REVISED ENVIRONMENTAL SCOPING DOCUMENT

PROPOSAL NAME:	**INNER HARBOUR STRUCTURE PLAN**
ASSESSMENT NUMBER:	**1879**
LOCATION:	**KOOMBANA BAY, BUNBURY**
LOCAL GOVERNMENT AREA:	**CITY OF BUNBURY**
PROPONENT:	**SOUTHERN PORTS AUTHORITY**
PUBLIC REVIEW PERIOD:	**8 WEEKS**

1. Introduction

This revised Environmental Scoping Document (ESD) sets out the form, content and timing of the Environmental Review for the above Strategic Proposal. The previous ESD for this proposal was originally endorsed by the EPA and issued to the proponent on 30 January 2012. Since then, there have been changes to EPA environmental factors, policies framework and the approach for preparing ESDs. The proponent has therefore requested the EPA update the ESD to take into account these changes. This revised ESD therefore replaces the previous ESD issued on 30 January 2012.

The *Environmental Protection Act 1986* (EP Act) sets out that where a proposal is considered to have a significant environmental impact it will be subject to an assessment by the Environmental Protection Authority (EPA) under section 38 of the EP Act. The EP Act also provides for the assessment of a strategic proposal, which is a future proposal (or a number of future proposals implemented together) that may singularly or in combination have a significant effect on the environment.

The desired objective of assessing a strategic proposal is to identify all potentially significant environmental impacts and management as early as possible. It also provides for greater certainty to local communities and proponents over future development, improved capacity to address cumulative impacts and flexible timeframes for consideration of environmental issues.

If it is agreed that a strategic proposal may be implemented, a Ministerial Statement for the strategic proposal is published. Future Proposals will be managed in accordance with the EP Act.

This strategic proposal is being assessed by the EPA at the level of Public Environmental Review (PER). The purpose of an ESD is to:

- provide proposal-specific guidelines to direct the proponent on the preliminary key environmental factors or issues that are to be addressed during the environmental review and preparation of the environmental review report;
- identify the required work to be carried out; and
- document the timing of the environmental review.

This revised ESD has been prepared by the EPA in consultation with the proponent consistent with EPA Environmental Assessment Guideline (EAG) 10 *Scoping a proposal*. ESDs prepared by the EPA are not subject to public review. The ESD will be available on the EPA website (www.epa.wa.gov.au) upon endorsement and must be appended to the PER document.

The proponent must conduct the environmental review in accordance with this ESD and then report to the EPA in an environmental review report (PER document). As well as the proposal-specific requirements for the environmental review identified in this ESD, the PER document must also address any requirements set out in guidelines prepared by the EPA for preparing a PER or any current Administrative Procedures. When the EPA is satisfied that the PER document adequately addresses both of these requirements, the proponent will be required to release the PER document for a public review period of eight weeks.

2. The strategic proposal

The subject of this ESD is the Southern Ports Authority's (the proponent) Inner Harbour Structure Plan. The proponent has prepared this plan to guide future development and decision making within the Inner Harbour and to conform to the strategic planning requirements under the *Port Authorities Act 1999*. It will also provide greater certainty of land use and development for port users, the Southern Ports Authority and other decision making authorities, neighbouring landowners and the community.

2.1 Future proposals

Subject to the outcomes of this assessment, future proposals are expected to be developed in stages. At this stage the proponent has identified the following future proposals:

- extension of the inner harbour basin;
- realignment of the Preston River along the south east boundary of the port operation areas and decommissioning the current Preston River channel; and
- permanent filling of all operation areas of the inner harbour port area up to 5 metres with fill capable of supporting port operations.

The development enveloped and conceptual footprints of the future proposals are shown in Figure 1.

The scope of the future proposals and the key characteristics (including their respective development envelopes) will be defined through the assessment process and outlined in the PER, in accordance with EAG 1 *Defining the key characteristics of a proposal*. It is expected the proponent will describe the strategic proposal including the identification of future proposals within the PER document, in accordance with Environmental Protection Bulletin 17 *Strategic and derived proposals.*

3. Preliminary key environmental factors and scope of work

The information provided by the proponent regarding the proposal characteristics has informed the identification of the preliminary key environmental factors for the proposal, in accordance with EAG 8 *Environmental principles, factors and objectives*. The preliminary key environmental factors for this proposal are:

- Flora and Vegetation;
- Terrestrial Fauna;
- Hydrological Processes and Inland Waters Environmental Quality;
- Terrestrial Environmental Quality;
- Air Quality and Atmospheric Gases;
- Amenity;
- Marine Environmental Quality;
- Benthic Communities and Habitat;
- Marine Fauna;
- Heritage; and
- Offsets (Integrating factor).

The EPA's objective for each of those factors are identified in Table 1.

To provide context to the preliminary key environmental factors, Table 1 also identifies the aspects of the proposal that cause the factors to be preliminary key environmental factors, and the potential impacts and risks likely to be relevant to the assessment. All of this in turn has informed the work required (or scope of work) to be conducted in the environmental review.

Finally, Table 1 identifies the policy documents that establish how the EPA expects the environmental factors to be addressed in the environmental review and the PER document that follows. While the relevant EPA policies identified in this ESD are current at the time this ESD has been prepared, the policies of the EPA are currently under review. This proposal will be assessed against policies current at the time of the EPA's recommendations and report to the Minister for Environment.

Impacts associated with proposals are to be considered at a local and regional scale, including evaluation of cumulative impacts, and provide details of proposed management/mitigation measures. This includes whether environmental offsets are required by application of the mitigation hierarchy, consistent with the WA Environmental Offsets Guidelines.

In addition to the preliminary key environmental factors, the PER is to address the environmental principles in EAG 8.

Table 1: Preliminary key environmental factors and required work

Flora and Vegetation	
EPA objective	To maintain representation, diversity, viability and ecological function at the species, population and community level.
Relevant aspects	• Clearing of native vegetation; and • Construction and operation of the realigned Preston River.
Potential impacts and risks	• Direct clearing of vegetation during construction; • Indirect impacts to vegetation and vegetation condition over time through operational impacts.
Required work	1. Complete a Level 1 (Reconnaissance) flora and vegetation survey within the proposal footprint and immediately adjacent area. Areas of remnant tuart and the small area of intact native vegetation adjacent to the Australind Bypass on the south-east boundary of the proposal should be targeted for survey for conservation significant flora or communities. Surveys are to be undertaken in accordance with Guidance Statement No. 51. 2. Identify the ecological value of the proposal area in a local, regional and State context using the criteria for determining regional significance in EPA's Guidance Statement No. 10. 3. Identify the construction and operational elements of the proposal that may affect significant flora and vegetation. 4. Describe and assess the potential direct and indirect impacts that may result from construction and operation of the proposal on flora and vegetation. 5. Identify and assess all direct and indirect impacts to native vegetation in regional and public open spaces and the adjacent Leschenault Estuary from the proposal. 6. Identify any coastal set-backs or buffer zones that will be required between the development and adjacent flora and vegetation as well as how they will be incorporated into the design of the proposal. 7. Predict the residual impacts from the proposal on flora and vegetation. 8. Identify management measures to mitigate[1] adverse impacts on the significant flora and vegetation to ensure that the EPA's objective for this factor can be met.
Relevant EPA policy and guidance	EPA Position Statement No. 2 (2000) *Environmental Protection of Native Vegetation in Western Australia.*

[1] To mitigate means a sequence of proposed actions designed to help manage adverse environmental impacts, and which includes (in order of preference):
1. avoidance – avoiding the adverse environmental impact altogether;
2. minimisation – reducing the degree or magnitude of the adverse impact;
3. rehabilitate – repairing, rehabilitating or restoring the impacted site as soon as possible; and
4. offset – to counterbalance any significant residual impacts of the proposal after it has been demonstrated that the potential impacts the proposal have been avoided, minimised and/or rehabilitated.

	EPA Environmental Assessment Guideline No. 17 (2015) *Preparation of management plans under Part IV of the* Environmental Protection Act 1986 EPA Position Statement No. 3 (2002) *Terrestrial Biological Surveys as an Element of Biodiversity Protection.* EPA Guidance Statement No. 10 (2006) *Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region.* EPA Guidance Statement No. 33 (2008) *Environmental Guidance for Planning and Development.* EPA Guidance Statement No. 51 (2004) *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia*. EPA Environmental Protection Bulletin No. 18 (2012) *Sea level rise* EPA Technical Guide (2015) *Flora and Vegetation Surveys for Environmental Impact Assessment.* EPA Checklist for documents submitted for environmental impact assessment of proposals that have the potential to significantly impact on sea and land factors (2016).
Other policy and guidance	State Planning Policy No. 2.6 *State Coastal Planning Policy* State Planning Policy No. 2.6 *State Coastal Planning Policy Guidelines.*
Terrestrial Fauna	
EPA objective	To maintain representation, diversity, viability and ecological function at the species, population and assemblage level.
Relevant aspects	Construction and operation of the realigned Preston River.
Potential impacts and risks	• Potential impacts to the roosting, nesting and foraging of water and shorebirds. • Potential impacts to water and shore bird habitat through potential changes to the Preston River delta.
Required work	9. Complete a targeted Level 2 fauna survey over the project area and immediately adjacent Leschenault Estuary for water and shorebirds to determine the distribution, nesting, foraging and roosting habitats of conservation-listed waterbird species. This is to be done in accordance with Guidance Statement No. 56 and the EPA's Technical Guide Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment. 10. Describe these values in a local, regional and State context. 11. Identify the construction and operational elements of the proposal that may affect water and shorebirds and their habitat. 12. Describe and assess the potential direct and indirect impacts that may result from construction and operation of the proposal on water and shorebirds and their habitat. This should include changes to distribution, composition and pattern of the habitat at the mouth of the Preston River and other potential impacts including dust and noise. 13. Predict the residual impacts from the proposal on terrestrial fauna. 14. Identify measures to mitigate[1] adverse impacts on water and shorebirds and their habitat to ensure that the EPA's objective for this factor can be met.

Relevant EPA policy and guidance	EPA Position Statement No. 3 (2002) *Terrestrial Biological Surveys as an Element of Biodiversity Protection.* EPA Environmental Assessment Guideline No. 17 (2015) *Preparation of management plans under Part IV of the* Environmental Protection Act 1986 EPA Guidance Statement No. 20 (2009) *Sampling of Short-Range Endemic Invertebrate Fauna for Environmental Impact Assessment in Western Australia.* EPA Guidance Statement No. 33 (2008) *Environmental Guidance for Planning and Development* EPA Guidance Statement No. 56 (2004) *Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia.* EPA Technical Guide (2010) Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment. EPA Checklist for documents submitted for environmental impact assessment of proposals that have the potential to significantly impact on sea and land factors (2016)
Hydrological Process and Inland Waters Environmental Quality	
EPA objectives	To maintain the hydrological regimes of groundwater and surface water so that existing and potential uses, including ecosystem maintenance, are protected. To maintain the quality of groundwater and surface water, sediment and biota so that the environmental values, both ecological and social, are protected.
Relevant aspects	• Altered hydrological regimes from the construction and operation of the realigned Preston River; • Compaction and changes in hydrological regimes from the filling of land-based operational areas; and • Extension of the inner harbour basin.
Potential impacts and risks	• Direct loss of wetland areas through clearing and filling. • Potential changes in water quality and quantity and flows resulting from the realignment of the Preston River. • Potential impacts to surface water quality and quantity within the Leschenault Estuary. • Bank instability, erosion, sedimentation and changes to flood risk resulting from the realignment of the Preston River. • Changes to surface flows in the proposal area resulting from the filling of operational areas. • Potential impacts to groundwater through dewatering, with potential consequential impacts to other groundwater users. • Potential to impact the confining layer of the Yarragadee Aquifer through rock fracturing, allowing saline water to enter the public drinking water supply. • Potential impacts on groundwater quality through saline intrusion.
Required work	*Wetlands* 15. Identify the functions, values and significance of wetlands within the proposal area and adjacent area and describe them in a local, regional and State context.

	16. Identify wetland boundaries, wetland management categories and buffers for wetlands on or adjacent to the proposal in accordance with the Department of Parks and Wildlife (DPaW) requirements and EPA Guidance Statement 33. 17. Describe and assess the potential direct and indirect impacts that may result from the proposal on any wetlands, including their buffers, within the proposal area and adjacent area. This should include potential impacts resulting from changes to local hydrology such as the impacts of groundwater drawn down on wetland values and functions, any groundwater dependant ecosystems, and from changes to stormwater and drainage. 18. Predict the residual impacts from the proposal on wetlands. 19. Identify measures to mitigate[1] adverse impacts to ensure that the EPA's objectives for these factors can be met. *Surface water* 20. Characterise the existing surface water environment in the project area and surrounding area. This should include, but not be limited to, surface water quality, flow and drainage patterns and flood risk. 21. Identify the potential direct and indirect impacts to surface water resulting from the proposal, including through realigning the Preston River. 22. Describe and assess the realignment channel of the Preston River channel, predicting stream water velocity, flood risk, erosion risk and scouring and water quality including from potential acid sulfate soils, increased suspended sediment and release of sediment bound nutrients and contaminants. This should include predicting impacts, such as changes to flood and sediment movement and disposition, to the Leschenault Estuary as a result of the proposal. 23. Predict the quality and quantity of surface water run-off during the construction phase of the project, as well as describing and mapping the receiving environment. This should include predicting changes to flood and drainage rates resulting from the realignment of the Preston River channel. 24. Predict the potential direct and indirect impacts to Vittoria Bay within the Leschenault Estuary resulting from movement of the mouth of the Preston River channel. This should include an evaluation of any potential impacts to water quality within the bay resulting from changes to sediments dispersion and settling. This may require hydrodynamic modelling. 25. Predict the residual impacts from the proposal on surface water. 26. Identify management measures, including effluent disposal, and drainage and nutrient management, to mitigate adverse impacts and to ensure that the EPA's objectives for these factors can be met. *Groundwater* 27. Characterise the hydrogeology of the groundwater system and the quality and quantity of the groundwater within the project area and surrounding area. Where the groundwater is contaminated, determine the extent of the contamination. 28. Identify the potential direct and indirect impacts to groundwater from the proposal. This should include potential impacts to groundwater dependent ecosystems and impacts to current groundwater allocation within the area.

	29. Develop a hydrogeological model and predict the hydrogeological changes that will result from the proposal (including dewatering). The extent, severity and duration of potential impacts should be predicted and include changes to local and regional groundwater flows and levels, extent of drawdown, impacts to local water quality through management of dewater effluent and impacts to other groundwater users. 30. Predict the likelihood that rock fracturing will breach the confining basalt layer of the Yarragadee aquifer, potentially allowing saline water to intrude into the public water supply. 31. If contaminated groundwater is encountered, prepare a remediation and/or disposal plan for contaminated material. This should be independently reviewed by an accredited contaminated sites auditor. 32. Develop contingency and monitoring measures should a breach of the confining layer of the Yarragadee Aquifer occur, including methods to seal the breach to prevent saline intrusion into the public drinking supply. 33. Evaluate the potential threats of extending the inner harbour further inland on groundwater quality and the ecosystems and beneficial uses that it supports. 34. Predict the residual impacts from the proposal on groundwater. 35. Identify measures to mitigate[1] adverse impacts to ensure that the EPA's objectives for these factors can be met.
Relevant EPA policy and guidance	EPA Environmental Assessment Guideline No. 17 (2015) *Preparation of management plans under Part IV of the* Environmental Protection Act 1986 EPA Guidance Statement No. 33 (2008) *Environmental Guidance for Planning and Development* EPA Position Statement No. 4 *Environmental Protection of Wetlands*
Other policy and guidance	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC and ARMCANZ, 2000) Department of Health and DER (2009) *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* DER (2014) *Assessment and management of contaminated sites, contaminated sites guidelines* DER (2015) *Identification and investigation of acid sulfate soils and acidic landscapes* DER (2015) *Identification, reporting and classification of contaminated sites in Western Australia* DER (2015) *Treatment and management of soil and water in acid sulfate soil landscapes* Department of Water (2012) *Leschenault Estuary Water Quality Improvement Plan* State Planning Policy No. 2.6 *State Coastal Planning Policy* and the State Planning Policy No. 2.6 *State Coastal Planning Policy Guidelines.*
Terrestrial Environmental Quality	
EPA objective	To maintain the quality of land and soils so that the environment values, both ecological and social, are protected.
Relevant aspects	• Construction of the realigned Preston River; and • Removal of soils for the extension of the inner harbour basin.

Potential impacts and risks	• Disturbance of contaminated sites. • Disturbance of Acid Sulfate Soils during the realignment of the Preston River and the extension of the inner harbour basin.
Required work	36. Complete investigations to determine the acid-generating potential of land to be disturbed as a result of the proposal, according to the Department of Environment Regulation's (DER) acid sulfate soil guidelines. 37. Identify and map known and suspected contaminated sites and complete investigations to characterise the nature of the contamination. A Sampling and Analysis Plan should be prepared to the satisfaction of the Contaminated Sites Branch of the DER. 38. Describe and assess the potential direct and indirect impacts from acid sulfate soils resulting from the proposal on the receiving environment. This should include the potential to generate acidic conditions during dewatering and the potential for monosulphidic black oozes to form either in the inner harbour, the realigned Preston River and delta or in the Leschenault Estuary adjacent to the new river mouth. 39. Identify areas where disturbance of contaminated sites will result from the proposal. Where contaminated sites are to be disturbed, describe and assess the potential direct and indirect impacts resulting from the disturbance of contaminated material. This should include impacts where there is the potential for contaminated material to be liberated into the environment, such as through water or dust, and potential impacts on rehabilitation success along the new Preston River ecological corridor. 40. Studies should be done accordance with the guidance in the DER contaminated sites guidelines, acid sulfate soil guidelines and through references to the DER Contaminated Sites Register. 41. Describe the management measures for the disturbance of contaminated material. This should include the preparation of a remediation and/or disposal plan for contaminated material, where relevant. This should be independently reviewed by an accredited contaminated sites auditor. 42. Predict the residual impacts from the proposal on terrestrial environmental quality. 43. Identify measures to mitigate[1] adverse impacts to ensure that the EPA's objective for this factor can be met.
Relevant EPA policy and guidance	EPA Environmental Assessment Guideline No. 17 (2015) *Preparation of management plans under Part IV of the* Environmental Protection Act 1986 EPA Guidance Statement No. 33 (2008) *Environmental Guidance for Planning and Development* EPA Checklist for documents submitted for environmental impact assessment of proposals that have the potential to significantly impact on sea and land factors (2016)
Other policy and guidance	Department of Health and DER (2009) *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* DER (2014) *Assessment and management of contaminated sites, contaminated sites guidelines* DER (2015) *Identification and investigation of acid sulfate soils and acidic landscapes*

	DER (2015) *Identification, reporting and classification of contaminated sites in Western Australia* DER (2015) *Treatment and management of soil and water in acid sulfate soil landscapes*
Air Quality and Atmospheric Gases	
EPA objective	To maintain air quality for the protection of the environment and human health and amenity, and to minimise the emission of greenhouse and other atmospheric gases through the application of best practice.
Relevant aspects	Dust generated during construction and operation.
Potential impacts and risks	Increased emissions of dust and other material, which has the potential to affect the health and amenity of the City of Bunbury residents.
Required work	44. Describe the existing ambient air quality at sensitive premises adjacent to the Port of Bunbury. 45. Identify the potential sources of air emissions from the proposal. 46. Develop management and contingency measures for those areas that are likely to be contaminated consistent with DER's '*A guideline for managing the impacts of dust and associated contaminants from land development sites'.* 47. Predict the residual impacts from the proposal on air quality and atmospheric gases. 48. Identify measures to mitigate[1] adverse impacts to ensure that the EPA's objective for this factor can be met.
Relevant policy and guidance	EPA Environmental Assessment Guideline No. 17 (2015) *Preparation of management plans under Part IV of the* Environmental Protection Act 1986 EPA Guidance Statement No. 3 (2005) *Separation Distances between Industrial and Sensitive Land Uses* EPA Guidance Statement No. 33 (2008) *Environmental Guidance for Planning and Development*
Other policy and guidance	Department of Environment (2006) Air Quality and Air Pollution Modelling Guidance Notes (under DER's Air Quality publications) Department of Environment and Conservation (March 2011) *A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities* (under DER's Air Quality publications).
Amenity (Noise and Vibrations)	
EPA objective	To ensure that impacts to amenity are reduced as low as reasonably practicable.
Relevant aspects	Proposal construction.
Potential impacts and risks	The proposal has the potential to increase noise and vibrations experienced at nearby residences and businesses.
Required work	49. Describe the existing noise levels at sensitive premises adjacent to the Port of Bunbury.

	50. Identify the likely noise emission sources during the construction of the proposal. 51. Evaluate the potential noise impacts of the proposal consistent with EPA's Environmental Assessment Guideline No 13. 52. Predict the residual impacts from the proposal on amenity (noise and vibrations) 53. Identify measures to mitigate[1] adverse impacts to ensure that the EPA's objective for this factor can be met.
Relevant policy and guidance	EPA Environmental Assessment Guideline No. 13 (2014) *Consideration of environmental impacts from noise* EPA Environmental Assessment Guideline No. 17 (2015) *Preparation of management plans under Part IV of the* Environmental Protection Act 1986 EPA Guidance Statement No. 3 (2005) *Separation Distances between Industrial and Sensitive Land Uses* EPA Guidance Statement No. 33 (2008) *Environmental Guidance for Planning and Development*
Other policy and guidance	State Planning Policy 5.4 (2009) *Road and Rail Transport Noise and Freight Considerations in Land Use Planning*
Marine Environmental Quality	
EPA objective	To maintain the quality of water, sediment and biota so that the environmental values, both ecological and social, are protected.
Relevant aspects	• Dredging for proposal construction and operations; and • Extension of the inner harbour basin.
Potential impacts and risks	• Dredging to allow for the construction and maintenance of the inner harbour may temporarily affect water quality due to increased turbidity and the release of any nutrients and contaminants in dredged sediments. • Exchange of water between the inner harbour and adjacent marine waters may result in changes in turbidity, nutrient and/or contaminants which may adversely affect marine ecology and function
Required work	**Construction:** 54. Conduct a water and sediment quality survey to characterise the existing marine water and sediment quality in the area of the proposal and to identify background levels of toxicants and physio-chemical parameters, with the scope of survey parameters to be informed by an assessment of threats and pressures to marine water and sediment quality. 55. Undertake an analysis of sediment samples and interpret resultant data in accordance with the National Assessment Guidelines for Dredging. Prepare a sampling and analysis plan to the satisfaction of the Office of the EPA prior to its implementation. 56. Provide an Environmental Quality Plan (EQP) that spatially defines the Environmental Values (EVs), Environmental Quality Objectives (EQOs) and Levels of Ecological Protection (LEPs) that are to apply to the area. The EQP is to be developed consistent with EAG 15 *Protecting the Quality of Western Australia's Marine Environment.* 57. Detail the likely dredging or dry excavation and spoil placement methods e.g. type of dredge and/or dry excavation equipment, management of dredge overflow, potential location of spoil ground(s) and or land based disposal areas etc.

	58. Assess whether the Environmental Values (EVs), Environmental Quality Objectives (EQOs) and associated levels of protection proposed for the operations phase would be temporarily compromised for the duration of the construction phase. If so, then predict the extent, severity and duration of temporary potential impacts of construction on the relevant EVs, EQOs and associated levels of protection. This includes an evaluation of potential impacts of turbidity on the environmental values of the Leschenault Inlet to the west of the inner harbour. 59. Detail management measures and contingency plans proposed to protect the EVs, and achieve the EQOs and levels of ecosystem protection during construction and to ensure that the EPA's objective for this factor can be met. 60. Consider cumulative impacts of the proposal in the context of existing and approved developments and other activities in the area, including consideration of the possible loss of marine water quality to other industrial uses of marine water in the area. **Operation:** 61. Complete a hydrodynamic flushing study to spatially predict the long-term water quality within the area identified for Berths 10-13 and 15. This study should consider all likely potential nutrient and contaminant inputs and identify water residence times and identify whether the established EQOs and levels of ecological protection can be achieved. 62. Identify and assess ongoing threats and pressures to marine water and sediment quality from operation of the proposal and the measures taken, or proposed to be taken, to avoid or minimise those threats and pressures. Descriptions of threats and pressures should include, but not be limited to, an estimate of the frequency and quantity of maintenance dredging within the inner harbour and storm water, and groundwater inputs. 63. Predict the consequences of the threats and pressures identified in accordance with point 63 above and couch the outcomes of those predictions in the context of the proposed EVs, EQOs and levels of ecological protection. Examine the likely effectiveness of the design of the proposal and proposed management measures. If, during the assessment, it is determined that there is a high risk of not meeting the ecological and/or social EVs and EQOs, and levels of ecological protection, then evaluate and spatially define the degree of conformity and non-conformity of the proposal. 64. Detail how effect would be given to the proposed EVs, EQOs and associated levels of protection for the operation phase of the proposal, including procedures for environmental monitoring using appropriate water and sediment quality indicators and environmental quality criteria, and a suitable decision framework for interpreting monitoring results. 65. Detail management measures and contingency plans proposed to meet the environmental values, objectives and levels of ecosystem protection during operations to ensure that the EPA's objective for this factor can be met.
Relevant EPA policy and guidance	EPA Environmental Assessment Guideline No. 7 (2011) *Marine Dredging Proposals* EPA Environmental Assessment Guideline No. 15 (2015) *Protecting the Quality of Western Australia's Marine Environment*

	State Environmental (Cockburn Sound) Policy 2015 (as an example of the EPA's implementation of the State Water Quality Management Strategy) EPA Checklist for documents submitted for environmental impact assessment of proposals that have the potential to significantly impact on sea and land factors (2016)
Other policy and guidance	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC and ARMCANZ, 2000) National Assessment Guidelines for Dredging (Australian Government, 2009) State Water Quality Management Strategy Document No.6 (Government of WA, 2004)
Benthic Communities and Habitat	
EPA objective	To maintain the structure, function, diversity, distribution and viability of benthic communities and habitats at local and regional scales.
Relevant aspects	• Dredging for construction and operation; and • Water quality and exchange from the extended harbour basin.
Potential impacts and risks	• Direct removal as part of dredging operations or through sedimentation or inadequate light from turbidity. • Potential impacts during construction from maintenance dredging and reduced water quality from the expanded inner harbour basin.
Required work	66. Using scientifically sound approaches, conduct surveys to identify the key components of different benthic habitats and report the findings of those surveys, noting levels of confidence and any assumptions that underpin the surveys and associated reporting. 67. Benthic surveys should cover the area potentially affected by the proposal, including the predicted zone of influences associated with dredging and spoil placement activities. 68. Seasonality of key biota should be addressed where appropriate. 69. Surveys and data interpretation should provide confidence in habitat boundaries and the communities they represent. 70. Key components of different benthic habitats should be described to a taxonomic resolution that is sufficient to inform the application of relevant guidance (e.g. EAG No.3 and EAG No.7) and to inform the design and implementation of a scientifically robust, relevant and cost-effective environmental monitoring program. 71. Based on the findings of benthic surveys, produce spatially-accurate maps showing the extent and distribution of the different benthic habitats and present these at an appropriate scale. 72. Identify the proposal-related activities that would potentially impact benthic habitats. 73. Detail the measures exercised to avoid and, where avoidance is not possible, minimise impacts of the proposal on benthic habitats. 74. Provide scientifically sound predictions of the likely extent, severity and duration of direct and indirect impacts of the proposal on benthic habitats. Impacts of the proposal on benthic habitats are couched in the context of the guidance set out in EAG No.7 *Marine Dredging Proposals.*

	75. Implement guidance set out in EAG No.3 *Protection of Benthic Primary Producer Habitats in Western Australia's Marine Environment* when losses of, or serious damage to, BPPH are predicted. 76. Detail the proposed environmental monitoring and management arrangements designed to minimise impacts and ensure that the environment will be protected to at least the level indicated by the predictions and to ensure that the EPA's objective for this factor can be met.
Relevant EPA policy and guidance	EPA Environmental Assessment Guideline No. 3 (2009) *Protection of Benthic Primary Producer Habitat in Western Australia's Marine Environment.* EPA Environmental Assessment Guideline No. 7 (2011) *Marine Dredging Proposals* EPA Checklist for documents submitted for environmental impact assessment of proposals that have the potential to significantly impact on sea and land factors (2016)
Marine Fauna	
EPA objective	To maintain the diversity, geographic distribution and viability of fauna at the species and population levels.
Relevant aspects	• Rock fracturing; and • Dredging.
Potential impacts and risks	• Rock fracturing. • Changes to marine environmental quality with consequential impacts to marine fauna movements, feeding or breeding areas. • Introduced marine organisms from vessels
Required work	77. Identify and assess the values and significance of marine and estuarine faunal assemblages within the proposal area and immediately adjacent area and describe these values in a local, regional and State context. *Marine mammals* 78. Describe the presence of marine mammals, particularly bottlenose dolphins, in the proximity of the proposal and any known uses of the area by them (e.g. foraging, calving and nursing). 79. Undertake underwater noise modelling to determine the potential noise exposure levels that may result from rock fracturing on marine fauna. 80. Consult with the Bunbury Dolphin Discovery Centre on mitigating effects of the proposal on the dolphin population in Koombana Bay. 81. Describe management and monitoring protocols to be implemented during rock fracturing that will reduce the risk of marine fauna being exposed to excessive underwater noise. *Fisheries* 82. Describe the major fisheries in the Geographe Bay/Bunbury region and Leschenault estuary that may be affected by the proposal. 83. Describe and assess the potential direct and indirect impacts on recreationally and commercially important marine species, including impacts to migratory patterns, spawning areas and nursery areas. *Introduced Marine Organisms (IMOs)*

	84. Identify and detail the abundance and extent of any invasive marine species already present in the project area. 85. Evaluate the risk of invasive marine species introduction from dredging plants and from ongoing operations. 86. Describe management and monitoring protocols to be implemented during dredging and construction to avoid introduction of IMOs. Describe controls available to manage risk of IMOs from ongoing operations.
Relevant EPA policy and guidance	EPA Environmental Assessment Guideline No. 7 (2011) *Marine Dredging Proposals* EPA Environmental Assessment Guideline No. 15 (2015) *Protecting the Quality of Western Australia's Marine Environment* EPA Checklist for documents submitted for environmental impact assessment of proposals that have the potential to significantly impact on sea and land factors (2016)
Other policy and guidance	National Biofouling Management Guidance for Non-trading Vessels (Commonwealth of Australia, 2009). National Biofouling Management Guidance for Commercial Vessels (Commonwealth of Australia, 2009).
Heritage	
EPA objective	To ensure that historical and cultural associations, and natural heritage, are not adversely affected.
Relevant aspects	Proposal construction
Potential impacts and risks	Loss or impacts to heritage.
Required work	87. Identify and assess the values and significance of Aboriginal and/or European culture and heritage sites within the project area and immediately adjacent area. This should include the Leschenault Homestead and the historic shipwreck located in the foreshore area. 88. Describe and assess the potential direct and indirect impacts that may result from any use or development during construction of the proposal, on any significant Aboriginal and/or European cultural and heritage sites. 89. In the event that significant Aboriginal and/or European cultural and heritage sites are impacted, describe measures to be implemented to avoid and protect such areas and/or manage and offset potential impacts where it is not possible to avoid or protect these sites.
Relevant EPA policy and guidance	EPA Environmental Assessment Guideline No. 17 (2015) *Preparation of management plans under Part IV of the* Environmental Protection Act 1986 EPA Guidance Statement No. 41 (2004) *Assessment of Aboriginal Heritage* EPA Guidance Statement No. 33 (2008) *Environmental Guidance for Planning and Development*
Other policy and guidance	*Department of Aboriginal Affairs (2013) Aboriginal Heritage Due Diligence Guidelines*
Offsets (Integrating Factor)	
EPA objective	To counterbalance any significant residual environmental impacts or uncertainty through the application of offsets.

Relevant aspects	Residual environmental impacts will be determined through the assessment in alignment with the WA Environmental Offsets Guideline.
Potential impacts and risks	Residual environmental impacts will be determined through the assessment in alignment with the WA Environmental Offsets Guideline.
Required work	90. Describe the residual impacts for the proposal and analyse these impacts to identify and detail any that are significant. 91. If the proposal is likely to have any significant residual environmental impacts, identify environmental offsets consistent with the requirements of: a. WA Environmental Offsets Guidelines, which includes the use of the WA Environmental Offsets template; and b. EPA Environmental Protection Bulletin No. 1.
Relevant EPA policy and guidance	EPA Environmental Protection Bulletin No. 1 (2014) *Environmental offsets*. EPA Guidance Statement No. 33 (2008) *Environmental Guidance for Planning and Development*
Other policy and guidance	Government of Western Australia (2011) *WA Environmental Offsets Policy*. Perth, Western Australia. Government of Western Australia (2014) *WA Environmental Offsets Guidelines*. Perth, Western Australia. *WA Environmental Offsets template*

4. Other factors or matters

During assessment of proposals, other factors or matters will be identified as relevant to the proposal, but not of significance to warrant further assessment by the EPA, or impacts can be regulated by other statutory processes to meet the EPA's objectives.

These factors do not require further work as part of the environmental review, or detailed discussion and evaluation in the PER document, although they must be included in the PER document in a summarised, tabular format noting that the PER document will be subject to public review.

At this stage, the EPA has identified the following factors or matters that require addressing in the PER:

- Visual impact; and
- Impacts of water supply options for the port.

However it is important that the proponent be aware that other factors or matters may be identified during the course of the environmental review that were not apparent at the time that this ESD was prepared. If this situation arises, the proponent must consult with the EPA to determine whether these emerging issues are to be addressed in the PER document, and if so, to what extent.

5. Stakeholder consultation

The EPA expects that the proponent will consult with stakeholders who are interested in, or affected by, the proposal. This includes decision-making authorities (DMAs), other relevant State government departments and local government authorities, environmental non-government organisations and the local community.

The proponent must document the stakeholder consultation undertaken and the outcomes, including any adjustments to the proposal and any future plans for consultation. This is to be addressed in a specific section of the PER document and, in addition, key outcomes of consultation are to be reported against the preliminary key environmental factors as relevant.

It is expected that as a part of the consultation with DMA's there will be discussion around each agency's specific regulatory approvals, and a demonstration that other factors are not significant and can be managed by another regulatory body.

6. Agreed assessment timeline

Table 2 sets out the timeline for the assessment of the proposal agreed between the EPA and the proponent. Proponents are expected to meet the agreed timeline, and in doing so, provide adequate, quality information to inform the assessment.

The proponent should refer to EPA's Environmental Assessment Guideline No. 6 *Timelines for environmental assessment of proposals* for information regarding the responsibilities of proponents and the EPA for achieving timely and effective assessment of proposals.

If any stage in the agreed timeline is not met or inadequate information is submitted by the proponent, the timing for the completion of subsequent stages of the process will be revised. Equally, where the EPA is unable to meet an agreed completion date in the timeline, the proponent will be advised and the timeline revised.

Table 2 Assessment Timeline

Key Stages of Assessment	Agreed Completion Date
EPA approval of ESD	January 2012
Proponent carries out the environmental review and submits first adequate draft PER document	9 November 2015
Office of the Environmental Protection Authority (OEPA) provides comment on first adequate draft PER document	26 November 2015
EPA approval of revised ESD	July 2016
Proponent submits revised draft PER document	19 August 2016

Key Stages of Assessment	Agreed Completion Date
OEPA provides comment on adequate revised draft PER document	30 September 2016 (6 weeks)
Proponent submits adequate revised draft PER document	11 November 2016
EPA authorises release of PER document for public review	25 November 2016 (2 weeks)
Proponent releases authorised PER document for public review	28 November 2016
Public review of PER document closes	6 February 2017 (8 weeks) (2 weeks additional time added due to public review period occurring over the Christmas/New Year period)
EPA provides summary of pertinent issues, submissions and OEPA comments on PER	24 February 2017 (3 weeks)
Proponent provides adequate Response to Submissions	7 April 2017
OEPA reviews the Response to Submissions	5 May 2017 (4 weeks)
Proponent provides adequate revised Response to Submissions	26 May 2017
OEPA assesses proposal for consideration by EPA	14 July 2017 (7 weeks)
Preparation and finalisation of EPA assessment report (including two weeks consultation on draft conditions with proponent and key Government agencies)	18 August 2017 (5 weeks)

7. Decision-making authorities

At this stage, the EPA has identified the DMAs listed in Table 3 as DMAs for the proposal. Additional DMAs may be identified during the course of the assessment.

Table 4 Decision-making authorities

Decision Making Authority	Relevant Legislation
Minister for Water	*Rights in Water and Irrigation Act 1914* Water extraction licence and Bed and Banks permit

Minister for Aboriginal Affairs	*Aboriginal Heritage Act 1972* Section 18 approval
Minister for Planning	*Planning and Development Act 2005* Scheme Amendments
Department of Environment Regulation	*Environmental Protection Act 1986* Works approval under Part V

8. Parallel processing

Pursuant to section 40B of the EP Act, the provisions of the EP Act constraining decision-making authorities from making a decision which would cause or allow a proposal being assessed by the EPA to be implemented, do not apply in respect of a strategic proposal unless, and to the extent, that the strategic proposal is itself a significant proposal.

9. PER document

Once this ESD has been accepted and approved by the EPA, the Proponent will carry out the environmental review based on the ESD.

On completion of the environmental review the Proponent will submit an adequate Public Environmental Review (PER) document to the EPA. The Proponent will ensure all identified work and elements in this ESD will be documented and adequately addressed in the PER.

When the EPA is satisfied with the standard of the PER document it will provide written authorisation for the release of the document for public review. The Proponent will refer to the EPA's Environmental Assessment Guideline No. 6 *Timelines for environmental impact assessment of proposals* for information on the standards required in the PER and *Guidelines for Preparing a Public Environmental Review,* as amended from time to time. The Proponent will not release the PER document for public review until this authorisation is provided.

The Proponent is responsible for advertising the release and availability of the PER document in accordance with instructions that will be issued by the EPA. The EPA will be consulted on the timing and details for advertising.

Figure 1 – Development envelope and conceptual future proposal footprints