



New England Highway bypass of Muswellbrook

Chapter 6.15 Hazard and risk

Transport for NSW | October 2021

6.15 Hazard and risk

6.15.1 Existing environment

Existing hazards and risks in the vicinity of the proposal are generally associated with the operation of the existing road network and the Main North railway line. As discussed in Section 6.4, there is a moderate risk of contamination from a range of potential contaminants and sources within and adjacent to the proposed road corridor. The proposal also passes over the old backfilled MCC Open Cut No.1 including the highwall and low wall.

As discussed in Section 6.2, the northern section of the proposal extends into the floodplain of the Hunter River near its confluence with Sandy Creek. The proposal crosses Sandy Creek about 2.4 kilometres upstream of its confluence with the Hunter River.

The proposed road corridor up to Sandy Creek Road is mapped as Vegetation Category 1 and 2 and vegetation buffer bushfire prone land. Vegetation Category 1 is considered to be the highest risk for bush fire. This vegetation category has the highest combustibility and likelihood of forming fully developed fires including heavy ember production. Vegetation Category 2 is considered to be a lower bush fire risk than Category 1. This Vegetation Category has lower combustibility and/or limited potential fire size due to the vegetation area shape and size, land geography and management practices. The vegetation buffer is the buffer zone around each category. For Vegetation Category 1, a 100 metre external buffer zone applies and for Vegetation Category 2, a 30 metre external buffer.

6.15.2 Potential impacts

Construction

Hazards and risks relating to the construction of the proposal would include:

- Spills or leakage of contaminants such as fuels, chemicals and hazardous substances entering the surface and groundwater or contaminating soils
- Discharge of turbid run-off, resulting in pollution of waterways
- Encountering unexpected utilities or contaminated material during earthworks
- Spread of noxious weeds
- Flooding during extreme rain events
- Changed traffic conditions leading to incidents
- Subsidence and spontaneous combustion risks associated with previous MCC operations.

The following bushfire/grassfire risks are identified for the proposal:

- Insufficient training of construction workers dealing with bushfire/grassfire risk and
- Fire from offsite or caused as a result of construction activities such as hot works.

Hazards arising from incidents during proposal construction could also pose a risk to health and safety of workers, as well as that of the environment. These potential risks and appropriate management measures are addressed in other sections of this REF, including:

- Biodiversity (refer to Section 6.1)
- Surface water, hydrology and flooding (refer to Section 6.2)
- Groundwater (refer to Section 6.3)
- Soils and contamination, subsidence and spontaneous combustion (refer to Section 6.4)

- Traffic and transport (refer to Section 6.5)
- Resource use and waste management (refer to Section 6.13).

Post construction bushfire/grassfire risks would remain similar to the existing situation, however new bypass infrastructure would require ongoing protection. A Bushfire Management Plan would be prepared and included in the CEMP.

Overall, the hazards and risks associated with the proposal during construction are considered low and would be managed with the implementation of the standard management and mitigation measures such as those identified in Section 6.15.3.

Operation

Operational hazards and risks relating to the proposal could include:

- Fuel and oil spills during maintenance activities or vehicle incidents polluting the natural environment
- Vehicle incidents.

Fuel and oil spills during operation are discussed in Section 6.2. Vehicle crashes are an inherent aspect of the operation of any road. During the design of the proposal, Transport has adopted the requirements of all relevant standards as listed in Section 3.2.1. During operation, it is anticipated that hazards and risks associated with the proposal would be low and would be managed with the implementation of standard management and mitigation measures identified below.

6.15.3 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Hazard and risk	Emergency response plans will be incorporated into the CEMP	Construction contractor	Preconstruction and construction	Additional safeguard
Hazard and risk	<p>A Hazard and Risk Management Plan will be prepared and implemented as part of the CEMP. The Plan will identify:</p> <ul style="list-style-type: none"> • Hazards and risks associated with the activity • Measures to be implemented during construction to minimise these risks • Record keeping arrangements, including information on the materials present on the site, material safety data sheets, and personnel trained and authorised to use such materials • A monitoring program to assess performance in managing the identified risks, including equipment checking and maintenance requirements • Contingency measures to be implemented in the event of unexpected hazards or risks arising, including emergency situations 	Construction contractor	Preconstruction and construction	Additional safeguard

Impact	Environmental safeguards	Responsibility	Timing	Reference
Bushfires	<p>A Bushfire Management Plan will be prepared and included as part of the CEMP. The Plan will identify:</p> <ul style="list-style-type: none"> • Asset protection zone locations and management details • Landscaping requirements including indicative design layout and vegetation density thresholds • Access provisions such as locations, passing bays and alternate emergency access • Water supplies and bush fire suppression systems • Details regarding the Bush Fire Emergency Management and Evacuation Plan and any other essential bush fire safety requirements 	Construction contractor	Preconstruction and construction	Additional safeguard
Bushfires	<p>Construction activities involving flammable materials and ignition sources (for example, welding) will be proactively managed to ensure that the potential for fire is effectively minimised. High risk construction activities, such as welding and metal work, will be subject to a risk assessment on total fire ban days and restricted or ceased as appropriate. Construction personnel will be inducted into the requirement to safely dispose of cigarette butts</p>	Construction contractor	Construction	Additional safeguard