

Environmental Sub Plan

Waste and Reuse Management Sub plan
Appendix 8 to the EMP (Maintenance)

10YEAR MAINTENANCE PERIOD

PACIFIC HIGHWAY UPGRADE
BRUNSWICK HEADS TO YELGUN

Release 18 May 07

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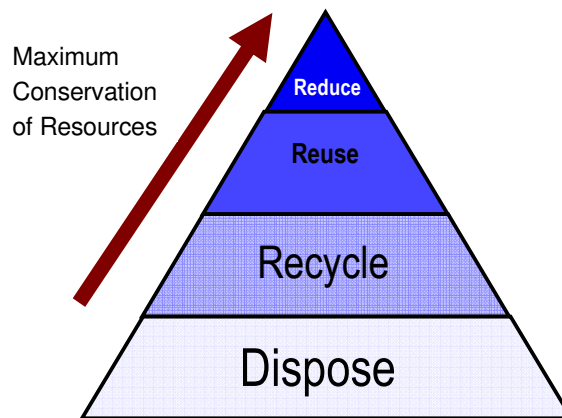
1. Background

The Protection of the Environment Operations Act broadly defines waste as:

- any substance which is discharged, emitted or deposited in the environment in such a volume or manner that causes an alteration to the environment or
- any discarded, rejected, unwanted, surplus or abandoned substance.

The hierarchy of waste management shown in Figure 1 will be used to prioritise and plan waste management activities during the maintenance period. This approach will help to conserve natural resources, minimise resource wastage and ensure that disposal options are well considered, and acceptable.

Figure 1: Waste hierarchy



Reduce

Waste avoidance by reducing the quantity of waste being generated is the simplest and most cost-effective way to minimise waste. It is the most preferred option in the Waste Management Hierarchy and is therefore ranked first.

Reuse

Reuse occurs when a product is used again for the same or similar use with no reprocessing. Reusing a product more than once in its original form reduces the waste generated and the energy consumed, which would have been required to recycle.

Recycle

Recycling involves the processing waste into a similar non-waste product consuming less energy than production from raw materials. Recycling spares the environment from further degradation, saves landfill space and saves resources that were used to make the item in the first place.

Dispose

Removing waste from worksites, compounds and offices and dumping in a licensed landfill site, or other appropriately licensed facility.

2. Objectives

The objectives of the Sub Plan are:

- To identify the types of waste likely to be generated as a result of the operation and maintenance of the upgrade.
- To identify options for waste avoidance, reuse, recycling and the disposal, consistent with the waste hierarchy.
- To encourage energy and water conservation and the sustainable use of resources.
- To facilitate compliance with the Project's waste obligations.

3. Environmental Aspects and Impacts

Maintenance activities that have the potential to produce waste or result in an environmental impact are listed in Table 1.

Table 1: Aspects and Impacts

Maintenance Activities (Aspects)	Potential Impacts of the Maintenance Activity
Purchasing decisions	<ul style="list-style-type: none"> • Material wastage • Increased disposal volumes, transport requirements and cost • Pollution of the environment
Office activities	<ul style="list-style-type: none"> • Material wastage • Under-utilisation of resources
Remove and replacement of infrastructure including pavement and asphalt surfaces, fencing	<ul style="list-style-type: none"> • Release of sediment and waste water to the environment • Disposal of bulk solid waste to landfill • Under-utilisation of a resource • Loss of a commercially valuable product
Maintenance of the Rest Area and the collection of waste from litter bins and roadside areas	<ul style="list-style-type: none"> • Pollution of the environment • Reduced visual amenity • Harm to fauna • Illegal dumping impacting on amenity, safety and the environment (ie if a hazardous substance)
Pollution control devices (eg GPT, spill basins and nutrient removal devices)	<ul style="list-style-type: none"> • Potential blocking of stormwater systems rendering controls and drainage ineffective • Reduced capacity of spill control devices • Pollution of the environment
Fuel and chemical storage, use and accidental spillage	<ul style="list-style-type: none"> • Pollution of the environment and waterways • Contamination of soil or groundwater • Generation of waste liquids and containers • Costly clean up and disposal costs (following an incident)
Landscape maintenance	<ul style="list-style-type: none"> • Litter pollution • Reduced amenity • Environmental pollution associated with chemical use • Harm to fauna • Spread of weeds

4. Environmental Controls and Procedures

4.1 Waste Classification

The classification of waste is based on the DEC(EPA) document “Environmental Guidelines: Assessment, Classification and Management of Liquid and Non- Liquid Wastes”. The classification of wastes is necessary to determine whether licensed transporters are required and at which landfill the waste may be disposed.

Non-liquid wastes are divided into four categories as follows:

1. Inert - waste that is unlikely to release significant quantities of greenhouse gasses or leachates contaminated with nutrients and/or chemicals;
2. Solid - likely to release higher quantities of contaminants than inert waste and therefore need to be handled with greater care;
3. Industrial - contain higher (four times) levels of contaminants than solid waste and needs to be managed with more stringent environmental controls than solid waste; and
4. Hazardous - this type of waste contains contaminants at levels high enough to require treatment to render them safe before disposal.

Liquid wastes are divided into separate groups namely:

- Group A (controlled aqueous or non-aqueous liquids, liquids contaminated with non-harmful chemicals solvents or chemicals);
- Group B (grease laden waste, liquid food waste); and
- Group C (effluent) and hazardous liquid wastes.

Waste materials produced during the maintenance period are likely to include:

- Office materials: paper, glass, cardboard, plastic, food waste (inert solid waste)
- Construction materials: remove and replace asphalt, roadbase, concrete (inert solid waste)
- General waste/litter: food containers and waste (inert solid waste)
- Curing compounds: (liquid group A)
- Herbicides: (liquid group A)
- Infrastructure: fencing, guard rail, packaging (inert solid waste)
- Excavated materials: rocks, soil (inert solid waste)
- Sanitary waste: (liquid group C)
- Vegetation cuttings and debris (insert, green waste)

4.2 Waste Management Options

Waste will be managed based on the hierarchy of avoidance, resource recovery and disposal. A list of local recycling and waste disposal contacts are provided in Table 2.

Table 2: Local Waste Management Contacts

Sources of Information			
Byron Shire Council		02-6629 7000	
Tweed Shire Council		07-5569 3189	
Ballina Shire Council		02-6686 4444	
Waste Contractors/Recyclers			
Contractor	Contact Details	Waste Accepted	Waste Recycled
Summerland Enviro Services	PO Box 564 Lismore Ph: 02 66872880 Fx: 02 66221389	Septic waste	Dispose
Solo	10-12 Chinderah Bay	Construction	Brick, steel, concrete, timber,

Waste Contractors/Recyclers

Contractor	Contact Details	Waste Accepted	Waste Recycled
	Drive, Chinderah NSW 2497. PO Box 1427, Kingscliff NSW 2487 Phone: (02) 66747647; (02) 6674 7656. Fax: (02) 6674 7657 Email: solorr@solo.com.au	waste, building waste etc	plastics, glass, metals, paper & cardboard
Stewart Machie Cleanaway	02 66453184 0401 545812 Eastlake, St Carrara QLD 4211. Phone: 13 1339; 07- 5530 5577	Steel Building waste, hazardous waste.	steel Paper, cardboard
Sita Environmental Solutions Gold Coast Paper Recyclers Visy Recycling	91B Lawrence Drive Nerang QLD 4211. Ph: (07) 5502 2999 Ashmore Phone: 07 5539 6769 Various locations in NSW & QLD. 8 Industrial Ave, Molendinar QLD 4214. Phone: 1300 368 479	Build waste, office waste, oils Building waste, hazardous waste. General construction waste, building waste etc	Plastic, glass, metals, timber, oils, paper and cardboard. Paper, Cardboard Steel, Aluminium, plastic, glass, paper and cardboard
Amcor Recycling	6 Geary Crescent Nerang QLD 4211 Phone: 07-5527 9127	Building waste.	Plastic, fibre, metal and glass products.
Richmond Waste	Phone: 02 66870449, 66217431; PO Box 42 Foulers Road, Banglore Tweed Heads QLD Phone: 07-5599 7943	General construction waste, building waste	Steel, concrete, timber, vegetation, water
G. Force Pressure Cleaning A.E Shaw & Associates	Ormeau, QLD. Phone: 1300 308 929. Mobile: 0407 360 069 Phone: 1300 362 362	Chemical cleaning Asbestos	Dispose Dispose
Kartaway (QLD) Pty Ltd Barkoola Environmental	29 Binary St. Yatala, QLD 4207. Phone: 1300 558 688	Rubbish Liquid, oil	Removals Recycle
Cortek Pty Ltd	Dayboro. QLD, 4521 Ph: (07) 3425 1746 Ph: 0409264328 (Ross)	Contaminated Waste (soil, oil etc.)	Dispose

Waste Management Facility

Wardrop Waste Management Facility

Stotts Creek Waste Management Facility

Byron Council Waste Management Facility
Ballina Council Waste Management
Facility

Location

Wardrop Valley Road, Murwillumbah
Phone: 02- 6672 6313

Leddays Creek Road, Stotts Creek
Phone: 02- 6677 6085

Minns Road, Myocum
Southern Cross Drive, Ballina

4.3 Roadside Litter and Rest Areas

Roadside and rest areas will be checked regularly (as required) to identify litter build up, damage to facilities and abandoned vehicles. Litter collected by maintenance crews will be placed in a skip (located within a secure waste compound area) or taken directly to a licensed landfill site.

Where the Maintenance Supervisor determines that it is practical and safe to do so, roadside litter will be collected prior to mowing or slashing to prevent the further spread of this material through the environment.

Locations where illegal dumping is observed to occur regularly or consistently will be identified and reported in the monthly reports. Consideration will be given to providing a barrier or signage to deter further dumping. Advice will be provided to the Police and/or Council of the location of abandoned vehicles. If collection and disposal is required, recycling options will be considered.

Toilet facilities and the on-site wastewater treatment system at the rest area will be maintained and managed in accordance with maintenance standards and references listed in section 7.7 of the Maintenance Manual.

4.4 Construction Materials

Aggregate, concrete, asphalt, steel or timber required for the maintenance phase of the project will be ordered as required. Quantities will be calculated at the time the materials are needed to reduce the site storage and generation of waste. Any surplus that can be reused elsewhere on site will be undertaken as soon as possible. All waste will be removed from site as there is negligible space for materials storage.

4.5 Fuel and Chemical Stores

All liquid chemicals, fuels and oils will be stored in a secure bunded area. Regular maintenance will be implemented to ensure they continue to function effectively and without risk to the environment. This will be undertaken in accordance with Standard Operating Procedure E4.

Empty drums and containers stored within the bunded area will be periodically removed by a licenced recycling or waste contractor.

Excess chemicals or liquid wastes will be reused or disposed of using a contractor or facility licenced to accept, process or dispose of such wastes.

4.6 Office Waste

Bins will be provided in office areas for the collection of office wastes and recyclables such as clean office paper and cardboard. A Council collection service will be arranged to service the office. The bins will be clearly marked as "Recycling" or Rubbish" to prevent mixing.

Refillable cartridges will be returned to the supplier/manufacturer for recycling.

4.7 Landscape Maintenance and Vegetative Waste

In general green waste arising from landscape maintenance such as mowing, brush cutting, trimming, tree prunings and weeding will remain in-situ. Vegetation from tree lopping activities will be mulched and reused in landscaped areas if considered practical by the Maintenance Manager.

Green waste and trimmings will be kept away from drainage lines and waterways.

If in the opinion of the Maintenance Manager very large quantities are generated, then the Maintenance Supervisor will arrange for off site green waste disposal. Where vegetative waste is to be disposed of, it will be taken to an approved facility that accepts green waste.

Damaged tree guards, stakes, pots and tree ties will be collected for disposal to prevent them from being blown away, becoming a hazard to fauna or washing into waterways.

4.8 Contaminated Soil Waste

Minor fuel spills may be managed in-situ or by removing the soil to a secure area, and applying an appropriate absorbent product in accordance with the manufacturer's directions. Preference should be given to products with absorption and bioremediation properties (eg Enritech). Dynamic lifter (containing bacteria) can also be added to the soil to assist with the breakdown of the contamination.

For significant fuel or chemical spills, emergency procedures will be implemented in accordance with the Environmental Management Plan and Standard Operating Procedure SOP-M2. Spillages will be cleaned up immediately to prevent the spread of the contaminant or its entry to surface or groundwater sources. In these situations soil waste material will be collected and taken to a licensed landfill facility with details recorded in the Waste Register.

4.8 Waste Register

A Waste Register will be maintained for all wastes removed from the site. A sample template is provided.

Site/Compound: _____

Date/Time	Waste Classification (inert, solid or hazardous)	Description of Waste (e.g. concrete, asphalt, vegetation)	Amount of Spoil or Waste Collected	Transporter	Receiver Facility

5. Action Plan for Waste Management

The following action plan will be implemented to promote the use of recycled materials and the conservation of energy and water:

Aspect	Action	Timing
Administrative	Induct maintenance personnel and provide training on waste management.	Prior to commencing work
	Ensure that all personnel are aware of their obligations to use recycling and waste facilities on site.	At all times
	Encourage the identification of innovative options for the re-use and recycling of waste materials.	Ongoing
	Maintain accurate and comprehensive records of waste removed from site.	Ongoing
	Maintain adequate stocks of spill control equipment in compound and storage areas.	At all times
Water and energy conservation	Promote energy and water conservation through education and the placement of appropriate signage in office and crib areas.	Ongoing
	Turn off electrical equipment such as air conditioning units and office equipment at the end of each day.	Ongoing
	Implement water reduction strategies including flow restriction devices and take immediate action to fix dripping taps.	At all times
Purchasing	Purchase products from suppliers that provide a collection and reuse or refill service, where possible.	At all times

	Avoid over-ordering through careful planning and accurate material estimates.	At all times
	Discuss packaging options (ie reduced, reusable or recyclable packaging material) and the availability of bulk product orders, with suppliers.	As required
	Investigate and give consideration to the purchase of products with a recycled content.	At all times
Collection and Storage	Store waste within secure, designated compound areas and remove at regular intervals.	At all times
	Sort and store different waste types for ease of collection, recycling and disposal. Provide signage on waste and recycling receptacles to prevent 'contamination' (mixing) of waste streams.	Ongoing
	Undertake inspections of waste compounds to identify incorrectly stored or sorted waste, maintain a tidy work environment and determine waste removal needs.	Monthly
	Store chemicals and other liquids in secure, bunded areas.	At all times
Disposal	Ensure that waste depots are licenced to process the type of waste being received.	Check prior to disposal
	Ensure that only authorised waste contractors are used to transport waste.	Check prior to collection.
	The waste material removed from the GPT and the Nutrient Removal Tank will be disposed at a licensed waste disposal facility.	As required
	Green waste from vegetation trimming, tree prunings, grass mowing and the like will be disposed within the project site. However, if in the opinion of the Maintenance Manager very large quantities are generated, then the Maintenance Supervisor will arrange for off site green waste disposal.	Ongoing

6. Communication and Reporting

6.1 Communication

Communication processes including consultation with sub-contractors, government Agencies and the community is addressed in Section 3 of the OEMP.

A quarterly report will be prepared in accordance with Section 3 of the OEMP.

7. Evaluation and Review

The effectiveness of waste management activities will be assessed based on:

- the outcome of regular inspections and audits by Abigroup, the RTA or the DEC
- the completion of records including inspection sheets and waste register
- compliance with approval conditions and project requirements.

7.1 Auditing Procedures

Auditing Procedures are addressed in Section 4 of the OEMP.

8. Emergency Response Procedures

Details of emergency response procedures and incident management are provided in the OEMP and Standard Operating Procedure M2.

All incidents will be investigated in accordance with the OEMP.

