

PART CH50
ENVIRONMENTAL PROTECTION ISSUES

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1. GENERAL

- .1 This part specifies the environmental protection requirements. The requirements specified in this part apply unless stated otherwise by the Principal.
- .2 Where appropriate to the work being undertaken, the Contractor shall comply with the following:
 - (a) SA Environment Protection Authority (EPA) Stormwater Pollution Prevention Code of Practice for Local, State and Federal Government, available from <http://www.epa.sa.gov.au/pdfs/govcop1.pdf>;
 - (b) SA EPA Guidelines for Environmental Management of On-site Remediation;
 - (c) DPTI Protecting Waterways Manual;
 - (d) DPTI Water Quality Monitoring Manual for Construction;
 - (e) DPTI: Vegetation Removal Policy;
 - (f) DPTI Environmental Instruction 21.7 "Management of Noise and Vibration: Construction and Maintenance Activities";
 - (g) DPTI Cultural Heritage Guidelines;
 - (h) AS 1940 "The storage and handling of flammable and combustible liquids";
 - (i) AS 4373 "Pruning of Amenity Trees";
 - (j) AS 4970 "Protection of Trees on Development Sites"; and
 - (k) any applicable environmental legislation.
- .3 DPTI publications are available from: <https://www.dit.sa.gov.au/standards>

2. VEGETATION PROTECTION**Vegetation Clearing and Pruning**

- .1 The Contractor shall undertake all tree pruning and removal in accordance with Part L40 Tree Pruning and Removal. The Contractor shall obtain all approvals required in accordance with the DPTI Vegetation Removal Policy prior to commencing vegetation pruning and removal work.
- .2 Provision of vegetation removal approval documentation to the Principal prior to vegetation pruning and/or removal shall constitute a HOLD POINT.
- .3 The Contractor shall:
 - (a) not prune, remove or otherwise damage any vegetation beyond the Contractor's Activity Zone (CAZ). Vegetation clearance beyond the CAZ is only allowed with prior approval of the Principal or where pruning is required to meet AS 4373, however it must be limited to the minimum amount practicable;
 - (b) liaise with the landowner, local Council where relevant, and other key stakeholders, and obtain any necessary authorisations, prior to whole tree removal;

- (c) dispose of excess vegetative material in accordance with Part L40 Tree Pruning and Removal and Part L48 Control of Weeds and Herbicide Control of Roadside Vegetation.
- .4 All tree pruning and removal shall be undertaken by a DPTI pre-qualified arborist, unless the vegetation removal:
 - (a) is limited to clearing and grubbing; and
 - (b) is wholly undertaken by machinery such as a bulldozer, front end loader or grader.
- .5 Refer to <https://www.dit.sa.gov.au/documents> for a list of prequalified arborists.

Protection of Non-target Vegetation

- .6 The Contractor shall ensure that any non-target vegetation is not damaged as a result of construction activities.
- .7 The Contractor shall:
 - .1 not damage roots within the Structural Root Zone (as defined in AS 4970) of any remaining tree;
 - (b) not park or store vehicles, plant or equipment, or stockpile material within the Tree Protection Zone (TPZ, as defined in AS 4970), or on any remaining native or amenity vegetation;
 - (c) minimise root damage within the TPZ and clean saw cut any roots exposed during works; and
 - (d) ensure works are planned to avoid impacting high value vegetation, including Rail and Roadside Significant Sites, wherever practicable.
- .8 If the Works includes earthworks batters, the mulch shall be stockpiled prior to being spread over the batters at the completion of earthworks.

3. FAUNA PROTECTION

- .1 Approval documentation for fauna impacts must be provided to the Principal prior to those impacts occurring and shall constitute a HOLD POINT. This applies to authorisations under the *Environment Protection and Biodiversity Conservation Act 1999*.
- .2 The Contractor shall:
 - (a) implement all reasonably practicable measures to minimise disturbance to fauna and prevent injury to fauna;
 - (b) contact Fauna Rescue SA, the RSPCA or a veterinarian for advice if any injured fauna is found on the Site;
 - (c) under the supervision of a suitably qualified person, relocate any native fauna to a similar habitat if that fauna's habit will be destroyed by the Contractor's work, and
 - (d) notify the Principal if any injured or dead native fauna is found on the Site.
- .3 The Contractor shall relocate hollows in accordance with Part L40 Tree Pruning and Removal.

4. WEED, PEST AND DISEASE CONTROL

General

- .1 The Contractor shall:
 - (a) comply with the requirements of the *Natural Resources Management Act 2004* (NRM Act) in regard to declared animals and plants, including disposal;
 - (b) obtain the required authorisations to transport or move declared animals or plants on a public road in accordance with the NRM Act;
 - (c) undertake all weed control activities in accordance with Part L48 Control of Weeds and Herbicide Control of Roadside Vegetation;
 - (d) ensure that declared animals, declared plants and environmental weeds (including seeds and other propagules) are not introduced to the MAZ or spread as a result of any maintenance activities. Effective hygiene practices must be used on all vehicles, plant and equipment. Environmental weed species are listed in the DPTI Weeds List;
 - (e) notify the Principal in the event of any outbreak of declared animal, declared plant or environmental weed resulting from maintenance activities associated with this Contract. The

Contractor shall develop and implement a management plan to control the outbreak until the outbreak is eradicated or as agreed to by the Principal.

- .2 If the Contractor is undertaking work that requires control of declared animals, e.g. rabbits, the Contractor shall liaise with the relevant regional Natural Resources staff of the Department of Environment, Water and Natural Resources (DEWNR) and coordinate control activities where practicable.
The regional Natural Resources offices of DEWNR <http://www.naturalresources.sa.gov.au> and PIRSA BiosecuritySA <https://www.pir.sa.gov.au/biosecurity> can provide advice about pest plants and animals, if required.

Phytophthora Control

- .3 Phytophthora is a plant pathogen that can result in dieback of vegetation. The Contractor shall plan and undertake its construction activities in accordance with DPTI Phytophthora (Dieback) Control Environmental Instruction 21.3..
- .4 The Contractor shall undertake a Phytophthora risk assessment to determine the required hygiene procedures and disposal requirements, and must implement those procedures during work.

5. WATER QUALITY PROTECTION

- .1 The Contractor shall ensure that any water entering the natural watercourse system or stormwater drainage system from areas disturbed by the Contractor complies with the Environment Protection (Water Quality) Policy 2003.
- .2 The Contractor shall prevent solid waste, oils, chemicals, bitumen spray waste, pavement marking scrubbing waste and waste water from brick, concrete and asphalt cutting from leaving the site or entering existing waterways. These shall be collected and disposed of or recycled at a licensed waste depot.

6. EROSION AND SEDIMENT CONTROL

Soil Erosion and Drainage Management Plan

- .1 The Contractor shall develop, implement and maintain a Soil Erosion and Drainage Management Plan (SEDMP) as part of its Contractor's Environmental Management Plan (CEMP). The SEDMP shall be developed in accordance with:
 - (a) SA EPA Stormwater Pollution Prevention Code of Practice for Local, State and Federal Government; and
 - (b) DPTI Protecting Waterways Manual.
- .2 The SEDMP may include the following, as required:
 - (a) Water Affecting Activities Risk Assessment (in accordance with the DPTI Water Affecting Activities Permits Standard Operating Procedure);
 - (b) any management requirements from a Water Affecting Activities Permit; and
 - (c) Water Quality Monitoring Plan (in accordance with the DPTI Water Quality Monitoring Manual for Construction Sites),
- .3 The SEDMP shall be updated prior to any changes to construction processes that may impact upon erosion or sedimentation. The Contractor shall provide the SEDMP at least 5 working days prior to works that may disturb the natural surface.
- .4 Provision of the SEDMP or any amendment to the SEDMP shall constitute a **HOLD POINT**.

Protection of Watercourse and Drainage Systems

- .5 The Contractor shall not obstruct or divert any waterway, stream or channel, unless authorised by the Principal. The Contractor is responsible for assessing and developing effective control measures for the Works. Control measures shall be suitable for any rainfall event that may result in surface runoff and shall be fully operational prior to commencing work.
- .6 The Contractor is responsible for the design, construction, operation and maintenance of drainage and temporary erosion control measures.
- .7 The Contractor shall:
 - (a) plan and carry out the whole of works to minimise the effects of runoff and erosion on the site and downstream areas;

- (b) avoid unnecessary ground disturbance and provide for the proper control of stormwater runoff at every stage;
 - (c) ensure that all required runoff, erosion and sediment control measures are in place and comply with its SEDMP prior to the commencement of earthworks;
 - (d) establish sediment control structures around all areas prone to erosion including stockpiles, batters and drainage lines;
 - (e) locate any stockpiles away from drainage lines and in locations with minimal susceptibility to wind;
 - (f) utilise any existing stockpile sites where practicable; and
 - (g) treat any stormwater retained in a basin or treatment device prior to discharge (including discharge to groundwater).
- .8 Works undertaken within a watercourse shall comply with the following requirements:
- (a) works shall not cause destabilisation of the bed and banks of the watercourse;
 - (b) all excavated material shall be removed from the watercourse and securely stored away from the watercourse to ensure that it does not return to the watercourse; and
 - (c) any material placed in and around the bed and banks of the watercourse shall be compacted to prevent the movement of loose material and downstream sedimentation.
 - (d) Immediately after the completion of earthworks areas (including batters, drains, cut and fill areas), or if earthworks areas are to remain essentially the same for 2 days or more, the Contractor shall install temporary measures to prevent erosion and/or control sediment. All proposed temporary erosion and sediment control measures shall be documented in the SEDMP.

Inspection and Reporting

- .9 The Contractor shall inspect any temporary and permanent siltation and erosion control devices:
- (a) before, during and immediately after a rain period; and
 - (b) once per week during dry weather.
- .10 The Contractor shall maintain a register documenting all relevant information, recording inspection dates, names of personnel performing the inspections, corrective actions, and performance of siltation control devices. The register shall include:
- (a) the location and description of all sediment control structures and all in-stream devices on scale diagrams;
 - (b) the time and date on which the sediment control structures and in-stream devices are inspected, and record observations made as to their operating effectiveness;
 - (c) the time and date on which the sediment control structures and in-stream devices are cleaned, repaired, maintained or altered and record the action taken;
 - (d) any corrective actions required; and
 - (e) the name and signature of the person making each entry.
- .11 The register shall be made available for viewing when requested by the Principal or Environment Protection Authority representatives.
- .12 Results of water quality monitoring shall be made available to the Principal upon request, within 24 hours of collection of data.
- .13 The Contractor shall rectify any defects revealed during an inspection immediately and these erosion control measures and sediment collection structures shall be cleaned, repaired and augmented as required to ensure effective control thereafter.

7. NOISE AND VIBRATION MANAGEMENT

- .1 The Contractor shall manage noise and vibration in accordance with DPTI Environmental Instruction 21.7 Management of Noise and Vibration: Construction and Maintenance Activities.
- .2 The Contractor shall prepare and implement a Construction Noise and Vibration Management Plan, and Night Works Management Plans (NWMPs), where required in accordance with Environmental Instruction 21.7. Submission of a NWMP to the Principal shall constitute a **HOLD POINT**.

8. AIR QUALITY PROTECTION

- .1 The Contractor shall suppress nuisance dust from any construction activities including access tracks, haul roads and stockpile sites and ensure that effective dust control measures are in place, particularly where the safety and convenience of people are affected.
- .2 Where applicable to the work under the Contract, the Contractor shall implement the following measures to minimise air pollution from the construction works:
 - (a) limiting on-site vehicle speeds;
 - (b) selecting appropriate surface materials for haul roads to minimise dust generation, e.g. gravel, bitumen seal;
 - (c) removing dirt and mud from construction equipment before it leaves the Site (this can be achieved through the use of shaker ramps, truck wash downs and wheel washes);
 - (d) locating stockpiles away from areas susceptible to disturbance by wind;
 - (e) covering loads carried by trucks;
 - (f) promptly removing any material that is spilt on to public roads or other sealed pavements;
 - (g) stabilise materials to be stockpiled for longer than a period of 1 month by grass seeding, covering or other appropriate means to prevent generation of dust;
 - (h) the progressive revegetation of the Site as work proceeds where this forms part of the Contract;
 - (i) watering of the Works areas and temporary paving of haul roads to suppress dust;
 - (j) avoid or minimise dust-generating activities during dry and windy conditions; and
 - (k) minimise the extent of exposed, stripped surface until covered with appropriate fill material.
- .3 The Contractor shall:
 - (a) cease any activity where that activity create a dust hazard of nuisance to the public, personnel working on the Site or properties in the vicinity of the Works;
 - (b) where dust is likely to be raised, ensure that an adequate number of water carts are on site at all times during the Contract and that they are used appropriately (separate payment will not be made for the use of the water cart);
 - (c) not permit the emission of odorous substances or particulates, which create or are likely to create objectionable conditions for the public; and
 - (d) maintain all construction plant and equipment such that they do not emit to the atmosphere visible smoke for any period greater than:
 - .1 15 consecutive seconds (in the case of plant not being registered for the use on public roads), and
 - .2 10 consecutive seconds (in the case of plant registered for use on public roads).
- .4 If specified by the Principal, the Contractor shall prepare and implement a dust monitoring program.

9. ENERGY EFFICIENCY AND GREENHOUSE GAS EMISSIONS

- .1 The Contractor shall identify and implement actions to reduce energy use and greenhouse gas emissions including:
 - (a) using energy efficient vehicles, plant and equipment, and adequately maintaining them to ensure continued efficiency;
 - (b) using alternative or low emission fuels, such as LPG or biodiesel/biodiesel blends for vehicles, plant and equipment;
 - (c) minimising idling time of vehicles, plant and equipment;
 - (d) using energy efficient office equipment and adopting energy efficient practices within site compounds.
- .2 The Contractor shall include energy efficiency measures and monitoring data in environmental reports (refer to Part G50) and provide this information to the Principal upon request

10. MATERIALS, FUELS AND WASTE MANAGEMENT

Construction Water

- .1 The water source(s) to be used for construction purposes (including dust control) shall be identified in the CEMP.

- .2 The Contractor shall investigate, document and where possible, implement the use of sustainable water sources as an alternative to potable and prescribed water sources during construction. If the Contractor uses water from any source other than a SA Water mains supply, the Contractor shall obtain all approvals, licences or permits that are required to extract the water or to construct a bore, prior to water extraction. Refer to Part CH10 Construction – General Provisions, Clause 14.3 "Water" for other requirements regarding water not sourced from a SA Water mains supply.
- .3 The Contractor shall comply with any permanent water conservation measures and current SA Water restrictions applicable to the Site.

Reuse and Recycling of Materials

- .4 The Principal encourages the reuse and recycling of material in infrastructure projects. Recycled Pavement Materials shall comply with Part R15 Pavement Materials, Clause 7 "Recycled Pavement Materials".
- .5 The Contractor shall maintain a record of the use of recycled materials on the project, including steel, concrete, fill and pavement material, using the form attached as Attachment CH50A. At a minimum, the record shall display:
 - (a) recycled material which has been brought onto the Site,
 - (b) existing material which is recycled on the Site;
 - (c) material which is removed from the site to be recycled; and
 - (d) material which is removed from the site and placed in landfill.
- .6 The record shall be provided to the Principal upon request and at completion of work on Site.
- .7 Where the Contractor proposes to reuse material or use recycled material for purposes other than pavement construction, the Contractor shall ensure that an environmental risk assessment is undertaken and documented in the CEMP. This applies to material won from the site and imported material.
- .8 For material won from the site, the risk assessment shall include an assessment of potential site contamination from current and previous land uses, and the potential risks to human health or the environment resulting from the use of the material in the proposed location(s).
- .9 For imported, recycled material, the risk assessment shall include a report from a suitably qualified environmental consultant stating the material's classification (as per the EPA Standard for the Production and Use of Waste Derived Fill) and suitability for use at the site. The Contractor shall comply with any environmental management recommendations in the report, and the recommendations shall be incorporated into the CEMP.
- .10 The Contractor shall provide a copy of the above documentation at least 7 days prior to the reuse of materials or use of recycled materials. Provision of this documentation shall constitute a **HOLD POINT**.
- .11 The Contractor shall identify the waste streams that will be generated by the Contract and shall investigate opportunities to recycle these materials. Where feasible, the Contractor shall ensure waste streams are kept separate and shall dispose of surplus material to appropriate resource recovery facilities. This applies to soils, aggregate, asphalt planings, waste concrete and demolition materials.

Storage and Handling of Hydrocarbons and Hazardous Liquids

- .12 The Contractor shall ensure that any fuel, oil, lubricants and other chemicals stored on site:
 - (a) are stored in accordance with the relevant Australian Standards;
 - (b) are stored within a bund with an impervious floor; and
 - (c) are not stored in an area which is subject to flooding or is within 20 metres of a natural or built drainage line.
- .13 The Contractor shall ensure that:
 - (a) fuel, oil or lubricants do not leak from machinery;
 - (b) appropriate methods during refuelling and maintenance are implemented to ensure that any spills/leaks are contained;
 - (c) a hydrocarbon spill kit(s) for the purpose of cleaning up oil and fuel spillage is accessible at all times and personnel trained in the efficient deployment of the spill kit are readily available in the event of a spill; and
 - (d) a responsible person is always in attendance while refuelling operations are in progress.

- .14 In the event of a leak, the Contractor shall immediately clean up the contaminated area, dispose of any affected material to the nearest licensed waste depot and if necessary, replace the contaminated soil with clean fill.
- .15 Maintenance of vehicles and machinery shall be carried out off site where practicable. If maintenance is to occur on site, the location and procedure shall be documented in the CEMP.

Waste Management

- .16 Except for any material to be mulched, all waste material resulting from the work under the Contract is the property of the Contractor and shall be removed from the site within 7 days or placed in a container with fitted lids for disposal at a later date. Refer to Part L40 Tree Pruning and Removal, Clause 5 "Disposal of Cut Material" for requirements relating to the disposal or retention of mulched material, available from <https://www.dit.sa.gov.au/documents>.
- .17 The Contractor shall:
 - (a) keep the Site in a clean and tidy condition at all times;
 - (b) regularly remove and dispose all site rubbish and waste;
 - (c) provide bins with fitted lids to prevent windblown litter and attraction of pest animals;
 - (d) carry out the work in a manner which minimises the generation of waste materials;
 - (e) whenever practicable, re-use or recycle materials from the Works to prevent their inclusion on landfill; and
 - (f) dispose of rubbish, waste materials, hazardous wastes and contaminated material in accordance with Environment Protection Agency requirements.
- .18 On completion of the work on Site, the Contractor shall remove all construction plant, Temporary Works, surplus material, rubbish and waste and leave the site in a clean and tidy condition.

11. CONTAMINATION MANAGEMENT

- .1 The Contractor shall:
 - (a) manage contamination issues in accordance with the *Environmental Protection Act 1993*;
 - (b) include procedures for safe working contaminated materials in the Work Health and Safety Management Plan (refer Part G30 Work Health and Safety);
 - (c) maintain a register of the nature, type and location of contamination encountered on the site;
 - (d) immediately notify the Principal in writing if any potential soil or water contamination not previously identified becomes evident during construction; and
 - (e) as far as practicable, ensure that potentially contaminated material is not mixed with clean material, e.g. during stockpiling activities.

12. CULTURAL AND NATURAL HERITAGE MANAGEMENT

- .1 The Contractor is responsible for the management of cultural and natural heritage affected or potentially affected by the works.
- .2 The Contractor shall undertake a Heritage Risk Assessment, which addresses both Aboriginal and non-Aboriginal heritage. This may involve the Contractor undertaking heritage surveys to inform the risk assessment.
- .3 The Contractor shall document in the CEMP any actions required to manage the identified heritage risks. This documentation may be in the form of a Cultural Heritage Management Plan and/or a Conservation Plan.

Aboriginal Heritage

- .4 The Principal will obtain any required authorisation to damage, disturb and/or interfere with Aboriginal sites, objects or remains under Section 23 of the *Aboriginal Heritage Act 1988*.
- .5 It is the responsibility of the Contractor to engage and manage any heritage specialists, including Aboriginal heritage survey participants, monitors, archaeologists and/or anthropologists, for the purposes of this Contract. This includes managing the payment of these specialists and ensuring the appropriate number of Aboriginal heritage survey participants and monitors are present as required.
- .6 The Contractor shall not agree to any terms and conditions, or make any payments (whether direct or indirect), in relation to the engagement of Aboriginal groups or individuals without prior approval from the

Principal. The Principal will obtain concurrence for these payments in accordance with South Australian Government guidelines. The Contractor shall allow a minimum of 6 weeks for concurrence to be obtained.

- .7 If, at any time, an Aboriginal site or a site containing items associated with Aboriginal occupation is uncovered, the Contractor shall follow the DPTI Aboriginal Objects, Sites and Remains Flow Chart. This includes stop work and notification requirements. The Contractor shall not recommence work in the affected area until directed to do so by the Principal.
- .8 The Contractor shall be involved in negotiations, in conjunction with the Principal, on the management of any identified Aboriginal Objects, Sites and Remains with relevant Aboriginal groups and the Department of State Development, Aboriginal Affairs and Reconciliation.

Non-Aboriginal Heritage

- .9 The Contractor shall obtain any approvals required under the *Development Act 1993* and the *Heritage Places Act 1993*.

If the Contractor causes damage to a heritage place or object listed on the South Australian Heritage Register, the Contractor shall arrange for the repairs required in a manner that is consistent with the character and fabric of the item. The Contractor shall obtain any approval required for these repairs.

13. HOLD POINTS

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

CLAUSE REF.	HOLD POINT	RESPONSE TIME
2.1	Commencement of clearing.	5 working days
6.1	Submission of SEDMP	5 working days
7.2	Submission of Night Works Management Plan	10 working days
9.2	Provision of Recycled Materials Documentation	5 working days

14. ATTACHMENT CH50A – EXAMPLE RECYCLED MATERIALS RECORD

Contract Name:

Type(s) of Material Recycled	Source of Material	Destination of Material	End use of Material (if known)	Volume of recyclable materials generated from project	Volume of recycled materials used by project
