

northern expressway environmental report

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Part F. Environmental Management

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40 Sustainability

40.1 Introduction

The Northern Expressway Project is addressing the principles of sustainability in the planning of the project.

The Brundtland Report, *Our Common Future* (1987), defines sustainability as *development that meets the needs of the present without compromising the ability of future generations to meet their own needs*.

40.2 Sustainability policy context

40.2.1 National

National Strategy for Ecologically Sustainable Development (1992)

Australia's *National Strategy for Ecologically Sustainable Development* (1992) (NSED) provides broad strategic directions and a framework for governments to direct policy and decision making. The strategy facilitates a coordinated and co-operative approach to ecologically sustainable development and encourages long-term benefits for Australia over short-term gains. The NSED defines ecologically sustainable development as:

... using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.

The core objectives and guiding principles of the strategy aim to prevent and reverse adverse impacts of economic and social activities on the ecosystem, while continuing to allow the sustainable, equitable development of societies.

Both South Australian and Australian Governments have endorsed the NSED, and principles of ecologically sustainable development must be built into important government decision-making processes.

40.2.2 State

South Australia's Strategic Plan

South Australia's Strategic Plan 2007 (Strategic Plan) defines six interrelated objectives supported by 98 targets and priority actions, with a view to ensuring strong economic growth and business environment, while also being environmentally sustainable and socially inclusive.

40.3 Northern Expressway sustainability principles

In accordance with the Australian and South Australian governments' commitment to the NSED, a number of sustainability principles have been defined for the Northern Expressway. These project-specific principles have guided the development of the concept design and will continue to guide development during the design, construction and operational phases of the project. These are listed in Part A, Section 1.4 of this report.

40.4 Achievement of the sustainability objectives and principles

The Northern Expressway proposal has integrated the objectives and principles of ecologically sustainable development into the route selection process, the preliminary concept design, the assessment of potential effects, and the development of mitigation and management measures.

The key objectives of ecologically sustainable development (from the NSESD) are:

- the precautionary principle – a precautionary approach should be used to avoid threats of serious or irreversible environmental damage
- intergenerational equity – the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations
- the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making.

40.4.1 The precautionary principle

The precautionary principle is a decision-making approach which ensures that where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

The precautionary principle is preventative. The principle provides the philosophical authority to make decisions in the face of uncertainty. Its purpose is to encourage decision-makers to consider the likely harmful effects of their activities on the environment before they pursue those activities.

The precautionary principle has been integrated into the route selection and environmental assessment phases of the Northern Expressway proposal. When selecting a preferred route, potential environmental effects such as noise, visual issues and community accessibility were key considerations. The route selected had the lowest effect on the environment while providing the greatest benefits for society and providing value for money.

Environmental assessments, surveys and studies have relied on the best technical information available. Best practice environmental standards, goals and measures have been adopted in the development of mitigation measures to minimise the threat of environmental damage (e.g. ensuring that noise criteria are met at sensitive receivers). Where appropriate, worst-case assumptions have been used to ensure that the proposed mitigation measures are effective in preventing environmental damage.

40.4.2 Intergenerational equity

The theory of intergenerational equity argues that we, the human species, hold the natural environment of our planet in common with all members of our species: past generations, the present generation and future generations. Each generation has the right to inherit the same diversity in natural and cultural resources enjoyed by previous generations and to equitable access to the use and benefits of these resources. At the same time, the present generation is a custodian of the planet for future generations, obliged to conserve this legacy so that future generations may also enjoy these same rights.

The Northern Expressway proposal has sought to ensure that any long-term adverse effects are minimised so that future generations are able to have the same or enhanced benefits compared to those enjoyed today. Environmental issues associated with the use of the new Expressway include fuel

consumption, generation of greenhouse gases, generation of waste, economic benefits associated with decreased travel times and improved road safety.

During construction, the generation of waste will be minimised. Where possible, waste will be reused on site, recycled or disposed of to an approved facility.

Pedestrian, cyclist and vehicle safety for existing and future generations will be improved by the removal of through traffic (particularly heavy vehicles) from Angle Vale and through upgrades to the local road network.

Present and future generations will also continue to have access to employment, markets, services and recreational opportunities as a result of construction of the Northern Expressway.

40.4.3 Conservation of biological diversity and ecological integrity

This objective argues that conservation of biological diversity and ecological integrity should be a fundamental consideration in the assessment of development proposals.

Impacts on remnant vegetation and fauna within the study area have been avoided as far as possible. Careful design, the implementation of a comprehensive landscape strategy based primarily on the use of indigenous vegetation species and a range of mitigation measures before, during and after construction will assist in ensuring that what remains of the biological diversity in the local area is maintained and enhanced.

Good water quality is also an essential element in the conservation and enhancement of biological diversity. The measures proposed (e.g. swales and detention basins) to protect areas such as the Gawler River and Smith Creek from contaminated road run-off are consistent with the conservation of biological diversity objective.

This approach to project design, construction and monitoring is consistent with the longer term conservation of biological diversity and the maintenance of ecological integrity.

40.5 Sustainability Management Plan

As part of obtaining approval for the project, DTEI is required to prepare a Sustainability Management Plan. This will document the extent to which the project addresses sustainable development principles, objectives and actions relating to:

- protection of water quality
- water conservation and reuse
- minimisation of energy consumption and use of renewable energy sources
- minimisation of contribution to greenhouse gas emissions
- minimisation of air emissions' waste
- minimisation and use of recycled materials
- protection of terrestrial and aquatic biodiversity
- management of land degradation and contamination
- reduction in transport noise impacts

- support and encouragement of social and community involvement and consultation
- minimisation of social impacts of projects and infrastructure
- contribution to the concepts of urban design/regeneration
- enhancement of visual amenity
- preservation of cultural heritage
- growing prosperity by contributing to competitive freight transport logistics and networks.