PlanSA

Assessment Requirements

ENVIRONMENTAL IMPACT STATEMENT

Nuclear Powered Submarine Construction Yard
Le Fevre Peninsula, Osborne and Outer Harbor

Proponent: Australian Naval Infrastructure

August 2024

Image supplied by Australian Naval Infrastructure

Government of South Australia
Department for Housing and Urban Development

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1 Objective of the EIS

To assess the social, economic and environmental impacts for projects declared as impact assessed development (not being restricted development) requires the preparation of an Environmental Impact Statement (EIS).

The EIS process is the highest level of assessment under the *Planning, Development and Infrastructure Act 2016* (PDI Act) and enables the holistic consideration of projects that are considered to be of economic, social or environmental importance to South Australia.

The EIS process provides a comprehensive assessment of a development or project proposal and the expected effects on the receiving environment and within the broader context of its setting, which could relate to a local area, region, state or nation.

2 Description of Development

On 15 February 2024, the Minister for Planning declared that the proposed development of a Nuclear-Powered Submarine Construction Yard (SCY) by proponent Australian Naval Infrastructure at Osborne (subject land identified in **Figure 1**) be assessed as an Impact Assessed development pursuant to section 108(1)(c) of the *Planning, Development and Infrastructure Act 2016* (the PDI Act). The project scoping application provides the following preliminary description of the proposal:

- Development associated with the construction and operation of the SCY.
- Development associated with any change in the use of land and coastal waters.
- Development associated with the construction, installation or provision of specified infrastructure, facilities and services (outlined in the declaration notice).
- Development (including development undertaken on land or coastal waters in the State, inclusive but not limited to the land and coastal waters specified in the gazette) associated with any excavation or filling of land associated with any development.
- Development (including development undertaken on land or coastal waters in the State, inclusive but not limited to the land and coastal waters specified in the gazette) associated with the division of land associated with the development.
- Any related or ancillary development (including development undertaken on land or coastal waters in the State, inclusive but not limited to the land and coastal waters specified in in the gazette).

It is noted that associated works, comprising a direct road connection over the rail corridor, will be the subject of a separate crown sponsored development application, and the dredging of the Port River navigational channel and basin (to support the movement of vessels to and from the new shipyard), will not form part of this assessment process.

Figure 1: Subject Land

3 Background to these Assessment Requirements

This document contains the Assessment Requirements to guide the preparation of an EIS by the project proponent.

Every attempt has been made to ensure these Assessment Requirements address all of the major issues associated with the proposed development, however they are not necessarily exhaustive. The Assessment Requirements should not be interpreted as excluding from consideration matters deemed to be significant but not incorporated in them, or matters that emerge as important or significant from environmental studies or otherwise during the preparation of the EIS.

The EIS must therefore address other matters not covered in these Assessment Requirements in the following circumstances:

- Studies reveal a matter that had not been foreseen when the Assessment Requirements were finalised.
- Stakeholder engagement and consultation with the community identifies an issue of widespread concern to the public, which had not previously been considered contentious. This may include a public perception of significant environmental harm

that may not be borne out by technical studies, which may also be attracting extensive media coverage.

- New or amended legislation or policies come into effect after the Assessment Requirements have been finalised, which may or may not have been referred to in the Assessment Requirements. Transitional arrangements or exemptions may apply, but it is considered best practice and of net benefit to a project to consider emergent legislation or policies even if not specifically required. This serves to 'future-proof' the EIS.
- The proponent makes amendments to the proposed project that would result in a change in the nature, scale, timing or location of any impacts.

4 The Impact Assessment Process

4.1 EIS process

Once a development has been categorised as impact assessed development (not being restricted development), a Scoping Application is prepared by the proponent which includes a preliminary assessment of the key social, environmental and economic issues and impacts associated with the development. The Commission uses the information provided in the Scoping Application to develop Assessment Requirements to inform preparation of the EIS.

The EIS must be prepared by the proponent in accordance with the Assessment Requirements for each environmental attribute in line with the level of detail specified. The level of detail is determined by the Commission based on the Practice Direction, the views of the relevant government agencies and the local council. The proponent is also given an opportunity to provide feedback on the level of detail required.

Assessment Requirements are intended to be outcome-focused and, supported by relevant guidance documents and legislation, are generally accompanied by a method of investigating the highlighted impacts and measures to assess these impacts. The methods provided are not necessarily exhaustive and a wide range of methods may be available to consider and respond to a particular issue.

If additional matters requiring detailed assessment become apparent after the final Assessment Requirements are issued, the EIS must also address these new matters in a comprehensive manner and identify means by which the effects can be managed.

The matters that must be included in an EIS are set out in Section 113 of the PDI Act and in the sections below. These requirements include detail of expected environmental, social, economic and climate effects of the development, consistency with state and regional planning documents, consideration of the provisions of the *Environment Protection Act 1993* and commitments by the proponent to avoid, mitigate or satisfactorily manage and control any potentially adverse effects of the development on the environment.

The EIS process is illustrated in **Figure 2.**

Figure 2: Steps in impact assessed development process

4.2 Consultation Process

After the completed EIS is submitted to the Minister for public release, it is referred to council(s) and relevant government agencies for comment. The public is also provided with an opportunity to comment when released for public exhibition.

Public consultation is a valuable resource to the EIS preparation process and a well-considered engagement strategy can play a pivotal role in the assessment of a project. The PDI Act sets out the principles of the Community Engagement Charter which guide public participation in the planning process and ensure that people and communities have a greater opportunity to engage in the planning process. The Minister will consider the Charter in determining the consultation program for an impact assessed development.

Public exhibition is undertaken for a period of 30 business days.

An advertisement will be placed in The Advertiser and local newspapers inviting submissions. The public consultation process will cater for those with special needs or those not able to access documentation electronically.

[Before releasing the EIS, the Minister must also consider the Community Engagement Charter and the consultation program. The PDI Act does not set any requirements for public notification except to say that the EIS must be placed on public notification however the PD details a minimum of 30 business days. The PD should outline details (aligning with the reading of the Community Engagement Charter) where additional or tailored consultation should be undertaken by the Minister and the proponent.

The Charter should be considered the minimum requirements for public consultation and emphasise the importance of early and open engagement as soon as practicable to avoid or minimise situations as early as possible where Stakeholder engagement and consultation with the community identifies an issue of widespread concern to the public, which had not previously been considered contentious.]

4.3 Responding to submissions

Copies of submissions from the public, council(s) and other relevant agencies are then provided to the proponent who then prepares a Response Document to address matters raised during the public exhibition period.

Following the receipt of the Response Document, the Commission will prepare an Assessment Report. The Assessment Report must set out:

- The Minister's assessment of the development
- Any comments by the Minister relating to:
    - the EIS
    - submissions received through the public consultation process
    - the proponent's responses to submissions received and matters raised by the Minister
- Comments provided by the Environment Protection Authority, another Minister, a council or other authority or body
- Any other comments or matters as the Minister or the Commission thinks fit.

The Assessment Report and the Response Document will be available for inspection and purchase by members of the public at a place and for a period of time determined by the Commission.

Availability of each of these documents (primarily on the PlanSA Portal) will be notified by advertisements in The Advertiser and local newspapers and in writing to persons who made a written submission. A copy of the EIS, Response Document and the Assessment Report will be provided to the relevant council(s). Requirements for public availability and notification of an EIS, Response Document and Assessment Report are laid out in Section 113 (10) - (12) of the PDI Act.

The Minister will make a final decision subject to Section 115 of the PDI Act.

In deciding whether the proposal will be approved and any conditions that will apply, the Minister must have regard to:

- The State Planning Policies
- Regional Plans, including the 30-Year Plan for Greater Adelaide (where relevant)
- Provisions of the Planning Rules and the regulations
- If relevant, the Building Code of Australia
- Where development involves or is for the purposes of a prescribed activity of environmental significance, the Environment Protection Act including the objects, General Environmental Duty and relevant environment protection policies
- Where relevant, the view of the Minister who is responsible for the administration of an area of the State subject to a special legislative scheme
- The EIS, Response Document and the Commission's Assessment Report
- Where relevant, any other government policy and/or legislation.

Pursuant to Section 115(2)(a) of the PDI Act the Minister can at any time indicate that the development will not be granted a development authorisation. This may occur if the development is inappropriate or cannot be demonstrated to be properly managed. This is commonly referred to as an "early no."

4.4 Development of the Assessment Requirements

Assessment Requirements set out the environmental attributes relevant to the development which are to be assessed (e.g. soil, water, heritage, threatened species etc). The key environmental, social and economic impacts to these environmental attributes are to be addressed in the EIS. The level of assessment required is determined by the Commission based on consideration of key factors to determine whether a standard level of assessment will be sufficient or whether more detailed assessment is required.

4.4.1 Key factors to consider in determining level of assessment detail

The PDI Act defines an EIS as "a document that includes a detailed description and analysis of a wide range of issues relevant to the proposed development or project, incorporating significant information to assist in an assessment of environmental, social or economic effects associated with the development or project and the means by which those effects can be managed".

In setting the Assessment Requirements, the Commission considers the scale, nature and sensitivity of the receiving environment associated with the proposal and refers to relevant legislation, policy, guidance documents, government agencies and subject matter experts to determine whether a standard or a detailed level of assessment is appropriate.

The Commission is required to classify the issues relevant to the proper assessment of the development or project according to categories of importance so as to indicate the levels of attention that should be given to those issues in the preparation of an EIS.

The following key factors have been considered in identifying the issues requiring assessment in the EIS and whether the Assessment Requirements are 'detailed' or 'standard':

- Scale of the impact taking into account intensity, geographical extent and duration
- Nature of the impact which should consider direct, indirect, cumulative and perceived impacts
- Sensitivity of the receiving environment
- Ability to avoid, minimise and/or offset the impacts of the project, to the extent known at the application stage
- Complexity of technical assessments and investigations required to identify and assess mitigation measures.

Description and examples of the key factors is provided in **Table 1**.

Table 1: Description and examples of key factors to consider during scoping.

Key factor	Components of factor	Description of example
Scale of the Impact	**Severity**	The scale or degree of the impact relative to the current situation or adopted standards or performance measures. The intensity may be measured quantitatively and compared to reference values (e.g. area of vegetation cleared, air and water quality, noise levels, change or disruption to ecological community function) or qualitatively.
	Geographical extent	The geographical reach of the impacts of the development or the range within which the impacts are observable
	Duration	The timeframe over which the impact occurs (e.g. for a short period, during construction only; during operations permanently). It may also refer to the period/s in which the impacts are observable and the regularity of the impacts (e.g. irregular, intermittent, regularly during operations.)
Nature of the Impact	**Direct impacts**	Impacts caused directly by the development. They usually occur at the same time as the development and within the vicinity of the site (e.g. vegetation clearing, air emissions).
	Indirect impacts	Impacts that occur as a consequence of the development or its direct impacts. Impacts may be delayed and happen further away from the site (e.g. project changes water table, changes affect wetland and causes an impact on groundwater dependent ecosystems). Impacts may also occur due to growth or land use changes facilitated by the project (e.g. a new transmission line may open up new areas for renewable energy generation).
	Cumulative impacts	The combined impacts of the project on a matter combined with other relevant existing and future projects (e.g. marine impacts from multiple port developments).
	Perceived impacts	There are a range of perceptions of the same impacts by people or groups

Sensitivity of the Receiving Environment	**Existing regulations and guidance**	The degree of sensitivity expressed in legislation or relative to adopted standards and performance measures (e.g. Guidelines for the use of the *Environment Protection (Commercial and Industrial) Policy 2023*)
	Value to society	Environmental value: e.g. water quality, natural habitat). Social value: e.g. community value, landscape, recreation, lifestyle disturbance, water quality, cultural heritage, amenity. Economic value: e.g. water supply, critical transport routes
	Vulnerability / resilience to change	The degree of vulnerability of the environment to the impacts of the project or resilience to cope with change. Regard should be had to the likely scale and nature of the impacts of the development and the sensitivity and adaptive capacity of the environment including adaptive capacity in a changing climate.

4.4.2 Assessment Level Characteristics

The characteristics of 'detailed' and 'standard' levels of assessment are provided in **Table 2**. A detailed level of assessment is required if the impact of the development has one or more the characteristics set out in **Table 3**.

Table 2: Characteristics of detailed and standard assessment

Level of Assessment	Characteristic of the impact of the development
Standard	The project is unlikely to result in significant impacts on the environmental attribute if managed through conventional management and mitigation measures, including cumulative impacts. While the assessment of the impacts of the development on the environmental attribute will involve technical specialists, these impacts are likely to be: ○ well understood by regulators and stakeholders ○ relatively easy to predict using standard methods ○ capable of being mitigated to comply with relevant standards or performance measures. The assessments will be supported by quantitative assessment methods, although the focus and coverage may be on specific project components or project locations The assessment is unlikely to involve any significant uncertainties, or require any detailed cumulative impact assessment.
Detailed	The development has a high / medium probability of causing significant environmental impact on the environmental attribute, including cumulative impacts. There is a high / medium probability of impacts on the development from external environmental factors such as those associated with climate change (sea-level rise, increased frequency of bushfire, floods etc) It is considered important by the Commission, and/or there is a public perception that an activity has the potential to cause significant impacts on the environmental attribute (even though this may be mistaken), or the activity has been the subject of extensive media coverage. Potential impacts to a Matter of National Environmental Significance (MNES) are likely to require referral and approval under the *Environment Protection Biodiversity and Conservation Act 1999*). The development raises requirements under other legislation applicable for the development (e.g.

	prescribed activities of environmental significance under the *Environment Protection Act 1993*). Assessment of the impacts of the development on the environmental attribute will require detailed studies and investigations to be carried out by technical specialists. During this assessment, these specialists may need to: o work closely with specialists assessing the impacts of the project on other environmental attributes to determine the likely indirect impacts of the project o undertake a detailed cumulative impact assessment for the project. Assessment is likely to involve several uncertainties in relation to one or more of the following and specific strategies may be required to address these uncertainties (e.g. further monitoring, review, technical investigations and adaptive management). o data collection (e.g. baseline information, availability of data for cumulative impacts assessment) identifying the specific mitigation measures or suitable offsets for the project the methods available for predicting the impacts of the project, including the indirect and cumulative impacts criteria for evaluating the acceptability of the impacts of the project specific strategies may be required to address these uncertainties (e.g. further monitoring, review, technical investigations and adaptive management).

Table 3: Assessment categories and environmental attributes

Assessment category	Environmental attribute and typical issues
Amenity and Environmental Quality	**Air quality** o Ground level concentrations (include construction / traffic), dust, odour, pollution sources and emissions (including stack/point sources and fugitive), receptors (location and sensitivity) **Noise / Vibration** o Noise / vibration type (include traffic noise), underwater noise, location of noise sources, identification of sensitive receptors prediction of worst-case noise impacts. Sensitive receptors may include terrestrial and marine fauna. **Transport and Traffic** o Traffic disruptions- commuter and local, public transport, pedestrians / cyclists, changes to traffic flow and volumes - temporary / ongoing, road / maritime safety, car parking, presence of heavy vehicles, impacts to road pavement, marine traffic / shipping **Visual amenity** o Interface with adjoining land, landscape changes, built form, light spill **Radiation** o Concentrations of radionuclides in the environment under all foreseeable scenarios (including credible accident scenarios) and low probability scenarios.
Biological Environment	**Biosecurity** o Weeds, pest species (including marine pests), diseases and pathogens. **Matters of National Environmental Significance** o Nationally threatened species and communities, migratory species, wetlands of national importance (Ramsar), Commonwealth marine areas **Marine Flora and Fauna** o Marine protected areas, threatened species, communities/ ecosystems, seagrass clearance, biodiversity loss **Terrestrial and Aquatic Flora and Fauna** o Protected areas, threatened species and communities, native vegetation clearance, habitat loss through clearing fire or fragmentation, biodiversity loss

Climate Change and Resource Use Efficiency	**Climate Change Adaptation** o Climate change risk assessment **Greenhouse gas emissions** o Greenhouse gas emissions including emissions reduction targets, NGER reporting, cumulative impacts on state and national GHG inventories and targets. **Sustainable use of resources** o Sustainable procurement, products / materials, energy efficiency **Waste Management** o Waste hierarchy; waste recycling / disposal
Economic Environment	**Local, regional and state economies** o Economic impact assessment which addresses workforce / employment, existing economic land and marine uses (primary production, tourism, ports, fisheries), infrastructure - utilities (energy, water), telecommunications, ports, rail), displacement, competition, opportunities, temporary and ongoing for existing businesses / industries, property and land values
Hazards and Risks	**Bushfire, Floods, Site Contamination, Radiation** Hazard risk management, bushfire, flooding, contamination (including radiological) and dangerous goods
Land Tenure, Protected Areas and Land Use	**Land Tenure, Protected Areas and Land Use** Land tenure (freehold, pastoral lease, mining, oil and gas, native title, crown land), generalised land use, population centres, major infrastructure and utilities (including marine infrastructure), P&D Overlays and Zones, reserved areas (including marine parks), changes / displacement of land uses
Physical Environment	**Coastal and Marine** o Coastal land systems (dunes, estuaries, beaches, island), and marine water quality **Soils, Landform and Geology** o Erosion and sedimentation, soil compaction and inversion, contamination (spills), land subsidence and acid sulfate soils. **Surface Water and Groundwater** o Surface water quality (sedimentation, wastewater, spills, use of surface water, stormwater management) and groundwater use and quality (including radiological properties).
Design	**Urban Quality** Supporting design excellence to create desirable and socially inclusive places.
Social and Community	**Aboriginal cultural heritage** o Known and unknown Aboriginal sites, objects and remains **Community wellbeing** o Social impact assessment which addresses impacts to specific groups, impacts to services, impacts / displacement of residential areas, public safety (including perceptions), recreation and public space amenity **Heritage Places and Areas** o Listed national, state and local heritage sites

4.4.1 Environmental Attributes to be considered in the EIS

Issues relevant to the proposal are addressed by each Assessment category within which a range of environmental attributes are identified. Specific Assessment Requirements are then determined for each environmental attribute relevant to the proposal with the level of detail tailored for that element or issue.

5 Content Requirements for the EIS

Section 113 of the PDI Acts sets out the legislative requirements for the content of an EIS.

5.1 Statutory Requirements

The EIS must Include the following (subject to any Practice Direction):

1. A statement of the expected, predicted or potential environmental, social and economic effects of the development, whether positive, neutral or negative. The assessment of effects should include all issues identified in the Assessment Requirements and be cross referenced to supporting technical studies.
2. A statement of the expected impact of the development on the climate and any proposed measures designed to mitigate or address those effects
3. A statement of the extent to which the expected, predicted or potential effects of the development are consistent or at variance with the provisions of—
    a. Any relevant State Planning Policy
    b. Any relevant Regional Plan(s), including the 30-Year Plan for Greater Adelaide (if applicable)
    c. The Planning and Design Code
    d. Any matters prescribed by the Regulations.
4. If the development involves, or is for the purposes of, a prescribed activity of environmental significance as defined by the *Environment Protection Act 1993*, a statement of the extent to which the expected, predicted or potential effects of the development are consistent or at variance with—
    a. The objects of the *Environment Protection Act 1993*
    b. The general environmental duty under that Act
    c. Relevant environment protection policies under that Act.
5. If the development will, or is likely to, significantly impact one or more MNES under the EPBC Act, a statement of:
    a. The expected, predicted or potential effects of the development on each identified MNES
    b. The extent to which the expected, predicted or potential effects of the development are consistent or at variance with the provisions of any relevant Commonwealth of Australia conventions, agreements or obligations under international agreements or treaties as they relate to MNES aspects
    c. The extent to which the expected, predicted or potential effects of the development are consistent or at variance with any relevant Commonwealth plans (such as threat abatement plant and recovery plans), conservation or management principles.
6. If the development is to be undertaken within an area of the State that is specifically subject to a special legislative scheme—a statement of the extent to which the expected, predicted or potential effects of the development are consistent or at variance with the State Planning Policy that specifically relates to that special legislative scheme.

7. A statement of the proponent's commitments to avoid, mitigate and satisfactorily manage and/or control any potential or likely adverse impacts of the development on the environment (including any proposed offsets to reduce residual significant impacts) or any matter that may be directly relevant to a special legislative scheme.
8. Any other particulars in relation to the development required by the Regulations, relevant Practice Direction or by the Minister.

The proponent's commitment to meet conditions proposed to avoid, mitigate and satisfactorily manage and/or control any potential or likely adverse impacts of the development on the physical, social or economic environment, must be clearly articulated in the EIS.

The design and construction of the proposed development should be flexible enough to incorporate changes to minimise any impacts highlighted by this evaluation.

5.2 Summary of the EIS

The EIS should include a summary of the matters set out in the Practice Direction prepared pursuant to Section 109 of the PDI Act and include mention of all environmental attributes set out in the Assessment Requirements. The reader should be able to obtain a quick but thorough understanding of the proposal and associated environmental impacts. The summary should convey the most important aspects and environmental management commitments relating to the proposed project in accessible, easily understood language.

The summary should aim to construct a narrative around what is being proposed in the EIS, alternatives that were considered, what the broad environmental implications are of the proposal and how they will be managed to provide a net benefit. The summary should be logical and easy to read and need not reflect the precise order of chapters within the EIS itself. Images and graphics are suggested as a means of assisting to succinctly communicate the contents of the summary.

Content should be summarised accurately and objectively. It should report all of the EIS's key conclusions and be consistent with the rest of the EIS. Specific issues and impacts should be addressed at an appropriate level of detail proportionate to their potential for significant impact and depth of study undertaken.

5.3 Introduction to the EIS

The introduction to the EIS should set the context for detailed assessment of the project in subsequent sections of the EIS, and include:

- Background to, and objectives of, the proposed project
- Proponent details, including;
    - Contact information for the proponent or representatives of a proponent organisation for the project, including full name, street and postal address, Australian Business Number, telephone, fax, email and other details as appropriate
    - Identify the legal entities that would develop, manage and operate the project
    - Provide a description of corporate structure including joint ventures, corporate policies and objectives relating to the project, in particular environmental policies
    - Specify mechanisms used to ensure that corporate policies will be implemented and adhered to for the project in addition to requirements for Environmental Management Plans

    - Identify key personnel, contractors, and/or subcontractors responsible for preparing the EIS
- Staging and timing of the proposal, including expected dates for construction and operation
- Relevant legislative requirements and approval processes
- Purpose and description of the EIS process

5.4 Need for the Proposal

The EIS should provide a statement of the objectives and justification for the proposal including:

- the specific objectives that the proposal is intended to meet, including market requirements or government requirements
- expected local, regional and State benefits and costs, including those that cannot be adequately described in monetary or physical terms (e.g. effects on aesthetic amenity)
- a summary of environmental, economic and social arguments to support the proposal including the consequences of not proceeding with the proposal.

5.5 Description of the Proposal

The EIS should provide a comprehensive and consolidated description of the proposal for which the proponent is seeking approval, using suitable maps, plans, figures and tables.

The proposal description sets out what the proponent is presenting for assessment and provides the basis for the Commission's evaluation against the Assessment Requirements. As the proposal may have undergone changes since the initial scoping stage (e.g. in response to stakeholder engagement, risk analysis or planning, technical or compliance grounds), it is important that the EIS provides an up to date and comprehensive description of the proposal.

The description of the proposal should address all aspects of the proposed project that are assessed by the EIS, and address the following information:

- Nature of the proposal and location (including development staging)
- Scale and intensity of the project
- Key elements of the receiving environment
- A project plan to outline objectives, constraints, key activity schedule and quality assurance
- Site layout plans (including indicative land division plan if relevant)
- Construction and commissioning timeframes (including staging)
- Description of working hours
- Description of the existing environment (including the immediate and broader location, identifying sensitive receptors and adjacent land uses which may lead to cumulative impacts)
- Description of the current commercial activities occurring in the area
- Details of all buildings and structures associated with the proposal

- Details of any other infrastructure requirements and availability
- Details on the operation of the proposal, including operating hours
- Relevant Zones and Overlays defined by the Planning and Design Code
- Management arrangements for the construction and operational phases (including Environmental Management and Monitoring Plans)
- A contingency plan for delays in construction.

5.6 Project Alternatives

Feasible alternatives considered for the proposed project should be presented in the EIS described and evaluated the comparative environmental, social, and economic impacts (including the option of not proceeding).

Each alternative and its potential impacts should be discussed in sufficient detail to enable an understanding of the reasons for preferring certain options and courses of action while rejecting others. This may be used to inform a justification of why the proposed project and preferred options should proceed.

5.7 Summary of Preceding Actions

The EIS should provide a summary of actions and activities that have been undertaken prior to or as part of the preparation of the EIS. These could include prior engagement with the Commission, government agencies, local councils and other stakeholders, engagement with the local community, the process of project development, pre-feasibility studies and any technical reports which may have bearing on the level of detail required by a relevant Assessment Requirement.

5.8 Matters of National Environmental Significance

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) ensures that 'nationally significant' animals, plants, habitats and places are identified and any potential significant impacts on them are carefully considered before changes in land use or new developments are approved.

There are nine MNES under the EPBC Act:

- Listed threatened species and communities
- Listed migratory species
- Ramsar wetlands of international importance
- Commonwealth marine environment
- World heritage properties
- National heritage places
- The Great Barrier Marine Park
- Nuclear actions
- A water resource, in relation to coal seam gas development and large coal mining development.

In respect to MNES matters, the Department of Climate Change, Energy, the Environment and Water (DCCEEW) has already made two decisions in relation to the project, firstly a determination in regard to the construction of a grade separated road, and secondly, a further determination in relation to a strategic assessment process.

5.8.1 Osborne North Car Park and Grade Separated Road

Pre-development works involving the construction of a staff carpark, road overpass and pedestrian link across the existing Outer Harbor freight line were determined not to be a controlled action under the EPBC Act on 7 December 2023.

For context in terms of the State assessment process the Osborne Noth Carpark is already exempt from requiring approval by existing Regulation.

The grade separate road comprises *essential infrastructure* works (having been sponsored for that purpose under s.131 of the PDI Act by the Department for Infrastructure and Transport) and will be considered under a separate crown development application and does not form part of the impact assessed process.

5.8.2 Strategic Assessment

On 24 November 2023, the Minister for the Environment and Water and the Australian Submarine Agency entered into an agreement to undertake a strategic assessment of the Osborne Submarine Construction Yard. The strategic assessment agreement is a mandatory requirement under the EPBC Act, and formally establishes the obligations of both parties.

The Terms of Reference (TOR) for the strategic assessment will detail how the Australian Submarine Agency will assess the impacts of the proposed development activities. The TOR seeks to assess the potential impacts of implementing a Strategic Assessment Plan (SAP) on EPBC Protected Matters, from initial investigations through to project implementation.

A copy of the draft TOR is available here:
https://www.asa.gov.au/sites/default/files/2023-12/Draft%20Terms%20of%20Reference.pdf

Once finalised, the Australian Submarine Agency will develop the SAP and a Strategic Impact Assessment Report (SIAR). These documents must:

- describe the proposed activities in developing the Osborne Submarine Construction Yard
- set out environmental commitments and outcomes to manage impacts on protected matters.
- assess the impacts of implementing the Plan on protected matters.
- assess the effectiveness of the proposed environmental management measures.

The general public will then be invited to comment on the draft SIAR.

A final recommendations report (including any public comments) will then be considered by the Minister for the Environment and Water before deciding whether to endorse the Plan.

Whilst the Strategic Assessment undertaken by the Commonwealth does not form part of any bilateral process with the state's impact assessment, where opportunities exist to streamline documentation requirements and/or a joint notification processes, these will be considered.

5.9 Commonwealth-State Approvals

The NPSCY Project will be subject to a range of additional approvals, such as those requirements under the EPBC Act (outlined above). Overall, there are currently three main legislated instruments that will have a role in the assessment of the project, being –

- Development approval under the *Planning, Development and Infrastructure Act 2016* (PDI Act) which is being progressed through an Impact Assessed Development Application (and the subject of these Assessment Requirements).
- Commonwealth approvals under the *Environment, Protection and Biodiversity Conservation Act 1999 (EPBC Act)* (outlined in section 5.8 above).

- Nuclear Licensing under the *Australian Radiation Protection and Nuclear Safety Act 1998* (ARPANS Act). This requires significant and detailed assessments against a range of internationally recognised standards.

Whilst these processes are separately undertaken, there will be some areas of 'overlap' at both a jurisdictional and determinative level as shown in **Figure 3**.

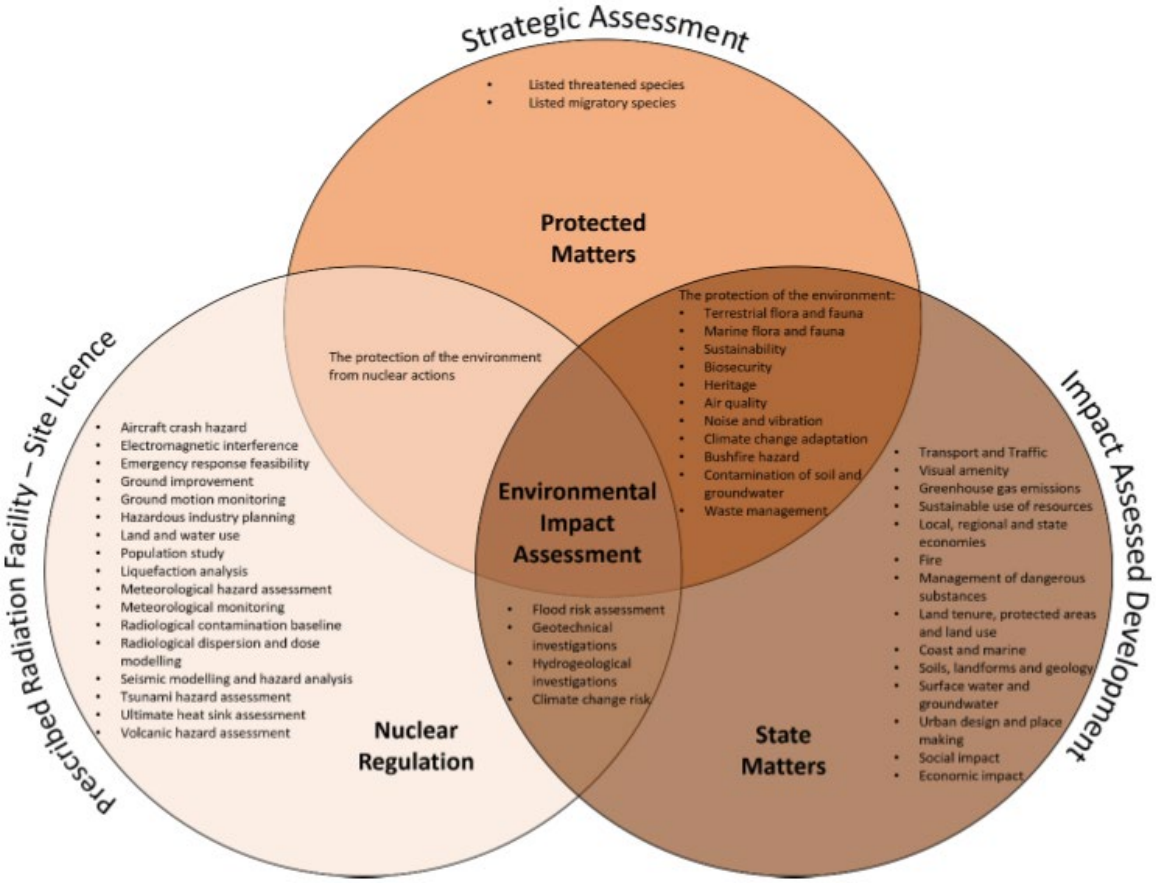

Figure 3 – Jurisdictional Assessment (Source: ANI)

It is understood that public interest in the development may arise in respect to the transport, receipt, storage, installation and testing of the nuclear-powered propulsion modules.

In addition to the *EPBC Act* process, the state-based planning assessment will focus on the planning aspects of the proposal, such as potential impacts to more sensitive receiving environments, whilst the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) will specifically consider the suitability of the site for a nuclear facility, including ongoing operational and safety requirements.

In Australia, ARPANSA is the current regulator for nuclear licensing, whereupon any new proposal will be considered against the International Atomic Energy Agency (IAEA) Fundamental Safety Principle, to ensure that nuclear installations are developed and operated in a way to protect people and the environment from harmful effects of ionising radiation.

The Assessment Requirements (specifically HR5) have been developed in consultation with the Environment Protection Authority, and then further reviewed by ARPANSA, noting that in

the event of any future decision to approve the development, there will remain on-going licensing requirements from both the EPA, ARPANSA and other authorities.

In summary investigations and documentation prepared by the proponent during the EIS process will be used – where necessary and appropriate – to support those related processes under both state and Commonwealth levels, providing a multi-tiered and robust level of assessment on the suitability of the Osborne site for the NPSCY project.

Where ARPANSA retains clear authority under the ARPANS Act, the state-based assessment process would not seek to duplicate their work.

It is also noted that the Commonwealth has acknowledged and flagged the need for a new fit for purpose regulatory framework to deal specifically with activities relating to nuclear-powered submarines, supporting facilities and the handling of naval nuclear propulsion material. This proposed new framework is currently outlined within the Australian Naval Nuclear Power Safety Bill 2023 and the Australian Naval Nuclear Power Safety (Transitional Provisions) Bill 2023, including the establishment of a new Australian Naval Nuclear Power Safety Regulator. The EIS prepared by the proponent will be required to respond as required to any progress on the implementation of this new regulatory framework, as flagged in Clause 3 – Background to these Assessment Requirements.

5.10 Sources of Information

All sources of information (e.g. reference documents, literature services, research projects, authorities consulted) should be fully referenced, and reference should be made to any uncertainties in knowledge. Where judgements are made, or opinions given, these need to be clearly identified as such, and the basis on which these judgements or opinions are made need to be justified. The expertise of those making the judgements including the qualifications of consultants and authorities should also be provided.

Any technical and additional information relevant to the EIS that is not included in the text should be included in appendices.

5.11 Consultation process

The EIS must include an appropriate public consultation program, outlined within a Community Engagement Plan. The Community Engagement Plan must detail:

- All legislated notification requirements to be undertaken by the Minister pursuant to the PDI Act and Practice Direction.
- The Proponent's overall engagement and collaboration strategy including scope and guiding principles.
- Engagement undertaken to date on the proposed project.
- Engagement activities proposed throughout the EIS process including performance outcomes, level of public participation, techniques, indicative timeframes, responsibilities and measures for measuring performance.
- A list of affected stakeholders, interest groups and other relevant parties.

The extent to which a proponent consults with relevant persons and organisations is to be proportional to the public interest and significance of the proposed project's potential environmental, social and economic impacts. Early and sustained consultation with all relevant stakeholders is recommended.

Prior to the public release of the EIS, the Community Engagement Plan will be reviewed by the Minister with regard to the principles of the State Planning Commission's Community

Engagement Charter. The Minister may require alterations to the Community Engagement Plan to ensure consistency with the Charter and an appropriate level of public participation in the EIS process.

5.12 Required Plans and Forms

- Current Certificate(s) of Title
- Context and locality plans should illustrate and analyse the existing environment and site conditions and the relationship of the proposal to surrounding land and buildings. Plans should be drawn to a large scale to allow presentation on a single sheet and be readily legible, according to standard mapping conventions. Plans should include:
    - Any neighbouring buildings, infrastructure or facilities, including identification of all nearby sensitive receptors and the likely use of existing or proposed neighbouring buildings (e.g. dwelling, farm outbuildings, shop, office)
    - Locations of any watercourses, surface water bodies (including dams), underground water sources, and any other sensitive environmental receptors/areas in the locality
    - Locations of any State heritage places in relation to the site
    - Existing native vegetation, regulated or significant trees
    - Known sites for State or Nationally listed protected or threatened species (including migratory species) or ecological communities on the site, adjoining land and marine environments
    - Existing roads (public and private)
    - Potential areas of habitat for native fauna, including relevant vegetation communities
    - Any other information that would help to set the context for the locality
- Site plans (drawn at a scale of 1:100 or 1:200) clearly indicating all proposed buildings, structures and works
- Elevations (drawn at a scale of 1:100 or 1:200) showing all sides of buildings, structures and works with levels and height dimensions provided in Australian Height Datum.
- Cross sections of the buildings, structures and works, including stockpile and storage facilities showing ground levels, floor levels, ceiling heights and maximum heights in Australian Height Datum
- Floor plans (drawn at a scale of 1:100 or 1:200) for each building or structure demonstrating what is proposed at each floor, with indicative internal layouts.
- Site survey plan demonstrating the development will be contained within relevant allotment boundaries.
- A schedule of construction materials, finishes and colours.
- Location and dimensions of any external advertising displays, including information as to whether signs are to be illuminated or contain a moving display.

5.13 Key Issues and Project Specific Assessment Requirements

The Commission has undertaken a preliminary review of the proposed development, based on the proponent's project scoping application, and identified the following as key issues associated with the development:

- *Direct and indirect impacts from the receival, storage, installation, testing and commissioning of nuclear-powered submarine propulsion componentry and related systems, including procedures, and measures to ensure the health and safety of the shipyard workforce, other businesses, local residents and the environment more generally.*

- *Direct, indirect and cumulative impacts on flora and fauna species and communities, including their marine and terrestrial habitats, such as Failie Reserve, Mutton Cove, Kardi Yarta, Biodiversity Park, Lady Ruthven Reserve, Outer Harbor Railway Station Reserve. Adelaide Dolphin Sanctuary, Adelaide International Bird Sanctuary National Park – Winaityinaityi Pangkara, and Torrens Island Conservation Park, from the construction and operation of the development.*

- *Direct, indirect and cumulative impacts from the construction and shipyard manufacturing processes, such as noise, vibration and airborne emissions to the shipyard workforce, other businesses, local community, adjacent State Heritage Places and environment more generally.*

- *Direct, indirect and cumulative impacts arising from the management of stormwater, and to prevent the direct release of nutrients, sediment/soil or other contaminants from the project area to the Failie Reserve, Mutton Cove, the Port River or council/state agency or associated infrastructure, with demonstrable improvements required from its capture, treatment, storage and/or re-use, including for environmental purposes.*

- *Ensuring development within the Coastal Areas overlay of the Planning and Design Code meets current sea level rise and inundation requirements for both future building levels and protection measures for the expected life of the development.*

- *Direct, indirect and cumulative impacts on existing social, community and physical infrastructure that services the Le Fevre Peninsula, including local communities and businesses, and outline plans, strategies and measures to augment or improve such infrastructure or facilities to ensure existing service levels and/or capacity is not unduly impacted or diminished by the development, including public access to open space.*

- *Direct, indirect and cumulative impacts on local and regional transport networks and services, including local and State roads, freight rail (including access to the Port of Adelaide, Adelaide Container Terminal and Outer Harbor Grain Terminal), and active and public transport, and strategies and measures to ensure existing service levels and/or capacity is not unduly impacted or diminished by the development.*

A scoping analysis of the environmental attributes associated with these key issues has been undertaken in accordance with the methodology detailed in Section 4.4.1.

An internal scoping exercise was used to inform the level of assessment for each relevant environmental attribute (standard or detailed) and guided the preparation of the project specific Assessment Requirements presented in Section 6.

The Project Specific Assessment Requirements are reflective of the Assessment Requirements Library available online at PlanSA. The Library is a planning practitioner's resource that provides draft standard and detailed Assessment Requirements, from which the initial project specific requirements are based. The Library also provides descriptions of each attribute and reference material to assist proponents in preparing an EIS.

The ‘Detailed’ Project Specific Assessment Requirements reflect the key issues identified above and should be given the greatest level of attention and detail in the EIS.

5.14 Management Plans

In order to manage residual impacts from large and complex developments (where such impacts cannot be completely avoided or mitigated in its design or siting) the preparation of specific management plans are often required. However, because such plans rely on specific, final and/or proprietary information, this may be unavailable at the time of assessment.

To avoid the unnecessary expenditure of time and resources, such requirements are more appropriately addressed through reserved matters or conditions pursuant to section 115(6) and 115(7) of the PDI Act, and not provided as part of the EIS process. Whilst a peer reviewed methodological approach or framework can be developed as part of the EIS documentation, the preparation of more detailed management plans is generally not required at this stage in the assessment process (unless such information was critical to a project’s consideration).

Such management plans would typically include: a Construction Environmental Management Plan (CEMP), Traffic Management Plan (TMP), Coastal and Marine Management Plan, Hazard and Emergency Management Plan, Flora and Fauna Management Plan(s), Cultural Heritage Management Plan (CHMP), Operational Environmental Management Plan (OEMP), and a Decommissioning and Rehabilitation Plan (DRP),

If approved, these plans would be developed in conjunction with relevant state agencies and the local Council and require final sign-off from the Minister for Planning (and form part of the overall approved documentation for the development and be subject to further review and monitoring under the PDI Act). Separate state agency licensing and permitting processes may also require their preparation and on-going implementation.

6 Summary of Project Specific Assessment Requirements

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
Overview				
AA1	N/A	To ensure the selection of the site and concept design considered mitigation of impacts and risks to the surrounding environment.	• Describe location and design options considered, reasons for selection and how the proposed location and /or design avoids and / or mitigates potential impacts and risks to the surrounding environment. Outline and justify any trade-offs in the design or operation of the development.	**STANDARD**
Amenity and Environmental Quality (AEQ)				
AEQ1	Air Quality	To ensure the development does not have unacceptable adverse air quality impacts on the surrounding receiving environment, in particular sensitive receivers in proximity to polluting development.	• Provide an air quality impact assessment prepared by an appropriately qualified specialist for all potential sources of dust / particles and gaseous pollutants associated with the construction and ongoing operation of the proposed development, to identify any known or potential human health and amenity effects of air emissions (including point source and diffuse sources) on the residential population and local businesses and describe how these would be mitigated, minimised, managed and monitored. Investigations should consider historical investigations and studies, including the EPA/City of Port Adelaide Enfield Victoria Road Air Quality Study. • The impact assessment must include modelling undertaken in accordance with the *Environment Protection (Air Quality) Policy 2016* and the EPA's Ambient Air Quality Assessment 2016 guidance document. Techniques used to obtain the predictions should be referenced and key assumptions and data sets explained. • Impact assessment must outline the impacts of dust / particles and gaseous pollutants on existing commercial and industrial operations and any other identified nearby sensitive receivers in the vicinity of the proposed development. The impact assessment should demonstrate how the requirements of the *Environment Protection (Air Quality) Policy 2016* (including ground level concentrations) and the 'General Environmental Duty' (as described in section 25 of the Environment Protection Act 1993) will be met, taking into account cumulative impacts and existing background levels of pollutants.	**DETAILED**
AEQ2	Noise / Vibration	To ensure the development does not have unacceptable adverse noise or vibration impacts on the surrounding environment, in particular sensitive receivers in proximity to noise sources.	• Provide an impact assessment of noise / vibration from or on the proposed development, prepared in accordance with the *Guidelines for the use of the Environment Protection (Commercial and Industrial Noise) Policy 2023* by a suitably experienced, professional acoustic engineering consultant. Indicative Noise Levels to be confirmed based on consideration of different zones and subzones. • The assessment should describe changes to noise and vibration levels as a result of the development (during both the construction and operational phases). Sufficient data should be gathered to provide baseline information for comparison	**DETAILED**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			with any future monitoring undertaken during the construction and operational phases. This should include monitoring within the marine environment. • The noise assessment should include noise contours from a suitable acoustic model for all significant noise generating activities operating under worst case acoustic and meteorological (and/or oceanographic for marine underwater noise) conditions for the transmission of noise from source to marine animals, including the Adelaide Dolphin Sanctuary which is both adjacent to and within the development site, and sensitive receivers, including those residents located on the Le Fevre Peninsula and St Kilda township (including transmission of noise sources across water). • Provide a vibration assessment prepared by a suitably experienced, professional acoustic engineering consultant, assessing the worst case predicted vibration from the development. The report must describe what reasonable and practicable measures will be taken to minimise vibration impacts on sensitive receivers, including marine mammals where relevant, and adjacent State Heritage Places (including Torrens Island Quarantine Station Complex (State Heritage Place (SHP) 26583 & 13931) and the Former Outer Harbour Pilot Station (SHP 11904)), and the likely effectiveness of these measures, with a view to demonstrating how the 'General Environmental Duty' (as described in section 25 of the *Environment Protection Act 1993*) will be met. • Underwater noise modelling must be undertaken by a suitably experienced specialist. Modelling must include modelling of bed substrates (acoustically reflective or acoustically absorptive) to understand the propagation beyond the proximity of the noise source (whether this be from construction or operational activities). The assessment must identify the distance to which there would be a biological impact to aquatic species. • Describe how environmental management objectives for noise and vibrations would be achieved, monitored, audited and reported, and how corrective actions would be managed. • Propose environmental management strategies that will avoid long-term impacts, including behavioural changes, of underwater noise on marine fauna and describe how objectives would be monitored and audited, and how corrective actions would be managed.	
AEQ3	Transport and Traffic	To ensure impacts to the safety and efficiency of transport modes and the broader transport and traffic system and infrastructure are avoided or mitigated.	• The scope of a transport and traffic impact assessment requiring detailed assessment will build on the Standard Assessment Requirements and be driven by the scale, nature and location of the development and the anticipated transport and traffic impacts (including reference to and consideration of the Osborne North Car Park and Grade Separated Road project, facility operational requirements (e.g. security measures such as checkpoints)). It is expected that the content of the assessment would be determined in consultation with state and local	**DETAILED**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			government and other transport infrastructure owners and operators (including Flinders Ports, Viterra and ARTC). • The detailed transport and traffic impact assessment report must be prepared by a suitably qualified planner/engineer and will address end-to-end supply chain (input and output) potential impacts to road (local and state maintained), freight and passenger rail (including ongoing access to the Port of Adelaide, Adelaide Container Terminal and Outer Harbor Grain Terminal), maritime and air transport operations (where relevant). The transport and traffic impact assessment must address each proposed project-affected mode (e.g. road, rail, air, port and sea) for each phase of the proposed project and identify potential need for infrastructure improvements and measures to mitigate impacts. • The assessment report must assess the impact on existing and projected shipping, recreational and other maritime/water vessel access to the Port of Adelaide, Torrens Island and Port River (including impacts of security considerations / exclusion zones) • Detail how active travel modes and public transport, including connections with existing walking and cycling paths will be established, will be supported and the provision of suitable end of trip facilities for workers employed at the facility.	
AEQ4	Visual Amenity	To ensure adverse effects on visual amenity, landscape and open space values are avoided or minimised and opportunities to enhance these values are maximised.	• Provide a description of the landscape character, features and values of the development area and its environs. This should address (where relevant): a. components of the development that may result in impacts to visual amenity, b. public and private viewsheds to the development and the visual values of the area, c. viewsheds in which the development features, including from nearby public lookouts, tourist attractions, conservation areas, roads and key vantage points in the vicinity, d. existing built features within the landscape and their impact on the existing landscape and visual setting. • Describe the effects of the development on visual amenity and landscape quality, including both near and distant views, such as where public access will be maintained from public reserve and conservation areas, including from the land and sea. This should focus on final built form, but should also address light spill from the development. • If required, provide a visual analysis of the development from key viewpoints, including photomontages or perspectives showing the proposed and likely future development. • Describe the rationale for the major design elements of the proposed development and measures to mitigate their visual impact (in the context of an industrial area).	**STANDARD**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			• Describe how the design and construction of all buildings and structures will be controlled to ensure cohesive visual amenity, including details of construction materials, colours and landscaping for all main buildings and structures. • Describe the use of screening / amenity / landscape plantings and potential broad scale revegetation, including the opportunities for the use of locally endemic species.	
Biological Environment (BE)				
BE1	Biosecurity	To ensure that construction and operation of the development avoids the introduction or spread of biosecurity threats including pest or nuisance animal and plant species (including marine pests), diseases and pathogens.	• Describe how the proposal is consistent with the *South Australia's Biosecurity Policy 2020-2023* and any potential approvals, permits or licenses required prior to conducting marine work during construction and/or operation. • Detail a monitoring program that would audit the success of biosecurity measures, identify whether objectives have been met, and describe corrective actions to be used if monitoring indicates objectives are not being met. • Provide information on the proposed management techniques for incoming ship ballast and bilge waters. • Describe how the introduction and spread of exotic marine organisms or notifiable pathogens (disease) will be avoided or managed. • Outline strategies to monitor for the early detection of marine exotic organisms (including invasive marine pests) at or near the site, especially on and around marine infrastructure (e.g. wharf, jetty) and how these will be managed. • Outline measures to ensure consistency with the Australian Ballast Water Management Requirements (and national biofouling management guidelines). • Outline strategies to monitor and prevent the introduction and spread of vermin and other nuisance species that can be attracted to port facilities, and measures to manage and monitor such species, including the need to restrict the spread of Pacific Oyster Mortality Syndrome (POMS) from the Port River to other areas of state waters / aquaculture areas. • Outline strategies to monitor, control and manage biofouling of wetted surfaces.	**DETAILED**
BE2	Marine Flora and Fauna	To ensure that the nature and scale of the development avoids or minimises adverse effects on biodiversity, threatened and protected marine flora and fauna species, their ecological communities and habitat	• Describe the nature and extent of the impacts likely to affect listed threatened native marine fauna species and populations during both construction and operation. Describe the ability of communities and individual species to recover, especially threatened or significant species (including those listed under the *National Parks and Wildlife Act 1972*). Detail any residual impacts that cannot be avoided and propose measures to offset the residual loss. • Assess the potential impacts of the proposed project's activities on the Port River and Adelaide Dolphin Sanctuary more specifically. Model the spread and assess the impacts of any sediment plume to be created by dredging, construction or excavations. • Assess the potential loss of habitat or diversity that could result from the activity and assess any potential impacts on commercial or recreational fisheries,	**DETAILED**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			including impacts that could arise from the loss of nursery habitat (e.g. seagrass beds, reefs, or, mangroves) of target species (such as prawns and fish). Assess the potential short-term or long-term impacts of noise on marine fauna, particularly cetaceans. • Detail the potential impact, including cumulative impacts, (such as any likely increase in vessel numbers, or habitat fragmentation and loss) on marine fauna, including the Port Adelaide bottlenose dolphins (Indo-Pacific bottlenose dolphins) both during construction and operation, including ecologically and economically important species (e.g. fisheries) • The assessment will also need to take into consideration the outputs of any underwater noise assessment, physical coastal and marine assessment, biosecurity assessment for potential impacts and incorporation of suitable mitigation measures in line with those and other relevant assessments for the development. • Prepare advice, prepared by a suitably qualified coast and marine expert, which details the existing environment, identifies any coastal hazards (e.g. erosion, sea level rise etc)) and significant coastal or marine features or habitats. The report should also assess the impacts of the proposed operations and documents the environmental protection controls and measures to be implemented and monitored. The report should address impacts on marine organisms from development activities (including noise, vibration, and water quality).	
BE3	Terrestrial Flora and Fauna	To ensure that the nature and scale of the development avoids or minimises adverse effects on biodiversity, threatened and protected terrestrial and aquatic flora and fauna species, their ecological communities and habitat.	• Describe the location of public or private protected areas reserved under the *National Parks and Wildlife Act 1972*, *Wilderness Protection Act 1992*, *Crown Land Management Act 2009, Adelaide Dolphin Sanctuary Act 2005* and *Forestry Act 1950*, council reserves and Indigenous Protected Areas which may be impacted by the development. Include reference to areas under Heritage Agreements through the *Native Vegetation Act 1991*. • Assess the impacts on public and private protected areas from the development including management of interface issues (e.g. biosecurity, fire management, access) and any implications for Heritage Agreements. • Describe the location, extent, condition and significance of native vegetation, including listed threatened flora species and ecological communities in the development's environs, and identify those that may need to be cleared or disturbed during construction and / or maintenance. • Identify and characterise any wetlands or groundwater dependant ecosystems that may be affected by altering surface water or the hydrogeological environment. • Describe the development activities with the potential to impact on native vegetation and listed threatened flora species and ecological communities and provide an assessment of how those impacts will be avoided, mitigated or offset. • For locations to which the *Native Vegetation Act 1991* applies, prepare a Native Vegetation Clearance Data Report prepared by an Accredited Consultant	**DETAILED**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			approved by the Native Vegetation Council. The assessment should undertake a survey of the vegetation and fauna (including EPBC Act Listed threatened species and communities), including seagrass in the tidal or subtidal marine environment, detail compliance with the impact mitigation hierarchy and describe how the significant environmental benefit would be achieved. • Detail potential impacts of fire on native vegetation, and the effects of fire risk management processes during construction, operation and maintenance. • Outline measures to mitigate effects on native vegetation by addressing the mitigation hierarchy, including any compensatory activities in already degraded areas and use of existing easements. Refer to guidelines produced by the Native Vegetation Council and outline the likely effectiveness of any mitigation measures adopted during both construction and maintenance. • Describe the location, extent, condition and significance of native fauna populations (including aquatic and subterranean fauna such as stygofauna) and listed threatened and migratory fauna species in the development's environs, and identify those that are likely to be disturbed during construction and / or maintenance. • Describe the development activities with the potential to impact on native fauna species and listed threatened and migratory fauna species and habitats, and provide an assessment of how those impacts will be avoided or mitigated. • Identify all potential sources of light pollution from the construction and operation of the proposed development. Describe their impacts on native fauna, including nocturnal species, and how these impacts will be managed. • Detail appropriate buffer distances that would be required between the proposed development and threatened species, including feeding areas, nesting sites and roosting sites, and Mutton Cove more specifically.	
Climate Change and Resource Efficiency (CCRE)				
CCRE1	Climate Change Adaptation	To ensure that development and design are climate resilient and risks from climate change are reduced.	• Undertake a climate risk assessment of the relevant potential impacts on the development of projected climate change over the lifetime of the development (e.g. increasing temperatures, extreme heat and heat waves, decline in rainfall, increased drought, extreme rainfall events, harsher fire weather, and sea level rise). Include proposed adaptive management strategies. • For developments with a lifetime to 2050 or before, the risk assessment should be based on climate projections from the RCP 8.5 scenario (high greenhouse gas emissions scenario). For developments with a lifetime beyond 2050, the risk assessment should be based on climate projections under both the RCP 8.5 and RCP 4.5 scenario (moderate greenhouse gas emissions scenario). • Examine the potential cumulative effects of climate change from a risk management perspective (including adaptive management strategies).	**STANDARD**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			• Where relevant, outline the potential effects of, and identify strategies to protect against, extreme weather events, including a 1% AEP storm event and sea level rise as per Coast Protection Board policy and allowances from a risk management perspective, including adaptive management strategies. Include mitigation strategies should the structure not withstand such an event.	
CCRE2	Greenhouse Gas Emissions	To ensure the development minimises greenhouse gas emissions associated with its construction and operation so as to meet South Australia's goal to reduce greenhouse gas emissions by more than 50% below 2005 levels by 2030 and achieve net zero emissions by 2050.	• Undertake a preliminary greenhouse gas assessment that: o identifies potential sources of GHG emissions that would be generated o provides an estimated annual GHG emissions for the construction and operating phases o provides an estimate of yearly net GHG emissions and emissions intensity, including an uncertainty assessment o provide an inventory of projected annual Scope 1 and Scope 2 emissions. • Describe how the project will contribute to meeting South Australia's emissions targets i.e. 100% renewable energy target by 2030, 50% emissions reduction below 2005 level by 2030 and zero net emissions by 2050. • Describe measures that have been incorporated in the design to minimise, reduce and ameliorate greenhouse gas emissions, particularly the use of alternative or renewable energy sources and off-sets, energy efficiency and energy conservation measures, and if it incorporates integrated passive design principles and climate-responsive techniques and features and identify barriers to implementation.	**STANDARD**
CCRE3	Sustainable Use of Resources	To ensure opportunities to procure and use resources efficiently and sustainably are maximised, supporting South Australia's transition to the circular economy	• Describe the sustainability objectives of the development and the approach and methodology used to achieve these objectives. • Describe design guidelines for aspects of the development (including transport options) that would be adopted to ensure sustainability. • Describe how sustainability of the development will be audited. • Identify ways in which power use can be minimised or supplemented, especially using alternative energy sources, energy efficient measures and energy conservation. • Describe the proposed approach to matters such as design, construction methods, materials and equipment to reduce energy use (including vehicle emissions), disposal of waste, water use efficiency during construction and operation over the life of the project.	**STANDARD**
CCRE4	Waste Management	To ensure that waste generated, transported or received as part of the development is managed in accordance with the waste hierarchy and in a manner that protects all environmental values.	• Identify, quantify and classify all the expected waste streams to be generated from the proposed project activities during the construction, operation, rehabilitation and decommissioning phases of the development. • Assess and describe the proposed management measures for each waste stream against the waste management hierarchy, namely: avoid and reduce	**DETAILED**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			waste generation, reuse, recycle, recover energy and other resources, treatment and disposal. This includes the generation, storage and transport of waste. • Prepare a waste management and minimisation plan (for demolition, construction and operation where relevant), detailing the sources of waste, the location of waste storage (including separation of waste streams, such as recyclables, hard waste and e-waste) and disposal facilities on the site or development -related sites (e.g. laydowns) and provide details of how these facilities will be serviced, including the need for licensing, permits or approvals to support proposed offsite or onsite waste management practices • To support planning of logistics and industry capability, identify potential waste service providers, including any potential requirement for waste streams to be managed by licensed service providers interstate. • Describe the method of storage of the radioactive waste from all relevant components of the proposal during ongoing operations, including transport and handling, storage and disposal of radioactive waste. • Describe the method of disposal of radioactive waste from all relevant components of the proposal after operations are completed.	
Land, Regional and State Economies (LRSE)				

LRSE1	Local, Regional and State Economies	To ensure adverse economic impacts arising from construction and operation of the development are avoided or mitigated, and net economic benefits to the region and state are created	• Provide a full economic analysis of the development including the long-term economic viability and efficiency of the operational aspects of the development, incorporating a regional impact analysis (RIA) and cost-benefit (risk return) analysis (CBA).
			• The RIA should focus on the direct impact of the project on the local, regional and state economies. The identification of economic impacts should include the prediction of spending on goods, services, taxes etc. during construction and operation of the project and the distribution of income generated by the project.
			• The CBA should assess the impact of the project on the economic welfare of the economies of interest by estimating a dollar value for as many economic, social and environmental benefits and costs as can reasonably be predicted.
			• Consideration of regional economic impacts should include:
			  • An outline of the skill level requirements of any new workforce, the component of the workforce that is expected to be hired locally, and the type of employment this would entail (e.g. full time, permanent, sub-contractors, casual, skilled labour, truck drivers etc) and identify if this employment would be continuous/year round.
			  • Description of the existing significant economic activities and facilities in the areas (e.g. industrial, commercial, primary production (e.g. mining, agriculture, horticulture, viticulture, aquaculture, fishery), tourism) in the project area.
				DETAILED

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			• Identification of the impacts of the development will have on existing users of distribution networks for gas, electricity, waste, potable water, sewerage, and communication systems. • Describe any potential economic effects locally and regionally and the potential to attract value add development and commercial ventures including: ○ potential employment opportunities and the expected impacts on the local workforce during construction and operational stages and flow-on impacts on local business ○ information on local and indigenous employment and training opportunities associated with the proposal. ○ the economic effect of the construction and on-going workforce regionally. Include consideration of impact of development on existing industries and local businesses if workers change employment e.g. mining taking skilled workers from trades and agriculture due to higher wages. ○ effects on accommodation supply and demand ○ an analysis of existing supply chain and prospective suppliers, as well as any gaps in the supply chain ○ consideration of any additional land requirements to support the development (i.e. third-party supplier, logistics, transport, warehousing, manufacturing, office etc) to support the project and need to be co-locate or within close proximity. ○ secondary economic effects, including property and land values, potential to attract new industries and commercial ventures. Describe the positive and negative effects on existing businesses / industries (e.g. displacement, competition or opportunities) ○ the proposal's anticipated effect on State and local investment, research and development, educational effects, employment generation and flow-on impacts on business. ○ the proposal's anticipated effect on State and local investment and the region as a whole Identifying employment and investment opportunities, including the 'multiplier effect' for the local area, the broader regional economy and community and South Australia. ○ any economic implications for the State and the region if the development does not proceed.	
Hazards and Risks (HR)				
HR1	Hazard Assessment and Management	To ensure the risk of, and adverse impacts from natural and man-made hazards from the development are avoided, minimised or mitigated to	• Undertake a risk assessment which describes the potential risks to people and property that may be associated with the proposed project for all components of the development. The assessment must address the following matters (where relevant):	**DETAILED**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
		protect people, property and the environment.	a. Potential hazards during construction and/or operation of the facility , including • the storage, installation and use of nuclear propulsion systems, dangerous substances, accidents, fire, occurrence of contaminated land and abnormal events that may occur during all stages of the proposed project, including estimated probabilities of occurrence, and • associated with Major Hazard Facilities, transmission lines, petroleum and gas pipelines, storage and use of dangerous substances and explosives, both onsite and associated with neighbouring land uses / facilities (including Quantem (bulk storage terminal of petrol and diesel), Ixom (chlorine storage) and the approved Venice Energy LNG Storage Facility (floating storage and regasification unit)). • Describe measures that would be taken to minimise the risks of these events and mitigate impacts of incidents at nearby facilities on the proposed development (such as siting considerations). b. Assess the vulnerability of the area to natural and induced hazards, including floods, coastal inundation and storm events. Consider the relative frequency and magnitude of these events together with the risk they pose to the construction, operation and decommissioning of the proposed project, as well as the rehabilitation of the site. Describe measures that would be taken to minimise the risks of these events. c. Evaluate the risk of fire, explosion, containment facility failure or other high consequence events at the site and any potential impacts on human health and to the environment (including marine and terrestrial flora and fauna), particularly from the storage, installation and use of nuclear propulsion systems. This should include a description of the critical controls (and how they will be maintained) that will be used to minimise the risks and mitigate the impacts from these catastrophic risks. • Hazard analysis and risk assessment in accordance with *AS/NZS ISO 31000:2018 Risk* management *guidelines and with HB203:2006 Environmental risk management principles and processes.*	

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
HR2	Flooding	As above	• Describe the history of flooding onsite and in proximity to the development site. • Describe current flood risk for a range of annual exceedance probabilities up to the probable maximum flood for the proposed project site, including consideration of flooding associated with interactions between surface water flows and coastal inundation under climate change scenarios (i.e. sea level rise, storm events). • Use flood modelling to assess how the proposed project may potentially change flooding and run-off characteristics on-site and both upstream and downstream of the site, including changes associated with the dynamics between surface water flows and coastal inundation risks. • The assessment must consider all infrastructure associated with the proposed project including levees, roads, and linear infrastructure, and all proposed measures to avoid or minimise impacts. • Identify the potential impacts on people, property, infrastructure and the environment from potential flood risk (where relevant). • Evidence must be provided to demonstrate that the securing of storage containers of hazardous contaminants during flood events meets relevant requirements of the *Environment Protection Act 1993.*	**DETAILED**
HR3	Site and Groundwater Contamination	As above	• Describe the historical land use and potential for contamination of soils and sediments and describe any known or suspected soil contamination that could be re-suspended, released or otherwise disturbed as a result of past or future development. This investigation would also consider any previous use of waste fill or similar materials, including the deposition of dredge spoil from the Port River. • Detail any known or potential sources of contaminated groundwater that could be impacted by the development. • Detail procedures to be adopted to confirm whether site contamination exists (such as site history, site audit, and site contamination reporting) and any remedial measures proposed. • Detail management measures that will be required during construction and operation to prevent site contamination. • Demonstrate compliance with the assessment methodology and site acceptability requirements for the intended use(s) of the development sought by Practice Direction 14 Site Contamination Assessment 2021, Plan SA. • Describe how site and groundwater contamination assessment will be undertaken in accordance with the National Environment Protection (Assessment of Site Contamination) Measure, the EPA Guidelines for the assessment and remediation of site contamination (2019), the PFAS National Environmental Management Plan 2.0, and other relevant guidance issued or referred to by the EPA.	**DETAILED**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
HR4	Dangerous Substances (excluding Nuclear)	As above	• Identify all dangerous and hazardous substances and any explosives to be used, transported, stored, bunded, processed or produced and the rate of usage. • Describe the use, handling and disposal of these materials during construction and operation, with reference to storage (including any associated fire protection facilities). • Describe how hazardous contaminants and waste substances produced by the development will be treated, contained and bunded until their disposal at an approved facility. • Evaluate the potential effects of any accidents involving dangerous substances on the environment and public health in the vicinity of the site.	**STANDARD**
HR5 (NEW)	Nuclear Propulsion Systems and Radiation Exposure from Accident	As Above	• Describe the process to transport, receive, secure, store, install, test and commission a nuclear-powered submarine propulsion system. • Describe and assess the radiation exposure pathways to workers, the public and non-human biota from relevant components of the development during construction and operation (including incident scenarios). • Describe the measures to control and optimise (reduce) any identified radiation exposure pathways to workers, the public and non-human biota from nuclear powered submarine propulsion system componentry during construction and operation, as well as longer term, the framework for the eventual decommissioning and rehabilitation of the site. • Outline how the radiation exposure pathways to workers, the public and the environment from relevant components of the development would be monitored during construction and operation of the site. • Describe existing radiological characteristics of the environment that could be impacted by construction or operation of the development and the eventual decommissioning and rehabilitation of the site (e.g. air quality, soils, surface and groundwater, marine, etc). • In considering the above, ARPANSA's *Radiation Protection Series* must be referenced in the consideration of potential impacts on planned, existing and emergency situations for the public, workers and the environment.	**DETAILED**
Land Use and Site Conditions (LUSC)				
LUSC1	Land Tenure, Protected Areas and Land Use	To ensure that the impacts of development on environmental, social and economic values of adjoining land uses, land tenures and protected areas are avoided or minimised.	• Provide details of the existing land uses (including relevant Planning Code Overlays and Zones), land tenures and protected areas at, overlapping or adjoining the development site. • Provide details of site services and infrastructure including utility services (water, gas, electricity, sewerage disposal, wastewater, drainage, trenches or conduits); location of ground and roof plant and equipment (electricity transformers; air conditioning; solar panels etc).	**STANDARD**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment

			• Provide high-level energy demand profile (including gas and electricity) for the construction and operational phases of the development, noting current network capacity to meet expected future demand, including consideration of the need for back-up power supplies for the facility.
			• Provide details of the development (activities or structures) with the potential to impact on existing land uses, land tenures and protected areas that overlap, adjoin or are in the region of the development.
			• Describe existing or potential native title rights, claims and interests which may be impacted by the development (including with the use of maps) the following native title considerations:
			  • land or waters where native title has been determined to exist by the Federal Court
			  • land or waters that are covered by a native title determination application.
			  • land or waters that are covered by a registered Indigenous Land Use Agreement.
			• Describe in general terms the potential impacts of the development on existing or adjoining land use. [Note that many impacts and mitigation measures will be addressed under Assessment Requirements for other environmental attributes and should be cross-referenced accordingly in the EIS].
			• Describe (where relevant) potential impacts of the development for Crown land (including the Port River) and Native Vegetation Heritage Agreements or any other relevant land tenures (including leases and licences).
			• Describe the existing policy and legislative considerations underpinning the Adelaide Dolphin Sanctuary which apply to the development.
			• Describe (where relevant) potential impacts of the development or areas protected under legislation or Special Legislative Schemes, including consideration of interface issues with the adjoining Mutton Cove including if the proposal will contribute to an 'edge effect' and discuss how this impact can be mitigated.
			• Provide an assessment of local impacts to adjoining land uses identified in the scoping application (e.g. property access (fencing, gates), privacy and enjoyment, conduct of regular or seasonal activities (e.g., harvesting, spraying, lambing) and describe any measures to mitigate these impacts.	

Physical Environment (PE)				
PE1	Coastal and Marine	To ensure the natural features and processes of coastal systems are protected so that the environmental values of the coast are maintained. To ensure the quality and productivity of marine waters, sediment and biota	• Describe existing coastal environmental values including estuarine, littoral and marine environmental values (e.g. water quality, benthos, aquatic flora and fauna, mangrove areas, salt marsh, and amenity) that could be impacted by construction or operation of the development. • Describe current processes and recently historical estuarine, littoral and marine morphology with a description of the processes shaping the coastal system (e.g.	**DETAILED**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
		are protected so that environmental values are maintained.	tides, rivers, floods, coastal currents, sediment transport, major storms, rocky headlands, or islands) • Describe the legislative, regulatory and planning contexts for coastal systems that apply to the development. • Describe existing residential, commercial or recreational uses of the coastal system that could be impacted by construction or operation of the development. • Provide details of proposed works with potential to affect coastal processes including buildings and infrastructure to be built on the shore or on land close to the shore and excavations on or near the shore. • Provide detail of any required dredging (area and volume) within the Port River both immediate (capital) and likely ongoing (maintenance). Identify spoil de-watering and storage site/s and how the spoil storage sites will be protected from potential sea flood risk. • Identify the flooding and erosion risks to the site (including flooding and erosion exacerbated by sea level rise and extreme weather events) and measures to reduce the risks. • Provide details of the pre- and post-development stormwater flow regime, including detail of runoff generated under a 1 EY, 50 year ARI and 100 year ARI events • Provide details of how natural processes and the protective function of landforms and vegetation will be maintained in sea erosion and storm tide inundation areas. • Identify any potential for Coastal Acid Sulfate Soils (CASS) to be encountered on the site and how this might be mitigated (refer to the Coast Protection Board policy on CASS). • Assess the potential impacts to the coastal system and existing uses from the development and propose mitigation measures to avoid or minimise those impacts during construction and operation. • Map existing vegetation communities and describe the effect of the proposed development on coastal features and associated vegetation communities and outline management and rehabilitation measures for these areas. • Identify the impact of coastal erosion due to expected sea level rise of 0.3 metre to 2050 and 1.0 metre to 2100. • Describe the effect on the conservation values of the nearby conservation areas (including conservation parks, national parks, land with heritage agreements, Adelaide Dolphin Sanctuary etc) • Describe historical marine uses and the potential for contamination of sediments or contaminated groundwater entering the marine environment and describe any known or suspected sediment or groundwater contamination within the study area that could be re-suspended released or otherwise disturbed as a result of the project.	

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			• Provide details of proposed works with potential to affect marine waters and current uses. The description should include the following matters (where relevant): ○ potential impact of vessel movements on the marine environment ○ any jetties, bunds, harbour walls, groynes, channel markers, or other infrastructure, to be built in the Port River ○ any proposals to undertake transhipping of material in state waters or the Commonwealth marine area ○ describe the underlying geology and the nature of the soils with special reference to coastal landforms ○ identify geological, seabed and substrate impacts that may occur as a result of any dredging activity that will be undertaken during the construction phase. Detail measures for managing these impacts. ○ identify the total 'in water' footprint of the proposed development (including all areas to be dredged and/or altered) • Model the sediment plume produced by any dredging including an assessment of likely risk to marine vegetation and fauna. Modelling should be developed using at least 12 continuous months of turbidity data collected from the site. • Describe the potential for pollution (e.g. sediment plumes, discharges or spills to land and water, discharge of stormwater and wastewater) of marine waters during construction and operation. Identify locations where discharge to marine waters or land may occur during construction, operation or decommissioning of the development. • Assess the potential impacts of the proposed project's activities in marine waters including, but not limited to, any potential impacts on the Adelaide Dolphin Sanctuary and Port River, commercial or recreational fisheries effects of the development on nursery habitat. Include spills of fuels and chemicals from water and land-based activities, run-off / discharge from land-based activities and propose mitigation or offset measures to avoid or minimise those impacts during construction and operation.	
PE2	Soils, Landform and Geology	To ensure development is undertaken in a manner that protects the productivity and quality land including, soil, subsoil and landform and avoids impact to other environmental values.	• Provide a description of the soils, landform and geology in the area of the development including the potential for water and wind erosion, soil salinity, acid sulfate soils and soil contamination. The description should: ○ Characterise soil types and structures in the development area and identify the potential location and disturbance of dispersive, acid sulfate, saline or potentially contaminated soils, or soils of other special characteristics that could affect or be affected by the development. ○ Identify hydrological, geomorphic or meteorological conditions that may contribute to susceptibility to erosion (e.g., channels, steep slopes, wind). ○ Identify any areas of ground instability and any ground conditions that may be susceptible to subsidence from development activities (e.g. tunnelling, deep	**STANDARD**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			excavation, dewatering) and direct and indirect changes to vegetative cover. Identify properties, structures and infrastructure that may be susceptible to subsidence. Land subsidence may be a relatively significant contributor to sea flood risk in this location and may occur regionally without being generated from incoming development. • Describe the development activities with potential to impact on soils and ground stability. • Address the implications of seismicity in the area in relation to both the construction and operation of the development. • Identify the risks of contamination of land from spills of fuel (or other toxic substances). Describe measures for the prevention and containment of spills, describe the contingency plans to be implemented in the event of spills, and comment on their expected effectiveness. • If acid sulfate soils would be disturbed or unexpectedly encountered during construction, describe measures to avoid oxidation of the sulfides, treat and neutralise the acid if it forms and manage any excavated material. • Ensure that appropriate soil contamination investigations have been undertaken and that soil generated from earthworks is managed in accordance with EPA guidelines, including for re-use on site or removal of material off-site for re-use, treatment or disposal	
PE3	Surface Water and Groundwater	To ensure the quality of groundwater and surface water is protected so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.	• Describe existing surface water environmental conditions upstream and downstream of the site (including seasonal variations and variations with flow) of waterbodies, watercourses, drainage channels, wetlands and floodplains. Water quality, any existing site contamination and potential sources of surface water pollution should be addressed. • Describe the legislative, regulatory and planning contexts for surface water that apply to the development. • Describe the potential for pollution (e.g. sediment plumes, spills to land and water, discharge of stormwater and wastewater, dewatering) of water bodies, watercourses, drainage channels and wetlands during construction and operation. Identify locations where discharge to surface waters or land may occur during construction, operation or decommissioning of the development. • Describe potential alteration to surface water flows as a result of the development (including to waterbodies, watercourses, wetlands, floodplains, beds and banks) and include details of the nature of the works. • Identify the risks of contamination of land from spills of fuel (or other toxic substances). Describe measures for the prevention and containment of spills, describe the contingency plans to be implemented in the event of spills, and comment on their expected effectiveness. • Describe the proposed mitigation measures to protect the environmental values for surface water quality, how the relevant standards and indicators may be	**DETAILED**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			achieved, to protect surface water during construction and operation. Provide details of proposed stormwater management, both installation and ongoing maintenance requirements, as well as any water sensitive design features as part of the development. If required, revisit project design and construction methodologies to reduce impacts surface water quality to demonstrate that the Water Quality EPP will be met. • Prepare a Soil Erosion and Drainage framework which describes the site characteristics, including the existing topography and runoff characteristics and outline measures to prevent soil erosion and contaminated runoff from leaving the site during construction and operations (including any opportunities for water sensitive design). Include inspection, maintenance and monitoring of effectiveness of soil erosion measures. If applicable, include details of how management measures may alter in accordance with staging of the development. • Describe measures for storage and management of stockpiled topsoil and subsoils to minimise potential adverse effects on local hydrology and water quality, restoring soil profiles and drainage Include sediment and erosion controls where required (e.g. temporary berms, controlling water movement into and around the site, stockpile management and stabilisation of non-paved operational areas). • Describe the known groundwater related environmental conditions including quality and significance of groundwater in the area of the development and any surrounding area potentially affected by the proposed development's activities ○ describe the nature, type, geology / stratigraphy and depth to and thickness of the aquifers, and hydraulic properties. ○ any existing site contamination, and any identified potential sources of groundwater pollution ○ characterise the quality and volume of the groundwater including seasonal variations of groundwater levels ○ describe existing groundwater supply infrastructure (e.g. bores, wells, or excavations). • Describe the legislative, regulatory and planning contexts for groundwater that apply to the development (if applicable). • Describe present and potential users and uses of groundwater water in areas potentially affected by the development, including residential, municipal, agricultural, industrial, recreational and environmental uses of water including groundwater dependent ecosystems (GDE). • Describe the potential changes to hydrology (including water quality), as a result of the proposal, and the implications of these changes. Water quality impacts should consider any parameters (e.g. metals, non-metal inorganics) considered important for existing groundwater users / uses in the vicinity of the projected area of impact.	

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			• Where groundwater would be taken by the development, quantify the volume of water that would be taken, the timeframe over which the take would occur and the potential impact on groundwater users (if applicable), noting that as the subject land is in the Central Adelaide Prescribed Wells Area, a water licence will be required for the taking of any groundwater for industrial uses. Include details as to how any dewatered water would be managed and used or disposed of, taking into consideration the waste management hierarchy and any nearby known site contamination. • Describe stormwater and wastewater management and the potential impact on groundwater resources in particular with regard to fuel and chemicals used in construction and / or operation of the development. Describe measures proposed for management of stormwater and wastewater during construction and operation to avoid impacts to groundwater.	
Design (DQ)				

DQ1	Urban Design and Place-Making	To ensure development promotes the value and quality of good design across South Australia's built environments, and that contributes to healthy neighbourhoods, supports innovation and the integration of smart and sustainable technologies.	• Provide a contextual analysis and identify site-specific issues including
			  ○ existing site conditions
			  ○ existing built form, heritage context (if applicable), setbacks and land uses within the locality
			  ○ existing transportation networks and movement patterns (public transport, bicycle paths, pedestrian paths)
			  ○ existing landscape (Regulated and other trees
			  ○ environmental conditions (orientation, outlook and views, noise sources).
			• Describe the development principles that are informing the site layout.
			• Demonstrate the proposal's precinct/site-wide movement strategy with consideration given to the following:
			  ○ access and parking for worker and service vehicles.
			  ○ active travel connectivity and public transport
			  ○ public access to the coast and open space connectivity (specifically how this will be modified or restricted)
			• Demonstrate the proposal's site configuration and built form.
			• Describe the proposal's landscape design response with consideration given to Water Sensitive Urban Design (WSUD) principles, enhancing biodiversity, proposed vegetation replanting / offsets, reclamation and/or rehabilitation of land not required for the facility, and the urban / coastal / industrial interface including with Mutton Cove and Failie Reserve.
			• Describe the proposal's Environmentally Sustainable Design (ESD) strategy.
			• Provide documentation in accordance with clause 5(2)(e) of Practice Direction 17 Impact Assessed Development.
				STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
Social and Community (SC)				
SC1	Aboriginal Cultural Heritage	Avoid adverse effects on Aboriginal cultural heritage values and maximise opportunities to appropriately complement and preserve these values.	• Describe any consultation with the RARB or any relevant Traditional Owner representatives relevant to the project area. Details of Aboriginal heritage provided by Traditional Owners during consultation or discussed in the EIS must remain confidential and are not to be disclosed or published by the proponent. • Describe the outcomes of AAR's central archives search for the project area, including consideration of any restricted Aboriginal sites and instances where approval from Traditional Owners may be required to access further information about the nature and/or location of the heritage. • Describe any Aboriginal heritage surveys or assessments relevant to the project area, including historic reports where relevant and accessible. These may include desktop-based heritage assessments, heritage survey/inspection reports, Work Area Clearance reports or other risk assessments. Where an Aboriginal heritage assessment is undertaken, it must be done by an appropriately qualified heritage expert. • Where there is a high risk of discovery of Aboriginal heritage within the project area, it is recommended that the proponent engage Traditional Owners and a qualified heritage expert (archaeologist and/or anthropologist) to carry out an on-ground heritage survey/inspection of the project area. • Identify any potential impacts to recorded or unrecorded Aboriginal heritage in the project area (noting that the specific location of any heritage must not be identified in the EIS). • Outline measures to avoid or minimise impacts to recorded and unrecorded Aboriginal sites, objects and remains in the project area during construction and operations phases. Where impacts to Aboriginal heritage are proposed, the proponent must hold valid authorisations under the Aboriginal Heritage Act 1988 (SA). • Preparation of a Aboriginal heritage discovery plan or Cultural Heritage Management Plan (if required) to protect and appropriately manage Aboriginal heritage during all phases of the project. • Preparation of an Aboriginal Engagement Plan that sets out steps taken to facilitate early, ongoing, meaningful and effective consultation with identified Aboriginal stakeholders throughout project design delivery and operations.	**STANDARD**
SC2	Community Wellbeing / Social Impact Assessment	To ensure adverse effects on the community near the development are avoided or minimised including with regard to community cohesion, access to services and facilities and health impacts and capitalise on opportunities to enhance benefits for communities.	• Provide a social impact assessment (SIA) of the development which addresses: - the existing social environment of communities potentially impacted by the project - the potential social impacts (both positive and negative) of the project, and how they will be managed and monitored	**DETAILED**

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			• The SIA should include social baseline information which includes but is not limited to: - a demographic profile of potentially affected communities - an analysis of community characteristics (e.g. community history and culture, land / property ownership) - an overview of land use, key industries in the region, and relevant local and state government plans - an overview of the capacity and accessibility of infrastructure, facilities and services, including education, health and emergency services - an analysis of the existing housing and accommodation market, including availability, capacity and affordability - a profile of the local and regional labour market, including likely availability of personnel with skills relevant to the project - details of other resource, infrastructure and major projects in the area (planned and currently operating). • Key matters to be addressed by the SIA (for both construction and operation) are: <u>Workforce Management</u> incorporating (where relevant)- - a summary workforce profile. - an analysis of the local and metropolitan labour market, and an assessment of potential social impacts, including employment opportunities, training and development opportunities - an assessment of opportunities for local workers to commute to and from work, including the use of public transport and active travel modes. - workforce management measures which *[may]* include: ○ measures to enhance potential employment opportunities for local communities, and to mitigate potential negative social impacts. ○ provisions to prioritise recruitment of workers from local communities ○ proposed training and development initiatives to improve local and regional skills and capacity including, where relevant, initiatives for traditionally under-represented groups. <u>Housing and Accommodation</u> incorporating (where relevant): - clarification of any temporary workforce accommodation provision (i.e. location, quantity, type etc) - analysis of potential social impacts from additional housing demand for the temporary and permanent workforce, including: ○ potential impacts to availability and affordability of housing (open market and rental) and other forms of accommodation	

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			○ consequences of project induced housing market changes for local residents ○ potential opportunities for local accommodation providers - workforce housing and accommodation management measures which *[may]* include: ○ measures to enhance potential benefits for project workers and the community, and to mitigate potential negative social impacts ○ policies regarding housing and accommodation support to be provided to project workers and their families who wish to live locally. <u>Health and Community Well-being</u> incorporating (where relevant): - an analysis of the availability, accessibility and capacity of, and an assessment of potential project impacts on, existing social services, facilities and infrastructure such as healthcare and emergency response, transport and utilities, education and childcare, and community support services - an analysis of the health and well-being of potentially impacted communities (in particular relevant disadvantaged groups e.g. Aboriginal people, disability, elderly), and an assessment of potential social impacts, including: ○ community health, safety and security ○ livelihoods, economic well-being and access to resources ○ community lifestyles and cultural practices, amenity value, social character, and community cohesion ○ potential temporary or permanent effects on community recreational facilities, affecting the use of open space and the enjoyment of passive and active recreational opportunities. - health and community wellbeing management measures which *[may]* include: ○ measures to ensure that the level of service provided to the local community by existing social services, facilities and infrastructure is not reduced ○ measures to mitigate potential health and well-being impacts on local communities, and enhance potential benefits ○ the level of on-site health services to be provided for workers ○ details of any workforce code of conduct to govern worker interactions with local communities ○ emergency response arrangements and management measures agreed with emergency service providers, for incidents both on and off the project site ○ details of any community development programs to be implemented, and the outcomes to be achieved.	

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
SC3	Heritage Places and Areas	To ensure that the nature and scale of the development does not compromise the recognised heritage significance of a heritage place or heritage area.	• Provide details of the location, nature and known potential heritage values of all historic heritage potentially affected by the development particularly State and Commonwealth-listed places and areas (including shipwrecks). • Provide an assessment of potential impacts from the development on all State heritage and other listed historic heritage places and areas (including shipwrecks). If applicable, this study should be undertaken. • If Commonwealth, National and World Heritage places have been identified, undertake an assessment of potential impacts to heritage values. • Provide design, management and site protection strategies (prepared by an appropriately qualified heritage consultant in accordance with the PDI Code if relevant) to avoid, mitigate or manage negative impacts on heritage values and enhance any positive impacts.	**STANDARD**

Table 4:Scoping Analysis for Level of Assessment

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
Amenity and Environmental Quality (AEQ)						
AEQ1	Air Quality	• Emissions during construction: dust, vehicle machinery • Emissions from ongoing operations: shipbuilding activities (including welding, painting, fabrication, etc) and other gaseous emissions including particulate emissions PM10, PM2.5.	• Different sources / impacts during construction and operation. • Collection, containment & treatment systems to contain fugitive dust and gaseous emissions. • Cumulative impacts within local airshed require consideration (noting gas peaker plants, existing ship building activities etc).	Direct, Indirect, Cumulative	• Existing air quality 'good' (Pt Adelaide monitoring station). • Sensitive coastal / marine environment adjacent site. • Sensitive receivers including residential areas and businesses on Peninsula • Dispersion / climate / wind patterns etc unknown.	**DETAILED**
AEQ2	Noise / Vibration	• Noise from construction and shipbuilding processes, including heavy vehicle movements.	• Construction (7am to 7pm, Monday to Sunday with potential for overnight work). • Operational times to be confirmed – nighttime shifts? • Impact above existing baseline noise unknown. • Transmission of noise over water and within locality – issues with new gas peaker facility and elevated noise levels at St Kilda township.	Direct	• Strategic Employment Zone comprises and/or envisages shipbuilding, maritime and bulk handling activities. • Noise generated by existing land uses and on-water shipping/vessel movement. • Urban development along the Le Fevre Peninsula, accumulative noise sources. • Consideration given to over water noise transmission, particularly to St Kilda township, and to other noise sensitive locations (such as residential areas to the west and south-west), and conservation parks.	**DETAILED**
AEQ3	Transport and Traffic	• Efficiency and adequacy of existing road infrastructure to handle expected traffic volumes to site. • Adequacy and provision of public transport and active travel connections. • Impact on existing shipping, recreational and other vessel movements	• Additional traffic volumes with increased Interaction with existing local road users, pedestrians and cyclists. • Provision of sufficient carparking, public transport and active travel modes for additional 4-5,000 works expected on-site.	Direct, Indirect, Cumulative	• Adequacy of and interaction with existing and future movements networks require detailed investigation, given significance of the Port of Adelaide / Outer Harbor and the Port River to the state's economy, from both current and other proposed development	**DETAILED**

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
		in the Port River due to security considerations / exclusion zones. • Management of construction traffic, esp. delivery of componentry and use of oversized movements. • Adequacy of on-site vehicle parking provision, inclusion of EV charging capacity etc. • Bicycle parking and change rooms.			• Transport and traffic impact assessment required, both for land and marine based movements. This will need to include impacts on the adjacent networks resulting from facility requirements (e.g. check points and security measures) • Identification of transport infrastructure/services upgrades and modifications (including maritime navigation) • Identification of measures to mitigate transport network impacts, ensure public safety, statutory and contractual compliance, including operational arrangements.	
AEQ3	Visual Amenity	• Construction of large industrial buildings. • Site reception and wayfinding • Use and control of security and flood lighting	• Large scale industrial buildings will be highly visible from immediate locality and across marine waters from Torrens Island and St Kilda township. • Public interface with secure permitter. • Control of obtrusive lighting will need to be managed.	Direct and Cumulative	• Strategic Employment Zoning and other industrial development is noted. • Revegetation plantings can be used to offset large development footprints. • Provision of landscape concept plan.	**STANDARD**
Biological Environment (BE)						
BE1	Biosecurity	• Marine Pests and diseases • Pacific Oyster Mortality Syndrome • Protocols for naval vessels • Potential impacts to marine environment • Control of weeds and other pathogens during construction		Direct and Cumulative	• Introduction and/or spread of marine pests can have a deleterious long-term impact to the marine environment and aquaculture industry.	**DETAILED**

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
BE2	Marine Flora and Fauna	• Clearance of or disturbance to seagrass or mangroves • Discharge of untreated stormwater into Port River. • Proximity of Port River Dolphin Sanctuary.	• Clearance or indirect loss of seagrass and/or mangroves • Loss of habitat and biodiversity. • Decrease in water quality • Impact on marine species within area of Dolphin Sanctuary – consider both construction, water quality and noise impacts. • Impact on conservation values of marine environment and Mutton Cove CR, Falie Reserve, Kardi Yarta, Biodiversity Park, Lady Ruthven Reserve, Outer Harbour Railway Station Reserve	Direct and Cumulative	• Subject to detailed technical review. Commonwealth may also have requirements.	**DETAILED**
BE3	Terrestrial Flora and Fauna	• Proximity of Mutton Cove and protection / respect to interface • Protection and enhancement of coastal vegetation (where retained), where disturbed, rehabilitated.	• Clearance of vegetation • Loss of habitat and biodiversity. • Remediation and rehabilitation works • Impact on conservation values of marine environment and Mutton Cove , Falie Reserve, Kardi Yarta, Biodiversity Park, Lady Ruthven Reserve, Outer Harbour Railway Station Reserve • Further industrialisation of Le Fevre Peninsula	Direct and Cumulative	• Subject to detailed technical review. Commonwealth may also have requirements.	**DETAILED**
Climate Change and Resource Efficiency (CCRE)						
CCRE1	Climate Change Adaptation	• Potential impacts to subject site from climate change due to sea level rise.	• Scoping application to confirm other vulnerabilities	Direct, Indirect and Cumulative	• Coastal Areas and Coastal Flooding Overlay • Site level compliance with CPB policy to be determined.	**STANDARD**
CCRE2	Greenhouse Gas Emissions	• Emissions (type and amount) from the shipyard facility are unknown	• Spatial extent of emissions transmission unknown.	Direct, Indirect and Cumulative	• Proximity to coast and Port River • Offsetting emission impacts unknown (i.e. renewable energy, resource recovery).	**STANDARD**

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
CCRE3	Sustainable Use of Resources	• Utility demand unknown (gas, electricity, water etc) • Requirements for local upgrades and augmentation unknown.	• Service level increase or provision of additional infrastructure to service shipyard development unknown.	Direct and indirect	• Site is proximate to major gas, electricity lines (and generating assets), freight network, port, and other services. SEAgas. • On-site waste management requirements need to be investigated.	**STANDARD**
CCRE4	Waste Management	• Management of waste materials / products during construction and operation	• Requires further investigation.	Direct	• Nuclear aspect requires detailed assessment. • Storage and handling of dangerous substances used for construction.	**DETAILED**
Land, Regional and State Economies (LRSE)						
LRSE1	Local, regional and state economies	• Job creation during construction and operation	• Positive economic benefit of shipyard facility to local, state and national economy. • Training and apprenticeship opportunities for skilled labour and other technical trades.	Direct and Indirect	• The development site is situated within an appropriate economic zone within the Adelaide Metropolitan area and a 10km journey from the Port Adelaide Regional Centre. The Le Fevre Peninsula has been developed over time, with the subject land representing one of the few remaining undeveloped areas east of Victoria Parade. • The expansion of shipbuilding activities should not result in direct competition with other industries or result in negative economic impacts (but may have some affect on worker attraction and availability).	**DETAILED**
Hazards and Risks (HR)						
HR1	Hazard Assessment	• Proximity to Major Hazard Facilities – including major chemical and fuel storage facilities. • Fire risk not from bushfire, but internal to site and	• Mitigating risk of incidents at neighbouring facilities to shipbuilding facility. • Role for emergency services – MFS/SAAS/Military	Direct	• Building certification consistent with current standards and MFS requirements etc	**DETAILED**

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
		nature of industrial process, including storage of chemicals and nuclear powered vessels, and including the risk of dispersion of radioactive material during a fire in a waste storage facility.	• Adequacy of fire safety and suppression systems.		• Confirm current arrangements for frigate construction.	
HR2	Flooding	• Coastal inundation risk from tidal actions, sea level rise and land subsidence • Flood risk from dynamic between surface water flows and coastal inundation • Flooding Overlay applies	• Filling of land to provide appropriate site levels to minimise long-term inundation risk. • Address scour risk from vessel movements along Port River channel.	Direct	• Appropriate site levels and protection works, consistent CPN requirements for 2100 development profile.	**DETAILED**
HR3	Site and Groundwater Contamination	• Previous land filling and known site contamination to be addressed. • Potential for spills / leaks of chemicals and other pollutants during operation of the shipyard.	• Management and/or treatment of contaminated soils during construction. • Potential for severe impacts if pollutants were to enter a sensitive coastal / marine environment. • Leachates can travel off-site through soil and groundwater – potential long-term impact and remediation implications.	Direct and Indirect	• Preliminary Site Investigation (PSI) > Site Audit reporting required. • Parts of site subject to section 83A notification • Groundwater testing has not been undertaken. • Adjacent sensitive marine / coastal environment receptors • Potential groundwater impacts to be clarified. • Area used for dewatering of dredged material from Port River.	**DETAILED**
HR4	Dangerous Substances (excluding Nuclear)	• Storage and use of hazardous materials. • Potential for spills / leaks of pollutants during operation of the shipyard.	• Potential for severe impacts to health and environment if hazardous substance not managed correctly.	Direct and indirect	• Sensitive marine / coastal environment in terms of potential spills, need for containment beyond max capacity.	**STANDARD**
HR5	Nuclear Propulsion Systems	• Radiation Exposure from Accident, storage, handling etc	• Requires further investigation.	Direct and indirect	• Nuclear aspect requires detailed assessment.	**DETAILED**

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Land Use and Site Conditions (LUSC)						
LUSC1	Land tenure, protected areas and land use	• Potential interface impacts to existing land uses and adjacent conservation areas / Port River. • Consider impact to future (envisaged) land uses in the zone.	• Interface impacts may extend to locality and other land uses	Direct and Cumulative	• Strategic Employment Zone, Coastal and Offshore Islands Zone, Conservation Zone. • Subject land under control of ANI/State Agencies (to be transferred to Commonwealth). • Employment zoned land is currently vacant / underutilised. • Access to road, rail and shipping terminals. • Residential areas some distance to the north-east and west of Victoria Road.	**STANDARD**
Physical Environment (PE)						
PE1	Coastal and Marine	• Physical alteration of coastal landform to accommodate new infrastructure (berth etc). • Potential habitat and species impacts from construction activities and runoff.	• Modification to existing landform and construction of built elements, including wharf and dredging of basin. • Increased turbidity during construction, loss of seagrass, etc	• Direct and Cumulative	• Coastal and marine ecosystems, direct and cumulative impacts on water quality. • Impact of disposal of material dredged or removed from the Port River	**DETAILED**
PE2	Soils, Landform and Geology	• Proximity to coast/Port River and minimisation of risk from coastal hazards	• Potential for Coastal Acid Sulphate Soils	• Direct		**STANDARD**
PE3	Surface Water and Groundwater	• Large areas of hardstand and building areas and reduction in permeable areas > increase in runoff and stormwater potential within expansion of industrial / ship building precinct. • Potential for impacts to the marine environment from contaminated or sediment laden runoff generated during the construction phase.	• On-site management of surface water flows and stormwater to ensure untreated water / contaminants are not discharged to the Port River, adjacent land or conservation areas during both the construction and operation phases.	• Direct and Cumulative	• Close proximity and sensitivity of Port River and marine waters, including Dolphin Sanctuary. • Preparation of Stormwater Management Plan. • Preparation of Soil Erosion and Drainage Management Plan	**DETAILED**

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Design (DQ)						
DQ1	Urban Design and Place-Making	• Bulk and scale of large industrial buildings in a linear form along the eastern edge of the peninsula. • Public reception and wayfinding • Active travel.	• Viewshed / zone of influence extends beyond the site, particularly to the north, east and south-east.	• Direct	• Industrialised locality	**STANDARD**
Social and Community (SC)						
SC1	Aboriginal Cultural Heritage	• Confirmation required of Aboriginal sites (recorded or possible within or adjacent to subject land)	• Risk of impact increases during construction / earthworks. • Significance of Mutton Cove • The adjacent Adelaide International Bird Sanctuary National Park – Winaityinaityi Pangkara and Torrens Island Conservation Park are co-managed through an Advisory Committee with the Kaurna Yerta Aboriginal Corporation.	• Direct	• Heavily modified environment • Close to Port River. • Native title extinguished under the *Kaurna People Native Title Settlement Indigenous Land Use Agreement (ILUA).* • Aboriginal Heritage Act applies.	**STANDARD**
SC2	Community Wellbeing / Social Impact Assessment	• Community concerns regarding environmental impacts, impact on conservation areas, Dolphin sanctuary / Port River, and nuclear powered vessels.	• Noise impacts to sensitive receivers to be confirmed. • Wider community concern for sensitive coastal / marine environments. • Nuclear vessel construction	• Direct, Indirect and Cumulative	• Local Environmental Groups will have a focus on conservation areas, Port River, Dolphin Sanctuary (PAREPG) / PAEF) with heightened sensitivity to any offsite impacts to land or marine waters from potentially polluting activities. • Impact on local services, infrastructure and facilities from an influx of workers. • Restricted of access to Mutton Cove?	**DETAILED**

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
SC3	Heritage Places and Areas	• Possible chance finds during construction. • New interface impacts to Port River and shipwreck locations from marine works. • Positive impacts e.g. employment opportunities, technology transfer, multiplier effects (new businesses, expansion of existing businesses, service sector growth etc) • Requirements for housing, services etc.	• Risk of impact increases during construction, dredging and related earthworks.	• Direct	• Nil registered European state or local heritage places on project site. • Closest state place is on Torrens Island, Quarantine Station site. • Location of protected shipwrecks in vicinity of conservation parks and port river would need to be confirmed. Marine survey required.	**STANDARD**