8. Management of potential impacts – operational phase

8.1 Intent

This part of the EMP specifies those matters which must be complied with by the Proponent during the "on-maintenance period" being the period after construction but before the council assumes responsibility for the subdivision works. The Proponents obligations in this section of the EMP conclude at the end of the maintenance period for each stage.

It also details how the development design will contribute to stormwater treatment and water quality maintenance during the operational phase (or life) of the development.

8.2 Sediment and Erosion Controls

Person responsible	Contractor's Site Manager, Consulting Engineer

Issue	Sediment and Erosion Controls
Operational policy	To prevent the displacement of sediment and soil across and offsite during storm events.
Performance criteria	Off-site discharges to comply with requirements for suspended sediments as detailed in Section 8.3 of the EMP.
Implementation strategy	• Temporary erosion and sediment control devices shall be maintained in an operational state during the maintenance period. • Permanent control measures shall be maintained in an operational state.
Monitoring	Temporary erosion control measures are to be inspected monthly and after storm events. Permanent control measures are to be inspected monthly and after storm events
Auditing	Quarterly inspections to be carried out by an Independent Environmental Consultant
Reporting of Monitoring Results	Reporting only required in the event of failure of the sediment and erosion measures.
Identification of incident or failure	• Signs of erosion on site • Build up of sediment • Falling water quality
Corrective action	Repair temporary sediment and erosion control measures. Check permanent measures for build up of sediment and clean out as necessary.

Commitment 7

Erosion and sediment control devices will be maintained during the on-maintenance period until the risk of soil erosion and sediment transport is considered negligible.

8.3 Surface Water Monitoring

Person responsible	Contractor's Site Manager, Environmental Consultant

Issue	Surface Water Monitoring
Operational policy	To re-establish surface water conditions and verify that development management is appropriate.
Performance criteria	All water discharged from the site will comply with the following criteria:

Water Quality Parameter	Release Criteria	Criteria Type
pH	6.5 – 8.5	Range
Suspended Solids	<50 mg/L	Maximum
Total Nitrogen	0.75 mg/L	Maximum
Total Phosphorus	0.1 mg/L	Maximum
Dissolved Oxygen (field measured)	>6.5 mg/L	Minimum
Oil and Grease	No visible film, No detectable odour	–

Implementation strategy	1. During rainfall events (defined as >25mm in any 24 hours period) samples are to be collected from the the discharge point of the water quality control pond on site and analysed at a NATA registered laboratory during the "On-Maintenance" period. 2. Surface water monitoring shall be undertaken at the discharge points from the development stages until the water quality criteria have been established. 3. Monitoring will also be undertaken during flood events where practicable. This monitoring will allow water quality comparisons to be made.
Monitoring	Surface water monitoring will be conducted at the monitoring points for pH, EC, Suspended Solids, Dissolved Oxygen and Oil & Grease during storm events. Flow rates are to be estimated and recorded at the time of sampling. • If problems are identified, laboratory analysis at a NATA registered laboratory for: turbidity, Suspended Particulate Matter, N, & P until such time as BSC is satisfied that the Proponent's duty of care under the PROTECTION OF THE ENVRIONMENT AND OPERATIONS 1997 Act has been discharged. • These provisions will conclude at the end of the "On Maintenance" period.
Auditing	• Management to audit water quality results quarterly to verify that discharges comply with the performance criteria.

Reporting of Monitoring Results	1. Monitoring test results are to be compiled on monthly result sheets. Quarterly reports containing raw data and an interpretation to be sent to BSC 2. Results to be available at all times
Identification of incident or failure	Fall in surface water quality at the environmental monitoring points.
Corrective action	1. Identify reason for deterioration in surface water quality to identify if it is linked to the development. 2. Take necessary steps to address the problem such as improved temporary sediment and erosion controls or flocculation of water quality control ponds.

Commitment 8

Subdivision works will be maintained during the maintenance period to ensure surface water quality complies with the water quality criteria agreed with BSC.

8.4 Maintenance

Person responsible	Contractor's Site Manager, Consulting Engineer

Issue	Maintenance
Operational policy	To maintain the water quality control structures to ensure adequate performance during the maintenance period.
Performance criteria	The control measures are maintained and operational.
Implementation strategy	1. Ensure inlet and outlet structures of basins are not blocked and are structurally stable. 2. All waste to be disposed of at Council approved waste facilities.
Monitoring	• Monthly inspection of control structures during the maintenance period • Any recurring problems with the control structures to be rectified during the maintenance period • Structures also to be inspected following major rainfall events
Auditing	• Management to carry out quarterly inspections to verify that the control measures are properly maintained.
Reporting of Monitoring Results	• Record inspection details. • Record details of all maintenance activities. • Results to be available to NSW EPA at all times
Identification of incident or failure	1. Blockage of stormwater system 2. Re-entrainment of trapped sediments 3. Deterioration of water quality within or downstream of control structure.
Corrective action	1. Clean or maintain stormwater control structure as appropriate. 2. Take necessary steps to address the problem to prevent a recurrence.

Commitment 9

Water quality control structures will be adequately maintained during the maintenance period to ensure continued performance

8.5 Investigating and reporting fish kills

Person Responsible	Contractor's Site Manager, Environmental Consultant, Appointed Council Officer

Issue	Fish Kills
Operational policy	To ensure that the appropriate authority has been notified of fish kills as per the Protocol for investigating and reporting fish kills, NSW EPA and NSW Fisheries, October 2000
Performance criteria	Contractor is fully aware of his responsibility to investigate and notify appropriate authorities of any significant fish kill event within any water bodies on site.
Implementation strategy	Ensure contractor has appropriate information and understanding of and pertaining to the reporting of fish kills on site (as outlined in Protocol for investigating and Reporting Fish Kills, NSW EPA and NSW Fisheries, October 2000). • On becoming aware of a fish kill, a Part A Notification Form (included in Appendix 5) is to be completed and forwarded to NSW Fisheries on Fax No 66862018. • Water and fish samples are to be collected and stored in accordance with the instructions contained in the Protocol for investigating and Reporting Fish Kills, NSW EPA and NSW Fisheries, October 2000 included in Appendix 5.
Monitoring	Daily inspections to be carried out to check for dead fish.
Reporting	Part A Notification Form (included in Appendix 5) is to be completed and forwarded to NSW Fisheries on Fax No 66862018.
Corrective action	Information of corrective action to be obtained from EPA or Fisheries Department depending on nature of fish kill.

9. Administration of the EMP

9.1 Amendment of the EMP

The Proponent may make an application to BSC to amend the provisions of this EMP. The application shall:

1. be in writing; and
2. specify the provisions of the EMP to which the application relates; and
3. state how the proposed amendments achieve the objectives of the provisions to which the amendments relate.

BSC shall approve the amendment where BSC is satisfied acting reasonably that the proposed amendments achieve the objective of the provisions to which the amendment relates.

9.1 Incident management

The Proponent and any person appointed by the Proponent as having responsibility for a control strategy set out in this EMP have clearly defined responsibilities under the Environment Planning and Assessment Act 1979 to report any incidents likely to cause material or serious environmental harm.