



Australian Government



Transport for NSW

# Great Western Highway

East – Katoomba to Blackheath

Review of Environmental Factors – Water quality fact sheet

May 2022



Indicative treatment at basin outlet (source: Blue Mountains City Council).

Together the Australian and NSW Governments are investing \$2.5 billion towards upgrading the Great Western Highway between Katoomba and Blackheath, and between Little Hartley and Lithgow, respectively. The Great Western Highway Upgrade will reduce congestion, deliver safer, more efficient and reliable journeys for those travelling in, around and through the Blue Mountains, and better connect communities in the Central West.

Transport for NSW (Transport) is presenting a Review of Environmental Factors (REF) and concept design for the Katoomba to Blackheath Upgrade for community consultation until Sunday 19 June 2022. We invite the community and other interested stakeholders to submit feedback to help inform next steps for the proposal.

This fact sheet summarises key points related to water quality impacts as described in the REF and concept design for the Katoomba to Blackheath Upgrade.

To read the complete chapter on the potential impacts on surface and groundwater during construction and operation of the proposal refer to section 6.1 of chapter 6 of the REF and the Surface Water and Groundwater Technical Assessment Working Paper (Aurecon, 2021), provided in Appendix D.



The Katoomba to Blackheath Upgrade lies adjacent to the Blue Mountains National Park within the Hawkesbury-Nepean catchment, the longest coastal catchment in NSW draining around 21,400 square kilometres. The northern portion of the proposal also lies within the Blackheath Special Area (drinking water catchment). Transport have developed the proposal with a beneficial effect on surface water runoff into these drinking catchments.

The proposal area sits between creeks running along both the eastern and western sides of the Great Western Highway and contains Key Fish Habitats (as defined in the Fisheries Management Act 1991) and hanging swamps which are identified as being threatened a threatened ecological community (TECs).

## Surface water and groundwater

Transport would manage the surface water run off or discharge from the proposal area (particularly from the Medlow Bath to Blackheath section) very carefully, as it would flow into the Blue Mountains National Park and existing special catchment areas.

There are two groundwater sources located within the proposal area – the Sydney Basin Blue Mountains Groundwater Source to the east and the Sydney Basin Cocks River Groundwater Source to the west. These groundwater sources support local hanging swamp ecosystems, which are mostly reliant on groundwater seeps out along bedding planes and layers in the sandstone.

As part of the preparation of the Review of Environmental Factors we carried out detailed planning about managing potential impacts to soil and water quality during construction and consider appropriate mitigation or management measures where impacts are identified. We would further develop this work into the Soil and Water Management Plan (SWMP) as part of the Construction Environment Management Plan (CEMP) which is developed prior to construction.

## Water quality management

The key potential construction impacts of the proposal on surface water and groundwater include:

- surface water quality impacts if sediment laden runoff is released to waterways during construction
- surface water and groundwater quality impacts as a result of accidental leaks and spills.

Managing impacts to water quality is a key priority for the project team. To manage impacts, a SWMP will be prepared and implemented as part of the overarching CEMP.

The SWMP will identify risks relating to soil erosion and water pollution and describe how these risks will be addressed during construction. It will also include detailed water monitoring plans to monitor existing surface water and groundwater and monitor changes to water quality during construction.

Run off from construction materials such as fuel and chemicals, stockpiles or ancillary facility operations (site compounds) also pose risks for water quality management during construction if not managed properly.

For this reason, we have deliberately located ancillary facilities for the proposal more than 40 metres away from local waterways.

The SWMP will also include several erosion and sediment control measures which must be maintained during construction.

To limit downstream flooding impacts and possibly hanging swamp impacts, the design features sediment detention basins located downstream of some drainage locations. Where possible, these permanent drainage structures will be installed as early as possible to filter and clean at the site water before it is released into the catchment. In partnership with Blue Mountains City Council, we are also adopting learnings from studies that have identified the impacts that rising pH levels can have on hanging swamps.

The water quality treatment system will be developed further during detailed design and will include:

- layout and detail of the drainage system including outlet design
- inclusion of bio-filtration, pollutant traps and rock pooling practices to remove velocity, separate pollutants and treat flows within the system
- minimisation of discharge flows from the sediment detention basins, to limit scouring in the drainage channels
- design within and around the waterways
- assessment of culverts and stormwater inlets in the local waterways and recommendation for scour protection within the Medlow Bath to Blackheath section.

## Hangingswamps

Transport acknowledges the importance of protecting the hanging swamps within or near the Katoomba to Medlow Bath and Medlow Bath to Blackheath proposal area, specifically those located:

- under the proposed twin bridges in the Katoomba to Medlow Bath section
- on the north-eastern side of the Medlow Bath to Blackheath section.

The proposal would increase the road footprint and thereby could cause minor operational flood impacts downstream due to increases in volume, frequency and rate of stormwater runoff coming off the larger road. This could potentially impact the hanging swamps.

The proposal may also affect sensitive environments near the proposal and may lead to extended periods of drying or waterlogging, introduction or increase in weeds and changes habitat suitability for dependant flora and fauna at the Blue Mountains Hanging Swamp specifically.

However, the proposed water quality and drainage network would result in a beneficial impact on water quality as the proposal would help to minimise hydrologic impacts to surrounding sensitive environments.

Please refer to Section 3.2.3 and Section 6.1.3 of the REF for further information.

The erosion and sediment control measures contained within the SWMP would also help to manage and minimise damage to the hanging swamps during construction.

Recent scientific studies have raised concerns about the impact of increasing pH levels on Blue Mountains Hanging Swamps. We are committed to further understanding these results and we plan to partner with Blue Mountains City Council to explore opportunities to achieve best practice in water quality design as part of the Proposal.

One of the ways pH levels can be minimised is by not using concrete which contains certain ingredients in construction. For example, Transport specifies the avoidance of concretes containing flyash. Using quality materials is a priority for the upgrade, as is ongoing consultation with key stakeholders including Water NSW and Blue Mountains City Council.



A hanging swamp located in the study area.

## What is an REF?

Transport has legal obligations to assess and mitigate impacts that may result from a proposed activity. An REF details these legal obligations, and the environmental impacts and proposed mitigation measures of a project.

## What is a concept design?

A concept design is developed in sufficient detail to allow an assessment of likely environmental, social and economic impacts so stakeholders can provide feedback. It may change based on feedback received.

### View the REF and concept design

You can view the Katoomba to Blackheath REF and concept design:

- online in our virtual consultation room at [nswroads.work/gwheastconsult](https://nswroads.work/gwheastconsult)
- As a printed copy at one of these locations:
  - Katoomba Library
  - Katoomba Council Headquarters (foyer)
  - Glenbrook Customer Service Counter
  - Blaxland Library

### Speak to the project team

We will hold a mixture of online and face-to-face information sessions.

We recommend that you view the REF and concept design before you speak with the team or make a submission.

#### Online

##### General sessions:

- **Monday 23 May** 6.30pm – 8pm
- **Thursday 9 June** 6.30pm – 8pm

##### Targeted sessions:

##### Biodiversity and water quality:

- **Tuesday 31 May** 6.30pm – 8pm

##### Localised impacts during and after construction:

- **Monday 6 June** 6.30pm – 8pm

### Face-to-face sessions

1. Seminar Room, Katoomba Cultural Centre  
**Wednesday 25 May** 4.30pm – 8pm
  - Aboriginal stakeholder engagement session 4.30pm – 6pm
  - General session 6pm – 8pmLocation: 30–32 Parke Street, Katoomba
2. Blackheath Neighbourhood Centre  
**Saturday 4 June** 10am – 12pm  
Location: 41 Gardiner Crescent, Blackheath

Register for a consultation session at

[nswroads.work/gwheastconsult](https://nswroads.work/gwheastconsult)

Bookings are essential for all sessions.

Face-to-face sessions will be held pending COVID restrictions.

Contact us on **1800 953 777** or

[gwhd@transport.nsw.gov.au](mailto:gwhd@transport.nsw.gov.au) to have a phone consultation if you prefer.

### How to make a formal submission

We welcome all feedback on the Katoomba to Blackheath Upgrade. To have your input formally considered, and receive a response in the Submissions Report, use our online submission form at [nswroads.work/gwheastconsult](https://nswroads.work/gwheastconsult), email us at [gwhd@transport.nsw.gov.au](mailto:gwhd@transport.nsw.gov.au), or mail a printed submission to: **Transport for NSW Katoomba to Blackheath (East) REF Submission PO Box 334, Parkes NSW 2870**

## Contact us

Sign up for our eNewsletter online at [nswroads.work/gwhd](https://nswroads.work/gwhd) and you'll never miss a project update.

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Great Western Highway  
Upgrade Program

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