20. Sustainability

20.1 Overview

The project will identify opportunities to integrate sustainability objectives, by ensuring the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

20.2 Policy requirements

Table 20.1 summarises the key policies relevant to the project.

Table 20.1 Relevant policies (sustainability)

<table>
<thead>
<tr>
<th>Policy</th>
<th>Description</th>
<th>Relevance to project</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Strategy for Ecologically Sustainable Development (1992) (Commonwealth)</td>
<td>Sets broad strategic directions and a framework for governments to direct policy and decision making. Facilitates a coordinated and cooperative approach to ecologically sustainable development and encourages long-term benefits for Australia over short-term gains.</td>
<td>The South Australian Government endorsed the strategy; the principles of ecologically sustainable development must be built into government decision making processes.</td>
</tr>
<tr>
<td>South Australia’s Strategic Plan (2007) (SA)</td>
<td>Defines six interrelated objectives supported by 98 targets and priority actions, with a view to ensuring strong economic growth and business environment while being environmentally sustainable and socially inclusive. Identifies that ‘the challenge of sustainable development requires the focus, commitment and ingenuity of all South Australians’. States that sustainable development should consider: biodiversity, climate change, ecological footprint, water, energy and Aboriginal cultural and heritage principles.</td>
<td>The concept design and planning phase of this project have incorporated the relevant sustainability related objectives and targets outlined in SA’s Strategic Plan.</td>
</tr>
</tbody>
</table>

20.3 Achievement of sustainability objectives and principles

As part of the project, a Sustainability Management Plan will be prepared to:

- protect water quality and implementation of water conservation and reuse
- minimise energy consumption and greenhouse emissions
- minimise waste and use of recycled materials
- protect and enhance biodiversity.

The construction contractor will be required to produce a Sustainability Implementation Plan to address these issues and contain additional mitigation measures to enhance sustainability.

Sustainability performance indicators will be developed to report on these mitigation and management measures, and provide overall guidance to DTEI, building contractors, residents and the community,
by ensuring that sustainable development principles are embedded and can be measured during the construction of the project.

The sustainability indicators, which aim to improve sustainability outcomes for the project, may include:

- water efficient and drought tolerant landscape and revegetation, using indigenous species adapted to local soil and natural rainfall conditions
- design of operating conditions for the project that will reduce fuel consumption by reducing network congestion and improving traffic flow
- reduced greenhouse gas emissions from construction and operation of the project by use of recycled products and materials where practicable and standards allow.

20.4 Mitigation measures to enhance sustainability

The are key opportunities to incorporate sustainability in the project.

20.4.1 Waste minimisation and use of recycled materials

- Where feasible, low grade contaminated rail ballast and sleeper mulch (rail sleepers converted to wood-chips) from the Noarlunga Rail Line may be reused during construction, to help minimise the volume of demolition waste going to landfill, and reduce the volume of virgin quarry materials required for construction of other DTEI projects.

- Opportunities to recycle/reuse construction and demolition waste such as concrete, asphalt planings, light poles and culverts on this and other departmental projects will be investigated.

- Old roadside furniture (safety rope and road barriers) may be reused in maintenance projects along the road network where possible.

- The vertical geometry of the project will be designed to minimise earthworks quantities, thereby minimising fuel and tyre rubber requirements and associated consumables throughout the construction process.

- Topsoil cleared from the project area that could be reused will be stockpiled on site and later spread in areas to be landscaped. Mulch available from the clearance of vegetation in the corridor may also be used.

20.4.2 Minimisation of energy consumption, use of renewable energy sources

- Where possible, materials will be sourced from local South Australian industries to gain economic benefit to South Australia and reduce embodied energy associated with transportation.

- Recycle and reuse of materials from other construction projects will significantly reduce embodied energy.
20.4.3 Water conservation and reuse

Water will be required for dust suppression, material compaction, the manufacture of asphalt and concrete, maintenance activities and facilities. The business case of a number of water conservation strategies will be explored by DTEI and the successful construction contractor, including:

- alternative non potable water sources for the construction phase
- use of wastewater from Aldinga or Christies Beach wastewater treatment plants
- installation of rainwater tanks and greywater systems at the planned site office.

20.5 Conclusion

Sustainability is a key objective for the duplication of the Southern Expressway. A Sustainability Management Plan and Sustainability Implementation Plan will be prepared to identify and detail key sustainability initiatives for the project, and the measures to be implemented to ensure sustainability objectives are achieved.