Project Impact Report
Executive Summary
Environment · Social · Economic
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1 What is the Southern Expressway Duplication?

1.1 What is the Southern Expressway Duplication?
The Southern Expressway is an 18.5 kilometre single carriageway road connecting Main South Road at Darlington with Main South Road at Old Noarlunga. It provides for travel in one direction only. On weekdays traffic flows north from 2.00 a.m. to 12.30 p.m. (including the morning commuter peak) and flows south from 2.00 p.m. to 12.30 a.m. (including the afternoon commuter peak). During the 90 minute changeover period access to the road is progressively closed and re-opened to traffic. On weekends and public holidays the times for northbound and southbound traffic flows are reversed.

The Southern Expressway is entered or exited via ramps at six locations: Main South Road at Darlington and Old Noarlunga, Marion Road, Panalatinga Road, Sherriffs Road and Beach Road. The direction of traffic flow on the ramps is also reversible.

The existing expressway provides for high-speed, free-flow travel. Restricted access to the road, due to its one-way reversible operation, means that many intended users (including freight movement and commercial trips into and out of the southern region) must often use the conventional two-way routes on Main South Road and along Ocean Boulevard–Lonsdale Road–Dyson Road.

The Southern Expressway Duplication project (the project) will transform the reversible expressway into a conventional two-way expressway. It will replicate the existing carriageway generally to its west. The new carriageway will have three lanes from Darlington to Reynella and two lanes from Reynella and Old Noarlunga. The project will also widen the existing expressway bridges over local roads, lengthen pedestrian and road bridges over the Southern Expressway, and add new on-ramps and off-ramps at existing interchanges.

1.2 Purpose of the Project Impact Report
This Project Impact Report reveals the concept design for the project and details the associated investigations. It has been prepared to help interested groups, individuals, businesses, government agencies and local government understand the project. It sets a framework for considering the project’s transport, economic, social and environmental aspects in the context of legislative and policy requirements.
The Project Impact Report aims to:

- describe the existing environment in the project area
- inform the community (including businesses) about the project
- identify the transport, environmental, social and economic effects and benefits of the project
- describe how any adverse effects will be avoided, minimised or managed
- invite public comment.

The report will be publicly displayed for a period of 20 business days from the date of issue. During the display period, submissions can be made on any issues associated with the project.

The report, including the Executive Summary, is available on compact disc (CD) and on the project website at www.infrastructure.sa.gov.au. Hard copies are on display at locations throughout the project area as listed on the website.

A Supplement Report will be prepared to respond to submissions received from the public and other stakeholders. It will also include the findings of further investigations and modifications to the project since the Project Impact Report was prepared.

The Project Impact Report and Supplement Report will be considered along with other determining factors before the project is finalised for approval by the South Australian Government.

1.3 Community and stakeholder engagement

The community and stakeholder engagement process for the project
began in October 2010 with the distribution of feedback forms to residents, businesses and other organisations in the project area. Briefings were held with the City of Marion, City of Mitcham and City of Onkaparinga. Two community information days were held: one at Noarlunga Centre and one at Marion Sports and Community Centre.

This stakeholder engagement established effective working relationships early in the project’s planning phase with residents adjacent to the existing expressway, government agencies, interest groups and local Members of Parliament.

Each group raised their issues for the project.

Residents and landowners adjacent to the Southern Expressway focused on:

- the land acquisition process
- potential impacts of noise, dust, blasting and vibration during construction and operation of the project
- location of new carriageway
- pedestrian and cycle paths.

Community groups:

- showed broad support for the project
- were concerned about potential impacts on waterways, fauna and vegetation corridors
- offered assistance in their respective area of expertise.

Members of Parliament, state government agencies and local government:

- showed broad support for the project but sought further information and design options
- requested additional interchange access to the existing Southern Expressway
- requested upgrades to the local road network
- requested involvement of local industries during construction
- showed concern for potential impacts on existing vegetation and waterways.

Most feedback on the project has been positive and noted:

- travel time savings with the Southern Expressway being operational 24 hours a day, seven days a week
- no need to coordinate activities around a one-way reversible expressway
- improved safety along the route.

Further stakeholder engagement with the release of this Project Impact Report for comment will continue to build on established relationships and seek feedback on the concept design.
2.1 Justification of the project

Since the single-carriageway Southern Expressway was completed in 2001, traffic use has grown significantly on the free-flow high-speed facility. This growth in demand has been much higher than on the other two major southern routes (Main South Road and Ocean Boulevard–Lonsdale Road–Dyson Road).

The Southern Expressway generally caters for long distance trips and primarily services the weekday commuter traffic peaks in the morning and afternoon periods. Main South Road and Ocean Boulevard–Lonsdale Road–Dyson Road cater for relatively shorter distance trips and provide for travel in the opposite direction to that on the Southern Expressway.

Successive South Australian governments have planned and developed the Southern Expressway since 1984. The need for the expressway grew as urban development continued south of Darlington but employment stayed concentrated in central metropolitan Adelaide. The additional road capacity of the Southern Expressway, and the existing Main South Road and Ocean Boulevard–Lonsdale Road–Dyson Road, met the then current and predicted peak period travel demand to and from the southern region. As the existing roads already had capacity to cater for travel demands in the opposite direction to the peak, a single reversible road, operated by time of day, was constructed. The road corridor allowed sufficient width for duplication of the road at a future stage.

Duplication of the Southern Expressway will ensure growth in the south is sustainable by improving access to employment, education, shopping and community facilities. A duplicated Southern Expressway will make the road available at all times including the current 90 minute closure period when the road is not available for travel in either direction. This will improve reliability, and reduce travel times and vehicle operating costs for drivers who previously had restricted access to the one-way expressway. It will also reduce congestion and improve reliability of travel times on Main South Road and Ocean Boulevard–Lonsdale Road–Dyson Road as traffic will divert to the Southern Expressway.

2.2 Strategic context

Duplication of the Southern Expressway to a two-way facility is a strategically significant initiative that supports key objectives of:

- South Australia’s Strategic Plan 2007, South Australian Government
- The 30-Year Plan for Greater Adelaide 2010: A volume of the South Australian Planning Strategy, Department for Planning and Local Government
- Housing and Employment Land Supply Program Report 2010, Greater Adelaide, Department of Planning and Local Government
- local government strategic plans (City of Marion, City of Mitcham, City of Onkaparinga).

The State Government announced its intention to create a free-flow north–south corridor between the Port River Expressway and the Southern Expressway when it released the Strategic Infrastructure Plan. The 30-Year Plan projects significant expansion in the southern and Fleurieu regions up to the year 2038. To deliver the outcomes of the 30-Year Plan and open new opportunities for economic development by connecting the rapidly expanding industrial and residential growth areas in the north and the south, the State Government has broadened the scope of Adelaide’s north–south transport corridor. It will now extend 78 kilometres from Gawler to Old Noarlunga in a series of four strategic road links:

- Northern Expressway from Gawler to Port Wakefield Road
- Northern Connector from Port Wakefield Road to Port River Expressway
- South Road corridor from Port River Expressway to the Southern Expressway
- Southern Expressway from Darlington to Old Noarlunga (this project).
The Southern Expressway is an integral component of the road transport system in metropolitan Adelaide as a:

- strategic route linking the southern region and wider metropolitan area
- primary freight and commuter route
- route for express public transport services during periods of high travel demand to and from the southern suburbs.

It is evident that the project will significantly enhance opportunities and improve accessibility by allowing travel in both directions 24 hours a day, seven days a week.

### 2.3 Key benefits

- Improved accessibility for people living in the southern region for employment, education, shopping and community facilities in the south and wider metropolitan area.
- Improved accessibility for commercial traffic to industry related facilities in the wider metropolitan area.
- Improved accessibility to tourist locations on the Fleurieu Peninsula.
- Support for economic development in the southern region.
- Shorter travel times, 24 hours a day, seven days a week, along the Southern Expressway than along Main South Road or Ocean Boulevard–Lonsdale Road–Dyson Road.
- Improved road safety.
- Unrestricted access for emergency services for both northbound and southbound travel on the Southern Expressway.
3 Description of the project

3.1 Project context
The initial planning and concept development phase of the project has produced the concept design for the duplicated carriageway discussed in this Project Impact Report. A budget of $445.5 million has been allocated with construction due to begin in late 2011 and the road open to traffic by mid-2014.

3.2 Development of context options
The planning stage identified and developed alternative solutions for the carriageway and interchange locations that best met the project objectives. The solutions were then assessed against a broad range of criteria to identify a preferred solution at each location.

The solutions for the carriageway and interchange locations considered:

- engineering and environmental issues identified through investigations
- comments and information from discussions with local councils, local communities and other government departments
- project constraints and objectives
- land acquisition
- safety to all potential users
- ease of construction including staging and traffic management during construction, earthworks, noise, vibration and duration
- cost.

Intersections, including the on-ramps and off-ramps with the arterial and local roads at each upgraded interchange of the Southern Expressway, were configured to cater for predicted future peak hour traffic volumes.

Access to the Southern Expressway at existing interchange locations will allow for the additional movements of:

- left turn from Marion Road to travel southbound on the Southern Expressway
- right turn from Southern Expressway (northbound) to Marion Road
- formalised left turn from Southern Expressway (southbound) to Main South Road at Old Noarlunga.

Additional access to the Southern Expressway at Landers Road and Seacombe Road will not be provided due to their proximity to adjacent interchanges, and the consequential effects on traffic safety. Similarly, provision of additional access at Majors Road can not be justified due to its impact on the expressways traffic flows and the generally good traffic conditions that will be available on parallel routes.

The ultimate form of the interchange at Main South Road at Darlington, which includes full grade separation and free flow traffic conditions, is being developed as part of the Darlington Transport Study. The timing for its construction is dependent on funding by the Australian Government and may not coincide with the Southern Expressway duplication. This project is considering configurations for an interim upgraded interchange only.

The concept design will be further developed and refined to resolve outstanding design and construction issues and to respond to relevant feedback from stakeholders and the community. Further and extensive community engagement will continue for the duration of the project.

3.3 Concept design
Key features of the proposed concept design include:

- a new carriageway along the full length of the Southern Expressway, located generally on the western side of the existing road but deviating to the eastern side for a 2-kilometre section up the Darlington escarpment, and in the main with three traffic lanes between Darlington and Reynella and two traffic lanes between Reynella and Old Noarlunga
- two-way traffic flow at all times
- various options for a compatible interim intersection of the Southern Expressway with Main South Road ranging from partial grade separated interchanges to a signal controlled junction
- two-way traffic flow at the Panalatinga Road interchange will require a new northbound on-ramp and utilisation of existing southbound off-ramp

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The concept design will be further developed and refined to resolve outstanding design and construction issues and to respond to relevant feedback from stakeholders and the community. Further and extensive community engagement will continue for the duration of the project.
• Sherriffs Road interchange including new northbound and southbound off-ramps, with traffic signal control at Sherriffs Road; a realigned Brodie Road (north) to connect directly into Sherriffs Road interchange, eliminating the need for the roundabout on the Southern Expressway on-ramp

• Beach Road interchange modified to include a new on-ramp and off-ramp on the eastern side of the carriageway, with coordinated traffic signal controlled intersections on both sides of the Southern Expressway at Beach Road

• upgrading the junction with Main South Road at Old Noarlunga to include the duplicated carriageway

• lengthened or replaced pedestrian bridges across the Southern Expressway corridor

• existing road bridges supplemented by new bridges across the duplicated road

• sections of the Patrick Jonker Veloway and Bikeway adjacent to the Southern Expressway relocated to maintain access along and across the project corridor.

The concept design has been developed in accordance with relevant Australian Standards and guidelines.

3.4 Landscape and urban design

The landscape and urban design for the project will be guided by the principles of:

• integrating the new expressway infrastructure with the existing

• improving the environment in sensitive ecological and cultural areas, such as Field River, Warriparinga and artificial
stormwater wetlands, through best practice environmental design

• enhancing the amenity of the expressway corridor
• formalising and improving strategic walking and cycling linkages.

New and existing Southern Expressway infrastructure can be integrated through good urban design enhancing the amenity to both the surrounding landscape and driver experience. The landscape and urban design concepts will complement the objectives of the project.

The landscape and urban design concept considers:

• Landscape character – enhance the unique natural qualities of the surrounding environment
• Environment – minimise disturbance to areas of high conservation value, and protect and enhance biodiversity
• Access – integrate existing pedestrian/shared use paths with the landscape
• Amenity – retention of view, crime prevention through design principles, natural features and low maintenance treatments that improve amenity of local environment along the corridor.

Urban design elements link visually and physically to the cross roads and pedestrian/cycling paths, and broaden the value of the Southern Expressway beyond the corridor itself, extending it into the suburbs via sensitively designed pathways and planting.

3.4.4 Pedestrian and cycle paths

The duplicated carriageway will impact on a number of pedestrian and cycling paths which run adjacent to the Southern Expressway carriageway. The intention is to retain these links between communities.

3.4.5 Landscaping

It is envisaged most landscaping will originate from seed collected on-site. Two overriding planting design strategies are proposed based on providing a sustainable, low maintenance, visually appealing and environmentally sensitive response:

• Dense native planting at interchanges and local road crossings, in areas where buffer screening is required and in locations that enhance the local environment, will suppress weeds and could be more structured in layout than random plantings.

• Dryland grass and scattered tree plantings with sufficient access for weed spraying and slashing, would typically be located in mid-block sections along the corridor and in areas where vistas enhance the driving experience.

3.4.1 Noise mitigation treatments

Noise mitigation treatments will be required along a number of sections of the Southern Expressway corridor. Two types of noise mitigation treatments are expected to be used: noise walls and landscaped earth mounds.

3.4.2 Bridges

The appearance of bridges has a high impact on the visual amenity of the Southern Expressway. Design considerations for all bridges, either road or pedestrian, will be visually consistent with existing bridges.

3.4.3 Retaining walls and abutments

Extensive retaining walls will be required in certain locations along the Southern Expressway corridor. New retaining walls will be designed to highlight natural geological features where possible and be consistent with the landscape character and noise wall treatments.
4.1 Economic

The 30-Year Plan for Greater Adelaide 2010 details a policy focused on stronger population growth, demographic change, land development and employment increases over the next 30 years. The economy and creation of jobs are a key rationale for the plan’s directions and targets with the main objective being to create an environment that promotes stronger economic performance through more efficient and effective land use to support the growth of new industries.

The importance of a duplicated Southern Expressway lies in its key role of providing a high standard road for use 24 hours a day. It advances the objectives of improving safety, reliability and efficiency for the movement of people and goods, as well as linking major regional centres in the southern and Fleurieu regions to major import and export facilities and population centres in the state.

A duplicated Southern Expressway is a crucial element for business and industry expansion. It forms the southernmost connection into the inter-modal transport hubs of Adelaide. The project complements proposed improvements along Main South Road, such as the Darlington Transport Study, and other north–south corridor projects (e.g. South Road Superway, proposed Northern Connector and completed Northern Expressway). Together they will help generate vital economic outcomes in several growth regions by:

- minimising journey to work times to new employment opportunities,
- creating jobs, both directly and indirectly, by facilitating regional investment opportunities and improving the general economic competitiveness of industry that uses the Southern Expressway.

The project potentially supports major economic activity and new investment in the southern and Fleurieu regions by improving access along the Southern Expressway. The projected travel time and accessibility improvements can generate business and industry efficiencies, and benefit current and future residents and other road users by reducing personal and business travel costs.

4.2 Business and community profile

The project is contained in the local government areas of Marion and Onkaparinga, with the northern termination of the Southern Expressway abutting the City of Mitcham.

Community and stakeholder engagement activities to date have highlighted significant community support for the project.

The project will improve accessibility for people living in the southern region for employment, education, shopping and community facilities in the south and wider metropolitan area, as well as improving accessibility for commercial traffic to industry related facilities in the wider metropolitan area. Transport efficiency benefits will be realised 24 hours a day, seven days a week.

The project is expected to boost local employment through people working directly during construction of the project. There are also expected ancillary employment benefits to the significant industries in the southern and Fleurieu regions, including tourism, agribusiness, wine and manufacturing. Employment and industry participation policies and taskforces have been established to guide employment generation for the southern region to ensure the best community and local area outcomes.

The project will benefit the southern region of Adelaide, therefore improving the competitiveness of the state as a whole.

4.3 Land use, zoning and property

Major infrastructure projects can often have significant effects on surrounding land uses as well as the wider region serviced by the infrastructure. The corridor in which the Southern Expressway will be duplicated was previously set aside for the purpose; the impacts of the project on land use are thus not as significant as at the time of original Southern Expressway construction.

Most of the land required for the project is already owned by the Commissioner of Highways. A land swap agreement between the Department for Transport, Energy and Infrastructure (DTEI) and the Department of Environment and Natural Resources (DENR) is currently underway for land located north of Majors Road at O’Halloran Hill. The
agreement includes retention of native vegetation adjacent to the road corridor.

No privately owned land needs to be acquired; minor areas of land maybe required from other government agencies.

The catchment surrounding the project has a mix of land uses. Residential, industrial, commercial and Hills Face areas make up a majority of the land use adjacent to the project area.

It is envisaged the project will have no adverse effect on the value of properties located in immediate proximity to the road corridor, particularly since a carriageway is already in the corridor. Rather, the improved access to the southern region may have a positive effect.

The transport efficiencies expected from the project will also support industries in the southern and Fleurieu regions and the objectives of the 30-Year Plan. These transport network improvements should improve the viability of and outputs from the industries, leading to a shift towards industry-associated land uses. For example, the tourism industry may require expansion of accommodation to cater for expected increases in tourism numbers using the duplicated Southern Expressway.

4.4 Non-Aboriginal heritage

Assessment of the non-Aboriginal heritage effects from construction and operation of the project has identified two heritage listed sites in proximity to the project area:

- Warriparinga including Fairford House, coach house and surrounding lands at Warriparinga Triangle (State Heritage)
- former farmhouse at Hackham (Local Heritage).
Unlisted areas within Warriparinga include a ford, and a water pump and shed. The ford, located north of the current Southern Expressway, is described by the Friends of Warriparinga Association as the ‘only crossing of the Sturt River on the Adelaide Plains in this area until the 1930s’. The water pump and pump shed are said to have been built when the area was used for viticulture. They are located adjacent to the Sturt River, approximately 20 metres from the current Southern Expressway bridge over the Sturt River.

The two heritage listed places would not directly be affected by the construction and operation of the project due to the distance between them and the project. Ongoing consultation with DENR would consider the setting of Fairford House and whether additional landscape screening may be required.

Discussions on managing the effects of the project on identified heritage places will be held with relevant property owners, the Friends of Warriparinga Association, City of Marion and City of Onkaparinga heritage advisers, and the Heritage Branch of DENR.

4.5 Native Title and Aboriginal cultural heritage

The project area is located in the native title claim area of two native title applicants, the Kaurna and the Ramindjeri. There is the potential for damage, disturbance or interference with Aboriginal sites, objects and ancestral remains during construction of the duplicated carriageway.

The Commissioner of Highways is seeking a Section 23 authorisation under the Aboriginal Heritage Act 1988 from the Minister for Aboriginal Affairs and Reconciliation for construction of the project.

4.6 Flora

Native vegetation in the project area has been highly altered through urbanisation and previous development of the Southern Expressway. Land use directly surrounding most of the project area is predominantly residential housing, light industry, pedestrian/cycling paths, roads and the occasional block of open vacant land.

Four areas of remnant vegetation and an area of native grassland were identified in the project area. Remnant group 4, located at Beach Road interchange, is a threatened ecological community (Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia) under the EPBC Act. The proposed concept design for the Beach Road interchange locates the roadway immediately to the east of the threatened community. These four areas of remnant vegetation, along with revegetated areas associated with Field River, Christies Creek and other stormwater ponds, are fauna habitat and an important link to the broader region.

Most vegetation in the project corridor consists of poor-to-moderate quality planted natives and exotic species, including amenity plantings from the first two stages of the Southern Expressway in 1997 and 2001. Vegetation clearance will be required as part of the project, primarily on the western side of the current alignment. It will be undertaken in line with DTEI’s Vegetation Removal Policy and Vegetation Offset Guidelines, which outline requirements for providing Significant Environmental Benefits.

The flora surveys of the project area identified the presence of significant trees as defined by the Development Act 1993. Removal of any of these trees during construction will require the approval of the Development Assessment Commission.

The removal of native vegetation and significant trees will be minimised through detailed design of the project footprint and by managing identified areas of native vegetation and weed species during construction.

Rehabilitation of the project area on completion of construction works, along with targeted revegetation of the corridor and provision of Significant Environmental Benefits, will help minimise effects on native vegetation in the project corridor.

4.7 Fauna

The project area has been highly modified since European settlement through clearance of native vegetation for agricultural, residential and industrial purposes. The current faunal assemblage reflects these changes. Many original fauna species present in the area are now either absent or restricted to areas such as Onkaparinga River National Park and O’Halloran Hill Recreation Park. Introduced species are prevalent and compete with native species for habitat and food.
Despite the high level of habitat modification, some areas could provide habitat for significant fauna species: Warriparinga Wetlands, O’Halloran Hill Recreation Park, the remnant vegetation at Beach Road interchange, and riparian and aquatic areas surrounding waterways, could be key areas. Individual remnant trees and significantly revegetated areas are likely to provide habitat for fauna species.

Overall, fauna habitat in the project area is considered to have very low to moderate value. The very open/cleared areas are not conducive to a high diversity of fauna, particularly given excessive weed growth in the understorey. However, dense, mature revegetated areas are likely to provide reasonable habitat to numerous species, particularly birds.

Of the vegetation surveyed, the areas considered of most importance for wildlife habitat are those containing remnant vegetation, mature trees and well-established local revegetation. Clearance of vegetation in these areas, and of scattered trees supporting hollows, has the potential to cause an impact on native fauna in the region.

The size of, and proximity to, other vegetation links and biodiversity corridors adjacent to the project area (e.g. Onkaparinga River National Park and O’Halloran Hill Recreation Park) are considered sufficient to provide a suitable shelter and habitat for a number of native fauna species during construction.

Management measures, developed to limit potential impacts on native fauna, will be implemented during the design, construction and operational phases of the project. In particular, impacts on native fauna will be minimised by limiting the actual area of habitat to be removed including restricting construction laydown areas to locations that are already highly degraded.

The significantly altered nature of the project corridor, as well as the presence of the existing Southern Expressway, make the overall impact of the project on native fauna minimal.

4.8 Surface water and groundwater

The standards adopted in the design of drainage systems for the duplicated Southern Expressway incorporate:

- design of stormwater infrastructure for the roadway, including pavement drainage and culverts, to DTEI standards
- treatment of stormwater using (where possible) water sensitive urban design techniques such as vegetated swales, wetland systems, vegetated detention and retention basins
- provision of spill containment in stormwater treatment ponds.

The general philosophy for the drainage design considers the following principles and assumptions:

- Drainage systems (including culverts, drainage networks, kerb and channel and open drains) shall cater for 1 in 10 average recurrence interval storm events, with a 1 in 100 year average recurrence interval storm event checked for overland flooding. The system shall have sufficient capacity to accommodate the design drainage flow in accordance with drainage requirements and without causing damage or nuisance to surrounding landowners and properties.
- Discharge from the project to any council downstream drainage pipe or channel system (regional drainage system) should not increase flows in that system to the extent that the design standard of the existing system is compromised.
- Existing regional drainage catchments and flow patterns should be maintained where practicable and drainage flows shall not cause scour, damage or nuisance to surrounding landowners and properties. The design basis shall not permit redirection, concentration or diversion of drainage flows for the project except with the written consent of council.
- No runoff from any part of the project shall be discharged out of the road corridor unless it is in an underground or surface drainage system.
- The pavement drainage approach and philosophy will generally follow that of existing sections of the Southern Expressway in order to maintain continuity throughout the infrastructure project.

Through the adoption of specific design requirements for drainage
and stormwater (water quality) and concentrated management through construction, the impacts to surface water and groundwater as a result of the duplicated Southern Expressway are not considered to be significant.

4.9 Transport

The project aims to provide an expressway standard road enabling two-way traffic flow at all times of the day. The duplicated Southern Expressway will attract traffic currently using Main South Road and Ocean Boulevard–Lonsdale Road–Dyson Road.

The project will result in improved travel times for traffic travelling to and from the southern region. It will also improve safety and accessibility for commercial traffic to industry related facilities in the wider metropolitan area. Travel time on the Southern Expressway is expected to be in the order of 13 minutes less than on Main South Road.

The project is estimated to take 2–3 years to construct. In this time, there will be traffic impacts on and across the existing Southern Expressway but works will be managed to minimise these impacts as much as practical. Temporary reductions in capacity along the Southern Expressway (i.e. speed restrictions) during construction and subsequent shifts in traffic will be accommodated by alternative routes including Main South Road and Ocean Boulevard–Lonsdale Road–Dyson Road. These alternative routes have spare capacity to accommodate these route shifts as they are currently underutilised in peak directions due to the Southern Expressway accommodating most of the peak flows.

Construction of the project will continue the current level of access and amenity for pedestrians and cyclists. The existing Patrick Jonker Veloway and Bikeway along the eastern side of the project corridor may be realigned in some places but will provide the same level of service to cyclists. The existing connectivity along unsealed paths on the western side of the project corridor will be retained.

The project will minimise impacts on the community, commuters, freight and businesses through effective construction staging and monitoring of the project both during and after construction.

4.10 Noise and vibration

Road traffic noise is expected to increase for properties closer to the western side of the new carriageway. With duplication of the expressway, properties on the eastern side of the existing carriageway will experience reduced noise levels for the morning commuter peak traffic. However, an increase in traffic on the existing expressway is expected over time as a result of development in the southern region.

The existing noise environment is currently being determined through noise logging and noise modelling of the road network. Noise level predictions of the project for the year 2031 are being calibrated by using the noise logging locations. Noise modelling will evaluate the potential impact on sensitive receivers and identify locations where criteria are exceeded. Noise attenuation measures will depend on the amount of noise reduction required to achieve stipulated noise criteria.

Residents nearest to road works may perceive vibrations, particularly during vibratory compaction earthworks or blasting of rock. It is not expected that blasting operations will adversely impact on properties. Nonetheless, as a precaution, buildings located within 25 metres and, in the case of heritage listed buildings, within 50 metres, of blasting activities, will be inspected. These building inspections will prepare reports of pre-existing structural conditions before blasting so that any potential claims of damage from blasting may be properly assessed.

4.11 Air quality

The project will be constructed within the existing road corridor and, based on results of the air quality assessment and modelling for the draft concept design, there is no
potential adverse impact from carbon monoxide concentrations in proximity to identified sensitive receivers in the suburbs of Sturt, Morphett Vale, Christie Downs and Noarlunga Downs.

4.12 Visual amenity

The project opens an opportunity to reinvigorate elements of the corridor by enhancing landscape treatments, installing habitat corridors and recreation trails, and treating identified significant areas.

4.13 Geology, soils and site contamination

The Southern Expressway corridor generally covers the footslopes and rocky slopes of the Adelaide escarpment, Black Earth soils along the flat topped O’Halloran Hill area, rocky hillside slopes leading to Reynella, variable terrain at Panalatinga Road interchange, undulating slopes with rocky outcrops towards Moore Road and undulating slopes south of Moore Road towards Main South Road interchange at Old Noarlunga. Blasting may be required at several locations along the corridor to excavate rocky outcrops. Environmental effects can include ground vibration, air blast/noise, fly rock, dust, traffic and storage of explosive materials. Blasting for construction works are generally more controlled, of smaller volume and of less impact to the surrounds than blasting works for bulk excavations such as mining. The proximity of the project corridor to nearby houses and stakeholders necessitates extensive design, planning, management and liaison for all blasts to minimise their impacts.

A review of aerial photographs from 1949, 1959, 1969, 1979, 1989, 1999 and 2005 confirms the entire project corridor is likely to have been in use, at one time or another, as agricultural land. Based on past and present land uses across the project corridor, a number of identified areas of interest could be contaminated. Further detailed contamination assessments will be undertaken for these areas.

Materials excavated from earthworks in the project corridor will be used as much as possible as construction materials. Waste materials from other DTEI projects, including excavated ballast and subgrade materials from the Rail Revitalisation project (Noarlunga line upgrade), may also be used. All excavated materials taken from site and waste materials to be reused on site will be required to meet DTEI materials specifications and Environment Protection Authority classification for materials. The reuse of excavated materials will reduce importation of virgin or waste materials and exportation of waste materials, and thus traffic movements to and from the project corridor. Impacts such as noise, dust, traffic volumes and potential road damage, are consequently also reduced.

4.14 Greenhouse gases

Major greenhouse gas emissions from the construction and maintenance phases of the project are associated with: fuel (diesel), concrete, steel, bitumen, electricity, waste to landfill and vegetation clearance.

Construction greenhouse gas emissions will be assessed once detailed quantity and cost estimates are completed using the Greenhouse Gas Assessment Tool. The tool was designed to focus on capturing the majority of emissions from major contributing items and activities in the project.

4.15 Sustainability

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.

Sustainability is a key objective for the project. As part of project approval, a sustainability management plan will be prepared to identify key areas of sustainability and address ecologically sustainable development principles including:

- protection of water quality and implementation of water conservation and reuse
- minimisation of energy consumption and greenhouse emissions
- minimisation and use of recycled materials and waste
- protection and enhancement of biodiversity.

A sustainability implementation plan will identify the measures to be implemented to ensure sustainability objectives are achieved.
The construction environmental management plan will detail the environmental protection requirements the contractor must implement in order to mitigate and minimise environmental effects during construction. The main purpose of the plan is to ensure the environmental requirements and commitments adhere to the DTEI Environmental Code of Practice for Construction and incorporate any approval-specific environmental requirements.

Environmental audits during the construction phase will identify whether environmental objectives are being met. The audits will also identify non-conformances (if any) with relevant environmental legislation, the construction environmental management plan and the requirements of the construction contract.

DTEI will be responsible for the ongoing maintenance and environmental performance of the Southern Expressway.
6.1 Viewing the Project Impact Report

The Project Impact Report has been prepared to describe the project, and evaluate its potential social, environmental and economic effects.

A Supplement Report will be prepared to respond to submissions received from the public and other stakeholders. It will also outline the findings of further investigations and any modifications to the project since the Project Impact Report was prepared.

The Project Impact Report and Supplement Report will be considered before finalising the project for approval by the Australian and South Australian governments.

The Project Impact Report can be viewed online at www.infrastructure.sa.gov.au.

For a complimentary copy of the Executive Summary and CD containing the Project Impact Report, please call 1300 626 097 or email dtei.southernexpressway@sa.gov.au

6.2 Make a submission

You can comment on any aspect of the project. All comments must be received in writing. You may include:

- the nature of your interest in the proposal
- your opinions on the proposal
- any suggestions about improvements to the proposal
- any additional measures you consider important
- any errors or omissions in the Project Impact Report
- any additional factual information you have, and its source
- any other aspects relevant to the proposal.

To help us record your submission, please:
- include your name, address and date
- list your points by issue
- refer to the appropriate section of the Project Impact Report
- ensure that hand-written submissions are legible.

All submissions will be public documents unless confidentiality is requested. DTEI may be challenged about this confidentiality through the Freedom of Information Act 1991.

6.3 Where to send your submissions

Forward by letter, fax or email on or before 5.00 p.m. on Friday, 10 June 2011 to:
Project Director
Southern Expressway Duplication
Department for Transport, Energy and Infrastructure
Reply Paid 83100
GPO Box 1533
Adelaide SA 5081
Fax: (08) 8343 2516
Email: dtei.southernexpressway@sa.gov.au

6.4 Community information sessions

You are encouraged to attend community information sessions where project staff will be available to discuss the project and answer questions. The sessions will be held on:

Saturday, 14 May 2011
9.00am to 2.00pm
South Adelaide Football Club
1 Lovelock Drive, Noarlunga Downs

Wednesday, 18 May 2011
4.00pm to 8.00pm
Marion Sports and Community Club
262 Sturt Road, Marion

6.5 Visit the project website

www.infrastructure.sa.gov.au

6.6 Contact the project team

Information line: 1300 626 097
Fax: (08) 8343 2516
Interpreter information: 1300 626 097
Email: dtei.southernexpressway@sa.gov.au