## 8.4 Waste management

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

### 8.4.1 Assessment of potential impacts

#### Construction

The following waste streams would be generated during construction:

- Demolition wastes from existing structures that require demolition, such as residences, farm sheds and other outhouses. Wastes would include pipe work, bricks, corrugated iron, fibrous cement and pavements.
- Excavated wastes, such as soil and rock, that are unable to be reused within the project.
- Contaminated soils or ASS that may be exposed during construction, and if exposed, would require off-site disposal (refer to **Section 8.1**).
- Surplus material from construction and general site reinstatement, such as 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 from grubbing and clearing vegetation (including noxious weeds) that is unable to be reused within the project.
- Plant and vehicle maintenance waste, such as fuel, oil and chemical containers.
- General office wastes generated by onsite personnel, such as paper, cardboard, beverage containers and food wastes.
- Effluent generated at site amenities during construction.

Resource consumption and waste generated by the project would contribute to the emission of greenhouse gases during construction. The consideration of this impact and emission reduction opportunities are discussed further in **Section 8.5**.

#### Operation

During the operational phase of the project, roadside litter would be expected to occur along the length of the project. 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.

### 8.4.2 Environmental management measures

Mitigation and management measures would be implemented to avoid, minimise or manage waste streams generated as a result of the project. These mitigation and management measures have been identified in **Table 8-8** and incorporated in the draft statement of commitments in **Chapter 10**.

**Table 8-8 Mitigation and management measures**

| Potential impacts | Mitigation and management measures |
|---|---|
| **Construction** | |
| Inappropriate management of waste | Manage and dispose all waste in accordance with relevant State legislation and government policies including the *Waste Avoidance and Resource Recovery Act 2001*, *Waste Avoidance and Resource Recovery Strategy 2007* (Department of Environment and Conservation (DECC), 2007) and the *Waste Reduction and Purchasing Policy* (RTA, 2009).<br><br>Prepare a Waste Management Plan as part of the Construction Environmental Management Plan detailing appropriate procedures for waste management according to the waste management hierarchy of principles:<br>• Avoidance of unnecessary resource consumption to reduce the quantity of waste being generated.<br>• Recovery of resources for reuse onsite or offsite for the same or similar use, without reprocessing.<br>• Recovery of resources through recycling and reprocessing so that waste can be processed into a similar non-waste product and reused.<br>• Disposal of residual waste.<br><br>Dispose of all residual waste to a suitably licensed landfill or waste management facility where there are no other feasible and reasonable options for waste avoidance, reuse or recycling. Waste materials requiring removal from the site would be classified, handled and stored onsite in accordance with the 'Waste Classification Guidelines: Part 1 Classifying Waste' (Department of Environment, Climate Change and Water (DECCW), 2009) until collection by a contractor for disposal. |
| Unnecessary resource consumption | Avoid unnecessary resource consumption by making realistic predictions on the required quantities of resources, such as construction materials. Resource recovery, which includes reuse, recycling and reprocessing, would be applied to the management of construction waste and would include:<br>• Recovery of resources for reuse. Waste materials generated by the project would be reused either onsite or offsite where possible, including the reuse of top soil in landscape works.<br>• Recovery of resources for recycling. Facilities would segregate resources for recycling such as paper, plastic, glass, aluminium cans and other recyclable materials generated during construction. These materials would then be sent to a local recycling facility for processing.<br>• Recovery of resources for reprocessing. Cleared vegetation would be mulched or chipped onsite and used for landscaping, in the absence of a higher beneficial use being identified (such as harvestable timber, fence posts or use as 'fauna furniture' in proposed fauna underpasses).<br><br>Use recycled products in construction to reduce demand on resources, where the use of the material is cost and performance competitive. This may include the use of fly ash and slag within concrete mixes. |

| Potential impacts | Mitigation and management measures |
|---|---|
| Excess spoil | Prepare a spoil management strategy to address excess spoil (refer to Section 4.4.3). The strategy would consider the following options:<br>• Reduction of spoil volume through detailed design refinement or use within the project.<br>• Undertaking of further geotechnical investigation during detailed design which may lead to design refinements that reduce the predicted volume of excess spoil.<br>• Utilisation of excess spoil to flatten fill batters to blend the project into the existing landscape.<br>• Utilisation of excess spoil in the formation of noise mounds, where feasible.<br>• Consideration of steepening the profile of the cutting through Toolijooa Ridge.<br>• Utilisation of excess spoil in the construction of other road projects.<br>• Utilisation of excess spoil for preloading activities required to treat soft soils on the Broughton Creek floodplain. Provision of excess spoil to adjoining landowners, Shoalhaven City Council or other parties requiring spoil**.<br>This may include the provision of excess spoil to Shoalhaven City Council to provide stock mounds in flood prone areas as part of its flood mitigation works in the Broughton Creek floodplain, which are still under investigation by the council.<br>Excess fill material that cannot be used in the project, may be stockpiled for use on other road projects or other offsite uses (subject to the third party obtaining the relevant approvals). |
| **Operation** | |
| Roadside litter | Periodically inspect (RMS or its contractors) and remove roadside litter in accordance with the existing RMS road maintenance and litter collection program for the Princes Highway. |

** Based on the current concept design.*

*** Any provision of excess spoil to a third party would be dependent on the demonstration by the third party that it has obtained the necessary approvals for the use of the spoil (such as a development consent from the local council or a licence under section 143 of the Protection of the Environment Operations Act 1997). Appropriate environmental controls would be installed at sites where excess spoil would be delivered.*