

**Attachment 1: Blue Mountains City Council – Transport for NSW – Great Western Highway Upgrade Project (GWHUP) Central – Blackheath to Little Hartley Upgrade – Review of EIS January - February 2023**

**Date: 22 February 2023**

**GENERAL (G)**

<b>Item No:</b>	<b>Response Comment/Detail</b>
1.	<p>The Acknowledgment to Country (pg 4) is inaccurate and requires amending . Deerubbin is a Local Aboriginal Land Council name and they are not a traditional owner or First Nation. Their name should be removed from the acknowledgement of Country preamble</p> <p>Transport for NSW acknowledges the traditional custodians of the land on which the upgrade of the Great Western Highway between Blackheath and Little Hartley is proposed, being the Dharug, Deerubbin, Gundungurra and Wiradjuri country with surrounding language groups including Darkinung to the north and Kuring-gai, Eora, and Tharawal to the east</p>
2.	<p>While Council acknowledges an EIS has been prepared for this stage of the GWH Upgrade project, it is still Council's position the GWH Upgrade Program (Katoomba to Little Hartley) should be seen as a single project and subject to a single EIS process. The drawback of the current approach can be seen in the EIS where it repeatedly states the baseline for the assessment in the EIS is the upgraded outcome outlined in the Great Western Highway East – Katoomba to Blackheath Upgrade project. A true baseline study would be from existing before any part of the broader upgrade program commences. As it is, what is described and subsequently assessed in the EIS is incremental change upon incremental change that artificially minimises the true scale and impact of the project.</p>
3.	<p>Asset ownership and maintenance: Upfront discussion and clarification of which assets will come to Council is critical. Reference will be made to the Draft BMCC/RMS Maintenance Agreement and Sydney Trains Interface Agreement, as appropriate.</p> <p>Early indications have been provided to Council that the existing Great Western Highway surface road will remain a state road, this classification is strongly supported by Council in accordance with the role that the road will continue to play during times of traffic disruptions or maintenance in the tunnel, and/or for freight which cannot travel through the tunnel.</p>
4.	<p>Council continues to advocate strongly for the undergrounding of powerlines, especially in relation to bushfire risk and the impact upon the visual amenity of the area.</p>

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5.	Design should comply with Council standards. Primary reference documents being the BMCC Public Domain Technical Manual and Western Sydney Engineering Design Manual. The BMCC Public Domain Technical Manual takes precedence where differences exist.
6.	Council looks forward to providing further comment and working with Transport for NSW throughout the design process to ensure best outcomes are achieved for all stakeholders.

**Chapter 2 – Strategic context and project need**

Item No:	Response Comment/Detail
1.	<p>There is no mention of the Local Strategic Planning Statement in the Strategic Context section. It is noted the LSPS contains an action specific to this project that has therefore not been addressed:</p> <p><i>Action 9.1 Council will advocate for the Blue Mountains in response to the proposed duplication of the Great Western Highway from Katoomba to Lithgow, for alternatives to regional road freight and to ensure the protection of the world heritage setting and local priorities of safety, accessibility and amenity</i></p>
2.	<p>Council provides the following comments in response to the five identified benefits of the project:</p> <p><b><i>“improved economic development, productivity, and recovery – during the first ten years of operation, the project would contribute up to around \$10 million per year in net output for the regional area (refer to Chapter 20 (Business, land use and property)) and would create a faster, safer, and more efficient freight connection between Blackheath and Little Hartley. During construction, the project would create up to 1,100 jobs and is expected to contribute around \$130 million per year to the regional economy”</i></b></p> <ul style="list-style-type: none"> <li>Identified positive regional impacts of \$130 million annually are likely to be of little direct value to the communities bypassed and other local communities impacted. There is also no mechanism to direct regional or state level benefits to the most affected communities. Most of the Blue Mountains is unlikely to benefit directly from more efficient freight connections between the Central West and Sydney ports.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Further, the creation of jobs and construction activities is time limited and there is no mechanism for those jobs or contracts to be awarded locally or even to regional operators. In addition, the assumption of increased economic activity offsetting potential business impacts during construction seems questionable.</li> <li>• The identified Skills, Employment and Industry Development Strategy for the upgrade program needs to be developed in partnership with Council and local businesses and their representatives (p20-10) ahead of construction</li> <li>• Similarly, the identified Social Impact Management Plan to be prepared and implemented during construction and for first three years of operation, should be extended to at least the first 5 years of operation, and also commence prior to construction</li> <li>• It is anticipated the Economy team will provide detail on these issues, particularly around tourism and economic impacts.</li> </ul> <p><b><i>“improved resilience and future-proofing – the project would provide an alternative route to the current Great Western Highway between Blackheath and Little Hartley and would improve access for emergency vehicles in the event of an incident. It would also assist in minimising broader traffic delays and disruptions that may be caused by an incident. The project has been designed to improve the level of service for predicted traffic volumes in future years with scope to accommodate future growth”</i></b></p> <ul style="list-style-type: none"> <li>• Any benefit by reducing vulnerability to closure is misleading as the bypass of two villages does not reduce the risk of closures within the longer GWH corridor passing through the Blue Mountains. If this was a major benefit being sought by the project then Bells Line of Road would be the preferred option as this would provide an alternative route for the Central West to Sydney for an incident anywhere on the GWH in the Blue Mountains.</li> </ul> <p><b><i>“improved network performance – the project would reduce light vehicle travel times between Blackheath and Little Hartley by around nine minutes, and heavy vehicle travel times by around nine minutes during the weekday AM peak hour period. The project would also provide a connection for high productivity vehicles longer than 20 metres (with an upper limit of 36 metres) between Blackheath and Little Hartley, contributing to a total reduction in the current route for these vehicles by up to 100 kilometres between Sydney and Central West NSW. The project would substantially reduce traffic on the existing Great Western Highway between Blackheath and Little Hartley improving travel time, speeds and safety on this part of the route”</i></b></p>
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	<ul style="list-style-type: none"> <li>Improving travel time from Blackheath to Little Hartley is not the major driver of the project. The major driver is freight efficiency and the benefits of this are almost exclusively at the state level and not the local or even the regional level.</li> </ul> <p><b><i>“safety improvements – the project would provide a safer alternative to the current steep grades, limited overtaking opportunities and at-grade intersections along sections of the Great Western Highway between Blackheath and Little Hartley. The project would provide a bypass route for heavy vehicles, avoiding local townships and two school zones and allowing separation of through and freight traffic from local and tourist traffic”</i></b></p> <ul style="list-style-type: none"> <li>The driver is clearly the bypass of the steep grades at Victoria Pass for high productivity freight vehicles.</li> <li>Noting the bypass is for two villages and that all other villages will see no ‘separation of through and freight traffic from local and tourist traffic’</li> </ul> <p><b><i>“movement, place, and amenity improvements – the project would result in improved amenity for residents of Blackheath and Mount Victoria due to a substantial reduction in traffic and associated reductions in traffic noise and vehicle emissions along the existing Great Western Highway. The project would also incorporate urban design principles as described in Chapter 4 (Project description) and create potential opportunities for placemaking initiatives by reducing through traffic, including freight vehicles, at key locations along the Great Western Highway, particularly at Blackheath and Mount Victoria. These placemaking opportunities are consistent with the Movement and Place Framework (NSW Government, 2020a) adopted by Transport for the Upgrade Program.”</i></b></p> <ul style="list-style-type: none"> <li>The project will not see a decrease in those existing heavy vehicle movements associated with active quarries in the area and which are impacting greatly on the community of Mount Victoria in particular.</li> <li>As already mentioned above, increases in traffic movement on Blue Mountains communities east of the proposed tunnel have not been properly quantified</li> <li>The opportunities for increased placemaking and active transport opportunities appear to be at the cost of the Council</li> <li>Both Blackheath and Mt Vic rely on through traffic, particularly the truck stop at Mt Vic. The large body of work cited in Appendix P supports minimal impact on businesses from a bypass. However one study cited in the EIS showed smaller (less than 2,000 in population) towns suffered the most following a bypass, raising concerns regarding Mount Victoria in particular. This is noted in the Appendix but no</li> </ul>
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	<p>detail on mitigation is included. Also, <i>“in the long-term, average traffic levels on the “old routes” in medium and large bypassed communities returned to or surpassed pre-bypass levels”</i> which would appear to go against the touted amenity benefits from reduced traffic in the long term (Appendix P2-6)</p> <ul style="list-style-type: none"><li>• The EIS acknowledges high (adverse) impact to landscape character (increased width, etc) as ‘uncharacteristic’ to the entry to Blackheath, but which seems to be accepted as a necessary outcome. This is further concerning when the earlier comment about what is being used as baseline for this assessment is considered. As noted above, assumption of baseline is the landscape after other projects completed, rather than from existing (refer page s-17). Such an approach artificially minimises impact of this project and builds on entry features at Blackheath that were already compromised ( use of shotcrete, etc) by earlier GWH safety upgrades program. An example of a changed view point is shown below</li></ul>
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Figure 18-7 Viewpoint 2b – existing view eastbound showing the Great Western Highway



Figure 18-8 Viewpoint 2b – proposed view looking eastbound showing the upgraded Great Western Highway on the right and the Blackheath off-ramp on the left

- It is noted that while a Place Design and Landscape Plan (P18-30) is to be prepared there appears to be no mention in current assessment of non-native plantings in both Mt Vic and Blackheath (particularly Blackheath where the tunnel entrance will be) as a key landscape feature of both villages.
- Appendix N (Urban Design, Landscape and Visual) has a number of concerning elements in terms of assessment, including (but not limited to):

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	<ul style="list-style-type: none"> <li>○ not identifying C2 as the main land use zone at the tunnel entry at Blackheath,</li> <li>○ identifying Hat Hill road as arrival to town heart of Blackheath when most in the community would see the Govetts Leap intersection with the at grade connection to east and west sections of the village as serving this function</li> <li>○ Incorrect description of eastern entry into Blackheath as Item 8 on page 46</li> </ul> <ul style="list-style-type: none"> <li>• The proposed Place Design and Landscape Plan will need to very clearly deal with the change to the ‘entrance’ to Blackheath, particularly visual and landscaping delineation. For instance, it may be that sandstone drywall elements and Rhododendron plantings may be part of the landscaping features at the intersection. In addition, selection of species could also be associated with heritage aspects of the towns at either end as well as being drought and heat tolerant</li> <li>• In general, the interchange discussion in Appendix N emphasises the driver experience into and through the tunnel but not for those selecting to enter the townships of Blackheath and Mount Victoria, reinforcing a focus on tunnel users and not on the communities being affected</li> </ul> <p><b><i>“In addition, the project (as part of the Upgrade Program) would present socio-economic opportunities, including:</i></b></p> <ul style="list-style-type: none"> <li>• <b><i>improving connections between the national high productivity vehicle network and Sydney</i></b></li> <li>• <b><i>strengthening supply chains due to better access to regions</i></b></li> <li>• <b><i>improving access to employment opportunities and services.”</i></b></li> <li>• All of the above benefits speak to the priority given to regional and state benefits outside the Blue Mountains.</li> </ul> <p>None of the stated benefits of the project relate to environmental outcomes. It is noted that groundwater impacts are being assessed as regionally low, without overly noting that local impacts could be extreme. Further, the cumulative impact across all four stages of the overall project is the removal of 128.52 ha of native vegetation and 369 hollow bearing trees adjacent to WHA, with offsets being the only real strategy contemplated (there is some mention of replacement plantings, but that remains unclear). In addition, statements such as the project being “<i>unlikely to fragment movement corridors for fauna</i>” seem themselves unlikely with an increase to dual carriageway.</p>
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	<p>It is also worth noting that National Park areas are being acquired for the project at Blackheath and are proposed to be rezoned SP2. The argument then appears to be that the project will not directly impact the National park (p20-12) an obvious fallacy only permitted by the acquisition of said National Park areas.</p> <p>At Blackheath, part of the project and part of the Katoomba to Blackheath Upgrade traverses land previously reserved under the NPW Act as part of the Blue Mountains National Park. This part of the National Park was revoked in August 2022 by Act of Parliament and transfer of this land to Transport is in progress (see Section 20.3 and refer to Appendix B (Statutory compliance)). As a result, the project would not directly impact the Blue Mountains National Park.</p> <p>It is further worth noting that Section 20.3 of the EIS contemplates the acquisition of compensatory lands by Transport for transfer to NPWS ownership <i>“in consultation with NPWS to offset the land revoked due to the project.”</i> It is suggested that any ‘new’ lands should be of a high quality (albeit noting the assessment of the acquired land as being of reduced environmental or biodiversity value).</p> <p>In relation to aboriginal heritage, the EIS has assessed there are <i>“no direct Aboriginal cultural heritage impacts ... anticipated as a result of the project”</i>. (Appendix L – Aboriginal Heritage) and have included standard wording around managing potential unexpected Aboriginal heritage impacts. It is worth noting a scar tree was found at Blackheath during the EIS work (see below) but is to be ‘managed’ under the Katoomba to Blackheath project.</p>
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Table 16-3 Additional Aboriginal sites identified during site surveys			
Site name	Feature(s)	Location	Site status
Blackheath Portal Scar Tree 1	Culturally modified tree (carved or scarred)	Blackheath	Located within the part of the Blackheath construction footprint that will be used for the Katoomba to Blackheath Upgrade. This site will be subject to the conditions of an Aboriginal Heritage Impact Permit (AHIP) obtained for the Katoomba to Blackheath Upgrade if impacts cannot be mitigated. This site will have been managed in accordance with an AHIP, prior to disturbance of the site by the project.
<p>In relation to non-aboriginal heritage, the EIS has identified no impacts on heritage items within the Blue Mountains, apart from Soldiers Pinch construction area (Appendix M). They have proposed for Soldiers Pinch some standard wording around conducting a detailed historical archaeological assessment (in line with Heritage Council guidelines) to establish whether any remains of the 1814 alignment of Cox's Road survive within that site prior to any disturbance. Further management direction is given based on the presence of such remains, up to and including a management plan. There is some assessment of impact on WHA listing and it concludes with negligible impact given the nature of the listing.</p>			

**Chapter 3 – Project alternatives and options**

Item No:	Response Comment/Detail
1.	Limited explanation is provided about alternate options involving other modes of transport except road. Potential options such as improved rail infrastructure and modal shift of both passenger and freight to rail is not explored in depth.

**Chapter 4 – Project description**

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<b>Item No:</b>	<b>Response Comment/Detail</b>
1.	<p>Active Transport – Council believes there is deficiencies in the project scope in relation to active transport. The EIS mentions that “While active transport would not be permitted within the tunnel, the Little Hartley to Lithgow Upgrade would include an active transport connection to Little Hartley as shown in Figure 4-19”. The extent of active transport infrastructure proposed by the project does not connect the length of the tunnel with an appropriate level of infrastructure for cycling and walking. Council considers the lack of new or improved active transport infrastructure along the surface to bypass the tunnel as failing to fulfill Transport for NSW’s own policy “Providing for Walking and Cycling in Transport Projects Policy CP21001” adopted in 2021.</p> <p>Council would consider adequate active transport infrastructure between tunnel portals as a critical project scope requirement, this would be between the top of Berghofers Pass on Mount York Road, Mount Victoria to the Blackheath tunnel portal. Ideally this would be in the form of an off road shared path completing the Great Blue Mountains Trail already partially constructed by Council, or as a bare minimum provide a sealed cyclable shoulder (min 1.5 m wide) along the entire length and a route traversable for pedestrians that does not require walking on road.</p> <p>It is noted that the Transport for NSW is working with Council in this regard on the entire Great Western Highway Upgrade Program more broadly.</p>
2.	<p>There are two options for ventilation facilities proposed as part of the EIS. Council generally has a strong preference for the portal emission option over ventilation outlets for the reasons of visual amenity and smaller impervious footprint as a result.</p>

**Chapter 5 – Construction**

<b>Item No:</b>	<b>Response Comment/Detail</b>
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1.	Traffic impacts during construction must be monitored and management strategies need to be implemented as required to reduce construction throughout the project as far as possible.
2.	On-street parking of staff should be avoided wherever possible in residential areas. This should including provision of off street parking as appropriate and briefing and educating of staff and contractors.
3.	Request to ensure that Active Transport movement (such as the Great Blue Mountains Trail) is facilitated throughout the construction phase as far as possible.
4.	Potential traffic impacts to the connecting local road network need to be well considered and planned for- additional information needs to be provided to Council during design and construction phase.
5.	Contractors need to be mindful of local resident's access requirements coming on and off local streets. TMP needs to address this.
6.	Contractor's parking arrangements need to be clearly communicated, implemented and adhered to, so they do not interfere with local business, resident's needs or the operation of bus stops/ network.

**Chapter 7 – Community and stakeholder engagement & Appendix C - Community engagement**

Item No:	Response Comment/Detail
1.	Transport for NSW should implement a community and stakeholder engagement strategy throughout the design and construction phases. This strategy should be dynamic, respond to and address community needs.
2.	Council looks forward to providing further comment and working with Transport for NSW throughout the design process to ensure best outcomes are achieved for all stakeholders.

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**Chapter 8 – Transport and traffic & Appendix D - Transport and traffic**

<b>Item No:</b>	<b>Response Comment/Detail</b>
1.	The project shall seek to continue to use the existing Great Western Highway and new tunnel for primary traffic movements and avoid redirecting any additional traffic along local roads.
2.	As a general note, the traffic scenario modelling in the EIS shows increases in traffic volumes at Medlow Bath in the year 2040 (ten years post operation) with the project from 10,470 (per day) to 12,480 (per day) for vehicles travelling west (see Table 8-10). This is a percentage increase of 19% <u>due to the project</u> at Medlow Bath, which equates to an additional 2,010 vehicles per day. These vehicle numbers increase even more at Medlow Bath for traffic travelling east in 2040, which has 12,980 per day with the project, compared to 10,550 without the project, a 23% increase of 2,430 vehicles. The impact of these additional traffic volumes for Blue Mountains townships east of Medlow Bath are not seemingly contemplated, apart from a statement that <i>“the project would provide an additional two lanes in both eastbound and westbound directions that would support this additional traffic.”</i> While the functional capacity of the GWH to deal with this traffic is not necessarily refuted, the cumulative social and amenity impacts on townships bisected by the GWH outside the project areas with these increased traffic numbers is not addressed and is likely to be substantial.

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	<p>Table 8-10 Daily weekday traffic volume estimates in 2030 and 2040 with and without the project</p> <table><tr><th rowspan="3">Screenline location</th><th colspan="6">Operational year scenario – total traffic volumes</th></tr><tr><th colspan="3">2030</th><th colspan="3">2040</th></tr><tr><th>Without the project</th><th>With the project</th><th>Change %</th><th>Without the project</th><th>With the project</th><th>Change %</th></tr><tr><td>Little Hartley (westbound)</td><td>6,090</td><td>6,870</td><td>13</td><td>6,500</td><td>8,730</td><td>34</td></tr><tr><td>Little Hartley (eastbound)</td><td>6,250</td><td>7,050</td><td>13</td><td>6,710</td><td>8,680</td><td>29</td></tr><tr><td>Mount Victoria (westbound)</td><td>7,270</td><td>7,900</td><td>9</td><td>7,770</td><td>9,810</td><td>26</td></tr><tr><td>Mount Victoria (eastbound)</td><td>7,620</td><td>8,180</td><td>7</td><td>8,150</td><td>9,960</td><td>22</td></tr><tr><td>Blackheath (westbound)</td><td>9,660</td><td>9,860</td><td>2</td><td>10,490</td><td>12,020</td><td>15</td></tr><tr><td>Blackheath (eastbound)</td><td>9,730</td><td>12,250</td><td>5</td><td>9,600</td><td>12,270</td><td>28</td></tr><tr><td>Medlow Bath (westbound)</td><td>9,730</td><td>10,250</td><td>5</td><td>10,470</td><td>12,480</td><td>19</td></tr><tr><td>Medlow Bath (eastbound)</td><td>10,490</td><td>10,970</td><td>5</td><td>10,550</td><td>12,980</td><td>23</td></tr></table>	Screenline location	Operational year scenario – total traffic volumes						2030			2040			Without the project	With the project	Change %	Without the project	With the project	Change %	Little Hartley (westbound)	6,090	6,870	13	6,500	8,730	34	Little Hartley (eastbound)	6,250	7,050	13	6,710	8,680	29	Mount Victoria (westbound)	7,270	7,900	9	7,770	9,810	26	Mount Victoria (eastbound)	7,620	8,180	7	8,150	9,960	22	Blackheath (westbound)	9,660	9,860	2	10,490	12,020	15	Blackheath (eastbound)	9,730	12,250	5	9,600	12,270	28	Medlow Bath (westbound)	9,730	10,250	5	10,470	12,480	19	Medlow Bath (eastbound)	10,490	10,970	5	10,550	12,980	23
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3.	<p>It is also noted one of the main assumptions in the traffic modelling is that as the project will allow high productivity freight vehicles longer than 20m through Blackheath that there will actually be a <u>decrease</u> in heavy vehicle traffic by 2040 because of “<u>increased</u> freight transport efficiency” resulting in <u>fewer</u> heavy freight transport movements (see Table 8-11). This assumes that all (or most) current freight operators through the Blue Mountains will move from existing road stock used in the Blue Mountains to majority high productivity freight vehicles. As these are private operators for the most part such an assumption seems optimistic and there are no supporting studies cited for this assumption.</p>																																																																											

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Table 8-11 Daily weekday heavy vehicle volume estimates in 2030 and 2040 with and without the project

Screenline location	Operational year scenario – heavy vehicle volumes					
	2030			2040		
	Without the project	With the project	Change (%)	Without the project	With the project	Change (%)
Little Hartley (westbound)	1,230	1,180	-4	1,370	1,300	-5
Little Hartley (eastbound)	1,170	1,190	2	1,300	1,270	-2
Mount Victoria (westbound)	1,370	1,300	-5	1,520	1,440	-5
Mount Victoria (eastbound)	1,340	1,380	3	1,490	1,490	0
Blackheath (westbound)	1,470	1,390	-5	1,670	1,580	-5
Blackheath (eastbound)	1,460	1,460	0	1,500	1,640	9
Medlow Bath (westbound)	1,570	1,470	-6	1,790	1,690	-6
Medlow Bath (eastbound)	1,680	1,680	0	1,770	1,820	3

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	In 2030, the project would result in a slight increase in eastbound heavy vehicle volumes and a slight decrease in westbound heavy vehicle volumes when compared to the scenario without the project. In 2040, the project would result in a slight reduction in heavy vehicles travelling both eastbound and westbound when compared to the scenario without the project. This slight change in heavy vehicle volumes is due to the project providing a new connection for higher productivity freight vehicles longer than 20 metres between Blackheath and Little Hartley. Providing access to these higher efficiency vehicles would contribute to a total reduction in the current route for these vehicles by up to 100 kilometres between Sydney and Central West NSW (Transport for NSW, 2019).
4.	Provisions for on road cyclist should be included in the design as appropriate particularly at intersections.
5.	Council supports the Design Objectives listed within the report; specifically sight distance improvements at side roads, intersection treatments and relocation of utility poles away from curves.
6.	The impacts of the introduction of up to 36 metre long heavy vehicles needs to be assessed for the suitability of the Great Western Highway corridor as a whole. A review of identified higher risk sites and crash history locations should be developed for the corridor between Lapstone and the Great Western Highway Upgrade Program to ensure suitability and safety of the rest of the highway. Upgrades to reduce the risk of accidents beyond the Great Western Highway Upgrade Program physical scope should be implemented prior to 36 metre long heavy vehicles being permitted on the Great Western Highway. An ongoing monitor and evaluate stage should be included after implementation of 36 metre long heavy vehicles to ensure no increase in risk of accidents eventuates along the Great Western Highway corrido more broadly.

**Chapter 9 – Air quality & Appendix E - Air Quality**

Item No:	Response Comment/Detail
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1.	There are two options for ventilation facilities proposed as part of the EIS. Council generally has a strong preference for the portal emission option over ventilation outlets for the reasons of visual amenity and smaller impervious footprint as a result.
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**Chapter 11 – Noise and vibration & Appendix G - Noise and vibration**

Item No:	Response Comment/Detail
1.	Refer to construction section comments as relevant.
2.	Ongoing monitoring and evaluation of noise and vibration impacts should be included as part of the project. It is noted that Transport for NSW has taken some actions in this regard.

**Chapter 12 – Biodiversity & Appendix H - Biodiversity**

Item No:	Response Comment/Detail
1.	<p>To avoid impacts to biodiversity, water quality, hydrological systems and geological features, all investigations and modelling recommended in the EIS (including in appendices H and appendix I), should be undertaken to inform the ultimate design and management of the proposal. All mitigation measures identified in the BDAR and Groundwater Assessment and identified during further investigation must be incorporated into the design to manage all risks associated with groundwater and water quality impacts of the project and avoid impacts to groundwater dependent ecosystems including Blue Mountains Swamps (Temperate Highland Peat Swamps on Sandstone).</p> <p>Refer to comments on Appendix I (Groundwater and geology) as they also apply to biodiversity and are raised in the BDAR (Appendix H).</p>

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**Chapter 13 – Groundwater and geology & Appendix I - Groundwater**

Item No:	Response Comment/Detail
1.	<p>The EIS confirms that there are water quality and groundwater driven impacts associated with the project. There is potential for significant impacts to Greaves Creek and the downstream swamp systems due to groundwater drawdown during both the construction phase and operational phase, including: that there is potential for an 18% reduction to baseflow at Greaves Creek in Blackheath which is part of a Temperate Highland Peat Swamp on Sandstone (THPSS) system (without mitigation measures); and that there is potential for impacts to multiple hanging swamp systems (THPSS) west of the project footprint due to reduction in baseflow.</p> <p>The EIS recommends that further groundwater investigations and groundwater modelling be undertaken to inform design-related mitigation measures with a focus on reducing groundwater drawdown around the Blackheath portals. All further investigations and modelling must be undertaken as soon as possible to inform the project design.</p> <p>The EIS states that during operation (following construction), groundwater drawdown would still occur at permanently drained structures, being the Blackheath and Little Hartley portals and the mid-tunnel caverns. Maximum drawdown is predicted to be between 5.1 to 20 metres and between 2.1 to 5 metres at the Blackheath and Little Hartley portals, respectively. Groundwater drawdown would potentially affect 33 registered bores during operation (2030 to 2130). A comprehensive groundwater management system should be designed and implemented for all permanently drained structures to ensure that all groundwater regimes and natural hydrological processes and Groundwater Dependent Ecosystems (GDEs) are protected in perpetuity.</p> <p>The EIS states that: <i>‘The probability of Potential Acid Sulphate Rock (PASR) in the Banks Wall Sandstone, Mount York Claystone and Burra-Moko Head Sandstone is considered to be low, the Caley Formation is considered to have a low to moderate probability, and the Illawarra Coal Measures and Berry Siltstone are considered to have a very high probability.’</i> Further investigation into the extent of the acid forming rock units within the project area should be undertaken and appropriate avoidance or mitigation measures should be implemented to prevent the formation or release of iron oxides, sulfuric acid, sulfates, and salts into the environment.</p>

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	<p>To avoid impacts to biodiversity, water quality, hydrological systems and geological features, all investigations and modelling recommended in the EIS (including in appendices H and appendix I), should be undertaken to inform the ultimate design and management of the proposal. All mitigation measures identified in the EIS and identified during further investigation must be incorporated into the design to manage all risks associated with groundwater and water quality impacts of the project and avoid impacts to groundwater dependent ecosystems including Blue Mountains Swamps (Temperate Highland Peat Swamps on Sandstone).</p> <p>Risk of fracturing rock above the tunnel and subsequent loss of groundwater should be addressed.</p> <p>Conditions of Consent should:</p> <ul style="list-style-type: none"> <li>- require that all recommendations and identified mitigation measures to minimise the impact of the project on water quality, hydrological systems, biodiversity and geological features are undertaken/implemented; and</li> <li>- require that stages of construction that present a high risk of impact to the local hydrology (such as groundwater drawdown) have specific time limits imposed to avoid the environmental impact associated with prolonged high risk stages.</li> </ul>
2.	<p>Given the predicted tunnel groundwater inflows, potential groundwater drawdowns, the changes to creek and swamp baseflows and the potential associated impacts on groundwater dependent ecosystems (GDEs) associated with Temperate <b>Highland</b> and Peat Swamps on Sandstone (THPSS) (listed as endangered under both NSW and Commonwealth legislation) and the adjacent Greater Blue Mountains World Heritage Area, outlined in Chapter 13 (Groundwater and geology) and Chapter 12 (Biodiversity), in combination with the water quality issues associated with that groundwater interacting with the Illawarra Coal Measures and the Shoalhaven Group – Berry Formation in the western part of the tunnel , a precautionary approach which ensures the entire tunnel system is “tanked” to proactively ensure groundwater impacts are minimised to the greatest possible extent is strongly recommended. Given the sensitivity and significance of the location of the tunnel within or adjacent a world heritage listed environment BMCC <b>will</b> recommend investing in this precautionary approach as part of the final project design in preference to the proposed TfNSW approach of retaining “drained” sections of the tunnel at the Blackheath and</p>

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	<p>Hartley portals and the mid tunnel cavern and monitoring for groundwater impacts with unspecified additional mitigations reactively developed if required.</p> <p>The prioritisation of the protection of swamp hydrology is particularly important as projected climate change and research raise concern about the stability of THPSS overall hydrological functioning and storage capacity in the near future (Keith, DA, Rodoreda, S &amp; Bedward, M 2010, 'Decadal change in wetland-woodland boundaries during the late 20th century reflects climatic trends', Global Change Biology, vol. 16, no. 8, pp. 2300-2306.)</p>
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**Chapter 14 – Surface water and flooding & Appendix J - Surface water and flooding**

<b>Item No:</b>	<b>Response Comment/Detail</b>
1.	Unnecessary impervious surfaces should be avoided where possible.
2.	Water Sensitive Urban Design should be included in design which measures to not cause a net increase in pollutants entering the water network.
3.	Water management should be a key focus during construction, with a focus to stage and reduce sediment control and erosion.
4.	Ancillary sites at tunnel portals must have appropriate water management and design. This includes ensuring appropriate outlets and upgrades of downstream infrastructure where required.

**Chapter 15 – Soils and contamination & Appendix K - Contamination**

<b>Item No:</b>	<b>Response Comment/Detail</b>
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1.	The large amount of spoil generated from the eastern section of the tunnel represents an opportunity to obtain locally sourced and geologically appropriate high quality sandstone geology derived VENM which could have beneficial applications to BMCC operations including capping of contaminated lands and for the daily covering of waste in Council Waste Management facilities. The development of the projects Spoil Management Plan (SMP) represents an opportunity for BMCC to liaise with TfNSW to identify beneficial reuses in the Blue Mountains LGA.
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**Chapter 16 – Aboriginal cultural heritage & Appendix L - Aboriginal heritage**

Item No:	Response Comment/Detail
1.	2/ S23- Where Aboriginal consultation occurs on indigenous interpretation and storytelling in the Blue Mountains there must be the requirement to engage with the recognised traditional owners from the First Nations of the lands located within the BM LGA , who are recognised in BMCC’s Statement of Recognition and Commitment ( developed in consultation with the Blue Mountains Aboriginal Advisory Council and the BM Aboriginal community) as having the singular cultural; right to speak for the Ngurra inherited from their ancestors “ The Council acknowledges, recognises and respects the particular and profound custodial responsibility and cultural obligations held by the Dharug and Gundungurra Traditional Owners in relation to their Ngurra, including their singular cultural right to speak for that Ngurra inherited from their ancestors”

**Chapter 17 – Non-Aboriginal heritage & Appendix M - Non-Aboriginal heritage**

Item No:	Response Comment/Detail
1.	Transport for NSW must engage with Council throughout the design and construction phases in relation to heritage.

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**Chapter 18 – Landscape character and visual & Appendix N - Urban design landscape & visual**

Item No:	Response Comment/Detail
1.	<p>Blue Mountains City Council is dedicated to provide you with the best support possible in your review and development of the tunnel project through the mountains. Below and attached some supporting information that could assist you in your work. We will continue to review the guidelines and standards that influences the detail of the design. We have already looked into some of the important standards for lighting (attached email). We look to provide detail again in the new year to ensure implementation follows best practice outcomes. Further detail will broadly follow the aims outlined below.</p> <p>The aim of the concept design for the tunnel needs to:</p> <ul style="list-style-type: none"> <li>• Be complementary to the Blue Mountains dark-sky <b>(further details attached)</b></li> <li>• Promote best practice active travel including a healthy (noise, light, air), high amenity (smooth and uninterrupted experience) and human scale designed environment.</li> <li>• Provide for best practice water sensitive urban design incorporated within the natural environment</li> <li>• Be highly sympathetic to the surrounding rural, environmental, world heritage, bushland character.</li> <li>• Be inclusive of all users including flora and fauna.</li> <li>• Limit visible retaining walls.</li> <li>• Limit modern and contemporary design elements (for example: preferring the use of sandstone over concrete design elements, for example 2: preferring the use of natural landscape/topography over retaining walls).</li> <li>• Incorporate natural colour palettes that complement into the surrounding landscape. (E.g. warm colours matching sandstone, Australian bush, avoiding cool colours and greys).</li> <li>• Limit portions of large plain surfaces to better suit the natural feel of the surrounding environment.</li> <li>• Avoid being homogenous. (For example 1: Use the minimum design speed standards in balance with a maximum design speed of the road to slow down traffic, for example 2: use design elements to break up interest)</li> <li>• Seek local contractor procurement</li> </ul>

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- Avoid hardscape if possible
- Incorporate/engage with local indigenous story-telling if appropriate.

Design elements in the tunnel may be able to link to the unique natural landscape that the tunnel is cut through, like the sandstone strata layers. Some **good** and **bad** examples below:

**TfNSW St Helena Tunnel on Pacific Highway fits well into the natural environment.**



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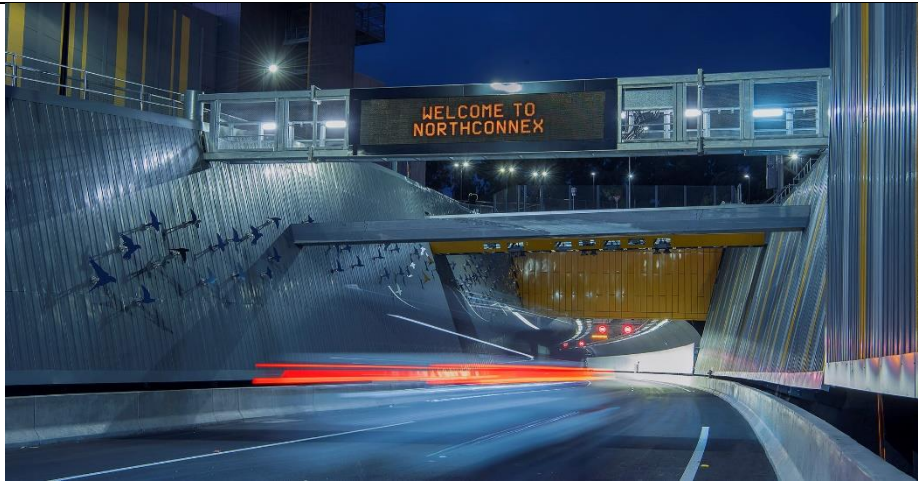
**Warringah Road upgrade is an example of large plain surfaces that should be avoided in the mountains**

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**Northconnex portals as an example of modern contemporary design that should be avoided in the mountains**





Historic sandstone walls on Mitchells Pass is complementary to the surrounding natural materials

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Fake rock wall constructed during Blackheath Highway Safety Upgrade could've been better executed but suitable as a concept in the mountains



Rock wall installed recently avoids modern contemporary design



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East section of the Great Western Highway Upgrade Project which is largely sympathetic to the surrounding natural landscape



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	<p>Some further detail:</p> <ul style="list-style-type: none"> <li>• Active transport infrastructure should be minimum 2.5 m wide concrete paths complying with AustRoads Guide to Road Design Part 6A. M7 shared path is a good example in which material, human scale and safety comes together. Remove railing where not required (minimizing hazards for cyclists). Promote smart lighting balancing improved safety outcome with environmental and energy reduction.</li> <li>• Kerb ramps should be sandstone in colour complying with BMCC Public Domain Manual.</li> <li>• Preferable to have bus stops considered and upgraded to DASPT compliance along path routes.</li> </ul>
2.	<p>In the Blue Mountains, we want to avoid any up lighting that spills into the night sky. We are proud of our dark sky which is part of the character and experience here. It also provides for support to our wildlife.</p> <ul style="list-style-type: none"> <li>• Maximum 3000k LED light temperature used at any areas outside of the tunnel <ul style="list-style-type: none"> <li>○ 3000k vs 4000k is just a warmer light. We are rolling this out in selected locations in the mountains in the new year. Also parramatta have included this in areas of their roll out.</li> </ul> </li> </ul>  <p><b>3000K vs 4000K Color Temperature Lighting</b></p> <ul style="list-style-type: none"> <li>○</li> <li>• Use of LED lights but if not only use LED lights – LED it is.</li> <li>• Great to see LED that utilise smart features:</li> </ul>

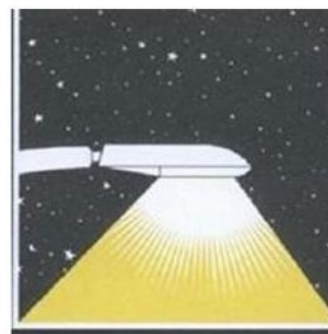
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- Trimming the LED lights – i.e. design of the lighting meets standards at the end of its 20 year life. To do this it's important to factor in annual degradation so the light output today will be ~ 20% above the required standard to allow for this degradation. Lights can now be programmed with smart nodes to trim down and maintain output at the level required by the standard over the 20 years without over lighting. This has the benefit of reducing light pollution and energy consumption.
- Recommend dimming of lights further in quiet times i.e 1 am to 5 am or utilising connected motion sensors to dim down the lights to say 20% output when no vehicles are in that section of road. They then come back up to standard when a vehicle is at a certain distance away.
- For example: currently we believe that trimming and dimming components in the City of Parramatta are the most advanced in NSW, in which officers at BMCC were part of the works previously including smart technology on major roads.
- <https://www.cityofparramatta.nsw.gov.au/about-parramatta/news/media-release/parramatta-leads-the-way-with-largest-smart-streetlighting>
- For the motion sensor <https://panzeri.it/en/places-where-smart-lights-are-used-in-public-lighting/>
- Fauna-bridges particularly should be kept pitch-dark.
- LED light spill should be minimised from all fittings
  - Light spill is mostly determined by the type of light and the light design. Lots of LED lights use curved lenses to spread the light further. Flat lenses or equivalent help to reduce this spill but may require slightly closer placement of lights in the design.



Effective use of shield (*right*) directing light downward where it is needed.



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**Chapter 19 – Social impacts & Appendix O - Social**

<b>Item No:</b>	<b>Response Comment/Detail</b>
1.	Please refer to the strategic context and project need comments as appropriate. A number of these comments relate to social impacts.

**Chapter 21 – Resource use and waste management**

<b>Item No:</b>	<b>Response Comment/Detail</b>
1.	The large amount of spoil generated from the eastern section of the tunnel represents an opportunity to obtain locally sourced and geologically appropriate high quality sandstone geology derived VENM which could have beneficial applications to BMCC operations including capping of contaminated lands and for the daily covering of waste in Council Waste Management facilities. The development of the projects Spoil Management Plan (SMP) represents an opportunity for BMCC to liaise with TfNSW to identify beneficial reuses in the Blue Mountains LGA.