

PART D19**DESIGN - ENVIRONMENTAL****CONTENTS**

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1. GENERAL

- .1 This Part specifies the requirements for incorporating environmental protection matters into the design of the Works. It must be read in conjunction with Part G50 "Environmental Management Requirements" and Part CH50 "Environmental Protection Issues".

"Environmental authorisation" includes an approval, licence, permit or exemption.

2. REFERENCES

- .1 Unless specified otherwise, all design must be undertaken in accordance with the following:
 1. DPTI: Contractor's Environmental Management Plan Guidelines for Construction – Road, Rail and Marine Facilities;
 2. DPTI: Rail and Roadside Significant Sites Environmental Instruction 21.5;
 3. DPTI: Cultural Heritage Guidelines;
 4. DPTI: Protecting Waterways Manual;
 5. DPTI: Water Quality Monitoring Manual for Construction;
 6. DPTI: Road Traffic Noise Guidelines;
 7. DPTI: Vegetation Removal Policy;
 8. DPTI: VE101 Vegetation Survey Guidelines;
 9. EPA: Stormwater Pollution Prevention Code of Practice for Local, State and Federal Government, http://www.epa.sa.gov.au/environmental_info/legislation/codes_of_practice
 10. EPA: Acid Sulfate Soil Material Guideline (Nov 2007) www.epa.sa.gov.au/xstd_files/Site%20contamination/Guideline/guide_sc_acid.pdf
 11. National Environment Protection (Assessment of Site Contamination) Measure 1999 <http://www.scew.gov.au/nepms>
- .2 DPTI publications are available from: <http://www.dpti.sa.gov.au/documents> or <http://www.dpti.sa.gov.au/standards/environment>.
- .3 Other publications are available on the nominated web site or directly from the agency concerned.

3. CONTRACTOR'S ENVIRONMENTAL OBLIGATIONS

- .1 The Contractor's design must meet or exceed all environmental requirements specified in this Contract. Where the Contractor's design varies from that contemplated in the environmental documentation provided by the Principal, the Contractor:
 - (a) bears all risks associated with compliance with the environmental requirements associated with the varied design;
 - (b) must obtain any additional authorisations, approvals and licences necessary; and
 - (c) must update the Contractor's Environmental Management Plan to address all environmental protection matters resultant from the work under the Contract which have not been addressed in the documentation provided by the Principal.

4. ENVIRONMENTAL AND SUSTAINABILITY OBJECTIVES

- .1 Subject to the requirements of this CSTR, the Contractor's design and construction methodology must be undertaken to maximise the achievement of the following objectives:
 - (a) include the principles of sustainability in the design and construction of the Works, including:
 - i) minimise resource use and waste generated during construction;
 - ii) minimise the generation of greenhouse gases;
 - iii) maximise recycling; and
 - iv) disposal of waste in an environmentally appropriate manner.
 - (b) incorporate Water Sensitive Urban Design (WSUD) elements;
 - (c) prevent disturbance to Aboriginal Heritage sites;
 - (d) protect and conserve non-Aboriginal cultural heritage sites;
 - (e) prevent pollution of surface, ground and marine waters;
 - (f) avoid acid sulphate soils where possible or mitigating impacts;
 - (g) avoid mobilisation of contaminants and where feasible, remediation of contaminated land on the Site;
 - (h) limit the destruction or disturbance of native flora and significant trees;
 - (i) maintain and preserve existing areas of vegetation;
 - (j) eliminate proclaimed pest plants and environmental weeds;
 - (k) protection of fauna habitat;
 - (l) enhance the amenity of the road corridor and surrounding areas with urban design and landscaping; and
 - (m) protect noise sensitive receivers from traffic noise.

5. ENVIRONMENTAL SPECIALISTS

- .1 Environmental Specialists who undertake assessments, modelling, monitoring or design must be currently on the DPTI panel contracts for environmental and contamination services, or demonstrate eligibility for admission to the panel.

6. ENVIRONMENTALLY SENSITIVE AREAS

- .1 The design of the Works and Temporary Works must minimise, to maximum extent practicable, the impact on any environmentally sensitive areas.
- .2 The Contractor must 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.

7. ENVIRONMENTAL AUTHORISATIONS

- .1 The Contractor must comply with all conditions specified in all environmental authorisations.
- .2 The Principal has or will obtain the environmental authorisations specified in the **Contract Specific Requirements**.
- .3 The Contractor must obtain all other environmental authorisations for the work under the Contract required by law or this CSTR.
- .4 Submission of any environmental authorisations required by law or this CSTR shall constitute a **HOLD POINT** and must be provided at least 10 working days prior to the commencement of work on any part of the site affected by the approval.

8. 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 must:
 - (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) ensure that the landscape design incorporates offsets for impacted native, amenity, regulated and significant vegetation in accordance with the DPTI Vegetation Removal Policy, Native Vegetation Act 1991 and Development Act 1993, where relevant;
 - (d) 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;
 - (e) submit the vegetation removal drawings to the Principal for use in the assessment of the request to remove the vegetation;
 - (f) 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;
 - (g) 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;
 - (h) prepare documentation 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. Template approval forms may be provided by the Principal upon request. The approvals may include those in accordance with:
 - i) DPTI internal procedures;
 - ii) the *Development Act (SA) 1993* for Significant and Regulated Trees;
 - iii) the *Native Vegetation Act (SA) 1991*; and
 - iv) the *Environment Protection and Biodiversity Conservation Act (Cth) 1999*.
- .2 Provision of the above documentation shall constitute a **HOLD POINT**.
- .3 The Contractor's design must comply with any recommendations regarding flora and fauna contained within the reports included in the appendices.

9. WATER QUALITY PROTECTION

- .1 Where applicable to the Works, the design must ensure the management of pollutants generated from the operation and maintenance of the infrastructure, including from road runoff and vehicle spills during the operation of a road.

- .2 Where the Works and / or Temporary Works will (or have the potential to) affect water quality, the design must incorporate 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) referenced in this Contract;
 - (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.
- .3 The Contractor must undertake a Water Quality Risk Assessment at the completion of notionally 30% design or when specified in the **Contract Specific Requirements** and update the WQRA during design development where appropriate.
- .4 The Provision of the Water Quality Risk Assessment documentation shall constitute a **HOLD POINT** and must be provided at least 10 working days prior to the commencement of work on any part of the site.
- .5 The Contractor must undertake a Water Affecting Activities Risk Assessment at the completion of notionally 30% design or when specified in the **Contract Specific Requirements** in accordance with the DPTI Water Affecting Activities Permits Standard Operating Procedure. Should the risk assessment identify the need for a Water Affecting Activities (WAA) Permit, the Contractor must obtain a permit from the relevant Natural Resources Management Board. Prior to applying for the WAA Permit, the Contractor must confirm the findings of the risk assessment with the Principal.

10. EROSION AND SEDIMENT CONTROL

- .1 The design of the Works and Temporary works must:
 - (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.

11. NOISE AND VIBRATION

- .1 The design of a road must comply with the DPTI Road Traffic Noise Guidelines (RTNG), which provide guidance on addressing road traffic noise in the planning and design of infrastructure projects.

12. CONTAMINATION

- .1 If the work under the Contract will affect areas that have not been included in any contamination investigation provided by the Principal, the Contractor must arrange for a suitably qualified contamination consultant to undertake any further investigation necessary (prior to construction and during construction) to determine the scope and nature of contamination.
- .2 The design of the Works and Temporary works must address the management of contaminated material.

13. ABORIGINAL HERITAGE

- .1 If the work under the Contract will affect areas that have not been included in any Aboriginal heritage survey provided by the Principal, the Contractor must advise the Principal in order for additional surveys to be undertaken, if required, in accordance with DPTI's Cultural Heritage Guidelines. The Principal will organise any additional surveys.
- .2 Provision of advice to the Principal shall constitute a **HOLD POINT**.

14. HOLD POINTS

.1 The following is a summary of Hold Points referenced in this Part:

CLAUSE REF.	HOLD POINT	RESPONSE TIME
7.	Submission of any environmental approvals or licences	10 Working Days
8.1	Provision of documentation to seek vegetation removal approval	3 months
8.2	Provision of the Water Quality Risk Assessment documentation	10 Working Days
8.7	Provision of advice on need for additional Aboriginal heritage surveys	3 months

15. RECORDS

The following records must be provided to the Principal:

Drawings

Vegetation Removal Plans.

Environmentally Sensitive Areas Plan.

Reports

Where appropriate, the surveys or reports which address:

- Additions or revisions to the CSR;
- Water Quality Risk Assessment, including additions or revisions;
- Additional Vegetation Survey;
- Additional Site Contamination Investigation;
- Additional Non-Aboriginal Heritage Survey;
- Revised air quality modelling;
- Road traffic noise investigation, calculations and mitigation measures;
- incorporation of sustainability measures;
- management of noise and vibration;
- Draft documentation to enable the Principal to obtain any necessary approvals in accordance with DPTI's Vegetation Removal Policy for the removal of vegetation; and
- any other surveys, reports or studies issued to address environmental issues.

Implementation Records

The following approvals or licences where appropriate (at least 14 days prior to the commencement of work on any part of the site affected by the approval):

- Approval for the removal of vegetation in accordance with the *Development Act (SA) 1993* for Significant Trees, the *Native Vegetation Act (SA) 1991* and/or the *Environment Protection and Biodiversity Conservation Act (Cth) 1999*.
- Earthworks Drainage Licence from the Environment Protection Agency or any licence / approval or permit required under the *Environment Protection Act (SA) 1993*.
- Any other licence/approval or permit required under any other legislation.