

Executive summary

The proposal

Transport for NSW (Transport) is proposing to widen the Great Western Highway, between Rowan Lane, Katoomba and Tennyson Road, Blackheath from one to two lanes in each direction (the proposal). The proposal is part of the Great Western Highway Upgrade Program which aims to provide a safer, more efficient connection between the Central West region of New South Wales (NSW), the Blue Mountains and Sydney.

Key features of the proposal would include:

- widening of the Great Western Highway to provide a four-lane divided carriageway in two sections:
 - between Rowan Lane, Katoomba and Bellevue Crescent, Medlow Bath (about 3.5 kilometres)
 - between Station Street, Medlow Bath and Tennyson Road, Blackheath (about 1.8 kilometres)
- new concrete twin bridges (about 400 metres long) over the valley from Pulpit Hill near Explorers Road
- upgrades to intersections at Nellies Glen Road, Explorers Road and Foy Avenue
- re-use of redundant sections of the existing highway pavement for new truck stopping areas, local service roads and maintenance areas
- consolidation and improvement of the Pulpit Hill heritage interpretation area on Nellies Glen Road, including improved visitor parking
- adjustment of bus stops on the highway at Bonnie Doon Reserve, Explorers Road and Foy Avenue to provide set down and pick up locations for buses
- installation of 11 water quality basins including biofiltration and on-site detention
- upgrade and enhancement of existing sections and providing new active transport connections along the Great Western Highway, which would form part of the broader Great Blue Mountains Trail to improve active transport connectivity between Katoomba and Blackheath
- common construction activities and ancillary work, including:
 - relocation of rail infrastructure, maintenance areas, access roads and utilities (including electrical, gas, water and telecommunications)
 - work on associated rail infrastructure including adjustments to power connections and rail corridor fencing
 - civil earthworks, retaining walls, drainage work, water quality controls and tie in work to adjoining sections of the highway
 - new national park, railway, fire trail and utility authority maintenance access tracks to connect with other corridors
 - final roadworks including pavement, kerb and gutters, signs, landscaping lighting and line marking
 - new intelligent transport systems including, but not limited to, closed-circuit television, variable-message signs and variable speed limit signs
 - establishment of temporary ancillary facilities to support construction, including compound sites, site offices, stockpile and laydown locations, temporary access tracks, water quality devices and concrete batching plants.

Need for the proposal

The proposal is consistent with key strategic objectives within a number of State Government strategies and plans including:

- Premier's Priorities
- Future Transport Strategy 2056
- State Infrastructure Strategy 2018-2038: Building Momentum
- Regional NSW Services and Infrastructure Plan.






The proposal forms part of the broader upgrade of the Great Western Highway between Katoomba and Lithgow. The proposal, as part of the broader upgrade is needed to provide a safer and more efficient link between Central West NSW and the Sydney Motorway network.

Without the proposal, the highway between Katoomba and Blackheath would continue to be constrained resulting in suboptimal traffic movement along the corridor and impacts to the local communities in the Blue Mountains, particularly in Katoomba, Medlow Bath and Blackheath. In particular, without the proposal, the highway would continue to experience:

- slow travel speeds with limited overtaking opportunities and steep gradients (more than double the recommended maximum level)
- delays of up to 80 minutes in peak times and hours if there is an incident
- reduce freight efficiency by limiting access for safer and more sustainable high productivity vehicles
- limited access during incidents and natural disasters
- higher than state average crash rates, and
- socio economic amenity impacts for local communities with high through traffic volumes and congestion.

Proposal objectives

The proposal objectives are tied to the overall objectives of the Great Western Highway Upgrade Program. The program objectives and the proposal response to those objectives are detailed in the following table.

Theme	Great Western Highway Upgrade Program objective	Great Western Highway East – Katoomba to Blackheath proposal response
 1. Economic development, productivity and recovery	Improve ability to drive regional economic development and freight productivity	Providing a four-lane divided carriageway with dedicated turn lanes to improve freight productivity and reduce congestion.
 2. Resilience and future proofing	Provide a dependable and adaptable transport network that enables continuity of transport and essential services	Make network provisions for emergency services and provide safe continuous access to transport services.
 3. Network performance	Improve transport network efficiency	Provide suitable capacity to reduce congestion during peak periods and to support overtaking of slower vehicles.
 4. Safety	Reduce actual and perceived safety risks	Separate traffic flows and user groups, upgrading intersections, provide shoulders, improve alignment and remove roadside hazards along the corridor.
 5. Movement, place and amenity	Maintain and enhance local amenity and character, and protect environmental and cultural assets	Improve local traffic connectivity along and across the corridor. Provide facilities to encourage active transport as part of the Great Blue Mountains Trail. Preserve, consolidate and interpret cultural heritage through sensitive urban design along the highway, including both Aboriginal and non-Aboriginal heritage themes.

The proposal would meet these objectives by the provision on increased capacity on the highway.

Options considered

Since the 1950's, Transport has considered duplication and alignment of the Great Western Highway to improve the crossing of the Blue Mountains.

In 2009, planning and investigations for the duplication of the Great Western Highway for the corridor between Mount Victoria and Lithgow were undertaken to inform the Local Environmental Plan (LEP) corridor reservation.

In June 2018, the NSW Government committed to investigating the feasibility of extending the duplication of the Great Western Highway from north of Katoomba to Forty Bends. In late 2018 and 2019, a corridor route option analysis was undertaken for the length of highway.

The corridor was split into four zones to appropriately capture potential options for the localities. Due to the constraints between Katoomba and Medlow Bath, the only option was to consider a duplication generally along the alignment of the existing highway. This included straightening the alignment by bridging across the valley north of Explorers Road. Between Medlow Bath and Blackheath, there were two corridor route options: a new alignment that passed to the west of the Main Western Rail Line (along Station Street) or realigning and widening the existing alignment. The preferred corridor route was to realign and widen the existing alignment as it would maximise the use of existing road pavement and reduce impacts on heritage items.

Once the preferred corridor route had been selected, strategic and concept design was undertaken to further minimise environmental impacts and improve the constructability of the designs. The strategic design identified two separate options for the Katoomba to Medlow Bath section, focusing around the bridges required west of Explorers Road:

- Option A: A new carriageway to cater for westbound traffic, with the existing highway catering for eastbound traffic.
- Option B: Upgrade the existing alignment with one curved twin bridge to the west of Explorers Road.

Option B was selected for the Katoomba to Medlow Bath section as Option A did not meet the program objectives, as using the existing highway alignment did not resolve known constraints and safety issues.

Between Medlow Bath and Blackheath, an alternative alignment near Coachhouse Lane was progressed. This option was further developed based on community feedback, as it shifted the alignment more into the rail corridor to avoid impacts to Coachhouse Lane and private properties in the area.

Through the concept design phase, a number of different design refinements were undertaken to improve the constructability of the strategic designs including changes to the alignment around Pulpit Hill and the bridges to the north of Explorers Road.

The preferred design for the proposal has been defined through strategic and concept design development, involvement of stakeholders attending workshops, and included a range of refinements to minimise impacts and improve constructability. The preferred design:

- provides a four-lane dual carriageway through the sections of Katoomba to Medlow Bath, and Medlow Bath to Blackheath suitable for a posted speed of 80 kilometres per hour
- follows an alignment that is constructable alongside highway traffic to maintain existing highway operation during construction
- provides upgraded intersections at Nellies Glen Road, Explorers Road and Foy Avenue
- makes best use of redundant highway sections for maintenance, local access and for truck stopping areas for load checking
- avoids impacts on properties in Coachhouse Lane
- provides for improvement to water quality along the proposal while also providing suitable access to maintain and manage assets along the corridor
- provides opportunities to enhance locations with heritage value through interpretation and urban design features
- makes best use of the landscape to provide connections between villages that integrate with the surrounding natural landscape
- construction of the bridge structures identified to be incrementally launched to minimise direct environmental impacts under the bridge structure and reduce construction logistics.

Statutory and planning framework

Chapter two of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP) aims to facilitate the effective delivery of infrastructure across the State.

Section 2.108 of the Transport and Infrastructure SEPP permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent.

As the proposal is for a road and road infrastructure facilities and is to be carried out on behalf of Transport, it can be assessed under Division 5.1 of the *Environmental Planning and Assessment Act 1979*. Development consent from council is not required.

Part of the proposal area is currently located on land reserved under the *National Parks and Wildlife Act 1974* (NPW Act) as part of the Blue Mountains National Park. Development within national park estate cannot proceed by virtue of Section 2.108 of the Transport and Infrastructure SEPP until the land is revoked from the national park estate via an Act of Parliament. This revocation process is currently ongoing.

Community and stakeholder consultation

The NSW Government began planning for the Great Western Highway upgrade between Katoomba and Lithgow in 2019. Since then, Transport has involved the community during the development of the Great Western Highway Upgrade Program through a range of community consultation activities. For the Great Western Highway East – Katoomba to Blackheath this has included community feedback periods for the strategic design, community updates and doorknocking activities to inform the community of the upgrade.

Consultation has also been undertaken with a range of government and community stakeholders through the development of the concept design. In particular, issues such as heritage, water quality and National Park revocation have been discussed. Aboriginal heritage stakeholders have also been consulted in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.

Environmental impacts

Surface water and groundwater

During construction, there would be a need to prevent surface water quality impacts from sediment laden runoff or accidental leaks and spills. In addition, the proposal may result in localised interception of groundwater which could impact on the groundwater quality. Construction sediment control basins have been designed to minimise impacts to water quality from the proposal. A Soil and Water Management Plan (SWMP) would be implemented during construction and include the requirement for several erosion and sediment control measures to be maintained during construction. Soil and erosion controls would be especially important around the Blue Mountains Swamp Threatened Ecological Community (TEC) (Plant Community Type [PCT] 1078) within the proposal area. Near the new twin bridges, surface water flow off the bridge structure during construction would also be managed by explicit intervention measures to avoid uncontrolled site water falling onto the PCT.

During operation, the increased impervious surface area of the upgraded Great Western Highway would result in increased stormwater runoff volume, frequency and rate and associated increases in pollutant loading to receiving waterways. The drainage design of the proposal includes several Gross Pollutant Traps, water quality basins and swales to retain and treat stormwater runoff before release into the surrounding environment. Water quality modelling carried out for the proposal identified that these treatments would result in a net beneficial effect on water quality compared to the existing scenario.

Biodiversity

There is limited cleared space for widening the Great Western Highway along the existing corridor. As such, the proposal would involve the removal of up to 47.56 hectares of native vegetation, including:

- up to 46.8 hectares of vegetation identified as plant community type (PCT 1248) Sydney Peppermint – Silvertop Ash
- up to 0.76 hectares of vegetation identified as plant community type (PCT 967) Narrow-leaved Peppermint – Silvertop Ash.

The design has avoided direct impact to the Blue Mountains Swamp TEC (PCT 1078) near the twin bridges in the Katoomba to Medlow Bath section. This is a TEC listed under the BC Act and EPBC Act. However, there may be indirect impacts to 0.12 hectares of the swamp.

The proposal would result in an increased road crossing distance (from about 30 metres to about 100 metres in some locations). This would reduce connectivity across the widened Great Western Highway and increase the risk of injury and mortality to local fauna.

Assessments of significance have been carried out for threatened species which were identified with potential to occur within the proposal area. These assessments found that the vegetation removal associated with the proposal would not have a significant impact on threatened biota. Significant impacts would be avoided through the implementation of mitigation measures, including the implementation of a Flora and Fauna Management Plan.

During the detailed design and construction stages, work would be undertaken to minimise, as far as practicable, the area of vegetation removal. However, biodiversity offsets have been identified and would offset the resultant vegetation removal.

Non-Aboriginal heritage

The proposal would result in direct impacts on four local heritage items listed on the *Blue Mountains Local Environment Plan 2015* within the Katoomba to Medlow Bath section. These are: Pulpit Hill and Environs; Stone Arrangements; Explorer's Tree and Environs; and Bonnie Doon Reserve. While the proposed design has been refined to minimise impacts to these heritage items by following the existing alignment as much as possible, impacts would occur during construction. This would be due to the widening of the existing road corridor through the curtilages of these heritage items. While the Explorer's Tree and Environs heritage item sits entirely within the proposed road corridor, the tree was removed in February 2021 due to safety concerns. As such, the proposal would have a partial impact on the item. The proposal would not impact on the 'heritage fabric' of the other heritage items subject to direct impacts.

The proposal has been designed to complement the heritage significance of the proposal area by creating spaces for interpretation and community access. These design features include the retention and expansion of the existing heritage interpretation area at Pulpit Hill and the provision of improved active transport trails. These features would be further developed as part of the Great Western Highway Upgrade Program heritage interpretation strategy.

Landscape character and visual impact

The proposal would result in visual impacts to motorists, recreational walkers and cyclists during construction due to clearance of vegetation, excavations and earthworks and the presence of construction areas and ancillary facilities. Residents that overlook construction sites would experience the greatest visual impacts from the proposal. There would be major visual impacts experienced at residences on Explorers Road, especially those down the valley due to their proximity to the construction of the twin bridges. Visual impacts would also be noticeable for residents on Rowan Lane, Katoomba; Foy Avenue, Delmonte Avenue, Coachhouse Lane and Station Street, Medlow Bath. There are no anticipated residual landscape or visual impacts resulting from the construction phase of the proposal as contractors would be required to rehabilitate all work sites.

The proposal would result in landscape character and visual impacts due to widening of the road corridor and removal of vegetation. This would have the greatest impact in areas which are currently highly vegetated including near Pulpit Hill in the Katoomba to Medlow Bath section and along the Medlow Bath to Blackheath section where the proposal removes vegetation that is currently part of the Blue Mountains National Park. However, an urban design and landscape strategy has been developed for the proposal to maintain the existing character of the local area. The strategy has informed the design of elements including the proposed twin bridges, retaining walls, exposed cut, fill embankments, bicycle and pedestrian connections and replanting/ landscaping.

Noise and vibration

During construction, exceedances of the noise management levels are predicted near the proposal. During standard working hours, most residences are not predicted to be 'highly noise affected'. However, where work occurs near Foy Avenue and Coachhouse Lane, Medlow Bath, nine residences are predicted to be 'highly noise affected'. The highest noise levels are only likely to occur for relatively short periods when construction work is near the residences.

For work outside standard hours, exceedances are predicted throughout the proposal area. Impacts would be greatest during the night-time period for work near Medlow Bath. The main potential source of vibration during construction would be excavation of hard rock. The assessment found that some receivers would be within the minimum working distance for cosmetic damage and/or the human comfort minimum working distance during the worst-case vibration scenario. Noise and vibration impacts during construction would be minimised and managed as far as feasible and reasonable in accordance with the Construction Noise and Vibration Guideline (Transport, 2016a).

During operation, noise levels are predicted to increase for some sensitive receivers along the Great Western Highway as the highway would move closer. The operational noise modelling show that 31 residential receivers would experience an exceedance of the adopted operational noise criteria. This is expected to apply to receivers closer to the Great Western Highway along the Katoomba to Medlow Bath section, and receivers at the eastern end of the Medlow Bath to Blackheath section.

A range of noise mitigation measures including low noise pavement and at-property treatments would be considered further by Transport during detailed design for properties where noise levels would exceed the adopted criteria.

Traffic and transport

The construction of the proposal would be staged so that the new carriageway for each section would be constructed offline and result in little or no impact to existing traffic. Once completed, the main highway traffic would be diverted onto the new carriageways in a contraflow operation, resulting in minimal impacts to traffic during the construction of the second carriageway for each section. As some work may be carried out immediately adjacent to the highway, there may be the need to reduce the speed limit in localised sections along the highway during work for the safety of workers. This could result in some short-term localised traffic delays.

Within the Katoomba to Medlow Bath section, construction of the westbound carriageway would result in the temporary closure of the Great Blue Mountains Trail between Katoomba and Medlow Bath. This would be reconstructed and reopened upon completion of this carriageway. Construction would also impact local roads through the staged temporary closure of Nellies Glen Road and Explorers Road. Temporary access to properties along these roads would be provided. Construction would also result in temporary relocation of bus stops along this section.

During operation, the proposal would result in benefits to traffic and transport including:

- improved existing performance and safety and reduced congestion by:
 - improving operation of key intersections (Nellies Glen Road, Explorers Road and Foy Avenue) along the Katoomba to Medlow Bath section
 - improving traffic flow along the Medlow Bath to Blackheath section

- improved pedestrian and cyclist infrastructure through:
 - the upgrade and realignment of parts of the Great Blue Mountains Trail within the Katoomba to Medlow Bath section
 - the establishment of a new active transport trail to the east of the Great Western Highway between Medlow Bath and Blackheath.

The proposal would result in permanent changes to traffic conditions at Nellies Glen Road and Explorers Road, Katoomba, and Foy Avenue, Medlow Bath.

Explorers Road would no longer connect to the highway, instead connecting to the service road which would provide access eastbound to the highway. The Explorers Road intersection would only allow a right-in and right-out (to Katoomba) traffic movement.

Nellies Glen Road would be shifted further east to improve driver sight lines of traffic on the highway and allow for the retention and improvement of the existing Pulpit Hill heritage interpretation area. The left-out movement at Nellies Glen Road which was removed by Blue Mountains City Council in 2021 due to safety concerns would be reinstated, making the intersection left-in left-out only. If Pulpit Hill residents need to travel to Medlow Bath, access to the highway would be via Nellies Glen Road.

At Foy Avenue, the intersection would become a left-in, left-out and right-in only. The right turn out of Foy Avenue onto the Great Western Highway eastbound would not be permitted. To travel towards Katoomba, residents would need to travel north to Bellevue Crescent to turn around at the U-turn bay provided by the Great Western Highway Upgrade – Medlow Bath.

By widening the Great Western Highway from one to two lanes in each direction, the proposal would improve reliability of access for the local and regional communities and emergency services currently using the highway. It would also improve the resilience of the highway during emergencies such as traffic incidents and bushfires.

Justification and conclusion

Without the proposal, the highway between Katoomba and Blackheath would continue to be constrained resulting in restrictive traffic movement along the corridor continuing to impact on the local communities in the Blue Mountains, particularly in Katoomba, Medlow Bath and Blackheath.

In particular, the proposal would meet the proposal objectives and would realise the following benefits:

- increased road capacity from one lane either direction to two lanes either direction to improve travel speeds and reduce delays during peak times
- improved safety for all road users including pedestrians and cyclists
- improved access in terms of traffic incidents or other emergency incidents or natural disasters.
- upgrading to latest road specifications could allow for improved freight access including use by higher productivity vehicles.
- improved travel efficiency would result in improved amenity for local communities and improved access for the local community.

While there would be some environmental impacts from the proposal, they have been avoided or minimised wherever possible through design and the use of site-specific environmental safeguards to be implemented during detailed design and construction. The beneficial effects of improving safety and freight efficiency are considered to outweigh the adverse impacts and risks associated with the REF proposal.

In conjunction with the broader Great Western Highway Upgrade Program, the proposal would improve transport link for freight, commuters, travellers and tourists between the Central West and the east coast cities including Sydney, Newcastle and Wollongong. It would better connect local communities in the Blue Mountains to jobs, health care, education and other services both within townships and in neighbouring regional cities and strategic centres. Completion of upgrades to the last section of the Great Western Highway (between Sydney and Lithgow) would also result in improved:

- resilience and emergency management conditions
- connectivity for all road users along and across the corridor
- active transport links
- consistency of travel conditions
- network efficiency and freight productivity
- safety for all road users
- quality of surface water run off to the surrounding environment
- local amenity through heritage interpretation.

Display of the review of environmental factors

This REF is on display for comment between 15 May and 19 June 2022. You can access the documents in the following ways:

Internet

The documents are available as pdf files on the Transport for NSW website at nswroads.work/qwheastconsult.

Printed copies

Hard copies of the REF will also be available for viewing between 15 May and 19 June 2022 at:

- Blaxland Library
 - 33 Hope St, Blaxland NSW 2774
 - Hours of operation: 10am to 5:30pm Monday to Friday and 9am to 4pm Saturday
- Blue Mountains City Council – Katoomba Council Headquarters
 - 2-6 Civic Place, Katoomba NSW 2780
 - Hours of operation: Monday to Friday 9am–4pm
- Glenbrook Customer Service Counter (Glenbrook Visitor Information Centre)
 - Hamment Place, Glenbrook NSW 2773
 - Hours of operation: 8:30am to 3pm Monday to Friday
- Katoomba Library
 - Blue Mountains Cultural Centre, 30 Parke St, Katoomba 2780
 - Hours of operation: 10am to 5pm Monday to Friday, 10am to 4pm Saturday and 12 noon to 4pm Sunday.

An online version of the REF will also be available throughout the display via our virtual consultation room at nswroads.work/qwheastconsult.

Copies by request

Printed and electronic copies are available by contacting Elisabeth Sacco on 1800 953 777 or email gwhd@transport.nsw.gov.au.

Staffed displays

Date	Location and time
Monday, 23 May 2022	Online general session – 6:30pm – 8pm
Wednesday, 25 May 2022	Aboriginal stakeholder engagement session – 4:30pm – 6pm General face to face session – 6pm – 8pm Seminar Room, Katoomba Cultural Centre, 30-32 Parke Street Katoomba
Tuesday, 31 May 2022	Specialised online session – biodiversity & water quality 6:30pm – 8pm
Saturday, 4 June 2022	Face to face session – 10am – 12pm Blackheath Neighbourhood Centre, 41 Gardiner Cres, Blackheath
Monday, 6 June 2022	Specialised online session – localised access/construction & completion 6:30pm – 8pm
Thursday, 9 June 2022	Online general session – 6:30pm – 8pm

How can I make a submission?

To have your input formally considered, and receive a response in the Submissions Report, use our online submission form at nswroads.work/qwheastconsult.

To send in a printed submission via post, write to:

Great Western Highway Upgrade Program

Katoomba to Blackheath Upgrade REF & Concept Design

PO Box 334, Parkes NSW 2870

Submissions must be received by midnight 19 June 2022. Submissions will be managed in accordance with the Transport for NSW Privacy Statement which can be found here <https://www.transport.nsw.gov.au/privacy-statement> or by contacting 1800 953 777 for a copy.

What happens next?

Transport for NSW will collate and consider the submissions received during public display of the REF.

After this consideration, Transport for NSW will determine whether or not the proposal should proceed as proposed and will inform the community and stakeholders of this decision. The REF for this proposal and the Great Western Highway Upgrade – Medlow Bath REF will be considered and determined at the same time to capture all potential impacts of the Great Western Highway upgrade between Katoomba and Blackheath.

If the proposal is determined to proceed, Transport for NSW will continue to consult with the community and stakeholders prior to and during construction.

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Appendices

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Appendix E	Biodiversity Assessment Report
Appendix F	Statement of Heritage Impact
Appendix G	Urban Design, Landscape Character and Visual Impact Assessment
Appendix H	Noise and Vibration Impact Assessment
Appendix I	Traffic and Transport Assessment Report
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Appendix K	Great Western Highway Duplication – Katoomba to Lithgow Archaeological Survey Report