6.15 Waste

Transport is committed to ensuring the responsible management of unavoidable waste and promotes the reuse of such waste in accordance with the resource management hierarchy principles outlined in the *Waste Avoidance and Resource Recovery Act 2001*. These resource management hierarchy principles, in order of priority, are:

- Avoidance of unnecessary resource consumption in operations, maintenance, construction and management
- Resource recovery (including reuse, reprocessing, recycling and energy recovery)
- Disposal.

By adopting the above principles, Transport aims to efficiently reduce resource use, reduce costs and reduce environmental harm in accordance with the principles of ecologically sustainable development, as outlined in Section 8 of this review of environmental factors.

6.15.1 Legislative framework and guidelines

Legislative framework

The key waste related legislation relevant to the proposal include:

- *Protection of the Environment Operations Act 1977*
- *Protection of the Environment Operations (Waste) Regulation 2014*
- *Waste Avoidance and Resource Recovery Act 2001*.

A description of these legislative instruments and relevance to the proposal is presented in Section 4.

Waste Classification Guidelines

The NSW Waste Classification Guidelines (EPA, 2014a) provides guidance on the assessment, classification, management and disposal for all waste on the proposal. The waste classification process under the guidelines follows the principles:

- Where practicable, safe and appropriate, it is desirable to separate a mixture containing different classes of wastes before classifying them separately
- Two or more classes of waste must not be mixed in order to reduce the concentration of chemical contaminants. Dilution of contaminants is not an acceptable waste management option. This includes the addition of water to any waste before laboratory analysis for the purpose of waste classification
- When classifying waste using chemical assessment it is not appropriate to exclude sample results. Selectively choosing sample results to classify waste introduces bias and violates fundamental statistical principles. There must be scientifically valid reasons for the exclusion of sample results.

6.15.2 Potential impacts

Construction

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

- Excavation and earthworks
- Vegetation clearing
- Demolition
- Utilities adjustment

- Surplus construction material
- Plant and equipment maintenance
- General site office activities at ancillary facilities.

The waste types likely to be generated from the proposal are listed in Table 6-126. Refer to Section 6.12 for measures to manage potential contamination from some of the waste types discussed below.

Table 6-126 Construction waste streams

Waste type	Description
Spoil and excavation waste	• The proposal would have a fill deficit (refer to Section 3.3.5 for information on cut and fill material amounts). Excavated material from cuts would be used as fill, where suitable, however there may be material unsuitable for use that would require disposal offsite.
Green waste	• This waste type would be generated from clearing existing vegetation (refer to Section 6.1 for estimated amounts of vegetation to be cleared by the proposal) and landscaped areas on the Princes Highway road reserve. Waste would include tree branches, green waste and weeds.
Demolition waste	• The proposal would require the demolition of building structures (eg houses and sheds) and the removal and relocation of road pavement, roadside furniture and utilities infrastructure resulting in bricks, asphalt, concrete, gravel, steel and other related waste.
Excess building materials	• For example, concrete, asphalt, steel, timber, plastics and packaging materials.
Liquid Waste	• Mainly from maintenance of various construction plant and equipment including liquid hazardous waste, fuel and oils. Generation of this waste would generally occur at the proposed construction ancillary facilities, including compound areas where plant is stored.
General waste	• For example, food, paper and other waste generated from site compounds and offices.
Contaminated material	• Potential contamination is present on site, including (but not limited to) groundwater contamination from underground fuel storage associated with a former service station, groundwater in vicinity of Hartley Cemetery, soil contamination from disturbance of waste dumping/burial, sheep/cattle dips, septic tanks and chemical or fuel use and ground storage areas (refer to Section 6.12 for further information) • There is also potential Acid Sulfate Rock that may require disposal if it can not be treated or reused on site.

Waste type	Description
Wastewater	• From washdown and bunded areas within ancillary facilities.
Redundant erosion and sediment controls	• Erosion and sediment controls would be removed at the completion of construction.

These waste types could have potential impacts in terms of:

- Excessive volumes of waste generated on-site
- Excessive volumes of waste sent to landfill from the inadequate collection, classification and disposal of waste
- Contamination of soil, surface water and groundwater from inadequate waste handling.

The potential to reuse excavated material would be further investigated during detailed design and construction planning. Unsuitable fill material and all other wastes would be classified in accordance with the *NSW Waste Classification Guidelines* (EPA, 2014a) and disposed of to an appropriately licensed facility. While the proposal would have a net fill requirement, some unsuitable material (such as Acid Sulfate Rock) may be generated during the construction of the proposal. Unsuitable material is surplus material that cannot be used beneficially elsewhere onsite. This material would need to be disposed of offsite. Green waste would be mulched (where not contaminated by weeds) and beneficially reused for the proposed interchange landscaped areas as a first preference.

Management of potential contamination is discussed in Section 6.12.

Operation

Limited volumes of waste are currently generated from the operation of the intersection, derived from maintenance activities and road users. Waste includes:

- General waste along the road, including litter
- Trimmed vegetation from landscaped areas
- Excess concrete and asphalt from road maintenance and repair activities
- Vehicle oils and greases from maintenance vehicles
- Vegetation, soil and silt from the clearing of drains and culverts
- Contaminated waste as a result of fuel spills, accidents or leaks.

The proposal would not result in additional waste or potential waste impacts once operational.

6.15.3 Safeguards and management measures

Table 6-127 Safeguards and management measures – Waste

No	Impact	Environmental safeguards	Responsibility	Timing	Reference	Locations
WM01	Waste management	A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The	Contractor	Prior to construction	Environmental Procedure - Management of Wastes on Transport Land (Roads and Maritime	All

No	Impact	Environmental safeguards	Responsibility	Timing	Reference	Locations
		WMP will include but not be limited to: • Measures to avoid and minimise waste associated with the project • Classification of wastes and management options (reuse, recycle, stockpile, disposal) • 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. The WMP will be prepared taking into account the Environmental Procedure - Management of Wastes on Transport for NSW Land (Roads and Maritime Services, 2014) and relevant Transport for NSW Waste Fact Sheets.			Services, 2014)	
WM02	Waste management	All wastes will be managed and disposed of in accordance with the Protection of the Environment Operations Act 1997 and the Protection of the Contractor	Contractor	Construction	N/A	All

No	Impact	Environmental safeguards	Responsibility	Timing	Reference	Locations
		Construction Environment Operations (Waste) Regulation 2014				
WM03	Disposal of waste	Excavated material would be assessed for reuse as backfill material as part of the proposal. If material is unable to be used as backfill material it would be appropriately tested and classified against the NSW EPA Waste Classification Guidelines Part 1: Classifying Waste (NSW EPA, 2014) and Addendum 1 (NSW EPA, 2016) prior to being disposed of off-site.	Contractor	Construction	Appendix N	All
WM04	Green waste	Where possible and suitable for use, cleared vegetation will be used as mulch or coarse woody debris for site erosion and sedimentation controls or rehabilitation.	Contractor	Construction	N/A	All
WM05	Fill material	Any required additional fill material will be sourced from appropriately licensed facilities and/or other construction projects wherever possible. Additional fill material will be sourced and verified as suitable for use in accordance with relevant EPA and Transport guidelines.	Contractor	Construction	N/A	All