

PART P86
DESIGN ENVIRONMENTAL

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1. GENERAL

- .1 This Part specifies the requirements for incorporating environmental protection matters into the Detailed Design of the Works. This Part is only to be used for consultancy works in conjunction with Part P85 Detailed Design and AS 4122.
- .2 **“Environmental authorisation”** includes an approval, licence, permit or exemption.
- .3 The following documents are referenced in this Part:
- .4 Unless specified otherwise, all design shall be undertaken in accordance with the following:
 - (a) DPTI: Project Environmental Management Plan Guidelines for Construction – Road, Bridge and Marine Facilities;
 - (b) DPTI: Roadside Significant Sites;
 - (c) DPTI: Cultural Heritage Guidelines;
 - (d) DPTI: Protecting Waterways Manual;
 - (e) DPTI: Water Quality Monitoring Manual for Construction;
 - (f) DPTI: Road Traffic Noise Guidelines;
 - (g) DPTI: Vegetation Removal Policy;
 - (h) DPTI: Landscape Standards and Guidelines - VE101 Vegetation Survey Guidelines;
 - (i) EPA: Stormwater Pollution Prevention Code of Practice for Local, State and Federal Government, www.dehaa.sa.gov.au/epa/codes.html;
 - (j) EPA Vic: Acid Sulphate Soil and Rock, publication 655. www.epa.vic.gov.au;
 - (k) National Environment Protection (Assessment of Site Contamination) Measure 1999 www.ephc.gov.au/nepms/cs/con_sites.html.
- .5 DPTI publications are available from: <http://www.dpti.sa.gov.au/documents>.
- .6 Other publications are available on the nominated web site or directly from the agency concerned.

2. PROJECT ENVIRONMENTAL MANAGEMENT PLAN

- .1 If a Project Environmental Management Plan (PEMP) has not been prepared during the project planning phase, the Contractor shall prepare a PEMP in accordance with the DPTI: Project Environmental Management Plan Guidelines for Construction – Road, Bridge and Marine Facilities. If a PEMP has been previously prepared for the project, the Contractor shall review the PEMP and if necessary, update the PEMP to ensure that it addresses all environmental matters relative to the project.

3. ENVIRONMENTAL OBJECTIVES

- .1 The Contractor’s design shall be undertaken to maximise the achievement of the following objectives:
 - (a) include the principles of sustainability in the design of the Works, including:
 - .1 minimise resource use and waste generated during construction;
 - .2 minimise the generation of greenhouse gases;
 - .3 maximise recycling; and
 - .4 disposal of waste in an environmentally appropriate manner;
 - .5 incorporate Water Sensitive Urban Design (WSUD) elements:
 - a) prevent disturbance to Aboriginal Heritage sites;
 - b) protect and conserve non-Aboriginal cultural heritage sites;

- c) prevent pollution of surface, ground and marine waters;
- d) avoid acid sulphate soils where possible or mitigating impacts;
- e) avoid mobilisation of contaminants and where feasible, remediation of contaminated land on the Site;
- f) limit the destruction or disturbance of native flora and significant trees;
- g) maintain and preserve existing areas of vegetation;
- h) eliminate proclaimed pest plants and environmental weeds;
- i) protection of fauna habitat;
- j) enhance the amenity of the surrounding areas with urban design and landscaping; and
- k) protect noise sensitive receivers from traffic noise.

4. ENVIRONMENTALLY SENSITIVE AREAS

- .1 The design of the works and temporary works (where known) shall minimise, to maximum extent practicable, the impact on any environmentally sensitive areas.
- .2 The Contractor shall ensure that the following environmentally sensitive areas, at a minimum, are clearly shown on the relevant Design Documentation:
 - (a) known Aboriginal and non-Aboriginal heritage sites including artefact scatters;
 - (b) contaminated soils and/or contaminated groundwater;
 - (c) actual or potential acid sulphate soils (to be included in foundation plans);
 - (d) operational or disused irrigation / production wells;
 - (e) significant trees and areas of native vegetation;
 - (f) waterways; and
 - (g) noise sensitive areas.

5. ENVIRONMENTAL AUTHORISATIONS

- .1 The Contractor shall identify the environmental authorisations (either under legislation or DPTI internal Procedures) that are expected to be required for the project and include the relevant details in the PEMP. Where these authorisations will need to be obtained by the Principal, the Contractor shall provide all necessary supporting information for the authorisation application.

6. SPECIFIC ENVIRONMENTAL REQUIREMENTS

Flora and Fauna

- .1 Vegetation survey(s) of the Site and details of any approvals obtained by the Principal are included in the appendices. The Contractor shall:
 - (a) ensure that the design minimises the impact upon any areas of native and significant vegetation which have been identified in the vegetation survey(s) provided by the Principal;
 - (b) ensure that the design, to the greatest extent practicable, complies with recommendations contained within vegetation surveys;
 - (c) prepare vegetation removal drawings which 'overlay' the proposed horizontal design onto the vegetation survey drawings to identify all trees, shrubs and areas of vegetation that will require removal for the work under the Contract;
 - (d) submit the vegetation removal drawings to the Principal for use in the assessment of the request to remove the vegetation;
 - (e) arrange for additional vegetation survey to be undertaken in accordance with DPTI Landscape Standards and Guidelines - VE101 Vegetation Survey Guidelines if the Works will affect areas that have not been included in the vegetation survey(s) provided by the Principal. The Contractor may request the Principal to undertake the additional vegetation survey;
 - (f) present any additional vegetation survey on plans which enable the identification of particular trees, shrubs or areas of vegetation by use of the numbering system used in the Principal's vegetation surveys to avoid ambiguity or duplication in numbering of vegetation features;
 - (g) prepare draft documentation to enable the Principal to obtain any necessary approvals in accordance with DPTI's Vegetation Removal Policy for the removal of vegetation where these have not already been obtained by the Principal, which may include approvals required by:
 - .1 DPTI internal procedures;
 - .2 the Development Act (SA) 1993 for Significant Trees;
 - .3 the Native Vegetation Act (SA) 1991; and

- .4 the Environment Protection and Biodiversity Conservation Act (Cth) 1999; and
- (h) prepare a Vegetation Management Plan (VMP) in accordance with DPTI: Vegetation Offset Guidelines and DPTI: Landscape Guidelines for the delivery of the offset and significant environmental benefit required under the Native Vegetation Act (SA) 1991.

Water Quality Protection

- .2 The design shall ensure the management of:
 - (a) pollutants from road runoff and vehicle spills during the operation of the road, and
 - (b) pollutants, sediments and alteration of pH or salinity during the work under the Contract.
- .3 The design of the Works and temporary works shall consider water quality management features to meet the Principal's environmental objectives and the requirements of the following documents:
 - (a) any reports and / or the draft Water Quality Risk Assessment (WQRA) included in the appendices;
 - (b) DPTI Protecting Waterways Manual;
 - (c) Natural Resource Management Act (SA) 2004;
 - (d) Environment Protection Act (SA) 1993;
 - (e) Environment Protection (Water Quality) Policy 2003; and
 - (f) Stormwater Pollution Prevention Code of Practice for Local, State and Federal Government.

Erosion and Sediment Control

- .4 The design of the Works and Temporary works shall:
 - (a) accommodate a range of sediment and erosion control measures where appropriate during construction;
 - (b) if necessary, include temporary stabilisation using sterile rye grass or an approved equivalent method of stabilising until permanent stabilisation / revegetation has been established;
 - (c) ensure that erodible materials are not used as fill; and
 - (d) ensure that all batter slopes have grades that will not result in erosion or are provided with an appropriate surface treatment.

Noise

- .5 Insert details where appropriate.

Air Quality

- .6 Insert details where appropriate.

Contamination

- .7 Insert details where appropriate.

Aboriginal Heritage

- .8 Insert details where appropriate.

7. HOLD POINTS

- .1 There are no hold points referenced in this Part.