

6.13 Resource use and waste management

6.13.1 Methodology

A qualitative assessment of potential resource use and waste management has been carried out for the proposal. Various waste and resource streams would be generated during the construction and operational phases of the proposal.

6.13.2 Existing environment

Existing waste streams within the proposal area are limited to private household and agricultural waste as well as roadside litter and other waste material associated with roadside maintenance.

6.13.3 Potential impacts

Construction

Resource use

The proposal will require the use of a number of resources which include (but is 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 guide posts
- Construction water (for concrete mixing and dust suppression).

The initial estimated source and quantities for these materials are outlined in Section 3.3.5. 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.

Roads and Maritime 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
- 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, portable toilets etc)
- Chemicals and oils
- Waste water 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.

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 resources recovery orders and exemptions. 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.

Operation

It is anticipated that waste volumes during the operation of the proposal would be comparable to existing waste volumes within the proposal area.

Roads and Maritime 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, Roads and Maritime encourages the most efficient use of resources and reduces cost and environmental harm in accordance with the principles of ecologically sustainable development.

Construction and operational waste impacts would be managed in accordance with the waste hierarchy as detailed in Section 6.13.3.

6.13.4 Safeguards and management measures

Mitigation measures provided in Table 6-65 would be implemented to minimise potential resource use and waste impacts.

Table 6-65: Summary of mitigation measures to minimise potential resource use and waste impacts

Impact	Environmental safeguards	Responsibility	Timing
Resource use	Use of recycled-content materials would be considered during the detailed design.	Roads and Maritime	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 appropriately handle and dispose of unavoidable waste.</p> <p>The WMP will include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> • Measures to avoid and minimise waste associated with the project. • Classification of wastes generated by the project and management options (re-use, recycle, stockpile, disposal). • Classification of wastes received from off-site for use in the project and management options. • Identifying 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 would be prepared taking into account the <i>Roads and Maritime Environmental Procedure – Management of Wastes on Roads and Maritime Services Land</i> and relevant Roads and Maritime Waste Fact Sheets.</p>	Construction contractor	Pre-construction and construction
Construction waste	<p>The following resource management hierarchy principles will be followed:</p> <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>Waste Avoidance and Resource Recovery Act 2001</i>). 	Construction contractor	Pre-construction and construction