# TRANSITION MANAGEMENT PLAN FOR INTEGRATION OF CURRENT OPERATIONS WITH THE ENVIRONMENTAL CONSTRUCTION MANAGEMENT PLAN.

## PROPOSED MATERIALS HANDLING FACILITY 65-75 YARRAWA STREET PRESTONS.

## FOR SYDNEY INVITATION FUTURITY PTY. LTD.

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**NOV 2010**

**HM 1012**

CONTENTS:

# 1. INTRODUCTION

This is an integrated plan outlining the management of the transition of the current business operations on site to the final proposed development, with the Environmental and Construction Management Plan. The objective of this plan is therefore to outline the proposed method for managing the concurrent business operations and the proposed construction work and the staged transition of the current business into the new built works on the site in a manner to avoid or minimise environmental impacts associated with building works, siteworks and services during and after the construction of this project.

The proposed method is a staged construction development which will allow the transition to occur in stages and will incorporate the environmental control conditions of the Development Consent progressively. However it is the intention of this report that, where possible, all operational controls listed in the Development Consent will be complied with.

The development work is set to be carried out from February 2011 through to March 2013.

# 2. EXISTING OPERATIONS ONSITE

The subject site is partly developed and is operating as a material handling facility. Current operations on site include the storage of recovered aggregate, screening of recovered aggregate and the handling and storage of virgin sand and aggregate with associated vehicle support infrastructure and administration facilities. All these activities are expected to operate continuously during the construction and site works period.

# 3. EXISTING CONDITIONS ON SITE

The front area of Lot 4 contains a scattering of buildings both of fibro and sheet metal construction used as offices, workshop and vehicle storage. The rear portion o f Lot 4 and parts of Lot 5 have been disturbed by the storage of recovered aggregate (RAP).

The subject site is traversed by a 30 metre wide transmission easement which provides a restriction on the development and use of the land for storage and machinery access.

# 4. DESCRIPTION OF CONSTRUCTION WORK

The proposal is to build a materials handling facility for the storage of road making materials (sand, metal fines and aggregate) and processing of recycled asphalt product (RAP). This will incorporate the construction of nine covered stockpile bins for the storage of dry aggregate, truck service work bays, workshop, offices and amenities, new dual driveway, security office and off street car parking. Also included in the proposal are areas for the stockpiling of "recovered aggregate" prior to processing through the aggregate screener and transfer to the covered stockpile bins. The facility will also include all necessary environmental dust control systems and noise control measures.

Site works include a waste water separator system, drainage system and landscaping.

All existing structures will be demolished on site, and specific areas of the site along the western boundary of the transmission easement will be re-vegetated.

The following is a breakdown of the construction and transition operations to be completed by the end of each stage of construction:

| Stage | New work | Transition | Dust control |
|---|---|---|---|
| **One** | Processing area for recovered aggregate<br>Stockpile areas for recovered aggregate<br>Driveway entry/ exit 1<br>Carparking<br>Electrical easement roadway 1<br>Power pole protection<br>Gatehouse<br>Relocate tank<br>Commence riparian zone rehabilitation and fencing<br>Stage 1 stormwater drainage and GPT. RAP stockpile water spray system and construction of screening plant enclosure. | Existing open air stockpile areas will remain operational. Access and egress for vehicles will continue via the existing roadway system. * | See part 5.3 |
| **Two** | Stockpile bins 5-10<br>Driveway exit 2<br>Roadway 2<br>Demolition of old house and offices<br>Continue riparian zone rehabilitation<br>Stage 2 stormwater drainage and GPT. Rainwater harvesting and Dust suppression system | The new Recovered Aggregate RAP stockpile area will become operational. Access and egress for vehicles to the existing stockpiles areas will be via the new Roadway 1 and Driveway Entry/Exit 1. * | See part 5.3 |
| **Three** | Offices, workshop, amenities, wash-bay and fuel-bay<br>Driveway exit 3<br>Roadway 3<br>Commence landscaping complete riparian zone rehabilitation<br>Stage 3 stormwater drainage. | The new covered Stockpiles bins 5-10 will become operational. Access and egress for vehicles will use both the Roadway 1 and 2 systems. Existing offices, workshops and fuel bay will remain operational until Stage 3 is completed. * | See part 5.3 |
| **Four** | Stockpile bins 1-4<br>Demolition of old workshop, offices and warehouse<br>Landscaping completion<br>Public roadworks<br>Balance of dust suppression system<br>Completion of stormwater system. | The new offices workshops etc will become operational and the existing facilities will be demolished. Egress will be via new Driveway exit3. The covered stockpile bins 5-10 and the RAP stockpiles area will continue to operate with a small area of open air stockpile until Stage 4 is | See part 5.3 |

| | | | |
|---|---|---|---|
| | | completed. All remaining open air Stockpiles will then be removed. All driveway entry/exit points will become operational. Transition Completed. * | |

* These stockpile bins will only be accessed 7:30 am to 4:30 Monday to Friday and 7:30 am to 12:30pm Saturday. Trucks may enter the site and unload outside these hours, but not from 7:30am Sunday to 7:30 am Monday.

The following is an outline of building activities on the site for each stage of construction:

(Please refer to sketch on page 9)

**Stage One:**

- Site establishment, setting up site sheds, temporary power, site access, security fencing and compound
- Setting up erosion control devices, siltation fences, sediment basin, dust control devices, designating stockpile areas, protection devices for public assets and services
- Bulk earthworks and contour drainage
- Setting out
- Filling and compaction
- Detailed excavation, service excavations
- Underground services, pits and pipework
- Profiling earthworks and roadworks
- Hardstand areas for site access
- Footings and below ground level concrete works
- Gross pollutant trap and stormwater system
- Screening plant dust enclosure
- Gate house (prefabricated) installation
- Services installations including hydrant main
- RAP stockpile water spray system
- Riparian zone remedial works and weeding
- Access control system
- Car park and driveway slabs and pavements
- Crossovers x 2

**Stage Two:**

- Site establishment, setting up site sheds, temporary power, site access, security fencing and compound (if necessary to relocate after Stage 1)

- Setting out
- Piling and compaction
- Detailed excavation, service excavations
- Underground services, pits and pipework
- Profiling earthworks and roadworks
- Hardstand areas for site access
- Footings and below ground level concrete works
- Gross pollutant trap and stormwater system
- Ground slabs
- Structural steelwork
- Pre-cast panels
- Roof cladding
- Wall cladding
- Services installation
- Services Fit-off
- Rainwater harvesting system
- Dust suppression system
- Painting
- Cleaning
- Driveway slabs and pavements
- Crossovers
- Riparian zone commence plantings
- Testing of equipment services

**Stage Three:**

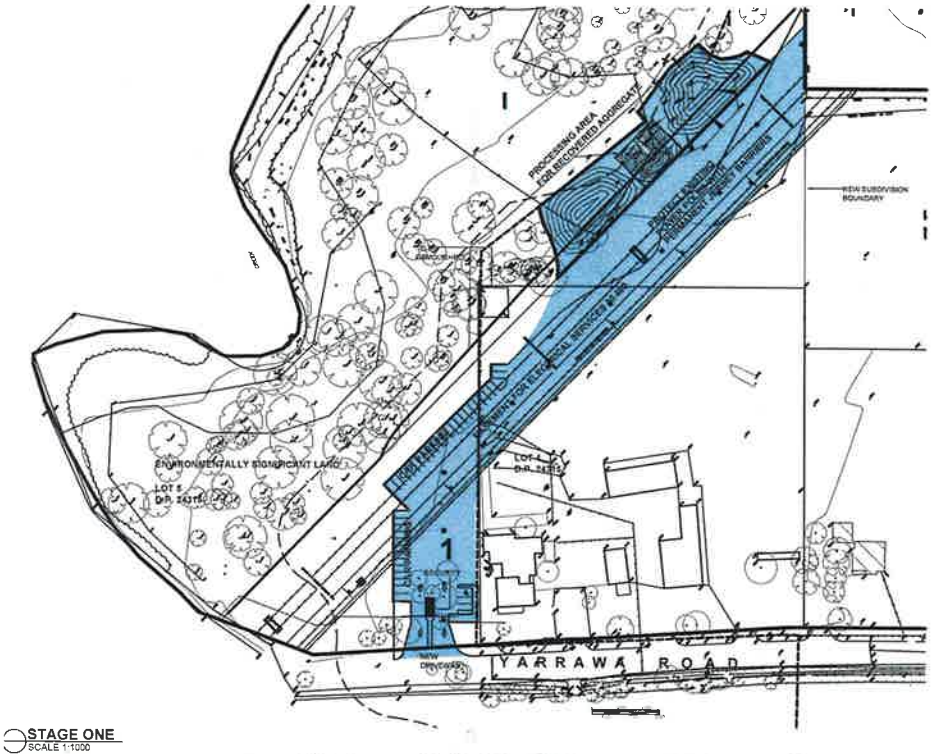
- Site establishment, setting up site sheds, temporary power, site access, security fencing and compound
- Setting up erosion control devices, siltation fences, sediment basin, dust control devices, designating stockpile areas, protection devices for public assets and services
- Bulk earthworks and contour drainage
- Setting out
- Piling and compaction
- Detailed excavation, service excavations
- Underground services, pits and pipework
- Profiling earthworks and roadworks
- Hardstand areas for site access
- Footings and below ground level concrete works

- Stormwater system and connection to Stage 1
- Structural steelwork
- Pre-cast panels.
- Roof cladding
- Wall cladding
- Ground floor slabs
- Services installations, fire hydrant and hose reel system
- Window and glazing installation
- External doors
- Fitout, doors and internal works
- Services fit off
- Painting
- Cleaning
- Car park and driveway slabs and pavements
- Crossovers
- Complete riparian zone planting
- Commence site landscaping

**Stage Four:**

- Site establishment, setting up site sheds, temporary power, site access, security fencing and compound
- Setting up erosion control devices, siltation fences, sediment basin, dust control devices, designating stockpile areas, protection devices for public assets and services
- Bulk earthworks and contour drainage
- Setting out
- Piling and compaction
- Detailed excavation, service excavations
- Underground services, pits and pipework
- Profiling earthworks and roadworks
- Hardstand areas for site access
- Footings and below ground level concrete works
- On-site detention pit and stormwater system and connection to Stage 2 system
- Ground slabs
- Structural steelwork
- Pre-cast panels.
- Roof cladding
- Wall cladding

- Services installations
- Services fit-off
- Rainwater harvesting
- Dust suppression system
- Fitout, doors and internal works
- Painting
- Cleaning
- Driveway slabs and pavements
- Landscaping completion
- Exterior fencing
- Commissioning of equipment
- Testing services
- Removal of erosion control measures




STAGE ONE
SCALE 1:1000


STAGE TWO
SCALE 1:1000


STAGE THREE
SCALE 1:1000


STAGE FOUR
SCALE 1:1000

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## STAGES OF CONSTRUCTION:

| | |
|---|---|
| STAGE ONE | PROCESSING AREA FOR RECOVERED AGGREGATE<br>STOCKPILE AREAS FOR RECOVERED AGGREGATE<br>DRIVEWAY ENTRY/ EXIT 1<br>CARPARKING<br>ELECTRICAL EASEMENT/ ROADWAY 1<br>POWER POLE PROTECTION<br>GATEHOUSE<br>RELOCATE TANK |
| STAGE TWO | STOCKPILE BINS 5-10<br>DRIVEWAY EXIT 2<br>ROADWAY 2<br>DEMOLITION OF OLD HOUSE AND OFFICES |
| STAGE THREE | OFFICES, WORKSHOP, AMENITIES, WASH BAY<br>FUEL BAY<br>DRIVEWAY EXIT 3<br>ROADWAY 3 |
| STAGE FOUR | STOCKPILE BINS 1-4<br>DEMOLITION OF OLD WORKSHOP, OFFICES, WAREHOUSE<br>LANDSCAPING |

| Issue | Amendment | Date | By |
|---|---|---|---|
| C | DEFERRED COMMENCEMENT | 11.01.11 | CL |
| B | ISSUE REVISED | 02.11.10 | CL |
| A | PRELIMINARY | 03.11.10 | CL |

ALL DIMENSIONS TO BE VERIFIED ON SITE. DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS. ANY DISCREPANCIES TO BE REFERRED TO ARCHITECT BEFORE PROCEEDING.

Project

**PROPOSED MATERIALS HANDLING FACILITY 65-75 YARRAWA STREET, PRESTONS. LOT 4 + 5 D.P. 24315**

Client

**SYDNEY INVITATION FUTURITY PTY, LTD.**

Drawing

**STAGED DEVELOPMENT PLAN**

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| Scale | 1:1000 | Job No. | Dwg No. | Rev. |
|---|---|---|---|---|
| Date | FEB'09 | HM1012 | A01 | 'C' |
| Drawn | ND | | | |

# 5. PLAN OF CONSTRUCTION

The various activities listed above have to be controlled to obtain the best possible environmental outcome in carrying out the proposed plan of construction.

By following the systems and methods outlined in general terms in the following sections, and by constant monitoring during the building period by the contractor or superintendent the management plan will deliver the desired outcome and avoid environmental incidents.

The various plans for general activities are listed below under the following descriptors:

*5.1 Access, Egress + Compound Management*

*5.2 Civil Structures*

*5.3 Dust Management*

*5.4 Emergency Response*

*5.5 Excavation Works*

*5.6 Flood Mitigation – Contingency*

*5.7 Hazardous Material Management*

*5.8 Noise Management*

*5.9 Occupation Health + Safety*

*5.10 Odour Control*

*5.11 Soil + Water Management*

*5.12 Topsoil Management*

*5.13 Traffic Management*

*5.14 Waste Management Plan*

*5.15 Water Quality Management*

## 5..1 ACCESS, EGRESS AND COMPOUND MANAGEMENT

Access and egress management involves the control of the construction, visitor vehicle and pedestrian movements both external and internal of the site.

The entry/exit to the site is to be protected by a temporary stabilised site entry ramp to prevent sediment from being tracked onto public roads.

Refer to the Sediment + Erosion Control Plan 3422_C-11_F and C-12_F.

Compound management relates to the control of work access, vehicle movements, site facilities and amenities and the impact on neighbouring residents, sites, public roads and public assets.

### 5.1.1. Environmental Issues

The main concerns with access, egress and movement of vehicles and pedestrians within and around the site are:

- Control of working movements and areas;
- reduction in vandalism; and
- control of noise and dust generation and mud tracking.

### 5.1.2. Compliance and Best Practice Regulations

The requirements of the access, egress, and compound management are related to statutory requirements and engineering best practices. An outline of issues that are to be addressed include:

- Occupational Health and Safety Act and Regulation (2000);
- Traffic management of vehicles entering and leaving the site in accordance with Australian Standard 1742.3 – Manual of uniform traffic control devices – Traffic control devices for works on roads – (2002);
- site access control;
- dust and noise control;
- erosion prevention;
- removal of sediment from runoff prior to leaving the site;
- provide a designated office and compound area; and
- all works and materials associated with the access gates and fencing shall be undertaken in accordance with the relevant AS 1725. – Chain-link fabric security fencing and gates – (2003).

### 5.1.3. Environmental Goals

The aim of the access, egress and compound controls is to:

- ensure the safety of on site and off site persons;
- prevent unauthorised access to the site; and
- reduce environmental issues/impact.

### 5.1.4 Work Instructions

The access, egress and compound management shall allow for:

- The installation of a 1.8 m high man proof fence and associated gates as shown on the engineering plans for the entire perimeter of each stage including the compound area;
- the installation of appropriate signage as required under statutory requirements;
- progressively adjust the fence line and compound area as required;
- the perimeter fence is to removed from site upon completion; and
- the compound is to provide the required site facilities in accordance with the OH&S Act, including amenities, facilities and offices.

### 5.1.4. Responsibility

It is the Contractor's responsibility to ensure that access, egress, compound and other fencing or related Occupation Health and Safety issues are installed and maintained for the entirety of the contract. The fencing is to be checked by the contractor on a daily basis during construction works.

The Contractor is to include traffic management, in accordance with Australian Standard 1742.3. The Contractor shall make use of their own traffic management plan if necessary, to ensure access, signage and traffic management is in accordance with the contractors program.

The Superintendent may order all works to cease or be restricted to certain access and egress points until such time as the fencing and associated signage has been installed to his satisfaction.

## 5.2. CIVIL STRUCTURES

The construction, testing and maintenance of culverts, pits, retaining walls, gross pollutant traps, and footpaths will be constructed as detailed on engineering plans. The works associated with these structures including the excavation and backfilling, supply of all necessary items, bedding, laying, jointing necessary pipes, junctions, and sundry equipment or activities required for the installation shall be undertaken by the contractor.

The works and processes being undertaken will be staged to maintain operational viability of the existing materials handling facility. Therefore all existing civil structures for access and drainage must be maintained during construction of the new works until these become operational.

### 5.2.1. Environmental Issues

The structures required as part of this project provide for:

- future development of the site;
- the movement and control of stormwater through and around the site; and
- pollution control measures.

### 5.2.2. Compliance and Best Practice Regulations

Below is an outline of some of the compliance and best practice requirements of the civil structures associated with the development.

- Suppliers and contractors shall provide assurance of the quality of all goods, materials and services to be provided and installed in accordance with the manufacturer's specification or industry standards.
- Suppliers and contractors will require a quality assurance system complying with elements of AS/NZS ISO 9001.
- All works are to be undertaken in accordance with the relevant Australian Standards or Building Code of Australia (BCA).
- The testing or certification of the civil structures shall be undertaken and provided to the superintendent for all structures.

### 5.2.3. Environmental Goals

The aim of the structures are to provide facilities that permit the development of the site in accordance with the requirements outlined in the conditions of the Development Approval or as required following discussions with regulatory bodies.

During construction and installation of pipework and drainage installations there is increased potential for soil erosion during inclement weather. Extra care is essential when control devices are removed to allow works to proceed.

### 5.2.4. Work Instructions Environmental Goals

The location, size, levels, grade and details of all structures shall be determined from the details as shown on the engineering plans.

Where structures are proprietary products then the installation, testing and maintenance of the structures shall be in accordance with the industry standards and manufacturer's requirements and specifications.

### 5.2.5. Responsibility

It is the Contractor's responsibility to ensure that all materials, work practices, finishing and testing are supplied and implemented to provide for the structures as required on the engineering plans.

The Superintendent may order all works to cease until such time as any particular structure/s has been constructed or rectified to his/her satisfaction.

## 5.3. DUST MANAGEMENT

Dust management involves the control of construction processes and stabilisation to reduce air pollution thus reducing potential nuisances to surrounding properties. This is in addition to the ongoing operation of the materials handling facility and the operational dust management plan which will continue throughout the construction period until the new dust control measures are installed.

### 5.3.1. Environmental Issues

The main source of dust generation is likely to result from:

- The excavation of material as part of the construction process;
- construction vehicle emissions and dust;
- transportation of material; and
- Vegetation removal.

### 5.3.2. Compliance and Best Practice Regulations

All construction activities shall be managed in accordance with the POEO Act (1997). Dust emissions from exposed soil areas and stockpiles must comply with the requirements of the Blue Book.

The reduction of source extent and the incorporation of process modifications or adjusted work practices are preventative techniques for the control of fugitive dust emissions and should be reviewed as the project proceeds.

### 5.3.3. Environmental Goals

The aim of dust management practices is to:

- Reduce potential nuisances to surrounding properties and residents;
- controlling working process;
- controlling plant, contractors and sub-consultants; and
- stabilise disturbed areas as soon as possible following completion of works.

### 5.3.4. Work Instructions

Dust generation / air pollution shall be minimised by:

- Spraying exposed soil areas with water to suppress dust;
- formalising road routes and ensuring traffic do not deviate from these tracks;
- minimising the area of exposed surfaces where possible;
- ensuring site material is not carried onto public roads by vehicle tyres;
- stabilising the completed earthworks by turfing, seeding and plant establishment;
- using wet suppression on material being handled;

- using wet suppression on stockpiles to achieve a suitable moisture content together with seeding and or covering where necessary;
- ensuring all trucks cover their loads;
- using wet suppression to achieve a suitable moisture content and limiting traffic to 15 km/h speed limits or closing the site on high risk days;
- the seeding of all disturbed areas as soon as practicable;
- limiting the volume of construction machinery working in one area at the same time
- regularly maintaining machinery for maximum efficiency; and
- minimise unnecessary movement of machinery on site.

Excavation, stockpiling and backfilling operations will be programmed on a daily basis. Stockpiled material shall be watered to minimise dust emissions.

Dust generation shall be observed on a daily basis during construction works. The Contractor shall suspend dust-generating activities during periods of high winds.

Dust deposition and concentration shall be continually monitored throughout the construction period by a principal appointed environmental consultant. Feedback from the consultant will include comment on practices being utilised by the contractor, and where practical the contractor will revise their practices.

Consultation with residents will also be required to ensure nuisance to these properties is kept to a minimum.

### 5.3.5. Responsibility

It is the Contractor's responsibility to ensure that dust mitigation practices are implemented and revised where necessary to reduce the volume of dust generated. Vehicle emissions are the responsibility of the individual machine operator under the direction of the Contractor. The Contractor is to liaise with the environmental consultant.

It is the environmental consultant's responsibility to provide feedback and advice to the Contractor on an ongoing basis to ensure that dust generation does not exceed the predicted volume of the above mentioned dust report.

The Superintendent may order all works to cease until such time as any particular dust nuisance has been controlled to his satisfaction.

### 5.3.6. Dust management for ongoing operation of facility

These conditions will be followed as part of the ongoing operations of the facility:

- Watering of the material to be screened is to be undertaken as required (in the event that visible dust is seen the screen operator or yard manager beyond the site boundary).

- Regular watering of unsealed roads, exposed surfaces and stockpiles is to occur
- Employee induction to ensure awareness of dust management measures is to occur
- Regular sweeping of sealed roads is to occur
- During adverse wind conditions, outdoor stockpiles are to be sprayed directly with water to suppress dust generation.
- Mobile machinery movement is to be restricted to designated routes and standing areas.
- Vehicle speeds are to be controlled on site (10km/h) to minimise dust generation and also to promote site safety
- The recovered aggregate stockpiles are not to be stored to a height exceeding 6 metres,

### 5.3.6. Responsibility during transition

It is the responsibility of the manager of the Materials Handling Facility to continue to operate the site in an environmentally responsible manner and to adopt where possible the controls which apply to the new Facility on the existing operations in the transition period.

In particular the environmental controls relating to dust management must be observed and coordination between normal work activities and construction activities on site is the responsibility of both the site manager and the contractor.

## 5.4. EMERGENCY RESPONSE

Emergency response management involves the control and monitoring of the construction processes and environmental incidents to reduce physical, mental or environmental damage to the Contractor or their staff, Superintendent, Certifier, Principal, consultants, neighbours and any other stakeholder related to or effected by this project.

### 5.4.1. Environmental Issues

The main issues regarding emergencies are:

- Injury or death to persons;
- damage to property, both on the site and external of the site;
- environmental damage; and
- Services conductors contained within the electrical easement.

### 5.4.2. Compliance and Best Practice Regulations

- Workcover Guidelines and Regulations
- Occupation Health and Safety Act and Regulations
- DEC Guidelines and Regulations
- Statutory acts and regulations
- Industry standards
- Details contained within the development documents
- Integral Energy rules for working under electrical conductors.

### 5.4.3. Environmental Goals

The aim of emergency response practices is to:

- Prevent situations that may increase the risk of damage to people, places or property;
- during or following incidents, reduce damage to the person, property or the environment; and
- assess incidents and accidents to reduce the risk of repeat occurrences.

### 5.4.4. Work Instructions

Emergency response procedures for project construction and operation shall be implemented generally in accordance with the following framework:

Define the problem:

- The immediate problem is identified in order to facilitate a review of available options for short-term action.

Manage the situation:

- The safety of any persons, either workers or others involved in project construction or operation, is the priority.
- Environmental damage is to be quickly minimised. All emergency action shall occur as soon as possible.

After the event:

- The Superintendent shall be contacted immediately once all people are safe and all possible immediate actions to control damage and manage the situation have been undertaken. The DEC shall also be advised if pollution has occurred.
- An action plan shall be prepared to ensure that similar events do not occur. This shall include recording any changes that are required to existing written procedures.
- A rectification plan shall be developed detailing how any remaining environmental effects shall be remedied.
- A full report of the incident shall be prepared.
- The Superintendent shall review the report and act accordingly.

In the event of a chemical or fuel spill or the leakage of waste water of unacceptable quality, a barrier shall be installed around the affected area. The spill shall then be mopped up with a suitable substance such as sand as quickly as possible. The contaminated material shall be collected for disposal at a waste depot licensed to receive such waste. All site workers shall be trained in emergency response so that action can be taken immediately.

### 5.4.5. Responsibility

The Contractor shall take all precautions against accident, damage to property and injury or loss arising from any cause whatsoever to persons employed by the Contractor, Principal or otherwise. The cost to the Principal of any such damage, injury or loss may be deducted from any monies due to the Contractor on account of this Contract.

The Contractor is to provide detailed information on the emergency response that will be implemented (Incident Management Plan). The Contractor will be required to establish a 24-hour emergency contact phone number and the Contractor will be the primary contact for any callouts to the site.

If an incident occurs on-site, personnel working on the site shall be responsible for following all procedure, including reporting all incidents. All incidents shall be documented and investigated, with action plans prepared or modified to ensure that the event does not re-occur.

## 5.5. EXCAVATION WORKS

"Excavation" shall mean excavation in all classes of material and shall include the removal of loose earth, sand, clay, all growth and rippable shale other than rock. Provision should also be made for the removal of concrete, masonry pipes, conduits, made ground and any other obstruction, material, matter or substance. These civil works shall be undertaken in accordance with the current Australian Standards, industry practices and relevant statutory authority's specifications.

Excavation for sewer, water, stormwater drainage, electricity and any other service line trenches will be to the correct lines and levels, with allowance for bedding.

### 5.5.1. Environmental Issues

Attention is drawn to the contents of the following investigations:

- Environmental Site Investigations AS121027-02 dated May 2010
- Geotechnical Report JC 09076A dated October 2009.

### 5.5.2. Compliance and Best Practice Regulations

The compliance requirements of the excavation works will be determined as part of the Development Application. Outlines of some of the issues highlighted in the Development Application process are:

- Geotechnical constraints and methods of construction;
- other environmental considerations like noise, dust and pollution control;
- statutory requirements and regulations;
- development application conditions; and
- industry standards.
- "Dial before you dig"- obtain reports

### 5.5.3. Environmental Goals

The aim of excavation management practices is to:

- Protect and restore natural system forms/functions;
- provide for the regrading of the site in accordance with the development requirements;
- minimise disturbance;
- minimise works; and
- increase efficiency.

### 5.5.4. Work Instructions

Excavation works shall entail:

- Initial topsoil stripping, including the organic and non-organic material if found on site. Most topsoil has been removed from the site.

- Asbestos fragments in the location noted in the Environmental Site Inspection shall be screened and handpicked and appropriately removed to a depth of 300MM

- Following the stripping of topsoil and before any excavation, filling or other works are commenced in any area, all exposed silt and other deleterious material which in the opinion of the Superintendent or geotechnical consultant is unsuitable for use as fill material, shall be removed and disposed of as directed by the Superintendent. Minor pockets of unsound material such as earth disturbed by tree stumps, etc. shall be removed.
- Unsuitable materials are typically defined as those materials that can not be used for their intended purpose. However, a more formal definition to be used for these works is:
    - Ground unsuitable for the purposes of the work, including fill liable to subsidence, ground containing cavities, faults or fissures, ground contaminated by harmful substances and ground which becomes soft, wet or unstable.
- Some materials are unsuitable for forming structural fill and should be either removed to spoil or used in non-critical areas.

  The contractor shall include removal of all materials that is not suitable for inclusion in the works from site and shall obtain all necessary approvals and the like from statutory authorities prior to disposal. Removal of unsuitable material shall be at the direction of the Superintendent and on the recommendation of the environmental or geotechnical consultants.

Material affected by excessive moisture content will not be considered as "unsuitable" unless it can be also classified as per above. When any material is affected by excessive moisture content the approach to be adopted to allow reuse shall be at the contractor's discretion and expense. Methods to dry the material and/or progress the works that the contractor may consider include:

i) expose to sun and wind in situ or by spreading to allow the material to dry to a moisture content which will allow compaction and the placement of overlying material, and/or

ii) scarify the material to a minimum depth of 300mm and work as necessary to accelerate drying of the material. Re-compact as specified and at the specified moisture content, and/or

iii) excavate moisture affected material and replace with compacted select material.

- The areas that have been specified for regrading shall be finished to the levels, with allowance for the topsoil if required. The area

shall be graded as shown on the engineering documents without abrupt changes of slope and/or depressions. The regraded surface, after the specified compaction shall present a good true surface, free from rocks, clods and waste of all description.

- Site regrading work shall be carried out as shown on the Engineering plans by cut and/or fill operations and/or by utilisation of surplus approved spoil material to be transported to the fill areas and blended with topsoil material prior to placement.
- If unsound or unsuitable material is encountered at the specified excavation level or in other than minor pockets, additional excavation and its replacement with compacted approved material may be ordered in writing by the Superintendent. All unsound or unsuitable material excavated in accordance with the provisions of this paragraph shall be disposed of or removed from the site.
- Excavation works in the vicinity of the existing sewer and water mains on the site shall initially be undertaken with plant that ensures that the existing sewer and water infrastructure is not damaged. From this point, all excavation within the zone of influence of the sewer and water mains shall be undertaken with an excavator working from outside the zone.
- When excavating through existing concrete or asphaltic concrete pavements or public roadways, saw cut the pavement to a depth of at least 50 mm and then remove the pavement with pneumatic tools. The relevant authority shall be informed at all times prior to excavating.
- When working outside the property boundary of the site ensure that the relevant authority or owner has been notified of the proposed works and has provided authorisation in writing. This authorisation is to be presented to the Superintendent prior to the commencement of these works. All works are to be restored to the relevant authorities / owners and Superintendents satisfaction.
- Excavation works shall be continually monitored in accordance with engineering plans and geotechnical reports throughout the construction period by a suitably qualified consultant. Feedback from the consultant will include comment on practices being utilised by the contractor, and where practical the contractor will revise their practices.
- All areas not subject to construction works shall be retained free from disturbance or damage. Should these areas become disturbed or damaged they shall be reinstated in accordance with Best Management Practices and the Conditions of Approval.

### 5.5.5. Responsibility

It is the Contractor's responsibility to ensure that excavation works are undertaken in accordance with the compliance, best practices, regulations and environmental issues.

The Superintendent may order all works to cease until such time as any particular works have been controlled to his satisfaction.

## 5.6. FLOOD MITIGATION - CONTINGENCY

Flood mitigation management involves the control of the floodwater during the construction processes to reduce the potential impacts on the environment and construction processes.

### 5.6.1. Environmental Issues

The main source of environmental concerns regarding flood mitigation is likely to result from:

- Pollution of downstream water bodies due to sedimentation;
- delays to works due to inundation;
- damage to landscaping works.

### 5.6.2. Compliance and Best Practice Regulations

The compliance requirements of flood mitigation are required under:

- Environmental legislation regarding pollution;
- best management practice; and
- industry standards.
- Liverpool City Council DCP 2008 – Chapter 9- Flooding Risk.

### 5.6.3. Environmental Goals

The aim of the flood mitigation measures during construction is to:

- control flood waters up to the 2-year Annual Recurrence Interval (ARI) storm event;
- reduce the potential of erosion due to storm events from upstream flows; and
- Minimise site disturbance due to inundation from upstream flows.

### 5.6.4. Work Instructions

The flood damage and potential environment risks shall be minimised by:

- providing controlled access points to the site at all times;
- establishing and maintaining growth of the plantings in designated areas and particularly the remedial areas. ;
- the effectiveness of the stabilised material and access to be checked daily; and
- maintenance of all erosion control measures adjacent to newly landscaped and mulched areas or to recently excavated areas prior to pavements being completed.

### 5.6.5. Responsibility

It is the Contractor's responsibility to ensure that flood mitigation practices outlined are implemented and maintained as a minimum. The contractor is to assess the potential risk and provide relevant flood management facilities as he determines necessary.

The Superintendent may order all works to cease until such time as any particular flood mitigation control has been installed or restored to his satisfaction.

The Flood Assessment Report dated September 2009 by Bewsher Consulting outlines the potential Flood risk for the site.

## 5.7. HAZARDOUS MATERIAL MANAGEMENT

Hazardous materials such as fuel, lubricants and chemicals are likely to be stored within the site compound during the construction period. These materials, including all fuels, shall be managed to reduce the potential for contamination of the adjacent watercourse or surrounding ground. All such materials must be stored above AHD level 29.9 at all times.

### 5.7.1. Environmental Issues

The main source of hazardous materials is likely to result from:

- Site storage within the site compound;
- Plant;
- Vehicles; and
- Refuelling incidents

### 5.7.2. Compliance and Best Practice Regulations

The compliance requirements of the hazardous material management are determined through statutory legislation like:

- Workcover Guidelines and Regulations;
- Occupation Health and Safety Act and Regulations;
- DEC Guidelines and Regulations;
- Code of Practice for the Safe Removal of Asbestos;
- Protection of the Environment Act; and
- Environmentally Hazardous Chemicals Act

### 5.7.3. Environmental Goals

The aim of hazardous material management practice is to:

- Reduce the potential of spillage from site storage areas;
- Control the use of hazardous materials to within confined areas; and
- Control refuelling of plant and vehicles either on or adjacent to the site
- Sto4re materials above flood risk levels.

### 5.7.4. Work Instructions

The environmental risks associated with hazardous material shall be minimised by:

- Implementation of a dust monitoring regime by an independent testing authority during demolition;

- Fuel and chemicals shall be stored in a safe manner to ensure that, in the event of spillage, the spill is contained and immediately cleaned up;
- All machinery shall carry an oil spill kit to minimise risk of any accidental oil spills from machinery contaminating soils and the stormwater system;
- Locating spill response equipment near the storage area;
- Containing any spillage immediately and mopping up with a suitable material such as sand. Contaminated material, including soil, shall be collected for disposal at a waste depot licensed to receive such waste; and
- Hazardous material management and the associated activities shall be observed on a daily basis during construction works.

### 5.7.5. Responsibility

It is the Contractor's responsibility to ensure that hazardous material management practices are implemented and revised where necessary to reduce the potential of spillage or contamination in accordance with statutory and industry requirements. Full documentation records shall be kept of all removal practices and testing regimes. These are to made available for audit and review.

The Superintendent may order all works to cease until such time as any particular hazard has been controlled to his satisfaction.

## 5.8. NOISE MANAGEMENT

Noise management involves the control of the construction processes to reduce noise pollution to neighbouring residents. The task associated with noise management under this section comprises the provision of both physical and management noise controls as required by the relevant legislation.

### 5.8.1. Environmental Issues

Noise and vibration levels shall adhere to all guidelines. The limited extent of construction works at any one time should not allow for excess noise levels.

### 5.8.2. Compliance and Best Practice Regulations

All construction activities shall be managed in accordance with the POEO Act and Environmental Operation Act. Other requirements include those as specified in the DEC MAO Construction Sites (1995) document and the NSW Environmental Noise Control Manual.

### 5.8.3. Environmental Goals

The aim of noise management practices is to:

- Minimise noise and vibration pollution to neighbouring properties to within the guidelines detailed in the Acoustic report.

### 5.8.4. Work Instructions

Construction noise and its associated impact shall be minimised by:

- Restricting construction activities outside of the restricted areas, to the hours of 7.00am to 5.00pm Monday to Friday, 8.00am to 1.00pm on Saturday, and no work on Sundays or Public Holidays;
- Provide signage or perimeter indicators for the restrictive construction areas;
- Sound barriers if required;
- The selection of plant and equipment based on acoustic performance;
- Community Liaison will allow occupants of any local residences that are in close proximity to the construction works to plan and organise their week around any noisy activities, including providing contact details for complaints and discussions; and
- A register of complaints shall be maintained.

The noise restricted construction activities shall be observed continually during construction works.

The noise levels shall be continually monitored in accordance with the Acoustic report throughout the construction period by a suitably qualified principal appointed consultant. Feedback from the consultant will include comment on practices being utilised by the contractor, and where practical the contractor will revise their practices.

### 5.8.5. Responsibility

It is the Contractor's responsibility to ensure that noise mitigation measures and records are implemented and that a Complaints Register is implemented and maintained.

It is the Acoustic Engineer's responsibility to monitor the noise levels during construction and provide feedback to the superintendent and contractor on how to minimise these levels.

The Superintendent may order all works to cease until such time as any particular noise control facility has been installed or undertaken to his satisfaction.

## 5.9. OCCUPATIONAL HEALTH AND SAFETY

OH & S management involves the control of construction processes and of a safe working environment to reduce incidents and accidents thus reducing potential Occupational Health, Safety and rehabilitation industrial incidents and accidents to employees, contractors and visitors.

### 5.9.1. Environmental Issues

The OH & S management is required to ensure the following are implemented and maintained monitored and reviewed:

- Risk Management;
- Evacuation;
- Hazardous Substances;
- Work Wear Requirements;
- Work Place Hazards; and
- Site Specific Field Operations.

### 5.9.2. Compliance and Best Practice Regulations

All construction activities shall be managed in accordance with the Occupational Health & Safety Act and the Occupational Health & Safety Regulations.

### 5.9.3. Work Instructions

OH & S monitoring and review operations will be programmed on a daily basis, to minimise work place incidents and accidents.

OH & S issues shall be continually monitored in accordance with relevant Inspection and Testing Plans (ITP's) throughout the construction period by a suitably qualified consultant. Feedback from the consultant will include comment on practices being utilised by the contractor, and where practical the contractor will revise their practices.

Consultation with employees, subcontractors and visitors as required will also be required to ensure OH & S accidents and incidents are kept to a minimum.

### 5.9.4. Responsibility

It is the Contractor's responsibility to ensure that OH & S practices are implemented and revised where necessary to reduce the occurrence and impact of work place accidents and incidents. An Incident Management Plan is to be developed and implemented.

The Superintendent may order all works to cease until such time as any particular OH & S incidents and or accidents have been controlled to his satisfaction.

## 5.10. ODOUR CONTROL

Odour management involves the control of the construction processes.

### 5.10.1. Environmental Issues

To comply with the POEO Act in regards to the management and disposal of any odour generated. Odour levels shall adhere to all guidelines. The limited extent of construction works at any one time should not allow for excess odour levels.

### 5.10.2. Compliance and Best Practice Regulations

All construction activities shall be managed in accordance with the relevant Acts and encompass such activities as odour from construction machinery and the possibility of uncovering rotting organic material.

### 5.10.3. Environmental Goals

The aim of odour mitigation practices is to:

- Minimise odour to statutory requirements; and
- provide for odour mitigation during the management of construction rather than as a reactionary response.

### 5.10.4. Work Instructions

Odour arising from construction plant and waste material generated from the compound shall be minimised by:

- The erection of the site compound being well away from any adjoining residence.

### 5.10.5. Responsibility

It is the Contractor's responsibility to ensure that odour mitigation measures are implemented.

The Superintendent may order all works to cease until such time as any particular odour source has been controlled to his satisfaction.

## 5.11. SOIL + WATER MANAGEMENT

Removing the vegetation cover from an area leaves the underlying soil susceptible to erosion by stormwater run-off. Run-off can convey sediment from the construction site and deposit it into the downstream waterways, resulting in a reduction in water quality.

To control the expected sediment export from the site erosion and sediment control measures have been prepared and will be enforced during the construction phase of the development.

The work under this part comprises the provision of a complete soil and water management facility to control the erosion and promote sedimentation of any eroded material. The control facilities shall convey all overland flows through the particular control facilities as nominated on the Drawings.

The soil and water management system shall be installed, constructed and maintained in accordance with the NSW Department of Housing's "Managing Urban Stormwater; Soils and Construction." The work shall be undertaken in a manner that the erosion risk is minimised and those disturbed surfaces are progressively stabilised.

Assessment for the extent of the site preparation and erosion control measures required for this development is to be undertaken. All of this work is to be carried out within the development site prior to the commencement of any works that will increase the potential of erosion from the site.

The task associated with rehabilitation under this section comprises the provision of a stabilisation works for areas disturbed during the earthworks.

### 5.11.1. Environmental Issues

The objectives of the soil water management plan are:

- To control the erosion of soil from disturbed areas on the site;
- To protect downstream water quality and prevent any sediment laden water from leaving the existing site;
- To provide rehabilitation and re-vegetation for disturbed areas; and
- To establish an ecologically sustainable system of pollution control works during construction.

### 5.11.2. Compliance and Best Practice Regulations

All site personnel will be required to minimise land disturbance to essential construction areas only with the purpose of reducing the soil erosion hazard on site.

Appropriate erosion and sediment controls are included on the detailed design drawings. Through appropriate implementation of this soil and water management plan, the impact on the natural and physical environment will be minimised. The plan is to be consistent with the objectives as outlined in the NSW Government Publication "Managing Urban Stormwater" March 2004 ("BlueBook").

All soil and water management facilities shall comply with the NSW Government's "Managing Urban Stormwater, Soils and Construction". Where a particular type of facility is required, details are specified on the Drawings.

### 5.11.3. Work Instructions

The risk of sediment pollution of the waterways shall be minimised in accordance with the requirements of the Blue Book:

Where practical the following principles shall be applied for the control of erosion and sedimentation:

- Stabilisation of denuded areas shall commence as soon as possible but no later than thirty days following the areas being disturbed;
- Stabilisation of disturbed areas shall be hydro mulched with native seed mix (seed mix sourced from others);
- Stabilisation of disturbed areas shall be in accordance with the Specification for Grassing and/or Specification for Landscape Works;
- All temporary earth diversion channels/banks and sediment basin embankments shall be seeded as soon as possible but within fifteen days of completion of their earthworks;
- Stabilisation of all cut and fill slopes shall be undertaken as soon as possible but within fifteen days of completion of formation;
- All stabilisation measures shall be undertaken prior to issue of the Certificate of Practical Completion; and
- All stabilisation works are to be relocated or decommissioned and removed off site upon instruction by the superintendent.

Sediment basin storage will be provided in the locations as shown on the design plans. Construction and maintenance of the sediment basins will be in accordance with the Blue Book.

If necessary, the settled water will be treated with a flocculation agent to assist in the settlement of fine particles. Flocculation will be undertaken in accordance with the Blue Book. If necessary, additional flocculation and treatment will also be undertaken to reduce the contaminates phosphorous, chlorine and salinity. Before any water is discharged, tests will be undertaken to determine the suitability and acceptability of the waters for release into the downstream drainage system.

A construction sequence shall be implemented to ensure all sediment control measures are in place before the commencement of any significant work practice on site.

The contractor will be required to implement and maintain a self-auditing program in accordance with Chapter 8 of the Blue Book. The Contractor must keep a complete set of the self-audit records on-site and make them available to any authorised person on request.

Water quality samples will be required at regular intervals at the downstream end of sediment basins or other locations as directed by the superintendent.

Samples will be tested by the principal appointed environmental consultant for suspended solids, pH and other tests as directed by the superintendent.

All records will be kept on site and made available to any authorised person upon request.

A self-auditing program will be established based upon a checklist sheet. A site inspection using the checklist is required to be undertaken by the contractor's site manager:

- At least weekly;
- Immediately before site closure; and
- Immediately following rainfall events in excess of 5mm.

All sediment detention systems are required to be kept in good working condition. Particular attention will be given to:

- Recent works to ensure that they have not resulted in diversion of sediment laden water;
- Degradable products to ensure they are replaced as required; and
- Sediment removal to ensure the design capacity or less remains in the settling zone.

The location of each soil and water management facility shall be determined from the details on the Drawings, unless otherwise directed by the Superintendent.

Additional erosion and/or sediment control works may be required to be constructed as they become necessary to ensure the desired protection is given to downstream lands and drainage systems.

All sediment and erosion control devices shall be maintained in a satisfactory working order throughout the works or until such earlier time as the area above has been stabilised and the Superintendent directs that the device be removed.

Inspect the devices after all storm events for structural damage or clogging by silt and other debris and make prompt repairs or replacement.

All sediment deposited within the gross pollutant traps shall be periodically removed to a disposal area as directed by the Superintendent.

Gravel or other filter materials shall be cleaned and restacked or replaced when directed by the Superintendent to maintain effective performance.

In the case of the temporary construction exit, the contractor shall undertake daily surface cleaning by drag broom or equivalent, to remove all build up of foreign material to the satisfaction of the Superintendent.

All works are to be contained wholly within the development site. If it becomes necessary to undertake work outside the property boundary of the site the relevant authority or owner shall be notified of the proposed works.

### 5.11.4. Responsibility

It is the contractor's responsibility to ensure that all sediment and erosion control practices outlined in the engineering plans and the regulatory requirements are implemented and that all reasonable measures are taken to minimise the risk of sediment and other pollutants being carried from the site by stormwater run-off.

Silt settled within sediment basins shall be blended with stockpiled topsoil in accordance with industry best practices and used to topsoil the park or residential areas

At all times, the Contractor shall ensure that the disturbed areas are maintained with an even surface gradient that will enable surface water to drain freely to the sediment fences and discharge points.

In areas subject to prolonged exposure and/or where the nature of the surface is considered highly prone to erosion, the Superintendent may direct that one or more of the following control measures be implemented:

(a) Intercept or divert runoff from exposed areas by constructing diversion channels or bunds in accordance with the NSW Department of Housing's "Managing Urban Stormwater, Soils and Construction."

(b) Establish temporary and permanent vegetation or mulching. Temporary and/or permanent ground cover shall be established on disturbed areas as directed by the Superintendent and in accordance with the Specification for grassing.

(c) Construct and maintain sediment traps at appropriate locations in accordance with the NSW Department of Housing's "Managing Urban Stormwater, Soils and Construction."

All necessary works and materials including excavation, supply, fixing, lay, installation of stakes, ties, silt barriers, straw bales, seeding material and sundry equipment required for the installation of the soil and water control facilities shall be provided.

## 5.12. TOPSOIL MANAGEMENT

Topsoil is a valuable resource for the re-vegetation of disturbed areas.

### 5.12.1. Environmental Issues

The reuse of topsoil sourced during the stripping process is essential to earthwork balance, the riparian re-vegetation and development island stabilisation.

### 5.12.2. Compliance and Best Practice Regulations

The compliance requirements for the topsoil sourcing and reuse are development driven with the earthworks balance, riparian vegetation and development island topsoil for stabilisation

### 5.12.3. Environmental Goals

The aim of Topsoil management practices is to:

- Create a balanced cut to fill development that utilises the resources on site for a future benefit;
- Provide a sufficient topsoil layer to enable the stabilisation of the site's development.

### 5.12.4. Work Instructions

To maintain the integrity of the topsoil on site during the construction period, it will be necessary to undertake the following measures;

- The topsoil from the site shall be stripped prior to the main construction works and stockpiled separately from other materials;
  - The topsoil shall be stockpiled in approved locations outside areas such as drainage depressions, for later respreading;
  - Grass shall be stripped off together with the topsoil;
  - Where the topsoil is retained for more than one month, the stockpile shall be covered to minimise erosion potential and degradation by weeds and animals (e.g. birds). Topsoil shall be re-spread as soon as possible;
  - Every attempt shall be made to stockpile topsoil on site in depths no greater than 2.0 m. Where this is not possible the superintendent shall be notified;
  - Where the topsoil stockpile is greater than 2m in height and is left for periods of time greater then 6 weeks, then the stockpile shall be turned in order to aerate the material and in doing so maintain the topsoil's microbes;
  - To minimise soil loss all stockpiles are to be track rolled and where left for more than thirty days, seeded;
  - Commencement in placing topsoil on the prepared areas shall not take place until the authority to do so has been obtained from the Superintendent;

- After the Superintendent has authorised the placing of topsoil, works to spread the stockpile to the specified depths: 0.2m within all drainage channels; 0.1m (minimum) within the voids of rip-rap; and
- The topsoil is not to be over compacted within the landscape zones; and
- Silt settled within sediment basins shall be blended with stockpiled topsoil in accordance with geotechnical requirements and used to topsoil the landscaped areas; and
- After spreading the topsoil, it shall then be trimmed so that the finished surface of the topsoil conforms to the design levels and grades unless otherwise specified or directed. Top soiled areas, when finished, shall present smooth surfaces free of stones and lumps of soil and blend into adjoining undisturbed ground.

### 5.12.5. Responsibility

It is the Contractor's responsibility to ensure that topsoil management addresses the aims and requirements detailed within the engineering plans.

## 5.13. TRAFFIC MANAGEMENT

The OH & S act makes any employer responsible for the safety of its own workforce, its contractors, visitors and the public at any work site under its control. Traffic control at work sites highlights this responsibility to ensure that road users are able to travel through, past or around work sites in safety. Of equal importance is the obligation to ensure that the workforce is able to work safely in the vicinity of road users and work site plant.

Traditional site activities of the operational materials handling facility are expected to be able to continue uninterrupted during the construction process.

### 5.13.1. Environmental Issues

As described above the main issue regarding traffic management is the health and safety of workers, visitors and the public as they travel around, or through the development area. There are a large number of private dwellings within the development that will require permanent access.

### 5.13.2. Compliance and Best Practice Regulations

The compliance requirements of the traffic management are outlined below. These tasks are not exhaustive and should be supplemented by the contractor with some of the issues highlighted in the Development Application process are,

- No work is to commence on site until such time as a person accredited to prepare traffic control plans in accordance with AS1742.3 and the Roads and Traffic Authority's publication "Traffic Control at Worksites" has certified a Traffic Control Plan for the development/site;
- Compliance with OH&S legislation, regulations, standards and codes, and the Site Safety Rules; and
- Any works outside the property boundary of the site, ensure that the relevant authority or owner has been notified of the proposed works and has provided authorisation in writing. This authorisation is to be presented to the Superintendent prior to the commencement of these works. All works are to be restored to the relevant authorities / owners and Superintendents satisfaction.

### 5.13.3. Work Instructions

Prior to the commencement of any work a traffic control plan is to be prepared. The prepared traffic management plans, must be prepared and certified a person accredited to prepare traffic control plans in accordance with AS1742.3 and the Roads and Traffic Authority's publication "Traffic Control at Worksites".

The Traffic Control Plan shall be implemented during the construction phase of the development and a copy of the plan shall be available on site at all times.

A copy of the Traffic Control Plan shall accompany the Notice of Commencement to be submitted to Council 2 days before any work is to commence on site.

Upon completion of the project the temporary traffic management facilities shall be removed and the areas disturbed restored at least to its pre development standard.

The traffic management facilities shall be observed on a daily basis during construction works. The Contractor shall suspend vehicle or pedestrian use of a certain traffic management facility should evidence of a hazardous or dangerous situation be present.

### 5.13.4. Responsibility

It is the Contractor's responsibility to ensure the safety of his own workforce, contractors, visitors and the public. They are required to prepare, implement and keep records (Section 6 – RTA, Traffic Control at Work Sites) the Traffic Management Plan that satisfies the requirements of the OH&S Act, Regulations and the Traffic Control at Work Sites manual 1998 RTA.

The Superintendent may order all works to cease until such time as any particular safety issue has been controlled to his satisfaction. The Superintendent must be consulted on all traffic management matters to ensure that construction activities do not restrict the safe operation of the materials handling facility during the transition phase.

## 5.14. WASTE MANAGEMENT PLAN

Inert and solid waste is likely to be generated during construction works, consisting of green waste and construction waste. In addition, some waste water laden with fine sediment is likely to be generated from disturbed sites, whilst effluent will be generated within site staff amenities.

### 5.14.1. Environmental Issues

Litter or waste left to scatter across the site during construction will not only be unsightly but also have the potential to pollute the surrounding streetscapes and neighbourhoods. If it is not prevented from entering the downstream stormwater system the work required to remove it increases substantially.

Also of potential risk is where water has been in contact with dumped waste enters the adjacent watercourse or water table.

The main source of litter is likely to result from:

- Construction activities;
- Dumped waste; and
- Site amenities.

### 5.14.2. Compliance and Best Practice Regulations

The compliance requirements of litter and debris control are determined from statutory requirements like the POEO Act and other industry standards.

### 5.14.3. Environmental Goals

The aims of litter and debris management practices are to:

- Minimise loose litter;
- Contain litter or debris to within designated sorting areas; and
- Reduce and control dumped material.

### 5.14.4. Work Instructions

Litter and debris shall be minimised by:

- To ensure the site is free from litter and dumped waste material during the course of the project regular inspections shall be undertaken on a weekly basis;
- The removal of litter shall be from both sides of the proposed perimeter fence;
- The site shall be fenced in accordance with the engineering plans to prevent any illegal dumping;
- Any discovered dumped waste shall be removed without delay;

- Waste materials shall be recycled where possible or appropriately disposed of off-site in accordance with the requirements of the DECCW and Council;
- Two appropriate waste bays shall be provided at the site for the depositing of recyclable waste, litter and other waste to allow the sorting of different waste material. These bins shall be covered at all times when works are not operating on site;
- Trucks shall be cleaned before leaving the site. A truck cleaning facility in the form of a wash down area shall be installed at the exit to the site. This will prevent the deposition of soil and other materials on public roads; and
- Provision of toilet facilities at the rate of one toilet to every 20 persons employed on the site. Each toilet must be a standard flushing toilet connected to a public sewer or where this is not practical, any other sewage management facility approved by council.

### 5.14.5. Responsibility

The Contractor will have to comply with the POEO Act in regards to the management and disposal of any waste generated. The provision and management of site facilities shall be undertaken in accordance with the OH&S Act

The Superintendent may order all works to cease until such time as any particular waste management issue has been addressed to his satisfaction.

## 5.15. WATER QUALITY MANAGEMENT

The management of water quality for the site involves the management and control of construction processes to maintain the water quality.

### 5.15.1. Environmental Issues

Environmental issues associated with water quality include:

- determine baseline and surface water conditions and set suitable benchmark criteria for water quality;
- to minimise impacts on the surface water system from the earthworks process;
- analyse various design options to minimise potential interaction between surface water;
- design a surface water management strategy;
- determine critical triggers for the implementation of a surface water management strategy; and
- design a management plan which will be used to implement mitigation strategies, if required.

### 5.15.2. Compliance and Best Practice Regulations

The compliance requirements of the water quality management will be determined as part of the Development Application. An outline of some of the issues highlighted in the Development Application process are;

- Surface water that is discharged from the site during construction into the downstream drainage system shall meet pre-construction water quality;
- Work is to be in accordance with the engineering plans and water management plan for the site;
- Control of the water quality that discharges from the site (Gross pollutants, Sediment and Nutrients);

### 5.15.3. Environmental Goals

The aims of water quality management practices are to:

- Ensure surface water quality, quantity and levels are not changing significantly during and after construction

### 5.15.4. Work Instructions

During construction the following measures are required to ensure water quality for the surface water is assessed:

- Undertake regular self-audit of maintenance requirements and testing using a check sheet, where a weekly site inspection will be made by the site manager;

- Monitoring of erosion and sediment controls; where water fills more than one quarter of the design capacities, water must be flocculated and discharged within 5 days of any storm event capable of these capacities;
- Undertake installation and regular maintenance checks of equipment GPTs and erosion and sedimentation controls.

### 5.15.5. Responsibility

It is the Contractor's responsibility to ensure that the facilities for the surface water monitoring are available to the specialist consultant. The contractor is also to liaise and provide access to the site for the specialist consultant to undertake the required testing regime.

The Superintendent may order additional works to be undertaken or other works to cease until such time as the testing facilities and access to these facilities are available.

# 6. CONCLUSION

The superintendent will be required to report on the performance of the contractor in complying with the ECMP plan and will be required to follow the "Responsibility" obligations outlined throughout the construction period.