

NORTHERN PIPELINE INTERCONNECTOR PROJECT STAGE 2

MANAGEMENT PLAN

Waste Management Plan

Document number: NNA001-A-PLN-014

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Date	Reason for Issue	Revision	Originator	Signature	Checked By	Signature	Approved By	Signature
27/06/08	Issued For Review	A	Adam Pullen		David Pugsley		Peter Fitzgerald	
02/09/08	Issued For Review	B	Adam Pullen		David Pugsley		Peter Fitzgerald	
15/04/09	Issued For Use	O	Adam Pullen		John Karooz		Ian Clark	

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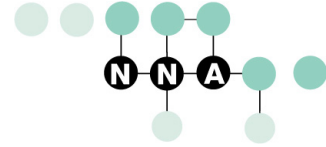
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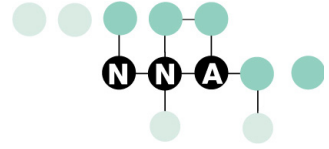
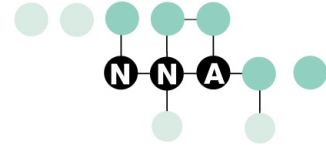


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1 INTRODUCTION

This Waste Management Plan is one component of the Construction Environmental Management Plan (CEMP) (NNA001-A-PLN-017) which provides a system and procedures to ensure that Northern Network Alliance (NNA) (hereafter referred to as the 'Alliance') establishes and maintains best practice controls to manage potential environmental impacts during the construction of the Northern Pipeline Interconnector (NPI) Stage 2 and associated infrastructure (hereafter referred to as the 'Project') and, wherever practicable, realise opportunities for enhanced environmental outcomes.

The Project is a key component of the SEQ grid. Initially, the Project will transport water under existing utilised entitlement (up to 55% or 3600 ML/a has been used by Noosa Shire in the past) authorised under the *Water Resource (Mary Basin) Plan 2006* (Mary Basin WRP). This existing entitlement comprises 6500 ML/a (18 ML/d) interim water allocation (high priority) held by the SEQ Water Grid Manager within the Upper Mary River Water Supply Scheme. However, the pipe will be sized and designed to accommodate flows from future bulk water sources on the Sunshine Coast, including the Traveston Crossing Dam, should it be approved.

The Alliance consists of the following partners:

- LinkWater
- Abigroup Contractors Pty Ltd
- McConnell Dowell Constructors (Aust) Pty Ltd
- Kellogg, Brown & Root Pty Ltd.

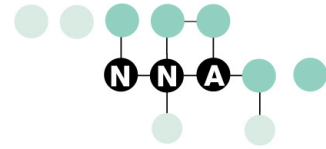
The Alliance is committed to providing the services it offers in a manner that conforms to the contractual requirements and to all relevant regulatory and legislative requirements. To achieve this, the Alliance will plan, implement and control an integrated management system that achieves the stated environmental outcomes.

The Alliance will ensure that controls are properly implemented and regularly monitored and audited to assess their effectiveness. Changes to the controls will be instigated if they are not achieving their objectives.

1.1 Project Description

The Project forms part of the drought contingency pipeline to connect existing and future water infrastructure on the Sunshine Coast with the Brisbane network. The Project will be constructed in two stages and will allow the transfer of up to 65 ML/d of potable water between the Sunshine Coast and Brisbane. Stage 1 of the Project—between Landers Shute water treatment plant (WTP) and Morayfield—is due for completion by 31 December 2008.

The completed Project (Stage 1 and Stage 2) will supply a target volume of 65 ML/d of potable fresh water to existing facilities at Caboolture for distribution to localities in the greater Brisbane region. The Project will have the capacity to deliver up to 18 ML/d (under existing entitlements for the Noosa Shire).



Subsequent interconnection of Stages of the Project may be constructed to link with the proposed Traveston Crossing Dam and/or other bulk water sources proposed for the Sunshine Coast. These subsequent Stages are not considered in this report. However, the use of a large diameter pipe capable of transporting bulk water is a basis for the design of both Stages 1 and 2 of the Project.

The key components of the Project are as follows:

- approximately 48 km of underground pipe between Noosa water treatment plant (WTP) and the termination point of NPI Stage 1 at Eudlo
- a balance tank with a 5 ML capacity
- three new pump stations; and
- a new water quality management facility (WQMF) and upgrades to an existing WQMF at Landsborough.

A number of additional above-ground facilities would be required for commissioning, operation and maintenance of the system. These include:

- water quality maintenance structures
- water branch mains; and
- cleaning and communications stations.

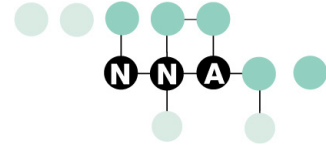
1.2 Purpose and Scope

LinkWater has a commitment to effective environmental management and lists the environment as a key component of its overall vision to become an effective partner in delivering water security to south-east Queensland (LinkWater 2008). LinkWater is committed to adding value to the management of the natural and built environments by adhering to all appropriate local, state and federal environmental guidelines, with an underlying principle of sustainability and positive environmental outcomes (LinkWater 2008).

The purpose of this WMP is to describe how the Alliance proposes to manage waste, and ensure resources (e.g. energy, spoil, and water) are conserved, during construction of the Project to ensure compliance with the *Environment Protection Act 1994* and the *Environment Protection (Waste) Policy 2000*.

To achieve this objective the Alliance will adhere to the specifications of the waste management hierarchy that prioritises waste solutions according to how successfully they conserve natural resources. The principles of 'reduce, reuse, recycle and dispose' have been adopted in establishing this WMP and in order of importance these priorities are:

- **Reduce:** Waste avoidance by reducing the quantity of waste being generated. This 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.
- **Dispose:** Removing waste from worksites, compounds and offices and dumping in a licensed landfill site, or other appropriately licensed facility.

This Plan will address the requirements of all applicable legislation and aims to ensure that the commitments made by the Alliance within the Project Environmental Impact Statement (EIS) regarding Waste Management are met.

1.3 Related Management Plans

The Waste Management Plan forms part of the overall CEMP (*NNA001-A-PLN-107*) for the Project. Where relevant, reference should also be made to the following associated management plans (MPs):

- Contaminated Land Management Plan (*NNA001-A-PLN-006*)

1.4 Objectives and Targets

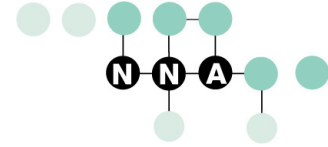
The objectives of this management plan are:

- Ensure that all waste material generated on site is handled in a responsible manner, and in accordance with legislative requirements
- Educate all employees on waste minimisation hierarchy principles of reduce, reuse, recycle and dispose
- Prevent pollution associated with the management and disposal of waste material
- Increase employee and subcontractor awareness and their obligations regarding waste management
- Promote waste recycling throughout the project.

The targets associated with this management plan are:

- No spillage or leaks of hazardous materials
- No damage to the environment as a result of poor waste management by the project
- All regulated wastes transported by an EPA approved licensed contractor
- 100% of native vegetation wastes are reused in rehabilitation and revegetation
- Waste management register created, implemented and maintained
- 100% of employees trained in regard to their responsibilities in managing waste.

The above performance criteria have been developed for this MP to assist in the delivery of desirable environmental outcomes. The performance criteria will be linked to key performance indicators (KPIs) for the Project.



2 LEGISLATION AND REGULATORY REQUIREMENTS

2.1 Licenses/Permits

There are no licences and approvals required for the management of waste associated with the project however there are relevant processes and procedures which must be implemented for management of Acid Sulphate Soils and Contaminated Land issues. These are outlined in their respective management plans - Acid Sulphate Soils Management Plan (*NNA001-A-PLN-003*) and Contaminated Land Management Plan (*NNA001-A-PLN-006*).

2.2 Guidelines/References

Key legislation relevant to waste management includes:

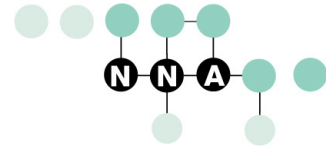
- *Environmental Protection (Waste Management) Policy 2000*
- *Environmental Protection Act 1994*
- *Environmental Protection Regulation 1998*
- *Environmental Protection (Waste Management) Regulation 2000*
- Waste Management Strategy for Queensland
- *Road Transport Reform Act 1999*
- Australian Code for Transport of Dangerous Goods by Road and Rail

2.3 Commitments

The following commitments are made in the Project EIS and are relevant to this MP. Table 1 lists these commitments.

Table 1. Waste Management Requirements/Commitments (refer Alliance EIS 2008, Appendix E for final commitments)

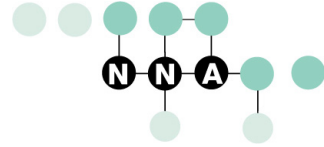
NPI 2EIS Section (December 2008)	Requirement/Commitment
3.6	A waste management plan will be developed and implemented in consultation with the EPA.
3.6	Storage, safeguarding, handling and transport of any waste generated by the project will be in accordance with relevant Australian Standards and statutory processes.



The types of wastes that are likely be generated during construction of the Project are listed in Table 2.

Table 2. Potential Waste Sources

Waste	Source
Site Office and Work Sites	
Glass/plastic/cans/paper/ cardboard potentially - recyclable	Construction compound/ office
Plastic wrapping/containers – collected and littered	Construction compound/ office and site
Scrap metal	Construction compound / steel yards / structural sites
Domestic waste	Food scrapes etc from office
Printer cartridges	Site office
Sanitary systems waste	Site office/worksite areas
General Construction Works	
Green waste, mulched timber	Vegetation from worksite clearing and grubbing
Weeds	Clearing works
Excavated surplus material (topsoil/spoil/rock)	Surface excavation, haul road establishment, construction.
Possible slurry cuttings containing some bentonite	Tunnelling
Waste	
Concrete wastes	Waste concrete from pours and washouts
Scrap metal	Construction activity wastes
Cables, parts	Construction and fit outs
Timber	Framework, off-cuts and packaging
Road maintenance wastes	Asphalt maintenance materials
Plastic wrapping, containers, packaging	Construction of activities
Plastic plant pots, fertiliser containers	Landscaping/revegetation works
Sediment fences, timber, metal, concrete	Decommissioning of site environmental controls
Plant Maintenance / Chemical Management	
Drums and containers	Maintenance (oil and lubricants etc) of plant and equipment, drums and containers from concrete works
Chemical wastes	Wastes from painting, maintenance, spill cleanup, herbicides, pesticides
Waste oil, grease, lubricants, oily rags, and filters	Maintenance of plant and equipment
Operations Control	
Solids (Sediment)	Sediment collected from sediment fences and other devices



3 ENVIRONMENTAL MITIGATION MEASURES

3.1 General

3.2 Waste Management Strategy

To reduce the impact on resources during the construction of the Project, the Alliance will actively promote and ensure the responsible use of water and energy as well as water efficient work practices whilst achieving its other related environmental objectives (i.e. efficient utilisation of water to mitigate dust emissions, consideration for the use of recycled water). The Alliance will also actively promote and ensure the reduction of greenhouse gas emissions by adopting energy-efficient work practices.

Waste management and reuse procedures for the Project were developed through the Waste Hierarchy principles. This involves the adoption of environmentally sensitive work practices and implementation of environmental safeguards, which are identified in Management Mitigation Measures

Following is a detailed step by step process for reducing, reusing, recycling and disposing of waste. Specific measures for waste management and reuse on the Project are presented below.

3.3 Reuse and Recycling Action Plan

Waste separation and segregation will be promoted on site to facilitate reuse and recycling as a priority of the waste management program as follows:

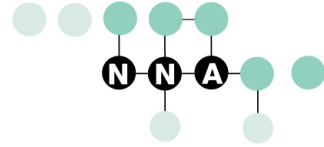
- Waste segregation on site – Waste materials, including spoil and demolition construction waste, will be separated on site into dedicated bins/areas, where practicable, for either reuse on site or collection by a waste contractor and transport to offsite facilities.
- Waste separation offsite – Wastes to be deposited into one bin where space is not available for placement of multiple bins, and the waste is to be sorted offsite by a waste contractor.

Table 3 in Section 3.11 presents the proposed reuse, recycling and disposal strategy for segregated waste materials generated during construction of the Project.

3.4 Waste Handling and Storage

Where waste is required to be handled and stored on site prior to on site reuse or offsite recycling/disposal, the following measures apply:

- Spoil, topsoil and mulch are to be stockpiled on site in allocated areas, where appropriate, and mitigation measures for dust control and surface water management will be implemented as per the Air Quality, Construction Noise and Vibration MP (NNA001-A-PLN-009) and the Soil and Water MP (NNA001-A-PLN-011).



- Liquid wastes are to be stored in appropriate containers in bunded areas (or equivalent purpose-built bunding device) until transported offsite. Bunded areas will have the capacity to hold 120% of the volume of liquid wastes.
- Hazardous waste will be managed by appropriately qualified and licensed contractors, in accordance with the requirements of the *Environmental Protection Act 1994*.
- All other recyclable or non-recyclable wastes are to be stored in appropriate covered receptacles (e.g. bins or skips) in appropriate locations on site and contractors commissioned to regularly remove/empty the bins to approved disposal or recycling facilities.

3.5 Waste Disposal

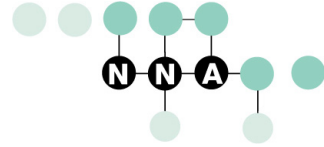
Waste (and spoil) disposal is to be in accordance with the *Environmental Protection Act 1994*. Wastes that are unable to be reused or recycled will be disposed of offsite to an Environmental Protection Agency (EPA) approved waste management facility. Details of waste types, volumes and destinations are to be recorded in the **Waste Register** by the Environmental Manager/Officer or delegated person (*Form G-FRM-003*).

3.6 Management of Contaminated Material

Management of contaminated materials or potentially contaminated materials will be in accordance with the Contaminated Lands MP (*NNA001-A-PLN-006*).

3.7 Management of Spoil and Fill

- A key objective of the Alliance is to maximise the reuse of the excavated cut material to meet the fill demands of the project. By achieving this objective, in addition to conserving resources and flow on energy savings, The Alliance will minimise spoil handling, transportation and disposal costs as well as minimising any amount of imported fill required. However, if excess spoil is produced it may be required to be sent offsite for reuse or disposal.
- The overall management strategies for spoil and fill are presented in a number of additional management plans including:
 - Traffic Management MP – (*NNA001-A-PLN-012*) - for truck haulage routes and traffic control.
 - Air Quality, Construction Noise and Vibration MP (*NNA001-A-PLN-009*) - for dust mitigation in spoil and fill use, storage and transport.
 - Contaminated Land MP – (*NNA001-A-PLN-006*) - includes an assessment of known areas of contamination as listed on the EMR which may be encountered along the pipeline route with specific management measures on how to manage and dispose of contaminated soils.
 - Acid Sulphate Soils MP – (*NNA001-A-PLN-003*) – includes an assessment of areas where there is potential for acid sulphate soils (ASS) and details of the processes to be followed if ASS is encountered. Site specific management plans will be prepared where necessary.



3.8 Energy Conservation

During the construction of the Project, the Alliance will actively promote and ensure the reduction of greenhouse gas emissions by adopting energy-efficient work practices.

Construction of the Project will involve the use of energy-expending equipment such as vehicles, earthmoving trucks, concrete trucks, excavators, compressors, generators and concrete pumps. By adopting an energy conservation strategy the following benefits will be incurred:

- The reduction in energy demand and associated costs through the use and operation of energy efficient equipment.
- Reduction in energy demand will result in reduction of greenhouse gas emissions through direct means (i.e. less fuel consumed, less emissions) and indirect means (i.e. less electricity consumed – less coal burnt- less emissions).

3.9 Water Conservation and Reuse

During the construction of the Project, the Alliance will actively promote and ensure the responsible use of water and water efficient work practices whilst achieving its other related environmental objectives (i.e. efficient utilisation of water to mitigate dust emissions).

3.10 Training and Induction

- All Alliance personnel and subcontractors will be inducted into the requirements of this Plan. Targeted training programs will be developed on an as required basis and in accordance with the CEMP (*NNA001-A-PLN-017*).

3.11 Resource Requirements

The Superintendent and Project Engineers will oversee waste collection, waste management and coordinate waste disposal contracts. The Environmental Manager (or delegate) will maintain the waste register for the Project, and monitor the performance of meeting our waste minimisation and recycling targets.

Table 3 below describes the various waste management arrangements, including targets for reuse and recycling.

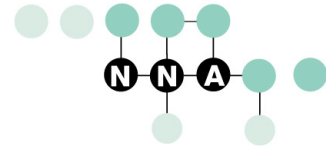


Table 3. Proposed Waste Reuse, Recycling and Disposal Arrangements

Key Waste Stream	Segregation Areas / Containers (at established compounds)	Reuse / Recycling / Disposal Method	Target Reuse / Recycle	Waste Type
Waste Separation on Site				
Spoil from excavations - suitable for reuse on site or offsite (based on engineering suitability and waste classification)	Stockpile areas	Beneficial reuse on site or offsite. Balance cut and fill earthworks, where possible, to optimise reuse on Project.	100%	Varied depending on contamination investigations.
Paper/Cardboard/Plastic	240 L bins	Offsite recycling	100%	Inert
Glass/bottles/cans	240 L bins	Offsite recycling	100%	Inert
Cleared vegetation/green waste	Site mulch	Reuse on site/ send to green waste recycling centre	100%	Solid
Concrete Products	10 m ³ bins/pre-designated stockpile areas	Crushed and reused as backfill or as road base for site access/ used for site levelling or stabilisation/ sent off-site.	100%	Inert
Timber (formwork)	15 m ³ bins/pre-designated stockpile areas	Reuse on site where possible/ offsite recycling	100%	Inert
Steel (reinforcement)	10 m ³ bins/pre-designated stockpile areas	Offsite recycling	100%	Inert
Asphalt	10 m ³ bins/pre-designated stockpile areas	Reused for road base during construction or offsite recycling	100%	Inert
Hydrocarbons (oils/grease)	Sealed drums/containers	Offsite recycling	100%	Non-aqueous liquid waste
Oily Rags	240 L bins	Offsite recycling	100%	-
Paints / solvents	Sealed drums/containers	Offsite disposal at approved facility	Not recycled	Non-aqueous liquid waste
General Solid Waste	3 m ³ bins with lids	Offsite disposal at approved facility	Not recycled	Solid
Chemical wastes	15 m ³ bins lined with heavy duty plastic and covered	Offsite disposal at approved facility	100% if recyclable	Hazardous
Printer Cartridges	Bin provided (capacity 20-25 standard cartridges)	Offsite recycling	100%	Hazardous
Sanitary wastes	n/a	Sewer is available	n/a	n/a

The provision of bins/drums will need to be reviewed prior to the commencement of construction in relation to the final location of site compounds to be established.

Table 3 outlines the mitigation measures, responsibilities and timing for identified actions to minimise impacts during construction. The roles and responsibilities if the Alliance Project Team are outlined in the CEMP (NNA001-A-PLN-017).

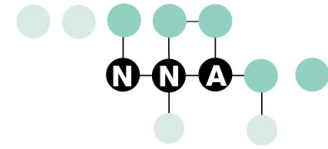
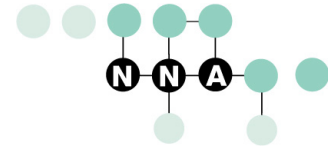
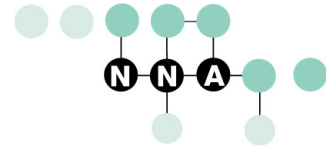


Table 4. Management Mitigation Measures

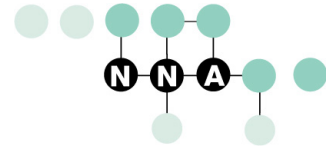
Activity / Construction Item or Detail	Management Mitigation Measures	Responsibility	Timing
Pre - Construction	Determine “cut and fill” earthworks balance and, where possible, schedule works to maximise reuse of spoil on the Project and minimise double handling and need for stockpiling, thereby minimising the transport and dumping of excess material or the importation of material.	Construction Manager/ Project Engineers	Pre-Construction and ongoing
	Specific procedures for waste management (e.g. sorting area locations, recycling bin locations, waste oil tanks, material stockpile locations) are to be noted on the WMSs.	Environmental Manager	Pre-Construction
	All recycled materials will be considered for use in concrete and other construction materials in accordance with the Environment Protection (Waste) Policy 2000.	Project Engineers	Throughout construction and prior to concreting works.
	Waste management areas are to be adequately designed and managed to prevent sediment runoff and dust generation.	Superintendent	Pre-Construction
	Potentially hazardous materials (e.g. asbestos) and contaminated soils/sludges are to be identified prior to works and, where required, management procedures developed and documented in works method statements (WMSs) and the where necessary.	Environmental Manager	Prior to entering an area of known or potential contamination
Training and Awareness	Implement waste management awareness program as part of Site Induction and ongoing site Toolbox talks. All Project and site personnel are to be trained in the requirements of the Waste Management Plan and the waste hierarchy. Site staff and subcontractors to be trained to minimise wastes, recognise which types of materials are recyclable and to be aware of their obligations to use recycling facilities provided on site.	Environmental Manager/ Environmental Officer/ Project Engineers	Pre-Construction and ongoing
	Provide clearly signed and categorised waste bins at worksites, site offices and compounds in convenient locations for segregation of recyclable materials.	Superintendent	Pre-Construction/ as required
	Provide site personnel with instruction into location of bins and any special storage or disposal arrangements (e.g. hazardous wastes, chemicals, waste oils/contaminated materials).	Project Engineers/ Environmental Manager/ Environmental Officer	Pre-Construction/ as required
	Spoil management areas are to be adequately designed and managed to prevent sediment runoff and dust generation. Controls should be implemented in accordance with the Soil and Water MP (NNA001-A-PLN-011).	Project Engineers	Pre-Construction
	In the event contaminated soil is discovered during excavations, work is to cease and actions undertaken as per the Contaminated Land MP (NNA001-A-PLN-006).	Environmental Manager/ Environmental Officer/ Site	At all times



Activity / Construction Item or Detail	Management Mitigation Measures	Responsibility	Timing
		Superintendent/ Project Engineers	
	Measures to ensure no dirt tracked off-site and may include washdown facilities at major access points and daily road clean up with road sweepers.	Project Engineers/ Site Superintendent	At all times
	Spoil and fill loads will be securely covered and tailgates secured before leaving the site and in transit to site.	Superintendent	At all times
	Undertake spoil haulage in accordance with approved hours of site operation, on approved haulage routes, adhering to speed limits and at reuse/disposal locations.	Superintendent	At all times
	Monitor the approved haulage routes and ensure that local roads are restricted against use by Project heavy vehicle traffic, unless otherwise stipulated in the Traffic MP (NNA001-A-PLN-012).	Project Engineers/ Site Superintendent	At all times
	Where possible, reuse or recycle clean and/or treated spoil on the Project in embankments and landscaped areas, in preference to transporting offsite.	Project Engineers	As required
General Construction – Waste Reuse	Where practicable, trees cleared during construction to be chipped and mulched. Where space allows, mulched material to be stockpiled for reuse during landscaping. Vegetation and leaf material not reused on site to be transferred to landscape suppliers or Green waste Centre for composting. Weed material to be disposed to landfill as required.	Superintendent/ Environmental Manager/ Environmental Officer	As required
	Topsoil (free of weeds) to be stripped prior to undertaking earthworks, stockpiled and stored. Following completion of earthworks, topsoil to be used as part of landscaping and revegetation works.	Superintendent / Environmental Manager/ Environmental Officer	As required/Where possible
	All reasonable measures are to be employed to reuse and recycle excavated spoil material by utilising as fill.	Superintendent	Where possible
	Any empty fuel, lubricant and chemical containers are to be stored for collection by a licensed drum recycler for cleaning and reuse.	Superintendent	At all times
	Waste oil, grease and lubricants from maintenance of plant and equipment are to be placed in drums for collection by a licensed Waste Oil Recycler for treatment and reuse.	Superintendent	At all times
General Construction – Waste recycling	Ensure all potentially recyclable material is sorted, collected by a licensed waste transporter and taken to an appropriate recycling depot in the area.	Superintendent/ Environmental Manager	At all times
	Scrap metal resulting from construction activities to be segregated into ferrous and non-ferrous bins for collection by a scrap metal contractor for recycling.	Superintendent	As required



Activity / Construction Item or Detail	Management Mitigation Measures	Responsibility	Timing
	Where practicable, recycled concrete is to be used for hardstand areas, to provide stabilised vehicle access and prevent dirt being transported onto public roads.	Superintendent	Where possible
	Wood packaging, pallet, formwork and off-cuts, and cardboards and plastic wrapping resulting from project activities to be reused on site wherever possible, otherwise to be placed in separate bins and collected for recycling.	Superintendent	At all times
General Construction – Waste Disposal	All materials that cannot be reused or recycled are to be classified and disposed of at approved disposal facilities in accordance with the Environmental Protection Act 1994.	Superintendent/ Environmental Manager/ Environmental Officer	At all times
	Wastes from the Project that cannot be recycled or reused are to be disposed of via a licensed waste management contractor. The types of waste, destination and receipt by the disposal site are to be recorded on a waste manifest/receipt/docket system and in the Waste Register.	Project Engineers	At all times
	Provide appropriate covered receptacles in appropriate locations on site and ensure a contractor is commissioned to regularly remove/empty the bins. All bin removal/clearance will be undertaken within site boundaries.	Superintendent	Pre-Construction/ Ongoing
	Rubbish skips are to be provided at all construction sites and site compounds and are to be regularly removed/emptied.	Superintendent	Ongoing
	Non-hazardous waste (e.g. putrescible waste, non-recyclable paper/ plastics/ office waste etc) that cannot be recycled or reused is to be placed in skips for disposal to approved landfill.	Superintendent	At all times
	Any hazardous waste (e.g. asbestos) to be managed and handled by an appropriately licensed contractor and transported for disposal to an EPA approved site in accordance with the EPA requirements.	Superintendent	As required
	Any contaminated soil or contaminated water to be handled, treated, managed and disposed of in accordance with <i>Environmental Protection Act 1994</i> and in accordance with the Contaminated Land Management Plan.	Superintendent	As required
	Chemical wastes to be placed in sealed drums in designated, bunded areas for collection by a licensed waste contractor and offsite treatment or management in accordance with the manufacturers' instructions.	Superintendent	At all times
General Construction – Waste Transportation	All trucks transporting wastes offsite are to be appropriately licensed to carry the materials to appropriately licensed waste facilities.	Project Engineers	At all times



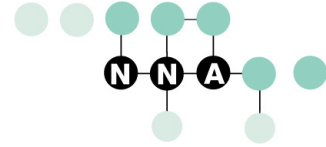
Activity / Construction Item or Detail	Management Mitigation Measures	Responsibility	Timing
	Waste truck loads are to be covered and tailgates secured prior to trucks leaving the worksite.	Superintendent	At all times
	Waste truck movements related to the worksite will only occur during working hours.	Project Engineers/ Superintendent	At all times
	For the transportation of hazardous waste, follow EPA requirements, obtain a consignment number, complete waste data forms and provide copies to the waste transporter regarding the consigned waste. Keep copies on site.	Environmental Manager	At all times
	Reuse of collected water (e.g. rain tanks) to be maximised on worksites for dust suppression and wash down.	Superintendent	At all times
	Concrete washouts will be undertaken over bins or other appropriate vessels.	Superintendent	At all times
	Implement energy management awareness program as part of Project Induction, Site Induction and, where applicable, ongoing site Toolbox talks.	Environmental Manager	Site induction

3.12 Verification Procedure

The verification procedure is a mechanism to show that the easement has been inspected, all the environmentally sensitive areas are known and delineated, and the construction supervisor has been advised of and acknowledges environmentally sensitive areas. The verification package is a written record and tangible reminder to the construction supervisor that he has environmental obligations ahead of him; and if he doesn't have signoff, then he doesn't have approval to enter that section of the ROW.

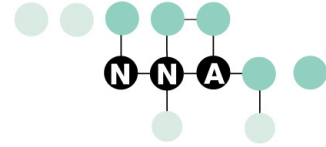
In practical terms, the verification procedure is as follows:

- The Environmental Officer reviews the environmental information available for the easement some days ahead of construction.
- The Environmental Officer identifies from the GIS and alignment sheets all those areas that represent an environmentally sensitive area. These areas may include rare or endangered flora, particular water crossings, habitat of rare or endangered animals, heritage areas [Aboriginal or European], and noise sensitive areas.
- The Aboriginal Heritage Officer (refer Aboriginal Cultural Heritage procedures) will locate and tag known aboriginal heritage sites with construction tape and certify that this task is complete within the designated section of ROW. A 50 metre buffer is to be maintained around aboriginal



heritage sites. The Contractor will construct a delineation fence to define the buffer zone. There is to be no activity of any sort within this buffer zone.

- The Environmental Officer should inspect the easement and physically identify all other known sensitive areas with construction tape.
- The details of the site; instructions and description of marking should be recorded and noted in the Verification Checklist process.
- If the Environmental Officer is unfamiliar with a particular environmental aspect [e.g. rare animal capture or plant identification] he should call in suitably qualified personnel who can assist. Sufficient time should be allowed to ensure availability of specialist environmental advisers.
- Once all environmental issues have been identified and flagged out on a specified section of ROW, the Environmental Officer shall point out all the issues in that section with the construction supervisor. The construction supervisor will explain what actions will be taken to protect environmental values and that suitable machinery and material (e.g. spill containment kit) is available to protect flagged out areas.
- The Environmental Officer and the Construction Engineer shall sign off on the verification package prior to the commencement of works. Construction can then commence on that section of the ROW described in the general purpose record.



4 CORRECTIVE AND PREVENTATIVE ACTIONS

4.1 Community Liaison and Complaint Management

Refer to Section 8.1 in the Construction Environmental Management Plan (CEMP)

(NNA001-A-PLN-017)

4.2 Environmental Incident/Emergency Reporting

Refer to Section 8.2 in the Construction Environmental Management Plan (CEMP)

(NNA001-A-PLN-017)

4.3 Incident/Emergency Preparedness and Response

Refer to Section 8.3 in the Construction Environmental Management Plan (CEMP)

(NNA001-A-PLN-017)

4.4 Incident Investigation

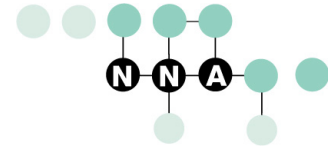
Refer to Section 8.4 in the Construction Environmental Management Plan (CEMP)

(NNA001-A-PLN-017)

4.5 Non-conformances

Refer to Section 8.5 in the Construction Environmental Management Plan (CEMP)

(NNA001-A-PLN-017)



5 INSPECTION AND MONITORING

5.1 Inspections

Weekly environmental inspections will be undertaken by the Environmental Officer/s and will include inspections of waste, management areas on site to ensure that all procedures for the reduction, reuse, recycling and disposal of waste are correctly implemented for the duration of the construction works. Records from the weekly inspections will be recorded within the Weekly Inspection Checklist form (refer *Form G-FRM-001*).

5.2 Monitoring and Reporting Program

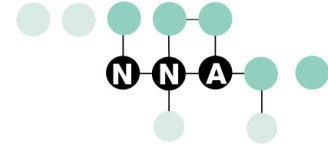
A regular monitoring and reporting program for waste management will be conducted as follows:

- Contractors performing works on site are to complete the Waste Register for all wastes generated and/or subject to disposal, as part of their subcontract. These registers are to be submitted to the Environmental Manager and Site Manager on a monthly basis.
- Periodic inspections are to be conducted to monitor waste management and recycling practices including: status of waste bins (e.g. overflows, adequate containment), segregation of wastes in the worksite, general waste management practices).
- Waste Removal Contractor – responsible for the appropriate removal and disposal of waste.

The following protocols for monitoring of waste management during the construction works have been established and documented in Table 5 below.

Table 5. Monitoring and Reporting Program

Description	Frequency	Responsibility
Monitor waste management and recycling practices regularly at the worksite, including recording the date and time of each waste removal event and the waste removal contractor.	Daily	Environmental Officer/ Site Superintendent
Regular site inspections will be undertaken to assess general waste management and site litter /housekeeping is being effectively managed.	Daily/Weekly	Site Superintendent/ Environmental Officer
Maintenance of waste register: waste volumes will be registered including details of the waste type, volume, management procedure, ultimate reuse / recycle or disposal location and responsible site personnel (refer to G-FRM-003).	Weekly	Environmental Manager/ Environmental Officer
Inspections will be undertaken of waste facilities on site and storage compounds, including storage areas for reuse and recycling of waste.	Monthly	Environmental Officer
Monitoring of material reuse: where waste items are reused on site, e.g. topsoil, mulch, monitoring will be conducted and details recorded in the waste register described above.	Weekly	Environmental Manager/ Environmental Officer
Review/audit this Waste Management Plan in accordance with the CEMP (<i>NNA-001-A-PLN-017</i>)	6 monthly	Environmental Manager

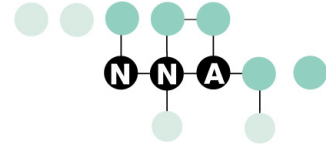


5.3 Waste Register

A Waste Register (*Form G-FRM-003*) is to be maintained by the Environment Manager to record the management of wastes from the Project. Significant materials generated during construction activities are expected to include:

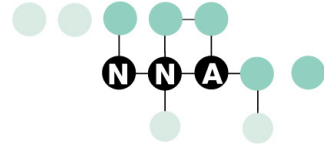
- spoil
- possible contaminated materials (identified as contaminated by the Contamination Investigation Report)
- some waste oils/lubricants/greases (from maintenance activities, spills etc)
- drums/containers (sent to recyclers)
- metal/wood for reuse/recycling
- any hazardous materials
- waste generated by construction staff e.g. food scraps, food wrapping, plastic bottles etc.

Details of wastes removed from site are to be included in monthly reports to the ALT. The template for the Waste Management Register is included on *Form G-FRM-003*.



6 DEFINITIONS AND ACRONYMS

Acronym	Glossary
ALT	Alliance Leadership Team
ASS	Acid Sulphate Soil
Aust	Australia
CEMP	Construction Environmental Management Plan
EIN	Environmental Improvement Notice
EIS	Environmental Impact Statement
EPA	Queensland Government Environmental Protection Agency
GIS	Geographical Information System
KPI	Key Performance Indicator
LinkWater	SRWPCo now trading as LinkWater and is 100 per cent owned by the Queensland Government
Mary Basin WRP	<i>Water Resource (Mary Basin) Water Resource Plan 2006</i>
MP	Management Plan
MSDS	Material Safety Data Sheet
NCR	Non-conformance Report
NNA	Northern Network Alliance
NPI	Northern Pipeline Interconnector
QESE	Quality Environmental Safety Engineering database
ROW	Right of Way
WMS	Work Method Statement
WQMF	Water Quality Management Facility
WTP	Water Treatment Plant



7 REFERENCE DOCUMENTS

Acid Sulphate Soils Management Plan (*NNA001-A-PLN-003*)

Air Quality, Noise & Vibration Management Plan (*NNA001-A-PLN-009*)

Construction Environmental Management Plan (*NNA001-A-PLN-017*)

Contaminated Land Management Plan (*NNA001-A-PLN-006*)

Department of Environment (1996) Waste Management Strategy for Queensland.

Environment Protection (Waste Management) Regulation 2000

Environment Protection (Waste) Policy 2000.

Environment Protection Act 1994.

Environment Protection Regulation 1998.

Federal Office of Road Safety, Department of Transport and Communications (1998) Australian Code for the Transport of Dangerous Goods by Road and Rail - Australian Dangerous Goods Code Sixth Edition.

LinkWater 2008, *Environment*, accessed 6 February 2009

< <http://www.linkwater.com.au/index.php?id=79>>

NNA 2008, NNA Draft Environmental Impact Statement (EIS), Northern Network Alliance, Queensland

Road Transport Reform Act 1999

Road Transport Reform Act 1999.

Soil and Water Management Plan (*NNA001-A-PLN-011*)

Traffic Management Plan (*NNA001-A-PLN-012*)

Waste Management Strategy for Qld