Port of Melbourne Operations Pty Ltd

Dredging Program 2023-33 Environmental Management Plan (DP23-33 EMP)

March 2025
Port of Melbourne Operations Pty Ltd

Port of Melbourne

Port of Melbourne

Approvals

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Revision History

Dates	Revision(s)	Details
2012-2022	0-7	Previous Dredging Program (DP12-22) EMP and revisions approved by former DSE/DELWP (now Dept. of Energy, Environment & Climate Action (DEECA))
11/04/2023	8	DP23-33 EMP approved by DEECA
16/01/2024	9	Amended - DMG Spoil Disposal Management and Monitoring Plan (refer Sect. 3.3)
6/03/2025	10	Amended - DEECA approval of 6 March 2025 (refer Section 1.3)

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Glossary

Acronym	Term
BHGD	Backhoe and/or grab dredge
CD	Chart datum
CDP	Channel Deepening Project
dB	decibels
DAFF	Dept. of Agriculture, Fisheries and Forestry (Cwlth)
DMG	Dredged Material Ground
DCCEEW	Dept. of Climate Change, Energy, Environment and Water (Cwlth)
DEECA	Dept. of Energy, Environment and Climate Action (Victoria)
EMP	Environmental Management Plan
EMS	Environmental Management System as defined under ISO 14001
EPA	Environment Protection Authority (Victoria)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cwlth).
HMAS	Her Majesty's Australian Ship
GIS	Geographic Information System
km	kilometre(s)
Laeq	time weighted equivalent noise level
m	metre(s)
MBES	Multi beam echosounder
ML	Local Magnitude (Unit of scale for measuring seismic activity)
MNES	Matters of National Environmental Significance
MPB	Microphytobenthos
NTU	Nephelometric Turbidity Units
OSF	Optimised Statistical Footprint
OCF	Operational Capping Footprint
PDS	Project Delivery Standard
PFAS	Per- and Polyfluorinated Substances
PoM	Port of Melbourne Operations Pty Ltd
PoMC	former Port of Melbourne Corporation
PoMDMG	Port of Melbourne Dredged Material Ground
SBP	Sub Bottom Profiler
SBPS	Sub Bottom Profiler Survey
SEDMG	South East Dredged Material Ground
SEES	Supplementary Environment Effects Statement
SF	Statistical Footprint
TSHD	Trailing Suction Hopper Dredge
PV	Ports Victoria
EPA Noise Protocol	*Environment Protection Act 2017* (Vic) Publication 1826.4, May 2021

1. Introduction

This Environmental Management Plan (EMP) details the environmental management requirements to be followed for the 10 year program of dredging activities to be undertaken by Port of Melbourne Operations Pty Ltd (PoM) between 2023 and 2033, referred to as DP23-33.

1.1 Obligations

Under the *Delivering Victorian Infrastructure (Port of Melbourne Lease Transaction) Act 2016* (Vic), Port of Melbourne is required to dredge and maintain channels and berths and all associated dredge areas, as defined in Section 1.2 below, in accordance with the terms of the Port of Melbourne Lease Transaction.

1.2 Dredging Operations

Dredging of channels, berths, swing basins and silt traps is one of the critical asset management strategies required to be undertaken to achieve the performance and regulatory requirements to allow the safe navigation of vessels throughout all port waters.

To meet the requirements of the *Delivering Victorian Infrastructure (Port of Melbourne Lease Transaction) Act 2016* (Vic), the objectives of DP23-33 are to:

- optimise the performance of channels and berths within port waters;
- maintain the declared depths of the shipping channels, berths, approaches and associated swing basins;
- maintain the depths and capacity of all sundry areas of the port; and
- manage the placement of dredged material within the Port of Melbourne Dredged Material Ground (PoMDMG) and South East Dredged Material Ground (SEDMG).

DP23-33 includes dredging operations and dredge management works in the following areas (see Figure 1):

- Northern Port Phillip - Yarra River and Hobsons Bay, comprising the Yarra River, Williamstown and Port Melbourne Channels, all berths, approaches, associated swing basins, silt traps and sundry port areas in the Yarra and Maribyrnong Rivers, Gellibrand Pier, Webb Dock, Station Pier and the PoMDMG; and
- South of the Bay - South Channel, SEDMG and The Entrance comprising the Great Ship Channel, Outer Western Channel, Western Channel, Eastern Channel and Outer Eastern Channel.

1.3 Scope of DP23-33

The scope of this EMP considers the following:

- the 10-year dredging consent for DP23-33 issued by the Dept. of Energy, Environment and Climate Action (DEECA) on 14 April 2023.
- PoM's 'DMG Spoil Disposal Management and Monitoring Plan' approved by DEECA on 3 January 2024.
- the amended dredging volume approved by DEECA on 6 March 2025.
- the requirements for environmental management during the planning, implementation, evaluation and review of DP23-33 activities;
- the responsibilities for implementing this EMP;
- the Project Delivery Standards (PDS) including the environmental management controls to ensure that the objectives and targets are met; and
- an overview of the environmental management, inspection and audit requirements, environmental monitoring and contingency plans and associated management actions.

This EMP applies to all dredging activities undertaken during DP23-33. PoM has overall responsibility for the implementation of DP23-33 in accordance with the requirements of this EMP.

For context, the Channel Deepening Project (CDP) Supplementary Environment Effects Statement (SEES) studies estimated that ongoing dredging to maintain the declared depths over each 10 year period could comprise approximately 3.7 million m^3, however the actual as-dredged volumes vary depending on survey results, weather conditions, port development activities, the annual rates of sedimentation and the availability of particular dredging equipment.

The types of sediments to be dredged during DP23-33 are shown in Table 1 and dredging activities may occur concurrently in these project areas.

Area	Sediment Type	Disposal Location
Northern Port Phillip	clays and silts (contaminated)	PoM DMG (bunded area)
	clays and silts (uncontaminated)	PoM DMG (unbunded area)
Southern Port Phillip & The Entrance	sands and other materials (clean)	SEDMG

Table 1 - Types of materials to be dredged

The dredging works will be undertaken by backhoe and/or grab dredges (BHGD), Trailing Suction Hopper Dredges (TSHD) and various support equipment including tugs, barges and sweeping / water injection vessels.

All sediments dredged from northern Port Phillip are deemed to be contaminated unless demonstrated otherwise. Material assessed as contaminated, as per the National Assessment Guidelines for Dredging (NAGD, 2009), will be placed within the southern underwater containment area at the PoMDMG located in the North of the Bay (see Figure 1).

If sediments are uncontaminated and suitable for unconfined disposal they will be placed within the northern area of the PoMDMG or, subject to geotechnical parameters, utilised for ongoing bund construction and/or maintenance.

Materials dredged from the South of the Bay will be placed in the SEDMG. (see Figure 1). If it is necessary to remove any loose material from the Entrance, it will be placed in the SEDMG.

1.4 Timing Considerations

Due to environmental and social seasonality issues, preference will be given to:

- maximising works in summer, autumn and winter in northern Port Phillip; and
- maximising works in autumn, winter and spring in southern Port Phillip.

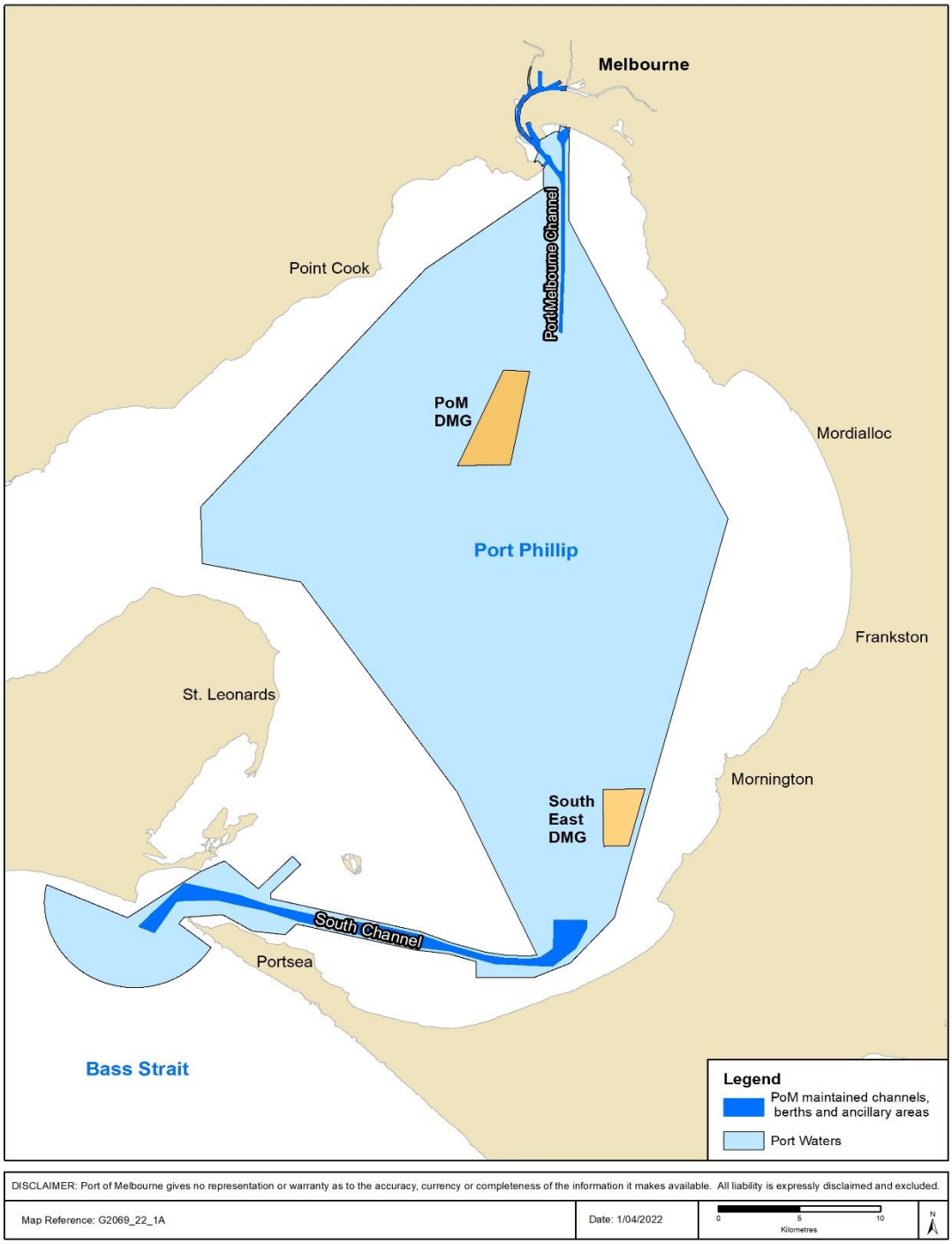
1.5 Key Assets, environmental effects and risks

Key Ecological Assets

The key assets, predicted effects and risk events associated with ongoing maintenance dredging (and minor capital dredging) activities are summarised below. Detailed information is contained within the risk assessment (refer to Section 2.4). The key ecological assets and potential impacts include:

- listed and protected species - potential disruption of migration patterns for the Australian grayling due to turbidity, and potential impacts to protected species due to turbidity and impacts on seagrass habitat;
- seagrass habitat - reduced light due to turbidity has the potential to affect seagrass health;
- Marine Protected Areas - potential impacts from turbidity in the vicinity of the Port Phillip Heads Marine National Park; and
- Ramsar sites (Swan Bay, Mud Island and the Spit Wildlife Reserve) - potential impact due to hydrodynamic changes and turbidity.

Figure 1 - Areas of Dredging and Dredged Material Grounds (DMGs)



Key Social Values and Economic Uses

The key social values, economic uses and potential impacts include:

- public amenity - noise and visual impacts of the project;
- recreational activities (diving, fishing, boating and beach use) - impacts due to dredging works;
- commercial uses (e.g. commercial diving and fishing activities, charter fishing, ecotourism) - potential disruption due to turbidity, and safety zones and no-dive zones around dredging equipment; and
- cultural heritage - potential disturbance to the shipwreck sites *HMAS Goorangai*.

1.6 Environment Policy

PoM's Board-approved Environment Policy provides the umbrella policy direction for DP23-33.

A summary of the Environment Policy is displayed in the PoM workplace. Key requirements and responsibilities will be communicated via inductions or other training programs (refer to Training and awareness Section 0).

PoM is committed to delivering DP23-33 in an environmentally responsible manner and in accordance with its statutory approvals and this EMP.

1.7 Environmental Management Plan overview

The implementation of this EMP is underpinned by the systems and procedures of PoM's Integrated Management System (IMS) as discussed further below.

PoM's port-wide 'Safety and Environment Management Plan' (SEMP), which is required under the *Port Management Act 1995* (Vic) (PMA), is applicable for the subject area with the Port's environmental management requirements outlined within this guiding document.

In accordance with the PMA, PoM's SEMP is required to be externally audited every three years by an auditor approved by the Minister for Ports and Freight. The last external audit in 2022 found the SEMP to be fully compliant with the PMA obligations. The next SEMP external audit is due to be undertaken in 2025.

The key objectives of PoM's SEMP are to promote:

- a cooperative approach to safety and environmental management between PoM and Port stakeholders, including but not limited to Ports Victoria,
  Port tenants, licencees, users and service providers; and
- the delivery of best practice safety and environmental management within the Port.

Complementing PoM's Board-approved Environment Policy and the SEMP, PoM has the following supporting plans and systems to ensure PoM is managing the port in accordance with its contractual responsibilities under the Port Concession Deed and Port Lease in an environmentally sustainable manner:

- a Port Environment Strategy (PES) which is required to be maintained and a PES Annual Report provided to the State as part of the Port Lease;
- certification from Bureau Veritas of PoM's IMS to ISO 14001:2015 Environmental management systems, ISO 45001:2018 OH&S management systems, ISO 9001:2015 Quality Management Systems and ISO 55001:2014 Asset Management; and
- this DP23-33 Environmental Management Plan (EMP).

The DP23-33 EMP has been developed to meet the following objectives:

- establish the processes and controls that will be implemented to ensure that DP23-33 is delivered with all risks or effects equal to or less than those identified in the risk assessment;
- communicate environmental management requirements to the dredging contractor; and
- ensure that the project does not result in unacceptable environmental impacts upon the assets, values and beneficial uses of Port Phillip including matters of national environmental significance.

1.8 EMP approval and revisions

This EMP is a controlled document and will be approved and revised in accordance with the requirements outlined in Table 2.

Where agency approval is required, this will be sought prior to implementing the change. Where approval is not required, relevant agencies will be notified of the change and issued with a revised EMP as soon a practicable, in accordance with requirements outlined in Table 2.

Revision	PoM	DEECA
Procedural revision (administrative changes e.g. amendment of procedure reference, formatting)	Approved by Executive General Manager (EGM) Operations	Notification to DEECA
Minor revision (changes within existing environmental approvals)		
Major revision (changes requiring amendment to environmental approvals)	Approved by EGM Operations	Approved as required by DEECA

Table 2 - EMP approval and revision requirements

2. Planning

2.1 Legal requirements

The relevant project approvals, legal requirements and other requirements such as guidelines and codes of practice have been identified by PoM.

Where legislation requires a 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 PDS associated with key legislation are identified in Table 3.

Compliance with legal and other relevant requirements will be evaluated in accordance with the PoM's *Compass*.

Legislation	Applicable Project Delivery Standards
Marine and Coastal Act 2018 (Vic) *Environment Protection Act 2017* (Vic) *Climate Change Act 2017* (Vic) *Marine Safety Act 2010* (Vic) *Aboriginal Heritage Act 2006* (Vic)	All PDSs
Environment Protection and Biodiversity Conservation Act 1999 (Cwlth.)	Marine-based works (all areas) Dredging and plume Dredging schedule Dredged material management
Historic Shipwrecks Act 1976 (Cwlth) *Heritage Act 1995* (Vic)	Marine-based works (all areas)
National Parks Act 1975 (Vic) *Wildlife Act 1975* (Vic) *Flora and Fauna Guarantee Act 1988* (Vic)	Marine-based works (all areas) Dredging and plume Entrance maintenance

Table 3 - Key legislation and associated Project Delivery Standards

2.2 Project Delivery Standards

The Project Delivery Standards (PDS) address the key environmental risks, effects and legal requirements. The PDS include the management and mitigation measures, environmental monitoring and contingency plans for the project.

The DP23-33 activity-based PDS groups are:

- maintenance management (all activities);
- marine-based works (all areas);
- dredging and plume;
- dredging schedule;
- dredged material management; and
- Entrance maintenance.

The PDS relevant to the activities of DP23-33 are listed in Annexure 1 of this EMP.

2.3 External notification and reporting requirements

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

Subject	Reporting or notification	
	Government agency	**Timeframe**
Environmental limit exceeded	Airborne noise – EPA, DEECA	Notification within 24 hours of verifying that environmental limit has been exceeded. Incident report required.
Pollution event or imminent environmental hazard (as defined in EPA Publication 953.2, 2007)	DEECA, EPA, DCCEEW*	Immediate notification. Incident report required.
Marine and Aboriginal heritage	Heritage Victoria, DEECA	Notification within 10 business days of discovery of shipwreck or potential Aboriginal site is identified. Notification prior to any additional surveys being conducted. Report to be forwarded following heritage inspections.
Campaign dredging schedule	DEECA	The schedule for each campaign will be forwarded by management no less than 10 business days prior to campaign commencement.
Pre-mobilisation Review & Campaign Initiation Report	DEECA	Report to be forwarded no less than 10 business days prior to campaign commencement.
Campaign close-out report	DEECA, DCCEEW*	Close-out report to be forwarded within 90 business days of the completion of each campaign.
Independent environmental audit of implementation of this EMP	DEECA, DCCEEW*	Audit report will be provided with the campaign close-out report, within 90 business days of the completion of campaign.
Project Delivery Standard	DEECA, DCCEEW*	Notification within 1 business day of verifying major non-conformance with a PDS (or part thereof)

*only for components relating to EPBC Act matters of national environmental significance

Table 4 - Notification and reporting requirements

2.4 Risk management

Environmental risks associated with DP23-33 have been identified and documented in a project risk register consistent with international Risk Management Standard ISO31000:2009 (International Organisation for Standardisation).

The DP23-33 risk register will be reviewed periodically to incorporate monitoring and investigation results and to reflect changes identified through the change management process, or as a result of incident investigations. Changes to the risk register will be approved by PoM's Executive General Manager, Operations and be included for review in PoM's Pre-Mobilisation Review and Campaign Initiation Report (see Section 4.1).

Risk management, including review and reporting requirements, are outlined in the PoM DP23-33 Risk Report.

Task-based risk assessments (e.g. Job Safety and Environment Assessments) will be undertaken during the project to identify and control work place hazards.

2.5 Organisational structure and responsibility

PoM has overall responsibility for the implementation of DP23-33 in accordance with the requirements of this EMP and is responsible for communicating responsibilities to the dredging contractor.

The Executive General Manager (EGM) Operations is accountable for:

- implementing this EMP;
- coordinating all activities relating to this EMP; and
- providing adequate resources to undertake DP23-33 in accordance with this EMP.

Responsibility for implementing this EMP will be delegated by the EGM Operations, through the management team to the workforce, the dredging contractor and relevant external parties.

All levels within the management structure have duties and responsibilities associated with implementing this EMP. The specific responsibilities for implementing this EMP will be identified in internal operational procedures.

2.6 Document and record control

Environment documents and records will be managed in accordance with PoM's Records Management Policy and associated documents.

2.7 Continuous Improvement

PoM is committed to continuous improvement during DP23-33. Management reviews will identify suitable opportunities for continuous improvement (refer Section 4.2).

Proposed changes to the dredging program will be assessed and documented as per the management review and reporting requirements outlined in Section 4. This will include an assessment of the risk and compliance with legal requirements. Changes to the program may include:

- alteration of a dredging schedule;
- modification of work methods within the approved scope of works;
- adjustment of environmental monitoring response levels;
- changes to project description; and
- future changes or improvements to dredging technology.

Changes will be approved by the Executive General Manager, Operations or delegate, with any necessary changes to this EMP handled in accordance with Table 4.

As an example of continuous improvement, PoM has implemented a new spoil monitoring and management regime (including management intervention trigger levels and measures) based on the studies documented in the DP23-33 Risk Report (refer to Section 4).

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, tool box meetings and in-field mentoring. Records of training and inductions will be maintained.
- Training requirements will include relevant personnel to be trained in spotting and identification of cetaceans (whales, dolphins).
- All personnel involved in DP23-33 will be required to complete an 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 include the following:

- PoM Environment Policy;
- key environmental issues and controls;
- monitoring program(s);
- emergency response;
- incident reporting;
- waste management;
- cetacean requirements;
- responsibilities;

- communication requirements; and
- consequences of a departure from the requirements of this EMP.

2.9 Communication

Internal and external communication and consultation arrangements are described below. The PoM communications delegate will be responsible for meeting all requirements with respect to community liaison.

Internal communication

- internal communication methods include meetings, emails, Intranet content; and
- regular meetings between PoM personnel and contractors will be scheduled.

External communication

A variety of methods will be used to enable information to be distributed to, and be received from, interested members of the community and key stakeholders. These may include the following:

- website (refer www.portofmelbourne.com);
- email or electronic direct mail (eDM);
- media releases;
- direct verbal or written advice (e.g. telephone, letter, email); and
- Notices to Mariners and shipping protocols.

Key communication activities and content include the following:

- the campaign dredging schedule to be available on the website covering project activities occurring in an upcoming campaign. Schedule to be updated as required;
- all complainants will receive a response within 1 business day. Complaints will be managed following the process described in Annexure 12 and resolved as soon as practicable; and
- engage various stakeholder groups just prior to commencement and at relevant milestones.

Key stakeholders include local, state and Commonwealth government bodies, business and commercial parties, commercial, passenger and recreational bay users and other identified stakeholders

2.10 Emergency preparedness, response and recovery

Emergency scenarios are identified in the risk report. In accordance with legislative requirements, PoM has a comprehensive Emergency Management Plan for managing emergencies that occur in its jurisdictional land and waters.

The contractor will have an emergency response procedure. This procedure will be in accordance with operational requirements, Harbour Master's directions and emergency management provisions contained in the Ports Victoria 'Port Operations Handbook' and 'Harbour Master's Directions'. The procedure will be reviewed to ensure consistency with PoM's Emergency Management Plan.

Inductions will provide an overview of emergency response requirements. Site specific inductions and training will be undertaken by the dredging contractor.

Following an emergency incident, an investigation will be conducted and corrective actions identified and addressed in accordance with PoM's Emergency Management Plan.

3. Measurement and evaluation

3.1 Incident reporting and investigation

Environmental incidents and hazards, including pollution incidents will be reported and recorded consistent with PoM's incident reporting requirements. This requirement will be included in inductions and reinforced during the project. PoM's external reporting/auditing requirements are identified in Table 5.

Finding level	Description
Conformance	There is sufficient evidence to confirm that actions have been undertaken, prepared and/or implemented in full conformance with the requirements of the auditable element.
Major non-conformance	The evidence shows that actions are not in full conformance with the requirements of the auditable element and this gives rise to the potential that the environment will be significantly affected (as defined in the risk assessment process) if the non-conformance is not rectified.
Minor non-conformance	The evidence shows that actions are not in full conformance with the requirements of the auditable element but it is unlikely that this will cause the environment to be significantly affected (as defined in the risk assessment process).
Not applicable	The auditable element falls outside the scope of the audit, e.g. work relevant to the element being audited has not yet commenced.
Area for improvement	A deficiency in the implementation of this EMP judged to be a risk to the environment, or to environmental management, without constituting an overall failure in the area concerned.
Undetermined	There is insufficient evidence to make a judgement on compliance.

Table 5 - Summary of audit findings classifications

3.2 Audits

A suitably qualified external auditor will be appointed to independently assess the conformance of each dredging campaign with the requirements of this EMP. The auditor may be appointed to audit a number of campaigns. The audit process takes into account the following:

- the timing and nature of the proposed works;
- the environmental risks of the dredging and dredged material management activities;
- the location, timing and volume of dredge material to be removed for minor capital projects; and
- the relevant PDS (refer Annexure 1).

The audit will evaluate performance on the basis of management records. The audit activities may also include direct observation of activities, as relevant. The audit report will include (as relevant):

- summary of findings;
- audit objective and scope;
- audit activities and reference documents;
- audit findings classification (refer Table 5 above); and
- audit findings and conclusion.

The audit findings will also be used to inform the management review and reporting process as per Section 4.

3.3 Monitoring of environmental performance

Environmental performance will be monitored via three mechanisms:

- process monitoring, inspections and surveys - monitoring of operational activities, physical conditions and post-maintenance activity environmental conditions (e.g. equipment tracking, monitoring of DMG integrity, bathymetric surveys, Entrance surveys).
- management performance monitoring - monitoring of the implementation and effectiveness of the environmental management system (e.g. nature of complaints, number of corrective actions completed).

- environmental monitoring and contingency plans - monitoring or response levels or environmental limits, with a description of the process to be followed in the event that identified levels or limits are reached.

Process monitoring

Process monitoring identified in the PDS includes the following:

- equipment tracking - Dredging and Plume PDS and Dredged Material Management PDS;
- hydrographic surveys - Dredged Material Management PDS;
- energy consumption and greenhouse emissions - maintenance management (all activities) PDS; and
- monitoring removal of contaminated sediments – Dredging and Plume PDS.

Inspections and surveys

Inspections and surveys identified in the PDS include:

- multibeam surveys and inspections at *HMAS Goorangai* as per the marine-based works (all areas) PDS;
- marine pest requirements identified in marine-based works (all areas) PDS;
- Entrance inspections and surveys as identified in the Entrance PDS; and
- bathymetric and multibeam surveys in dredging and plume PDS.

DMG Monitoring and Management Framework

Based on the result of the technical studies, PoM has replaced the previous intermediate sand capping activity at the DMG with a 'DMG Spoil Disposal Management and Monitoring Plan' which was approved by DEECA on 3 January 2024. This monitoring and management plan will determine when an intermediate capping campaign will need to be considered and is summarised below in Table 6:

Item	Description
24/7 storm event monitoring	real-time monitoring of wind speeds at the DMG and automated notification of extreme wind events to trigger a hydrographic survey inspection
Consolidation and/or settlement testing of deposited sediments	monitoring of sediment properties deposited at the DMG to track their erosion potential and resilience of significant storms to determine if trigger values are reached that require intervention
Bioavailability/ bioaccumulation monitoring	a four-stage approach for assessing bioavailability and bioaccumulation based on guidance in the National Assessment Guidelines for Dredging (NAGD, 2009)
Trigger events and approved Management Actions	defined trigger and management actions through the hydrodynamic and sediment monitoring program and the bioavailability and bioaccumulation data assessment and analysis process which detail when an intermediate sand cap determination will need to be made
Final Sand Capping Layer for DMG	one final 0.5m thick sand capping layer will still be placed on top of the contaminated sediments when the DMG is at full capacity, using the current approved capping protocol methodology

Table 6 - DMG Monitoring & Management Framework

The scope of works to be undertaken for the approved DMG Spoil Disposal Management and Monitoring Plan is outlined in PDS 24.

3.4 Other environmental monitoring and contingency plans

In addition to the monitoring and contingency plans described in Section 3 above, environmental monitoring and contingency plans for noise, heritage and complaints monitor response levels or environmental limits, with a description of the process to be followed in the event that identified levels or limits are reached.

The management actions identified in the contingency plans for noise, heritage and complaints are not an exhaustive list but tangible responses that the project will implement if required. The most appropriate management action will be selected on a case by case basis (refer to Annexures 10-12).

4. Management Review and Reporting

4.1 Pre-Mobilisation Review and Campaign Initiation Report

A dredging campaign comprises all dredging and dredging-related activities required in a particular timeframe following collection and assessment of hydrographic data that is routinely collected in the port.

Prior to commencement of each dredging campaign, a 'Pre-Mobilisation Review and Campaign Initiation Report' (Report) will be prepared by management to inform each maintenance campaign.

The Report will document the assessment by management of:

- the project activities to be undertaken for the campaign including any new dredging equipment, spoil management requirements and associated methodologies;
- estimated volumes to be dredged;
- hydrographic survey requirements;
- assessment of legal requirements including statutory approvals and other commitments, including listing of new species, habitats, communities and locations under Victorian or Commonwealth review;
- review of significant events that may have occurred since the previous campaign;
- review of environmental monitoring results from previous campaign(s);
- review of the relevant risks associated with all dredging activities;
- requirements of audits; and
- a summary of consultation activities.

The report will be sent to DEECA ten (10) business days prior to commencement of a campaign.

4.2 Campaign Close-Out Report

At the end of the each campaign, a 'Campaign Close-Out Report' will be prepared by senior management. The information from this review process will be used to inform subsequent maintenance campaigns.

The review will consider:

- summary of dredging activities undertaken;
- compliance with PDS;
- compliance with legal requirements including statutory approvals and other commitments;
- environmental performance monitoring results;
- results of inspections and surveys;
- results of audits, including the independent environmental audit;
- project risk profile; and
- lessons learned including any amendments required to the PDS.

Where an opportunity for continual improvement has been identified as part of the management review process, the following actions may be considered for each following maintenance campaign:

- development of new procedures;
- modification of existing procedures;
- modification to project scheduling;
- modification to communications strategy;
- modification to training schedule and/or programs;
- modifications to internal audit schedule;
- assessment as to whether any input is required from external specialists; and
- consideration of need for further investigations.

Any action arising from the management review will be assigned responsibility and tracked until completion.

The campaign close-out report will be sent with the independent audit to relevant government agencies within 90 business days of the final completion of all activities and contractual requirement for each campaign (refer to Table 4).

4.3 DMG Spoil Disposal Management and Monitoring Framework Reporting

The scope of work and reporting requirements for the approved DMG Spoil Disposal Management and Monitoring Plan are set out in Project Delivery Standard (PDS) 24 (refer Annexure 7). As the first dredging campaign (DP2023) undertaken under the DP23-33 consent extended from May 2023 through January 2024, the first annual report will be prepared in mid-late 2024 after the following sampling and testing program has been completed:

- monitoring of wind speeds at the DMG (ongoing);
- the sediment sampling program which will be undertaken in the South-East Cell) through 2024 and 2025; and
- the bioavailability and bioaccumulation sampling and laboratory testing program which is scheduled to be undertaken at least three months after completion of PoM's 2023/2024 dredging program in circa April 2024.

All separate bioavailability/bioaccumulation reports will be provided to DEECA for review prior to finalisation. The agreed triggers and management actions arising from the monitoring framework are shown in Drawing 6, Annexure 13. Any actions arising from the results of these report(s) will be subject to the approval of DEECA.

5. Annexure 1 Project Delivery Standards – applicable works and project areas

Project Delivery Standards	Yarra River and Hobsons Bay	North of the Bay	South of the Bay	The Entrance	PoMDMG
Maintenance management (all activities)					
1. Hours of operation	✓	✓	✓	✓	✓
2. Airborne noise	✓	✓	✓	✓	✓
3. Airborne Noise Monitoring	✓	×	✓	✓	×
4. Waste management	✓	✓	✓	✓	✓
5. Energy and greenhouse gases	✓	✓	✓	✓	✓
6. Equipment maintenance	✓	✓	✓	✓	✓
7. Fuels, oils, chemicals and hazardous goods	✓	✓	✓	✓	✓
8. Emergency response preparedness	✓	✓	✓	✓	✓
Marine-based works (all areas)					
9. Marine pests	✓	✓	✓	✓	✓
10. Vessel bunkering	✓	✓	✓	✓	✓
11. Cetaceans – vessel manoeuvring	✓	✓	✓	✓	✓
12. Cetacean sightings and log	✓	✓	✓	✓	✓
13. Dredging in the vicinity of services	✓	✓	×	×	×
14. Heritage (marine-based) – identification of potential relics	✓	✓	✓	✓	×
15. Maritime heritage – dredging	×	×	✓	×	×
Dredging and plume					
16. Pre- and Post-Dredging	✓	✓	✓	✓	×
17. Dredging of consolidated and unconsolidated contaminated sediments	✓	✓	×	×	×
18. Dredging of consolidated uncontaminated sediments.	✓	✓	✓	✓	×
19. Dredging of unconsolidated uncontaminated sediments	✓	✓	✓	✓	×
Entrance Activities					
20. Dredging in The Entrance	×	×	×	✓	×
Dredging schedule					
21. Campaign dredging schedule	✓	✓	✓	✓	✓
22. Consideration of seasonal sensitivities	✓	×	✓	×	×
Dredged material management					
23. Dredge material placement	✓	✓	✓	✓	×
24. DP23-33 Monitoring and Management Framework	×	×	×	×	✓
25. PoMDMG – final capping	✓	✓	✓	×	✓
26. PoMDMG – maintenance and inspection.	×	×	×	×	✓
27. SEDMG	×	×	✓	✓	×

6. Annexure 2 Dredging Management (all activities) PDS

Dredging management (all activities)		
Objective	▪ To appropriately plan and implement operational aspects of dredging activities. ▪ To ensure noise levels comply with EPA Noise Protocol requirements. ▪ To ensure that materials are appropriately stored, handled and disposed of.	
Target	▪ Conformance with environmental limits and controls specified in this PDS.	
Application	▪ The duration of dredging activities and areas.	
Environmental controls		**Project phase**
1. **Hours of operation** All activities may be conducted on a 24 hour, 7 days a week basis, except where explicitly restricted within a PDS, or relevant legislation.		All phases
2. **Airborne noise** ▪ All activities to be conducted within EPA Noise Protocol guidelines. ▪ A desktop noise assessment of dredging vessels and major equipment (that are new to works in port waters and not included in the existing modelling) to be conducted before acceptance and mobilisation onto program. ▪ Where the assessment indicates that the vessel or equipment may not conform to the risk assessment outputs, appropriate action is to be taken as described in Airborne Noise Contingency Plan.		All phases
3. **Airborne Noise Monitoring** ▪ Noise monitoring to be undertaken as described in the Airborne Noise Contingency Plan (Annexure 10). ▪ Where monitoring indicates an exceedance of EPA Noise Protocol limits, appropriate action is to be taken as described in Airborne Noise Contingency Plan.		Activity
4. **Waste management** ▪ All marine vessels to have sewage containment or treatment facilities. Sewage treatment will comply with Section 23G of the Pollution of Waters by Noxious Substances Act 1986 (Vic). ▪ Contractor waste management arrangements to include waste minimisation, containment, segregation and appropriate reuse, recycling, treatment and disposal. ▪ The handling and disposal of unexpected materials identified during TSHD dredging (e.g. inert debris such as metallic wastes and timber) to be included in waste management arrangements. All waste to be managed in accordance with: ▪ *Environment Protection Act 2017* (Vic) ▪ *Biosecurity Act 2015* (Cwlth.) (applicable vessels) ▪ *Pollution of Waters by Oil and Noxious Substances Act 1986* (Vic)		Activity
5. **Energy and greenhouse gases** ▪ The project will identify, calculate and report on energy consumption and greenhouse emissions on major plant and equipment if required under the		Activity

Dredging management (all activities)	
National Greenhouse and Energy Reporting Act 2007 (NGER) and/or any other requirements under the *Climate Change Act 2017* (Vic).	
6. **Equipment maintenance** ▪ Maintenance programs will be implemented for all plant and equipment as defined in the *Occupational Health and Safety Regulations 2007* (Vic).	Activity
7. **Fuels, oils, chemicals and hazardous goods** Storage and handling of chemicals to be in accordance with: ▪ *Dangerous Goods Act 1985 (Vic)* ▪ *International Ship Management (ISM) Code (applicable vessels)* ▪ *Pollution of Waters by Oil and Noxious Substances Act 1986 (Vic)*	Activity
8. **Emergency response preparedness** ▪ Development and testing of emergency response procedures, integrated with PoM's Emergency Management Plan, including provision for fuel, oil and chemical spills. ▪ All dredge vessels to have oil spill response kits on board. ▪ Relevant personnel to be appropriately trained in its use.	Activity

Environmental limit	**Environmental monitoring program**
Airborne noise	Airborne Noise Contingency Plan

Contingencies	Airborne Noise Contingency Plan (Annexure 10) Emergency response managed via Emergency Response Procedures (EMP Section 2.10)

7. Annexure 3 Marine-based works (all areas) PDS

Marine-based works (all areas)		
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 manoeuvring.	
Target	▪ Conformance with environmental controls specified in this PDS.	
Application	▪ All marine-based dredging activities.	
Environmental controls		**Project phase**
9. **Marine pests** ▪ Marine pest inspection and certification of monitoring and support vessels, dredgers and pontoons is required before mobilisation onto project, where these are sourced from outside Port Phillip. Certification must be received from the final port of call, before entry to Port Phillip. ▪ All applicable vessels to comply with the 'Australian Ballast Water Management Requirements', Dept. of Agriculture, Fisheries and Forestry (DAFF) (Cwlth.)		Pre-mobilisation Activity
10. **Vessel bunkering** ▪ All bunkering to take place in accordance with Ports Victoria Bunkering Guidelines and vessel bunkering procedures.		All phases
11. **Cetaceans – vessel manoeuvring** If within 300 m of a whale or dolphin the vessel must not: ▪ approach a whale or dolphin head on; ▪ restrict the path of a whale or dolphin; ▪ pursue a whale or dolphin; ▪ separate any whale or dolphin from a group; ▪ come between a mother and a calf; and ▪ drop or lower an anchor overboard from the vessel. If within 300 m of a whale or dolphin, the vessel must: ▪ maintain a constant speed that does not exceed 5 knots; ▪ avoid sudden changes in speed and direction; ▪ post a lookout for cetaceans; and ▪ manoeuvre the vessel to a distance of at least 300 m from the whale or dolphin if it shows any signs of disturbance.		All phases
12. **Cetacean sightings and log** ▪ Personnel on board vessels are to report all sightings of cetaceans; and ▪ A log of cetacean sightings and action taken to be kept for all work areas.		Activity
13. **Dredging in the vicinity of services** ▪ Management measures including positional controls and mechanical devices to minimise the risk of damage to services.		Activity

Marine-based works (all areas)	
14. **Heritage (marine-based) – identification of potential relics** ▪ If potential relics are identified during maintenance activities, the process described in Annexure 11 will be followed.	Activity
15. **Maritime heritage – dredging** ▪ Conduct multibeam survey in the vicinity of the HMAS Goorangai (S294) before and after dredging in the area identified in Activity Areas – Heritage Significance drawings included in Annexure 13. The following management measures shall be implemented for the wreck of the HMAS Goorangai (S294) for works identified in drawings included in Annexure 13 – Activity Areas – Heritage Significance: ▪ obtain an appropriate permit from Heritage Victoria; ▪ use of the sweep bar in conjunction with the TSHD in the vicinity of the *HMAS Goorangai;* ▪ draghead tracking to confirm that dredging has not occurred within the area of heritage significance; and ▪ conduct site inspection within 2 months of completion of dredging in the vicinity of *HMAS Goorangai* (S294). ▪ Inspections to be carried out under the supervision of an archaeologist and reports to be provided to Heritage Victoria, if needed.	Pre-activity

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

Contingencies	Not applicable to this PDS

8. Annexure 4 Dredging and Plume PDS

Dredging and plume	
Objective	▪ To optimise the performance of channels and berths ▪ To appropriately manage dredging activities and contaminated sediments. ▪ To minimise area of seabed disturbed and appropriately manage the material removed. ▪ To protect assets, beneficial uses and values from long-term adverse effects due to dredging-related water quality effects.
Target	▪ Maintain physical dredging works within the nominated activity zones ▪ No turbidity plume extent outside expectations
Application	▪ All maintenance dredging activities in the Yarra and Maribyrnong Rivers, Williamstown Channel, Hobsons Bay, Port Melbourne Channel, South Channel and Entrance; ▪ All minor capital dredging projects undertaken in the Yarra and Maribyrnong Rivers, Williamstown Channel, Hobsons Bay and Port Melbourne Channel; defined as comprising a maximum insitu dredge volume of 50,000 m3/annum ▪ The disposal of dredged material at the PoMDMG and SEDMG; and ▪ Use of TSHD, BHGD, sweep and associated equipment.

Environmental controls	**Project phase**
16. **Pre and Post-Dredging** ▪ Multibeam surveys of all channels to be undertaken prior to commencement of dredging. ▪ Due to dredging tolerance, actual depth will exceed the declared depths. The declared depths to be maintained are as follows: ▪ Dredging Activity Zone – activity zones have been identified to limit the footprint of dredging activities. The areas are identified in Annexure 13 (Drawings). ▪ All dredging activities to take place within the activity zones. No dredging (as a subset of dredging activities) is to take place within 65 m of the outside edge of the activity zone (Port Melbourne Channel, South Channel and the Entrance only, except to the extent necessary to achieve the declared depth. Dredging campaigns not to exceed a maximum duration of:	Activity

Dredging and plume

Area	Maximum duration	Principal proposed dredging operation
Yarra River, Maribyrnong River and Hobsons Bay	16 weeks	Dredging by BHGD in channels and at berths, approaches and swing basins.
	6 weeks	Dredging by TSHD in channels, approaches and swing basins and disposal in PoMDMG.
North of the Bay	1 week	Dredging by TSHD in Port Melbourne Channel south of Williamstown Channel
South of the Bay	6 weeks	Dredging by TSHD in South Channel
The Entrance	1 week	Dredging by TSHD in channel

- Dredging equipment and associated support vessels will be required to manoeuvre outside activity zones, including transit between activity zones.
- Toe lines and activity zones are identified in drawings included in Annexure 13.
- Tracking of equipment activity as follows:
  - The overflow valve of the TSHD will be closed when sailing.

Equipment	Time	Date	Coordinates	Other
TSHD	✓	✓	Dredging – x,y,z of dragheads (northing, easting, depth to Chart Datum) Sailing and placement of dredged material – x,y (northing, easting)	Status of cycle (i.e. dredging, sailing, placement of dredged material)
Backhoe Dredge and Grab Dredge (contaminated material only)	✓	✓	x,y,z bucket (northing, easting, depth to Chart Datum)	Nil
Split hopper barges	✓	✓	x,y (northing, easting)	Nil

17. **Dredging of consolidated and unconsolidated contaminated sediments**

Dredging of contaminated sediment in the Yarra River, Maribyrnong River, Williamstown and Port Melbourne Channels, Hobsons Bay and associated swing basins, piers and berths will be conducted with the following equipment:

Activity

<table>
<tr><td colspan="3">Dredging and plume</td></tr>
<tr><td colspan="2">▪ TSHD;
▪ grab dredge and/or backhoe dredge; and
▪ sweep / water injection.

18. Dredging of consolidated uncontaminated sediments

Where uncontaminated and consolidated sediments are identified to exist in the Yarra River, Maribyrnong River, Williamstown and Port Melbourne Channels, Hobsons Bay and associated swing basins, piers and berths, dredging of consolidated and uncontaminated sediment to be conducted with the following equipment:

▪ TSHD;
▪ grab dredge and/or backhoe dredge; and;
▪ sweep.

19. Dredging of unconsolidated uncontaminated sediments and loose material

▪ Uncontaminated and unconsolidated sediments and loose material exist in the South Channel and the Entrance. Dredging of unconsolidated and uncontaminated sediment to be conducted with the following equipment:
▪ TSHD; and
▪ Sweep /water injection and/or specialist backhoe dredge.</td><td></td></tr>
<tr><td colspan="2">Environmental limit</td><td>Monitoring program</td></tr>
<tr><td colspan="2">Not applicable to this PDS</td><td>Not applicable to this PDS</td></tr>
<tr><td>Contingencies</td><td colspan="2">Not applicable to this PDS</td></tr>
<tr><td colspan="3">Conformance with environmental controls specified in this PDS.</td></tr>
<tr><td colspan="3">All dredging activities in the Entrance, including use of the TSHD.</td></tr>
</table>

9. Annexure 5 Entrance PDS

<table>
<tr><td colspan="4">Entrance Activities</td></tr>
<tr><td>Objective</td><td colspan="3">▪ To appropriately manage activities in the Entrance.</td></tr>
<tr><td>Target</td><td colspan="3">▪ Conformance with all environmental controls specified in this PDS.</td></tr>
<tr><td>Application</td><td colspan="3">▪ Activities in the Entrance</td></tr>
<tr><td colspan="3">Environmental controls</td><td>Project phase</td></tr>
<tr><td colspan="3">20. Dredging in the Entrance
▪ For Rip Bank, all channel dredging works within 50 m of the canyon edge will be undertaken with the dredge operating in a southerly direction;
▪ For Nepean Bank, all dredging works will be conducted away from the canyon edge towards the plateau;
▪ A towed video survey shall be conducted prior to any dredging; and
▪ Works will only be undertaken within the workability of the vessel which includes limiting metocean conditions.</td><td>Activity</td></tr>
<tr><td colspan="2">Environmental limit</td><td colspan="2">Monitoring program</td></tr>
<tr><td colspan="2">Not applicable to this PDS</td><td colspan="2">Not applicable to this PDS</td></tr>
<tr><td>Contingencies</td><td colspan="3">Not applicable to this PDS</td></tr>
</table>

10.Annexure 6 Dredging Schedule PDS

Dredging schedule		
Objective	▪ To develop an appropriate dredging schedule, taking into account the seasonal sensitivities of Port Phillip assets, beneficial uses and values.	
Target	▪ Conformance with environmental controls specified in this PDS.	
Application	▪ All dredging activities in Yarra River, Williamstown Channel, Port Melbourne Channel, South Channel and at the Entrance.	
Environmental controls		**Project phase**
21. **Campaign dredging schedule** The dredging schedule for each campaign will be submitted to DEECA before implementation which will include: ▪ dredging technology; ▪ dredging configuration (i.e. number and location of dredges); and ▪ timing, duration and sequence of dredging in Project Areas.		Pre–Activity Activity
22. **Consideration of seasonal sensitivities** ▪ No dredging permitted between 18 December and 31 January in the South of Bay to mitigate impacts on the recreation and tourism activities during the holiday season; ▪ No dredging using the TSHD in the Yarra River or Williamstown Channels between 15 October to 30 November to protect migration of the endangered Australian grayling species; ▪ Dredging using the TSHD in Yarra River between 1 April and 31 July restricted to no more than two calendar months in any one year, or equivalent in days to protect Australian grayling larval drift; and ▪ For each campaign schedule, consideration will be given to seasonal sensitivities and preferred seasons identified in Annexure 9. The decision process, including how seasonal sensitivities were considered, will be documented.		Activity
Environmental limit		**Monitoring program**
Not applicable to this PDS		Not applicable to this PDS
Contingencies	Not applicable to this PDS	

11.Annexure 7 Dredged Material Management PDS

Dredged material management		
Objective	▪ To manage and track the placement of dredged material. ▪ To dispose of and manage dredged material appropriately within the DMGs. ▪ To manage the PoMDMG to the standard required for long-term containment of contaminated material.	
Target	▪ Conformance with environmental controls specified in this PDS.	
Application	▪ All dredged material placement and DMG management activities in the PoMDMG and SEDMG.	
Environmental controls		**Project phase**
23. **Dredged material placement.** ▪ DMGs - all dredged material placement activities to take place within the specified DMGs (including associated activity zones) set out in the drawings in Annexure 13. ▪ Dredged material placement - All dredged material to be placed in accordance with Annexure 8. ▪ Dredging and disposal locations to be recorded as per tracking of equipment table (refer to Annexure 4). ▪ Dredged material placement will not commence if a cetacean is sighted within 300 m of the TSHD placing material into a DMG. If a cetacean is sighted, placement can commence if the whale has been seen to move beyond 300 m, or has not been sighted within 300 m for at least 15 minutes (refer Annexure 3).		Activity
24. **DP23-33 DMG Management and Monitoring Framework** ▪ This section summarises the management, monitoring and reporting requirements of PoM's approved 'DMG Spoil Disposal Management and Monitoring Plan 2023' as well as the ongoing monitoring procedures at the PoMDMG and SEDMG.		Activity/ Post-Activity

Dredged material management

Item	Sampling Regime
Consolidation and settlement testing: First Dredging Campaign (DP2023):	**Dredge material during DP2023:** ▪ Dredge hopper/barge sampling (TSHD/Backhoe) and sediment testing, including density (bulk, dry and particle) and shear strength, to determine sediment properties **1 month (approximately) after first stage of DP2023 completed:** ▪ Placed material: Sample up to 5 sediment cores immediately after placement (i.e. within the first month). Square arrangement with one sample in the middle. Results can be averaged or looked at individually. Test top 0-50 mm, then at 0.25m and 0.5m core depth for baseline density and shear strength
Years 1-2 (after DP2023): Following Years	▪ 6 month intervals - Collect core samples of 0.5 m depth and test for density and shear strength. ▪ To be determined in consultation with DEECA following the results of Years 1-2 monitoring.

Item	Reporting Regime
Hydrographic Monitoring and Sediment Testing Reporting	Annual MBES Survey Reporting of the outcomes and findings from the hydrographic monitoring and sediment testing will be undertaken annually and provided to DEECA, and ongoing review of results will inform the following year of monitoring. The report will summarise the following: ▪ Storms that trigger management actions; ▪ Wave data associated with each storm (modelling or nearby wave buoy); ▪ Sediment sample data and results and how they relate to dredge areas and methods employed; and ▪ The trigger values reached, and subsequent management actions employed.
Wind Alert System	**Management Triggers**
Wind Alerts >10-year ARI storms or greater	▪ If wind alerts are not triggered, the shear testing shows no material difference to what is expected and the MBES survey does not indicate erosion there are no management actions beyond the scheduled monitoring. ▪ If scheduled monitoring of shear strength indicates the dredge deposit is materially lower in strength than expected at the 12 month mark (<301 Pa) then turbidity will be monitored at the seabed and the erosion model will be re-calibrated to re-assess the risk of erosion. ▪ If wind alerts are triggered: - wave modelling will then be used to confirm the storm intensity and estimated bed shear due to wave action. The wave modelling of the storm that generated the alert will be undertaken within 1 month to confirm the bed shear stress at the bed and if it exceeds 0.35 N/m2. - If the bed shear is greater than the threshold (0.35 N/m2), then MBES survey and additional core sampling of the DMG is undertaken. - If there are indications of erosion or material changes to the strength of the dredge deposit (lowering of shear strength to <301 Pa), then turbidity will be monitored on the seabed to re-calibrate the erosion model and re-assess the risk of erosion. ▪ If there is an increased risk of erosion from storm events, relative to erosion due to capping, then intermediate capping will be applied within 18 months, subject to dredger availability noting: - sediment core monitoring will continue in the lead up to any capping decision to determine if the material consolidates and

Dredged material management

	gains strength to the point where capping is not needed (> 301Pa). ▪ If erosion monitoring triggers intermediate capping, the findings of the bioaccumulation study will be assessed to determine if the dredged material poses an ecotoxicological risk to the environment. If there is no ecotoxicological risk, then capping is not required.

Item	Monitoring Regime	
Bioaccumulation/ Bioturbation survey after completion of DP2023 dredging campaign	**Task**	**Period**
	DP23-33 Dredging Campaign 1 – DP2023	*May 2023-April 2024*
	Stage 1 Field Preparations	May - June 2024
	Stage 1 Ecological Community Survey and Bioavailability Testing	July - September 2024
	Stage 2 Resident Biota Bioaccumulation Testing	January-February 2025
	Stage 3 Placed Biota Bioaccumulation Testing	February-March 2025 (assume pre-spawning season)
	Stage 4 Data Analysis	March-May
	Draft Reporting	June - July 2025
	Review and Final Reporting	July - August 2025

Dredged material management

As per the approved DMG Spoil Disposal Management and Monitoring Plan (PoM, December 2023), management actions will be undertaken at the PoMDMG subject to the results of the above monitoring and management framework:

Item	Trigger	Management Action
Wind Speed/ Erosion of deposited sediment	10-year ARI wind speed persisting for 3 hours and annual MBES survey shows unacceptable sediment erosion	Proceed with interim capping of affected sediment with clean sand within 12-18 months (depending on dredger availability)
Bioaccumulation/ Bioturbation Outcome 1	Receptors are present at impact location at a minimum level of colonisation - biota have colonised the South East Cell sediments for the applicable DP23-33 campaign. **And** Significant or very significant bioaccumulation is measured in resident or placed biota at the South East Cell impact location that is statistically greater than that measured at the reference locations	Revisit DP23-33 risk assessment and workshop with DEECA. If risk level is unacceptable, proceed with intermediate capping of sediments in South East Cell
Bioaccumulation/ Bioturbation Outcome 2	Receptors are present at impact location at a minimum level of colonisation - biota have colonised the South East Cell sediments for the applicable DP23-33 campaign. **And** There is no significant difference in bioaccumulation measured in placed biota at the South East Cell impact location when compared to the reference locations.	No action
Bioaccumulation/ Bioturbation Outcome 3	Receptors are not present at impact location and exposure pathway is incomplete – there is	Monitor exposure pathway for receptor colonisation at impact location, with further periodic

Dredged material management			
	no or minimal biota colonisation the South East Cell sediments for the applicable DP23-33 campaign. **And** Significant or very significant bioaccumulation is measured in placed biota at the South East Cell impact location that is statistically greater than that measured at the reference locations	ecological community survey at the South East Cell at 6-month intervals after Stage 1 survey until next DP23-33 campaign. Revisit management actions if minimum level of colonisation is detected in a periodic survey.	
Bioaccumulation/ Bioturbation Outcome 4	Receptors are not present at impact location – there is no or minimal biota colonisation the South East Cell sediments for the applicable DP23-33 campaign. **And** There is no significant difference in bioaccumulation measured in placed biota at the South East Cell impact location when compared to the reference locations.	25. No action	
25. PoMDMG – final capping ▪ Construction of final cap for PoMDMG when at capacity (and/or if an intermediate cap is required based on the DP23-33 monitoring and management regime): ▪ capping material to be sourced from South Channel and / or SEDMG as set out in the drawings in Annexure 13. ▪ capping material to be placed in accordance with the Capping Protocol detailed in Annexure 14.			Activity
26. PoMDMG – ongoing maintenance and inspection Maintenance and inspection procedures to be put in place for the long-term management of the PoMDMG and incorporated into PoM's operations management system. Ongoing inspections, based on acoustic techniques, of representative areas of any required intermediate capping layers (based on the proposed monitoring and management regime or final capping layer(s) when the PoMDMG is at capacity will be undertaken in accordance with the Capping Protocol detailed in Annexure 14 at the following intervals after completion of capping: ▪ annually ▪ within 2 weeks of a storm event (a 1 in 100 year event) or seismic event (greater than 4.5ML on the Richter scale), subject to safety considerations due to weather.			Post–Activity

Dredged material management		
27. SEDMG ▪ Subject to the results of pre-mobilisation review and the campaign initiation report risk assessment, a minimum 0.5 m thickness of sand material may be placed over Entrance rock material. ▪ Dredged material to be placed to maximum -15 m below Chart Datum. ▪ Once the dredged materials have been placed in SEDMG, survey to confirm materials have been placed in accordance with requirements.		Activity
Environmental limit	Not applicable to this PDS	
Monitoring program	Not applicable to this PDS	
Contingencies	Not applicable to this PDS	

12.Annexure 8 Dredging Summary

Project area	Dredging location	General description of material	DMG	Management requirements
Yarra River, Maribyrnong River and Hobsons Bay including Webb Dock, Station Pier and Gellibrand	Channels and at berths, approaches and swing basins	Clays and silts that are deemed contaminated (unconsolidated contaminated sediments)	PoMDMG	▪ If dredged by BHD disposal directly from barge. Requires bunding. ▪ If dredged by TSHD determine disposal method (ie. bottom doors, diffuser etc.) via risk assessment. Requires bunding.
		Clays and silts that are demonstrated to be uncontaminated (consolidated uncontaminated sediments)	PoMDMG	▪ If dredged by BHD disposal directly from barge. ▪ If dredged by TSHD disposal via bottom doors. ▪ Material may be utilised for bund maintenance.
		Clays and silts that are deemed contaminated (consolidated contaminated sediments)	PoMDMG	▪ If dredged by BHD disposal directly from barge. Requires bunding. ▪ If dredged by TSHD determine disposal method (ie. via bottom doors, diffuser etc.) via risk assessment. Requires bunding.
		Clays and silts that are demonstrated to be uncontaminated (unconsolidated uncontaminated sediments)	PoMDMG	▪ If dredged by BHD disposal directly from barge. ▪ If dredged by TSHD disposal via bottom doors. ▪ Material may not be utilised for bund maintenance.
North of the Bay	Port Melbourne Channel	Clays and silts that are deemed contaminated (unconsolidated contaminated sediments)	PoMDMG	▪ If dredged by BHD disposal directly from barge. Requires bunding. ▪ If dredged by TSHD determine disposal method (ie. via bottom doors, diffuser etc.) via risk assessment. Requires bunding.

Project area	Dredging location	General description of material	DMG	Management requirements
South of the Bay	South Channel	Medium to coarse sand	Final capping in PoMDMG	▪ Disposal via spreader
			SEDMG	▪ Disposal directly from hopper. ▪ Need for capping material to be determined via risk assessment. ▪ Other material to be disposed of in SEDMG.
The Entrance	The Entrance	Loose material (cobbles)	SEDMG (if required)	▪ If removal to SEDMG is required, disposal directly from hopper.

13.Annexure 9 Key seasonal sensitivities and preferred seasons

Project area	Key seasonal sensitivities	Preferred seasons
Yarra River, Maribyrnong River and Hobsons Bay	Denitrification, algal blooms, seabirds, MPB, little penguins, fish (in particular anchovy and Australian grayling and mudfish), eels, commercial fishing, recreational fishing (the Warmies), yachting, boating, beach use.	Winter is ranked the most preferred season for dredging to occur. Autumn and summer are ranked as second and third preference respectively. Spring is considered least preferred in this project area primarily due to the Australian grayling.
North of the Bay	Denitrification, algal blooms, seabirds, MPB, seagrass, little penguins, dolphins, fish (in particular anchovy), commercial fishing, recreational fishing, swimming, boating, yachting, beach use.	Winter is ranked the most preferred season for dredging to occur in this project area. Autumn and spring are ranked as equally preferred, while summer is considered the least preferred season for dredging in the North of the Bay Project Area.
South of the Bay	Algal blooms, nutrient cycling, denitrification, seagrass, macroalgae, seaweed, MPB, seabirds, little penguins, dolphins, whales, fish, commercial fishing (including abalone), aquaculture, tourism, recreational fishing, swimming, boating, yachting, beach use.	Winter is ranked the most preferred season for dredging to occur in this project area. Autumn is ranked as second preference and spring as third preference. Summer is the least preferred season for dredging to occur in the project area.
The Entrance	Seabirds, little penguins, whales, fish, commercial fishing (including abalone), tourism, recreational diving, beach use.	Winter is ranked the most preferred season for dredging to occur in this project area. Autumn and spring are ranked as second and third preference respectively, while summer is considered the least preferred season for dredging the Entrance.

14.Annexure 10 Noise monitoring and contingency planning

This section contains the Airborne Noise Contingency Plan and management actions as described below.

Program / plan	Rationale	Procedure and indicator	Monitoring location	Associated PDS
Airborne Noise Contingency Plan	Comply with EPA 'Noise Limit and Assessment Protocol' (EPA Publication 1826.4, May 2021).	A desktop noise assessment of new dredging vessels and/or major equipment and response to noise complaints.	Yarra River and Hobsons Bay, North of the Bay, South of the Bay, the Entrance.	Maintenance management (all activities)

Airborne Noise Contingency Plan

This Airborne Noise Contingency Plan relates to a potential or actual exceedance of the EPA 'Noise Protocol' from dredging activities.

Response level

Two events that will trigger contingency actions to appropriately manage airborne noise emissions are defined by either:

- airborne noise measurement at key locations is evaluated as likely to exceed EPA Noise Protocol unless management contingencies are taken; or
- a noise complaint has been received from an area represented by a key monitoring location within a distance from dredging activities that audible levels of noise disturbance are possible.

Environmental limit

The airborne noise environmental limit relates to the legislative requirements for noise under EPA Noise Protocol. This is required for:

- TSHD when working closer to key locations of Queenscliff and McCrae/ Dromana/ Rye
- TSHD and BHGD when working closer to the key locations of Port Melbourne and Williamstown
- the response to a noise complaint that has been received within a distance from dredging operations that audible levels of noise disturbance are possible.

The time period classification defined in the Environment Protection Regulations are shown below.

Time Period	Description
Day	**7am to 6pm Monday to Saturday**
Evening	**6pm to 10pm Monday to Saturday** **7am to 10pm Sundays and Public Holidays**
Night	**10pm to 7am Everyday**

Contingency for potential or actual exceedance

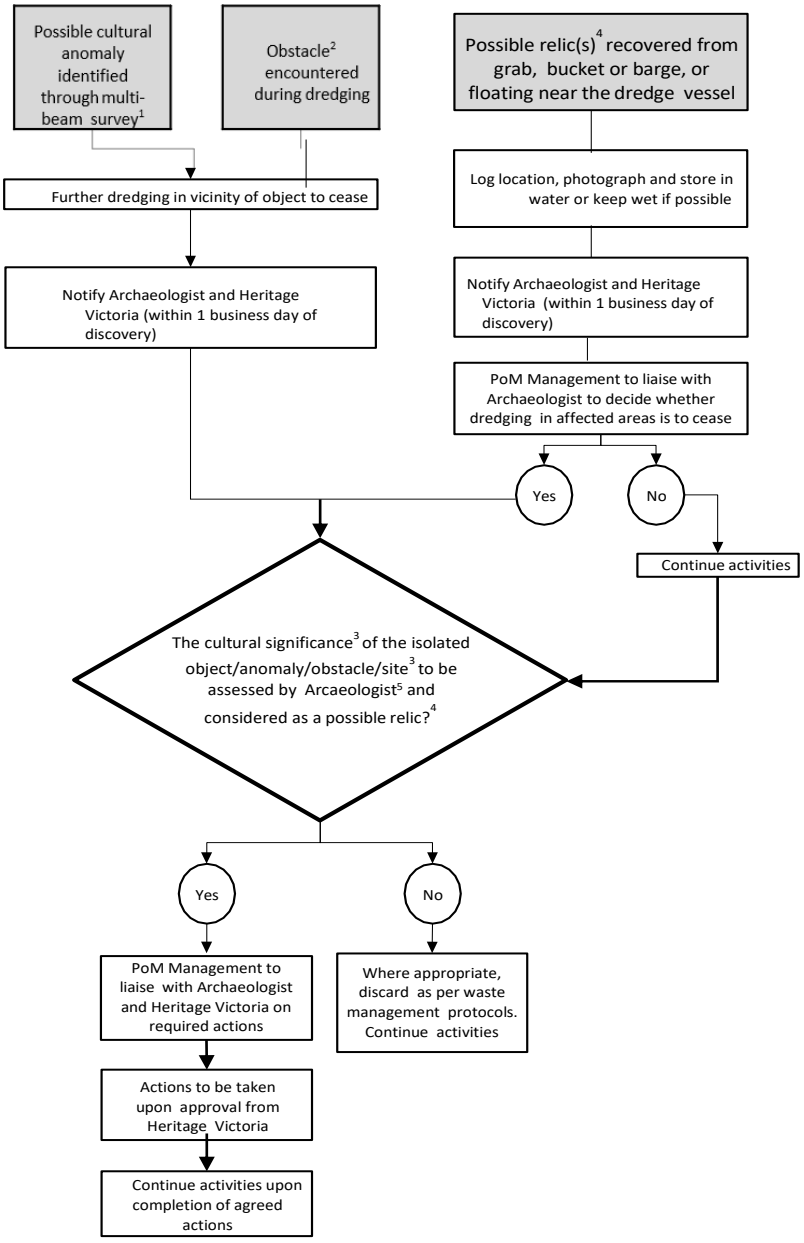
The management actions required for potential/actual noise exceedances are described below. Noise complaints will be managed as per the process in Annexure 12.

Management actions
New vessel or equipment management actions where the desktop noise assessment of vessels or equipment indicates it may not conform to EPA Noise Protocol, appropriate action to be taken. Management options include: ▪ selection of alternative vessel/equipment; ▪ modification to vessel/equipment; and ▪ restrictions on use of vessel/equipment.
In response to complaints, where the complaint is identified to have some basis for the complaint, noise monitoring may be used to assess compliance with the EPA Noise Protocol.
Management actions if activity does not meet/not likely to meet EPA Noise Protocol. ▪ If noise monitoring results and/or desktop noise assessment predict EPA Noise Protocol limits have been exceeded or may be exceeded unless appropriate management action is taken, then the following options for action may be taken: ▪ rescheduling high noise equipment to operate for daytime works only, or control locations of evening or night-time use to greater distances from key locations sensitive to noise; and/or ▪ evaluate ways to reduce equipment noise emissions if required (e.g. decreasing operating energy, installing additional acoustic dampening covers and mufflers etc.).

15. Heritage Marine-based Response

Annexure 11 Heritage Marine Based Response

The management actions for encountering previously unidentified heritage items/sites during dredging is shown in Figure 2 below.



1 If multi-beam survey is part of post construction monitoring, references to dredging are not relevant.
2 'Obstacle' refers to the progress of dredging impeded by object(s) on seabed within a discrete area.
3 'Cultural significance' refers to archaeological or historic shipwrecks, shipwreck relics, artefacts or sites as defined by the (Vic) *Heritage Act 1995* and (Cwth) *Historic Shipwrecks Act 1976., unless relics, items or sites have otherwise been exempt as agreed with Heritage Victoria.*
4 'Possible relics' refers to artefacts that may possibly be protected by legislation (see 3). Therefore car tyres, shopping trolleys, and aluminium beer cans etc. are not possible relics. Previously identified timber piles and wharf structures removed during construction or demolition activities are also not possible relics.
5 For this project a site is defined as a collection of artefacts within a discrete area. A ship or plane wreck is a site, as is an area of dumped material.
6 By way of diving inspection, inspection of recovered material and/or review of data collected.

16.Annexure 12 Complaints Response

The management actions to deal with complaints are described below.

Management actions
Management actions if a complaint is received: ▪ If a complaint is received, a general response will be given to the complainant within 24 hours. 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 investigation (if required). It is expected that there will be management action within 24 hours 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 the cause cannot be determined; and/or ▪ if there are a number of complaints relating to the same issue then monitoring may be considered as part of the investigation. ▪ Where the assessment of vessels, equipment or 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; and ▪ other actions as deemed appropriate.

17.Annexure 13 Drawings

Drawing 1 - Activity Zone Definition South Channel Plan Layout (Dwg 35331-4)

Drawing 2 - Activity Zone Definition South Channel (Dwg 35332-3)

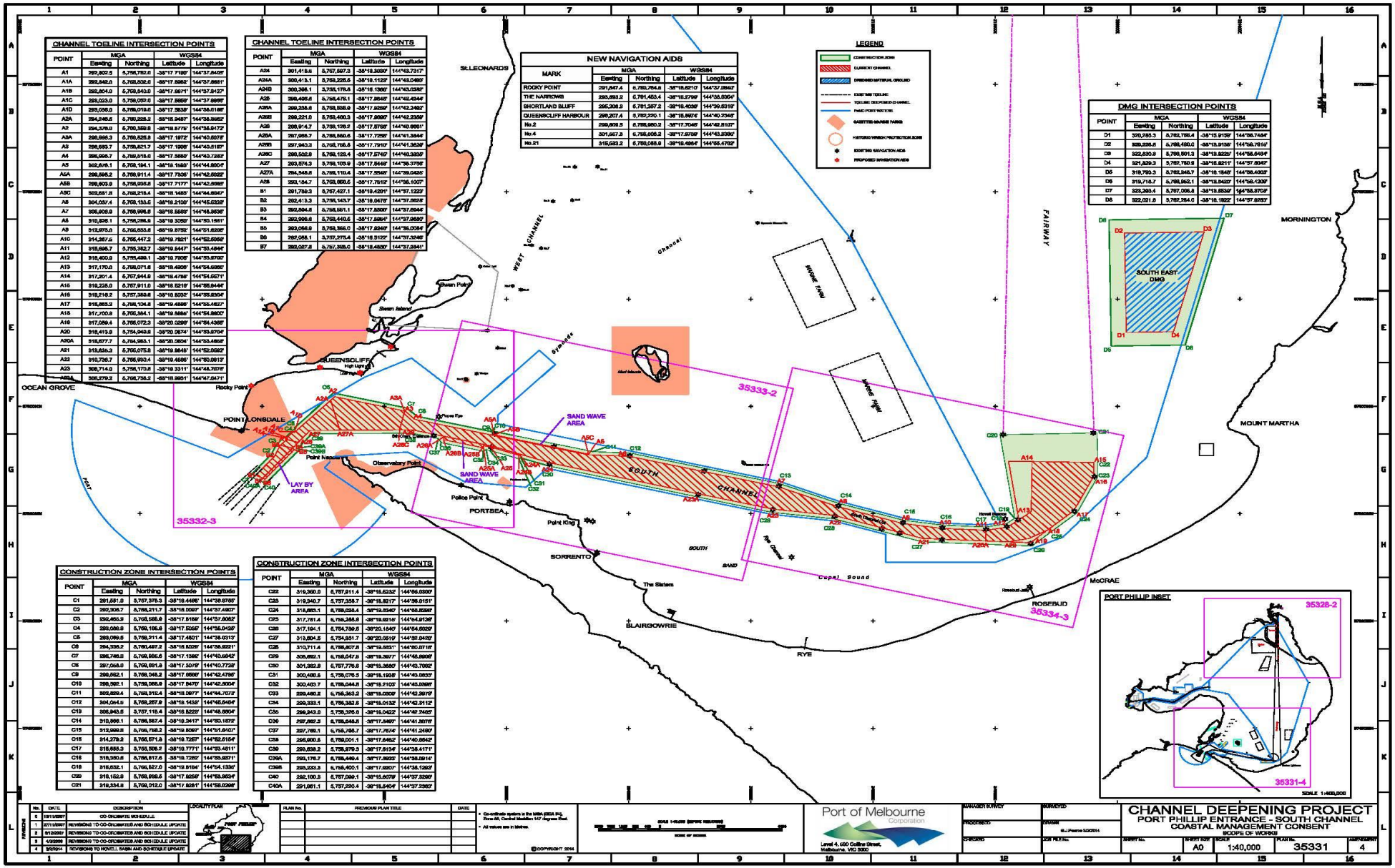
Drawing 3 - Activity Zone Definition South Channel (Dwg 35333-2)

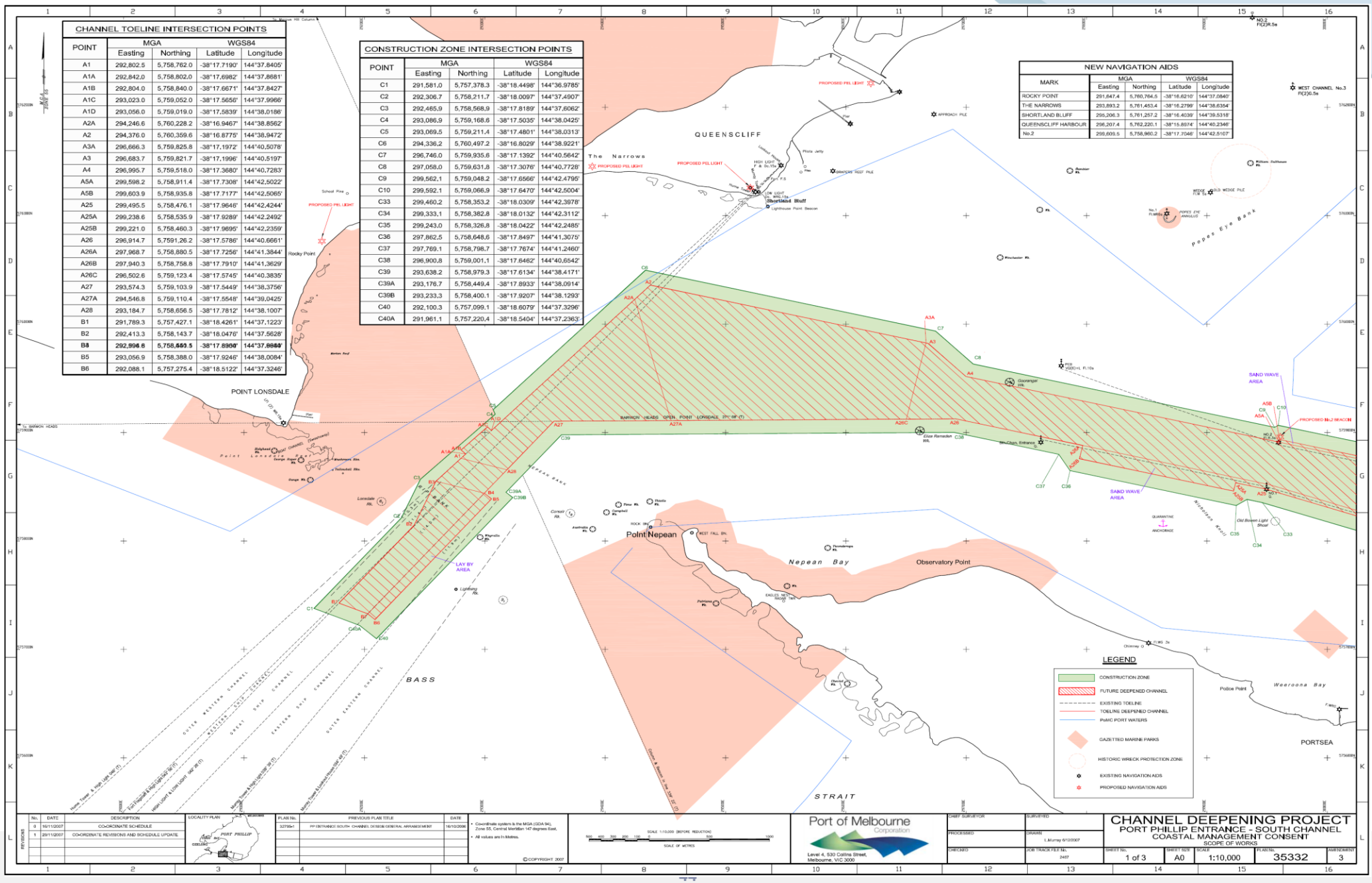
Drawing 4 - Activity Zone Definition South Channel (Dwg 35334-3)

Drawing 5 - Activity Zone Definition Northern Port Phillip (Dwg 35853-4)

Drawing 6 - Triggers and Management Actions for capping determination

Drawing 7 - Marine Based Activity Area South of Bay (Dwg DS-ENV-70012v0)


CHANNEL TOELINE INTERSECTION POINTS
CHANNEL TOELINE INTERSECTION POINTS
NEW NAVIGATION AIDS
LEGEND
DMG INTERSECTION POINTS
CONSTRUCTION ZONE INTERSECTION POINTS
CONSTRUCTION ZONE INTERSECTION POINTS
PORT PHILLIP INSET
CHANNEL DEEPENING PROJECT
PORT PHILLIP ENTRANCE - SOUTH CHANNEL
COASTAL MANAGEMENT CONSENT
SCOPE OF WORKS
Port of Melbourne Corporation
Level 4, 650 Collins Street, Melbourne, VIC 3000
SOUTH EAST DMG
SAND WAVE AREA
LAY BY AREA
SOUTH CHANNEL
WEST CHANNEL
FAIRWAY
35332-3
35333-2
35334-3
35328-2
35331-4
ST LEONARDS
QUEENSCLIFF
OCEAN GROVE
POINT LONSDALE
PORTSEA
SORRENTO
BLAIRGOWRIE
RYE
McCRAE
ROSEBUD
MORNINGTON
MOUNT MARTHA



CHANNEL TOELINE INTERSECTION POINTS

POINT	MGA		WGS84	
	Easting	Northing	Latitude	Longitude
A1	292,802.5	5,758,762.0	-38°17.7190'	144°37.8405'
A1A	292,842.0	5,758,802.0	-38°17.6982'	144°37.8681'
A1B	292,804.0	5,758,840.0	-38°17.6671'	144°37.8427'
A1C	293,023.0	5,759,052.0	-38°17.5656'	144°37.9966'
A1D	293,056.0	5,759,019.0	-38°17.5839'	144°38.0186'
A2A	294,246.6	5,760,228.2	-38°16.9467'	144°38.8562'
A2	294,376.0	5,760,359.6	-38°16.8775'	144°38.9472'
A3A	296,666.3	5,759,825.8	-38°17.1972'	144°40.5078'
A3	296,683.7	5,759,821.7	-38°17.1996'	144°40.5197'
A4	296,995.7	5,759,518.0	-38°17.3680'	144°40.7283'
A5A	299,598.2	5,758,911.4	-38°17.7308'	144°42.5022'
A5B	299,603.9	5,758,935.8	-38°17.7177'	144°42.5065'
A25	299,495.5	5,758,476.1	-38°17.9646'	144°42.4244'
A25A	299,238.6	5,758,535.9	-38°17.9289'	144°42.2492'
A25B	299,221.0	5,758,460.3	-38°17.9695'	144°42.2359'
A26	296,914.7	5,7591,26.2	-38°17.5786'	144°40.6661'
A26A	297,968.7	5,758,880.5	-38°17.7256'	144°41.3844'
A26B	297,940.3	5,758,758.8	-38°17.7910'	144°41.3629'
A26C	296,502.6	5,759,123.4	-38°17.5745'	144°40.3835'
A27	293,574.3	5,759,103.9	-38°17.5449'	144°38.3756'
A27A	294,546.8	5,759,110.4	-38°17.5548'	144°39.0425'
A28	293,184.7	5,758,656.5	-38°17.7812'	144°38.1007'
B1	291,789.3	5,757,427.1	-38°18.4261'	144°37.1223'
B2	292,413.3	5,758,143.7	-38°18.0476'	144°37.5628'
B3	292,996.6	5,758,660.5	-38°17.8900'	144°37.9840'
B5	293,056.9	5,758,388.0	-38°17.9246'	144°38.0084'
B6	292,088.1	5,757,275.4	-38°18.5122'	144°37.3246'

CONSTRUCTION ZONE INTERSECTION POINTS

POINT	MGA		WGS84	
	Easting	Northing	Latitude	Longitude
C1	291,581.0	5,757,378.3	-38°18.4498'	144°36.9785'
C2	292,306.7	5,758,211.7	-38°18.0097'	144°37.4907'
C3	292,465.9	5,758,568.9	-38°17.8189'	144°37.6062'
C4	293,086.9	5,759,168.6	-38°17.5035'	144°38.0425'
C5	293,069.5	5,759,211.4	-38°17.4801'	144°38.0313'
C6	294,336.2	5,760,497.2	-38°16.8029'	144°38.9221'
C7	296,746.0	5,759,935.6	-38°17.1392'	144°40.5642'
C8	297,058.0	5,759,631.8	-38°17.3076'	144°40.7728'
C9	299,562.1	5,759,048.2	-38°17.6566'	144°42.4795'
C10	299,592.1	5,759,066.9	-38°17.6470'	144°42.5004'
C33	299,460.2	5,758,353.2	-38°18.0309'	144°42.3978'
C34	299,333.1	5,758,382.8	-38°18.0132'	144°42.3112'
C35	299,243.0	5,758,326.8	-38°18.0422'	144°42.2485'
C36	297,862.5	5,758,648.6	-38°17.8497'	144°41.3075'
C37	297,769.1	5,758,798.7	-38°17.7674'	144°41.2460'
C38	296,900.8	5,759,001.1	-38°17.6462'	144°40.6542'
C39	293,638.2	5,758,979.3	-38°17.6134'	144°38.4171'
C39A	293,176.7	5,758,449.4	-38°17.8933'	144°38.0914'
C39B	293,233.3	5,758,400.1	-38°17.9207'	144°38.1293'
C40	292,100.3	5,757,099.1	-38°18.6079'	144°37.3296'
C40A	291,961.1	5,757,220.4	-38°18.5404'	144°37.2363'

NEW NAVIGATION AIDS

MARK	MGA		WGS84	
	Easting	Northing	Latitude	Longitude
ROCKY POINT	291,647.4	5,760,764.5	-38°16.6210'	144°37.0840'
THE NARROWS	293,893.2	5,761,453.4	-38°16.2799'	144°38.6354'
SHORTLAND BLUFF	295,206.3	5,761,257.2	-38°16.4039'	144°39.5318'
QUEENSCLIFF HARBOUR	296,207.4	5,762,220.1	-38°15.8974'	144°40.2346'
No.2	299,609.5	5,758,960.2	-38°17.7046'	144°42.5107'

REVISIONS No.	DATE	DESCRIPTION
0	15/11/2007	CO-ORDINATE SCHEDULE
1	29/11/2007	CO-ORDINATE REVISIONS AND SCHEDULE UPDATE

LOCALITY PLAN — PORT PHILLIP BAY

PLAN No.	PREVIOUS PLAN TITLE	DATE
32795-1	PP ENTRANCE SOUTH CHANNEL DESIGN GENERAL ARRANGEMENT	16/10/2006

- Coordinate system is the MGA (GDA 94), Zone 55, Central Meridian 147 degrees East.
- All values are in Metres.

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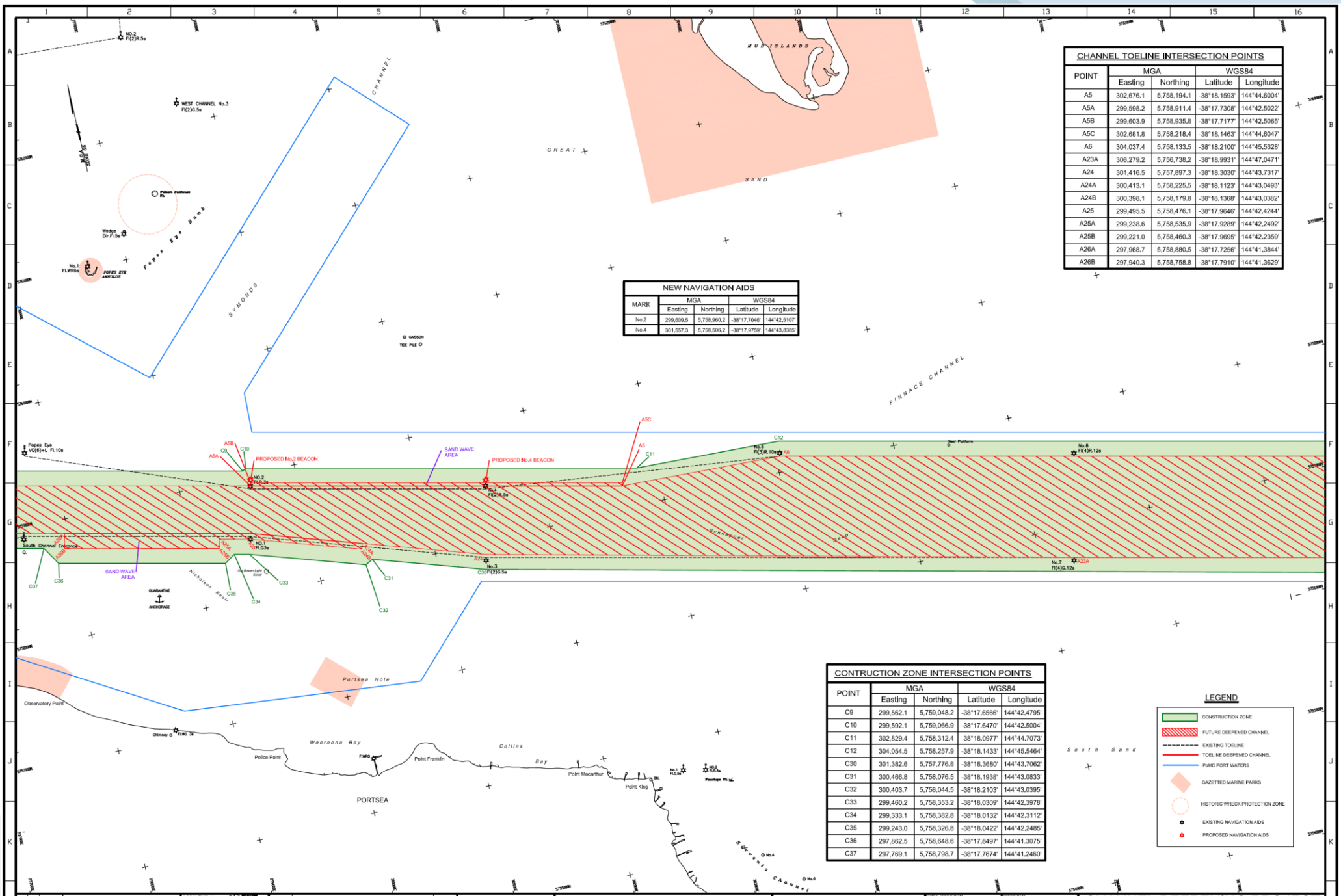
SCALE 1:10,000 (BEFORE REDUCTION)
SCALE OF METRES

Port of Melbourne Corporation
Level 4, 530 Collins Street, Melbourne, VIC 3000

CHIEF SURVEYOR
PROCESSED
CHECKED
SURVEYED
DRAWN L.Murray 6/10/2007
JOB TRACK FILE No. 2467

CHANNEL DEEPENING PROJECT
PORT PHILLIP ENTRANCE - SOUTH CHANNEL
COASTAL MANAGEMENT CONSENT
SCOPE OF WORKS

SHEET No.	SHEET SIZE	SCALE	PLAN No.	AMENDMENT
1 of 3	A0	1:10,000	35332	3



CHANNEL TOELINE INTERSECTION POINTS

POINT	MGA		WGS84	
	Easting	Northing	Latitude	Longitude
A5	302,676.1	5,758,194.1	-38°18.1593'	144°44.6004'
A5A	299,598.2	5,758,911.4	-38°17.7308'	144°42.5022'
A5B	299,603.9	5,758,935.8	-38°17.7177'	144°42.5065'
A5C	302,681.8	5,758,218.4	-38°18.1463'	144°44.6047'
A6	304,037.4	5,758,133.5	-38°18.2100'	144°45.5328'
A23A	306,279.2	5,756,738.2	-38°18.9931'	144°47.0471'
A24	301,416.5	5,757,897.3	-38°18.3030'	144°43.7317'
A24A	300,413.1	5,758,225.5	-38°18.1123'	144°43.0493'
A24B	300,398.1	5,758,179.8	-38°18.1368'	144°43.0382'
A25	299,495.5	5,758,476.1	-38°17.9646'	144°42.4244'
A25A	299,238.6	5,758,535.9	-38°17.9289'	144°42.2492'
A25B	299,221.0	5,758,460.3	-38°17.9695'	144°42.2359'
A26A	297,968.7	5,758,880.5	-38°17.7256'	144°41.3844'
A26B	297,940.3	5,758,758.8	-38°17.7910'	144°41.3629'

NEW NAVIGATION AIDS

MARK	MGA		WGS84	
	Easting	Northing	Latitude	Longitude
No.2	299,609.5	5,758,960.2	-38°17.7046'	144°42.5107'
No.4	301,557.3	5,758,506.2	-38°17.9759'	144°43.8385'

CONTRUCTION ZONE INTERSECTION POINTS

POINT	MGA		WGS84	
	Easting	Northing	Latitude	Longitude
C9	299,562.1	5,759,048.2	-38°17.6566'	144°42.4795'
C10	299,592.1	5,759,066.9	-38°17.6470'	144°42.5004'
C11	302,829.4	5,758,312.4	-38°18.0977'	144°44.7073'
C12	304,054.5	5,758,257.9	-38°18.1433'	144°45.5464'
C30	301,382.6	5,757,776.8	-38°18.3680'	144°43.7062'
C31	300,466.8	5,758,076.5	-38°18.1938'	144°43.0833'
C32	300,403.7	5,758,044.5	-38°18.2103'	144°43.0395'
C33	299,460.2	5,758,353.2	-38°18.0309'	144°42.3978'
C34	299,333.1	5,758,382.8	-38°18.0132'	144°42.3112'
C35	299,243.0	5,758,326.8	-38°18.0422'	144°42.2485'
C36	297,862.5	5,758,648.6	-38°17.8497'	144°41.3075'
C37	297,769.1	5,758,798.7	-38°17.7674'	144°41.2460'

LEGEND

- CONSTRUCTION ZONE
- FUTURE DEEPENED CHANNEL
- EXISTING TOELINE
- TOELINE DEEPENED CHANNEL
- PoMC PORT WATERS
- GAZETTED MARINE PARKS
- HISTORIC WRECK PROTECTION ZONE
- EXISTING NAVIGATION AIDS
- PROPOSED NAVIGATION AIDS

REVISIONS No.	DATE	DESCRIPTION
0	16/11/2007	CO-ORDINATE SCHEDULE
1	25/11/2007	REVISION TO CO-ORDINATES AND SCHEDULE UPDATE

LOCALITY PLAN — PORT PHILLIP

PLAN No. | PREVIOUS PLAN TITLE | DATE

- Co-ordinate system is the MGA (GDA 94), Zone 55, Central Meridian 147 degrees East.
- All values are in Metres.

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500 400 300 200 100 0 500 1000
SCALE OF METRES

Port of Melbourne Corporation
Level 4, 530 Collins Street, Melbourne, VIC 3000

CHIEF SURVEYOR | SURVEYED
PROCESSED | DRAWN: L.Murray 6/12/2007
CHECKED | JOB TRACK FILE No.: 2467

CHANNEL DEEPENING PROJECT
SOUTH CHANNEL - WEST
COASTAL MANAGEMENT CONSENT
SCOPE OF WORKS

SHEET No.	SHEET SIZE	SCALE	PLAN No.	AMENDMENT
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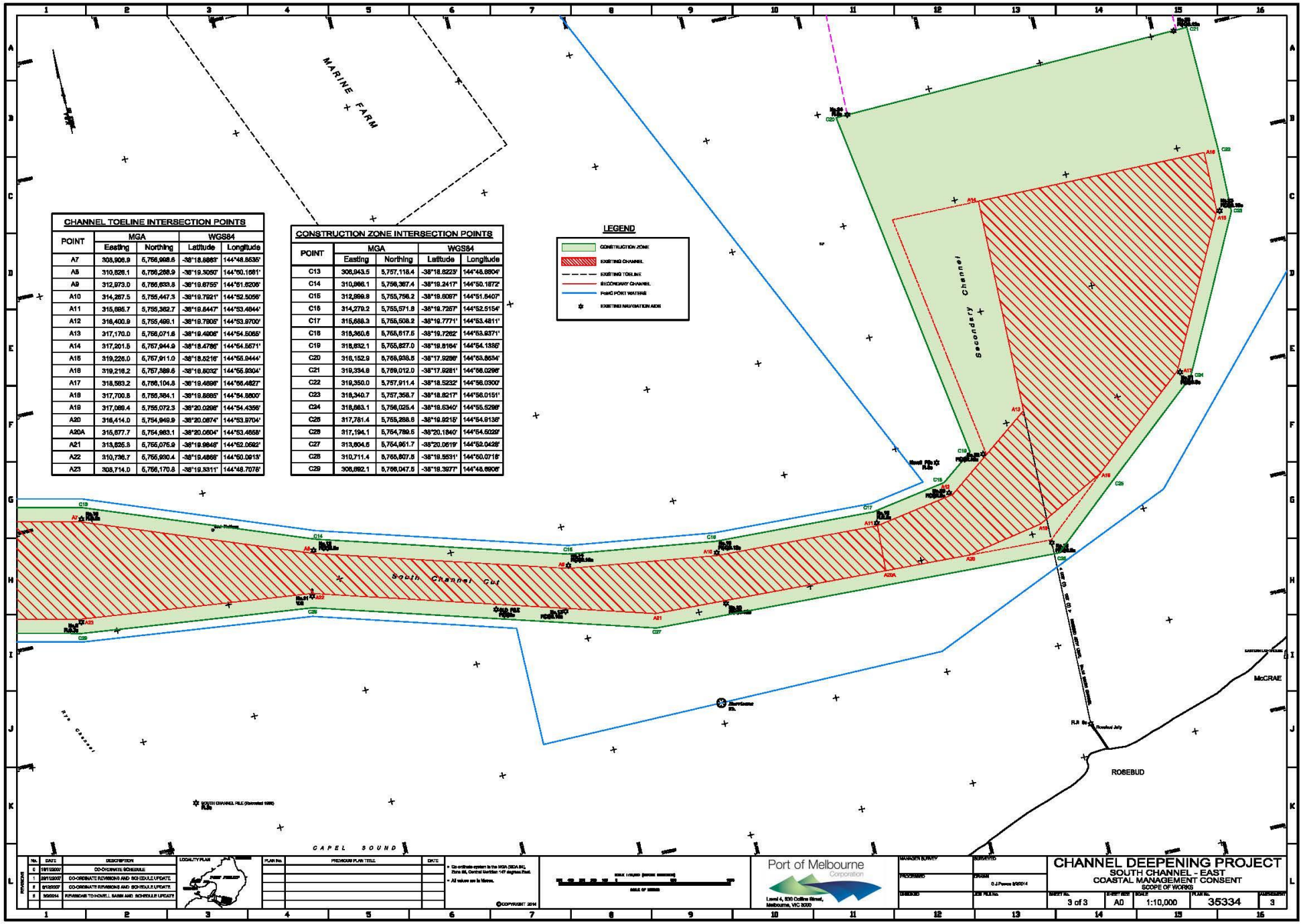

CHANNEL TOELINE INTERSECTION POINTS

POINT	MGA		WGS84	
	Easting	Northing	Latitude	Longitude
A7	308,906.9	5,758,998.6	-38°18.8883'	144°48.8535'
A8	310,826.1	5,756,268.9	-38°19.3050'	144°50.1661'
A9	312,973.0	5,755,633.8	-38°19.8755'	144°51.6206'
A10	314,267.5	5,755,447.3	-38°19.7921'	144°52.5056'
A11	315,686.7	5,755,362.7	-38°19.8447'	144°53.4844'
A12	316,400.9	5,755,499.1	-38°19.7805'	144°53.9700'
A13	317,170.0	5,756,071.6	-38°19.4906'	144°54.5065'
A14	317,201.5	5,757,944.9	-38°18.4786'	144°54.5571'
A15	319,226.0	5,757,911.0	-38°18.5216'	144°55.9444'
A16	319,216.2	5,757,389.6	-38°18.8032'	144°55.9304'
A17	318,563.2	5,756,104.8	-38°19.4696'	144°55.4827'
A18	317,700.8	5,755,364.1	-38°19.8685'	144°54.8800'
A19	317,069.4	5,755,072.3	-38°20.0298'	144°54.4356'
A20	316,414.0	5,754,949.9	-38°20.0974'	144°53.9704'
A20A	316,677.7	5,754,983.1	-38°20.0804'	144°53.4658'
A21	313,625.5	5,755,076.9	-38°19.9848'	144°52.0682'
A22	310,736.7	5,755,930.4	-38°19.4868'	144°50.0913'
A23	308,714.0	5,756,170.8	-38°19.3311'	144°48.7078'

CONSTRUCTION ZONE INTERSECTION POINTS

POINT	MGA		WGS84	
	Easting	Northing	Latitude	Longitude
C13	308,943.5	5,757,118.4	-38°18.8223'	144°48.8804'
C14	310,866.1	5,756,367.4	-38°19.2417'	144°50.1872'
C15	312,999.9	5,755,756.2	-38°19.6097'	144°51.6407'
C16	314,279.2	5,755,571.8	-38°19.7257'	144°52.5154'
C17	315,688.3	5,755,508.2	-38°19.7771'	144°53.4811'
C18	316,360.6	5,755,617.5	-38°19.7262'	144°53.9371'
C19	318,832.1	5,755,827.0	-38°19.6164'	144°54.1386'
C20	316,152.9	5,758,938.5	-38°17.9298'	144°53.8634'
C21	319,334.8	5,759,012.0	-38°17.9281'	144°56.0298'
C22	319,350.0	5,757,911.4	-38°18.5232'	144°56.0300'
C23	318,340.7	5,757,358.7	-38°18.8217'	144°56.0151'
C24	318,583.1	5,756,025.4	-38°19.5340'	144°55.5298'
C25	317,781.4	5,755,288.6	-38°19.9215'	144°54.9138'
C26	317,194.1	5,754,789.5	-38°20.1840'	144°54.5029'
C27	313,604.5	5,754,951.7	-38°20.0619'	144°52.0428'
C28	310,711.4	5,755,807.5	-38°19.5531'	144°50.0718'
C29	308,692.1	5,756,047.5	-38°19.3977'	144°48.6906'

No.	DATE	DESCRIPTION
0	19/11/2007	CO-ORDINATE SCHEDULE
1	28/11/2007	CO-ORDINATE REVISIONS AND SCHEDULE UPDATE
4	9/12/2007	CO-ORDINATE REVISIONS AND SCHEDULE UPDATE
5	3/6/2014	REVISIONS TO HOWELL BASIN AND SCHEDULE UPDATE

REVISIONS

LOCALITY PLAN

PLAN No.	PREVIOUS PLAN TITLE	DATE

- Co-ordinate system is the MGA (GDA 94), Zone 55, Central Meridian 147 degrees East.
- All values are in Metres.

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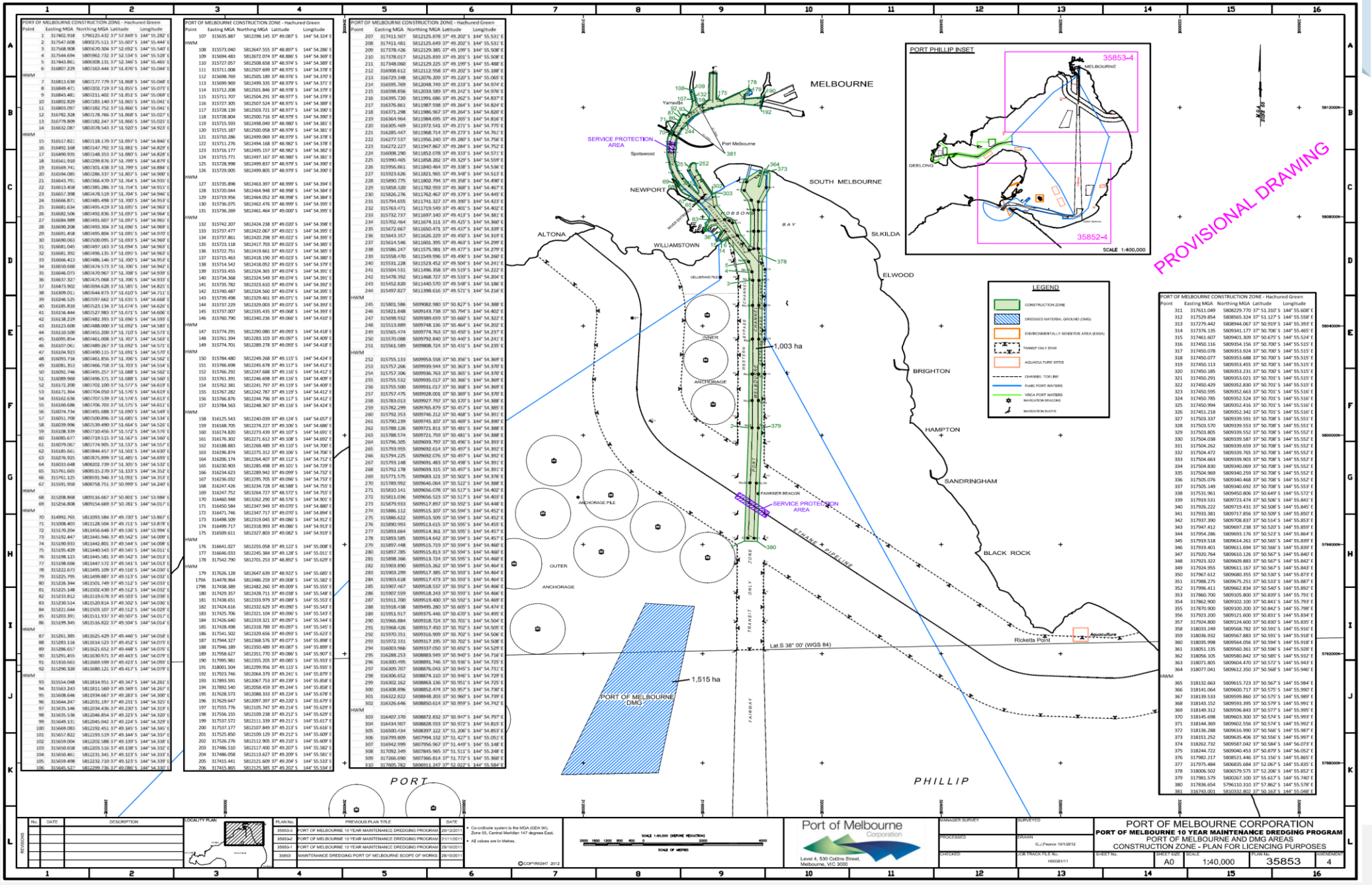
Port of Melbourne Corporation
Level 4, 535 Collins Street, Melbourne, VIC 3000

MANAGER SURVEY
PROGRAMMED
DESIGNED
SURVEYED
DRAWN G.J.Pearce 9/6/2014
JOB PLAN No.

CHANNEL DEEPENING PROJECT
SOUTH CHANNEL - EAST
COASTAL MANAGEMENT CONSENT
SCOPE OF WORKS

SHEET No.	SHEET SIZE	SCALE	PLAN No.	REVISION
3 of 3	A0	1:10,000	35334	3


MELBOURNE
SOUTH MELBOURNE
NEWPORT
ALTONA
WILLIAMSTOWN
ST KILDA
ELWOOD
BRIGHTON
HAMPTON
SANDRINGHAM
BLACK ROCK
Ricketts Point
Aquaculture
Port Melbourne
Spotswood
Yarraville
SERVICE PROTECTION AREA
SERVICE PROTECTION AREA
1,003 ha
1,515 ha
PORT OF MELBOURNE DMG
ANCHORAGE
ANCHORAGE PILE
FAWKNER BEACON
GELLIBRAND PILE
INNER
OUTER
ETHANE PIPELINE
Lat.S 38° 00' (WGS 84)
PORT PHILLIP INSET
GEELONG
35853-4
35852-4
SCALE 1:400,000
PROVISIONAL DRAWING
LEGEND
CONSTRUCTION ZONE
DREDGED MATERIAL GROUND (DMG)
ENVIRONMENTALLY SENSITIVE AREA (ESSA)
TRANSIT ONLY ZONE
AQUACULTURE SITES
CHANNEL TOKLINE
PoMC PORT WATERS
VRCA PORT WATERS
NAVIGATION BEACONS
NAVIGATION BUOYS
PORT OF MELBOURNE CONSTRUCTION ZONE - Hachured Green
Point Easting MGA Northing MGA Latitude Longitude
1 317402.918 5796125.432 37° 57.849' S 144° 55.282' E
2 317547.608 5800275.511 37° 55.607' S 144° 55.444' E
3 317568.908 5805670.304 37° 52.692' S 144° 55.547' E
4 317544.694 5805962.732 37° 52.534' S 144° 55.528' E
5 317443.861 5806308.131 37° 52.346' S 144° 55.465' E
6 316807.229 5807163.444 37° 51.876' S 144° 55.044' E
HWM
7 316813.630 5807277.779 37° 51.868' S 144° 55.048' E
8 316849.472 5807202.719 37° 51.855' S 144° 55.073' E
9 316843.481 5807211.402 37° 51.851' S 144° 55.068' E
10 316802.829 5807183.140 37° 51.865' S 144° 55.041' E
11 316803.097 5807182.752 37° 51.866' S 144° 55.041' E
12 316782.328 5807178.766 37° 51.868' S 144° 55.027' E
13 316779.809 5807182.247 37° 51.866' S 144° 55.025' E
14 316632.087 5807078.543 37° 51.920' S 144° 54.923' E
HWM
15 316517.821 5807118.170 37° 51.897' S 144° 54.840' E
16 316492.168 5807147.792 37° 51.881' S 144° 54.829' E
17 316490.935 5807148.353 37° 51.880' S 144° 54.828' E
18 316561.910 5807298.876 37° 51.799' S 144° 54.878' E
19 316569.741 5807301.438 37° 51.799' S 144° 54.884' E
20 316594.085 5807286.337 37° 51.807' S 144° 54.900' E
21 316643.792 5807366.470 37° 51.764' S 144° 54.935' E
22 316613.458 5807385.286 37° 51.754' S 144° 54.915' E
23 316657.398 5807478.519 37° 51.704' S 144° 54.946' E
24 316666.871 5807485.498 37° 51.700' S 144° 54.953' E
25 316681.634 5807495.419 37° 51.695' S 144° 54.963' E
26 316682.506 5807492.836 37° 51.697' S 144° 54.964' E
27 316684.989 5807491.607 37° 51.697' S 144° 54.965' E
28 316690.208 5807493.304 37° 51.696' S 144° 54.969' E
29 316691.458 5807495.804 37° 51.695' S 144° 54.970' E
30 316690.063 5807500.095 37° 51.693' S 144° 54.969' E
31 316681.045 5807497.163 37° 51.694' S 144° 54.963' E
32 316681.392 5807496.135 37° 51.695' S 144° 54.963' E
33 316666.413 5807486.146 37° 51.700' S 144° 54.953' E
34 316650.660 5807474.573 37° 51.706' S 144° 54.942' E
35 316646.073 5807470.967 37° 51.708' S 144° 54.939' E
36 316637.327 5807475.068 37° 51.706' S 144° 54.933' E
37 316473.902 5807694.628 37° 51.585' S 144° 54.825' E
38 316309.011 5807644.873 37° 51.610' S 144° 54.711' E
39 316246.525 5807597.662 37° 51.635' S 144° 54.668' E
40 316185.810 5807523.134 37° 51.674' S 144° 54.626' E
41 316156.444 5807527.983 37° 51.671' S 144° 54.606' E
42 316138.219 5807482.393 37° 51.698' S 144° 54.593' E
43 316123.600 5807488.000 37° 51.692' S 144° 54.583' E
44 316110.500 5807455.200 37° 51.710' S 144° 54.573' E
45 316095.854 5807461.008 37° 51.707' S 144° 54.563' E
46 316107.061 5807489.267 37° 51.692' S 144° 54.567' E
47 316104.923 5807490.115 37° 51.691' S 144° 54.570' E
48 316093.716 5807461.856 37° 51.706' S 144° 54.562' E
49 316081.353 5807466.758 37° 51.703' S 144° 54.554' E
50 316092.746 5807495.257 37° 51.688' S 144° 54.562' E
51 316089.960 5807496.371 37° 51.688' S 144° 54.560' E
52 316172.200 5807702.100 37° 51.577' S 144° 54.619' E
53 316171.364 5807704.050 37° 51.576' S 144° 54.619' E
54 316162.636 5807707.539 37° 51.574' S 144° 54.613' E
55 316160.686 5807706.703 37° 51.575' S 144° 54.611' E
56 316074.734 5807491.688 37° 51.690' S 144° 54.549' E
57 316051.700 5807500.896 37° 51.685' S 144° 54.534' E
58 316039.996 5807539.490 37° 51.664' S 144° 54.526' E
59 316108.339 5807710.456 37° 51.572' S 144° 54.576' E
60 316085.677 5807719.515 37° 51.567' S 144° 54.560' E
61 316079.067 5807774.905 37° 51.537' S 144° 54.557' E
62 316185.661 5807844.457 37° 51.501' S 144° 54.630' E
63 316276.925 5807875.899 37° 51.485' S 144° 54.693' E
64 316303.648 5808202.739 37° 51.305' S 144° 54.732' E
65 315761.665 5808515.270 37° 51.133' S 144° 54.352' E
66 315761.125 5808591.946 37° 51.091' S 144° 54.353' E
67 315591.958 5808758.751 37° 50.999' S 144° 54.247' E
HWM
68 315208.868 5809116.667 37° 50.801' S 144° 53.984' E
69 315256.808 5809154.669 37° 50.781' S 144° 54.017' E
HWM
70 314992.765 5811093.584 37° 49.730' S 144° 53.867' E
71 315008.403 5811128.504 37° 49.711' S 144° 53.878' E
72 315170.204 5811456.648 37° 49.536' S 144° 53.994' E
73 315192.447 5811445.946 37° 49.542' S 144° 54.009' E
74 315190.933 5811442.801 37° 49.544' S 144° 54.008' E
75 315195.429 5811440.543 37° 49.545' S 144° 54.011' E
76 315198.123 5811443.581 37° 49.542' S 144° 54.013' E
77 315198.666 5811447.572 37° 49.541' S 144° 54.013' E
78 315222.673 5811495.109 37° 49.516' S 144° 54.030' E
79 315225.795 5811499.887 37° 49.513' S 144° 54.032' E
80 315226.344 5811501.749 37° 49.512' S 144° 54.033' E
81 315225.148 5811502.430 37° 49.512' S 144° 54.032' E
82 315233.812 5811519.678 37° 49.503' S 144° 54.038' E
83 315230.514 5811520.814 37° 49.502' S 144° 54.036' E
84 315221.644 5811503.107 37° 49.512' S 144° 54.029' E
85 315203.391 5811511.937 37° 49.507' S 144° 54.017' E
86 315199.345 5811516.822 37° 49.504' S 144° 54.014' E
HWM
87 315261.385 5811625.429 37° 49.446' S 144° 54.058' E
88 315283.136 5811634.523 37° 49.452' S 144° 54.073' E
89 315286.657 5811621.652 37° 49.448' S 144° 54.076' E
90 315291.455 5811630.971 37° 49.443' S 144° 54.079' E
91 315310.663 5811669.599 37° 49.423' S 144° 54.093' E
92 315290.328 5811680.121 37° 49.417' S 144° 54.079' E
HWM
93 315554.048 5811814.951 37° 49.347' S 144° 54.261' E
94 315563.243 5811811.560 37° 49.349' S 144° 54.267' E
95 315608.646 5811934.667 37° 49.283' S 144° 54.300' E
96 315644.247 5812031.197 37° 49.231' S 144° 54.325' E
97 315635.146 5812034.436 37° 49.230' S 144° 54.319' E
98 315635.536 5812046.854 37° 49.223' S 144° 54.320' E
99 315649.131 5812045.042 37° 49.224' S 144° 54.329' E
100 315669.083 5812192.451 37° 49.145' S 144° 54.345' E
101 315657.822 5812193.519 37° 49.144' S 144° 54.337' E
102 315659.004 5812202.588 37° 49.139' S 144° 54.338' E
103 315650.658 5812203.516 37° 49.138' S 144° 54.332' E
104 315650.461 5812231.341 37° 49.123' S 144° 54.331' E
105 315659.498 5812232.139 37° 49.123' S 144° 54.339' E
106 315645.527 5812299.736 37° 49.086' S 144° 54.330' E
PORT OF MELBOURNE CONSTRUCTION ZONE - Hachured Green
Point Easting MGA Northing MGA Latitude Longitude
107 315635.887 5812298.145 37° 49.087' S 144° 54.324' E
HWM
108 315573.040 5812647.555 37° 48.897' S 144° 54.286' E
109 315694.483 5812672.074 37° 48.886' S 144° 54.369' E
110 315727.057 5812508.658 37° 48.974' S 144° 54.389' E
111 315711.008 5812507.699 37° 48.975' S 144° 54.378' E
112 315698.769 5812505.189 37° 48.976' S 144° 54.370' E
113 315699.969 5812499.335 37° 48.979' S 144° 54.371' E
114 315712.208 5812501.846 37° 48.978' S 144° 54.379' E
115 315711.707 5812504.291 37° 48.977' S 144° 54.379' E
116 315727.305 5812507.524 37° 48.975' S 144° 54.389' E
117 315728.139 5812503.721 37° 48.977' S 144° 54.390' E
118 315728.804 5812500.716 37° 48.979' S 144° 54.390' E
119 315715.593 5812498.049 37° 48.980' S 144° 54.381' E
120 315715.187 5812500.058 37° 48.979' S 144° 54.381' E
121 315710.286 5812499.069 37° 48.979' S 144° 54.378' E
122 315711.276 5812494.168 37° 48.982' S 144° 54.378' E
123 315716.177 5812495.157 37° 48.982' S 144° 54.382' E
124 315715.771 5812497.167 37° 48.980' S 144° 54.381' E
125 315728.998 5812499.837 37° 48.979' S 144° 54.390' E
126 315729.005 5812499.805 37° 48.979' S 144° 54.390' E
HWM
127 315735.898 5812463.397 37° 48.999' S 144° 54.394' E
128 315720.044 5812464.948 37° 48.998' S 144° 54.384' E
129 315719.956 5812465.052 37° 48.998' S 144° 54.384' E
130 315736.075 5812462.476 37° 48.999' S 144° 54.395' E
131 315736.269 5812461.464 37° 49.000' S 144° 54.395' E
HWM
132 315742.207 5812424.238 37° 49.020' S 144° 54.398' E
133 315737.477 5812422.067 37° 49.021' S 144° 54.395' E
134 315737.861 5812420.298 37° 49.022' S 144° 54.395' E
135 315723.118 5812417.793 37° 49.023' S 144° 54.385' E
136 315722.751 5812419.661 37° 49.022' S 144° 54.385' E
137 315715.463 5812418.190 37° 49.023' S 144° 54.380' E
138 315714.542 5812418.052 37° 49.023' S 144° 54.379' E
139 315733.455 5812324.365 37° 49.074' S 144° 54.391' E
140 315734.368 5812324.549 37° 49.074' S 144° 54.391' E
141 315735.782 5812323.610 37° 49.074' S 144° 54.392' E
142 315740.487 5812324.560 37° 49.074' S 144° 54.395' E
143 315739.498 5812329.461 37° 49.071' S 144° 54.395' E
144 315737.229 5812329.003 37° 49.072' S 144° 54.393' E
145 315737.007 5812335.435 37° 49.068' S 144° 54.393' E
146 315760.790 5812340.236 37° 49.066' S 144° 54.410' E
HWM
147 315774.291 5812290.080 37° 49.093' S 144° 54.418' E
148 315761.394 5812283.103 37° 49.097' S 144° 54.409' E
149 315774.701 5812289.278 37° 49.093' S 144° 54.418' E
HWM
150 315784.480 5812249.268 37° 49.115' S 144° 54.424' E
151 315766.698 5812245.678 37° 49.117' S 144° 54.412' E
152 315766.177 5812245.157 37° 49.117' S 144° 54.412' E
153 315761.391 5812246.698 37° 49.116' S 144° 54.409' E
154 315762.381 5812241.797 37° 49.119' S 144° 54.409' E
155 315767.282 5812242.787 37° 49.119' S 144° 54.412' E
156 315766.876 5812244.796 37° 49.117' S 144° 54.412' E
157 315784.563 5812248.367 37° 49.116' S 144° 54.424' E
HWM
158 316125.543 5812240.039 37° 49.124' S 144° 54.657' E
159 316168.705 5812274.227 37° 49.106' S 144° 54.686' E
160 316174.820 5812273.439 37° 49.107' S 144° 54.691' E
161 316176.302 5812271.612 37° 49.108' S 144° 54.692' E
162 316188.883 5812268.489 37° 49.110' S 144° 54.700' E
163 316196.874 5812275.312 37° 49.106' S 144° 54.706' E
164 316206.174 5812264.407 37° 49.112' S 144° 54.712' E
165 316230.903 5812285.498 37° 49.101' S 144° 54.728' E
166 316234.623 5812289.942 37° 49.099' S 144° 54.732' E
167 316236.032 5812295.705 37° 49.096' S 144° 54.733' E
168 316247.426 5812334.728 37° 48.588' S 144° 54.755' E
169 316247.752 5812364.727 37° 48.572' S 144° 54.757' E
170 316460.948 5813262.290 37° 48.576' S 144° 54.901' E
171 316450.584 5812347.949 37° 49.070' S 144° 54.880' E
172 316471.746 5812347.717 37° 49.070' S 144° 54.894' E
173 316498.509 5812319.045 37° 49.086' S 144° 54.912' E
174 316499.717 5812318.993 37° 49.086' S 144° 54.913' E
175 316509.611 5812327.803 37° 49.082' S 144° 54.919' E
HWM
176 316641.027 5812255.058 37° 49.122' S 144° 55.008' E
177 316646.033 5812245.384 37° 49.128' S 144° 55.011' E
178 317542.790 5812701.253 37° 48.892' S 144° 55.629' E
HWM
179 317626.128 5812647.639 37° 48.922' S 144° 55.685' E
179A 316478.964 5812486.259 37° 49.008' S 144° 55.582' E
179B 316438.389 5812482.260 37° 49.010' S 144° 55.555' E
180 317429.357 5812428.711 37° 49.038' S 144° 55.548' E
181 317438.651 5812333.979 37° 49.089' S 144° 55.553' E
182 317424.616 5812332.629 37° 49.090' S 144° 55.543' E
183 317425.706 5812321.104 37° 49.096' S 144° 55.543' E
184 317426.640 5812319.321 37° 49.097' S 144° 55.544' E
185 317428.498 5812318.789 37° 49.097' S 144° 55.545' E
186 317541.502 5812329.656 37° 49.093' S 144° 55.623' E
187 317544.327 5812368.576 37° 49.073' S 144° 55.626' E
188 317946.189 5812350.489 37° 49.087' S 144° 55.899' E
189 317958.627 5812351.770 37° 49.086' S 144° 55.907' E
190 317995.981 5812355.205 37° 49.085' S 144° 55.933' E
191 318001.504 5812299.956 37° 49.115' S 144° 55.935' E
192 317923.746 5812064.379 37° 49.241' S 144° 55.879' E
193 317893.591 5812067.753 37° 49.239' S 144° 55.858' E
194 317892.540 5812058.459 37° 49.244' S 144° 55.858' E
195 317628.573 5812088.333 37° 49.224' S 144° 55.678' E
196 317629.647 5812097.397 37° 49.220' S 144° 55.679' E
197 317555.776 5812105.747 37° 49.214' S 144° 55.629' E
198 317556.155 5812109.238 37° 49.212' S 144° 55.629' E
199 317537.572 5812111.339 37° 49.211' S 144° 55.617' E
200 317537.177 5812107.849 37° 49.213' S 144° 55.616' E
201 317525.850 5812109.129 37° 49.212' S 144° 55.609' E
202 317526.276 5812112.905 37° 49.210' S 144° 55.609' E
203 317486.510 5812117.400 37° 49.207' S 144° 55.582' E
204 317486.058 5812113.627 37° 49.209' S 144° 55.581' E
205 317415.441 5812121.609 37° 49.204' S 144° 55.533' E
206 317415.865 5812125.385 37° 49.202' S 144° 55.534' E
PORT OF MELBOURNE CONSTRUCTION ZONE - Hachured Green
Point Easting MGA Northing MGA Latitude Longitude
207 317411.507 5812125.878 37° 49.202' S 144° 55.531' E
208 317411.481 5812125.649 37° 49.202' S 144° 55.531' E
209 317378.426 5812129.385 37° 49.199' S 144° 55.508' E
210 317378.017 5812125.839 37° 49.201' S 144° 55.508' E
211 317348.060 5812129.225 37° 49.199' S 144° 55.488' E
212 316908.612 5812112.958 37° 49.202' S 144° 55.188' E
213 316729.348 5812076.309 37° 49.220' S 144° 55.065' E
214 316695.769 5812048.749 37° 49.233' S 144° 54.974' E
215 316598.856 5812033.589 37° 49.242' S 144° 54.976' E
216 316395.720 5811991.686 37° 49.262' S 144° 54.837' E
217 316376.861 5811987.938 37° 49.264' S 144° 54.824' E
218 316371.298 5811986.967 37° 49.264' S 144° 54.820' E
219 316364.964 5811984.695 37° 49.265' S 144° 54.816' E
220 316305.469 5811972.541 37° 49.271' S 144° 54.775' E
221 316285.647 5811968.714 37° 49.273' S 144° 54.762' E
222 316277.537 5811956.240 37° 49.280' S 144° 54.756' E
223 316272.227 5811947.867 37° 49.284' S 144° 54.752' E
224 316008.290 5811852.078 37° 49.333' S 144° 54.571' E
225 315990.665 5811858.282 37° 49.329' S 144° 54.559' E
226 315956.861 5811840.464 37° 49.338' S 144° 54.536' E
227 315923.626 5811821.965 37° 49.348' S 144° 54.513' E
228 315890.775 5811802.794 37° 49.358' S 144° 54.490' E
229 315858.520 5811782.959 37° 49.368' S 144° 54.467' E
230 315826.276 5811762.467 37° 49.379' S 144° 54.445' E
231 315794.655 5811741.327 37° 49.390' S 144° 54.423' E
232 315763.471 5811719.549 37° 49.401' S 144° 54.402' E
233 315732.737 5811697.140 37° 49.413' S 144° 54.381' E
234 315702.464 5811674.111 37° 49.425' S 144° 54.360' E
235 315672.667 5811650.471 37° 49.437' S 144° 54.339' E
236 315643.357 5811626.229 37° 49.450' S 144° 54.319' E
237 315614.546 5811601.395 37° 49.463' S 144° 54.299' E
238 315586.247 5811575.981 37° 49.477' S 144° 54.279' E
239 315558.470 5811549.996 37° 49.490' S 144° 54.260' E
240 315531.228 5811523.452 37° 49.504' S 144° 54.241' E
241 315504.531 5811496.358 37° 49.519' S 144° 54.222' E
242 315478.392 5811468.727 37° 49.533' S 144° 54.204' E
243 315452.820 5811440.570 37° 49.548' S 144° 54.186' E
244 315497.827 5811398.616 37° 49.571' S 144° 54.216' E
HWM
245 315801.586 5809082.980 37° 50.827' S 144° 54.388' E
246 315821.848 5809143.738 37° 50.794' S 144° 54.402' E
247 315698.932 5809389.659 37° 50.660' S 144° 54.322' E
248 315513.889 5809748.136 37° 50.464' S 144° 54.202' E
249 315565.474 5809774.763 37° 50.450' S 144° 54.237' E
250 315570.088 5809792.840 37° 50.440' S 144° 54.241' E
251 315561.589 5809808.724 37° 50.431' S 144° 54.235' E
HWM
252 315755.133 5809953.558 37° 50.356' S 144° 54.369' E
253 315757.266 5809939.944 37° 50.363' S 144° 54.370' E
254 315757.306 5809936.763 37° 50.365' S 144° 54.370' E
255 315755.532 5809935.017 37° 50.366' S 144° 54.369' E
256 315755.500 5809931.017 37° 50.368' S 144° 54.369' E
257 315757.475 5809928.001 37° 50.369' S 144° 54.370' E
258 315783.013 5809927.797 37° 50.369' S 144° 54.388' E
259 315782.295 5809765.879 37° 50.457' S 144° 54.385' E
260 315792.353 5809746.212 37° 50.468' S 144° 54.391' E
261 315790.239 5809745.107 37° 50.469' S 144° 54.390' E
262 315788.126 5809721.811 37° 50.481' S 144° 54.388' E
263 315788.574 5809721.759 37° 50.481' S 144° 54.388' E
264 315796.305 5809693.797 37° 50.496' S 144° 54.393' E
265 315793.955 5809692.614 37° 50.497' S 144° 54.392' E
266 315794.225 5809692.076 37° 50.497' S 144° 54.392' E
267 315793.148 5809691.483 37° 50.498' S 144° 54.391' E
268 315792.178 5809693.315 37° 50.497' S 144° 54.391' E
269 315771.575 5809683.121 37° 50.502' S 144° 54.376' E
270 315789.992 5809646.064 37° 50.522' S 144° 54.388' E
271 315810.141 5809656.078 37° 50.517' S 144° 54.402' E
272 315811.036 5809656.523 37° 50.517' S 144° 54.403' E
273 315879.933 5809517.897 37° 50.592' S 144° 54.448' E
274 315886.112 5809515.107 37° 50.594' S 144° 54.452' E
275 315886.622 5809515.509 37° 50.594' S 144° 54.452' E
276 315890.993 5809513.615 37° 50.595' S 144° 54.455' E
277 315893.664 5809514.361 37° 50.595' S 144° 54.457' E
278 315893.585 5809514.642 37° 50.594' S 144° 54.457' E
279 315897.448 5809515.719 37° 50.594' S 144° 54.460' E
280 315897.785 5809515.813 37° 50.594' S 144° 54.460' E
281 315898.366 5809513.724 37° 50.595' S 144° 54.460' E
282 315903.890 5809515.262 37° 50.594' S 144° 54.464' E
283 315903.299 5809517.385 37° 50.593' S 144° 54.464' E
284 315903.618 5809517.473 37° 50.593' S 144° 54.464' E
285 315907.467 5809518.537 37° 50.592' S 144° 54.466' E
286 315907.559 5809518.243 37° 50.593' S 144° 54.466' E
287 315911.700 5809519.400 37° 50.592' S 144° 54.469' E
288 315918.438 5809495.280 37° 50.605' S 144° 54.474' E
289 315951.917 5809375.446 37° 50.670' S 144° 54.495' E
290 315966.884 5809318.724 37° 50.701' S 144° 54.506' E
291 315968.426 5809317.450 37° 50.702' S 144° 54.505' E
292 315970.351 5809316.909 37° 50.702' S 144° 54.506' E
293 315972.331 5809317.195 37° 50.702' S 144° 54.508' E
294 316003.966 5809337.050 37° 50.692' S 144° 54.529' E
295 316288.253 5809883.949 37° 50.940' S 144° 54.716' E
296 316300.495 5809891.746 37° 50.936' S 144° 54.725' E
297 316305.207 5809876.043 37° 50.945' S 144° 54.731' E
298 316306.652 5809874.110 37° 50.946' S 144° 54.729' E
299 316302.162 5809863.136 37° 50.951' S 144° 54.725' E
300 316308.896 5809852.474 37° 50.957' S 144° 54.730' E
301 316322.822 5809848.203 37° 50.960' S 144° 54.739' E
302 316326.646 5809850.614 37° 50.959' S 144° 54.742' E
HWM
303 316407.370 5808872.832 37° 50.947' S 144° 54.797' E
304 316434.907 5808828.933 37° 50.972' S 144° 54.815' E
305 316500.434 5808397.122 37° 51.206' S 144° 54.853' E
306 316799.809 5807994.132 37° 51.427' S 144° 55.051' E
307 316942.999 5807956.967 37° 51.449' S 144° 55.148' E
308 317092.349 5807845.965 37° 51.511' S 144° 55.248' E
309 317266.690 5807366.814 37° 51.772' S 144° 55.360' E
310 317605.782 5806911.247 37° 52.022' S 144° 55.584' E
PORT OF MELBOURNE CONSTRUCTION ZONE - Hachured Green
Point Easting MGA Northing MGA Latitude Longitude
311 317611.049 5808229.770 37° 51.310' S 144° 55.608' E
312 317529.854 5808565.324 37° 51.127' S 144° 55.558' E
313 317279.442 5808944.067 37° 50.919' S 144° 55.393' E
314 317376.135 5809341.177 37° 50.706' S 144° 55.465' E
315 317461.607 5809401.309 37° 50.675' S 144° 55.524' E
316 317450.116 5809354.156 37° 50.700' S 144° 55.515' E
317 317450.078 5809353.924 37° 50.700' S 144° 55.515' E
318 317450.077 5809353.688 37° 50.700' S 144° 55.515' E
319 317450.113 5809353.455 37° 50.700' S 144° 55.515' E
320 317450.185 5809353.231 37° 50.700' S 144° 55.515' E
321 317450.291 5809353.021 37° 50.701' S 144° 55.515' E
322 317450.429 5809352.830 37° 50.701' S 144° 55.515' E
323 317450.595 5809352.663 37° 50.701' S 144° 55.516' E
324 317450.785 5809352.524 37° 50.701' S 144° 55.516' E
325 317450.994 5809352.416 37° 50.701' S 144° 55.516' E
326 317451.218 5809352.342 37° 50.701' S 144° 55.516' E
327 317503.337 5809339.591 37° 50.708' S 144° 55.551' E
328 317503.570 5809339.553 37° 50.708' S 144° 55.551' E
329 317503.805 5809339.552 37° 50.708' S 144° 55.552' E
330 317504.038 5809339.587 37° 50.708' S 144° 55.552' E
331 317504.262 5809339.659 37° 50.708' S 144° 55.552' E
332 317504.472 5809339.765 37° 50.708' S 144° 55.552' E
333 317504.663 5809339.903 37° 50.708' S 144° 55.552' E
334 317504.830 5809340.069 37° 50.708' S 144° 55.552' E
335 317504.969 5809340.259 37° 50.708' S 144° 55.552' E
336 317505.076 5809340.468 37° 50.708' S 144° 55.552' E
337 317505.149 5809340.692 37° 50.708' S 144° 55.553' E
338 317531.961 5809450.806 37° 50.649' S 144° 55.572' E
339 317919.531 5809723.474 37° 50.506' S 144° 55.841' E
340 317926.222 5809719.431 37° 50.508' S 144° 55.845' E
341 317933.381 5809717.856 37° 50.509' S 144° 55.850' E
342 317937.390 5809708.837 37° 50.514' S 144° 55.853' E
343 317947.412 5809697.238 37° 50.520' S 144° 55.859' E
344 317954.286 5809693.176 37° 50.523' S 144° 55.864' E
345 317919.518 5809614.261 37° 50.565' S 144° 55.839' E
346 317919.401 5809611.694 37° 50.566' S 144° 55.839' E
347 317920.764 5809610.126 37° 50.567' S 144° 55.840' E
348 317923.322 5809609.883 37° 50.567' S 144° 55.842' E
349 317924.955 5809611.167 37° 50.567' S 144° 55.842' E
350 317967.612 5809680.355 37° 50.530' S 144° 55.873' E
351 317988.275 5809675.251 37° 50.533' S 144° 55.887' E
352 317996.411 5809662.834 37° 50.540' S 144° 55.892' E
353 317860.700 5809105.800 37° 50.839' S 144° 55.791' E
354 317862.900 5809102.100 37° 50.841' S 144° 55.793' E
355 317870.900 5809100.200 37° 50.842' S 144° 55.798' E
356 317923.200 5809121.600 37° 50.831' S 144° 55.834' E
357 317924.800 5809124.600 37° 50.829' S 144° 55.835' E
358 318033.249 5809568.782 37° 50.591' S 144° 55.916' E
359 318036.932 5809567.883 37° 50.591' S 144° 55.918' E
360 318035.998 5809564.056 37° 50.594' S 144° 55.918' E
361 318051.135 5809560.361 37° 50.596' S 144° 55.928' E
362 318056.105 5809580.842 37° 50.585' S 144° 55.932' E
363 318071.805 5809604.470 37° 50.572' S 144° 55.943' E
364 318077.041 5809612.350 37° 50.568' S 144° 55.946' E
HWM
365 318132.663 5809615.723 37° 50.567' S 144° 55.984' E
366 318141.064 5809600.717 37° 50.575' S 144° 55.990' E
367 318139.533 5809599.860 37° 50.575' S 144° 55.989' E
368 318143.152 5809593.395 37° 50.579' S 144° 55.991' E
369 318149.312 5809596.843 37° 50.577' S 144° 55.995' E
370 318145.698 5809603.300 37° 50.574' S 144° 55.993' E
371 318144.369 5809602.556 37° 50.574' S 144° 55.992' E
372 318136.288 5809616.990 37° 50.566' S 144° 55.987' E
373 318151.252 5809635.406 37° 50.556' S 144° 55.997' E
374 318262.732 5809587.042 37° 50.584' S 144° 56.073' E
375 318244.722 5809040.453 37° 50.879' S 144° 56.052' E
376 317982.217 5808521.446 37° 51.156' S 144° 55.865' E
377 317975.484 5808635.684 37° 52.067' S 144° 55.835' E
378 318006.502 5806579.575 37° 52.206' S 144° 55.852' E
379 317981.579 5800267.100 37° 55.617' S 144° 55.740' E
380 317836.654 5796110.310 37° 57.862' S 144° 55.578' E
381 316743.001 5810332.802 37° 50.163' S 144° 55.048' E
PLAN No. PREVIOUS PLAN TITLE DATE
35853-3 PORT OF MELBOURNE 10 YEAR MAINTENANCE DREDGING PROGRAM 20/12/2011
35853-2 PORT OF MELBOURNE 10 YEAR MAINTENANCE DREDGING PROGRAM 21/11/2011
35853-1 PORT OF MELBOURNE 10 YEAR MAINTENANCE DREDGING PROGRAM 28/10/2011
35853 MAINTENANCE DREDGING PORT OF MELBOURNE SCOPE OF WORKS 28/10/2011
* Co-ordinate system is the MGA (GDA 94), Zone 55, Central Meridian 147 degrees East.
* All values are in Metres.
SCALE 1:40,000 (BEFORE REDUCTION)
SCALE OF METRES
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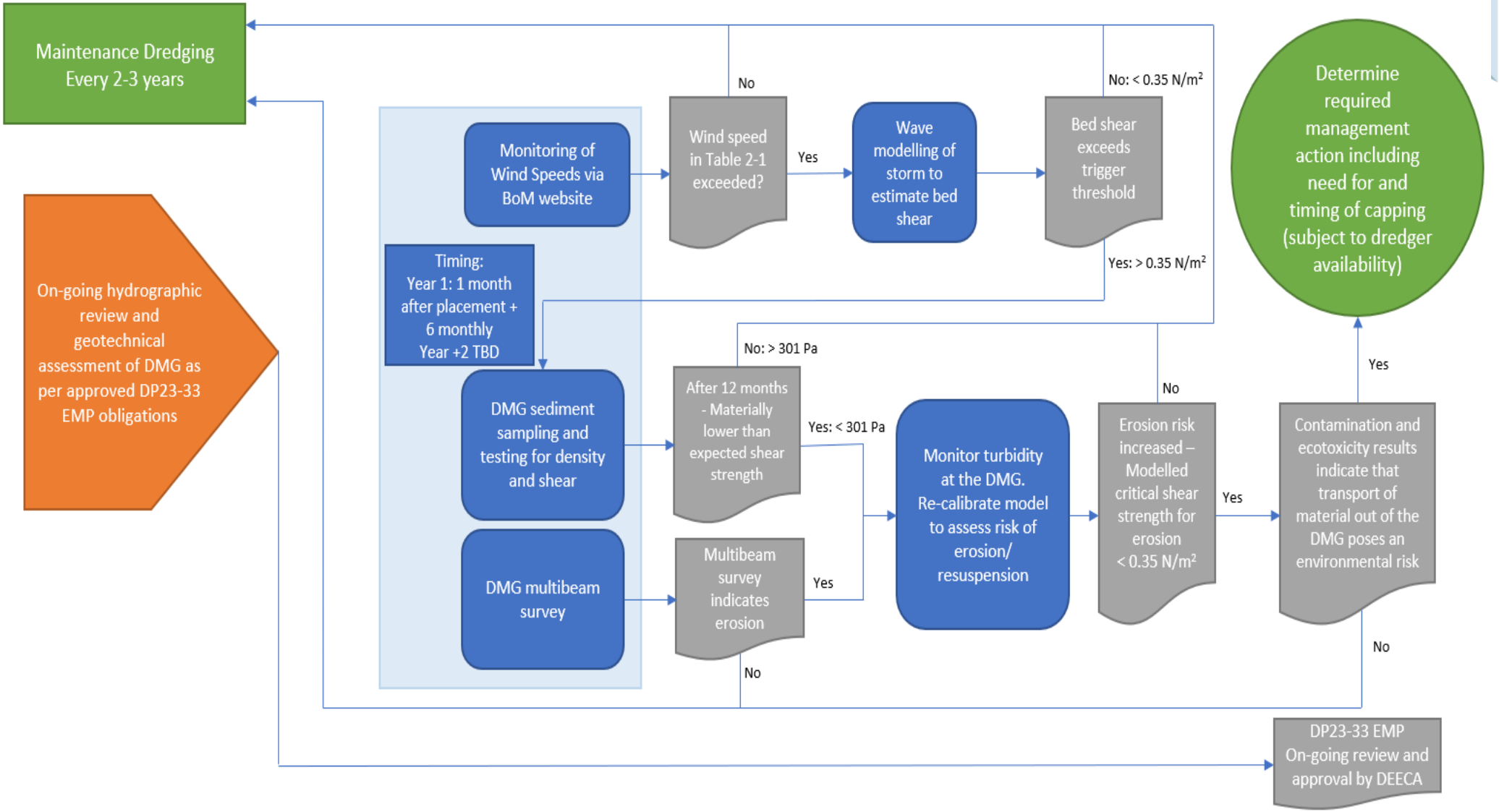
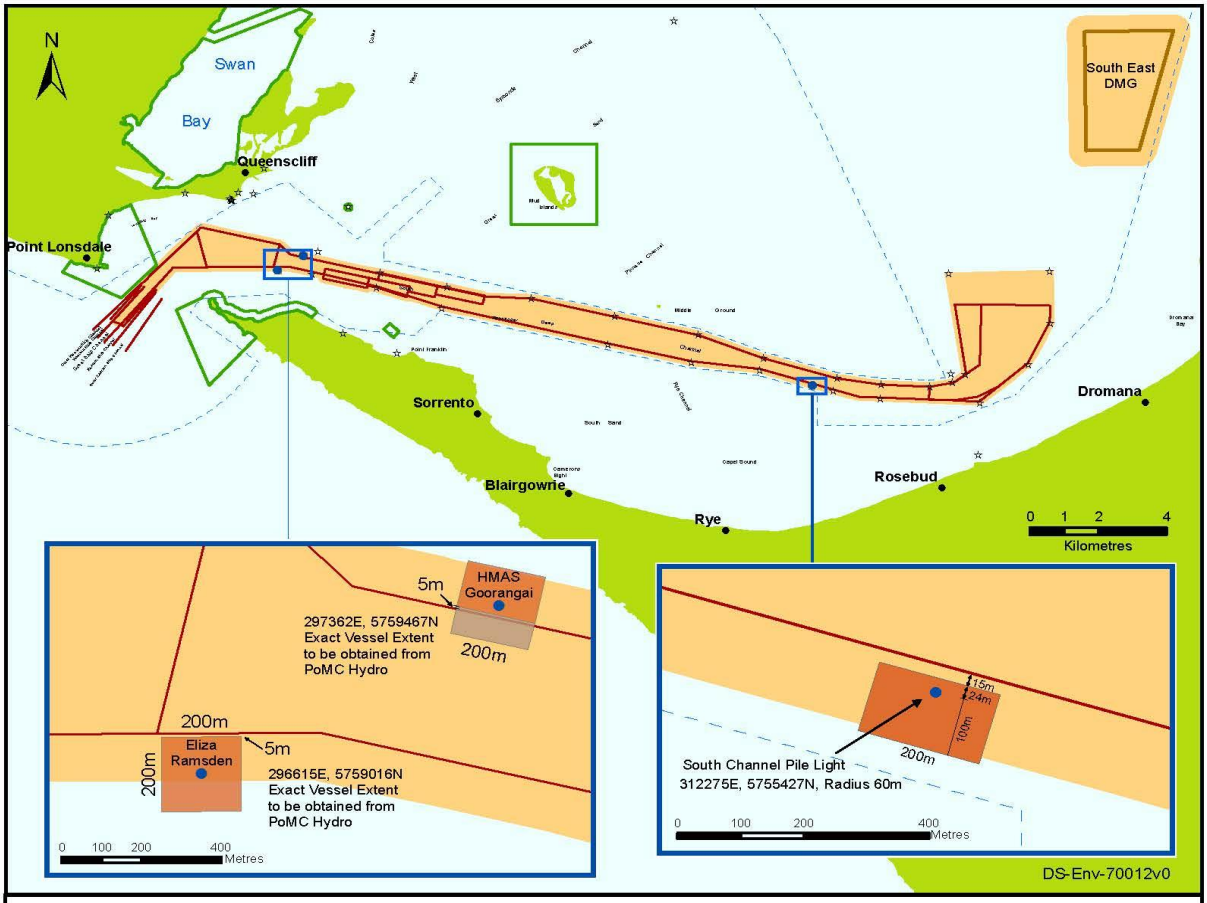
Port of Melbourne Corporation
Level 4, 530 Collins Street, Melbourne, VIC 3000
MANAGER SURVEY
SURVEYED
PROCESSED
DRAWN
G.J.Pearce 10/1/2012
CHECKED
JOB TRACK FILE No.
H00381/11
PORT OF MELBOURNE CORPORATION
PORT OF MELBOURNE 10 YEAR MAINTENANCE DREDGING PROGRAM
PORT OF MELBOURNE AND DMG AREAS
CONSTRUCTION ZONE - PLAN FOR LICENCING PURPOSES
SHEET No. A0
SCALE 1:40,000
DRAWING No. 35853
AMENDMENT 4


Maintenance Dredging Every 2-3 years
On-going hydrographic review and geotechnical assessment of DMG as per approved DP23-33 EMP obligations
Monitoring of Wind Speeds via BoM website
Timing: Year 1: 1 month after placement + 6 monthly Year +2 TBD
DMG sediment sampling and testing for density and shear
DMG multibeam survey
Wind speed in Table 2-1 exceeded?
No
Yes
Wave modelling of storm to estimate bed shear
Bed shear exceeds trigger threshold
No: < 0.35 N/m²
Yes: > 0.35 N/m²
After 12 months - Materially lower than expected shear strength
No: > 301 Pa
Yes: < 301 Pa
Multibeam survey indicates erosion
Yes
No
Monitor turbidity at the DMG. Re-calibrate model to assess risk of erosion/ resuspension
Erosion risk increased – Modelled critical shear strength for erosion < 0.35 N/m²
No
Yes
Contamination and ecotoxicity results indicate that transport of material out of the DMG poses an environmental risk
Yes
No
Determine required management action including need for and timing of capping (subject to dredger availability)
DP23-33 EMP On-going review and approval by DEECA

Marine Based Construction Areas - South of Bay



- Marine heritage location requiring controls
- Navigation Aids
- Port Waters
- Channel Toeline
- Marine National Park
- Dredged Material Ground
- Construction Areas
- Heritage significance - No dredging or anchoring
- Construction Area with heritage significance

Dredging permitted with the following mitigation measures:
- Multibeam survey prior to dredging
- Use of the sweep bar in conjunction with the TSHD to minimise overdredge.
- Site inspection pre and post dredging

Notes:

- All dredging and dredged material placement activities to take place within Construction Areas.

- Dredging equipment and associated support vessels will be required to manoeuver outside construction areas, including transit between construction areas.

- All dredged material placement to take place within the DMG.

- Final dredging locations to be determined following pre-dredge survey. Final dredging locations may vary to the indicative locations shown due to siltation and erosion processes. Limit of dredging will extend beyond capital dredge channel alignment to allow for:
  - Slope design
  - Survey tolerances
  - Dredging tolerances

Construction Areas comprise:

- a 500 metre area around SE DMG
- a 125 metre area from theoretical dredge areas in South Channel to include crest of cut slope

18.Annexure 14 Final Capping Protocol

This protocol is applicable to the following:

- The final capping layer when the PoMDMG is at full capacity; and/or
- Any intermediate capping layers determined to be required under the monitoring and management regime as outlined in this EMP.

Capping Footprint Definition

The operational capping footprint shall be determined prior to the performance of the capping operation by adopting the same criteria as utilised for the capping determination of the MP09-11 dredging campaign, initially approved by DEPI (now DEECA). For details refer below:

- The difference between the pre and most recent post disposal bathymetric surveys will be determined to define the footprint of the contaminated material.
- A 0.296 m difference threshold will be utilised to determine the limit of spatially coherent area of deposition to define the Statistical Footprint (SF).
- The application of GIS smoothing and majority filtering techniques to the Statistical Footprint to produce the Optimised Statistical Footprint (OSF).
- An Operational Capping Footprint (OCF) will be created by conducting a sensibility check of the OSF in conjunction with a review of the disposal event records to ensure that the proposed OCF is robust and caters for any unplanned disposal activities.

Construction Monitoring and Initial Capping Compliance

- A bathymetric pre-cap survey of the area to be capped will be undertaken to define the surface of the contaminated material.
- The pre-cap bathymetric surface, in conjunction with progress bathymetric surveys during the initial phase of the capping works, will be used to inform operational matters related to the progress of the works. Such operational matters are likely to include evenness of coverage, adjustments to capping methodology and dredge settings.
- When the volume of capping material placed approximates the design volume necessary to allow compliance with the capping thickness requirements or the average capping thickness as defined by the difference between bathymetric surveys is nominally 0.40 m, a sub bottom profile survey (SBPS) will be undertaken.
- SBPS lines will be run at 20 m centres in conjunction with long lines at 100 m centres over the area defined by the OCF.
- A multibeam hydrographic survey will be undertaken at the same time as the SBPS.
- The SBPS results will be interpreted by an appropriately qualified geophysicist to define the thickness of the capping at the location of the SBPS survey lines.
- Following interpretation of the SBPS data, an adjusted capping /dredged material interface will be created, by an appropriately qualified statistician, utilising data analysis techniques to transform the pre cap multibeam survey data based on the relationship to the SBPS data. This approach ensures that the settlement caused by the placement of capping material during construction is appropriately accounted for and that the transformed surface reflects the relief and complexity of the pre cap surface as determined by hydrographic survey techniques.
- Following the above, the difference between the current bathymetric surface and the adjusted pre-cap surface will be used to determine compliance with the capping thickness acceptance criteria where the lower limit of the 95% confidence interval, of the average capping thickness, must be equal to or greater than 0.5 m.
- In addition to the above, the difference between the current bathymetric surface and the adjusted pre-cap surface dataset will be used to determine compliance with the capping

thickness spatial distribution acceptance criteria. Acceptance of this criteria is defined as when the lower limit of the 95% confidence interval of the mean capping thickness of a 20 m neighbourhood around each cell, with a value of less than 0.5 m, is equal to or greater than 0.5 m. A 20m neighbourhood is defined as a collection of cells within a 20m radius of a cell with a value of less than 0.5m.

- Compliance with the capping thickness acceptance criteria requirements of the EMP will be on the basis of averaged bathymetric data on a 2 m grid over the OCF.

Post Construction Monitoring

- The bathymetric pre-cap survey of the capped area will be used as the basis for the definition of the surface of the contaminated material.
- At the time of monitoring as required by the EMP, SBPS lines will be run at 20 m centres in conjunction with long lines at 100 m centres over the area defined by the OCF.
- A multibeam hydrographic survey will be undertaken at the same time as the SBPS.
- The SBPS results will be interpreted by an appropriately qualified geophysicist to define the thickness of the capping at the location of the SBPS survey lines.
- Following interpretation of the SBPS data, an adjusted capping /dredged material interface will be created, by an appropriately qualified statistician, utilising data analysis techniques to transform the pre cap multibeam survey data based on the relationship to the SBPS data. This approach ensures that the settlement caused by the placement of capping material during construction is appropriately accounted for and that the transformed surface reflects the relief and complexity of the pre cap surface as determined by hydrographic survey techniques.
- Following the above, the difference between the current bathymetric surface and the adjusted pre-cap surface will be used to determine compliance with the capping thickness acceptance criteria where the 95% confidence interval of the average capping thickness must be equal to or greater than 0.5 m.
- Compliance with the capping thickness requirements of the EMP will be on the basis of averaged bathymetric data on a 2 m grid reconciled over the OCF.