

6.11 Cumulative impacts

This section discusses the potential cumulative impacts that may arise as a result of the construction and operation of the proposal, and the interaction of these impacts with other identified major developments within the local area. The cumulative impacts relate to both the individual environmental impacts of the proposal as well as the combined effects of this and other proposals in the vicinity of the proposal that form part of the wider program to upgrade the Great Western Highway.

6.11.1 Proposal area

The proposal area is defined in Section 1.1 and Figure 1-2. The cumulative impact assessment has considered the wider Blue Mountains region.

6.11.2 Broader program of work

The proposal is part of the Great Western Highway Upgrade Program between Katoomba and Lithgow. The program will ultimately deliver around 34 kilometres of four lane divided highway, building on the already upgraded section between Emu Plains and Katoomba. Subject to funding, the target is to open the full 34 kilometres to traffic by 2028. The Great Western Highway Upgrade Program includes:

- upgrade of the Great Western Highway between Katoomba and Mount Victoria
 - upgrade a 1.2 kilometre section of the Great Western Highway at Medlow Bath between Railway Parade and around 330 metres south of Bellevue Crescent
- upgrade of the Great Western Highway between Mount Victoria and Lithgow.

The program would provide a safer and more efficient link between Central West NSW and the Sydney Motorway network for freight, tourist and general traffic.

6.11.3 Other projects and developments

A search of the following registers was completed in April 2021:

- Department of Planning, Industry and Environment's Major Projects Register
- Sydney and Regional Planning Panel Development and Planning Register
- Blue Mountains City Council Development Application Register.

The search identified one major development application listed within Medlow Bath, for additions and alterations to the Hydro Majestic Hotel, and two projects under assessment by Blue Mountains City Council. Details of the search results are provided in Table 6-42.

Table 6-42: Past, present and future projects

Project	Construction impacts	Operational impacts
<p>Additions and alterations to the existing Hydro Majestic Hotel</p> <p>Status: Determined DA number: X/773/2009, Address: 52 – 88 Great Western Highway, Medlow Bath Planning panel reference number: PPS-2009SYW011 Capital investment value: \$22,700,000</p>	<p>Construction impacts of this project include:</p> <ul style="list-style-type: none"> • increased traffic • increased dust during earthwork • increased noise • potential offsite water pollution due to poor erosion and sediment control • contribution to greenhouse gas emissions due to embodied carbon and energy consumption 	<p>Operational impacts of this project, including benefits:</p> <ul style="list-style-type: none"> • better tourist/accommodation facilities • contribution to greenhouse gas emissions due to energy consumption.
<p>Subdivision of one lot into two for residential housing which includes changes to the existing access driveway</p> <p>Status: Under Assessment DA number: S/29/2020 Address: 26 – 28 Rutland Road, Medlow Bath</p>	<p>Construction impacts of this project include:</p> <ul style="list-style-type: none"> • increased dust during earthwork • increased noise • potential offsite water pollution due to poor erosion and sediment control • contribution to greenhouse gas emissions due to embodied carbon and energy consumption. 	<p>Operational impacts of this project, including benefits:</p> <ul style="list-style-type: none"> • contribution to greenhouse gas emissions due to energy consumption.
<p>A single storey manufactured home with detached garage- as modified – PAN # 70922</p> <p>Status: Under Assessment DA number: XM/213/2018/A Address: 90 Railway Parade, Medlow Bath</p>	<p>Construction impacts of this project include:</p> <ul style="list-style-type: none"> • increased dust during earthwork • increased noise • potential offsite water pollution due to poor erosion and sediment control • contribution to greenhouse gas emissions due to embodied carbon and energy consumption. 	<p>Operational impacts of this project, including benefits:</p> <ul style="list-style-type: none"> • contribution to greenhouse gas emissions due to energy consumption.

6.11.4 Potential impacts

An assessment of the potential cumulative impacts is included in Table 6-43.

Table 6-43: Cumulative impact assessment

Environmental factor	Construction	Operation
Noise	<p>It is likely that some overlap would occur during construction of the proposal, additions to the Hydro Majestic Hotel and the residential projects listed in Section 6.11.3. Considering the limited scale of the residential projects and temporary duration of the overlap, the cumulative noise impacts from the construction of these projects would be minimal.</p> <p>Construction of the road upgrade projects listed in Section 6.11.2 and the proposal would likely occur with some overlap and together construction would be for around five years. Over the five years some residences may regularly experience noise levels exceeding the relevant noise criteria.</p>	<p>The road upgrade projects listed in Section 6.11.2 would provide a safer and more efficient link between Central West NSW and the Sydney Motorway Network for freight, tourist and general traffic.</p> <p>The existing and future road traffic flows on the Great Western Highway could potentially result in receivers exceeding the cumulative noise limit which protects the community from impacts where noise levels are predicted to be 5 dBA or more above the RNP noise criteria. Measures recommended in accordance with the <i>Noise Mitigation Guideline</i> (Roads and Maritime Services, 2015c) would be required to mitigate the cumulative noise impacts from the road upgrade projects.</p>
Air quality and greenhouse gas emissions	<p>The construction of all projects, including the road projects would contribute to air quality impacts in the area due to dust and exhaust emissions.</p> <p>All projects, including the road projects would contribute to greenhouse gas emissions due to energy and fuel consumption and embodied carbon during construction.</p>	<p>All projects, including the road projects would contribute to greenhouse gas emissions due to energy and fuel consumption.</p>
Traffic	<p>There would be an increase in construction related traffic on the road network due to traffic restrictions during road work, construction worker movement and spoil transfer.</p> <p>The cumulative traffic impacts from the residential projects listed in Section 6.11.3 projects would be minimal due to the location and limited scale of the projects.</p> <p>Alterations and additions to the Hydro Majestic Hotel, the road upgrade projects listed in Section 6.11.2 and the Proposal would likely occur with some overlap and together there would be some cumulative traffic delays on certain routes.</p>	<p>The upgrades to the Great Western Highway upgrade projects listed in Section 6.11.2 and the Proposal would provide a safer and more efficient link between Central West NSW and the Sydney Motorway Network for freight, tourist and general traffic.</p> <p>Traffic impacts from the residential and Hydro Majestic Hotel projects would be minimal.</p>
Flooding	<p>Construction of the road upgrade projects listed in Section 6.11.2 and the proposal could potentially obstruct and divert flood waters and overland flow if not managed correctly.</p> <p>Cumulative flooding impacts are considered temporary, are expected to be minor and would be managed through the implementation of standard construction techniques.</p>	<p>The Great Western Highway upgrade projects, and the proposal would result in a cumulative increase to existing impervious areas or change in horizontal/vertical alignments which would impact upstream flood levels or downstream peak flow rates thereby affecting properties. Such impacts are to be limited through the use of flow control structures and detailed design to TfNSW standards.</p>
Biodiversity	<p>The proposal is not likely to significantly impact threatened species or ecological communities or their habitats, within the meaning of the</p>	<p>The accumulating impacts of historic vegetation clearing for agriculture and urban development have contributed to the loss of biodiversity. The road upgrade projects listed in Section 6.11.2</p>

Environmental factor	Construction	Operation
	<p><i>Biodiversity Conservation Act 2016 or Fisheries Management Act 1994.</i></p> <p>The proposal is not likely to significantly impact threatened species, ecological communities or migratory species, within the meaning of the <i>Environment Protection and Biodiversity Conservation Act 1999.</i></p>	<p>and the proposal would result in long-term effects such as habitat fragmentation and some loss of wildlife connectivity corridors in the area. Invasion and further spread of weeds, pests and pathogens, and changes to surface hydrology may occur as a result of the proposal and associated vegetation removal.</p>
Impact fatigue	<p>Impact fatigue is where people and environmental receivers are affected for a longer period of time than it would take to build the proposal. This can often happen in areas of high development where the building of several projects overlaps. In the case of the proposal, it would be reasonable to assume that any of the above projects would be built around the same time as the proposal; however, they may start or finish before or after the proposal. As such, any of the above impacts could be experienced for a longer period than assessed in the REF. This would lead to impact fatigue. It would be managed through consultation with the developers before work starts and by ensuring the safeguards and management measures committed to in this REF are implemented, effective, managed, audited and maintained throughout to minimise impacts.</p>	

6.11.5 Safeguards and management measures

Table 6-44: Safeguards and management measures – Cumulative impacts

Impact	Environmental safeguards	Responsibility	Timing	Reference
Cumulative construction impacts	<p>Other developers will be consulted:</p> <ul style="list-style-type: none"> to obtain information about project timeframes and impacts. Identify and implement appropriate safeguards and management measures to minimise cumulative impacts to manage the interfaces of the proposal's staging and programming in combination with the other projects occurring in the area. 	TfNSW / Contractor	Pre-construction	Section 5.2
Cumulative construction impacts	All environmental management plans (including but not limited to the Traffic Management Plan and Noise and Vibration Management Plan) will be prepared to consider other developments in the area.	Contractor	Pre-construction	Section 6.1.4, Section 6.5.4, Section 6.6.4,