

Appendix B EIA practice note - ESD



Transport
Roads & Maritime
Services

ENVIRONMENTAL IMPACT ASSESSMENT

PRACTICE NOTE

Ecologically sustainable development

EIA-N02

This practice note should be used in conjunction with the Roads and Maritime Services EIA guidelines. Printed copies of this document are uncontrolled.

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1 Introduction

1.1 Purpose of the document

Roads and Maritime Services (Roads and Maritime) has a legal and social imperative to consider the principles of ecologically sustainable development (ESD) in the development and assessment of its projects. Planning legislation requires that Roads and Maritime consider the principles of ESD in project development and assessment. Failure to consider ESD in environmental assessments has been used as a means of legal challenge to planning approvals.

The purpose of this practice note is to outline how ESD is relevant to the assessment of Roads and Maritime projects. The practice note explains the concept of ESD and its legal status under the NSW planning and assessment system. The practice note provides guidance on how to demonstrate in environmental impact assessment (EIA) documentation that the principles of ESD have been addressed through the development of the project.

The following diagram (Figure 1) is adapted from ProjectPack and indicates the various stages of the development of a project. Decisions influencing the ESD achievements of a project can be made at several different stages, as shown with an asterisk (*) and highlighted in red below.

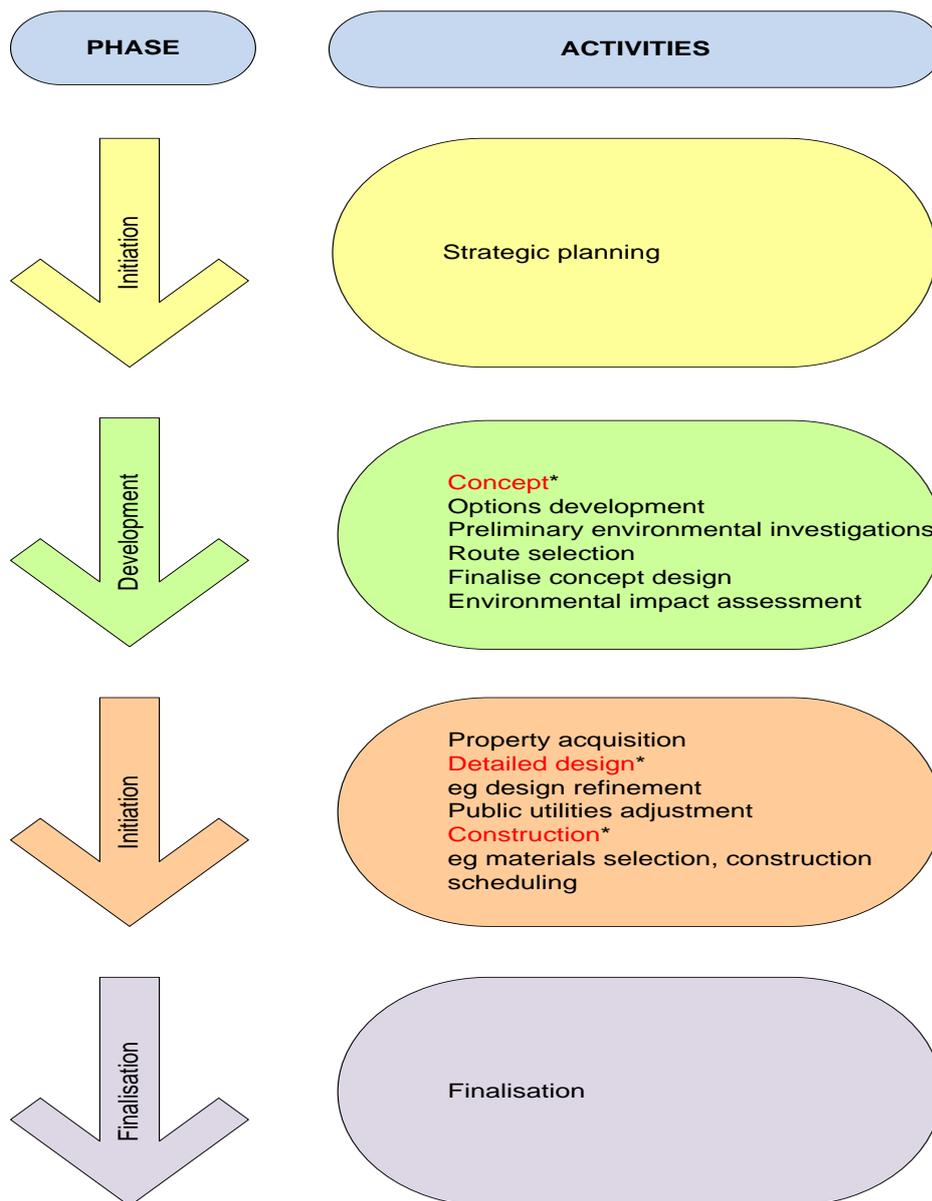


Figure 1: Stages of project development

This practice note is aimed at Roads and Maritime staff responsible for project development and Roads and Maritime staff or external consultants responsible for assessing the environmental impacts of Roads and Maritime activities.

This practice note focuses on the application of the principles of ESD at the project level. Roads and Maritime’s sustainability objectives at the organisational level are outlined in ‘Towards a more sustainable RTA: RTA’s Environmental Sustainability Strategy 2010’ (RTA, 2010). The strategy contains a series of environmental sustainability commitments and targets some of which may be applicable during the planning, design, construction and operation stages of road projects.

The history of ESD and how it has been applied in the courts is summarised in Appendix 1.

2 ESD in planning legislation

2.1 NSW legislation

In NSW, the commitment to the concept of environmental sustainability is expressed in current legislation. It is an object of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to encourage ESD (Section 5(vii)). The EP&A Act refers to the NSW *Protection of the Environment Administration Act 1991* (PEA Act) for definition of ESD.

Principles and programs aimed at achieving ESD are defined in Section 6(2) of the PEA Act:

Ecologically sustainable development requires the effective integration of economic and environmental considerations in the decision making process. Ecologically sustainable development can be achieved through the implementation of the following programs and principles:

1. **The precautionary principle** – if 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. In the application of the precautionary principle, public and private decisions should be guided by:
 - (i) Careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment.
 - (ii) An assessment of the risk-weighted consequences of various options.
2. **Inter-generational 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.
3. **Conservation of biological diversity and ecological integrity** – that conservation of biological diversity and ecological integrity should be a fundamental consideration.
4. **Improved valuation, pricing and incentive mechanisms** – that environmental factors should be included in the valuation of assets and services, such as:
 - (i) Polluter pays - those who generate pollution and waste should bear the cost of containment, avoidance or abatement.
 - (ii) The users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste.
 - (iii) Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

The Secretary's environmental assessment requirements (SEARs) issued under Part 5.1 of the EP&A Act for State significant infrastructure projects generally include consideration of the four principles of ecologically sustainable development as a requirement for Environmental Impact Statements.

Case law has developed around ESD in the NSW and Federal court systems. Recent court decisions relating to ESD and learnings for Roads and Maritime are summarised in Appendix 2.

2.2 Commonwealth legislation

It is an object of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to 'promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources' (Section 3(b)). The four principles outlined in the PEA Act also appear in the EPBC Act. The EPBC Act identifies a fifth ESD principle, the integration principle, to consider in decision making processes. The integration principle is defined as follows:

Integration principle – decision making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.

3 ESD principles in practice

ESD requires the effective integration of economic, social and environmental considerations in decision making processes (Preston, 2008a). Both State and Commonwealth law require decision makers to consider the principles of ESD at all stages of project development. When environmental and social considerations are canvassed at an early stage, and allowed to influence the ultimate project location and design, the integration of ESD principles will be implicit.

The following provides an explanation of how each of the four principles may apply to Roads and Maritime developments and the decision making process.

3.1 Precautionary principle

The precautionary principle can be applied during project development and environmental assessment by evaluating whether the proposal poses any risk of **serious or irreversible environmental harm**. Where there is risk of serious or irreversible harm, it is necessary to establish whether there is adequate scientific knowledge of the subject to evaluate the perceived threat. Where risk of serious or irreversible harm and lack of scientific knowledge of the nature of environmental harm combine, the precautionary principle applies. Recent case law has established that if the precautionary principle is triggered the proponent bears the burden of proof for demonstrating that their actions will not cause environmental harm (Preston, 2008b). The precautionary principle is likely to be most relevant to biodiversity, water quality, air quality, waste, socio-economic, cumulative impacts and climate change.

3.2 Intergenerational equity

The principle of intergenerational equity is concerned with ensuring that the well being and productivity of subsequent generations is not compromised by the current generation. This principle spans several environmental aspects but will be most relevant to waste and resources, socio-economics, biodiversity, water quality, air quality, climate change and cumulative impacts.

Examples of how this principle may apply to Roads and Maritime projects include:

- Biodiversity: the proposal may impact upon species, populations, ecological communities or habitats such that their future persistence is threatened and the biological processes supporting and supported by them are compromised.
- Air quality: the proposal (the current generation) may result in impacts on the quality of the environment available for future generations.
- Socio-economics: the proposal may bisect agricultural land reducing productivity for future generations, limit future land uses, alter or limit access to current or future.
- Aboriginal and non-Aboriginal heritage: loss of culture and heritage items or places may reduce this resource for future generations, or impact upon businesses.
- Climate change: impacts on future generations by increased frequency and intensity of flooding events, storm surges, sea level rises, or where the construction and operation of a proposal increases or maintains greenhouse emission levels into the future.
- Waste and resources: water, minerals and other material resources or landfill space is compromised for future generations.
- Cumulative impacts: the proposal adds to impacts upon an environmental aspect from past, concurrent or planned activities and thereby compromises the health, diversity and productivity of the environment for future generations.

3.3 Conservation of biological diversity and ecological integrity

Consideration of the principle of the conservation of biological diversity and ecological diversity overlaps with the previous two principles. The precautionary principle requires evaluation of the threat of serious or irreversible harm to biodiversity. The intergenerational equity principle requires the preservation of biodiversity and the ecosystem services they support for future generations. To consider this principle it is necessary to consider:

- The extent to which the development impacts on native vegetation or waterways and the species, populations and communities they support.
- The integrity of the native vegetation or waterway upon which the development impacts as a habitat and the potential for regeneration and habitat improvement.
- Whether or not the proposal causes fragmentation or isolates patches of vegetation and the impact this may have on flora and fauna eg dispersal, edge effects.
- The role of any vegetation, species, population or community on a regional scale including consideration of the cumulative impacts of past, concurrent and planned activities. This could include likely future land use changes in the region.
- The potential for climate change to alter patterns of occurrence and magnify the impact of the proposal into the future.

3.4 Improved valuation, pricing and incentive mechanisms

This principle relates to incorporating the costs of negative environmental consequences directly into the cost of conducting the activity (Preston, 2007). The internalisation of external environmental costs can be achieved in a number of ways (Preston, 2008a, 2008b):

- Environmental features or qualities can be considered as an asset or service and given a value.
- The 'polluter pays' approach ensures that those who generate pollution and waste bear the cost of containment, avoidance or abatement. This could encompass prevention or reduction of pollution; controlling, abating or mitigating damage to the environment caused by pollution; and cleaning up and restoring the environment when damaged including compensation for injury that is irreversible.
- Prices of goods and services may reflect the life cycle inputs and outputs including use of natural resources and waste management; and
- Incentive structures and market mechanisms can be established to encourage the achievement of environmental goals and place a value on innovation and research, e.g. carbon trading.

Understanding and application of the concept of internalisation of external environmental costs is still developing. Methods for calculating the external environmental costs of a project are complex and a developing field. Application of this principle to Roads and Maritime projects is also developing. The relevance of this principle to Roads and Maritime activities will need to be reviewed if emissions trading is introduced.

Examples of where this principle may apply include situations where the proposal:

- Occurs within State Forest land and may impact upon the economic value of that land.
- Bisepts agricultural land or other commercial land uses and may impact upon the economic productivity of this land.
- Bypasses a town and impacts on the local economy.
- Generates waste requiring disposal, particularly contaminated waste.
- Involves the purchase or securing of land to offset biodiversity losses.

4 ESD in environmental impact assessment

4.1 Introduction

This chapter provides guidance on where and how ESD should be discussed within environmental impact assessment (EIA) documentation. ESD must be addressed in all EIA documents, including preliminary environmental investigations and assessments, reviews of environmental factors (REFs) and environmental impact statements under Part 5.1. This must include detailing how ESD principles have been considered throughout the development of a project and how ESD considerations will influence the construction and operation phases.

While the structure of different environmental impact assessment documents will vary subtly, Table 1 details relevant parts of a typical EIA document and indicates the sections that would be relevant to ESD.

Table 1: Typical EIA layout and sections relevant to ESD

Section of EIA document (eg REFs, EIS)	Reference section in this practice note
Executive summary	
Introduction	
Strategic justification, project need and alternatives	Refer to section 4.2
Description of the project	
Statutory and planning framework	
Consultation	
Environmental assessment	Refer to section 4.3 and 4.4
Environmental management	Refer to section 4.3 and 4.4
Justification and conclusion	Refer to section 4.5
References	

The presentation of information on ESD for each of these sections is discussed below. Refer to guidance contained within the Roads and Maritime Review of Environmental Factors procedure for roads (EIA-P05-2) and for maritime projects (EIA-P05-3) or the Environmental Assessment procedure for State significant infrastructure (EIA-P03) for further instruction on how to develop and structure these sections of the environmental impact assessments.

4.2 Project alternatives and design options

Discussion of ESD in the context of project alternatives and design options will demonstrate the integration of environmental, economic and social considerations in project decisions.

For Part 5 projects, “Integrating ecologically sustainable development” in the Roads and Maritime Review of Environmental Factors template addresses ESD in the selection of the preferred option (refer section 2.4.2 of the REF template).

For State significant infrastructure (Part 5.1) projects, the EIS template describes the strategic justification, preferred option and the alternatives considered, and any refinements of the concept design, including ESD considerations influencing the decision making process (refer chapters 2 and 3 of the EIS template).

Within these sections, briefly discuss how the selection of the preferred option has incorporated environmental, economic and social considerations. For example, highlight where biodiversity, Aboriginal and non-Aboriginal heritage, noise, property impacts or other environmental constraints have influenced the location of the preferred option. Highlight any features of the design of the proposal that have been developed in response to environmental constraints and social concerns. For example, the provision of pedestrian connections to improve community cohesion or provision of dedicated fauna crossings to maintain habitat connectivity. The cost-benefit performance delivery risk profile of the preferred option should also be discussed. This is to confirm that the option is buildable within the constraints identified in the EIA.

Sources of relevant information for discussion of ESD in the context of project alternatives and design options may include:

- Route selection studies.
- Preliminary road geometry and geotechnical studies.
- Environmental Investigations.
- Community consultation feedback.
- Value management studies.

4.3 Environmental assessment

Addressing the principles of ESD is intrinsic to the proper assessment of the environmental impacts of a proposal.

For each environmental aspect a series of questions are posed to assist in identifying elements of the project that incorporate ESD principles. The question lists are not exhaustive and are intended only as a guide. Each proposal should be assessed on its own merits. Additional mitigation measures should be incorporated to address ESD principles as required. Further advice is available from Roads and Maritime environment staff.

It is not necessary to specifically reference ESD principles in the text of this section. Rather, the information provided should reflect the adoption of ESD principles in the project design or proposed management measures. Opportunity to highlight the ESD achievements of the proposal is provided in the justification section of EIA document (refer to Section 4.5).

4.3.1 Biodiversity

Assessing the impact of a project upon biodiversity is an essential element of ESD consideration. The potential application of the precautionary principle is addressed by the performance of the assessment. The assessment provides a scientific basis for assessing whether or not serious or irreversible harm is likely. Assessing the impact of the proposal on biodiversity will reflect how the proposal responded to the concern of maintaining biological diversity and ecological integrity. Impacts on biodiversity also relate to the concern of intergenerational equity, which requires that the physical resources and ecosystem services provided by biological resources be maintained for future generations. Biodiversity offset strategies recognise the value of environmental resources by compensating for losses. Offset strategies are therefore an example of how the project has considered the principle of improving valuation, pricing and incentive mechanisms.

When assessing the impact of the proposal on biodiversity consider the following:

- Does the proposal avoid or minimise impact on native vegetation or waterways?
- Does the proposal avoid or minimise impact on rare or threatened species, populations and ecological communities and/or their habitats?
- Does the proposal bisect an existing patch of native vegetation?
- Does the proposal sever or remove a linear vegetation corridor?
- Does the proposal involve the rehabilitation of degraded ecological areas to offset vegetation clearance?
- Does the proposal involve the creation of new habitats to offset vegetation clearance?
- Does the proposal involve the enhancement of remaining vegetation or the replacement or relocation of habitat features?
- Does the proposal involve revegetation in general or propagation and revegetation of a particular plant species?
- Would the operation of the proposal generate an increase in pollutants and sediment entering receiving drains and waterways?
- Is there a cumulative impact on any vegetation type from this and past projects?

4.3.2 Air quality

The precautionary principle may apply to air quality. Pollutants within vehicle emissions, such as particulate matter and nitrogen dioxide, are considered potentially harmful to human health. There is a degree of scientific uncertainty regarding the causality between pollutants and adverse health effects. Air quality impacts also relate to the principle of intergenerational equity, which requires that quality of life for future generations is not compromised by the current generation. The greenhouse gas element of air quality is considered further in Section 4.3.5 Climate change.

When assessing the impact of the proposal on air quality consider the following:

- Would the proposal result in an increase in traffic levels on some roads?
- Would the proposal result in a decrease in traffic levels on some roads?
- Does the proposal bring traffic closer to residential receivers, and if so, what would be the distance between the kerb and houses?
- What is the proposed speed limit and does this represent a change to the current situation (therefore changing vehicle efficiency)?
- Does the proposal occur over level, undulating or steep landscapes and what is the likely impact upon vehicle efficiency and air quality outcomes?
- Does the proposal involve a tunnel that requires ventilation stacks? Is an air filtration system proposed?
- Would the proposal involve a change to the mix of light and heavy vehicles in the traffic stream and what impact does this have on local air quality?

Air quality assessments for larger projects should estimate particle concentrations and contrast these with current [NSW ambient air quality goals](#). This should be done with consideration to the questions above and in consultation with Roads and Maritime's air quality specialist. Smaller projects may benefit from estimation of vehicle emissions and dispersal distances with the Roads and Maritime program TRAQ. Seek advice from Roads and Maritime environment staff if required.

4.3.3 Socio-economic

The assessment of socio-economic impacts of the proposal should reflect how the development has responded to intergenerational equity concerns such as economic viability, access and maintaining vibrant communities. Socio-economic assessment for Roads and

Maritime projects should be undertaken in accordance with the Environmental impact assessment practice note: socio-economic assessment (EIA-N05).

Consider whether the following economic impacts are likely to result from the proposal:

- Does the proposal limit impact upon passing trade or customer access for local business?
- Does the proposal impact upon agricultural or other productive land?

Consider whether the following impacts to access are likely to result from the proposal:

- Does the proposal cater for the transport needs of future urban development?
- Does the proposal provide improved access for all residents and users?
- Are viable alternative routes to new toll roads available for commuters?

When assessing the impacts of the proposal upon the community, consider the following and bearing in mind perceived impacts:

- Does the proposal reduce the cohesiveness or viability of a community?
- Does the proposal route minimise impact on the availability of residential, commercial, industrial and community lands?
- Is the safety of the road environment improved by the proposal?
- Does the proposal have a negative net impact on the adjacent community due to traffic noise?

4.3.4 Aboriginal and non-Aboriginal heritage

The assessment of impacts applying to Aboriginal and non-Aboriginal heritage relevant to the proposal should reflect how the development has responded to intergenerational equity concerns. The precautionary principle and conservation of biological diversity may also be relevant.

When assessing the impact of the proposal on Aboriginal and non-Aboriginal heritage consider the following:

- Are there potential heritage places or items in the vicinity of the proposal?
- Does the proposal avoid or minimise impacts upon Aboriginal and non-Aboriginal heritage places and items?
- Are the impacts of the proposal going to result in serious or irreversible harm to any heritage areas, items or places?
- Does the proposal involve the enhancement or conservation of heritage areas, places or items?
- Does the proposal avoid or minimise impacts on vegetation or fauna that may be of cultural significance to local Aboriginal communities?

4.3.5 Climate change

The issue of climate change spans three of the principles: precautionary principle; intergenerational equity; and biological diversity and ecological integrity. The assessment of climate change implications for the proposal should reflect how the development responds to these principles.

When assessing the impact of the proposal on climate change, consider the following:

- Does the proposal include provision for public transport?
- Does the proposal include bicycle lanes?

- Does the proposal include provision for pedestrians and/or maintain existing pedestrian connections?
- Does the proposal reduce the length of vehicle trips?
- Does the proposal improve the efficiency of vehicle use (eg by eliminating traffic lights, eliminating steep inclines, having optimal operating speeds etc)?
- Would the construction of the proposal generate an increase in greenhouse gas emissions? Have measures been incorporated to minimise this increase? Data from the Transport Authorities Greenhouse Group's (TAGG) 'Carbon Gauge Greenhouse Gas Calculator for road projects' would be useful for this discussion.

When assessing the impact of climate change on the proposal, consider the following:

- Is the proposal located in an area likely to be permanently or tidally inundated in the future or subject to increased duration and intensity of flooding?
- Has hydrological modelling and proposal design considered predicted climatic changes?
- Does the assessment of biodiversity impact consider future changes in species type and distribution at the proposal site location as a result of climate change?

4.3.6 Waste and resources

The assessment of waste and resources should reflect how the proposal and construction planning has responded to the precautionary, inter-generational equity and the valuation, pricing and incentive mechanisms principles. When assessing the selection and source of resources, consider the following:

- Does the proposal reduce the availability of raw materials, minerals or fresh water for future generations?
- Does the proposal incorporate use of recycled materials and/or materials that are manufactured locally?
- Does the proposal use sustainably harvested timbers?
- Does the proposal design allow for a balance between cut and fill if possible? If not does it minimise spoil and the need to import external fill material for earthworks?
- Has energy efficiency and use of renewable energy sources been considered?
- Are potable water conservation measures proposed?
- Is avoidance of land deterioration due to groundwater salinity and effects considered and proposed?
- Can timber be reused or recycled (refer to Roads and Maritime's Timber recycling policy)?

When assessing the waste generated by the proposal and the potential impacts of this waste, consider the following:

- Does the proposal adopt the waste hierarchy principles of waste avoidance, waste reduction and waste disposal?
- Does the proposal occur on contaminated land requiring remediation? Is Roads and Maritime liable for remediation?
- Does the proposal require the disposal of a contaminated substance or material? Has the nature of the contaminant been established to determine appropriate disposal location and technique?
- Does the proposal design allow for a balance between cut and fill, minimising spoil?
- Does the proposal design allow for a balance between cut and fill if possible? If not does it minimise spoil and the need for off-site disposal of excess material?
- Does the disposal of waste generated by the proposal deplete the availability of landfill space for future generations?

4.3.7 Cumulative impacts

A cumulative impact assessment that addresses ESD considerations would identify where the proposal adds to impacts upon an environmental aspect from recent, concurrent or planned activities and would:

- Create risk of serious or irreversible harm. For example consider air quality, climate change, waste and biodiversity.
- Compromise the well-being of future generations. For example, consider social equity, economic equity and access to resources.
- Compromise biological diversity or ecological integrity.

4.3.8 Secretary’s environmental assessment requirements

For environmental impact statements prepared under Part 5.1 of the EP&A Act ESD or components of it, may be elevated to a “Key Issue” and as such would require consideration in Chapter 7 of the EIS template. Case law examples cited in Appendix 2 of this practice note indicate that ESD should be given consideration in environmental assessments where it is relevant to the project, regardless of whether the Secretary’s environmental assessment requirements have identified it as a key issue to be addressed.

4.3.9 Justification

How a project addressed the principles of ESD is an integral component of the justification of the project. How ESD considerations influenced the development and will influence the construction of a project should be summarised in this section.

Table 2 provides a sample of a format for addressing ESD concerns within the justification section. The table also contains examples of statements that provide evidence of how a project may have responded to each of the four ESD principles.

Table 2: Addressing ESD in Justification

ESD principle	Best practice approach – potential response
Precautionary principle	<ul style="list-style-type: none"> • Issues that may cause serious or irreversible environmental damage as a result of the proposed project and where there is scientific uncertainty as to the nature of the damage have been identified. • Best available technical information, environmental standards and measures have been used to minimise environmental risks. • Preferred route alignment that minimises vegetation clearance, with particular consideration of sensitive areas, was selected. • Preferred route alignment to avoid or minimise potential damage to known items or areas of cultural significance was selected • Route alignment that minimises potential impacts on existing residential properties and other existing land uses, while also taking into consideration potential impacts on proposed future land use was selected. • Conservative “worst case” scenarios were considered while assessing environmental impact. • Specialist studies were incorporated to gain a detailed understanding of the existing environment.

ESD principle	Best practice approach – potential response
Intergenerational equity	<ul style="list-style-type: none"> • A preferred route alignment that minimises vegetation clearance within sensitive ecological areas to ensure that such areas are conserved for future generations has been selected. • Water quality, fauna connectivity and hydrological measures were included into the design to ensure that the impacts on the distribution of flora, fauna and ecological communities within sensitive ecological areas are minimised both for the short and long term. • Possible compensatory habitat or offsets were identified. • An Aboriginal cultural heritage assessment, including consultation with the local Aboriginal community, was carried out as part of the route selection process and during the environmental assessment phase to avoid or minimise the potential for irreparable damage to occur to Aboriginal cultural heritage during the construction. • The economic benefits in the form of freight efficiency and development potential for surrounding areas for the current and future generation were identified. • Issues that have potential long-term implications were minimised or avoided, for example consumption of non-renewable resources, waste disposal, greenhouse emissions, removal of vegetation and impacts on water quality, through route/concept selection and application of management measures. • Requirements to minimise the impact of climate change from greenhouse emissions were implemented, for example minimising vegetation clearance, optimising fuel economy of all construction machinery, use of green energy for on-site electrical energy requirements, use of recycled materials where feasible and investigating the feasibility of using biofuels in construction equipment. • Benefits that the project provides to current and future generations of local communities and the surrounding region that would maintain or enhance the health, diversity and productivity of the environment were identified. • Issues associated with the sterilisation, fragmentation or better use of agricultural land, especially in land of regional agricultural importance.
Conservation of biological diversity	<ul style="list-style-type: none"> • Landscape strategy was developed and implemented which reflected the structure and species of locally endemic flora to ensure that biological diversity in the local area is maintained. • Appropriate scope considered for connectivity and key corridors for species likely to occur in the area. • Design features that would allow safe movement patterns for native fauna species were incorporated. • Site selection criteria were established for construction phase facilities that include minimising native vegetation clearance. • The cultural significance of the remaining areas of native vegetation

ESD principle	Best practice approach – potential response
	<p>and native fauna to the local Aboriginal community was considered.</p> <ul style="list-style-type: none"> • Biodiversity offset package (such as riparian habitat restoration, compensatory habitats, and progressive revegetation using native seedlings) for unavoidable residual impacts was implemented.
Improved valuation, pricing and incentive mechanisms	<ul style="list-style-type: none"> • Environmental issues were considered as key matters in the route selection process and in the economic and financial feasibility assessments for the project. • Minimising the division of individual properties and the subsequent potential economic impacts on affected property owners were considered. • The economic value of state forests was recognised and the area of state forest directly affected by the project minimised. • The value of the project to the community in terms of improved safety was recognised. • Mitigation measures for the avoidance, reuse, recycling and management of waste during construction and operation are to be implemented.

5 References

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Preston, Brian (2007) *The Environment and its Influence on the Law*. Keynote address to Legal Aid New South Wales Civil Law Conference, 26th September 2007, Sydney.

Preston, Brian (2008a) *Principles of Ecologically Sustainable Development*. Presentation to the National Trust Corporate Breakfast 23rd November 2006, Sydney.

Preston, Brian (2008b) *Water and Ecologically Sustainable Development in the Courts*. A paper presented to the Australian Sustainability Laws and Water Management: The Future Symposium, 17th October 2008, Adelaide.

RTA Economic Analysis Manual.

Transport Authorities Greenhouse Group (TAGG) Carbon Gauge Greenhouse Gas Calculator for road projects.

United Nations Sustainable Development (1992) *Agenda 21*. United Conference on Environment and Development, 3rd – 14th June 1992, Rio de Janeiro.

6 Terms and acronyms

Term or acronym	Definition or meaning
EIA	Environmental impact assessment
EIS	Environmental impact statement prepared for a State significant infrastructure project under part 5.1 of the EP&A Act
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Australia)
ESD	Ecologically sustainable development
LEC	Land and Environment Court (NSW)
Minister	Minister for Planning (NSW)
PEA Act	<i>Protection of the Environment Administration Act 1991</i> (NSW)
PEI	Preliminary environmental investigation
REF	Review of environmental factors
SEARs	Secretary's environmental assessment requirements

7 Related documents

- EIA-P05-2 - Project Review of Environmental Factors procedure - roads
- EIA-P05-3 - Project Review of Environmental Factors procedure - maritime
- EIA-P03 - Environmental assessment procedure for State significant infrastructure

Appendix 1

History of ecologically sustainable development

The United Nations recognised a need to consider the impact of human activities on the environment for future generations, convening the Brundtland Commission in 1983. The landmark report that followed defined sustainable development as “development that meets the needs of the present generation without compromising the ability of future generations to meet their needs” (Brundtland, 1987).

In Australia, the National Strategy for Ecologically Sustainable Development (NSES) was endorsed by the Council of Australian Governments in December 1992. The strategy defines ESD 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 strategy defines three core objectives:

- To enhance individuals' and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations.
- To provide equity within and between generations.
- To protect biological diversity and maintain essential ecological processes and life support systems.

The progress of implementation of the strategy is reported biannually.

The principles of ESD have since been incorporated into NSW planning legislation and have been invoked in case law.

Appendix 2

Ecologically sustainable development in case law

Court findings on ESD

Since 1993 the NSW Land and Environment Court (LEC) has delivered several judgements which provide interpretation on the application of ESD principles in practical situations. The NSW Court of Appeal has now also made judgement on the application of ESD principles which at times overturns the earlier decisions of the LEC. ESD has also been considered by the Federal Court.

Details of some recent cases in NSW involving the consideration of ESD principles in the environmental approval process is included below with links to the relevant judgements. Although some of the decisions relate to Part 4 developments, these cases have played a role in the evolution of the legal interpretation of ESD and its application to Part 5.1 projects and Part 5 activities.

- [Carstens v Pittwater Council \[1999\] NSWLEC 249.](#)
- [Telstra Corporation Limited v Hornsby Shire Council \[2006\] NSWLEC 133](#)
- [BGP Properties Pty Limited v Lake Macquarie City Council \[2004\] NSWLEC 399](#)
- [Gray v Minister for Planning & Ors \[2006\] NSWLEC 720](#)
- [Drake-Brockman v Minister for Planning & Anor \[2007\] NSWLEC 490](#)
- [Walker v Minister for Planning \[2007\] NSWLEC 741](#) (note overturned by Court of Appeal decision below).
- [Walker v Minister for Planning \[2007\] NSWCA 224](#)
- [Anderson v Director-General of the Department of Environment and Climate Change \[2009\] NSWCA 337](#)
- [Aldous v Greater Taree Council \[2009\] NSWLEC 17](#)

Lessons for Roads and Maritime

The court decisions provide guidance for Roads and Maritime projects being assessed under Part 5.1 and Part 5 of the EP&A Act. It should be noted that this guidance is not legal advice and is provided for general information only. It is not intended to replace the need to seek specific legal advice for a project if it is required.

Court decisions generally focus on environmental impact assessment processes, as these provide documentary evidence of how ESD has (or has not) been considered in the development of a project. Challenges to Part 5.1 approvals concerning ESD have to date challenged adequacy of environmental assessment as well as procedural components of the environmental assessment and decision making process. The Secretary's environmental assessment requirements (SEARs) and the content of a proponent's environmental assessment, which inform the Minister's decision, will therefore be subject to potential scrutiny. However, the environmental impact assessment can only reflect how well ESD principles have been integrated into project decision making.

Key lessons from court decisions for the assessment of Roads and Maritime projects include:

- **ESD is an element of the “public interest”**. Failure to consider ESD where relevant may provide strong evidence of failure to consider the public interest.
- The **precautionary principle** applies only where there is both threat of serious or irreversible harm to the environment and scientific uncertainty as to the extent of the impacts.
- **ESD aspects relevant to a proposal** should be identified and discussed in EIA documentation proportionate to the degree of impact. For example, climate change flood and sea level rise issues will likely be relevant for projects near the coast and estuaries.
- **ESD should be given meaningful consideration commensurate with the degree or risk or impact**. In Part 5.1 environmental impact statements, relevant principles of ESD should be considered regardless of whether these are identified in the SEARs.

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Prepared by	Environmental Officer Senior Environmental Specialist (Planning and Assessment)
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Your comments and suggestions to improve this or any of the EIA guidelines may be sent to:

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