Port Hedland Spoilbank Marina Proposal

Operational Environmental Management Plan

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Table

Version No.	Date	Prepared by	Revision or issue description	Issued to
RevA	17/02/2020	M Spence	Spoilbank Marina Proposal	J Bradford
RevB	18/02.2020	J Bradford	Spoilbank Marina Proposal	EPA

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SUMMARY

Title: **Spoilbank Marina Proposal Operational Environmental Management Plan (OEMP)**

Proponent: **Department of Transport**

Key Environmental Factors

The following EPA Environmental Objectives guide and inform the OEMP and the attached management plans, which have been developed in accordance with the EPA's Instructions on how to prepare *Environmental Protection Act 1986* Part IV Environmental Management Plans:

- **Marine Fauna** – The EPA's Environmental Objective for this Factor is *'to protect marine fauna so that biological diversity and ecological integrity are maintained'.*
- **Marine Environmental Quality** – The EPA's Environmental Objective for this Factor is *'to maintain the quality of water, sediment and biota so that environmental values are protected'*.

1. Context, scope and rationale

1.1 Proposal

The Western Australian (WA) Department of Transport (DoT) propose to construct the Port Hedland Spoilbank Marina (the Proposal) located on the western side of the spoilbank sand formation in the town of Port Hedland, Pilbara region of WA. The spoilbank is a man-made coastal landform created in the late-1960s and early-1970s as a result of disposing dredge material associated with Port Hedland's inner harbour development.

The Proposal includes a marina basin, rock armoured breakwaters, dredged approach channel, boat pens, boat ramp and landside infrastructure such as carparks, amenities, public open space, lighting, paths and gardens. The Proposal involves ground disturbance of up to 40 hectares (ha) within a development envelope of approximately 77 ha. Clearing of up to 14 ha of Acacia Shrubland is proposed, which has been classed as being in degraded condition (Strategen, 2020b).

The physical and operational elements are detailed and summarised below:

- Marina basin, berth facilities (up to 80 pens), boat launching area and entrance channel.
- Capital dredging works resulting in up to 900,000 cubic metres (m^3) of dredge spoil and dredged to a maximum depth of -2m chart datum (-5.9m AHD). Dredge spoil will be used onsite as fill material to raise the finished ground level prior to landscaping - no ocean disposal of dredge material will occur as part of this Proposal.
- Construction of the marina's breakwaters, revetments and sand trap. Materials for the construction of these structures will be sourced from local and regional quarry operations.
- Parking facility, amenities (public and pen holders), public open space and upgrading of road infrastructure.

Table 1: Summary of the Proposed Action

Title	Port Hedland Spoilbank Marina Proposal
Proponent name	Department of Transport
Short description	The Proposal is for constructing and operating the Port Hedland Spoilbank Marina, located within the Town of Port Hedland, Pilbara. The Proposal includes: • dry-land excavation of the marina basin (maximum depth to -2m chart datum (-5.9m AHD)) • capital dredging works resulting in up to 900,000 cubic metres (m^3) of dredge spoil and dredged to a maximum depth of -2m chart datum (-5.9m AHD)

	• sand trap excavation • construction of breakwaters and revetment walls • disposal of capital dredge spoil on land as fill material to raise the finished ground level prior to landscaping, with excess material disposed offsite. The Proposal also includes the ongoing management and maintenance of the marina water body and infrastructure.

Element	Location	Proposed Extent
Physical Marine Element		
Marina basin and entrance channel	Figure 1	Ground disturbance and clearing of up to 12 ha
Breakwater and revetment wall	Figure 1	Ground disturbance and clearing of up to 6 ha
Sand trap	Figure 1	Ground disturbance and clearing of up to 8.5 ha
Physical Terrestrial Element		
Parking and trailer bays	Figure 1	Ground disturbance and clearing of up to 5 ha
Public open space	Figure 1	Ground disturbance and clearing of up to 5 ha
Road infrastructure	Figure 1	Ground disturbance and clearing of up to 3 ha

1.2 Scope

This OEMP has been prepared to outline how environmental impacts will be managed during on-going operations of the marina complex.

The OEMP is comprised of an overall environmental management framework and specific management sections to address relevant environmental factors and mitigate potential impacts from operational activities. The Facility Manager appointed to operate the marina complex will incorporate the management framework into the Operator's OEMP for the Proposal.

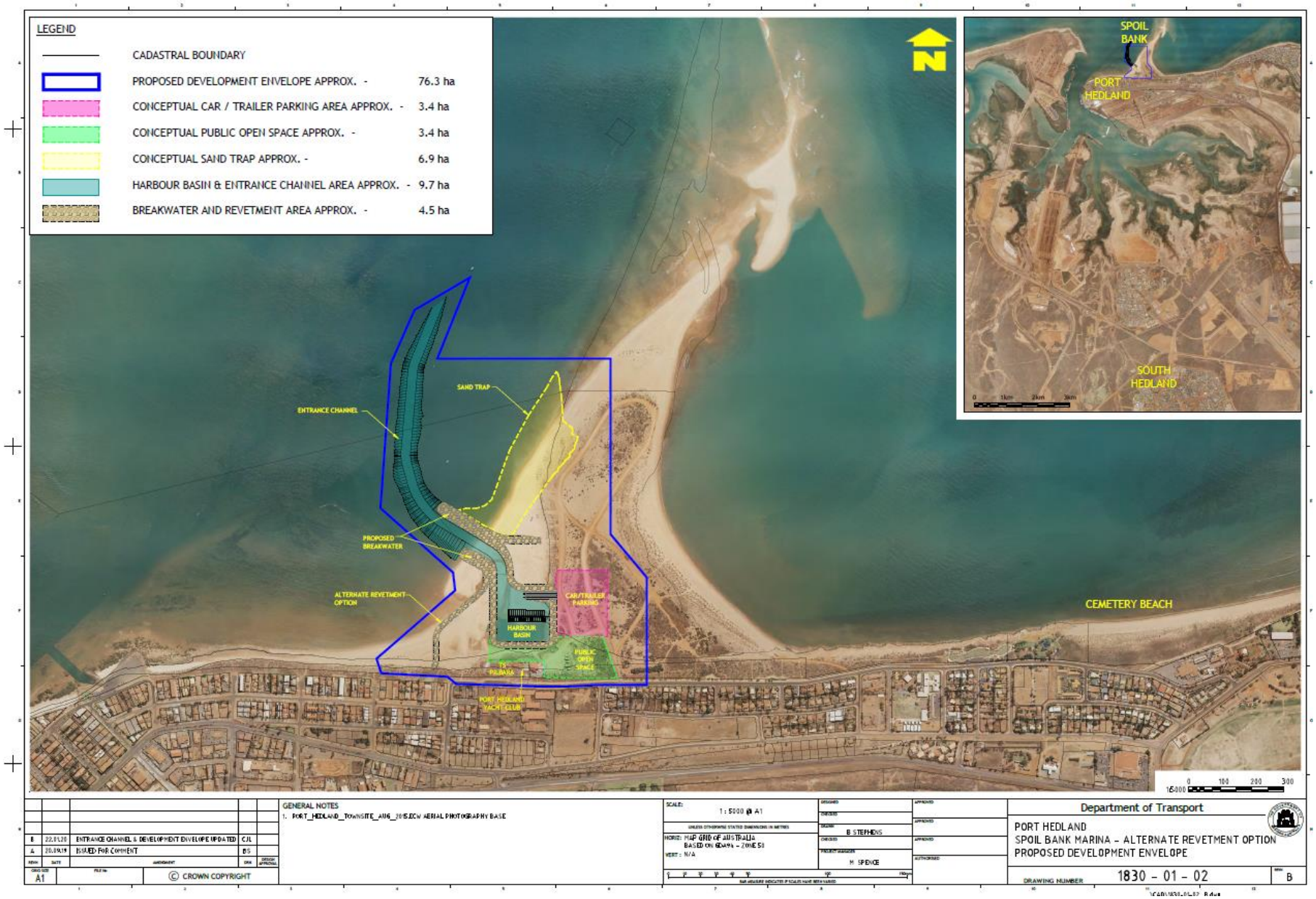


Figure 1: Port Hedland Spoilbank Marina Proposal Development Envelope

1.3 Key environmental factors

This OEMP has been prepared to address the EPA's Environmental Factors for:

- Marine Fauna
- Marine Environmental Quality.

Commonwealth Determination

DoT referred the Proposal to the Commonwealth's Department of Environment and Energy (DoEE) under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 22 August 2019. The Proposal was determined to be a 'Controlled Action' by a Delegate of the Commonwealth Minister for the EPBC Act on 21 January 2020 as it will, or is likely to have, a significant impact on the following Matters of National Environmental Significance (MNES):

- Listed threatened species and communities (section 18 and 18A); and
- Listed migratory species (sections 20 & 20A).

1.4 Rational and approach

The Port Hedland region has historically been the subject of numerous large-scale infrastructure developments, including extensive and periodic capital and maintenance dredging campaigns. The environment has been extensively surveyed and is well-understood.

Terrestrial flora and vegetation

DoT environmental consultants undertook a flora and vegetation desktop assessment and reconnaissance site survey work in February 2019 (Appendix G), in accordance with EPA's guidelines. It was noted that the site is characterised by predominantly bare sediment with areas of sparsely covered patches of colonising coastal shrubs and grasses (dominant species Buffel grass). No Threatened or Priority Ecological Communities were recorded, and no species of conservation significance were found. The vegetation was generally in degraded condition, being dominated by Buffel grass, and was fragmented by many four-wheel-drive tracks (Strategen, 2020b).

DoT's consultants concluded that the Spoilbank Reserve is characterised by a low diversity of vascular flora species and high densities of aggressive weeds. The vegetation does not meet criteria for conservation significance, and no Priority Flora species were identified at the site (Strategen, 2020b).

Groundwater

Groundwater survey work included a 12-month groundwater monitoring program of the study area in 2015 (RPS, 2015). The program consisted of salinity profiling to determine the presence and location of the saline interface, groundwater quality monitoring and an assessment of groundwater-tidal interactions. The study identified

groundwater flowed in a northly direction and discharge into the ocean at the coast. However, due to the presence of the spoilbank, a minor north to south aligned groundwater mound developed, acting as a groundwater divide between the east and west boundaries of the site, directing flows towards both sides of the spoilbank.

The Project area experiences a very high tidal range, which at times exceeds six metres (RPS, 2014). Tidal impact on groundwater elevations occur in two main cycles – semi-diurnal cycles between high and low, and neap and spring tides occurring twice every lunar month. Salinity fluctuated during the 12-month period, most likely correlating to the temporal variations of rainfall recharge to the aquifer. Salinity ranged between saline and hypersaline (5000 mg/L and 40,000 mg/L TDS).

Groundwater quality investigations recorded exceedances in total iron and dissolved cadmium, copper, nickel and zinc (RPS, 2014). These recordings were similar throughout the entire monitoring period with no spatial or temporal trend. The Detailed Site Investigation undertaken by RPS in 2014 concluded that metal concentrations in groundwater are considered reflective of natural conditions in the aquifer given the consistent concentrations across and up-hydraulic gradient of the site, and the fact that no contamination sources were identified.

Surface Water

The Proposed Action is located on a man-made feature with no discernible surface water flows. No surface water or surface expressions of groundwater are present at the site (RPS, 2011).

Sediment Quality

Environmental investigations and survey work was undertaken across the Proposal's development envelope to characterise the physio-chemical composition of the marine sediment (subtidal and intertidal) (Teal *et al*, 2019). Sampling was undertaken in accordance with the National Assessment Guidelines for Dredging (NAGD 2009) and the samples were analysed for particle size distribution, total organic carbon, pesticides, metals, organotins, acid sulfate soils, asbestos containing materials and hydrocarbons.

All analytes were below the available ANZG (2018) guideline values, NEPM (2013) Health Investigation Levels (HILS) and NAGD (2009) Screening Levels. At six locations, Aluminium and Iron exceeded locally derived background levels, however these exceedances were considered to be consistent with ambient concentrations in the area.

All samples were screened for acid sulfate soils and selected samples were subject to chromium suite acid sulfate analysis. The chromium reducible sulfur concentration of three samples were above the action criteria of 0.03% sulfur. The locations of two samples (B12 and S29-B) were in the nearshore environment and one (C02) at the start of the navigation channel. However, consideration of the acid neutralising capacity presented a positive Net Acidity, which indicated sufficient in-situ buffering capacity for any acid generated during handling. The analysis concluded that sediments were considered suitable for onshore disposal.

Marine Fauna

The Port Hedland area is known to support a number of conservation significant marine fauna species, including marine reptiles, cetaceans, fish species and migratory shorebirds. Cemetery Beach, located approximately 2 km east of the development envelope, has been identified as a biologically important area for inter-nesting flatback turtles (*Natator depressus*). It is understood that Cemetery Beach supports a mid-sized community (approx. 200 – 500 individuals) that nest on the beach between late November and March, with key hatchling periods between January to March (PENV, 2020).

The EPBC Act Protected Matters Search Tool (PMST) report (5 km buffer radius) identified a number of threatened and migratory marine fauna species that may frequent the area, including the blue whale, southern right whale, humpback whale, great white shark, whale shark, as well as dwarf, narrow and green sawfish.

Green turtles have also been observed within the Port Hedland Harbour and surrounding mangrove creeks (PENV, 2009). Although juvenile and adult turtles utilise habitat within the Port Hedland area for foraging and breeding, regionally significant foraging sites are known to occur beyond the Port Hedland Inner Harbour (RPS *et al*, 2020).

The green sawfish has been historically recorded in inshore marine waters and inhabits muddy bottom habitats and estuaries (Thorburn *et al,* 2007). The green sawfish is the most commonly distributed species of sawfish in Western Australian waters, occurring in areas with a muddy substrate and frequently found in shallow water. It commonly inhabits marine inshore waters, estuaries and lagoons. Most sawfish move into marine waters during or after the wet season and re-enter estuarine or fresher waters to breed (Morgan *et al,* 2011*)*.

A large number of seabird and shorebird species (or species habitat) may occur within the vicinity of the proposed action; this includes species classified as threatened and migratory under the EPBC Act or specially protected under the WA *Biodiversity Conservation Act 2016*.

Benthic Communities and Habitat

DoT's environmental consultants undertook ground truthing surveys and targeted survey work in 2019 (Appendix P), in accordance with *Technical Guidance, Protection of Benthic Communities and Habitats* (EPA, 2016e).

The Proposal's subtidal BCH assessment mapped three broad BCH classes within the Detailed Mapping Zone and LAU, including:

- Bare Sand
- Mixed assemblage (Corals, Sponges, Macroalgae, and Hydrozoan)
- Mixed assemblage with seagrass (sparse Seagrass, Sponges, Macroalgae, and Hydrozoan)

The benthic cover was found to be generally sparse to low across more than 95 per cent of the study area. Small areas of low to medium-density mixed assemblage habitat were typically found on consolidated or semi-consolidated substrate generally

in shallow water and/or in the intertidal zone and mostly along the shoreline. Areas of mixed assemblage with seagrass were found in slightly deeper water (>3 m) generally in areas with coarse sediment substrate. All habitats identified within LAUs are considered to be widespread across the turbid nearshore environments of the Pilbara region and did not represent conservation significant habitat (Teal *et al*, 2019b).

In the vicinity of the development envelope mixed assemblage habitat were present on low profile reefs and patches of very sparse ephemeral seagrass on sand were also observed. Sparse seagrass communities were observed in the vicinity of the Project area, and in the coastal LAU to the west. Survey work also observed corals occurring in proximity of the Proposal's development envelope.

1.5 Key assumptions and uncertainties

DoT has identified the key sensitive receptor requiring specific management to be the biologically important population of flatback turtles (*N. depressus*) located at Cemetery Beach, approximately 2 km east of the development envelope. The flatback turtle is considered a Matter of National Environmental Significance and is protected under the Commonwealth's Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the State's Biodiversity Conservation Act 2016.

DoT has identified the key impact pathways for the species to be from construction and operational light spill / pollution, vessel strikes and dredging equipment entrainment, water quality changes and underwater noise. DoT has outlined a robust management approach as part of this RSI and is of the view that the impacts associated with the Proposal could be avoided entirely or minimised to an acceptable level. DoT's impact predictions are supported by technical experts, including Pendoley Environmental (PENV, 2019).

In addition to marine fauna, DoT has identified fugitive dust emissions generated during construction activities to be a key environmental issue for the Proposal. To manage fugitive dust emissions, a Dust Management Plan (DMP) has been developed to inform the proposal's management measures, monitoring requirements and reporting protocols.

1.6 Management approach

DoT has undertaken site specific environmental studies and investigations that have informed project specific management plans, including:

- Artificial Lighting Impact Assessment Report (RPS *et al,* 2020) (Appendix A), provides guidance and direction for the Proposal's lighting design, including a robust suite of management measures that are consistent with the *Environmental Assessment Guideline for Protecting Marine Turtles from Light Impacts (EPA, 2010)*, and the Commonwealth's *National Light Pollution Guidelines for Wildlife - including Marine Turtles, Seabirds and Migratory Shorebirds*.

- Marine Environmental Quality Plan (Teal *et al*, 2020) (Appendix B), includes spatially delineated areas of ecological protection and appropriate tiered monitoring and management approach to ensure the environmental values of Port Hedland are maintained.

- Provisions for future maintenance dredging of the marina basin, navigational channel and sand trap, which is proposed to be undertaken in accordance with DoT's *Maintenance Dredging Environmental Management Framework* (DoT, 2018). Depending on the operational requirements, dredge material will be managed onsite and re-used were possible. If required, alternative disposal options will be investigated and appropriate approvals will be sought from State and Commonwealth departments.

To supplement the management framework identified in this OEMP, the Facility Manager will develop the Operator's OEMP, which will include more detailed instruction on day to day management and future maintenance dredging program scheduling.

1.7 Stakeholder consultation

Community Awareness Program

A community educational program will be developed to inform marine users and the wider general public about environmental issues relating to the site and how to minimise their impacts to the marine environment, including wildlife awareness information (targeting marine turtles and migratory birds) and strategies to reducing marine debris, rubbish and dust emissions.

2. EMP Provisions

2.1 Environmental objectives

The following EPA Environmental Objectives guide and inform the OEMP and the attached management plans, which have been developed in accordance with the EPA's Instructions on how to prepare *Environmental Protection Act 1986* Part IV Environmental Management Plans:

- **Marine Fauna** – The EPA's Environmental Objective for this Factor is *'to protect marine fauna so that biological diversity and ecological integrity are maintained'.*
- **Marine Environmental Quality** – The EPA's Environmental Objective for this Factor is *'to maintain the quality of water, sediment and biota so that environmental values are protected'*.

As this Proposal is a Controlled Action under the EPBC Act, DoT is committed to ensuring management for Matter of National Environmental Significance (MNES) are guided by clear environment objectives defined to achieve the following outcomes, including:

- **Listed Threatened Species and Communities:**

  Environmental Outcome: Significant residual impacts do not occur from the proposed action and therefore the biological diversity and ecological integrity of Listed Threatened Species and Communities will be maintained.

- **Listed Migratory Species:**

  Environmental Outcome: Significant residual impacts will not occur from the proposed action and therefore the biological diversity and ecological integrity of Listed Migratory Species will be maintained.

The key environmental factors and objectives to be managed under this OEMP have been derived from the Statement of Environmental Principles, Factors and Objectives (EPA 2016), which outlines objectives aimed at protecting all environments (Themes) including: Sea, Land, Water, Air and People. In consideration of potential environmental impact pathways associated with the proposed construction activities, subsequent project specific Environmental Protection Outcomes (EPOs) and Management Targets (MTs) were derived for each of these factors and are outlined in Table 1.

Table 1: Environmental Objectives and Management Provisions

Environmental Factor	EPA Objective	Potential Environmental Impacts	Environmental Protection Outcomes	Management Targets	Management Measures
Marine Fauna	*To ensure the biological diversity and ecological integrity are maintained.*	Operational light spill/pollution impacts to Flatback Turtle *(N. depressus*) community on Cemetery Beach.	No reported negative impacts on marine fauna attributable to the operational lighting requirements of the Proposal.	Minimise the residual risk to hatchling disorientation towards the west of Cemetery Beach from the implementation of the proposed marina development; and The lighting design for the proposed marina development will meet legislative and regulatory requirements for human safety whilst maintaining the biological diversity and ecological integrity of flatback turtles	Outlined in the Artificial Light Impact Assessment Report (Appendix A) and Section 3.
Marine Environmental Quality	*To maintain the water, sediment and biota quality so that the environmental values are protected.*	Water quality decline during the on-going operational phase.	No reported negative impacts on marine water quality attributable to the facility operation.	Manage water quality to maintain a 'Moderate' Level of Ecological within the marina waterbody and a 'High Level of Ecological Protection' in all marine areas outside of the development envelope.	Outlined in Marine Environmental Quality Plan (Appendix B). Maintenance dredging undertaken in accordance *with Department of Transports Maintenance Dredging Environmental Management Framework* (Appendix OEMP-C).
		Hydrocarbon spills.		Manage vessel bunkering, chemical storage and spill response to ensure no adverse impacts to the marine environment.	
		Short duration declines in water quality (turbidity) during necessary maintenance dredging operations		Manage turbidity generated by maintenance dredging to maintain a 'Moderate Level of Ecological Protection'	

				within the marina waterbody and a 'High Level of Ecological Protection' in all marine areas outside of the development envelope.	

3. Marine Fauna Operational Light Management

Pendoley Environmental (PENV) has undertaken a benchmarked light measurement survey at Cemetery Beach, which has informed the Proposal's Artificial Lighting Impact Assessment Report (RSP *et al,* 2020) (Appendix A). The report provides guidance for the preparation of the Proposal's lighting design, which will be developed in accordance with the *Environmental Assessment Guideline for Protecting Marine Turtles from Light Impacts (EPA, 2010), and Commonwealth's National Light Pollution Guidelines for Wildlife - including Marine Turtles, Seabirds and Migratory Shorebirds* (currently still draft). Key mitigation measures are detailed in Table 4 (pg. 35) of the report and included:

- Shielding the east facing side (i.e. side facing towards the Cemetery Beach nesting area) of the pole mounted lights to further reduce line of sight visibility to hatchlings within the Cemetery Beach nesting area.
- Minimise pole mounted lights required to safely light the main access road and parking and when unavoidable, use low intensity amber LED lights.
- Using lighting controls and / or motion sensors during turtle hatching (early December to mid-February) to keep areas dark when not in use and only providing light when active use of an area is required.

3.1.1 Environmental Objectives

- To protect marine fauna so that biological diversity and ecological integrity are maintained
- Significant residual impacts do not occur from the proposed action and therefore the biological diversity and ecological integrity of EPBC Act 'Listed Threatened Species and Ecological Communities' and 'List Migratory Species' will be maintained.

3.1.2 Legislation / Guidelines

- EPBC Act (Commonwealth)
- BC Act (WA)
- Environmental Factor Guideline – Marine Fauna (EPA, 2016)
- State *Environmental Assessment Guideline for Protecting Marine Turtles from Light Impacts* (EPA, 2010)
- Commonwealth's *National Light Pollution Guidelines for Wildlife - including Marine Turtles, Seabirds and Migratory Shorebirds (Draft)* (DoEE, 2019)

3.1.3 Management Measures

- The management measures detailed in the Proposal's Artificial Lighting Impact Assessment Report are provided in Appendix A of the OEPM. The management measures will be formalised in the Proposal's Operational Light Plan, which will be prepared in consultation with the Department of Biodiversity, Conservation and Attractions (DBCA) to confirm the timing and manner in which the management measures will be adequately implemented.

3.1.3 Monitoring

- Post-construction flatback turtle monitoring:
    - The Facility Manager will engage Care for Hedland Environmental Association to continue their turtle monitoring program on the spoilbank for two seasons post-construction to assist in determining if the Proposal is resulting in any level of changes in the distribution of turtle activity and nesting on the spoilbank, and if feasible, hatchling survivorship, orientation of adult and hatchling turtles within beaches adjacent to the Proposal's development envelope.
    - If feasible, the monitoring program will also aim to identify any shift of turtle nesting activity away from existing favoured beaches adjacent to facilities and towards less favourable beaches with respect to turtle population dynamics.

4. Other Impact Pathways and Management Approaches

The OEMP further outlines several operational related impact mechanisms that have the potentially to impact the EPA's Environmental Factors listed above, including:

- Hydrocarbon Spills
- Marine Debris (Pollution)
- Feral Animals

4.1 Hydrocarbon Spills

4.1.2 Environmental Objectives

- To protect marine fauna so that biological diversity and ecological integrity are maintained
- Significant residual impacts do not occur from the proposed action and therefore the biological diversity and ecological integrity of EPBC Act 'Listed Threatened Species and Ecological Communities' and 'List Migratory Species' will be maintained.

4.1.3 Legislation / Guidelines

- EPBC Act (Commonwealth)
- BC Act (WA)
- Environmental Factor Guideline – Marine Fauna (EPA, 2016)

4.1.4 Management Measures

- Implement actions to avoid spills of liquids/chemicals into surface and groundwater, and if a spill occurs within the jetty project area, emergency spill procedures will be implemented as appropriate.
- Uncontained spills to be reported to the DWER via the Pollution Watch Hotline on 1300 784 782.
- Spill kits to be located on site and personnel trained in their use.

4.1.5 Monitoring

<u>Response</u>

- Hydrocarbon spills into the marine environment (in State waters) be immediately reported to Department of Transport's Maritime Environmental Emergency Response (MEER) unit (ph. 9480 9924).

- Implement MEER's oil spill response protocols.

4.2 Marine Debris (Pollution)

Marine debris may include solid wastes, hazardous wastes and sewage and grey water. DoT's environmental consultants have prepared the Proposal's Marine Environmental Quality Plan (MEQP) to monitor and manage water quality to maintain recreational and aesthetic environmental values of the marina basin. To achieve this objective the marina basin will be cleared of wastes and debris on a regular basis.

4.2.1 Environmental Objectives

- To protect marine fauna so that biological diversity and ecological integrity are maintained
- Significant residual impacts do not occur from the proposed action and therefore the biological diversity and ecological integrity of EPBC Act 'Listed Threatened Species and Ecological Communities' and 'List Migratory Species' will be maintained.

4.2.2 Legislation / Guidelines

- EPBC Act (Commonwealth)
- BC Act (WA)
- Environmental Factor Guideline – Marine Fauna (EPA, 2016)

4.2.3 Management Measures

- Implement standard waste minimisation and reduction strategies, including providing facilities for waste disposal.
- Implement routine removal and off-site disposal of wastes in accordance with State and local policies and procedures.

4.2.4 Monitoring

<u>Protocols and Procedures</u>

- Daily visual checks.

<u>Frequency</u>

- On-going.

<u>Location</u>

- On-site and within the marine environment of the development envelope.

<u>Responsibility</u>

- Contractor.

Response

- Hydrocarbon spills into the marine environment (in State waters) be immediately reported to Department of Transport's Maritime Environmental Emergency Response (MEER) unit (ph. 9480 9924).
- Implement MEER's oil spill response protocols.

4.3 Feral Animals

4.3.1 Environmental Objectives

- To protect marine fauna so that biological diversity and ecological integrity are maintained
- Significant residual impacts do not occur from the proposed action and therefore the biological diversity and ecological integrity of EPBC Act 'Listed Threatened Species and Ecological Communities' and 'List Migratory Species' will be maintained.

4.3.2 Legislation / Guidelines

- EPBC Act (Commonwealth)
- BC Act (WA)
- WA Department of Primary Industries and Regional Development (DPIRD) Biosecurity Procedures

4.3.3 Management Measures

- The Operator will be required to ensure all vessels are in compliance with the DPIRD biosecurity procedures and protocols.
- The completion of the DPIRD risk assessment tool for any vessels entering the marina from international or interstate waters will be a requirement. The recommendations from the tool will be implemented.

4.3.4 Monitoring

Protocols and Procedures

- On-going visual monitoring for invasive species establishing a presence within the marina complex.

Frequency

- On-going.

Location

- Marina basin.

Responsibility

- Contractor.

Response

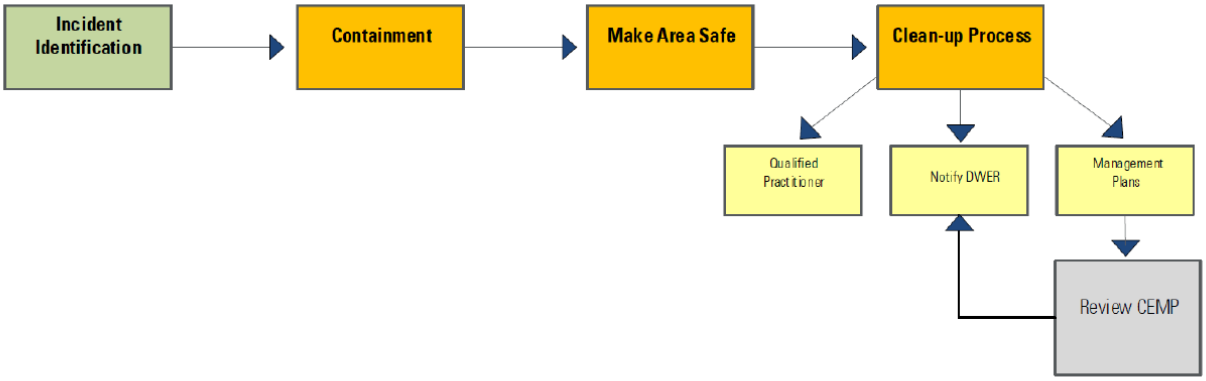
- Contact DBCA within 24 hours of finding feral animals within the marina complex.

4.4 Unexpected Findings Protocol

In the event that any spill, chemical exposure, breach of bund, excess dust, or new material suspected of containing potentially hazardous substances is found (e.g. asbestos containing material), the following procedures should be implemented:

1. Stop/prevent any activity in the area.
2. Place signage and barricade area – make area safe. Do not touch or disturb the item/material.
3. Report the Unexpected Occurrence/Finding to the Superintendent.
4. Record the location, visual appearance, odour, and extent, type of accident or material and mode of discovering the material to the Superintendent.
5. Obtain assistance from a suitably qualified practitioner in identifying the potential hazard to human health or the environment in accordance with regulatory requirements.
6. If considered potentially contaminated, sediments and soils are analysed for the purpose of classification and reuse in accordance with *Landfill Waste Classification and Waste Definitions 1996* (As Amended April 2018) and Assessment and Management of Contaminated Sites (DER, 2014a). If contaminated (in respect to current and future land use) material is to be disposed off-site to an appropriately licenced facility.
7. Establish management actions in compliance with regulatory requirements.
8. Obtain the Superintendent and regulator's approvals for the proposed management actions.
9. Do not commence work until the appropriate approvals have been received.
10. Implement the approval management action plan and seek on-going advice as necessary.
11. Document the findings and compliance with the approved action plan and provide documentation to the Superintendent.
12. Update the OEMP procedures and controls as required.

Plate 1: Overarching Management of Environmental Incident



5. ROLES AND RESPONSIBILITIES

The overarching responsibility for the implementation of this OEMP lies with the Facility Manager.

An example for contact details and relevant summary information for the parties and project personnel having responsibilities for management of these issues is provided in Table 1. At the time of implementation and activation of this OEMP.

6. ENVIRONMENTAL INCIDENTS AND RESPONSE FRAMEWORK

6.1 Environmental Inspections

The Facility Manager shall document and sign-off after checking off each monitoring aspect (where applicable). Further Environmental Inspections shall be conducted when the job requirements change.

6.2 General Incident Response

In the event that any unplanned or non-conforming environmental issues (i.e. targets are not met or management actions are not followed) are observed, they should be noted on an inspection sheet and an environmental incident form completed. The following points will be recorded in an environmental incident form:

1. Time and date of incident
2. Location and description of event
3. Incident category, as described in Table 1
4. Weather conditions
5. Involved parties
6. Person recording complaint and witness (if applicable)
7. Steps to make area safe
8. Steps to rectify problem
9. Steps to ensure incident will not occur again (e.g. process review of management plans)
10. Notification to relevant authority
11. Deadline to rectify incident
12. Sign off once clean-up is completed.

Any significant incident that occurs on or arises from this Site shall be reported with urgency commensurate with the incident. Table 13 provides guidance on the hierarchy of incidents and their reporting.

Table 1 Incident Category

Incident Category	Rank	Description	Reporting Level	Reporting Time
1	High	Incident with a significant risk of environmental impact, potential impact off-site (e.g. neighbouring occupants) and/or cause alarm to the community	Contractor, Superintendent, Responsible authorities (i.e. DWER, EPA)	All environmental incidents be reported to the Superintendent as soon as the immediate response to the incident is complete. It is also a requirement that all hydrocarbon spills into the marine environment (in State waters) be immediately reported to Department of Transport's Maritime Environmental Emergency Response (MEER) unit (ph. 9480 9924). MEER's protocols must then be followed. Refer also DoT website.
2	Intermediate	Incident with potential to cause minor environmental impact or cause concern to neighbouring occupants and/or the community.	Contractor, Superintendent & responsible authorities (i.e. DWER, Council, EPA)	All environmental incidents be reported to the Superintendent as soon as the immediate response to the incident is complete. 24 Hours
3	Low	Incident unlikely to cause immediate environmental impact but requires rectification	Contractor, Superintendent & responsible authorities (i.e. DWER)	All environmental incidents be reported to the Superintendent as soon as the immediate response to the incident is complete. 7 days

In addition, emergency response to protect public health and safety, and the environment requires the following actions:

- Assess the nature and scale of the problem
- Take appropriate actions to immediately contain/mitigate problem - if safe to do so
- Make the area safe
- Communicate with relevant personnel on/off-site to advise them of the situation
- Verbally report to Superintendent and relevant regulatory authorities based on the magnitude and seriousness of the event
- Deploy appropriate internal and/or external resources to rectify the situation, if necessary
- Record and report the incident and outcome in Site's OEMP Environmental Incident Forms
- Implement remedial/corrective action on facilities, procedures and/or practices
- Superintendent signs out the final check in OEMP Environmental Incident Forms

- Review and update of the OEMP.

6.3 Emergencies

An “emergency” is any situation arising in which an unplanned occurrence potentially results in an immediate or imminent hazard to public health and safety or to the environment. Certain “near miss” situations should also be treated as reportable emergency incidents.

Table 2 summarises some of the potential environmental emergency situations possible at this Site for which contingency plans are to be prepared by the Contractor.

Table 2 Environmental Emergency Contacts

Issue	Emergency Condition	Contact In Event of Emergency
Contamination of the ocean	• Spill of contaminant into the ocean (e.g. fuel). • Sediment runoff into ocean	• Facility Manager • DWER • DoT MEER
Dust, litter, Waste or feral animals	• Visible particles, litter or waste resulting in aesthetic impact on neighbouring properties or environment. • Feral animals present on site.	• Facility Manager • DBCA
Fire	• Fire in equipment, facilities or fuel/chemical storage.	• Facility Manager • Fire Brigade • DWER

6.4 Public Compliant Resolution

In the event a complaint is received it shall be recorded appropriately. It is the responsibility of the Facility Manager to assess the collected complaint to allow formal judgement of the nature and severity of the complaint and to ensure that the person voicing the complaint can receive feedback if the person had requested it.

All information will be recorded, either from a phone call, written or verbal complaint made to a member onsite. The following information should be collected:

1. Time and date of complaint
2. Nature of complaint (e.g. location, description of events that led to complaint, etc.)
3. Weather conditions (e.g. windy period and potential for increased dust)
4. Involved parties
5. Name and contact details of person making complaint, if provided
6. Is a response required?
7. Person recording complaint
8. Project manager of appointed personnel following it up.

Every complaint relating to the environment shall be treated as an environmental incident and therefore recorded as an environmental incident.

7. REFERENCES

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