



New England Highway bypass of Muswellbrook

Chapter 6.13 Resource use and waste
management

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6.13 Resource use and waste management

Various waste streams would be generated during the construction and operational phases of the proposal. These would include demolition wastes, green waste (vegetative matter), packaging materials, liquid wastes and excavated material.

6.13.1 Methodology

A qualitative assessment of potential resource use and waste management has been carried out for the proposal.

6.13.2 Existing environment

Existing waste streams within the construction footprint are limited to household and agricultural waste as well as roadside litter and other waste material associated with roadside maintenance. Run of Mine (ROM) and inert materials used to cover areas of potential spontaneous combustion may also be visible in areas previously operated by MCC.

6.13.3 Potential impacts

Construction

Resource use

The proposal would require the use of a number of resources which include (but are not limited to):

- Resources associated with the operation of construction vehicles and machinery, such as diesel and petrol
- Material required for drainage construction, road surface construction and bridgework including road base, asphalt, spray seal, sand, concrete and aggregate
- Materials for earthworks, such as topsoil, mulch, general fill and select fill
- Materials required for road signage, linemarking, roadside barriers and guideposts
- Construction water (for concrete mixing and dust suppression).

The initial estimated source and quantities for these materials are outlined in Section 3.3.6. The materials required for construction of the proposal are not currently limited in availability, however any non-renewable materials would be used conservatively.

The reuse of waste on-site would assist in minimising resources required for construction. Where possible, excavated spoil would be re-used again onsite in construction and landscaping activities. Excess spoil, not suitable for reuse, would be disposed of in accordance with safeguards and mitigation measures outlined below in Section 6.13.4.

Transport contractors are required to use recycled-content materials where they are cost and performance competitive and are the environmental equivalent (or better) than non-recycled alternatives as described in the *Roads and Maritime Environmental Sustainability Strategy 2019-2023*.

Waste management

The proposal has the potential to generate waste from the following activities:

- Vegetation removal (including native vegetation and noxious weeds)
- Earthworks
- Utility adjustments

- Removal of the existing pavement
- Demolition of structures.

Waste streams likely to be generated during construction of the proposal include:

- Excess spoil unsuitable for reuse - excavated wastes, such as soil and rock, that are unable to be reused within the proposal as it would not meet engineering specifications or are in excess of the proposal requirements
- Demolition waste such as pipe work, bricks, corrugated iron and pavements
- Surplus material from construction and general site reinstatement – including fencing, sediment, concrete, reclaimed asphalt, sand bags and scrap metal
- Packaging materials from items delivered to the site such as pallets, crates, cartons, plastics and wrapping materials
- Green waste as a result of vegetation clearing. Noxious weed material would be separated from native green waste
- Packaging and general waste from staff (lunch packaging, beverage containers)
- Effluent generated at site amenities during construction including portable toilets
- Chemicals and oils used for plant and vehicle maintenance such as fuel, oil and chemical containers
- Wastewater from wash-down and bunded areas
- Redundant erosion and sediment controls
- Asphalt waste from the removal of the existing pavement
- Potential asbestos and other hazardous waste.

Waste would be managed in accordance with the guidance in the *Re-use of waste off-site: Waste Fact Sheet 9* which identifies potential off-site reuses for typical wastes and the *Management of Wastes on Roads and Maritime Services Land* procedure which includes best practice and contingency planning for construction wastes on sites.

Transport is committed to ensuring responsible management of unavoidable waste and to promoting the reuse of such waste through appropriate measures in accordance with the resource management hierarchy principles embodied in the *Waste Avoidance and Resource Recovery Act 2001* (WARR Act 2001). The resource management hierarchy principles in order of priority as outlined in the WARR Act are:

- Avoidance of unnecessary resource consumption
- Resource recovery (including reuse, reprocessing, recycling and energy recovery)
- Disposal.

By adopting the above principles, Transport encourages the most efficient use of resources and reduces cost and environmental harm in accordance with the principles of ESD.

Surplus or contaminated material would be classified and disposed of at a licensed waste facility in accordance with EPA Waste Classification Guidelines (EPA, 2014) or reused in accordance with EPA resource recovery orders and exemptions. The transport and disposal of contaminated and hazardous waste would be carried out in accordance with the Protection of the Environment Operations (Waste) Regulation 2014 which includes notification and tracking requirements.

As discussed in Section 6.4, an unexpected finds procedure would be developed as part of the CEMP for the construction area and would be implemented during the construction phase. An asbestos management plan would also be developed and implemented during the construction phase. The plan would include procedures to identify, manage and handle asbestos and would outline procedures for correct disposal of asbestos in accordance with NSW EPA guidelines, Australian Standards and relevant industry codes of practice.

Operation

During the operational phase of the project, roadside litter would also be found along the length of the bypass. Additional wastes would be generated during routine maintenance and repair activities required over time. The type and volume of wastes generated would be dependent on the nature of the activity, but would predominately consist of green waste, oils, road materials used in repair and maintenance works as well as contaminated waste resulting from fuel spills and leaks.

With the implementation of standard work practices during routine maintenance and repair activities, the overall impact of operational waste streams and volumes would be minimal.

Construction and operational waste impacts would be managed in accordance with the relevant State legislation and government policies including the *WARR Act 2001* and *Waste Avoidance and Resource Recovery Strategy 2014-21* (NSW EPA, 2014).

6.13.4 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Resource use	Use of recycled-content materials will be considered during the detailed design	Transport	Detailed design
Construction waste	<p>A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The WMP will provide specific guidance on measures and controls to be implemented to support minimising the amount of waste produced and appropriate handling and disposal of unavoidable waste.</p> <p>The WMP will include, but will not necessarily be limited to:</p> <ul style="list-style-type: none"> • Measures to avoid and minimise waste associated with the proposal • Classification of wastes generated by the proposal and management options (re-use, recycle, stockpile, disposal) • Classification of wastes received from off-site for use in the proposal and management options • Identify any statutory approvals required for managing both on and off-site waste, or application of any relevant resource recovery exemptions • Procedures for storage, transport and disposal • Monitoring, record keeping and reporting, including any documentation management obligations arising from resource recovery exemptions <p>The WMP will be prepared taking into account the <i>Roads and Maritime Environmental Procedure – Management of Wastes on Roads and Maritime Services Land</i> and relevant Transport Waste Fact Sheets</p>	Construction contractor	Pre-construction and construction
Construction waste	The following resource management hierarchy principles will be followed:	Construction contractor	Pre-construction

Impact	Environmental safeguards	Responsibility	Timing
	<ul style="list-style-type: none"> Avoid unnecessary resource consumption as a priority Avoidance will be followed by resource recovery (including reuse of materials, reprocessing, and recycling and energy recovery) Disposal will be a last resort (in accordance with the <i>WARR Act 2001</i>) 		and construction
Contamination	The CEMP will include an unexpected finds protocol for potentially contaminated material encountered during construction work	Construction contractor	Construction
Contamination	<p>An Asbestos Management Plan will be developed and implemented to manage asbestos and asbestos containing material if encountered during the construction. The plan will include:</p> <ul style="list-style-type: none"> Identification of potential asbestos on site Procedures to manage and handle any asbestos Mitigation measures if asbestos is encountered during construction Procedures for disposal of asbestos in accordance with the NSW EPA guidelines, Australian Standards and relevant industry codes of practice 	Construction contractor	Construction