GIPPSLAND LAKES OCEAN ACCESS

Environmental Management Plan

Gippsland Ports
97 Main Street
P O Box 388
BAIRNSDALE VIC 3875

Version 4.2.3– 5 November 2015

Document revision

Version	Date	Prepared by	Comments
Version 3	28 October 2011	Margaret Supplitt	Amended and issued for approval under CMAC
Version 4	4 November 2011	Margaret Supplitt	Finalised for 2011 TSHD works
Version 4.1	28 September 2012	Damian Snell	Amended to incorporate 2011 EMP Audit recommendations and issued for approval by Director Major Projects and Environmental Approvals, DSE
Version 4.2	21 March 2013	Damian Snell	Amended to clarify construction/renewal works associated with Sand Transfer System and issued for approval by Director Major Projects and Environmental Approvals, DSE
Version 4.2.1	10 October 2013	Damian Snell	Amended to incorporate 2012 EMP Audit recommendations and new SD2013/2442 permit conditions and approved by Acting Director Regulation and Approvals, Environment and Landscape Performance, DEPI (12/11/13)
Version 4.2.2	14 August 2014	Damian Snell	Amended to incorporate 2013 EMP Audit recommendations and approved by Director Regulations and Approvals, Environment and Landscape Performance, DEPI (20/08/14)
Version 4.2.3	9 November 2015	David Holding	Amended to replace Annexures 1 & 2 with the latest versions of Environmental Policy and Incident Risk Event Report form.

Table of contents

Figures

Tables

Abbreviations

CD	Chart Datum
CSD	Cutter Suction Dredge
DMG	Dredged Material Ground
DAFF	Department of Agriculture, Fisheries and Forestry
DSE	Department of Sustainability and Environment
DEPI	Department of Environment and Primary Industries (formerly DSE)
EMP	Environmental Management Plan
GLOA	Gippsland Lakes Ocean Access
GP	Gippsland Ports
IMO	International Maritime Organisation
LTMP	Long Term Management Plan
MDP	Maintenance Dredging Program
SCD	Side Casting Dredge
SEMP	Safety and Environment Management Plan
SEWPaC	Department of Sustainability, Environment, Water, Population and Communities
STS	Sand Transfer System
TACC	Technical Advisory and Consultative Committee
TSHD	Trailing Suction Hopper Dredge

1 Introduction

1.1 Scope

The Environmental Management Plan (EMP) details the environmental management requirements to be followed for Gippsland Lakes Ocean Access (GLOA) activities.

This EMP includes:

- the requirements for environmental management during the planning, implementation, evaluation and review of dredging activities;
- the responsibilities for implementing this EMP; and
- the project delivery standards (PDS) including environmental controls and limits to ensure that project objectives and targets are achieved.

This EMP applies to the maintenance dredging works described below. GP has overall responsibility for the implementation of GLOA activities in accordance with the requirements of this EMP.

1.2 Project Description

In order to maintain navigable waters between the Port of Gippsland Lakes and Bass Strait, Gippsland Ports must conduct maintenance dredging at Lakes Entrance in the Inner Channels and the Bar. For over 30 years to 2008 this has been undertaken using a side casting dredge (SCD). However, it became apparent that this approach could not keep up with the accumulating sands and in 2005 the Victorian Government announced the Lakes Entrance Sand Management Program. One aspect of this program was the trial use of the Trailing Suction Hopper Dredge (TSHD) in 2008, 2009 and 2010 with disposal of dredge material at Dredge Material Grounds (DMGs) along the coast outside the entrance. TSHD Maintenance dredging has also occurred since 2011 under the GLOA program. This is consistent with Gippsland Ports continuous improvement approach to the delivery of safe navigation to the Gippsland Lakes, and was supported by Government.

Key activities associated with the GLOA project are:

- Trailing Sand Hopper Dredge (TSHD) – a TSHD is to be contracted by Gippsland Ports to undertake regular maintenance dredging at approximately 12 month intervals.
- Side Casting Dredge (SCD) – unscheduled maintenance dredging by a SCD may be required should the TSHD not be available and the bar begins to shoal.
- Cutter Suction Dredge (CSD) to maintain navigable profile of the inner channels (Swing Basin, The Narrows, Cunninghame Arm, Hopetoun Channel) (see Figure 1: Dredging areas).
- The Sand Transfer System (STS) associated with the CSD dredging (see Figure 2: Elements of the Sand Transfer System) comprising construction and maintenance works for:
    - a pump house called the Sand Transfer Station (STS) located on Long Island.
    - transfer pipelines and risers to bring dredge slurry from the CSD to the STS.
    - a pipeline and near-shore discharge to deliver pumped material to Ninety Mile Beach about one kilometre east of the Entrance.
    - a pipeline and near-shore discharge to deliver pumped material to Ninety Mile Beach about one kilometre west of the Entrance.
- Disposal of dredge material in one of two identified Dredge Material Grounds outside the entrance for the TSHD (Figure 3: Location of Dredged Material Grounds for TSHD).
- Figure 4 provides the dredging and disposal locations for the SCD.

The areas to be dredged in order of priority (indicating frequency of dredging) are the Bar (Zone 1), Entrance Channel and Swing Basin (Zone 2) and the inner channels (Zone 3) as shown in Figure 1. A TSHD will not be used in North Arm or Hopetoun Channel.

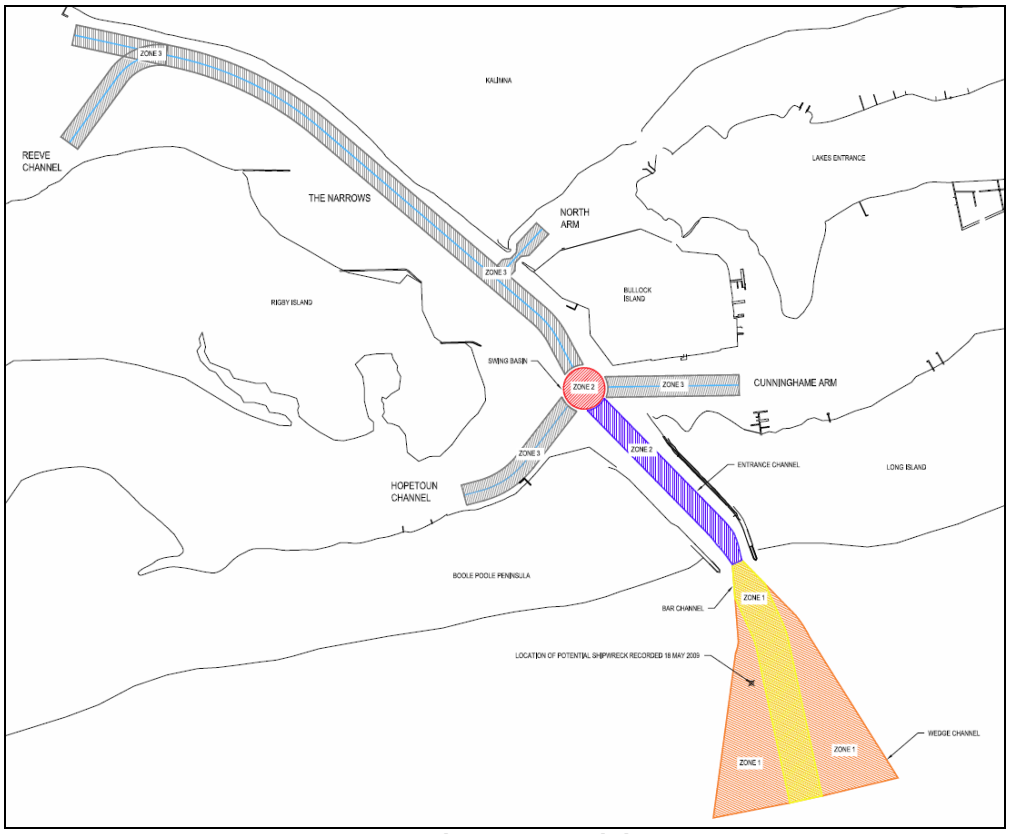


Figure 1: Dredging areas

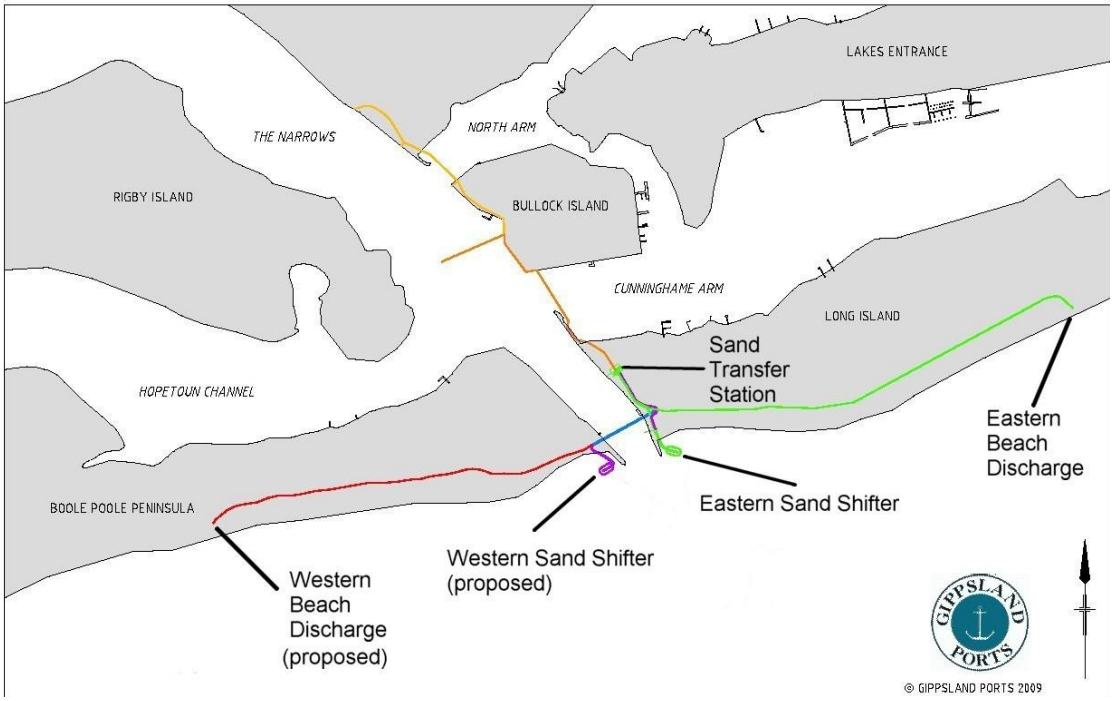


Figure 2: Elements of the Sand Transfer System

Table 1: Coordinates for Dredged Material Grounds for TSHD.

CORNER	Western Dredged Material Ground		Eastern Dredged Material Ground	
	Longitude	Latitude	Longitude	Latitude
North-west	147°56.17616E	37°54.12'S	147°59.43972'E	37°53.26315'S
South-west	147°56.2776'E	37°54.3274'S	147°59.53999'E	37°53.46463'S
South-east	147°57.44375'E	37°53.72533'S	148°00.70888'E	37°52.86686'S
North-east	147°57.53540'E	37°53.92621'S	148°00.80920'E	37°53.06770'S

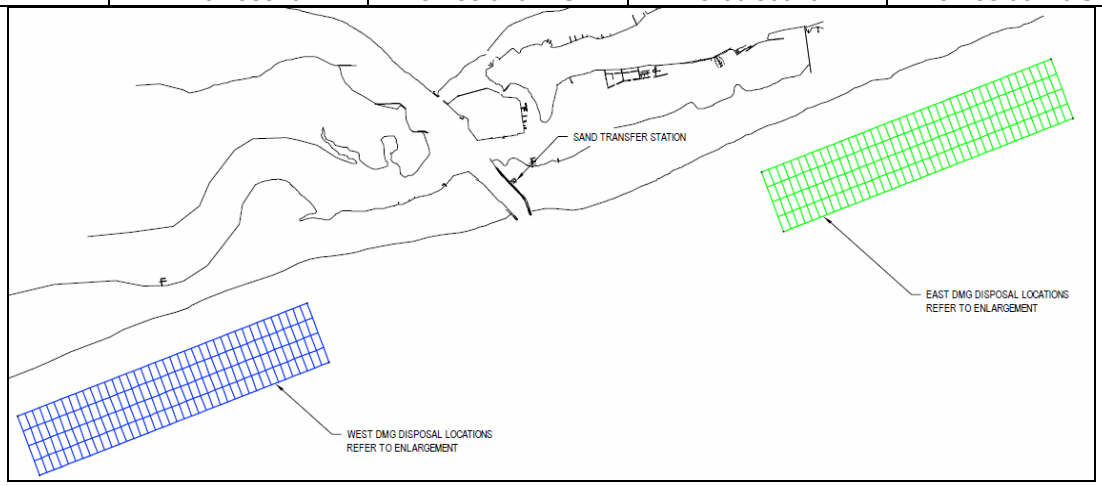


Figure 3: Location of Dredged Material Grounds for TSHD

Table 2: Coordinates for the SCD

SETOUT POINTS				
POINT	EASTING	NORTHING	LONGITUDE	LATITUDE
A	585063.907	5805744.527	147° 58' 2.7699"	-37° 53' 30.61841"
B	585119.220	5805508.885	147° 58' 5.1344"	-37° 53' 38.24458"
C	585518.679	5805286.358	147° 58' 21.58275"	-37° 53' 45.32905"
D	585965.434	5805383.053	147° 58' 39.8313"	-37° 53' 42.04051"
E	586228.842	5805796.649	147° 58' 50.43699"	-37° 53' 28.5328"
F	586174.262	5805955.452	147° 58' 48.13435"	-37° 53' 23.39948"

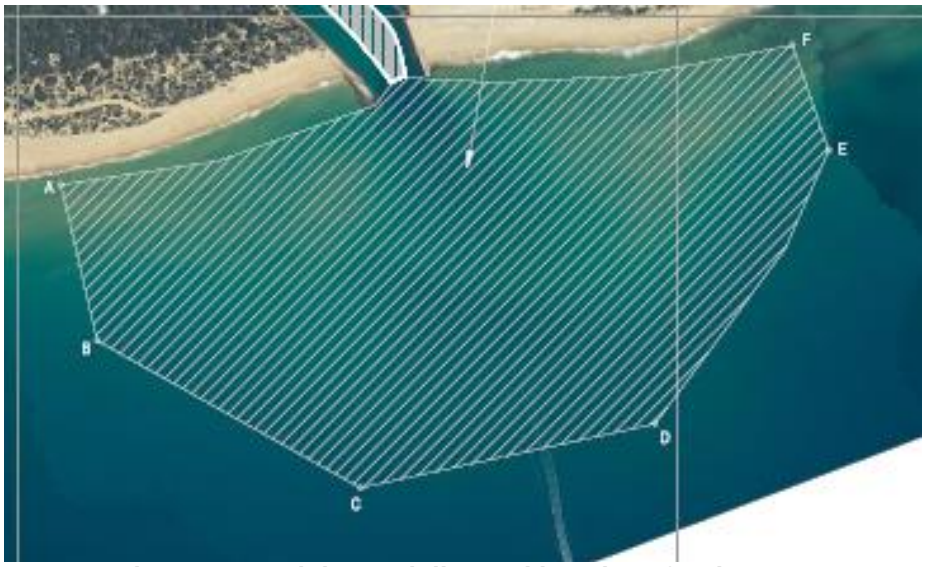


Figure 4: Dredging and disposal locations for the SCD

The use of a TSHD will generally comprise of a four to eight week program dredging mainly in the bar area. Dredging with the CSD is generally confined to the inner channels and is carried out on a near-continuous basis, depending on the status of the channels as a result of dynamic oceanic and weather conditions. The SCD will only be used for unscheduled maintenance dredging should the TSHD not be available.

Ocean conditions at Lakes Entrance are dynamic, and there may be a need at any time for unscheduled maintenance dredging to ensure safe vessel access between the Gippsland Lakes and Bass Strait.

No dredging is allowed within the Rigby Island Buffer zone (as shown in Figure 5) between October and March inclusive due to Little Tern and Fairy Tern breeding season. It is noted that the dredge design channel is outside of this buffer zone. Dredged material may be placed on Rigby Island, Boole Poole or Long Island with approval from relevant land managers in order to maintain a suitable environment for bird habitat and reduce vegetation losses associated with bank erosion.

Figure 5: Rigby Island Buffer Zone

1.3 Environmental Policy

The Gippsland Ports Environmental Policy (Annexure 1) provides the umbrella policy direction for the maintenance dredging program.

The Environmental Policy will be displayed in the workplace. Key requirements and responsibilities will be communicated via inductions or other training programs (refer to Section 2.8).

Gippsland Ports is committed to undertaking GLOA in an environmentally responsible manner and in accordance with its statutory approvals and this EMP.

1.4 Environmental Management Plan Overview

The implementation of the EMP is underpinned by the systems procedures of GP's integrated Safety Environmental Management Plan (SEMP), which is prepared consistent with Part 6A of the *Port Management Act 1995* (Vic.). The development of Gippsland Ports Risk Assessment Framework is based on the application of the following Australian-New Zealand and International Standards:

- ISO 31000-2009 Risk management – Principles and guidelines;
- AS/NZS 4801:2001 Occupational health and safety management systems – Specification with guidance for use;

- AS/NZS ISO14001:2004 Environmental management systems – Specification with guidance for use; and
- AS/NZS ISO14004:2004 Environmental management systems – General guidelines on principles, systems and supporting techniques.

This EMP has been prepared to fulfil the following objectives:

- To establish the processes and controls that will be implemented to ensure that GLOA activities are delivered with no greater risk or effects than those identified in the environmental risk assessment.
- To communicate environmental management requirements to the dredging contractor, who will be required to meet the requirements of this EMP, which will be adopted as the contract Dredge Environment Management Plan (DEMP)
- To embed environmental management requirements in the GLOA activities of Gippsland Ports.

2 Planning

2.1 Legal Requirements

Project approvals, legal requirements, and other relevant requirements such as guidelines and codes of practice have been identified.

Where legislation requires a specific management action or response, these requirements have been identified within the Project Delivery Standards (PDS) as environmental controls, environmental limits, environmental monitoring programs or within contingency plans. The content of a PDS is further described in Section 2.2. The GLOA PDS associated with key legislation are identified in Table 3.

Compliance with legal and other relevant requirements will be evaluated in accordance with the Internal / External Audit Procedure.

Table 3: Key legislation and associated GLOA PDS

Legislation	PDS
Coastal Management Act 1995 (Vic) *Environment Protection Act 1970* (Vic) *Environment Protection and Biodiversity Conservation Act 1999* *Environment Protection (Sea Dumping Act) 1981*	All GLOA PDS
Wildlife Act 1975 (Vic)	Marine based works Dredging and plume Dredged material management

2.2 GLOA Project Delivery Standards

GLOA Project Delivery Standards (PDS) have been identified for GLOA to address key environmental risks, effects and legal requirements. The GLOA PDS are a collation of the management and mitigation measures, environmental performance monitoring and contingency plans for the project. The GLOA PDS are:

- Hours of operation
- Airbourne noise
- Waste management
- Equipment maintenance
- Fuels, oils, chemicals and hazardous goods
- Emergency response preparedness
- Marine pests
- Vessel anchoring
- Vessel bunkering
- Cetaceans
- Heritage – identification of potential relics
- Dredging
- Dredging schedule
- Consideration of seasonal sensitivities
- Dredged material placement
- Disposal site dissipation monitoring.

The PDS relevant to the GLOA are contained in Annexure 3 of this EMP.

The GLOA PDS include the following:

- An objective – the performance goal.
- A target – performance level at which the objective is demonstrated as being achieved.
- Application – the project activities and project areas to which the PDS applies.
- Environmental controls – management and mitigation measures required to support achievement of the objective during the implementation of the project. These include process controls and associated monitoring
- Reference to environmental or process limits – numerical performance standards which the project must comply with
- Reference to environmental or process monitoring programs – the monitoring programs applicable to the PDS.

2.3 External notification and reporting requirements

Performance against this EMP will be reported to government agencies and stakeholder groups as described in Table 4.

Table 4: External notification and reporting requirements

PDS	Subject	Reporting or notification	
		Government Agency / Stakeholder	**Timeframe**
18a	Pollution event or imminent environmental hazard (as defined in Environmental Auditor Guidelines for Conducting Environmental Audits, Publication 953.2, October 2007, EPA, Victoria)	EPA, DEPI, SEWPaC	Immediate notification (Incident report required).
18b	Project Delivery Standard	DEPI, SEWPaC	Notification within one (1) business day of verifying non-conformance with a PDS.
18c	TSHD and / or SCD campaign	DEPI, SEWPaC	Notification within 14 days of commencement and completion of a TSHD campaign.
18d	Annual GLOA performance report	DEPI	Within 90 days of completion of all dumping activities associated with a TSHD campaign, assuming one TSHD intervention required per year. (Note: Independent Audit will audit this criteria based on submission of previous year's report).
18e	SDP annual compliance report	SEWPaC	By 31 January annually, including on the day of the expiry of the permit or completion of all dredging under the permit, in required IMO format (or as approved by SEWPaC) to facilitate annual reporting to IMO.
18f	SDP hydrographic survey	RAN Hydrographer	For the bathymetric survey completed within one (1) month of completion of all dumping activities authorised under the SDP, provide a digital copy of the bathymetric surveys within two (2) months.
18g	SDP hydrographic survey report	SEWPaC	For the bathymetric survey completed within one (1) month of completion of all dumping activities authorised under the SDP, provide a report within two (2) months including a chart showing the change in sea floor bathymetry as a result of dumping and include written commentary on the volumes of dumped material that appear to have been retained within the disposal site.
18h	Annual reporting and continuous improvement planning	TACC, SEWPaC, DSE	Stakeholder awareness annually as a minimum, with outcome summary to SEWPaC TACC agenda prior to meetings and minutes following meetings detailing issues together with proposed actions, accountability, timelines and outcomes.

2.4 Risk Management

Environmental risks associated with GLOA have been identified and assessed consistent with the Australian/New Zealand Standard: Risk Management (AS/NZS 4360:2004; Standards Australia and Standards New Zealand 2004) and the Standards Australia Handbook: Environmental risk management - principles and process (HB 203-2000; Standards Australia and Standards New Zealand 2006).

Environmental risks are detailed in the GLOA Environmental Risk Register.

2.5 Organisational structure and responsibility

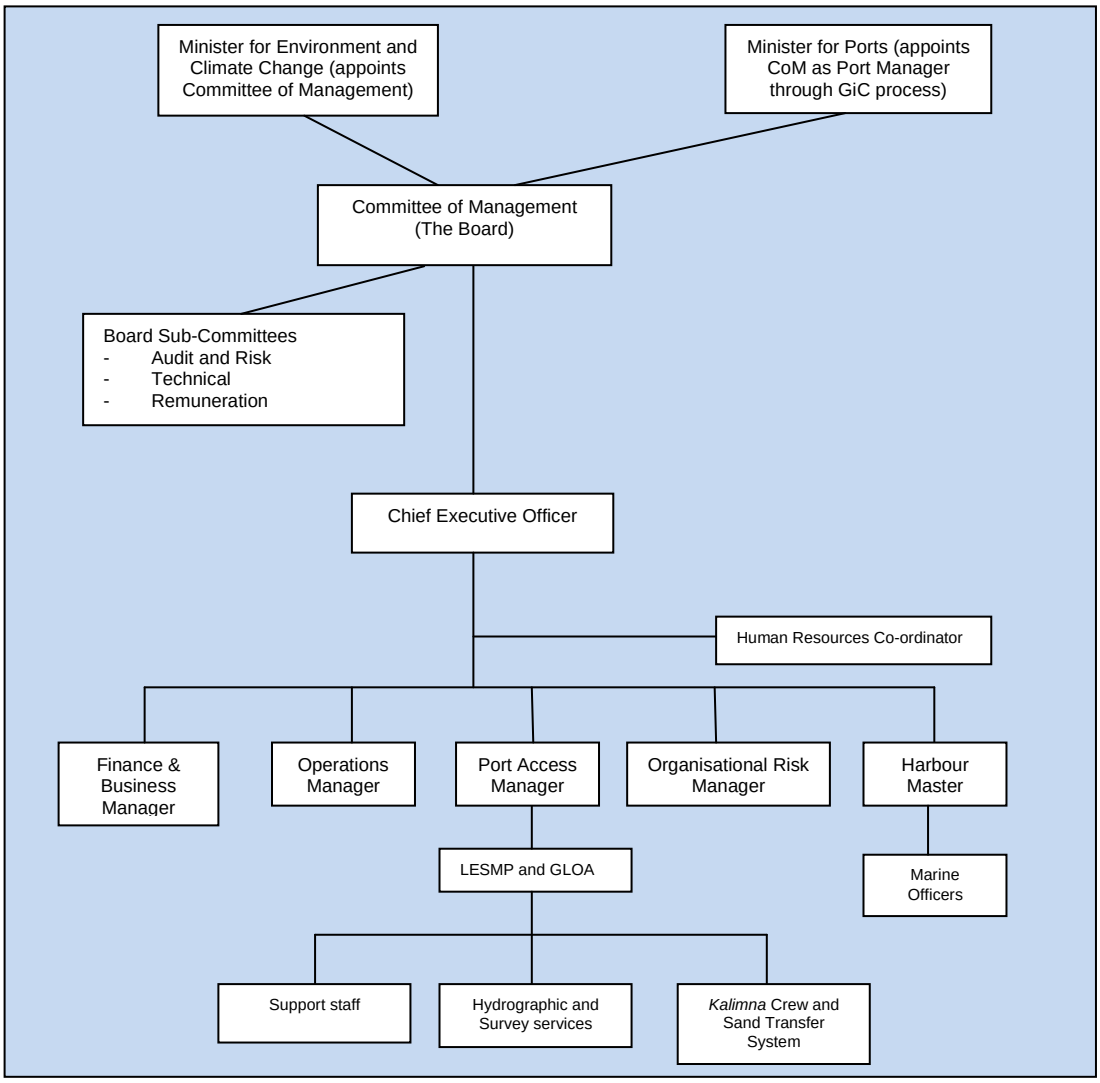
Gippsland Ports has overall responsibility for the implementation of GLOA activities in accordance with the requirements of this EMP.

The CEO or nominated delegate is accountable for:

- Implementing the EMP.
- Co-ordinating all activities relating to the EMP.
- Communicating responsibilities to contractors.
- Providing adequate resources to undertake GLOA in accordance with the EMP.

Responsibility for implementing the EMP will be delegated by the Gippsland Ports CEO through the management team to the work force. All levels within the management structure have duties and responsibilities associated with implementing the EMP. Specific operational responsibilities for implementing the EMP will be identified in GP internal procedures, and are outlined in Figure 6 which illustrates line management responsibility for GLOA activities lies with the Port Access Manager position.

Figure 6: Gippsland Ports indicative organisational structure



2.6 Document and record control

Environment documents and records will be managed in accordance with Gippsland Ports' Safety and Environmental Document Control and Safety and Environmental Records procedures.

2.7 Gippsland Ports' change management arrangements

Proposed changes to the project will be assessed and documented following Gippsland Ports established procedures encapsulated in Gippsland Ports' Safety and Environmental Document Control and Safety and Environmental Records procedures.

2.8 Training and awareness

All personnel shall be suitably qualified and experienced to undertake their work in an environmentally responsible manner. Personnel who have formal responsibilities under this plan will be trained in the requirements of this EMP.

Training may include formal courses, staff meetings, tool box talks, and ongoing awareness mentoring in the field. Records of training and inductions will be maintained.

Training requirements will include relevant personnel to be trained in identification of cetaceans (whales, dolphins), and threatened bird species (for example, hooded plover, little tern), and relevant protocols for working in proximity to these species.

All personnel involved in GLOA activities will be required to complete a site induction which will incorporate key environmental aspects of the project. All personnel will be required to complete an assessment to demonstrate an understanding of key issues, requirements and responsibilities.

Induction topics will include the following:

- GP Environmental Policy
- Legislative requirements and key environmental issues
- Safety management procedures
- Emergency response
- Vessel crew changes
- Incident reporting
- Waste management
- Cetacean and other threatened species requirements
- Individual and organisational responsibilities
- Communication requirements
- Consequence of compliance failures, with particular emphasis on EMP undertakings.

2.9 Communication

Internal and external communication and consultation arrangements are described below. The CEO and Manager Port Access will be responsible for and undertake all requirements with respect to community liaison.

2.9.1 Internal communication

Internal communication methods include meeting agendas and notices distributed by email.

Regular meetings between GLOA personnel employed by Gippsland Ports and contractors will be scheduled. Weekly meetings are scheduled between Gippsland Ports and the TSHD contractor. Environmental matters will be included as a standing agenda item at all meetings.

2.9.2 External communication

A variety of methods will be used to enable information to be distributed to, and received from, interested members of the community and GLOA stakeholders, see Gippsland Lakes Ocean Access Stakeholder Engagement Plan.

These may include the following:

- GP website (www.gippslandports.vic.gov.au)
- Broadcast email
- Media releases
- Newspaper advertisements
- Direct verbal or written advice (one or more of telephone, post or email)
- Notices to Mariners.

The provision of information to GLOA users of non-English speaking origin will be consistent with current State Government of Victoria protocol for the translation and distribution of communications in languages other than English.

Key communication activities and content include the following:

- GLOA scheduled activities to be included on the GP website covering planned operational activities.
- All complaints will receive a response within one (1) business day. Complaints will be managed following the process described in Annexure 5 and resolved as soon as practicable.
- Engage various stakeholder groups at least once every year through a formal TACC meeting.

Key stakeholders include:

- local, state and federal government bodies;
- recreational, business and commercial users and industry representatives
- indigenous and heritage groups;
- local resident groups;
- environmental interest groups.

2.10 Emergency preparedness, response and recovery

Emergency scenarios are identified in the GLOA Environmental Risk Register.

GP have statutory responsibility for Emergency Response in the Gippsland Lakes. The Gippsland Ports Emergency Response Procedure will be reviewed for consistency with GLOA activities and risks.

Following an emergency incident, an investigation will be conducted and corrective actions identified and addressed.

3 Measurement and evaluation

3.1 Incident reporting and investigation

Environmental incidents and hazards, including pollution incidents will be reported and recorded. This requirement will be included in inductions and reinforced at operational meetings.

Gippsland Ports has established an Incident / Risk / Event Report (refer to Annexure 2). Once complete the report must be actioned and the details entered into the Incident Accident Register and kept on file for a minimum of 7 years. The Incident / Risk / Event Report and the Incident Accident Register will be audited as part of the quarterly internal audit process, and will be reported on monthly to the Committee of Management.

External reporting requirements in relation to hazards and incidents are identified in Table 4.

3.2 Audits

Audits will be undertaken to monitor compliance with the GLOA EMP and all approval conditions. Improvement opportunities may also be identified during audits.

Auditing of Gippsland Ports' SEMP is documented in Safety and Environment Audit Procedures and Safety and Environment Audit program. These procedures require biannual internal auditing and triennial external certification audits. Gippsland Ports will establish a quarterly internal audit procedure to ensure that the GLOA EMP is embedded in the operational context, and will align the EMP and the SEMP, as it is reviewed in accordance of provisions in the Port Management Amendment Act 2012

Conformance with this EMP and all approval conditions will be assessed through observation of GLOA activities, interviews and review of records. Records may include the following:

1. Inspection reports;
2. Dredge and STS record sheets;
3. Hydrographic surveys;
4. Recorded data from the GPS tracking data.

As a minimum, internal audits will be conducted four (4) times per year, with at least one audit scheduled to coincide with the use of contract dredging equipment.

GP implementation of the EMP will be audited using an external auditor engaged by Gippsland Ports, with this audit coinciding with the use of the TSHD.

3.3 Monitoring of environmental performance

Environmental performance will be monitored through process monitoring, inspections and surveys. Monitoring of operational activities and physical conditions (eg. tracking equipment and hydrographic survey and weather station). Process monitoring, inspections and surveys are identified in PDS alongside process controls. Monitoring data informs any additional management action that may be required.

In addition to monitoring undertaken by Gippsland Ports, monitoring undertaken by other Agencies will be collated and form part of the auditing and reporting process. Of particular relevance is the monthly Gippsland Lakes monitoring undertaken by the EPA.

3.4 Timing contingency for monitoring activities

Operational monitoring and inspections (including surveys) will be scheduled but timing of the execution of these activities will take into account safety issues and vessel workability.

4 Review and Reporting

4.1 Maintenance dredging program management review and report

A review of the EMP and environmental performance will be undertaken by senior management annually.

The review will include:

- Compliance with PDS;
- Compliance with legal requirements including statutory approvals and other commitments;
- Results of inspections, surveys and audits.

An annual GLOA performance report will be prepared following the management review. The annual GLOA report will contain a summary of GLOA outcomes for the previous 12 month period including:

- a summary of activities;
- volumes dredged, calculated from hydrographic survey results;

- volumes taken to DMGs, calculated from hydrographic survey results;
- conformance with PDS;
- stakeholder engagement.

The annual GLOA performance report will be provided to DSE within 90 days following completion of the contract dredging.

Gippsland Ports maintains a Safety and Environmental Review procedure, and review of this EMP will be incorporated into this existing procedure once this EMP is embedded operationally to the satisfaction of Gippsland Ports management.

Annexure 1 - Environmental Policy Statement

Environmental Policy

Gippsland Ports recognises that the health and wellbeing of its ports and waterways environment has a direct impact on the health and wellbeing of Gippslanders. We are therefore committed to minimising the environmental impacts of our operations.

We will aim to go beyond legislative obligations in order to ensure, where opportunities exist, best practice environmental management is implemented. We believe that the training of our personnel, provision of information to contractors, visitors and the general public will lead to the development of sustainable environmental practices.

Through the setting of targets and actively monitoring the operating environment we will aim to protect our ports and waterways natural environment.

In our everyday operations we will implement waste management strategies that will encourage energy reduction, reuse and recycling.

We will proactively seek to identify where actions may lead to adverse environmental impacts and implement programs to eliminate, or where elimination is not possible, reduce to the absolute minimum, the affects of such actions.

The natural values of Gippsland's ports and waterways are some of Victoria's greatest assets.

Nick Murray
Chief Executive Officer

Date: 15/9/14

Geoff Hocking
Chairman Committee of Management

Date: 15/9/14

Annexure 2 – Incident / Risk / Event Report

Incident / Risk / Event Report Form	GP Ref:

Instructions

- This form must be used to report a current or potential hazardous situation, risk, event or near miss or any incident that has the potential to affect staff, public, customers, equipment, property or the environment. If you are in any doubt, complete this report.
- If the incident caused injury notify your supervisor/manager immediately. An **Injury Report form** must be completed if any injury occurs.
- If this is a marine incident notify the Harbour Master immediately. A **Marine Incident Report** may be required to be completed.
- If the incident is a **notifiable incident**, notify your supervisor/manager immediately as notification of external agency may be required.
- This report must provide as much information as possible, including your assessment of the risk level and priority for action and any suggestions you may have to address the issue. Attach additional information, photos, etc as required.
- Submit the report to your supervisor/site manager for their review and further action.
- Scan and email or fax a copy of the report to Organisational Risk Manager (ORM)

Subject:		**Person making report:**	
Location:	**Date:** / /	**Time:**	**Weather:**

Details: Describe the details of the incident, risk or event and actions taken

Risk category: What is the primary risk from this issue?	Safety	Environment	Financial	Legal	Reputation	Ops/Business Interruption

Risk Level: What is your assessment of the risk level of this issue?	Extreme	High	Medium	Low
Priority: What is your assessment of the urgency to address this issue?	Critical	Urgent	Routine	

Suggestions: Do you have any suggestions / recommendations to rectify this issue or prevent recurrence?

Is the Incident Serious or Notifiable to other Agency? Yes No	Name of Agency	GP person notifying	Date Notified	Time Notified	Agency contact	Agency Reference No.
Agency direction/action:						

GP Actions Required	Person Responsible	Due date

Person making report	Name:	Signature:	Date: / /
Supervisor/Site Manager notified	Name:	Signature:	Date: / /
Report received by Organisational Risk Mgr	Name:	Signature:	Date: / /
Data entered into register & report filed	Name:	Signature:	Date: / /

Copy provided to external authority	Authority name:	Provided to:	Provided by:	Date: / /

Annexure 3 - Project Delivery Standards

Table 5: Operational management (all activities and areas) PDS

Operational management (all activities)		
Objective	To plan and implement operational aspects of GLOA. To ensure materials are appropriately stored, handled and disposed of.	
Target	Conformance with all environmental limits and controls.	
Application	Throughout all GLOA operational activities and areas.	
Environmental controls		**Operational phase**
1. Hours of operation a) All activities may be conducted on a 24 hour, 7 days a week basis, except where explicitly restricted within this EMP, or by legislation.		Operation
2. Airbourne noise a) Airbourne noise monitoring will be conducted if and when stakeholder feedback and/or complaints received indicate equipment used in facilitating GLOA is resulting in non-compliance. Note: GP has operated equipment in the same locations over decades resulting in one complaint which was resolved by amending an operating procedure requiring door closure at the STS pump station. b) Noise monitoring will be conducted in accordance with the procedure outlined in Annexure 4 which references 'Noise from Industry in Regional Victoria' (EPA Pub. No.1411 and 'Control of Noise from Commerce, Industry and Trade' (SEPP N-1).		Maintenance and operation
3. Waste management a) All marine vessels to have sewage containment facilities. b) No disposal of untreated sewage or other waste to waterway. c) Contractor waste management arrangements to include waste minimization, containment, segregation and appropriate reuse, recycling, treatment and disposal. d) The handling and disposal of unexpected materials identified during dredging (eg. Inert debris such as steel sections and timber) to be included in waste management arrangements. e) All waste to be managed in accordance with: o *Environment Protection Act 1970 (Vic)* o *Quarantine Act 1908 (Commonwealth)* for applicable vessels o *Pollution of Waters by Oil and Noxious Substances Act 1986 (Vic)*		Maintenance and operation
4. Equipment maintenance a) Maintenance programs will be implemented for all plant and equipment as defined in GP's procedures and the *Occupational Health and Safety Regulations 2007 (Vic)*.		Maintenance and operation
5. Fuels, oils, chemicals and hazardous goods a) Storage and handling of chemicals in accordance with: o *Dangerous Goods Act 1985 (Vic)* o *International Ship Management (ISM) Code* for applicable vessels o *Pollution of Waters by Oil and Noxious Substances Act 1986 (Vic)* b) Asbestos audits indicate that no asbestos is present in any GLOA infrastructure, however, should asbestos be found, it will be managed in accordance with the o *Occupational Health and Safety Regulations 2007 (Vic).*		Maintenance and operation

6. Emergency response preparedness a) Development and testing of emergency response procedures, integrated with the GP EMP, including provision for fuel, oil and chemical spills. b) All dredging vessels to have oil spill response kits on board. Relevant personnel to be trained in its use.		Maintenance and operation
Environmental limit Airborne noise	**Environmental monitoring program** Airborne noise	
Contingencies	Airborne Noise Contingency Plan Emergency response managed by GP Emergency Response Plan.	

Table 6: Marine-based works (all areas) PDS

Operational management (all activities)		
Objective	To appropriately manage marine-based works. To minimise disturbance to and appropriately manage non-Aboriginal heritage. To minimise impacts on cetaceans due to vessel maneuvering.	
Target	Conformance with all environmental limits and controls.	
Application	All marine-based GLOA activities.	
Environmental controls		**Operational phase**
7. Marine pests a) Marine pest inspection and certification of contract dredge and support vessel is required before mobilisation to Gippsland Lakes, where these are sourced from outside Gippsland Lakes. Certification must be received from the final port of call, before entry to the Gippsland Lakes. b) All vessels to comply with *Protocol for Environmental Management – Domestic Ballast Water Management in Victorian State Waters,* EPA Publication 949.3 (July 2010). c) All vessels to comply with *Australian Ballast Water Management Requirements*, DAFF (version 5, November 2011).		Pre-arrival at Gippsland Lakes
8. Vessel anchoring a) Vessels to anchor in accordance with the TSHD Contract or Harbour Master's instructions.		Maintenance and operation
9. Vessel bunkering a) All bunkering to take place in accordance with conditions stated in Gippsland Ports' issued Fuelling Permit.		Maintenance and operation
10. Cetaceans – vessel activities a) Before beginning dredging and dumping activities, check using binoculars, from a high observation platform on the vessel, for cetaceans within the monitoring zone b) Dredging can only commence if no cetaceans have been observed within 300m of the vessel. If any cetaceans are sighted in the monitoring zone, dredging/ dumping activities must not commence in the monitoring zone until 20 minutes after the last cetacean is observed to leave the monitoring zone or the vessel is to move to another area of the dredge/ disposal site to maintain a minimum distance of 300 metres between the vessel and any cetacean identified above. *Note:* Monitoring zone means the area within 300 metres of any point on the dredging/ dumping run about to be commenced.		Operation
11. Cetacean sightings and log a) Personnel on board vessels are to report all sightings of cetaceans. b) A log of cetacean sightings and action taken to be kept for all vessels and operational work areas, and recorded on dredge daily log sheets. c) This information to be summarised in annual GLOA performance report.		Operation Annual Report
12. Heritage (marine based) – identification of potential relics a) If potential relics are identified during operational activities, the process described in Annexure 5 will be followed.		Operation

Environmental limit Not applicable to this PDS	**Environmental monitoring program** Not applicable
Contingencies	Not applicable

Table 7: Dredging and plume PDS

<table>
<tr><td colspan="3">Dredging and plume</td></tr>
<tr><td>Objective</td><td colspan="2">To appropriately manage dredging activities and sediments.
To minimize the area of channel and seabed disturbed and appropriately manage the material removed.
To protect assets, beneficial uses and values from long-term adverse effects to dredging-related water quality effects.</td></tr>
<tr><td>Target</td><td colspan="2">Conformance with all environmental limits and controls.</td></tr>
<tr><td>Application</td><td colspan="2">All dredging activities.
The disposal of dredged material at the DMGs and breaker-zone points.
Use of dredges and associated equipment.</td></tr>
<tr><td colspan="2">Environmental controls</td><td>Operational phase</td></tr>
<tr><td colspan="2">13. Dredging
a) Dredging must remain within the identified dredging zones, and will be confirmed by recorded GPS data. Note: Dredging equipment and associated support vessels will maneuver outside dredge areas, including transit from mooring locations.
Turbidity
b) The overflow valve of the TSHD must be closed when the vessel is not engaged in dredging.
c) During the period of September to January (grayling migration period) plume caused by dredging activities, i.e. the ‘Dredge effect’, must not exceed 25NTU, at a distance of 50m from the vessel, across the channel in accordance with the TSHD Turbidity Monitoring Protocol. Note: the ‘Dredge effect’ is calculated by subtracting the minimum turbidity value of the ten Reference readings (five stations with two depths) from the maximum turbidity value of the ten Test readings (five stations with two depths).
d) During the grayling migration period (September to January), the dredge will not operate in overflow mode between the training walls on a flood tide.
e) Recording of equipment activity on dredge log sheets will include the following information as a minimum:
<table>
<tr><th>Equipment</th><th>Time / Date / Weather</th><th>Location / Co-ordinates</th><th>Status</th></tr>
<tr><td>TSHD (contract dredge)</td><td>✓</td><td>Management of sand from …….
Sailing and placement of sand to ….</td><td>Dredging / sailing / placement at DMG / maintenance</td></tr>
<tr><td>CSD (GP dredge)</td><td>✓</td><td>Management of sand from …….</td><td>Dredging / sailing / east or west discharge point</td></tr>
<tr><td>Other (sand shifters, bulldozer, etc)</td><td>✓</td><td>Management of sand from …….</td><td>Reason for use of equipment other than dredge.</td></tr>
<tr><td>DMG</td><td>✓</td><td>N/A</td><td>East / West</td></tr>
<tr><td>DMG</td><td>✓</td><td>N/A</td><td>East / West</td></tr>
</table></td><td>Operation</td></tr>
<tr><td>Environmental limit
Plume Turbidity</td><td colspan="2">Environmental monitoring program
Plume Turbidity Monitoring – refer to Turbidity Monitoring Protocol</td></tr>
<tr><td>Contingencies</td><td colspan="2">Not applicable</td></tr>
</table>

Table 8: Dredging schedule PDS

Dredging schedule		
Objective	To develop an appropriate dredging schedule, taking into account the seasonal sensitivities of the Gippsland Lakes' assets, beneficial uses and values.	
Target	Conformance with all environmental limits and controls.	
Application	All dredging activities.	
Environmental controls		**Operational phase**
14. Dredging schedule a) Dredging to take place in accordance with Table 10: Dredging Summary. b) No dredging is allowed within the Rigby Island Buffer zone (as shown in Figure 5) between October and March inclusive. It is noted that dredge design channel is outside of this buffer zone. c) Dredging schedule to include: o Dredging technology. o Timing, duration and sequence of dredging.		Planning
15. Consideration of seasonal sensitivities a) Dredging activities planned with a particular awareness and regard for high recreational use periods (Easter, Summer holidays, long weekends) as set out in Table 11 – Key seasonal sensitivities and preferred seasons.		Planning
Environmental limit Not applicable to this PDS	**Environmental monitoring program** Not applicable	
Contingencies	Not applicable	

Table 9: Dredged material management PDS

Dredged material management		
Objective	To manage and track the placement of dredged material. To relocate dredged material and manage dredged material appropriately within the DMGs and near-shore points.	
Target	Conformance with all environmental limits and controls.	
Application	All dredged material placement and DMG management.	
Environmental controls		**Operational phase**
16. Dredged material placement a) Dredged material must only be dumped within the Western and Eastern disposal sites defined by the MGA 94 coordinates in Table 1: Coordinates for Dredged Material Grounds for TSHD. b) Each load of dredged material is dumped so that the dredged material is placed in the inshore areas of the defined disposal sites, consistent with safety, navigation and vessel handling requirements. c) Dredged material must be placed along a different alignment for each disposal cycle. d) Prior to dumping, establish by GPS that the vessel is within one of the defined disposal sites. e) Dredging disposal locations to be recorded as per recording of equipment (refer to Table 7 – Dredging and plume PDS). f) Volumes are to be calculated from hydrographic survey data. g) For a SCD all dredged material only to be dumped within disposal site defined by the MGA 94 coordinates in Table 2: Coordinates for the SCD and illustrated in Figure 4.		Operation
17. Disposal site dissipation monitoring a) DMGs - Hydrographic surveys will be required as follows: o Before each (typically annual) TSHD program – within one month of the scheduled commencement of dredging o After each (typically annual) TSHD program – within one month of the completion of all dumping activities authorised under the sea dumping permit. o The results of hydrographic surveys will be included in the annual GLOA performance report. b) Near-shore discharge: o Every 3 weeks - photographic records taken at low and high tides o Annual – geo-referenced aerial photographs.		Operation Reporting
Environmental limit Not applicable to this PDS	**Environmental monitoring program** Not applicable	
Contingencies	Not applicable	

Table 10: Dredging Summary

Location (see Figure below)	Dimensions for navigation reliability (metres)		Dredging Target[2] (metres)		Over Dredging Tolerance[3] (metres)	
	Width[1]	Depth	Width	Depth	Width	Depth
Bar/Wedge	80 to 450	3.5	80	5.5	± 5m	-1.0
Sand traps (Wedge)[6]	n/a	n/a	35	8.5	± 5m	-1.0
Entrance Channel	50	3.5	50	4.5	±2m	-1.0
Swing Basin (diameter)	100	3.5	100	4.5	±2m	-1.0
Cunninghame Arm[4]	50	3.5	50	4.5	±2m	-1.0
The Narrows	50	3	50	4	±2m	-1.0
Hopetoun Channel	50	3	50	4	±2m	-1.0

Notes:
All depths are measured from 'Chart Datum' (0.757m below Australia Height Datum.
1 – 80m width just beyond the seaward end of the training wall and 450m is the maximum width of the wedge.
2 – Dredging Target allows for accretion of sand during non-dredging interval
3. – Dredging Target applies at the cessation of individual programs by the TSHD.
4 – Over Dredging Tolerance (includes survey tolerance) – allowance for slumping and settlement immediately after dredging
5 – The western end of Cunninghame Arm is dredged to allow safe navigation to unloading facilities for trawlers at Bullock Island.
6 – Two sand traps up to 220m length and 35m width to be dredged on both western and eastern boundary of wedge. Exact location dependent on location of Bar formation. Refer indicative locations in Figure below.

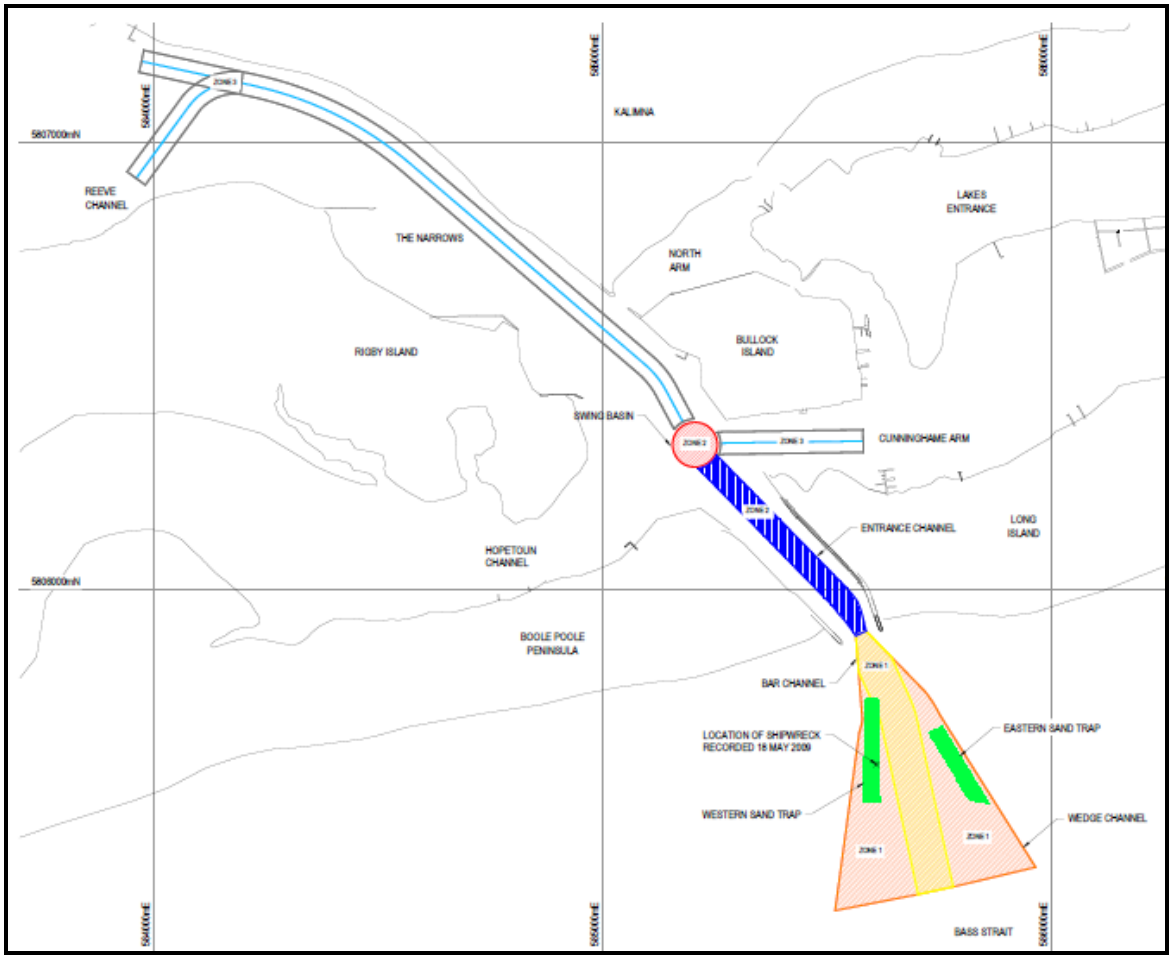


Table 11: Key seasonal sensitivities and preferred seasons

Project area	Key seasonal sensitivities	Preferred seasons
Seaward of Entrance: Bar channel, wedge, wedge channel	High recreational use over summer / public holiday periods. Occasional whale sightings during migration.	April, May, June and July are ranked as the most referred months for dredging to occur due to historically relatively benign weather conditions. Spring is considered least preferred due to weather conditions.
Inner channels	High recreational use over summer / public holiday periods. Proximity to potential nesting locations of Little Tern – no dredging within buffer between October to March inclusive.	Due to sheltered location there is no preferred season due to weather conditions. No dredging occurs within the adopted Rigby Island buffer zone during October to March.
Inner channels	September to January inclusive *Australian Grayling* migration.	Turbidity will be managed in accordance with the Turbidity Monitoring Protocol

Annexure 4 - Monitoring Programs & Contingency Plans

AIRBOURNE NOISE

Context

This environmental monitoring program relates to airborne noise resulting from GLOA activities, and will be activated if stakeholder feedback and/or complaints received indicate equipment used in facilitating GLOA is resulting in non-compliance.

Note: Gippsland Ports has operated equipment in the same locations over decades resulting in one complaint which was resolved by amending an operating procedure requiring door closure at a shed.

Environmental monitoring program

The main aspect of this environmental monitoring program is the use of the standard indicator for airborne noise measurement of "A" weighted equivalent noise level (Laeq) measured in decibels (dB) – as is used within SEPP (Control of Noise from Commerce, Industry and Trade) No.N-1 (SEPP N-1). Noise from Industry in Regional Victoria' (EPA Pub. No.1411) will also be referenced.

Monitoring location(s) will be informed by the feedback and/or complaints received. Monitoring will occur during normal operational activities occurring at the time feedback and/or compliant was received.

Monitoring to confirm SEPP N-1 conformance will be carried out over 3 consecutive days and reflect the time the feedback and/or complaint was received.

Monitoring will be weather dependent and include consideration of wind conditions that provide for a representative sample of noise at the monitoring location with regard to wind velocity and direction including preference to monitor during a "down wind" scenario where practicable. If conditions are not considered appropriate to achieve a representative noise measurement, days may not be consecutive.

Results of the airborne noise monitoring will be compared against the calculated SEPP N-1 noise limits.

Environmental limit

The airborne noise environmental limit relates to the legislative requirements for noise under the SEPP N-1. The airborne noise environmental limit is based on calculated SEPP N-1 limits determined from sampled ambient noise levels at key locations. Table 12 shows the SEPP N-1 time period classification to which different limit levels apply.

Table 12: SEPP-N1 Time period classifications

SEPP N-1 time period classification	
Day	7am to 6pm weekdays 7am to 1pm Saturdays
Evening	6pm to 10pm weekdays 1pm to 6pm Saturdays 7am to 6pm Sundays 7am to 6pm Public holidays
Night	10pm to 7am weekdays 6pm to 7am weekends 6pm to 7am Public holidays

Airbourne noise contingency plan

This *Airbourne Noise Contingency Plan* relates to a potential or actual exceedance of the noise environmental limit from GLOA activities. Management Actions are provided in Table 13. Noise complaints will be managed via the compliant response process described in Annexure 5. For significant project changes refer to Gippsland Ports change management process.

Management actions

Table 13: Management actions - Airborne noise

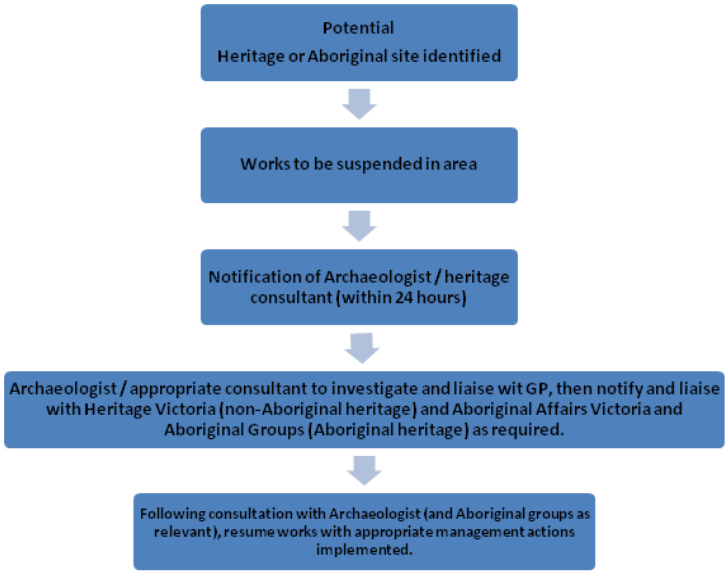
Management actions
Management actions if activity does not meet / not likely to meet SEPP N-1: If noise monitoring results and/or complaints received indicate a possible exceedance of SEPP N-1, the following actions may be taken: ➢ Implement alternate works program. ➢ Modification to vessel / equipment. ➢ Restrictions on use of the equipment. ➢ Selection of alternative equipment.

Annexure 5 - Response Processes

Heritage (marine based) response process

This heritage (marine based) response process relates to the potential for previously unidentified heritage items or sites to be identified during GLOA activities. Refer to Figure 7 for response process flowchart.

Figure 7: Heritage (marine based) response process flowchart



Complaints response process

Refer to **Figure 8** for complaints response process flowchart and Table 15 for management actions.

Table 14: Management actions - complaints response

Management actions
Management actions if a complaint is received: If a complaint is received, a general response will be given to the complainant within one (1) business day. The timeframe for a response to a complaint (aside from the initial response) is dependent on the nature of the complaint and the scale of the investigation (if required). It is expected that there will be management action within one (1) business day of the initial assessment of the complaint. The following options for action may be taken: ➢ If the complaint is a single event then no monitoring may be required if cause cannot be determined. ➢ If there are a number of complaints relating to the same issue then monitoring will be considered as part of the investigation. Where the assessment of vessels, equipment of activity indicates that it may not conform to relevant legislation, appropriate action to be taken. Management options include: ➢ Selection of alternative vessel / equipment. ➢ Modification to vessel / equipment. ➢ Restrictions on use of vessel / equipment. ➢ Other actions as deemed appropriate.

Figure 8: Complaints response process flowchart