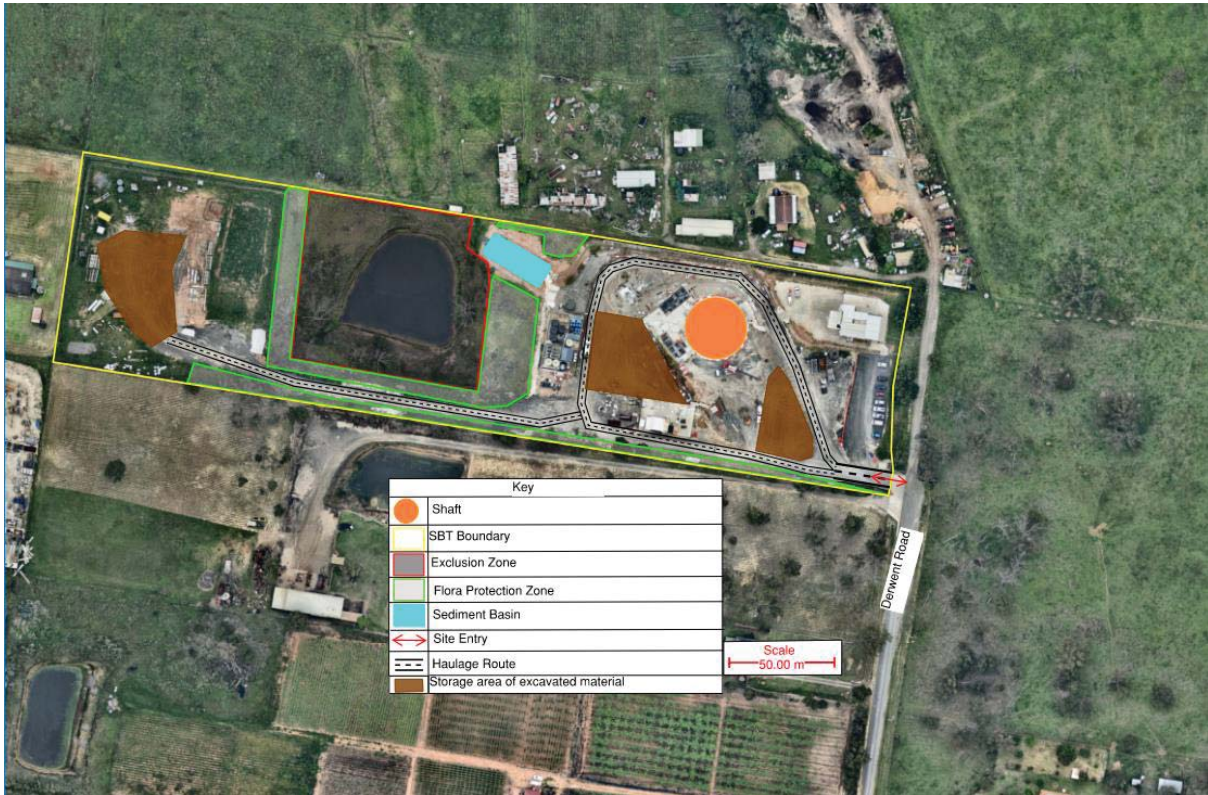


Figure 1: Indicative site layout for proposed works

## 2. Consistency with Conditions of Approval

The following table outlines whether the proposed changes would be consistent with the relevant Conditions of Approval.

**Table 2 Comparison of the proposal with relevant elements of the Approved Project**



Relevant elements of the Approved Project	Proposed Change
<p>Technical Paper 1 - Transport</p>	<p><b>Vehicle Movements and Haulage routes</b></p> <p>Anticipated vehicle movement volumes to and from the Bringelly construction site to facilitate tunnelling support activities would not be greater than the peak construction movements listed in Table 4-2 of Technical Paper 1.</p> <p>Shaft excavation has been completed at Bringelly, and as such minimal vehicle movements are anticipated for construction activities not related to tunnelling support activities. As a result, vehicle movements associated with tunnel support activities would likely account for all vehicle movements to and from the Bringelly construction site.</p> <p>Vehicles would access the site via an arterial road, the Northern Road, before entering the site via the newly constructed access/ egress on Derwent Road. The designated haulage routes to be used by heavy vehicles for the delivery of materials and spoil haulage are consistent with those as shown in the Technical Paper 1 (Figure 4-1) for the approved Project.</p>
<p>Technical Paper 2 – Noise and Vibration</p>	<p><b>Activities outside of standard construction hours</b></p> <p>Appendix B.1 of Technical Paper 2 provides an outline of the scenarios considered for the airborne noise assessment prepared for the EIS. Appendix B.1 indicates that a number of construction scenarios were assessed for Bringelly.</p> <p>Figure 4-d of the EIS shows worse case impacts of Out of Hours tunnelling and associated works (worse case) at Bringelly. The impacts model shows receivers in noise catchment areas (NCA) NCA12 and NCA11 to have potential impacts above 20NML and between 10-20NML respectively.</p> <p>Table 3 provides a comparison of the predicted noise levels for tunnelling and associated works within Technical Paper 2, and the results of noise modelling undertaken by CPBG for this scope of works. The results indicate that the noise impacts for the proposed works would still be less than what was initially predicted in the EIS for tunnelling and associated works outside of standard construction hours within those noise catchment areas. The noise assessment undertaken by CPBG is shown in attachment 1, Section 3 of this report identifies the impact of the proposed works compared to the EIS.</p> <p>The noise modelling predicts that the proposed out of hours works will impact 8 receivers above the NML across NCA 11 and NCA 12, which is lower than the EIS predicted total of 148 for tunnelling support works occurring out of standard hours.</p> <p>The noise impacts are lower than predicted worse case out of hours for Tunnelling and associated works as shown in Figure 4-dd Appendix B.</p>
<p>SSI CoA E41</p>	<p>CSSI 10051 CoA E41 states that:</p> <p>Notwithstanding Conditions E38 and E39 work may be undertaken outside the hours specified in the following circumstances:</p> <p>(d) By Prescribed Activity, including: (i) tunnelling and ancillary support activities (excluding cut and cover tunnelling and surface works not directly supporting tunneling) are permitted 24 hours a day, seven days a week;</p> <p>The proposed activities to be undertaken outside standard hours are considered to be tunnelling support activities and are therefore permissible as per CoA E41</p>

Relevant elements of the Approved Project	Proposed Change
SSI CoA E47	<p>As detailed in the noise assessment provided in Table 3 below, predicted noise levels may exceed the NML at residential receivers during periods outside of standard construction hours. However, these noise impacts are predicted to be less than those identified in the SM-WSA EIS (refer to the noise assessment in Table 3 below).</p> <p>In accordance with the requirements of CoA E47, a Detailed Noise and Vibration Impact Statement (DNVIS) will be prepared and a copy provided to the ER prior to the commencement of the works.</p>
SSI CoA E49	<p>As detailed in the noise assessment provided in Table 3 below, noise levels at receivers within sensitive land uses identified in Appendix B of the Instrument of Approval would not exceed the highly noise affected criteria. As such, CoA E49 would not be triggered.</p>
SSI CoA E103	<p>Shaft excavation has been completed at Bringelly, and as such minimal vehicle movements are anticipated for construction activities not related to tunnelling support activities. As a result, vehicle movements associated with tunnel support activities would likely account for all vehicle movements to and from the Bringelly construction site.</p> <p>Anticipated vehicle movement volumes to and from the Bringelly construction site to facilitate tunnelling support activities would not be greater than the peak construction movements listed in Table 4-2 of the SM-WSA EIS Technical Paper 1 (Transport). These impacts have been considered in the existing Construction Traffic Management Plan (CTMP) (SMWSASBT-CPG-OHE-SF150-TF-PLN-000001) for the SBT works at the Bringelly site.</p>
SSI CoA E105	<p>One local road would be impacted by the use of heavy vehicles. Derwent Road is a local road which falls under the care and control of Liverpool City Council. It commences at the Northern Road and terminates to the north of the site. Vehicles would access the site from Derwent Road.</p> <p>The use of this local road for heavy vehicle haulage was identified in Figure 4-1 of the SM-WSA EIS Technical Paper 1 (Transport). As such, CoA E105 would not be triggered by the proposed works.</p>
EPBC 2020/8687 conditions	<p>No proposed change.</p> <p>The proposed works are not located within a portion of land covered by the EPBC 2020/8687 approval, this approval is not considered further.</p>

### 3. Environmental review

The following table provides a risk review of the potential environmental impacts of the proposed works.

Table 3 Environmental review

Environmental review	Yes / No	Description of impacts (including consideration of safeguards required by the Approved Project)
Is the proposal to take place outside of the construction footprint of the project	No	The proposed works would occur at the Sydney Metro – Western Sydney Airport (SM-WSA) Bringelly services facility construction site. The site is located at the northern end of Derwent Road, at 40 Derwent Road (Lot 181, DP 806012), and covers an area of approximately 39,000m <sup>2</sup> . No changes to the approved construction footprint are required for the proposed works.
Is the location of works within the existing EPL premise boundary	Yes	The proposed work would be undertaken within the existing Bringelly services facility construction site which is currently within the premise boundary for EPL 21672. There are no proposed changes to the existing EPL as a result of the proposed works.
Will the works take longer than 2 weeks to complete.	Yes	The proposed works would commence in mid 2024 and would continue until tunnel completion estimated to occur in Q4 2024.
Does the work require OOHW approval	Yes	The proposed works would require tunnelling support activities to be undertaken outside of standard construction hours. Out of hours works would be permitted as per CoA E41 of SSI 100581 and Conditions L5.10 and E1.1 of EPL 21672.
Will the works impact an EEC or threatened species	No	The site has already been cleared as part of prior works and it is anticipated that no further clearing would be required for the proposed works. If any additional clearing is required, clearing activities would be undertaken in accordance with the process outlined in the approved SBT Flora and Fauna Management Sub-plan and impacts would not be greater than what was assessed within the EIS as all works would be undertaken within the approved construction footprint.
Will works impact on native vegetation	No	The site has already been cleared as part of prior works and it is anticipated that no further clearing would be required for the proposed works. If any additional clearing is required, clearing activities would be undertaken in accordance with the process outlined in the approved SBT Flora and Fauna Management Sub-plan and impacts would not be greater than what was assessed within the EIS as all works would be undertaken within the approved construction footprint.
Will the works impact on habitat trees	No	The site has already been cleared as part of prior works and it is anticipated that no further clearing would be required for the proposed works. If any additional clearing is required, clearing activities would be undertaken in accordance with the process outlined in the approved SBT Flora and Fauna Management Sub-plan and impacts would not be greater than what was assessed within the EIS as all works would be undertaken within the approved construction footprint.

Environmental review	Yes / No	Description of impacts (including consideration of safeguards required by the Approved Project)																			
<p>Will clearing of non EECs or ground disturbance be of High / moderate condition vegetation. What is the area of impact</p>	<p>No</p>	<p>It is anticipated that no further clearing would be required for the proposed works.</p>																			
<p>Will the works result in medium / high noise or vibration impacts? Will noise and vibration impacts on sensitive receivers be greater than that predicted in the EIA?</p>	<p>No</p>	<p><b>Airborne Noise Assessment</b></p> <p>The BSF construction site is located within NCA12, however, receivers to the north are located within NCA11. The Noise Management Levels (NML) for these NCAs are detailed below:</p> <p><b>NCA11 and NCA12 NMLs</b></p> <table border="1" data-bbox="528 801 1380 981"> <thead> <tr> <th rowspan="2">NCA</th> <th colspan="4">NML</th> </tr> <tr> <th>Standard</th> <th>Day OOH</th> <th>Evening</th> <th>Night</th> </tr> </thead> <tbody> <tr> <td><b>NCA11</b></td> <td>49</td> <td>44</td> <td>42</td> <td>35</td> </tr> <tr> <td><b>NCA12</b></td> <td>48</td> <td>43</td> <td>40</td> <td>39</td> </tr> </tbody> </table> <p>Noise modelling undertaken as part of the EIS to determine the potential noise impacts of the proposed works indicate the following:</p> <ul style="list-style-type: none"> <li>No receivers would exceed the highly noise affected criteria during the day, evening and night period</li> <li>Exceedances of up to 10dB above the NML could be experienced by a total of 35 residential receivers during the evening period.</li> <li>Exceedances of above 10dB above the NML could be experienced by a total of 111 residential receivers during the evening period.</li> <li>Exceedances of up to 10dB above the NML could be experienced by a total of 32 residential receivers during the night period.</li> <li>Exceedances of above 10dB above the NML could be experienced by a total of 227 residential receivers during the night period.</li> </ul> <p>These results can be found in table 4-24 and 4-25 and of the Noise and Vibration Technical paper 2. In order to determine whether the predicted noise levels represent an increased impact to what was assessed within the EIS, a review of the noise impacts assessed within the EIS for tunnelling and support activities for both NCA11 and NCA12 was undertaken. This was then compared to the results of noise construction noise modelling undertaken by CPBG.</p> <p>In order to ensure a holistic assessment of noise impacts associated with tunnelling support activities, both BSF and On-airport sites were considered (refer to On-airport DNVIS SMWSASBT-CPG-ATL-SN350-EN-RPT-293014 and Bringelly Services Facility DNVIS SMWSASBT-CPG-AEC-SN450-EN-RPT-293011). A summary of the predicted NML exceedances at residential receivers during out-of-hours tunnelling support activities is provided below.</p>	NCA	NML				Standard	Day OOH	Evening	Night	<b>NCA11</b>	49	44	42	35	<b>NCA12</b>	48	43	40	39
NCA	NML																				
	Standard	Day OOH	Evening	Night																	
<b>NCA11</b>	49	44	42	35																	
<b>NCA12</b>	48	43	40	39																	

**Summary of NML exceedances at residential receivers during out-of-hours**

Assessment Scenarios	Number of receivers exceeding NML – worst case					
	Evening			Night		
	0-10	10-20	20+	0-10	10-20	20+
SM-WSA EIS Technical Paper 2 – Noise and Vibration						
NCA11						
SC02 – Tunnelling and Associated works	7	41	11	6	7	47
NCA12						
SC02 – Tunnelling and Associated works	28	59	0	26	61	1
Construction Modelling undertaken by CPBG						
NCA11						
On-airport – Tunnelling Support	0	0	0	0	0	0
Bringelly – Tunnelling Support	4	0	0	3	1	0
NCA12						
On-airport – Tunnelling Support	0	0	0	0	0	0
Bringelly – Tunnelling Support	3	1	0	4	0	0

Based on the results provided above, although the proposed works would result in noise levels that exceed the NMLs in both NCA11 and NCA12, predicted impacts would still be less than what was initially predicted in the EIS for tunnelling and associated works outside of standard construction hours.

Furthermore, noise modelling undertaken for the proposed works represents a realistic worst-case scenario when construction works occur at a location close to residences and other sensitive receivers. As such actual noise levels are likely to be less than the predicted noise levels.

Additionally, the assessment undertaken for this Environmental Review includes noise mitigation measures to reduce the impact on receivers. The list of mitigation measures can be found in tables C3 (Attachment 2), C4 (Attachment 3) and C1 (Attachment 4) of the Bringelly Services Facility DNVIS (SMWSASBT-CPG-AEC-SN450-EN-RPT-293011).

**Construction Traffic Road Noise Assessment**

The Bringelly Service facility construction site is located at 40 Derwent Road, Bringelly.

Vehicles would access the site via an arterial road, the Northern Road, before entering the site via the newly constructed access/ egress on Derwent Road. The proposed works would generate up to 10 heavy vehicle movements per hour (five heavy vehicles) during the nighttime period (10pm – 7am) for concrete deliveries.

A construction traffic noise assessment has been undertaken by Renzo Tonin in accordance with the *Road Noise Policy (RNP)* (NSW EPA, 2011) and the *Construction Noise and Vibration Guideline (CNVG)* (Roads and Maritime, 2016).

Environmental review	Yes / No	Description of impacts (including consideration of safeguards required by the Approved Project)																		
		<p>Consistent with the assessment criteria adopted in the EIS, where road traffic noise levels increase by more than 2 dBA as a result of the proposed construction traffic, <b>and</b> the RNP Road Traffic Noise Criteria are exceeded, investigation of mitigation options would be required.</p> <p>In order to determine whether the predicted noise levels represent an increased impact to what was assessed within the EIS, a review of the noise impacts assessed within the EIS are detailed in the table below and compared to the results of construction traffic noise modelling undertaken by Renzo Tonin.</p> <p><b>Summary of Construction Traffic Road Noise Assessment</b></p> <table border="1" data-bbox="528 667 1385 1149"> <thead> <tr> <th rowspan="2">Road</th> <th rowspan="2">RNP Classification</th> <th colspan="3">Night (10pm to 7am)</th> </tr> <tr> <th>RNP Criteria</th> <th>Predicted traffic noise (L<sub>Aeq1hour</sub>)</th> <th>Increase generated by construction traffic (L<sub>Aeq1hour</sub>)</th> </tr> </thead> <tbody> <tr> <td>Derwent Road (north of the Northern Road)</td> <td>Local</td> <td>50</td> <td>49</td> <td>5</td> </tr> <tr> <td>The Northern Road (west of Badgerys Creek Road)</td> <td>Arterial</td> <td>55</td> <td>60</td> <td>1</td> </tr> </tbody> </table> <p>The traffic noise assessment indicates that 3 heavy vehicle movements per hour would result in a less than a 2 db increase on the Northern Road and 3 heavy vehicle movements per hour would result in a less than a 2 db increase on Derwent Road dB increase from what was predicted in the EIS. As such, road noise impacts associated with the proposed works would likely be negligible and would not trigger the need for investigation of mitigation options.</p> <p>Feasible and reasonable noise mitigation would continue to be implemented for the Project, these would include:</p> <ul style="list-style-type: none"> <li>Noise testing of significant items of plant and equipment.</li> <li>Implementation of noise barriers or enclosures for noisy equipment where feasible and reasonable.</li> <li>Noise verification monitoring at the most affected residential receiver locations to confirm noise levels.</li> </ul> <p>Noise complaints received will be managed in accordance with the CPBG SBT Community Communication Strategy (SMWSASBT-CPG-1NL-NL000-CY-PLN-000002). Each complaint would be investigated and where noise levels are established as exceeding the predicted noise levels as a result of the works, additional mitigation measures would be investigated.</p>	Road	RNP Classification	Night (10pm to 7am)			RNP Criteria	Predicted traffic noise (L <sub>Aeq1hour</sub> )	Increase generated by construction traffic (L <sub>Aeq1hour</sub> )	Derwent Road (north of the Northern Road)	Local	50	49	5	The Northern Road (west of Badgerys Creek Road)	Arterial	55	60	1
Road	RNP Classification	Night (10pm to 7am)																		
		RNP Criteria	Predicted traffic noise (L <sub>Aeq1hour</sub> )	Increase generated by construction traffic (L <sub>Aeq1hour</sub> )																
Derwent Road (north of the Northern Road)	Local	50	49	5																
The Northern Road (west of Badgerys Creek Road)	Arterial	55	60	1																
Will the works result in medium/high air quality impacts	No	<p>Ground disturbance may be required for minor site levelling works required to establish an area for concrete pours to take place. These works are not anticipated to result in any substantial air quality impacts as no major earthworks would be required.</p> <p>The proposed works would require spoil management activities to occur at the site with spoil generated during cross-passage construction to be removed via the shaft. The total quantity of spoil to be generated by cross passage</p>																		

Environmental review	Yes / No	Description of impacts (including consideration of safeguards required by the Approved Project)																										
		<p>excavation is approximately 6000 m<sup>3</sup>. This is less than the estimated 21,700m<sup>3</sup> that was generated during shaft excavation.</p> <p>As such air quality impacts as a result of spoil management impacts are expected to be minor and would not be greater than what was assessed in the Project approval documentation. Air quality will be managed as per shaft excavation management measures already identified within the approved SBT Construction Environmental Management Plan (CEMP) (SMWSASBT-CPG-1NL-EV-PLN-000002) and Sub-plans, management will be in line with these environmental management documents.</p>																										
Will the activity be located adjacent to or in close proximity to sensitive receivers	Yes	<p>The proposed works will be occurring within the approved construction footprint at the BSF and as such will take place within 50m of sensitive receivers.</p> <p>Existing measures to minimise noise impacts include 3m hoarding around the BSF construction site to block noise and visual impacts.</p> <p>The proposed works are not expected to generate any additional noise or vibration impacts above those already assessed as part of the project.</p>																										
Would there be additional impact from what was predicted in the EIS on an Aboriginal / Historic heritage site as a result of the works	No	<p>Works will be occurring within the same approved construction footprint for all previous works at Bringelly. Works will continue to be controlled by the Unexpected Finds Procedure for Aboriginal or Historic heritage finds.</p>																										
Are works within 10m of a watercourse	No	<p>The proposed works do not take place within 10m of any waterway.</p>																										
Are works in an area of known contamination	No	<p>The SM-WSA EIS identified one medium risk contamination zone (AEC 45) within the Bringelly services facility construction site.</p> <p>In accordance with CoA E92 a Detailed Site Investigation (DSI) has been prepared for the site (SMWSASBT-CPG-SWD-SW000-GE-RPT-040512) which identified one potential asbestos source zone. Asbestos impacted material in this area was removed from site in accordance with the Remediation Action Plan (RAP) (SMWSASBT-CPBG-SWD-SW000-GE-RPT-040520) during initial site establishment works.</p>																										
Will the works result in temporary or long-term traffic impacts	No	<p>Shaft excavation has been completed at Bringelly, and as such minimal vehicle movements are anticipated for construction activities not related to tunnelling support activities. As a result, vehicle movements associated with tunnel support activities would likely account for all vehicle movements to and from the Bringelly construction site.</p> <p>Anticipated vehicle movement volumes to and from the BSF to facilitate tunnelling support activities would not be greater than the peak construction movements listed in Table 4-2 of SM-WSA EIS Technical Paper 1 (Transport) and detailed below.</p> <p><b>Peak construction vehicle movements</b></p> <table border="1"> <thead> <tr> <th rowspan="3">Vehicle Type</th> <th colspan="6">Peak Construction Movements</th> </tr> <tr> <th colspan="3">AM Peak (7:30am to 8:30am)</th> <th colspan="3">PM Peak (4:30pm to 5:30pm)</th> </tr> <tr> <th>In</th> <th>Out</th> <th>Total</th> <th>In</th> <th>Out</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>LV Staff</td> <td>50</td> <td>0</td> <td>50</td> <td>0</td> <td>50</td> <td>50</td> </tr> </tbody> </table>	Vehicle Type	Peak Construction Movements						AM Peak (7:30am to 8:30am)			PM Peak (4:30pm to 5:30pm)			In	Out	Total	In	Out	Total	LV Staff	50	0	50	0	50	50
Vehicle Type	Peak Construction Movements																											
	AM Peak (7:30am to 8:30am)			PM Peak (4:30pm to 5:30pm)																								
	In	Out	Total	In	Out	Total																						
LV Staff	50	0	50	0	50	50																						

Environmental review	Yes / No	Description of impacts (including consideration of safeguards required by the Approved Project)														
		<table border="1"> <tr> <td>LV Deliveries</td> <td>1</td> <td>1</td> <td>2</td> <td>1</td> <td>1</td> <td>2</td> </tr> <tr> <td>HV deliveries</td> <td>6</td> <td>6</td> <td>12</td> <td>6</td> <td>6</td> <td>12</td> </tr> </table> <p>Vehicles would access the site via an arterial road, the Northern Road, before entering the site via the newly constructed access/ egress on Derwent Road. The designated haulage routes to be used by heavy vehicles for the delivery of materials are consistent with those as shown in the Technical Paper 1 (Figure 4-1) for the approved Project.</p>	LV Deliveries	1	1	2	1	1	2	HV deliveries	6	6	12	6	6	12
LV Deliveries	1	1	2	1	1	2										
HV deliveries	6	6	12	6	6	12										
Will the works result in additional impacts to sensitive receivers	No	<p>Noise modelling results indicate that the proposed works would result in 4 receivers within NCA11 and 4 in NCA12 experiencing noise above the NML during evening and night periods.</p> <p>The EIS identified 59 receivers for evening and 60 receivers during night periods above the NML for NCA11. The EIS identified 87 receivers for evening and 88 receivers during night periods above the NML for NCA12.</p> <p>Based on the results provided above, although the proposed works would result in noise levels that exceed the NMLs in both NCA11 and NCA12, the total number of receivers impacted would still be less than what was initially predicted in the EIS for tunnelling and associated works outside of standard construction hours.</p> <p>As such, the works would not result in impacts greater than what was assessed in the Project environmental assessment documentation.</p>														
Will the works involve significant earthworks	No	<p>The proposed works will not involve significant earthworks. Minor site levelling activities may be required to allow for additional laydown areas onsite. The proposed works would require spoil management activities to occur at the site with spoil generated during cross-passage construction to be removed via the shaft. The total quantity of spoil to be generated by cross passage excavation is approximately 6000 m<sup>3</sup>. This is less than the estimated 21,700m<sup>3</sup> that was generated during shaft excavation.</p> <p>The works would not result in impacts greater than what was assessed in the Project environmental assessment documentation.</p> <p>Given that spoil management quantities associated with the proposed works are consistent with those already identified within the approved SBT Construction Environmental Management Plan (CEMP) (SMWSASBT-CPG-1NL-EV-PLN-000002) and Sub-plans, management will be in line with these environmental management documents.</p> <p>The management of cumulative impacts will occur as per Section 6.11 of the SBT CEMP and in accordance with the Sydney Metro Cumulative Construction Impacts Management Plan.</p>														






## 4. Recommendation

Based on the above assessment, and with reference to the SM-WSA EIA and Submissions Report, including the Conditions of Approval and associated CEMP and plans, it is recommended that:

✓	The proposed design/construction change is consistent with the Approved Project SM-WSA EIA and Submissions Report including the Conditions of Approval, has negligible impacts on the community and environment and no further assessment is required.
✗	The proposed design/construction change is likely to be consistent with the Approved Project SM-WSA EIA and Submissions Report, however more than a negligible impact on the community and environment may result and further assessment in the form of a Planning Approval Consistency Assessment form is required to be completed and submitted to the Planning team for the proposed design/ construction change.
✗	The proposed design/ construction change is not substantially the same as the Approved Project and is considered a radical transformation. A new planning pathway should be considered.

## 5. Certification

The above information provides a true and fair review of the proposed works.

<b>Prepared by (signed):</b>	
<b>Date:</b>	
<b>Name:</b>	
<b>Position:</b>	Approvals Manager

## 6. Endorsement

I have reviewed the above review and provide the following endorsement:

✓	The proposed design/construction change is consistent with the SSI 10051, has negligible impacts on the community and environment and no further assessment or modification of the planning approval is required.
✗	The proposed design/construction change is likely to be consistent with the SM-WSA EIS and Submissions Report, however more than negligible impacts are expected on the community and environment and further assessment is required.
✗	The proposed design/construction change constitutes a project modification and requires further assessment and approval.

This endorsement is conditional on the following:

1. All works will be carried out in accordance with the SM-WSA EIS and Submissions Report and the Project Conditions of Approval.
2. All works will be carried out in accordance with the approved Construction Environmental Management Plan and any relevant sub plans.

<b>Signed:</b>	[Redacted Signature]
<b>Endorsed by:</b>	[Redacted Name] A/Senior Manger Planning Approvals
<b>Date:</b>	17/06/2024

Attachment 1

Receiver		Predicted noise levels, dB(A)										
		Day (Standard)		Day (OOHW)		Evening (OOHW)		Night (OOHW)				
NCA	Address	NML	PTBM-P3	NML	PTBM-P3	NML	PTBM-P3	NML	PTBM-P3	NML	PTBM-P3	Lmax
NCA11		49	46	44	46	42	46	35	44	59		
NCA11		49	44	44	44	42	44	35	44	56		
NCA11		49	45	44	45	42	45	35	44	57		
NCA11		49	35	44	35	42	35	35	-	42		
NCA11		49	50	44	50	42	50	35	49	62		
NCA12		48	37	43	37	40	37	39	35	47		
NCA12		48	46	43	46	40	46	39	43	54		
NCA12		48	37	43	37	40	37	39	35	48		
NCA12		48	34	43	34	40	34	39	-	42		
NCA12		48	34	43	34	40	34	39	-	42		
NCA12		48	38	43	37	40	37	39	35	49		
NCA12		48	34	43	34	40	34	39	-	43		
NCA12		48	46	43	46	40	46	39	43	56		
NCA12		48	40	43	40	40	40	39	38	49		
NCA12		48	41	43	41	40	41	39	40	53		
NCA12		48	40	43	39	40	39	39	37	51		
NCA12		48	52	43	52	40	52	39	49	61		

Attachment 2

RENZO TONIN ASSOCIATES

29/01/2024

Table C3: Noise Wall / Hoarding Design Specifications			Bringelly Ventillation Facility	
Noise wall reference	Location	Noise wall/ hoarding height	Proposed Construction	Acoustic Rating of Construction*
NW01	North Eastern boundary (see figure C1)	3m	17 mm plywood hoarding	Rw 24

Notes:

Noise barrier performance: Low - Rw 10-15; Medium - Rw 15-20; Medium-High - Rw 20-25; High - Rw 25; Very High - Rw 30

\* estimated by calculations and/or reference to other similar barrier type data

GENERAL

- The specified 'required rating' must be achieved by the product selected.
- By way of explanation, the Sound Insulation Rating Rw is a measure of the noise reduction property of the assembly, a higher rating implying a higher sound reduction performance.
- Note that the Rw rating of systems measured as built on site (R'w Field Test) may be up to 5 points lower than the laboratory result.
- The sealing of all gaps is critical in a sound rated construction. Use only sealer approved by the acoustic consultant.
- Check design of all junction details with acoustic consultant prior to construction.
- Check the necessity for HOLD POINTS with the acoustic consultant to ensure that all building details have been correctly interpreted and constructed.
- The information provided in this table is subject to modification and review without notice.
- The advice provided here is in respect of acoustics only. Supplementary professional advice may need to be sought in respect of fire ratings, structural design, buildability, fitness for purpose and the like.

Attachment 3

RENZO TONIN ASSOCIATES

29/01/2024

**Table C4: Noise Shed / Enclosure Design Specifications**

**Bringelly Ventilation Facility**

Area to be Mitigated	Construction component	Reference ID	Indicative element construction
Temporary enclosure - concrete drop zone	Structure	-	Scaffold structure for body of enclosure
	Walls	F027	Noise blankets lining walls ensuring no gaps by overlapping blankets
	Roof	F027	Noise blankets lining roof ensuring no gaps by overlapping blankets
	Opening	-	Opening should face away from neighbours (i.e. to the west)

Notes:

1. The final level of noise reduction required from an acoustic shed / enclosure is dependent on a number of factors, however one important factor is whether or not there are noisy plant on site which cannot be acoustically treated and operate outside the acoustic shed / enclosure. Depending on the number and noise emissions of such plant, it may be necessary to apply greater acoustic treatment to the acoustic shed / enclosure in order to keep its noise contributions down so that the total noise emissions from site meet the set environmental noise limits at neighbouring receptors.

LEGEND \* estimated by calculations and/or reference to other similar wall type data. The client is advised not to commit to materials which have not been tested in an approved laboratory or for which an opinion only is available. Testing materials is a component of the quality control of the design process and should be viewed as a priority because there is no guarantee the forecast results will be achieved thereby necessitating the use of an alternative which may affect the cost and timing of the project. No responsibility is taken for use of or reliance upon untested materials, estimates or opinions.

GENERAL

- The underside of the roof and (where possible) internal walls should be lined with acoustic insulation to reduce the build-up of sound inside the shed.
- The specified performances must be achieved by the product selected.
- The sealing of all gaps is critical in a sound rated construction. Use only sealer approved by the acoustic consultant.
- Check design of all junction details with acoustic consultant prior to construction.
- Check the necessity for HGLD POINTS with the acoustic consultant to ensure that all building details have been correctly interpreted and constructed.
- The information provided in this table is subject to modification and review without notice.
- The advice provided here is in respect of acoustics only. Supplementary professional advice may need to be sought in respect of fire ratings, structural design, buildability, fitness for purpose and the like.
- Only the buildings elements noted in Table C4 and Table C4a have been assessed. It is assumed that all other items will not impact the acoustic properties, or can be sufficiently acoustically treated.

OFFICIAL

Attachment 4

**Table C1: Construction timetable/ activities/ equipment** **Bringelly Ventillation Facility**

Activity/ Work Area	Aspect	Scenario reference	Plant/ Equipment (as provided by client)	Day		Evening	Night	Timing of Activity		Sound Power Level (Lw re: 1pW) in Noise Model, dB(A)			High noise plant	Vibration intensive plant	Notes		
				7am - 6pm	6pm - 10pm	10pm - 7am	Start Date	End Date	L <sub>avg</sub>	Penalty	L <sub>max</sub>						
COMPOUND																	
Phase 3 - Bringelly Site - Apr - Nov 2024	XP and Tunnel Invert Support	XP and Tunnel Invert Support	PTBM-P3	180-200T Mobile Crane	1	1	1*					99	-	108	-	-	Surface. *Not concurrent with concrete deliveries at night.
XP and Invert Lining use				Concrete truck	3 Per Hour	3 Per Hour	3 Per Hour*					108	-	111	-	-	Surface, concrete drop inside enclosure. *Not concurrent with crane operation at night.
				Boom pump	1	1	1					103	-	107	-	-	In Shaft
				Telehandler	1	1	-					98	-	102	-	-	Surface, either forklift OR telehandler at night. *Not concurrent with concrete deliveries.
				Forklift	1	1	1*					99	-	103	-	-	Surface
				Ventilation fan	1	1	1					98	-	102	-	-	Surface
				Spoil trucks	2 Per Hour	2 Per Hour	-					106	-	111	-	-	Surface, no spoil handling at night
				Water pump (diaphragm pump)	1	1	1					99	-	101	-	-	Surface
				Water treatment plant (10/s)	1	1	1					106	-	109	-	-	Surface