

## MINUTES

### Great Western Highway Upgrade: Blackheath Co-Design Committee

<b>Date</b>	5 August 2020	
<b>Time</b>	6.00pm – 9.30pm	
<b>Venue</b>	Webex Webinar	
<b>Chairperson</b>	Alistair Lunn – TfNSW	
<b>Committee members</b>	Kirstin Fischer Kate Walsh Iain MacLeod Fire & Rescue NSW – Katoomba Glenn Sherlock Peter Chudek Ally Drinkwater Ross Ingram Damien Mah Gary Moore Juliet Bourke Sally Hollis Adele Colman George Vergotis Gary McCue Mick Beltran Greg Nankervis	TfNSW TfNSW TfNSW NSW Fire & Rescue Blue Mountains City Council Blue Mountains City Council Blackheath Public School P&C Blue Mountains Historical Society Blue Mountains Cycling Safety Forum Blackheath Area Neighbourhood Centre Save Centennial Glen Save Station Street Blackheath Streetscape Group Blackheath Chamber of Commerce Blackheath Highway Action Group Community Representative Community Representative
<b>Additional attendees</b>	Paul Peters Tricia Wunsch (Facilitator) Veronica Kooyman Caroline Boyd Adam Hillard (Design) Jonathan Blizzard (Environment - online) Nigel Casey (Tunnels) Andrew Mattes (Ventilation) Phil Clark (Tunnel structures)	TfNSW KJA KJA TfNSW TfNSW TfNSW TfNSW TfNSW TfNSW TfNSW
<b>Apologies:</b>	Gary Parsons NSW Police – Springwood	Blue Mountains City Council NSW Police

1.	<b>Meeting agenda – Tricia Wunsch (Facilitator)</b>
1.1	<ul style="list-style-type: none"> <li>• Thanked everyone for joining online via the Webex platform, noted the proficiency of the committee in using the technology</li> <li>• Acknowledgement of Country</li> <li>• Noted feedback was received about the weighting of assessment criteria and assessment process. This has been taken on board and will be covered in more detail later in the meeting.</li> <li>• Tonight the committee will be presented with a range of modified route options and variations put forward during the BCC process. At the end of the meeting there will be an opportunity to choose as a committee which of those presented tonight will be included for assessment at the next meeting.</li> </ul>
2.	<b>Welcome and introduction – Alistair Lunn (Chair)</b>
2.1	<p>Welcomed the committee and acknowledgment of country</p> <p>Noted that due to the current Covid situation the Committee is again back to meeting online. With the next meeting due to be held in a fortnight it is likely to also be held online. The safety of the community is most important.</p>
2.2	<p>The BCC member representing the Blackheath Alliance, Ms Eva Johnstone, has been removed from the committee due to a confidentiality breach. This decision was not taken lightly, but was necessary in recognition of the sensitivity of this project. There is still extensive representation of the stakeholder group by other members on this committee. TfNSW recognised the committee’s dedication to the process and the spirit of fairness the committee has demonstrated.</p> <p>The objection of the Blackheath Streetscape Group to the removal of Ms Johnstone and the Blackheath Alliance is noted.</p>
2.3	<p><b>Scope</b></p> <p>The focus of the project and the committee is a route through Blackheath. Bells Line of Road and a very long tunnel option (e.g. from Lapstone to Lithgow) is out of scope. To clarify, the long tunnel option presented by TfNSW is in scope.. Freight is a consideration being looked at by another separate process.</p> <p>Also out of scope is funding. The NSW Government is committed to delivering a solution and it is important for the committee to focus on the best outcome for Blackheath. Cost is important and it is something that TfNSW will manage. Whatever option comes out of this process and the ongoing consultation with the broader community, the Government is committed to delivering a sound solution. The options presented today that are deemed suitable for assessment by the committee will be brought forward into the assessment process in the next meeting.</p>
2.4	<p><b>Process</b></p> <p>The preferred option(s) of this committee will go forward as part of broader consultation with the community. We will be taking on board the view of the committee as part of the option selection process. Later this year, TfNSW will go back to the broader Blackheath community for consultation and give some people certainty, especially those in the area included in the ‘grey swathe.’</p> <p>All committee members have a voice in selecting the preferred option. (Point of clarification: BMCC will not make an assessment). Each member will complete their own weighting, scoring and ranking of the options which will be de-identified and the results shared with the committee. Anonymity will allow for each person to have their own independent view. It is an emotive issue and we want people to speak freely about what they see as important to them.</p>

	<p>At the end of the Co-Design process KJA will create a report for publication that will detail the process, sentiment and the outcomes. This will take some time to produce but we have committed to consulting with the community later this year before the run up to Christmas.</p> <p>To reiterate, the process is not a vote and the Government will also have input on the options. TfNSW has entered into this in good faith and everyone on this committee has invested a lot of time and effort. TfNSW, the NSW Government and the Minister are committed to the outcomes that this process will deliver, and are looking forward to the results.</p>
<b>3.</b>	<b>Criteria weightings Q&amp;A and discussion – Tricia Wunsch (facilitator)</b>
3.1	<p><b>You have mentioned consulting the community with one preferred option but the original brief was options preferred. To find a single option would require consensus of all committee members not just a majority. We need to be clear on what is expected.</b></p> <p>This is about a broad strategic alignment and refining the route options. The committee is not being directed to find one single option. If there is a split decision we will reflect that and there may be a preferred option with some variations for consultation. It is not my view we will be going out with one option.</p>
3.2	<p><b>Will you be sending around to the group how everyone voted? (Leaving out individuals)</b></p> <p>We will have a spreadsheet which we will present during meeting 5 of the individually weighted scores against each option. These will be de-identified.</p>
3.3	<p><b>We have had an open consultation and I am prepared to stand by my results/have them public. Do we want to test this among the group?</b></p> <p>While a number of committee members indicated they were willing for their assessment to be shared with the committee, it was noted by Alistair Lunn that this is a difficult forum to be able to indicate a preference for anonymity. It was agreed that if one person requested anonymity, all would be anonymous. It was confirmed that in any event, in the published report, assessment results would be anonymous.</p> <p>Point of clarification: there was a later request by a BCC member for anonymity.</p>
3.4	<p><b>How you will average/accumulate everyone’s individual scores?</b></p> <p>Each criterion for each option will have a score that is weighted by each individual with its own rating. We can then see across each individual how they have rated each option out of 100. We can then average those to get a group scoring if needed. The committee agreed to the method, and that each individual would provide their weightings to TfNSW, who will enter the weightings into a spreadsheet for each the individual member o put their scores in prior to the next meeting. This is to allow individuals to verify that the result reflects their intentions for each option.</p> <p>To achieve this, each member needs to provide their weightings to KJA by Monday 10 August so individual spreadsheets can be created and returned to each member by Friday 14 August. This process will also allow for anonymity as discussed at 3.3.</p>
3.5	<p><b>Will we have an opportunity to say this is my preferred option?</b></p> <p>Yes at the next meeting there will be an opportunity for each committee member to outline their preferred option. We do need to also have a robust and defensible process as well, hence the assessment criteria.</p>
3.6	<p><b>Can the Committee be a part of the community consultation with TfNSW so we have a chance to explain what our reasons are? We have been a part of the process so far.</b></p> <p>TfNSW is open to this, it is a good and a brave suggestion. We will consider this.</p>
<b>4.</b>	<b>Presentation of alternative tunnel options – Iain MacLeod and Adam Hillard</b>

	<b>The committee were shown through several suggested tunnel variations, with the benefits and drawbacks described, including concerns around steep gradients, topographical challenges and potential property impacts.</b>
4.1	<b>Several questions were received about tunnels passing under properties and at what depths.</b>  All tunnel options will pass under properties at some point, it is unavoidable. TfNSW noted the different depths of the tunnel variations as requested.
4.2	<b>Confusion was raised by the committee around the nomenclature and numbering of the different options, as well as how these variations relate to the previous options shown in meeting 3. This was raised several times by various committee members and noted it was difficult to understand on small laptop screens.</b>  TfNSW noted that is can be confusing, particularly with the tunnel variations, as portal locations can be mixed and matched and there are several options or combinations that could be made. TfNSW ran through the numbering system based on the route option type. This was discussed again at the end of the meeting. At the request of the committee these options were presented again, with the previous long tunnel options shown to compare with them. To help with the assessment process, there will be a table which details each option and joins it to the hierarchy to help the committee decide which ones to include for assessment.
4.3	<b>What are the impacts on the National Park from these tunnel options?</b>  These options do not impact on the National Park. A map detailing the location of the National Park was shown to demonstrate this.
4.4	<b>How far east does option tunnel / bridge combination extend? Concerns from several committee members were raised about its proximity to the Rhododendron Garden and recreational areas and the impacts noise would have on these areas. One member noted that there is already noise on the main road through Blackheath and this would take the noise away from that. Another member noted a concern that this option transfers the issues of the outer western bypass to the east side of the highway. It was also noted in the online chat that the bush around Ridgewell Road is very special and divers. It is highly prone to bushfires and has been burned out several times in the last few years.</b>  At this stage it is difficult to comment on the noise impacts for this option, the portal is approximately 400-500 metres away from the gardens. Good to receive these comments now.
4.5	<b>Is the tunnel variation east of the railway line (being presented) longer than the long tunnel option generated by TfNSW?</b>  Yes. Recap of the tunnel variations with the different portal exits.
4.6	<b>Requests were received for a tunnel variation with a southern portal near Evans Lookout Road. There was also a preference noted for a northern portal at the weigh station. Is this still an option?</b>  The option shown tonight is a slightly shorter option with a portal near Sutton Park. But a portal near Evans Lookout Road is an option and could be provided. It may involve some National Park or Sydney Water land.
4.7	<b>The railway line has an unusual shape, presumably because it is the flattest route across the plateau. Noting there are challenges in moving a railway line, if you took the curve out of the railway line at the Evans Lookout Road area and straightened it you could put the tunnel portal there without losing any properties. Is that topographically possible?</b>  No, that area drops away significantly. We did look at this area previously to reduce property impacts but it would not be possible.

4.8	<p><b>Where do you propose to locate the additional facilities, buildings, services (e.g. water) and power stations for the tunnel options? They are considerable in size, as shown in other motorways and tunnels.</b></p> <p>We are not yet at the stage to have determined where these would be located.</p>
4.9	<p><b>TfNSW asked the designer to comment on the relative grades on the original options and the eastern options put forward today on the Mt Victoria end. They look substantially steeper grades.</b></p> <p>The original options generally stick closer to the railway alignment which stays along the ridgeline. This provides flatter grades, with the steepest at 3.5%. As soon as we put any option on the east we have a series of valleys to get below and then back up to the natural surface. This goes to a grade of 5.5% - 6%. The further away from the rail line we go to the east to avoid properties the more difficult it becomes for the grades. Grades are important from a traffic efficiency perspective as well as an emissions perspective. Trucks hauling up a hill at 6% grade is a significant challenge for emissions and network point of view. This is why we were looking at the western side. Please bear this in mind. The tunnel would be 30-40 metres below residences, which is approximately 10 storeys.</p>
4.10	<p><b>So there is no tunnel option that won't impact residences, east or west long tunnel? If you have the technology to do this, why don't you have an eastern option that follows the rail line that mirrors the west option? If an eastern option followed the highway up to Ridgewell Road closer than is shown, it is not as steep there and you could miss the valleys.</b></p> <p>Every tunnel option will travel underneath residences. What is being suggested is tweaking these designs, which we would do if the long tunnel option was a preferred option and it moves into the concept design stage - we would be looking at many different potential options. It is too early to look at every option underground now. When we go through the scoring process we will also be looking for your comments and we would encourage you to provide comments such as these.</p>
4.11	<p><b>One committee member indicated on the design where a body of water is located that is a spring fed dam is used by the RFS for firefighting.</b></p> <p>Noted.</p>
4.12	<p><b>The road designer was asked for his opinion about which of the general (east or west) tunnel options are least impactful for the town/residences in terms of potential disturbance from tunnelling?</b></p> <p>There seems to be a criteria being applied to route a tunnel alignment to the eastern side to minimise the number of properties under which a tunnel might be aligned. Subject to further design work, it appears this would require a steeper grade which is less optimal from an alignment perspective. One of the main criteria that tunnel designers have to consider, as required by DPIE, is to minimise any property impacts. Some properties may still be affected, for various reasons, but the risk for properties above the tunnel is very low. The M4 East tunnel passes under in excess of 700 properties but there were around 10-20 properties that had a property damage dispute with the tunnel construction contractor. Tunnels are designed in such a way as to minimise the impacts to property on the surface. I would suggest that the tunnels are not ranked based on the least number of properties that they pass under. These tunnels are likely to be constructed with a Tunnel Boring Machine (TBM) or a roadheader. The most likely complaint would be a very low hum at night from the TBM as it passes under the property, and it would last for around however long it takes to pass under the property – typically one or two nights.</p>
	<p><b>Why were the properties on the M4 East affected?</b></p> <p>A lot of the properties in Sydney's inner west are old and historic properties and built on a sensitive soil material that is reactive to water and general ground movement. Where there</p>

	<p>has been a property damage dispute with the contractor, Independent Engineers were engaged to assess whether or not damage was caused by tunnelling or ground movement that happens continually and naturally. TfNSW can and has accessed INSAR satellite data which can measure ground movement to an accuracy of 1-2mm. This data assists in assessments as to whether damage is caused by natural ground movements or tunnelling activities. I understand in Blackheath there are a lot of old buildings but they are constructed on piles rather than concrete slabs. Concrete slabs are generally more susceptible to damage.</p>
	<p><b>Where are the tunnel portals located in comparison to residences? What is an optimal distance? We are keen to see these located away from residences and public spaces at either end.</b></p> <p>From an engineering perspective this does not matter; the tunnel can go to most depths below the surface level. The shallower it is the more ground support is required and the more expensive it is to construct; this leads to some of the comments around grade. From a community perspective there could be a noise impact from a construction site nearby. From an air quality perspective, if portals are located away from where people live, work or play that leaves open the option to not require ventilation outlets as there won't be any significant change in air quality.</p>
	<p><b>What experience does the tunnel team have in constructing tunnels in areas of hanging swamps and sensitive areas? Not just from a tunnel perspective, but protecting the environment.</b></p> <p>There are a series of challenges and engineering solutions to ensure the tunnel is watertight, if it needs to be to protect the environment. At the last meeting the hydrogeological process was outlined. To recap, as part of the EIS a hydrogeological study will be completed that will consider the impacts of the tunnel on the environment such as the hanging swamps. As part of the EIS they will assess the risk associated with the construction and DPIE will typically impose some conditions on the project to mitigate any adverse effects on the hanging swamps. That will ensure the contractor builds the tunnel in a particular way. These issues are prevalent elsewhere with similar issues of unexpected ground conditions and groundwater management being encountered in the construction of London's Crossrail.</p>
	<p><b>If you pushed the tunnel portal more towards Browntown then the tunnel grades will be greatly reduced. If a 6% grade is too steep that is one way to reduce it.</b></p> <p>That is true, it is a balance between how long is the tunnel and what grades can be achieved.</p>
4.13	<p><b>What are the impacts of the new Jellicoe Street portal suggestion?</b></p> <p>This option does impact on some of the properties in and around Jellicoe Street.</p>
4.14	<p><b>The tunnel experts were asked if they would support a tunnel being under their house if there was an option of a tunnel going elsewhere.</b></p> <p>One expert noted two different family members with tunnels located under their properties in Sydney. The only impact noted by one was a low hum for a couple of days while the roadheaders passed under their property. The tunnel was approximately 30 metres below surface level. We do have empathy for people and understand the perceived risk with tunnels. Both experts noted they would not be concerned if a tunnel went under their house, noting also that if the contractor does damage the property then they have to repair any damage.</p>
4.15	<p><b>How far below homes will the long tunnel be starting by Evans Lookout Road and heading north toward Chelmsford?</b></p> <p>Approximately 18 – 20 metres. But this is just a starting point, it could be shifted for more clearance and more depth could be achieved.</p>
	<p><b>Is that 22m to the pavement of the road, it seems to be in one section 16m between the cover of the tunnel and a house? What is the tunnel height?</b></p>

	<p>We have designed the recent tunnels in Sydney to be 5.3m clear, which is consistent with the bridge code. Yes it would be 16m between the cover of the tunnel and the floor of the house, but as noted previously tunnels can be any depth from 5m down and would require more structure to support it the shallower it is.</p>
4.16	<p><b>Are there any structures required for the long tunnel/s if there is no need for ventilation stacks?</b></p> <p>There are a number of facilities required for a tunnel. As mentioned previously, you need a power supply, the building housing transformers and other electrical equipment would depend on the existing power distribution system; water storage for fire suppression; pumping facility, hard standing facility for fire and rescue to be able to access the water; possibly some workshop facilities which could be located remotely, and a control centre with operators which similarly could be local or remote from the tunnel. Communications systems and CCTV are used to monitor the tunnel activity and respond to incidents as they occur. Should there be an incident on the tunnel you will have laybys at either end of the tunnel for recovery of vehicles.</p>
4.17	<p><b>What sort of litre capacity would the water storage be?</b></p> <p>The water tanks for firefighting suppression (deluge system and hydrant system) are 2 x 1,000M<sup>3</sup>. This size of tank is principally a requirement of Fire &amp; Rescue NSW. It allows for 2 hours of deluge water flow which is sufficient for the envisaged duration of the largest of fires. It also allows for continuous 3 x hydrant flow. We typically locate one tank at either end of the tunnel and in some instances these tanks have been built underground.</p>
5	<p><b>Break – 15 minutes</b></p>
6.	<p><b>Presentation of additional alternative options – Paul Peters and Adam Hillard</b></p> <p><b>The committee were shown through several additional route variations, with the benefits and drawbacks described. A potential underpass at Shipley Road to connect to the GWH was described.</b></p>
	<p><b>Would there still be a pedestrian crossing at the original location of the level crossing? It is very important for pedestrian connectivity from the west to the east.</b></p> <p>If we closed the level crossing you would close it for everyone. But we could look at a pedestrian underpass at that point. This is good feedback to receive.</p> <p>A committee member noted that you would need an underpass at Bundarra Street to connect with the commercial part of Station Street.</p>
	<p><b>Is there a pedestrian crossing from the railway station into the main township?</b></p> <p>There is a pedestrian crossing – shown on map.</p>
	<p><b>How would the right turn from the Shipley underpass back onto the highway, keeping in mind the traffic queues already at Bundarra?</b></p> <p>It would be a three-way intersection that is signalised. While this is early days, our research shows a three way intersection is more efficient than a four way intersection, with more time for each traffic line than currently at Bundarra. On the face of it, this is the best answer we can come up with for the issue of the level crossing. It would work better than the current configuration, but we don't know yet how much improvement it would bring.</p>
	<p><b>Are there houses lost with the Shipley underpass?</b></p> <p>There is no property impact at the moment. The property impacts may be the relocation of some driveways due to the cut and retaining wall we would need to consider. This would be the next round of design.</p>
	<p><b>Bus parking in front of the Ivanhoe on the Highway no longer exists. You would need to consider where this would go because currently they stop in the middle of town.</b></p>

	<p>There is some room to work with and it might be possible to put in a bus lane on the departure side. This option does retain the parking in front of the shops; there is a little bit of room to work with.</p>
	<p><b>One of the main points of the duplication is to reduce travel time, but this option includes an additional traffic light. Additionally access between the two sides of town would only be at either the northern and southern end, without a central connection. This would have significant impacts on the businesses on the west side. We would also still lose the trees and the park.</b></p> <p>These are good points. Each option has benefits and drawbacks, and these would be some of the drawbacks of this option.</p>
	<p><b>The difference between the outer western option and the variation to it being presented is that there is now a tunnel under the Vipassana Centre? Is that the difference?</b></p> <p>Yes the previous version went over the rail line, this version goes under it.</p>
	<p><b>Who asked for the variation to the outer western option? We are all against the Centennial Glen and Station Street options.</b></p> <p>I would need to check my notes for this. It does have a number of the drawbacks of the main outer western option.</p> <p>POINT OF CLARIFICATION: During the BCC process TfNSW was approached by several members of the committee endorsing direct engagement by TfNSW with the Vipassana Centre. As a result of this engagement, the variation to the outer west option was developed and included for consideration by the committee.</p>
	<p><b>Does using the rail corridor for road impact the rail access road? It is the great walking trail and there are three properties along the dirt road as well.</b></p> <p>It would impact on the walking trail, you would need to reinstate that parallel which we haven't done. Acknowledged that there is a cliff nearby. We allow 6.5m from the centre line of each track within the rail reserve for the maintenance vehicle. Any walking tracks would need to be built outside of that zone. We do not impact on the properties, the route does not head that far south. This was to test if it was feasible.</p>
	<p><b>What would be the speed limit through town?</b></p> <p>Coming into town it would drop back to 60kms, and heading out it would be 80kms.</p>
	<p><b>Is there any advantage for Blackheath with the option to use the rail corridor for road? It seems to have a huge impact on Station Street and there does not seem to be an appetite to destroy Station Street.</b></p> <p>The idea with the long tunnel would be to not impact on Station Street. There are two options for using the rail corridor for road. The shortest footprint, to reduce the amount of rail that would need to be moved, is the cut and cover option. That would cause significant disruption to Station Street. The bored tunnel version tunnels underneath but does require significantly more rail to be moved. This option appears to be a good solution with a lot more connectivity as you would take rail out of the equation. But to get the rail down to the level required would mean taking out a lot of property in each direction and the length of the reconstruction is quite long as well.</p>
	<p><b>The Minister talks about this road being 100kms per hour and shaving at least 10 minutes off the trip from Lithgow to Katoomba. Are these serious benchmarks we need to take into account when thinking about all these options? The minister is on public record saying this.</b></p> <p>I understand he said this when he was the local member but not since he has been Minister. The announcement made in the media release stated 100kms in the valley and 80kms in the</p>

	rest of the alignment with the exception of Medlow Bath. That is what the government has committed to. Some of the above ground through town options would make this impossible to achieve this. Travel time is important, it feeds efficiency, growth and tourism. Substantial savings would be expected and the precise time would be dependent on the time of day travelled. 100kms per hour is not a requirement through the mountains.
<b>7.</b>	<b>Selection of options and variations to move forward for assessment – Tricia Wunsch</b>
7.1	<p>Note the original options presented by TfNSW during Meetings 2 and 3 automatically move forward for assessment as they are the base options. This will ensure a clear direction form the community is recorded and a robust process is followed.</p> <p>There were 13 voting members of the committee present. Each option was considered individually, with the plan shown to provide clarity on which option it was. Seven votes are required to include or exclude an option for assessment.</p> <p>The variation to the existing Great Western Highway with an underpass at Shipley Road will replace the original base design to upgrade the existing highway route as it provides resolution to the intersections (which at the last meeting were still unresolved). It will move forward as the only above-ground, through-town option for assessment.</p> <p>The vote resulted in only one additional option moving forward for assessment – 4F.</p>
7.2	<p><b>Will the final report provide enough detail to show that the options we have chosen not to take forward to assessment tonight have been legitimately considered and rejected?</b></p> <p>Yes. The options were raised by the committee, they were mapped by TfNSW and they were discussed in detail at a formal meeting of the BCC. The conversations we have had are reflected in the minutes, which will form part of the report.</p>
7.3	<p><b>Can the report reflect that the BCC only had the choice to add in the sixth option, and that the others were included as baseline original ideas.</b></p> <p>We will reference that they were the broad alignments that were announced in December 2019 and they were refined and modified through this process and we also added options.</p>
7.4	<p><b>How far south from Evans Lookout would the southern portal of the long tunnel be located?</b></p> <p>The portal is about 300 metres south.</p>
<b>8.</b>	<b>Next steps – Tricia Wunsch</b>
8.1	It was confirmed and agreed that weightings would be provided by BCC members to KJA by Monday 10 August so individual spreadsheets can be created and sent back to the committee members by Friday 14 August to provide sufficient time to consider the scoring for each option prior to the final meeting held on the 19 August.
<b>9</b>	<b>Thanks and close – Alistair Lunn</b>
9.1	The Committee noted their thanks to the designer for developing the different options and variations that were put forward. The significant input of time to develop these was appreciated. Being able to see the pros and cons of each option is beneficial for the committee and is similar to the process TfNSW follows when developing a project.
9.2	Thanks to the committee for their time, it is appreciated. Please remember confidentiality, particularly at this point of the process.
	<b>Next meeting 19 August 2020</b>