



STATE
PLANNING
COMMISSION

Assessment Requirements

ENVIRONMENTAL IMPACT STATEMENT

Northern Water Project

Mullaquana Station, Eastern Eyre Peninsula, Upper Spencer Gulf and Far North of South Australia

Department for Infrastructure and Transport

2026



NORTHERN WATER

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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 16 December 2025 the Northern Water Project Delivery Office, within the Department for Infrastructure and Transport (DIT), as an agency of the Crown, lodged a development application under Section 131 of the *Planning, Development and Infrastructure Act 2016* (the PDI Act) for the Northern Water Project (Crown DA 25038619).

On 22 December 2025, pursuant to Section 131(25) of the PDI Act the Minister directed that the development becomes subject to the procedures under the PDI Act with respect to the preparation and consideration of an EIS. The direction notice appeared in the SA Government Gazette on 8 January 2026. The scope of the development is as defined in Crown DA 25038619.

On 19 March 2026 DIT lodged a scoping application under Section 111(2)(d) of the PDI Act in accordance with the requirements of Practice Direction 17 – Impact Assessment Development (State Planning Commission).

The Northern Water Project is a water supply infrastructure project which seeks to provide a secure, climate resilient source of water to the eastern Eyre Peninsula, Upper Spencer Gulf and Far North of South Australia. The project will support current and future growth in the region and may offer an alternative water supply to the River Murray, Great Artesian Basin and/or local groundwater sources.

The proposed development comprises a 51 gigalitre per year (GL/y) seawater reverse osmosis desalination plant and associated marine structures on the western shore of Upper Spencer Gulf at Mullaquana Station. A water transfer system comprising a trunk pipeline and associated storage, pump stations and power supply extends north from the desalination plant to Olympic Dam passing Whyalla, Port Augusta, Woomera and Roxby Downs, with a branch pipeline to the Carrapeteena mine delivery point.

A detailed description of the project, based on a Reference Design, is provided below including construction and operational methodologies and estimated disturbance footprints.

It is noted that the Reference Design is preliminary and expected to change in response to detailed design and engineering, stakeholder engagement, cultural heritage matters, technical studies and through this assessment process.

2.1 Reference Design

Desalination Plant

- A 51 GL/y seawater reverse osmosis desalination plant located on the western shore of Upper Spencer Gulf at Mullaquana Station, approximately 25km south-west of Whyalla.
- Access to the desalination plant site is via Eight Mile Creek Road from Whyalla. A new 6km road may be constructed connecting Eight Mile Creek Road and Lincoln Highway, to provide alternative access to the site (direct from Lincoln Highway) during construction and/or operation.
- The site will include the main desalination plant, water storage, high voltage switchyard, intake and outlet pump station, Tunnel Boring Machine (TBM) launch facility, stormwater and wastewater management systems, potable water supply, power supply, administration building(s), workshop(s), parking, fencing and security, access roads, and landscaping.
- The main desalination plant will include an intake pump station and screening structures, pre-treatment, reverse osmosis and post treatment systems.

Marine Infrastructure

- The desalination plant will extract seawater via an intake pipeline and structure, and discharge return water back into the Spencer Gulf via an outfall pipeline and structure.
- The intake pipeline will extend a minimum 3km offshore to a depth of approximately 13m from lowest astronomical tide (LAT) (approximately -15m Australian Height Datum), with associated intake pumps and screened intake heads.
- The outfall pipeline will extend a maximum 5km offshore, to a maximum depth of 17m LAT (approximately -19m Australian Height Datum), with associated diffusers.

Water Pipelines

- A water supply pipeline network, with a main trunk of approximately 360km from the desalination plant at Mullaquana Station to the Olympic Dam mine delivery point.
- An approximately 46km branch pipeline to the Carrapateena mine delivery point.
- Blank flanges will be located at key points along the pipeline (including but not limited to Whyalla North, Port Bonython, Woomera and Oak Dam) to facilitate potential future customer connections.
- The majority of the main trunk pipeline would be trenched (underground) except where geotechnical conditions or other sensitivities require an alternative design response. The branch pipeline to Carrapateena may be constructed above or below ground, subject to final design.

Pump Stations and Storage Tanks

- Transfer pump stations and water storage facilities will be constructed along the pipeline as follows:
 1. Mullaquana pump station

2. Lincoln Gap pump station and storage

3. Kalaya pump station and storage

4. Mangata pump station and storage

5. Bimba high point storage

- Each individual pump station location will include an electrical control room, electrical transformers and equipment, operation and maintenance facilities, as well as fencing and parking.
- Storage tanks are proposed to be single concrete tanks with a fixed steel roof; however alternate storage solutions (eg earth bank storage) may be considered.

Electricity Transmission Infrastructure

- The project requires new electricity transmission lines and network connection points, including new transformers and substations to provide power to the desalination plant and pump stations.
- A new Mullaquana Substation will be constructed and operated by ElectraNet, approximately 20km north of the desalination plant. The new substation will connect to the desalination plant via a 20km, 132kV overhead, private transmission line constructed and operated by the Project.
- Electricity infrastructure for the new pump stations includes:
 - Lincoln Gap: augmentation of the existing ElectraNet Corraberra Hill Substation, and connection to Lincoln Gap pump station via a 3km, 275kV private transmission line built and operated by the Project.
 - Kootaberra Station: a new substation to be constructed and operated by ElectraNet, and connection to the Kalaya pump station via a 4km, 132kV private transmission line built and operated by the Project.
 - Oakden Hills: augmentation of existing SAPN Mount Gunson Substation, and connection to the Mangata pump station via a 15km, 33kV distribution line likely to be built and operated by SAPN.
- Power supply for the Bimba storage at Pimba will be provided by a solar panel array and battery.
- In addition to the new and augmented SAPN / ElectraNet network substations described above, new project substations will be constructed, one for the desalination plant, and one for each of the transfer pump stations. Each substation will be located within the facility sites, built and operated by the Project.

Telecommunications Infrastructure

- A fibre-optic network is expected to be included in the transfer system trench to provide data connectivity between pumping stations, storage tanks and the control system.
- Communication towers will provide point-to-point radio link connectivity and data communication between sites. Towers may be located at the desalination plant site, pump station and storage sites.

2.2 Construction Methodologies

Staging

- Construction of the project is expected to proceed in stages, to be further defined in the EIS.

Desalination Plant and Marine Infrastructure

- The reference design proposes the construction of the intake and outfall tunnel(s) via a Tunnel Boring Machine (TBM) under the seabed to the required distance offshore. The TBM would be launched via a temporary onshore decline and box cut.
- Alternative construction methodologies may be considered for part(s) of the pipeline, including the 'float and sink' method.
- Marine construction works (offshore intake and outfall diffuser structures) will be undertaken from a Jack Up Barge (JUB). The JUB will be moored above the proposed location of the intake and outfall structures, with supporting land infrastructure located at the Whyalla Port.
- Construction of the intake and outfall structures may require a combination of dredging, piling, grouting, rip rap placement, floating and sinking of structures, and installation of riser caps.

Water Delivery Pipeline

- The construction corridor width will vary along the alignment based on local conditions. The nominal corridor width for standard installation is 40m, allowing for trenching, pipeline installation, stockpiling, vehicle access and pipe laydown. In areas of ecological or cultural sensitivity (or in response to other local conditions), disturbance corridors will be constrained.
- Below ground installation, via trench and cover fill, is the preferred construction method for most of the alignment. Trenchless installation may be used for rail line crossings, major road crossings and some waterway / waterbody crossings.
- Some sections of the pipeline may require above ground installation, for example steep terrain, creek crossings, and environments / soils that are sensitive to excavation (eg ephemeral lakes, highly aggressive soils) or where preferred by Traditional Owners.
- Construction activities will typically include survey, vegetation clearance and grading, pipe deliveries and pipe stringing, trenching, pipe installation, backfill, and rehabilitation. Due to the linear nature of the pipeline, construction will occur on concurrent work fronts, at an estimated rate of approximately 500m per day.
- Following construction, the area above the pipeline would be rehabilitated by resspreading cleared topsoil and vegetation to encourage natural regeneration, with additional rehabilitation methods (e.g. direct seeding) implemented where required to supplement natural regeneration.

Electricity Transmission Infrastructure

- Construction may proceed on several concurrent work fronts along the linear transmission line routes, and substation sites.

- Construction activities will typically include access preparation, vegetation clearance and grading including temporary stockpiling, concrete foundations / footings, tower installation, and stringing.
- Lattice towers are expected to be partially fabricated off-site, and monopoles will be delivered to work sites in sections.

Temporary Development & Other Construction Requirements

- Temporary development for the construction phase including laydown areas, yards, site offices, and amenities. Laydown areas of up to 10ha each are expected to be required every 100km along the pipeline route.
- A combination of existing premises in regional centres, and transportable construction camps, are proposed for workforce accommodation.
- Construction camps would include temporary accommodation and office buildings, sewage treatment systems and possibly a mobile reverse osmosis plant for water treatment. Several will be required along the project route.
- Potable and non-potable water will be required for various activities including the construction workforce, concrete batching, hydrotesting, dust suppression and backfill conditioning. Potential sources include SA Water connection points, Port Augusta to Woomera pipeline connection points, and BHP water at Olympic Dam. Water will be transferred via road tanker to temporary tank farms established at laydown areas and construction camps.
- Electricity supply will be required for construction camps, laydown areas, and along the work fronts. Most of the construction power will be provided by mobile (diesel powered) generators. Temporary solar arrays can be utilised.

2.3 Operational Requirements

Desalination Plant

- The desalination plant will operate and be staffed on a 24/7 basis with most maintenance activities undertaken during daylight hours.
- The desalination plant will operate under an environmental authorisation (licence), administered by the Environment Protection Authority (EPA) under the *Environmental Protection Act 1993*. This will include preparation of an Operational Environmental Management Plan.

Water Transfer System

- Periodic maintenance, inspection and monitoring of the pipeline will be undertaken, including regular on-site inspections.
- Access tracks established during construction will be utilised for inspection and maintenance activities by light 4WD vehicles.
- Activities may include maintenance or replacement of pumps, flow meters, check valves and other components.

Electricity Transmission Infrastructure

- Access tracks established during construction will be utilised for inspection and maintenance activities by light 4WD vehicles.
- Major maintenance activities, such as replacement of insulators may be required after 20-25 years.

2.4 Project Disturbance Footprints

Indicative disturbance footprints have been prepared based on the reference design, the anticipated construction methodologies, and a range of assumptions.

Project Element	Estimated total disturbance (ha)	Estimated breakdown	
		Permanent (ha)	Temporary (ha)
Desalination plant	187	187	0
Offshore construction of marine infrastructure	7	4	3
Main transfer pipeline and lateral branch	1603	122	1481
Pump stations and water storages	28	14	14
Electricity infrastructure	85	45	40
Temporary construction areas (camps, laydowns, yards, offices, access tracks)	209	0	209
TOTAL	2119	372	1747

2.5 Scope Exclusions

The following elements are excluded from the scope of the Assessment Requirements and EIS, with assessment and approvals to be progressed via separate processes:

- Ongoing environmental surveys and investigations to inform preparation of the EIS.
- Establishment of site access, signage and temporary fencing.
- Asset relocation and third-party service provision.
- Development and use of berthing facilities that are already approved for that activity.
- Development and use of borrow pits.
- Accommodation camps outside the project footprint
- Laydown areas located in existing premises or areas that are already approved for that activity.
- Fixed or mobile concrete batching plants.
- Alteration or maintenance of public roads which will be utilised by the project, including the alteration and/or upgrade of Mullaquana Road and Eight Mile Creek Road from the intersection of Horseshoe Road and Mullaquana Road (at Whyalla) to the Project Footprint.

2.6 EIS Marine Study Area

A marine study area of approximately 35 km² has been adopted for the EIS. The area covers an appropriate distance around the marine intake and outfall alignments and forms the broad basis for marine baseline studies and surveys at the Mullaquana Station site. Refer Figure 3.



Figure 1: Project Footprint

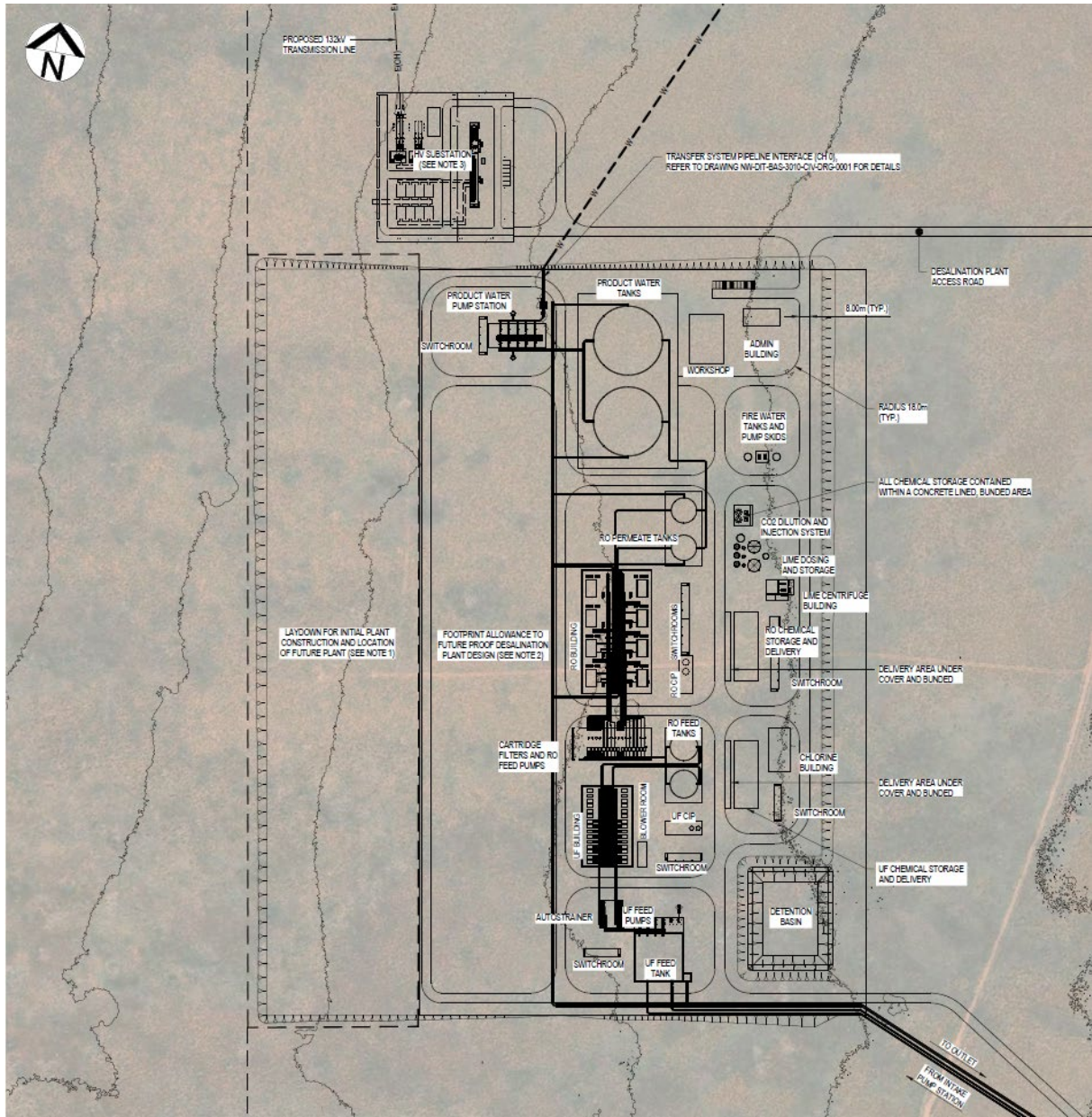


Figure 2: Project Layout – Desalination Plant (reference design)

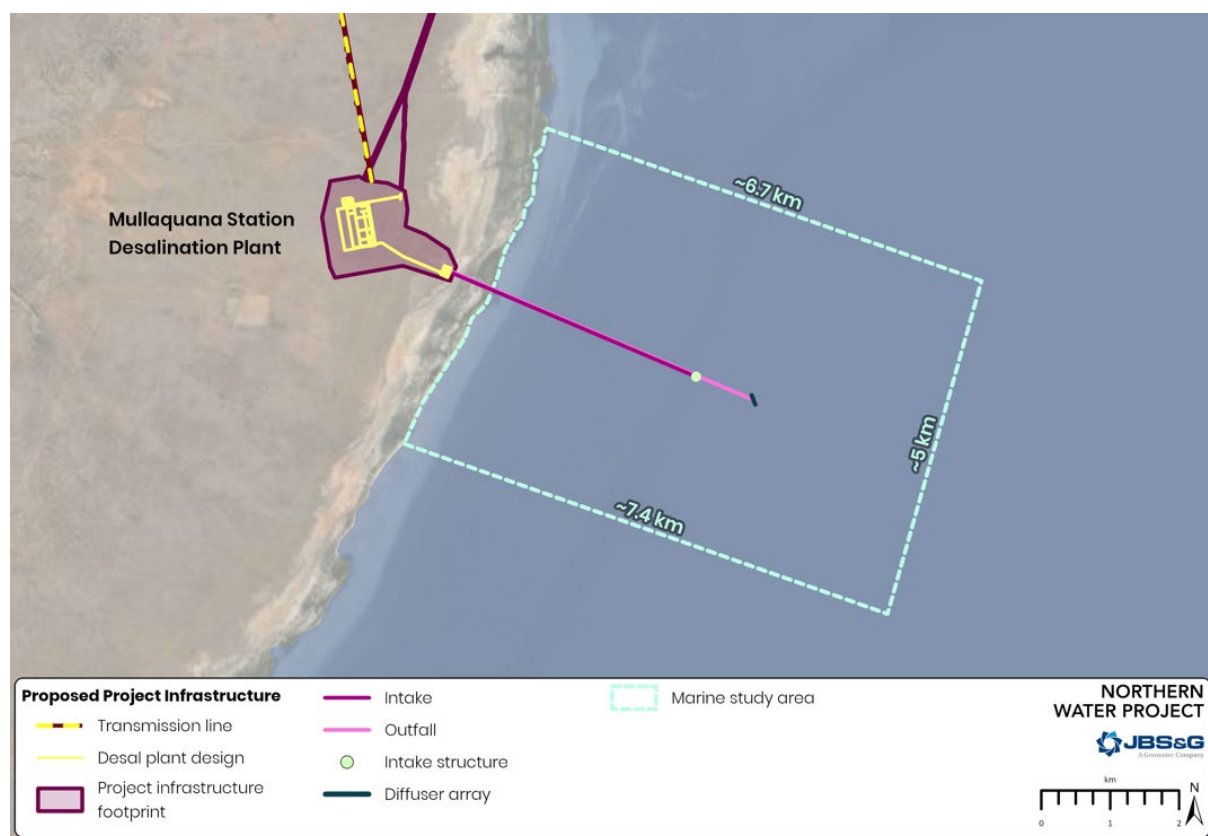


Figure 3: EIS Marine Study Area

3 Background to these Assessment Requirements

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

The Assessment Requirements set out the matters relating to the environment that are to be addressed in an EIS for this project. The EIS must also address all requirements set out in Section 113 of the PDI Act, Practice Direction 17 and Schedule 4 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (EPBC Regulations) (Appendix A).

Every attempt has been made to ensure these Assessment Requirements address all 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 course of 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

Section 131 of the PDI Act provides if a State Agency proposes to undertake development or supports development for the purposes of “Essential Infrastructure”, then the State Agency must lodge a Crown Development Application.

There is, however, specific provision available via Section 131(25) of the PDI Act which enables the Minister for Planning to formally direct that an EIS be prepared by the applicant, at which time the Impact Assessed pathway would apply. This direction was made by the Minister on 22 December 2025.

The scoping application lodged by the Department for Infrastructure and Transport on 19 March 2026 includes a preliminary assessment of the key social, environmental and economic issues and impacts associated with the development. The Commission has used the information provided in this 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(s). 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 4.



Figure 4: Steps in impact assessed development process

4.2 Assessment under accredited assessment process

The proposal was referred under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The delegate of the Australian Government Minister for the Environment and Water decided under section 75 of the EPBC Act that the proposed action is a controlled action and, as such, requires assessment and an approval decision due to the potential for a significant impact on matters of national environmental significance (MNES) protected under Part 3 of the EPBC Act.

The proposal is being assessed under an accredited assessment process in accordance with section 87(4) of the EPBC Act and section 131(25) of the PDI Act. These Assessment

Requirements have been prepared to meet the requirements of both government jurisdictions, including those specified in Schedule 4 of the EPBC Regulations (Appendix A).

4.3 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.

The process for consultation with First Nations people must be undertaken consistent with the requirements of the [Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999](#) and or any First Nations engagement standard (if one is in force).

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

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

4.4 Responding to submissions

Copies of submissions from the public, council(s) and relevant agencies are 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 Chief Executive of the Department for Housing and Urban Development 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 Chief Executive thinks fit.

The Assessment Report and the Response Document will be published on the SA planning portal. The Assessment Report will be made available for inspection and purchase by members of the public, as required in Section 113(10) 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
- Provisions of the Planning Rules and the regulations
- The Building Code of Australia
- Where development involves or is for the purposes of a prescribed activity of environmental significance, the *Environment Protection Act 1993* 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 Chief Executive'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."

4.5 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.

4.5.1 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. <i>Environment Protection (Commercial and Industrial Noise) Policy 2023</i>)
	Value to society	<u>Environmental value</u> : e.g. water quality, natural habitat). <u>Social value</u> : e.g. community value, landscape, recreation, lifestyle disturbance, water quality, cultural heritage, amenity. <u>Economic value</u> : 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.
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4.5.2 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 of the characteristics set out in Table 2.

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: - o well understood by regulators and stakeholders - o relatively easy to predict using standard methods - o 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 <i>Environment Protection Biodiversity and Conservation Act 1999</i>. ▪ The development raises requirements under other legislation applicable for the development (e.g. prescribed activities of environmental significance under the <i>Environment Protection Act 1993</i>). ▪ 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)

	- o identifying the specific mitigation measures or suitable offsets for the project - o the methods available for predicting the impacts of the project, including the indirect and cumulative impacts - o criteria for evaluating the acceptability of the impacts of the project - o specific strategies may be required to address these uncertainties (e.g. further monitoring, review, technical investigations and adaptive management).
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4.5.3 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.

Table 3: Assessment categories and environmental attributes

Assessment category	Environmental attribute and typical issues
Amenity and Environmental Quality	<u>Air quality</u> Ground level concentrations (include background levels, construction / traffic), dust, odour, stack emissions, receptors (location and sensitivity). <u>Noise / Vibration</u> Noise / vibration type (include traffic noise), underwater noise, noise level, sensitive receptors and location. Sensitive receptors may include terrestrial and marine fauna. <u>Transport and Traffic</u> 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. <u>Visual amenity</u> Interface with adjoining land, landscape changes, built form, light spill.
Biological Environment	<u>Biosecurity</u> Weeds, pest species (including marine pests), diseases and pathogens. <u>Matters of National Environmental Significance</u> Nationally threatened species and communities, migratory species, wetlands of national importance (Ramsar), Commonwealth lands <u>Marine Flora and Fauna</u> Marine protected areas, threatened species, communities/ ecosystems, seagrass clearance, biodiversity loss <u>Terrestrial and Aquatic Flora and Fauna</u> Protected areas, threatened species and communities, native vegetation clearance, habitat loss through clearing fire or fragmentation, habitat degradation, biodiversity loss
Climate Change and Resource Use Efficiency	<u>Climate change adaptation</u> Climate change risk assessment <u>Greenhouse gas emissions</u> Greenhouse gas emissions including emissions reduction targets, NGER reporting, cumulative impacts on state and national GHG inventories and targets. <u>Sustainable use of resources</u> Sustainable procurement, products / materials, energy efficiency <u>Waste Management</u> Waste hierarchy; waste recycling / disposal
Economic Environment	<u>Local, regional and state economies</u> 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	<u>Bushfire, Floods, Site Contamination</u> Hazard risk management, bushfire, flooding, contamination and dangerous goods
Land Tenure, Protected Areas and Land Use	<u>Land Tenure, Protected Areas and Land Use</u> 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	<u>Coastal and Marine</u> Coastal land systems (dunes, estuaries, beaches, island), and marine water quality. <u>Soils, Landform and Geology</u> Erosion and sedimentation, soil compaction and inversion, contamination (spills), land subsidence and acid sulfate soils. <u>Surface Water and Groundwater</u> Surface water quality (sedimentation, wastewater, spills, use of surface water) and groundwater use and quality.
Design	<u>Urban Quality</u> Supporting design excellence to create desirable and socially inclusive places.
Social and Community	<u>Aboriginal cultural heritage</u> Known and unknown Aboriginal sites, objects and remains. <u>Community wellbeing</u> 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. <u>Heritage Places and Areas</u> Listed national, state and local heritage sites.

5 Content Requirements for the EIS

Section 113 of the PDI Act and Schedule 4 of the EPBC Regulations (Appendix A) set 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)
 - 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 Matters of National Environmental Significant (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 plan 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 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:

- Title, background to, and clear 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.
- 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.

- How the development may impact reliance on existing water resources in the region, including the Great Artesian Basin, by providing an alternative, climate resilient water supply, including an outline of potential indirect environmental benefits.

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 Chief Executive'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
- 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
- All requirements detailed in Schedule 4 of the EPBC Regulations (Appendix A)

5.6 Project Alternatives

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

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 EPBC Act 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 unconventional gas development and large coal mining development.

On 11 December 2025, DIT submitted a referral under the EPBC Act to the Australian Government Minister for the Environment and Water.

On 5 February 2026 a Delegate of the Minister determined that the Northern Water Project has the potential to have a significant impact on the environment and requires assessment and approval under the EPBC Act before it can proceed. The Delegate also decided, under section 87 of the EPBC Act, that the proposed action will be assessed by accredited assessment, under the South Australian PDI Act 2016.

The proposed action will be assessed by a single EIS, to be prepared under a project specific administrative arrangement between the Commonwealth and Government of South Australia and meeting the requirements of both the EPBC Act (Commonwealth) and the PDI Act (State).

The action has the potential to have a significant impact on the following MNES that are protected under Part 3 of the EPBC Act including but not limited to:

- Listed threatened species and communities (sections 18 & 18A):
 - o Western Grasswren (*Amytornis textilis myall*) – Vulnerable
 - o Plains Rat, Palyoora, Plains Mouse (*Pseudomys australis*) – Vulnerable
 - o Southern Right Whale (*Eubalaena australis*) – Endangered
 - o Australian Sea-lion, (*Neophoca cinerea*) – Endangered

- o White Shark, Great White Shark (*Carcharodon carcharias*) – Vulnerable, Migratory
- o Loggerhead Turtle (*Caretta caretta*) - Endangered, Migratory
- o Leatherback Turtle, Leathery Turtle, (*Dermochelys coriacea*) – Endangered, Migratory
- o Thick-billed Grasswren (*Amytornis modestus*) – Vulnerable
- o Malleefowl (*Leipoa ocellata*) – Vulnerable
- o Sandhill Dunnart (*Sminthopsis psammophila*) – Endangered
- o Curlew Sandpiper (*Calidris ferruginea*) – Critically Endangered, Migratory
- o Eastern Curlew, Far Eastern Curlew (*Numenius madagascariensis*) – Critically Endangered, Migratory
- o Common Greenshank, Greenshank (*Tringa nebularia*) – Endangered, Migratory
- o Eastern Hooded Plover, (*Thinornis cucullatus cucullatus*) – Vulnerable
- o Ruddy Turnstone (*Arenaria interpres*) – Vulnerable
- o Sharp-tailed Sandpiper (*Calidris acuminata*) – Vulnerable
- o Red Knot, Knot (*Calidris canutus*) – Vulnerable, Migratory
- o Australian Fairy Tern (*Sternula nereis nereis*) – Vulnerable
- o Greater Sand Plover, Large Sand Plover (*Charadrius leschenaultii*) – Vulnerable, Migratory
- Listed migratory species (sections 20 and 20A):
 - o Common Sandpiper (*Actitis hypoleucos*)
 - o Sanderling (*Calidris alba*)
 - o Pectoral Sandpiper (*Calidris melanotos*)
 - o Red-necked Stint (*Calidris ruficollis*)
 - o Bar-tailed Godwit (*Limosa lapponica*)
 - o Fork-tailed Swift (*Apus pacificus*)

Listed controlling provisions relevant to the assessment are those that were listed at the time that the controlled action decision was made, on 5 February 2026. The EIS must address all relevant MNES (refer to MNES1 and MNES2 in Section 8 below), and explain how they have adequately regarded the Conservation Advice of each EPBC Act listed species that are known or likely to be impacted, and Australia's obligations under international conventions and agreements. Moreover, the EIS must explain how the proposal is not inconsistent with any Threat Abatement Plans, Bioregional Plans or Recovery Plans.

Various policy statements and other publications that may be relevant to the assessment can be found at Appendix B.

5.8.1 Other considerations under the EPBC Act

a) Ecologically sustainable development

The EIS must include a discussion of how the proposal meets the principles of ecologically sustainable development, as defined under section 3A of the EPBC Act.

b) Environmental record of person(s) proposing to take the action

The EIS must include details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

- i. The person proposing to take the action.
- ii. For an action for which a person has applied for a permit, the person making the application.
- iii. If the person proposing to take the action is a corporation, details of the corporation's environmental policy and planning framework must also be included.

c) Environmental outcomes

In the event that the Commonwealth Minister decides to approve the action and attach conditions, should you wish to implement or pursue an outcomes-based approach to mitigating and/or offsetting impacts on protected matters, the EIS must provide information on the outcomes that will be achieved for the relevant protected matters.

Outcomes need to be specific, measurable and achievable, and should be based on robust baseline data and new and relevant scientific data. Outcomes must be developed in consideration of the [Outcomes-based Conditions Policy 2016](#) and [Outcomes-based Conditions guidance 2016](#), with suitable justification for considerations identified in the policy and guidance.

To allow application of outcomes-based conditions, the EIS should include the specific environmental outcomes to be achieved. It should also include the reasoning for these, including reference to any recovery plan, conservation advice or threat abatement plan that may be relevant to the protected matters.

For each proposed outcome, the information must include:

- i. The risks associated with achieving the outcome.
- ii. The measurability of the outcome, including all suitable performance measures.
- iii. Appropriate baseline data upon which the outcome has been defined and justified.
- iv. The likely impacts that the proposed outcome will address.
- v. Demonstrated willingness and capacity of achieving the outcome.
- vi. The level of knowledge about the protected matter or its surrogate, upon which outcomes were based.
- vii. Discussion of the appropriateness of any surrogates for protected matter outcomes.
- viii. Commitments to independent and periodic audits of performance towards achieving outcomes.
- ix. Assessment of the likely level of control that the proponent will have in achieving the outcome.

- x. Details of proposed management to achieve the outcome, including, but not limited to performance indicators, periodic milestones, proposed monitoring and adaptive management, and record keeping, publication and reporting processes.

5.9 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, how recent the information is and how the reliability of the information was tested. 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.

5.10 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 Interim Engaging with First Nations People EPBC Guidelines (Appendix B) and an appropriate level of public participation in the EIS process.

5.11 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 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
- 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 clearly indicating all proposed buildings, structures and works, and demonstrating that key parts of the development will be contained within relevant allotment boundaries.
- Elevations showing all sides of buildings, structures and works with levels and height dimensions relative to ground level.
- Bulk earthworks plan (or similar) for the desalination plant site, pump stations and water storage sites, detailing the extent of engineered cut and fill across the site(s).
- A description 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 moving displays.

6 Key Issues and Project Specific Assessment Requirements

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

- Effects on marine flora and fauna, ecological processes, and marine based industry including recreational and commercial fisheries and aquaculture.
- Effects on terrestrial flora and fauna.
- Effects on Matters of National Environmental Significance under the EPBC Act including listed threatened species and communities.
- Effects on Aboriginal cultural heritage.
- Economic and social effects for local and regional communities, and the State.

A scoping analysis of the environmental attributes associated with these key issues has been undertaken in accordance with the methodology detailed in Section 5.5.1. Refer Appendix C.

This scoping exercise has informed the level of assessment for each relevant environmental attribute (standard or detailed) and guided the preparation of the project specific Assessment Requirements presented in Sections 9 and 10.

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.

7 Post Decision Requirements

If the development is approved, final detailed design drawings / plans and project specific management plans will be required through reserved matters or conditions pursuant to section 115(6) and 115(7) of the PDI Act, to the satisfaction of the Minister for Planning.

Final detailed drawings / plans may include the following, drawn at an appropriate scale:

- Site plans clearly indicating all proposed buildings, structures and works, and demonstrating that key parts of the development will be contained within relevant allotment boundaries.
- Elevations showing all sides of buildings, structures and works with levels and height dimensions provided relative to ground level.
- 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 for each building or structure demonstrating what is proposed at each floor, with internal layouts.
- Final schedule of external materials, finishes and colours for the desalination plant, pump stations and water storages.

A suite of management plans will capture the measures identified in the Applicant's EIS and Response Document, and the Chief Executive's Assessment Report to avoid, mitigate, manage, offset and/or monitor environmental impacts during construction and operation of the development.

Preparation of the plans will require consultation with DCCEE, State Agencies, local Councils, Traditional Owners and others, as relevant. The suite of plans is expected to address both PDI Act and EPBC Act requirements and may include:

- Construction Environmental Management Plan (CEMP)
- Traffic Management Plan (TMP)
- Post Construction Rehabilitation Plan
- Coastal and Marine Management Plan
- Hazard and Emergency Management Plan(s)
- Flora and Fauna Management Plan(s)

- Native Vegetation Clearance Data Report (final) including a Significant Environmental Benefit (SEB) Management Plan
- Threatened Species Management Plan
- Offset Strategy and Offset Management Plans for MNES
- Cultural Heritage Management Plan (CHMP)
- Greenhouse Gas Emissions Mitigation Plan
- Operational Environmental Management Plan (OEMP)
- Decommissioning and Rehabilitation Plan (DRP)

8 Summary of Project Specific Assessment Requirements – Commonwealth

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
Commonwealth Matters of National Environmental Significance (MNES)				
MNES1	Listed Threatened Species and Communities (Sections 18 and 18A – EPBC Act) controlling provision	To ensure the proposed action does not have unacceptable adverse impacts to the survival of the species.	An analysis is required for each listed threatened species and ecological communities that are known or likely to occur within the proposal site according to PMST (using a buffer of 5 km for the search), which may include, but is not limited to, those identified in section 5.8 above, and is based on the likelihood of significant impacts and should follow the below structure. Description - Describe each listed threatened species and ecological communities including EPBC Act listing status, abundance, distribution, ecology, and habitat preferences in both a regional and local context. These descriptions are to align with the information in the SPRAT database and relevant Commonwealth documents (Appendix B). Desktop analysis - Describe the desktop assessment methodology used to inform the field surveys within and adjacent to, the site of the proposed action. - Identify and describe historical records of listed threatened species and ecological communities in the broader region supported by an appropriate source (i.e. Commonwealth and State databases, published research, publicly available survey reports, etc.) (See Appendix B), including the year of the record and a brief habitat description. - Where desktop analysis is the limit of the information being analysed justify this position. Survey efforts - Detail methods, data and scientific literature used to assess the environmental values in the proposed action area and surroundings, including survey data and historical records for the relevant listed species with reference to DCCEEW documents (e.g. approved conservation advice, recovery plans, draft referral guidelines and listing advice, and the SPRAT Database), including published research and any other relevant sources. - Justify any divergence from relevant Commonwealth and State guidelines or best practice survey guidelines at the time of the surveys with input from species experts and available scientific literature. - Ensure surveys adhere to suitable standard for scope, timing and spatial and temporal replication, to maximise species detection. - Include maps demonstrating survey effort and species distribution. - Provide additional surveys to fill information gaps, including but not limited to the complete hydrodynamic modelling survey for the intake, outfall and supporting infrastructure of the project at Mullaquana Station, SA. Survey outcomes - State the total number of records (individuals and evidence of presence) of listed threatened species and ecological communities within and adjacent to the proposed action. All records are to include the year of the	DETAILED

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			record and a brief description of the habitat in which the record was identified. This data may be used by DCCEEW to update the relevant species distribution models that underpin the publicly available PMST. Habitat assessment - Conduct a comprehensive habitat assessment focusing on quality, importance, and ecological function (e.g. for foraging, breeding, roosting or dispersal) for listed threatened species and communities within the proposed action area and surrounding areas. - Base habitat assessments on field surveys and vegetation assessments, the SPRAT Database, relevant DCCEEW documents (e.g. approved conservation advice, recovery plans, listing advice, draft referral guidelines, etc.), published research and expert input, where necessary (See Appendix B). - Map habitat type/s for relevant listed threatened species and ecological communities within and adjacent to the proposed action site, including the EIS Marine Study Area (defined in Section 2 – Description of Development), detailing the disturbance footprint (in ha) with an overlay of any EPBC habitats and known records of individuals from desktop analysis and/or field surveys. - Note that the National Conservation Values Atlas Mapping System indicates important migratory habitat for the Southern Right Whale, within the marine environment off Mullaquana Station, SA. Impact assessment - Describe and assess the likely short-term and long-term impacts (direct, indirect, facilitated, and cumulative) to listed threatened species and ecological communities from the proposed action. - Evaluate all relevant impacts with the latest relevant Commonwealth policies and guidelines, and information provided in the SPRAT database (Appendix B), including habitat clearance, fragmentation, degradation, injuries, disturbances (e.g., dust, light, vibration, noise), behavioural changes, pest/weed introduction, hydrological changes, water quality (including ecotoxicology assessment of concentrated seawater discharge), barriers to fauna movement. - Identify action components and stages of the action and/or consequential actions that are of relevance to each listed threatened species and communities. - Impacts discussion on these protected matters should address uncertainty (where applicable) and in the absence of information about impacts a precautionary approach or principle should be applied and the maximum potential impact assumed. - The assessment of the impact to threatened ecological communities must include any relevant buffers that directly surround the patch. - Provide maps which identifies the total amount of habitat (in ha) for each listed threatened species and communities in the disturbance footprint and the interaction or overlap between impacted habitat (where the disturbance footprint occurs) and retained habitat (areas that are not directly impacted by the disturbance), with tables of coordinates appended. - Identify whether any relevant impacts are likely to be unknown, unpredictable or irreversible. - Assess how the action impacts the outcomes, objectives and targets of relevant reports and documents.	

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			Significant impact assessment - Analyse the significance of the relevant impacts considering the species ecology and environment, potential threats, and using the DCCEEW's Significant impact guidelines 1.1 (2013) outline which significant impact criteria applies. - Provide an assessment of the likelihood of residual significant impacts occurring on MNES after avoidance, mitigation and management measures have been applied. If residual significant impacts to protected matters are likely, provide proposed offsets (described below). Avoidance, mitigation and management - Describe all relevant species-specific measures to avoid, mitigate and manage potential impacts on listed threatened species and communities, aligning with key life-cycle events (e.g. key breeding periods) and assess expected effectiveness. - Describe sedimentation and erosion mitigation measures particularly in relation to important habitats that relate to shorebirds and marine species. - Describe measures to prevent oxidation of acid sulphate soils, treat and neutralise acid if formed and manage excavated material, where identified, and if relevant to a potential impact to MNES. - Describe measures that aim to protect suitable refuge habitat for the Plains mouse, where habitat is present. - Describe application of the mitigation hierarchy (avoid, mitigate and offset) as it relates to key activities and impacts to MNES. - Ensure that avoidance, mitigation and management measures are aligned with the requirements of all EPBC Act relevant policy and guidance (Appendix B). - Use committed language ('will') rather than non-committal language (i.e. 'may', 'where possible', 'if required', etc.) for proposed measures, referencing relevant guidance or best practice. - Present specific measures for impacted protected matters including the environmental objectives, performance criteria, monitoring, reporting, corrective action, responsibility and timing for each environmental issue as stated in DCCEW's Environmental Management Plan Guidelines (Appendix B). Proposed offsets - Should there be any residual significant impacts on MNES after the avoidance, mitigation and management measures have been applied then provide details of an offset package (this may be in the form of an offset strategy and offset management plan) proposed to be implemented to compensate for the residual impacts of the project. Provision of an Offset Management Plan can be considered as condition/s of approval. However, a complete offset strategy at a minimum, should be provided as part of the assessment to demonstrate a reasonable level of feasibility under Part 7 of the EPBC Act Environmental Offsets Policy (Appendix B).	
MNES2	Listed Migratory Species (Sections 20 and 20A – EPBC Act)	To ensure the proposed action does not have unacceptable adverse impacts to the	An analysis is required for each listed migratory species that are known or likely to occur within the proposal site according to PMST (using a buffer of 5km for the search), which may include, but is not limited to, those identified in section 5.8 above, and is based on the likelihood of significant impacts and should follow the below structure. Description	DETAILED

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
	controlling provision	survival of the species	- Describe each listed migratory species including EPBC Act listing status (if applicable), abundance, distribution, ecology, and habitat preferences in both a regional and local context. These descriptions are to align with the information in the SPRAT database and relevant Commonwealth documents (Appendix B). Desktop analysis - Describe the desktop assessment methodology used to inform the field surveys within and adjacent to, the site of the proposed action. - Identify and describe historical records of listed migratory species in the broader region supported by an appropriate source (i.e. Commonwealth and State databases, published research, publicly available survey reports, etc.), including the year of the record and a brief habitat description. Survey efforts - Detail methods, data and scientific literature used to assess the environmental values in the proposed action area and surroundings, including survey data and historical records for the relevant listed species with reference to DCCEEW documents (e.g. approved conservation advice, recovery plans, draft referral guidelines and listing advice, and the SPRAT Database), including published research and any other relevant sources. - Justify any divergence from relevant Commonwealth and State guidelines or best practice survey guidelines at the time of the surveys with input from species experts and available scientific literature. - Ensure surveys adhere to suitable standard for scope, timing and spatial and temporal replication, to maximise species detection. - Include maps demonstrating survey effort and species distribution. - Provide additional surveys to fill information gaps, including but not limited to the complete hydrodynamic modelling survey for the intake, outfall and supporting infrastructure of the project at Mullaquana Station, SA. Survey outcomes - State the total number of records (individuals and evidence of presence) of listed migratory species within and adjacent to the proposed action. All records are to include the year of the record and a brief description of the ecological behaviour and habitat in which the record was identified. This data may be used by DCCEEW to update the relevant species distribution models that underpin the publicly available PMST. Habitat assessment - Conduct a comprehensive habitat assessment focusing on quality, importance, and ecological function (e.g. for foraging, breeding, roosting or dispersal) for Listed Migratory Species within the proposed action area and surrounding areas. - Base habitat assessments on field surveys and vegetation assessments, the SPRAT Database, relevant DCCEEW documents (e.g. approved conservation advice, recovery plans, listing advice, draft referral guidelines, etc.), published research and expert input, where necessary. (See Appendix B.)	

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			- Map habitat type/s for relevant Listed Migratory Species within and adjacent to the proposed action site, detailing the disturbance footprint (in ha) with an overlay of any EPBC habitats and known records of individuals from desktop analysis and/or field surveys. - Map listed threatened ecological community, subtropical and temperate coastal saltmarsh (vulnerable) and any other beach habitats within or adjacent to the proposed action area that could be important habitat to any migratory shorebirds likely to be impacted. - Note that the National Conservation Values Atlas Mapping System indicates important migratory habitat for the Southern Right Whale, within the marine environment off Mullaquana Station, SA. Impact assessment - Describe and assess the likely short-term and long-term impacts (direct, indirect, facilitated, and cumulative) to Listed Migratory Species from the proposed action. - Evaluate all relevant impacts with the latest relevant Commonwealth policies and guidelines, and information provided in the SPRAT database (Appendix B), including habitat clearance, fragmentation, degradation, injuries, disturbances (e.g., dust, light, vibration, noise), behavioural changes, pest/weed introduction, hydrological changes, water quality (including ecotoxicology assessment of concentrated seawater discharge), barriers to fauna movement. - Identify action components and stages of the action and/or consequential actions that are of relevance to each listed migratory species. - Impacts discussion on these protected matters should address uncertainty (where applicable) and in the absence of information about impacts a precautionary approach or principle should be applied and the maximum potential impact assumed. - Provide maps which identifies the total amount of habitat (in ha) for each listed migratory species in the disturbance footprint and the interaction or overlap between impacted habitat (where the disturbance footprint occurs) and retained habitat (areas that are not directly impacted by the disturbance), with tables of coordinates appended. - Provide a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible. - Assess how the action impacts the outcomes, objectives and targets of relevant reports and documents. Significant impact assessment - Analyse the significance of the relevant impacts considering the species ecology and environment, potential threats, and using the DCCEEW's Industry guidelines for avoiding, assessing and mitigating impacts on relevant EPBC Act listed migratory species and Significant impact guidelines 1.1 (2013) (see Appendix B), outline which significant impact criteria applies. - Provide an assessment of the likelihood of residual significant impacts occurring on MNES after avoidance, mitigation and management measures have been applied. If residual significant impacts to protected matters are likely, provide proposed offsets (described below). Avoidance, mitigation, and management	

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			- Describe all relevant species-specific measures to avoid, mitigate and manage potential impacts on listed migratory species, aligning with key life-cycle events (e.g. key breeding periods) and assess expected effectiveness. - Describe sedimentation and erosion mitigation measures particularly in relation to important habitats that relate to listed migratory species. - Describe measures to prevent oxidation of acid sulphate soils, treat and neutralise acid if formed and manage excavated material, where identified, and if relevant to a potential impact to MNES. - Describe application of the mitigation hierarchy (avoid, mitigate and offset) as it relates to key activities and impacts to MNES. - Ensure that avoidance, mitigation and management measures are aligned with the requirements of all EPBC Act relevant policy and guidance (Appendix B). - Use committed language ('will') rather than non-committal language (i.e. 'may', 'where possible', 'if required', etc.) for proposed measures, referencing relevant guidance or best practice. - Present specific measures for impacted protected matters including the environmental objectives, performance criteria, monitoring, reporting, corrective action, responsibility, and timing for each environmental issue as stated in DCCEW's Environmental Management Plan Guidelines (Appendix B). <u>Proposed offsets</u> - Should there be any residual significant impacts on MNES after the avoidance, mitigation and management measures have been applied then provide details of an offset package (this may be in the form of an offset strategy and offset management plan) proposed to be implemented to compensate for the residual impacts of the project. Provision of an Offset Management Plan can be considered as condition/s of approval. However, a complete Offset Strategy at a minimum should be provided as part of the assessment to demonstrate a reasonable level of feasibility under Part 7 of the EPBC Act Environmental Offsets Policy (Appendix B).	

9 Summary of Project Specific Assessment Requirements – State

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
Amenity and Environmental Quality (AEQ)				
AA1	NA	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 for all project elements (including the desalination plant facility, intake and outlet pipelines and structures, water delivery pipeline, pump stations and storage sites, and electricity transmission infrastructure), 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
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.	- Describe the existing air environment at the proposed development site and the surrounding area and airshed, including local and regional meteorology, existing sources of contaminants and background / ambient levels of air contaminants. - Describe and illustrate the location of sensitive receivers. All types of sensitive receivers should be identified, noting that some pollutants can affect health or amenity over shorter time periods than others, and for these pollutants a broader range of locations (e.g. commercial and industrial) should be considered as sensitive receivers. In addition, describe any other environmental values that could be impacted by emissions to air. - Provide an emissions inventory and description of the characteristics of contaminants or materials that would be released from point and diffuse sources and fugitive emissions when carrying out the development activity. This should address construction, commissioning, operation, upset conditions, and closure of the proposed development. - Provide an assessment of predicted impacts of emissions on sensitive receivers / environmental values of the receiving environment, that includes consideration of background levels of pollutants, in accordance with the Environment Protection (Air Quality) Policy 2016 (Air Quality EPP). Assessment should consider the sensitivity and assimilative capacity of the receiving environment and the practices and procedures that would be used to avoid or minimise impacts. - Evaluate the risk of dust originating from the development and any potential impacts to people, property and the environment. - Provide an assessment of the compatibility of the development's air emissions with existing or potential land uses in surrounding areas and the cumulative impact of emissions with other known releases of contaminants, materials or wastes associated with existing development and approved development (i.e. as described by approved plans and existing project approvals). - Describe the proposed mitigation measures to protect the environmental values for air quality, how the relevant standards and indicators may be achieved. If required, revisit project design and construction methodologies to reduce air quality impacts to demonstrate that the Air Quality EPP and/or the general environmental duty under the <i>Environment Protection Act 1993</i> (EP Act) will be met.	STANDARD
AEQ2	Noise / Vibration	To ensure the development does not have unacceptable adverse noise or vibration impacts on the	<u>General</u> Describe and illustrate the locations of any noise and vibration sensitive receivers both proposed or existing (including marine and terrestrial fauna). Also describe any other environmental values that could be impacted by noise emitted from or to the development.	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
		surrounding environment, in particular sensitive receivers in proximity to noise sources.	- Describe current background noise and vibration levels at sensitive receivers, including their location, who they are, and how have they been defined. Note – the analysis must clearly identify all types of sensitive receivers, noting that these could include commercial/industrial land uses, and for the protection of the workers at those sites. - Describe sources and characteristics of noise and vibration that would be emitted during the construction, commissioning, operation, upset conditions, and closure of the development. - Provide an assessment of the compatibility of the development's noise emissions with existing or potential land uses in surrounding areas and the cumulative impact of emissions with other known noise / vibration emissions associated with existing development and approved development (i.e. as described by approved plans and existing project approvals). - Describe noise emission and vibration impacts on fauna, including nocturnal species, and how these impacts will be managed. - Describe and design strategies to mitigate noise and vibration impacts during construction, commissioning, operation, upset conditions and closure of the development, to demonstrate compliance with relevant legislation, guidelines and standards including, but not limited to: <i>Environment Protection (Commercial & Industrial Noise) Policy 2023.</i> <i>Environmental Protection Act 1993</i> (environmental duty and relevant environmental authorisations). <i>Local Nuisance and Litter Control Act 2016.</i> - Guideline for the Management of Noise and Vibration: Construction and Maintenance Activities, DIT, October 2021. - AS 2436 Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites. <u>Underwater noise</u> - Undertake an underwater noise assessment covering both construction and operation of the desalination plant facility, with consideration for potential short and long term impacts to marine fauna. - Demonstrate how the development will meet the General Environmental Duty under the <i>Environmental Protection Act 1993</i> with respect to underwater noise. - Describe and outline environmental management strategies to mitigate noise and vibration impacts of underwater noise on marine flora and fauna.	
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.	<u>Road operations</u> - A Transport and Access Impact Assessment should be prepared by a suitably qualified traffic engineer, evaluating current and proposed access arrangements and development related transport impacts including the effect on the arterial road network, and vehicle interface with the local road network. Any assessment must address implications for the entire supply chain and the transport, traffic and access impact for the construction, operation, maintenance and decommissioning phases. - The assessment should determine the transport system asset improvements, asset management / maintenance requirements, and operational management requirements to accommodate the increase in movements and/or vehicle sizes/mass for affected transport assets and services across all modes for the proposal's construction / implementation and operational phases. The assessment should provide where relevant: - A summary of the transport task for the development (including workforce and end-to-end supply chain (input and output)) during construction, operations and decommissioning phases of the development. This should address predicted traffic volumes, proposed vehicle types, number/frequencies, hours of activity and traffic	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			peaks, any requirements that are outside of the current gazetted heavy vehicle networks, and any measures required to ensure compliance with the 'Heavy Vehicle National Law'. - A description of the existing transport and traffic environment (using traffic data, accident statistics) and include (where relevant) public transport networks, car parking, school bus routes, and public pedestrian, cycle pathways or trails. - Any operational management measures to minimise delays and ensure safety and/or accommodate (where relevant) for other transport users (e.g. temporary road closures/detours, impact on school bus routes, alternative or new facilities), including transport of plant and equipment to/from the site. - Requirements for temporary or permanent upgrades and modifications to roads or rail infrastructure (including rail crossings and bridges), upgrades to road pavements and surfaces, access on arterial and / or local roads and car parking as a result of the development including any increase (temporary or ongoing) in maintenance requirements of transport assets. - Any management measures for transport of hazardous materials. - Identify any laydown areas or temporary construction camps that will generate traffic movements and interfaces with public road and rail networks. - Describe potential impacts of the development on Public Access Routes (PARs) through pastoral leases. Consider access and/or closure requirements during construction and operation, and potential damage, maintenance and repair arrangements. - Describe how identified impacts to transport and access will be mitigated. Mitigation strategies may include upgrade or traffic management works, contributions or other strategies that can be documented in a traffic management plan. Strategies must be prepared in close consultation with relevant transport authorities, including local government. <u>Maritime operations</u> ▪ Identify any marine or port infrastructure (new or amendments) required to facilitate the development (eg module offloading facilities if required), and their interface with transport routes and networks. ▪ Describe expected marine traffic volumes to and from port / wharves and the desalination plant development site, including expected boat/ship movements, timing and patterns. ▪ Describe marine traffic impacts associated with these movements (e.g. interaction with other vessels, impacts to navigation aids) including to existing operators (e.g. commercial fisheries, tourist operators, recreational users). ▪ Describe the impacts of any marine structures on maritime operations and management of these impacts. ▪ Discuss the measures that will be undertaken to mitigate these impacts and any safety measures that will be implemented to ensure public safety and that enable compliance with relevant marine, navigation and ports legislation and operational arrangements. <u>Rail operations</u> ▪ Assess the potential impacts of any temporary or permanent disruption of existing freight and passenger rail services. ▪ Discuss the measures that will be undertaken to mitigate these impacts and enable compliance with rail legislation and operational arrangements. <u>Air operations</u>	

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			- Assess the capacity of existing airports or airfields to handle the demand for air transport of people and/or freight. If existing facilities do not have sufficient capacity, describe and illustrate the requirements for any new or altered air transport facilities. - Describe the likely additional number of flights, size of aircraft, their frequency and timing, particularly noting any increase in night arrivals or take-offs. Describe and illustrate any air routes that would take new or increased air traffic. - Describe any features of the project that could impact on air transport, including registered aerodromes and private airfields. - Discuss the measures that will be undertaken to mitigate these impacts.	
AEQ4	Visual Amenity	To ensure adverse effects on visual amenity, landscape and open space values, including Aboriginal cultural values, are avoided or minimised and opportunities to enhance these values are maximised.	<u>Desalination Plant</u> - Provide a description of the landscape character, features and values of the development area and its environs, including Aboriginal cultural values. - Describe the effects of the development on visual amenity and landscape quality for residents and visitors for both near and distant views, from important viewing points, including from the land and sea. Describe the effects of the development on culturally significant sightlines. This should include construction, operations and closure / rehabilitation aspects of the desalination plant. - Provide a visual analysis of the desalination plant from key viewpoints, including photomontages or perspectives showing the proposed and likely future development. - Describe the potential for visual amenity impacts from night lighting at the desalination plant site and measures to mitigate visual impact. - Describe the rationale for the major design elements of the proposed development and measures to mitigate their visual impact. - 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 buildings and structures. - Describe the use of screening / amenity / landscape plantings, and any broad scale revegetation of the disturbance footprint, including opportunities for the use of locally endemic species. <u>Water Transfer System & Electricity Transmission Infrastructure</u> - Provide a description of the landscape character, features and values of the development area and its environs, including Aboriginal cultural values. - Where there is potential to impact on sensitive receptors, culturally significant sightlines, and/or major public roads, provide a visual analysis of the development (ie transfer pump station, water storage facility and/or electricity transmission infrastructure). The analysis should include photomontages or perspectives (or similar) showing the proposed development from near and distant views (as relevant). - Describe the proposed revegetation of disturbance footprints, including opportunities for the use of locally endemic species.	STANDARD
Biological Environment (BE)				
BE1	Biosecurity	To ensure that construction and operation of the development avoids the introduction or spread	<u>Terrestrial / Aquatic</u> Describe the extent and significance of existing exotic, pest or nuisance plant and animal species, diseases and pathogens in the development's terrestrial and aquatic environs.	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
		of biosecurity threats including pest or nuisance animal and plant species (including marine pests), diseases and pathogens.	- Describe the existing uses and environmental values of the development's terrestrial and aquatic environs and any sensitive places and receivers which may be impacted by introduced biosecurity threats. - Identify the potential for the introduction or dispersal of new exotic, pest or nuisance plant and animal species, diseases and pathogens, and the associated implications for native species, habitat, agricultural land and other environmental values. - Identify the potential for increased distribution and abundance of existing exotic, pest or nuisance plant and animal species, disease and pathogens, and the associated implications for native species, habitat, agricultural land and other environmental values. - Propose measures to remove, control and limit the introduction or spread of exotic, pest or nuisance plants and animals, diseases and pathogens on the development site and any areas under the proponent's control (e.g. decontamination of vehicles, mobile plant, equipment and materials), having regard to the effectiveness of such mitigation measures in the past. This includes declared plants and animals under relevant State and Commonwealth legislation. <u>Marine</u> - Describe the extent and significance of existing exotic, pest or nuisance plant and animal species, diseases and pathogens in the development's marine environs. - Describe the existing uses and environmental values of the development's marine environs and any sensitive places and receivers which may be impacted by introduced biosecurity threats. - Provide a biosecurity risk analysis that outlines the potential risk of introduction of exotic marine organisms and disease (e.g. operation of vessels or barges supporting construction activities) and measures proposed to eliminate this risk. - Outline strategies to prevent the introduction of exotic marine organisms and disease. - Describe the response procedure that will be followed in the event of a new exotic organism being detected and describe the system of surveillance monitoring.	
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	- Prepare a draft Native Vegetation Clearance Data Report prepared by an Accredited Consultant approved by the Native Vegetation Council, using Vegetation Association Scoresheets to assess marine native vegetation systems. The assessment should undertake a survey of the vegetation (including EPBC Act Listed threatened species and communities), demonstrate the application of the impact mitigation hierarchy when considering any clearance, and describe how the significant environmental benefit would be achieved. - Provide an assessment undertaken by an appropriately qualified specialist of the direct, indirect and cumulative impacts of the development on marine flora and fauna, ecological communities and populations, that may occur over the life of the development: - Describe the existing marine environment at a regional scale (in relation to the location of the intake and outfall infrastructure at Mullaquana Station) using existing publicly available data, including a description of nearby Marine Protected Areas. - Describe the distribution, abundance, condition and significance of flora and fauna species, populations, and marine habitats at Mullaquana Station and adjacent marine environment (defined as the EIS Marine Study Area – refer to Section 2 Description of Development). The assessment should consider and/or include, where relevant: - benthic habitat and plankton surveys, including potential harmful algal species;	DETAILED

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			b) ecologically important species; c) economically important species, particularly for the commercial and recreational fisheries and aquaculture industries (both existing and potential future sites in the region) including spat survival / collection; and d) species that are totemic and/or of significance to the cultural traditions of Traditional Owners. - Describe the ability of communities, populations or individual species to recover, regenerate or be rehabilitated during construction and operation including maintenance. - Describe the measures that will be taken to address displaced flora and fauna (if any). - Incorporate the outputs of the underwater noise (AEQ2), physical coastal and marine (PE1), and biosecurity (BE1) assessments, and incorporate suitable avoidance and mitigation measures in line with those and other relevant assessments. - Assess the effects of artificial light from the desalination plant on marine flora and fauna species for which artificial light has been demonstrated to affect behaviour, survivorship or reproduction (if any). Consider impact in accordance with the <i>National Light Pollution Guidelines for Wildlife</i>. - Consider the vulnerability of affected marine flora and fauna under climate change scenario RCP 8.5 (or SSP3 7.0), - Describe suitable avoidance and mitigation measures to minimise impact to flora and fauna during construction and operation. - For potential impacts identified that require mitigation and management, propose draft data collection methodologies, monitoring efforts, and assessments to be undertaken during construction and operation (noting that monitoring methods are to be confirmed as part of post approval management plans). - Detail any residual impacts that cannot be avoided and propose measures to offset the residual loss. - Where relevant, mitigation and offset strategies for totemic and/or culturally significant species should be developed in consultation with Traditional Owners.	
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.	• Prepare a draft Native Vegetation Clearance Data Report prepared by an Accredited Consultant approved by the Native Vegetation Council, using Vegetation Association Scoresheets to assess terrestrial native vegetation systems. The assessment should undertake a survey of the vegetation (including EPBC Act Listed threatened species and communities), demonstrate the application of the impact mitigation hierarchy when considering any clearance, and describe how the significant environmental benefit would be achieved. ▪ Provide an assessment undertaken by an appropriately qualified specialist of the direct, indirect and cumulative impacts of the development on terrestrial flora and fauna, ecological communities and populations, that may occur over the life of the development: - Describe the location, extent, condition and significance of flora and fauna species and populations that may be affected during construction and operation. Consider ecologically important species, economically important species, and species that are totemic and/or of significance to the cultural traditions of Traditional Owners. - Identify significant wildlife habitat and characterise wildlife movement within the broader development area that could be directly or indirectly impacted by the development including alteration of habitat conditions (e.g. habitat fragmentation, severance of wildlife corridors or habitat linkages) that may occur over the life of the	DETAILED

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			development. Assess the potential impacts on habitat connectivity of listed or other protected fauna species including but not limited to migratory species. - Include alteration of conditions that may directly or indirectly impact wetland, riparian and in-stream environments and undertake an assessment of the impacts of the development on aquatic ecology (where relevant). - Detail any changes in biological diversity that may result at the interface between the development and existing native vegetation (i.e. the 'edge effect') during construction and over the life of the development. - Describe the ability of communities, populations or individual species to recover, regenerate or be rehabilitated during construction and operation including maintenance. - Assess the ability of habitat to recover, especially for resident or migratory shore birds and listed threatened or significant species. - Assess the effects of artificial light from the desalination plant on fauna species for which artificial light has been demonstrated to affect behaviour, survivorship or reproduction (if any). Consider impact in accordance with the <i>National Light Pollution Guidelines for Wildlife</i>. - Consider the vulnerability of affected terrestrial flora and fauna under climate change scenario RCP 8.5 (or SSP3 7.0), - Describe the measures that will be taken to address displaced native fauna (if any). - Describe suitable avoidance and mitigation measures to minimise impact to flora and fauna, including revegetation and rehabilitation. - Describe the proposed post construction rehabilitation (including revegetation) of the pipeline corridor and other disturbed areas. - Detail any residual impacts that cannot be avoided and propose measures to offset the residual loss. - Where relevant, mitigation and offset strategies for totemic and/or culturally significant species should be developed in consultation with Traditional Owners.	
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, sea level rise, salinity of marine waters). Include proposed adaptive management strategies. ▪ Indicate how the site selection has incorporated climate change adaptation considerations. ▪ The risk assessment should be based on climate projections under both a high greenhouse gas emissions scenario (RCP 8.5 or SSP3 7.0) and a moderate greenhouse gas emissions scenario (RCP 4.5 or SSP2 4.5). ▪ Examine the potential cumulative effects of climate change from a risk management perspective (including adaptive management strategies). ▪ 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. ▪ Examine potential climate change hazards on the desalination processes, in addition to considerations relating to the desalination plant infrastructure. Consider the risks of increasing marine heatwaves, increasing salinity and any other	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			marine processes that may impact on the operation of, and discharges from, the desalination plant. This should include, but not be limited to, the impacts of Harmful Algal Blooms on treatment processes and subsequent discharge water quality from increased use of chemicals, potential for foaming events and increased turbidity.	
CCRE2	Greenhouse Gas Emissions	To ensure the development minimises greenhouse gas emissions through the design of the desalination plant and associated with its construction and operation so as to meet South Australia's goal to reduce net greenhouse gas emissions by at least 60% below 2005 levels by 2030 and achieve net zero emissions by 2050.	- Describe the electricity consumption requirements for the development and identify the proposed energy sources. - Describe emissions reduction opportunities with regard to the mitigation hierarchy (i.e. prevent, reduce, limit, offset) and consider Best Available Techniques Economically Achievable (BATEA). - Undertake a greenhouse gas assessment that: - identifies all sources of GHG emissions that would be generated - provides the estimated annual GHG emissions from each source - provides an estimate of yearly net GHG emissions and emissions intensity, including an uncertainty assessment - provide an inventory of projected annual Scope 1 and Scope 2 emissions for each GHG over the life of the development. Provide an estimate of annual Scope 3 GHG emissions for the life of the development. - Describe GHG mitigations including: - A description of how the project will contribute to meeting South Australia's emissions targets: 100% net renewable electricity target by 2027, at least 60% net emissions reduction below 2005 level by 2030 and zero net emissions by 2050. - A description of measures that have been incorporated in the design to minimise, reduce and ameliorate GHG 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 against the waste management hierarchy, namely: avoid and reduce waste generation, recycle, reuse, recover, treatment and disposal. This includes the generation, storage and transport of waste.	STANDARD
Land, Regional and State Economies (LRSE)				

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
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. - An assessment of potential impacts on existing, future (ie approved), and envisaged (ie zoned) significant economic activities and facilities in the region including industrial, commercial, tourism (including aquaculture tourism), and primary industries. - 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: - Employment opportunities and the expected impacts on the local work force 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 primary industries 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 - 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, including reliance on existing water resources and resultant limits on growth.	DETAILED
Hazards and Risks (HR)				

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
HR0	General	To ensure the risk of, and adverse impacts from natural and man-made hazards from the development are avoided, minimised or mitigated to protect people, property and the environment.	- Undertake a hazard and risk assessment in accordance with <i>AS/NZS ISO 31000:2018 Risk management guidelines</i> and with <i>HB203:2006 Environmental risk management principles and processes</i> which describes the potential risks to people, property and the environment during all stages of development. The assessment shall address the specific requirements listed in HR 1, 2, 3, 4 below. - Where development occurs within or adjacent to Department of Defence land, describe emergency and hazard management arrangements, including interfaces with Defence emergency response protocols and coordination arrangements during construction and operation.	STANDARD
HR1	Bushfire / Fire	As above	- Evaluate and identify any bushfire risks for all elements of the project, in particular how risks from bushfire will be minimised with regards to the potential for uncontrolled bushfire events, high levels and exposure to ember attack, impact from burning debris, radiant heat, likelihood and direct exposure to flames from a fire front. - Explain how buildings and structures will be designed, configured, sited and the use of materials in order to reduce the impact of bushfire. - Explain how the desalination plant, substations, pump stations and water storage sites will meet relevant CFS bushfire planning requirements with respect to siting, access/egress, Asset Protection Zones and vegetation management, fire water supply and building considerations (or alternative arrangements as agreed with CFS). - Evaluate the risk of fire originating from the development and any potential impacts to people, property and the environment. - Describe measures that would be taken to avoid and minimise the risks of these events during all stages of development.	STANDARD
HR2	Flooding	As above	- Undertake a quantitative flood assessment for the desalination plant site including: - 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 development site. - Undertake flood modelling, using MUSIC and DRAINS tools, to assess how the desalination plant may potentially change flooding and run-off characteristics on-site and both upstream and downstream of the site. - Include current and future climate scenarios of SSP2 4.5 2030 and SSP3 7.0 2100. - Identify the potential impacts on people, property, infrastructure, and the environment from potential flood risk. - Describe measures that would be taken to avoid and minimise the risks of these events during all stages of development. - Undertake a qualitative flood assessment for all substations, pump station, and water storage sites including: - Describe the history of flooding onsite and in proximity to the development site. - Describe current flood risk for the development site. - Where applicable, describe how the development may potentially change flooding and run-off characteristics on-site and both upstream and downstream of the site. - Where applicable, identify the potential impacts on people, property, infrastructure, and the environment from potential flood risk. - Where applicable, describe measures that would be taken to avoid and minimise the risks of these events during all stages of development.	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
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 the development. - Detail any known or potential sources of contaminated groundwater that could be impacted by the development. - Describe 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. - 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. - Describe measures that would be taken to avoid and minimise the risks of these events during all stages of development. - Site and groundwater contamination assessment should be undertaken in accordance with the National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM), the EPA Guidelines for the assessment and remediation of site contamination and any other relevant guidance issued by the EPA.	STANDARD
HR4	Dangerous Substances including marine spill management	As above	- Identify all dangerous and hazardous substances and any explosives to be used, transported, stored, 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 or contained until their disposal at an approved facility. - Evaluate the potential effects of any accidents involving dangerous substances on the environment and public health. - Describe measures that would be taken to avoid and minimise the risks of these events during all stages of development.	STANDARD
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, land tenures and protected areas at, overlapping or adjoining the development site(s) (including with the use of maps) which may be impacted by the development including: - relevant Planning Code Overlays and Zones. - existing or potential native title rights, claims and interests (including with the use of maps) including: - 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. - Crown land, pastoral leases, petroleum and mining tenements, Native Vegetation Heritage Agreements or any other relevant land tenures (including leases and licences). - areas protected under legislation or Special Legislative Schemes. - designated aquaculture zones in the Spencer Gulf. - Provide details of the development (activities or structures) with the potential to impact on the existing land uses, approved developments, land tenures and protected areas listed above, during all stages of the development including construction, operation (including maintenance) and decommissioning. - Describe any measures to mitigate these impacts.	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			Outline the potential impacts of the development on Department of Defence land and operations (such as the Woomera Prohibited Area and Defence training areas), with consideration for physical, operational or access constraints that could affect continued Defence operations and activities. Outline consultation undertaken with the Department of Defence and describe measures to avoid or mitigate impacts.	
Physical Environment (PE)				
PE1	Coastal and Marine	To ensure the natural features and processes of coastal systems are protected so that the environmental, economic and cultural values of the coast are maintained. To ensure the quality and productivity of marine waters, sediment and biota are protected so that environmental values are maintained and impacts to commercial industries (eg marine tourism, fisheries and aquaculture) which rely on them are minimised.	<u>Desalination Plant – General</u> - Describe coastal engineering requirements for the location, orientation and type of infrastructure. - Undertake a qualitative assessment of the potential impact of the proposed coastal works on the local sediment transport regime. - Describe materials that will be used to construct the infrastructure, including any treatment that the materials may have been subject to, prior to immersion in water. - Describe the impacts of infrastructure construction on foreshore, intertidal, seabed, benthic and pelagic environments (especially any nursery/spawning areas). Describe measures that will be undertaken to mitigate these impacts. - Describe, and provide baseline information on, the existing seabed profile, bathymetry, sedimentary profiles (including particle sizes), sand movement, water flow and tidal movement patterns through and around the proposed infrastructure. - Identify any possible changes to the seabed, bathymetry, sedimentary profiles (including particle sizes), and sand movement water flow and tidal movement patterns as a result of the development during both the construction and operational phases. Identify the impacts this may have on sensitive marine flora and fauna, aquaculture activities (existing and potential future), commercial and recreational fishing in the region, and outline mitigation strategies. - Describe the contaminants and toxicants that may accumulate on the site and the risks during stormwater events (where not managed) to the adjacent aquatic environments and commercial industries (e.g. fisheries and aquaculture) that rely on those environments. - Identify the risks from the exposure of fine sediments or clays that would impact adversely on water quality (turbidity and light penetration) and contribute to the production of sediment plumes in the region during both construction and operation phases. Apply a qualitative assessment to assess the impact of dredging and/or marine construction works. Outline the impacts this may have on commercial aquaculture activities in the region. Discuss the presence and risks of any chemicals in sediments potentially disturbed during construction or operation. - Describe measures to protect foreshore areas during and after construction, including potential marine and terrestrial protection areas and associated buffers. <u>Desalination Plant – Operational Marine Discharge</u> - Undertake detailed investigations relating to operational marine discharge of the desalination plant to provide adequate understanding of existing values, physical and ecological processes, sensitivities to predicted project effects and the potential impacts of such effects. Investigations should include: - Marine sediments and water quality: establish baseline water and sediment quality within the vicinity of the intake and outfall infrastructure. - Plume dispersion: use hydrodynamic modelling of multiple plant flow regimes and receiving environment conditions (eg capture low currents and quiescent weather conditions, as well as impacts of staged delivery of the desalination plant) to determine the dilution and dispersion of the concentrated seawater in the local	DETAILED

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			environment and determine impacts of the desalination plant on the local environment and the wider Spencer Gulf. - Using farfield modelling, investigate the potential for long term effects of salinity in Spencer Gulf (in combination with climate change). - Use nearfield plume modelling to demonstrate the initial dilution (dilution at the point of impact with the seabed) under different flow and current scenarios. - Use nearfield plume modelling to demonstrate that the plume does not break the surface directly after discharge. - Use midfield modelling to outline the dilution benthic and pelagic flora and fauna communities potentially exposed to desalination plant discharge (including recreational and commercial fisheries and aquaculture species) and evaluate risk with respect to the locally relevant ecotoxicity data and duration of exposure. - Demonstrate that there will not be unacceptable pooling of desalination plant discharge on the seabed. - Describe the likely constituents and toxicity of any chemical treatments, additives, or any other chemicals (including brine) that may be discharged to the marine environment. Outline the degree of dilution required to ensure that "95% protection level" of representative local species are protected from any chronic impacts from the discharge. - Modelling of seawater intake to consider larval entrainment, and assess the impacts on the marine environment, including recreational and commercial fisheries and aquaculture species. - Demonstrate that the intake velocity will be less than 0.15 m/sec. - Demonstrate negligible short circuiting of the intake (from the outfall). ▪ Describe management and mitigation measures that could be implemented to reduce environmental risk from operational marine discharge, including a seawater bypass system to improve dilution. Justify the proposed method of managing operational marine discharge, and any alternatives including further treatment, having regard to the waste hierarchy. ▪ Demonstrate mitigation and contingency methods to ensure suspended solids and backwash components will be returned to ambient conditions within an appropriate distance from the outfall, particularly with reference to high turbidity events or harmful algal blooms.	
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 detailed 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 excavation, dewatering) and direct and indirect changes to vegetative cover. Identify properties, structures and infrastructure that may be susceptible to subsidence. ▪ 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.	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			- 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, cultural heritage values, land uses and the welfare and amenity of people are maintained.	<u>Surface Water</u> - Describe existing surface water environmental conditions upstream and downstream of the development area (including seasonal variations and variations with flow) of waterbodies, watercourses, drainage channels, wetlands and floodplains. Water quality, including any existing site contamination and potential sources of surface water pollution should be addressed. - Describe present and potential users and uses of water in areas which may be affected by the development, including residential, municipal, agricultural, industrial, recreational and environmental uses of water. Describe surface water / groundwaters that are (or may be) of cultural significance to Traditional Owners. - If MNES have been identified, undertake an assessment of potential impacts to surface and groundwater relevant to the MNES. - 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, wetlands and floodplains during construction and operation. Identify locations where discharge to surface waters or land may occur during construction, operation or decommissioning of the development. - Describe how erosion and capture of sediment will be minimised and managed during construction of the pipeline network and the electricity transmission lines. - Describe potential alteration to surface water flows as a result of the development (including to water bodies, watercourses, wetlands, floodplains, beds and banks) and include details of the nature of the works. Discuss the implications of these changes for downstream water uses, and impacts on environmental and cultural heritage values, and describe how these impacts will be avoided or minimised. - Describe how drainage and flow of watercourses will be maintained in the operational phase of the proposed pipeline network. - Describe the options for supplying water to the development including potable water (if relevant) and temporary demands during the construction period. Describe on-site storage and treatment requirements for wastewater from accommodation and/or offices and workshops. - 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 environmental and cultural heritage values for surface water quality during construction and operation. Provide details of proposed wastewater and stormwater management, as well as any water sensitive design features as part of the development. If required, revisit project design and	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			construction methodologies to reduce impacts surface water quality to demonstrate that the Environmental Protection (Water Quality) Policy 2015 (Water Quality EPP) will be met. - Describe wastewater capture, management and treatment for: a) Any process wastewater if applicable (other than the marine discharge from the desalination plant). b) Staff facilities wastewater. - Stormwater management should clearly describe: c) All methods of proposed drainage on site, the sizing of all elements including the direction of any drainage leaving the site and how frequently runoff will leave the site. d) How clean runoff (e.g. from the roof) will be separated from contaminated runoff. e) How all contaminated runoff will be captured, retained and treated. f) All proposed stormwater treatment measures on site including the sizing of all elements. g) How any upstream stormwater is managed/ diverted around the site. h) All bunding details. ▪ Describe measures to manage construction impacts including stockpile management and storage to minimise potential adverse effects on local hydrology and water quality, restoring soil profiles, drainage and productivity, as well as landscape rehabilitation in the context of decommissioning of earth structures. Describe how erosion will be minimised and sediment capture controls where required (e.g. temporary berms), controlling water movement into and around the site, stockpile management and stabilisation of non-paved operational areas. <u>Groundwater</u> ▪ 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. For the desalination plant include: - describe the nature, type, geology / stratigraphy and depth to and thickness of the aquifers, hydraulic properties and value as water supply sources - 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. ▪ 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 (GDEs). ▪ 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. ▪ 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. ▪ Describe stormwater and wastewater management and the potential impact on ground water resources in particular with regard to fuel and chemicals used in construction and / or operation of the development. Describe	

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			measures proposed for management of stormwater and wastewater during construction and operation to avoid impacts to groundwater.	
Design (DQ)				
DQ1	Design Quality	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.	<u>Desalination Plant</u> - Provide a contextual analysis and identify site-specific issues including: - existing site conditions - existing transportation networks and movement patterns, including public access to the coast and crown reserve and the facility. - local environmental conditions. - Describe the design principles that have informed the position and layout of the plant, including the requirement for the provision of appropriate site levels (and associated excavation and filling of land). - Provision of landscaping (for both screening and amenity purposes). - Provide a description of external materials, finishes and colours (consistent with development in a coastal environment). - Provide details of any proposed reception/visitor facilities.	STANDARD
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 how the proposed location and / or design avoids and / or mitigates potential impacts and risks to known and unknown Aboriginal heritage. Where impacts to Aboriginal heritage cannot be avoided, provide detailed justification for this and acknowledgment that impacts must be authorised or otherwise approved by the Minister for Aboriginal Affairs under the <i>Aboriginal Heritage Act 1988</i> (SA). - Undertake on-ground cultural heritage survey(s) by qualified heritage experts (ideally an anthropologist and an archaeologist) in consultation with the relevant Recognised Aboriginal Representative Bodies (RARB)/Traditional Owner representatives. Where practical, survey(s) should cover the entirety of the project area. - The subsequent Aboriginal heritage report(s) should: - be prepared by a suitably qualified heritage expert. - be agreed by the RARB/Traditional Owner representatives. - outline the results of the heritage survey, including the location of Aboriginal heritage within the project area, as well as any areas where unrecorded sub-surface Aboriginal heritage is likely to occur. - consider the project's potential impacts to known and unknown Aboriginal heritage. - consider the results of a central archives search, as well as any other searches of local archives, other relevant databases and review of any relevant historical survey reports. - incorporate the views of the RARB representing all Traditional Owners of the relevant Aboriginal heritage, or where no RARB is appointed, Traditional Owner representatives, including any recommendations to relocate project elements to avoid Aboriginal heritage. Note that any sensitive or restricted information relating to Aboriginal heritage must remain confidential, and should not be publicly disclosed. - consider both the archaeological and anthropological/ethnographic values of the area, based on relevant literature, previous heritage assessments and the views of the RARB or Traditional Owner representatives. - provide recommendations for the protection and management of Aboriginal heritage before construction, during project works, and post construction (ie operation and maintenance activities) in light of the above.	DETAILED

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
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. ▪ 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 (existing, approved and potential). ▪ Key matters to be addressed by the SIA (for both construction and operation) are: - Workforce management. - Housing and accommodation. - Local business and industry procurement. - Heath and community wellbeing.	DETAILED
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 places and areas potentially affected by the development including State and Commonwealth-listed places and areas (including shipwrecks). ▪ Where relevant, provide an assessment of potential impacts from the development on historic heritage places and areas. 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

Appendix A – Schedule 4 of the EPBC Regulations - Matters to be addressed by the environmental impact statement (EIS)

1 General information

1.01 The background of the action including:

- (a) the title of the action;
- (b) the full name and postal address of the designated proponent;
- (c) a clear outline of the objective of the action;
- (d) the location of the action;
- (e) the background to the development of the action;
- (f) how the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action;
- (g) the current status of the action;
- (h) the consequences of not proceeding with the action.

2 Description

2.01 A description of the action, including:

- (a) all the components of the action;
- (b) the precise location of any works to be undertaken, structures to be built or elements of the action that may have relevant impacts;
- (c) how the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts;
- (d) relevant impacts of the action;
- (e) proposed safeguards and mitigation measures to deal with relevant impacts of the action;
- (f) any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action;
- (g) to the extent reasonably practicable, any feasible alternatives to the action, including:
 - (i) if relevant, the alternative of taking no action;
 - (ii) a comparative description of the impacts of each alternative on the matters protected by the controlling provisions for the action;
 - (iii) sufficient detail to make clear why any alternative is preferred to another;
- (h) any consultation about the action, including:
 - (i) any consultation that has already taken place;
 - (ii) proposed consultation about relevant impacts of the action;
 - (iii) if there has been consultation about the proposed action—any documented response to, or result of, the consultation;
- (i) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.

3 Relevant impacts

3.01 Information given under paragraph 2.01(d) must include:

- (a) a description of the relevant impacts of the action;
- (b) a detailed assessment of the nature and extent of the likely short term and long term relevant impacts;
- (c) a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;
- (d) analysis of the significance of the relevant impacts;
- (e) any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

4 Proposed safeguards and mitigation measures

4.01 Information given under paragraph 2.01(e) must include:

- (a) a description, and an assessment of the expected or predicted effectiveness of, the mitigation measures;
- (b) any statutory or policy basis for the mitigation measures;
- (c) the cost of the mitigation measures;
- (d) an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing;
- (e) the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program;
- (f) a consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action, including mitigation measures proposed to be taken by State governments, local governments or the proponent.

5 Other approvals and conditions

5.01 Information given under paragraph 2.01(f) must include:

- (a) details of any local or State government planning scheme, or plan or policy under any local or State government planning system that deals with the proposed action, including:
 - (i) what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy;
 - (ii) how the scheme provides for the prevention, minimisation and management of any relevant impacts;
- (b) a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action;
- (c) a statement identifying any additional approval that is required;
- (d) a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

6 Environmental record of person proposing to take the action

6.01 Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

- (a) the person proposing to take the action; and
- (b) for an action for which a person has applied for a permit, the person making the application.

6.02 If the person proposing to take the action is a corporation—details of the corporation's environmental policy and planning framework.

7 Information sources

7.01 For information given in a draft public environment report or environmental impact statement, the draft must state:

- (a) the source of the information; and
- (b) how recent the information is; and
- (c) how the reliability of the information was tested; and
- (d) what uncertainties (if any) are in the information.

Appendix B – List of relevant guidance material

Guidance material that is considered relevant to the Assessment Requirements, includes but is not limited to, the documents listed below. This list is not exhaustive, but captures key guidance used in the preparation of these requirements and to inform the preparation of the EIS. The proponent must draw on further relevant industry and best practice guidance as part of developing the EIS.

- Commonwealth of Australia, 2013, Matters of National Environmental Significance - Significant impact guidelines 1.1, https://www.dcceew.gov.au/sites/default/files/documents/nes-guidelines_1.pdf
- Commonwealth of Australia, 2013, Matters of National Environmental Significance - Significant impact guidelines 1.2, https://www.dcceew.gov.au/sites/default/files/documents/commonwealth-guidelines_1.pdf
- Commonwealth of Australia, 2023, Species Profile and Threats Database (SPRAT), <https://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>
- Commonwealth of Australia, 2017, Survey guidelines for Australia's threatened birds, <https://www.dcceew.gov.au/sites/default/files/documents/survey-guidelines-birds-april-2017.pdf>
- Commonwealth of Australia, 2011, Survey guidelines for Australia's threatened mammals, <https://www.dcceew.gov.au/sites/default/files/documents/survey-guidelines-mammals.pdf>
- Commonwealth of Australia 2024, National Guidelines for the Survey of Cetaceans, Marine turtles and the Dugong, Department of Climate Change, Energy, the Environment and Water, Canberra, <https://www.dcceew.gov.au/sites/default/files/documents/national-guidelines-survey-cetaceans-marine-turtles-dugong.pdf>
- Meek PD, Ballard G and Fleming P, 2012, An introduction to camera trapping for wildlife surveys in Australia, PestSmart Toolkit publication, Invasive Animals Cooperative Research Centre, Canberra, Australia, https://pestsmart.org.au/wp-content/uploads/sites/3/2020/06/CameraTrapManual_2012.pdf
- Commonwealth of Australia, 2017, EPBC Act Policy Statement 3.21: Industry guidelines for avoiding, assessing and mitigating impacts of EPBC Act listed migratory shorebirds, <https://www.dcceew.gov.au/sites/default/files/documents/bio4190517-shorebirds-guidelines.pdf>
- Commonwealth of Australia, 2024, Environmental Management Plan Guidelines, Department of Climate Change, Energy, the Environment and Water, Canberra, <https://www.dcceew.gov.au/sites/default/files/documents/environmental-management-plan-guidelines.pdf>
- Commonwealth of Australia, 2012, EPBC Act Environmental Offsets Policy, Department of Sustainability, Environment, Water, Population and Communities, Public Affairs, Canberra, https://www.dcceew.gov.au/sites/default/files/documents/offsets-policy_2.pdf
- Commonwealth of Australia, 2021, Guide to providing maps and boundary data for EPBC Act projects, Department of Agriculture, Water and the Environment, Canberra, <https://www.dcceew.gov.au/sites/default/files/documents/epbca-maps-data-guidelines.pdf>
- Commonwealth of Australia, 2023, Interim Engaging with First Nations People and Communities on Assessments and Approvals Under the Environment Protection and Biodiversity Conservation Act 1999, Department of Climate Change, Energy, the Environment and Water, Canberra. <https://www.dcceew.gov.au/environment/epbc/publications/engage-early>.
- Commonwealth of Australia, 2024, National Conservation Values Atlas: Interactive Map (environment.gov.au), <https://www.environment.gov.au/webgis-framework/apps/ncva/ncva.jsf>

For other EPBC Act publications and resources, please refer to the DCCEEW website, here:

- Commonwealth of Australia, 2024, EPBC Act publications and resources - DCCEEW, Canberra, <https://www.dcceew.gov.au/environment/epbc/publications>

Appendix C – 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	- Construction: dust from unsealed work areas and emissions from vehicles and equipment. - Operation: emissions from vehicles and equipment.	- Localised and temporary impacts at desalination plant site during construction. - Localised and temporary impacts along pipeline route, with construction estimated at 500m/day. - Severity of impact will depend on proximity to site and sensitivity of receptors. - Possible after-hours construction activities. - Minimal dust and vehicle emissions during operation due to rehabilitation of disturbed areas and minimal operational traffic.	Direct: disturbance to sensitive receivers, dust deposition onto vegetation.	Desal Plant - Clean air typical of a sparsely populated rural environment. - Existing emission sources in locality include windblown aerosols and dust from agricultural activities, sand mining (3km NE of site), vehicle emissions, fires. - Few sensitive receptors. Nearest sensitive receptor is the Mullaquana Station homestead (5km west), and coastal holiday settlements of Cowleds Landing (8km north) and Murninnie Beach (10.5km south). Water Transfer & Electricity Transmission Infrastructure - Primarily rural and remote locations with few sensitive receptors. - Sensitivity increases near townships (Whyalla, Pimba, Woomera and Roxby Downs). - Key emission sources along the project footprint include Whyalla (steelworks) and Olympic Dam.	STANDARD
AEQ2	Noise / Vibration	- Construction: noise emissions and vibration from heavy vehicles, construction equipment, diesel generators, traffic. - Operation: noise emissions from desalination plant and pump stations, vehicle movements, corona and aeolian noise from transmission lines.	- Long construction period at desalination plant site. Concentrated, localised impacts. - Underwater noise and vibration during construction – short term localised effects. - Localised and temporary impacts along pipeline route during construction (estimated rate 500m/day). - Severity of impact will depend on proximity to site and sensitivity of receptors. - Possible after-hours construction activities. - Operation (24/7 for plant) and sporadic maintenance activities for pipeline / transmission / ancillary infrastructure.	Direct: disturbance to sensitive receivers, fauna activity (foraging and breeding), transient users of the marine environment, transient road users.	Desal Plant - Existing noise environment dominated by natural sources (insects, wind and wave action) typical of a sparsely populated rural environment, with some noise from agricultural activity. - Relatively flat terrain. - Existing activities in the marine environment include recreational and commercial fishing and boating. Water Transfer & Electricity Transmission Infrastructure - Primarily rural and remote locations. - Existing noise environment expected varies along the corridor depending on adjacent land uses, proximity to roads and towns, and seasonal effects. - Sensitivity increases near townships (Whyalla, Pimba, Woomera and Roxby Downs). - Existing noise sources along the project footprint may include vehicular traffic, rail transport, mining activities, agricultural activities, generators at homesteads, and aerial mustering of livestock.	STANDARD

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
AEQ3	Transport and Traffic	▪ Increase in traffic movements and heavy vehicles during construction. ▪ Upgrade of existing and/or creation of new access tracks, roads and intersections. ▪ Temporary traffic management and changed conditions during construction (delays, detours and speed restrictions). ▪ Interactions / conflict between light and heavy vehicles. ▪ Increased demand on passenger capacity at regional airports. ▪ Water pipeline crossings of major roads and railways. ▪ Introduction of marine exclusion zones at the desalination plant site.	▪ Long construction period at desalination plant site. Impacts will extend to the public road network. ▪ Potential short-term impacts to marine, rail and air operations during construction. ▪ Severity of impact will depend on proximity to site and sensitivity of receptors. ▪ Increased demand on passenger services at regional impacts during the construction period only. ▪ Ongoing localised impacts from marine exclusion zone around the outfall and intake infrastructure.	▪ Direct: potential impacts may include disruption to current land uses, travel times and deterioration of road pavements from increased level of use by heavy vehicles.	Desal Plant ▪ Access to the site is from Eight Mile Creek Road (local, unsealed public road). ▪ Lincoln Highway (15km west) is a State maintained road and major highway on the Eyre Peninsula, serving as the primary route from Port Lincoln to Whyalla and connectivity to numerous towns. Sealed single carriageway with one lane in each direction. ▪ Marine shipping traffic within Upper Spencer Gulf associated with Port Pirie, Whyalla and Port Bonython, as well as commercial fishing boats, tourism operators and recreational vessels. Navigational channel marked with buoys. Water Transfer System & Electricity Transmission Infrastructure ▪ Major highways in the region are the Stuart, Eyre, Lincoln and Olympic Dam highways. ▪ Local road network includes sealed and unsealed roads. ▪ Unsealed roads and tracks on private land / pastoral stations. ▪ Sydney–Perth and Adelaide–Darwin transcontinental rail lines which provide regional and interstate passenger and freight services. ▪ Regional airports at Port Augusta, Port Lincoln, Whyalla and Olympic Dam. RAAF airfield at Woomera. Smaller airfields at Cleve and Cowell. Private (unregistered) landing strips expected.	STANDARD
AEQ4	Visual Amenity	Desal Plant ▪ Construction: visual impacts from vegetation clearance, presence of heavy machinery, stockpiling, temporary structures, lighting. ▪ Operation: new, large industrial type building(s) and ancillary structures, security fencing, lighting. Water Transfer System & Electricity Transmission Infrastructure ▪ Construction: visual impacts from vegetation clearance, presence of heavy machinery, stockpiling, temporary structures, lighting. ▪ Operation: pipeline predominantly underground.	Desal Plant: ▪ Long construction period at desalination plant site. Concentrated, localised impacts. ▪ Permanent visual impact from new structures in an undeveloped landscape. ▪ Day time vs night time impacts may be different (lighting associated with desal plant). ▪ Severity of impact will depend on proximity to site and sensitivity of receptors. Water Transfer & Electricity Transmission Infrastructure ▪ Localised and temporary impacts along pipeline route during	▪ Direct: new structures in landscape. ▪ Perceived: impact on amenity can be subjective. ▪ Cumulative: addition of transmission lines in areas that have existing or proposed transmission infrastructure and/or wind farms.	Desal Plant ▪ Relatively flat and low-lying coastal plain, gently rising to the west. ▪ Expansive panoramic views of undisturbed saltbush and scrubland, with views to Mount Young in the mid-ground and Middleback Ranges beyond. ▪ Sparsely populated rural environment with few sensitive receptors. Nearest visual receptors on land are Mullaquana Station homestead (5km west), and coastal holiday settlements of Cowleds Landing (8km north) and Murninnie Beach (10.5km south). ▪ Visual receptors in the marine environment include recreational and commercial fishing and boating. ▪ Natural landscape has cultural value to Traditional Owners. Water Transfer System & Electricity Transmission Infrastructure	STANDARD

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
		Operation: new high voltage transmission lines, substations, telecommunications towers and pump stations.	construction (estimated rate 500m/day). - Severity of impact will depend on proximity to site and sensitivity of receptors. - Ongoing visual impact of the pipeline likely to be minimal (majority underground). - Permanent visual impact of new transmission lines, pump stations and water storages.		- Variable landscape character and sensitivity along the project footprint, ranging from saltbush plains and mangrove fringed coastline; to sandy and/or gibber landforms; to remote arid and semi-arid dune fields. - Primarily rural and remote landscapes with generally low scale of development, with exceptions (eg Lincoln Gap wind farm, electricity transmission infrastructure). - Sensitivity increases near townships (Whyalla, Pimba, Woomera and Roxby Downs). - Natural landscape has cultural value to Traditional Owners. Important features include salt lakes, watercourse and rock formations.	
Biological Environment (BE)						
BE1	Biosecurity	- Potential for introduction and/or spread of exotic pest or nuisance species, diseases and pathogens within both marine and terrestrial environments during construction from vehicle movements, earthworks, marine works / vessel movements (ie barges and vessels associated with construction). - Potential for waste materials stored at construction sites, laydown areas and/or construction camps to attract predatory pest species. - Potential for biofouling or ballast water from shipping traffic generated by the project (ie barges and vessels associated with construction). - Introduction of marine structures may encourage colonisation by opportunistic or invasive species.	- Highest risk during construction phase. - Low risk during operation / maintenance. - Geographically large project area for the water transfer system.	- Direct: weed species can outcompete native species, alter community structures and dynamics. - Indirect: outbreaks of invasive flora can act as new bases for further spread; changes to community dynamics can impact other species; reduction in revenue from aquaculture and fisheries; damage to infrastructure; loss of amenity; impacts on human health.	- Arid and semi-arid weeds likely to be present across project footprint. - Declared weeds detected during field surveys include Buffel Grass, Carrion Flower and African Boxthorn. - Feral animals are well established in the Project Area, including cats, foxes, wild dogs, rabbits, goats, rats and house mice. - The region supports agricultural activities which may be susceptible to weeds / pathogens. - Sensitivity increases in vicinity of areas managed for conservation, and in identified threatened species habitat. - Existing harmful algal bloom (Karenia species) within Gulf St Vincent, Spencer Gulf and Kangaroo Island.	STANDARD
BE2	Marine Flora and Fauna	Construction - Potential clearance of vegetation (seagrass). - Potential physical impact to fauna. - Increased turbidity can disturb sediments, release nutrients and increase suspended solids. - Underwater noise and vibration. Operation	Construction - Extent of vegetation clearance and impact on the seabed depends on final construction methodology for the marine infrastructure. - Short term and localised impacts. Operation - Ongoing seawater intake during operation – localised impacts.	Direct: vegetation clearance and/or damage; fauna mortality; changes to fauna behaviour and/or physical responses; change in water quality (salinity, turbidity, temperature).	- North Spencer Gulf Bioregion, Yonga Marine Biounit - The benthic environment is sandy and flat with extensive seagrass meadows (high environmental value) and intertidal mangroves. - The seagrass, mangrove, sand and pelagic habitats support diverse marine fauna. - Potential for conservation significant fauna species including Southern Right Whale and White Shark. - Potential for other marine mammals and turtles to occur in the project area.	DETAILED

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
		- Potential entrainment and entrapment of marine species into intake structures. - Discharge of concentrated seawater discharge, and low levels of chemical contaminants into the marine environment (refer also to PE1). - Underwater noise.	- Ongoing discharge during operation – localised zone of influence (500m max). - Severity, extent and duration of impacts from marine discharge influenced by hydrodynamics of the Spencer Gulf, seasonal variations, weather events.	- Indirect: flow on effects to ecosystems; impact on recreation activities; reduction in revenue from aquaculture and fisheries. - Perceived impacts: community concern / prejudice around desalination plants and impacts on marine environment.	- The USG supports commercial fisheries, aquaculture, provides nursery grounds for juvenile fish species, and habitat for other high value marine species (eg cuttlefish). - The USG is vulnerable to an increase in salinity, which may be exacerbated due to climate change.	
BE3	Terrestrial Flora and Fauna	Construction - Clearance of vegetation and land disturbance / earthworks, including watercourse crossings. - Potential impacts from construction include noise, dust deposition, vibration, light, vehicle strike, spread of weeds, pathogens and pests. Operation - Nighttime lighting. - Fragmentation of habitat by pipeline / transmission line. - Bird strike from newly installed transmission lines.	Desal Plant - Clearance of vegetation within a defined area. - Long construction period at desalination plant site. Concentrated, localised impacts from construction activities. - Ongoing nighttime light source. Water Transfer & Electricity Transmission Infrastructure - Clearance of vegetation along pipeline alignment (max 40m wide). - Localised and temporary impacts along pipeline route from construction activities (estimated rate 500m/day). - Natural regeneration of disturbed areas atop the pipeline.	- Direct – vegetation clearance and/or damage; fauna mortality; changes to fauna behaviour and/or physical responses; - Indirect – bird strike from newly installed transmission lines; removal of bird nests from transmission lines.	Desal Plant - Historical sheep grazing over native vegetation. The site has not been cleared for agricultural cropping. - Coastal vegetation associations at the site include: - Low chenopod shrubland - Low open woodland - Grey mangrove tall shrubland - Saline depressions and drainage lines with low open shrubland and chenopods - Subtropical and Temperate Saltmarsh Community (EPBC Vulnerable) confirmed at site. - Coastal wader bird site (Whyalla to Shoalwater Point). - Potential habitat for conservation significant fauna species including Western Grasswren and Southern Whiteface. - Intrinsic cultural values of habitats (eg dune scapes), which may support species of totemic importance. Water Transfer System & Electricity Transmission Infrastructure - The project area traverses four broad vegetation types: - Flat to undulating plans with low open chenopod shrubland - Low dunes and sand plains with tall shrubland and open woodland - Sandy loam plains with low open woodland over chenopod shrubland - Drainage lines with shrubland, tall shrubland and open woodland. - Potential habitat for conservation significant fauna species including Western Grasswren, Southern Whiteface, Blue-winged Parrot, Sharp-tailed Sandpipe, Australian Fairy Tern,	DETAILED

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
					Plains Mouse, Grey-headed Flying-fox, and migratory species. ▪ Intrinsic cultural values of habitats (eg ephemeral watercourses), which may support species of totemic importance.	
Climate Change and Resource Efficiency (CCRE)						
CCRE1	Climate Change Adaptation	- Potential impact to desalination plant site from rising sea level exacerbated by storm surge events and wave patterns. - Climate change effects on salinity and Spencer Gulf hydrodynamics. - Impact to infrastructure from climate change related hazards.	- Ongoing risk to project infrastructure. - Severity, extent and duration impacted by climatic conditions.	- Direct: damage to infrastructure - Indirect: the project supports the provision of a climate resilience water course; supports the growth of green technologies to assist in transition to low-carbon economy.	Relevant climate change predictions for the Eyre Peninsula and Spencer Gulf: - Higher temperatures. - Average annual rainfall will decline. - Longer fire seasons. - Rising sea levels. - More frequent extreme climatic conditions such as intensity and frequency of droughts, extreme heat and storm events. - Likely increased salinity and pH in Spencer Gulf.	STANDARD
CCRE2	Greenhouse Gas Emissions	- Construction: Greenhouse Gas Emissions (GHG) from use of diesel fuel (for construction machinery), vehicles and generators, transport of workers and materials, and embodied energy in materials. - Operation: GHG emissions associated with vehicles and electricity consumption.	- Increased direct emissions during construction phase. - During operation, electricity will be sourced from the network which uses a high percentage of renewable energy.	- Direct: emissions from vehicles and machinery. - Indirect & cumulative: embodied energy in materials; emissions from off-site electricity generation.	Desal Plant - Clean air typical of a sparsely populated rural environment. - Existing GHG emission sources in locality include machinery and vehicle emissions, generators, fires. Water Transfer System & Electricity Transmission Infrastructure - Primarily rural and remote locations. - Key GHG emission sources along the project footprint include townships and regional centres, as well as major industrial and mining land uses (ie Whyalla steelworks) and Olympic Dam).	STANDARD
CCRE3	Sustainable Use of Resources	Construction - Building materials including steel, concrete. - Temporary water and power supplies. - Generation of material / spoil from excavation. Operation - Extraction of seawater. - Grid electricity connections. - Use of consumables and replacement parts during operation.	- Intensive use of resources during construction period. - Ongoing use of water, power and consumables during operation. - Spatial extent includes the source of construction material extraction, processing / manufacturing, and transportation to the site (ie supply chain). - Impacts at source of power generation.	- Direct: consumption of power, water and materials during construction and operation - Indirect: impacts associated with sourcing materials for construction (eg fossil fuels, large volumes of concrete, steel). - Indirect: embodied energy in materials	Desal Plant - Undeveloped coastal and marine environment with no water, power or sewer infrastructure. Water Transfer System & Electricity Transmission Infrastructure - Primarily rural and remote locations, with varying access to water, power or sewer infrastructure.	STANDARD
CCRE4	Waste Management	Construction	Localised storage / treatment of waste streams within project site	Direct: generation of waste, potential for	Desal Plant	STANDARD

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
		- Various types and volumes of waste generated during construction including building materials, spoil, and wastewater from tunnel boring / jack-up barge. - Potential for waste materials stored at construction sites, laydown areas and/or construction camps to attract predatory pest species. Operation - Discharge of concentrated seawater, and low levels of chemical contaminants into the marine environment (refer also to PE1). - Various types and volumes of waste generated during operation of the desalination plant including chemicals and hazardous substances. - Low volume of waste generated at transfer pump stations and water storage facilities from maintenance activities.	during construction (likely multiple work fronts). - Off-site transportation of waste materials to landfill, recycling, other waste receivers during construction. - Ongoing generation of waste materials during operation. - Ongoing generation of sweeter discharge during operation – localised zone of influence (500m max).	sedimentation, spills, attraction of pest species, change in water quality (salinity, turbidity, temperature). Indirect: transportation of wastes to/from site, pressure on landfill sites, opportunities for recycling.	- Undeveloped coastal and marine environment with no water, power, sewer or waste collection infrastructure. - Refer also to BE2 for sensitivity of marine environment. Water Transfer System & Electricity Transmission Infrastructure - Primarily rural and remote locations, with varying access to water, power, sewer or water collection infrastructure.	
Land, Regional and State Economies (LRSE)						
LRSE1	Local, regional and state economies	- Job creation during construction, skill development, and business opportunities. - Impact of temporary construction activities on the environment, townships, housing and services. - New, climate resilient water source for the region.	- Local, regional and state-wide impacts. - Greatest impact during construction with influx of workers. - Ongoing benefit of new, climate resilient water source for the region.	- Direct: job creation, increased demand for local housing / services / supplies. - Indirect: indirect jobs in transport and logistics, support functions (food, accommodation etc); expansion of customer markets (mining etc).	Desal Plant - Agricultural land (primarily grazing) with scattered dwellings. - Whyalla 25km to north-east – regional centre (largest city in the USG). - Iron Duke mine complex 28km to west – open cut mine operated by OneSteel. - The USG supports marine based industries (fishing, aquaculture, shipping, tourism) and recreation. Water Transfer System & Electricity Transmission Infrastructure - Covers large geographical area, with varying communities and demographic profiles along corridors / sites. - Whyalla, Port Augusta are the largest population centres. - The region supports agricultural industries, mining, tourism. - The region's full potential of currently constrained by the capacity, reliability and sustainability of existing water sources.	DETAILED
Hazards and Risks (HR)						

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
HR1	Bushfire	- Bushfire risk within project area from existing land uses, activities, and natural causes (eg lighting). - Construction introduces ignition points (heavy machinery, hot works etc). - Design and operation of new infrastructure to consider emergency access requirements and fire mitigation measures.	- Temporary increase of fire risk / ignition during construction. - Ongoing fire risk to infrastructure during operation. - Severity, duration and extent of impact dependent on various factors including type of fire emergency, topography, weather, access, preparedness, and emergency response capacity.	- Direct: damage to property / infrastructure; risk to life; loss of essential services. - Indirect: transmission of smoke, fumes, pollutants via air and surface waters; impacts to adjacent land uses in event of emergency.	Desal Plant - Hazards (Bushfire – Regional) Overlay. - No recorded bushfires or prescribed burn history. - CFS Region 6 (Eyre Peninsula and West Coast) with closest CFS stations at Cowell and Whyalla (Middleback CFS). - Supported by Region 6 Air Support. Water Transfer System & Electricity Transmission Infrastructure - Covers large geographical area – Regions 4 and 6 of SA. - Whyalla serviced by SA Metropolitan Fire Service. - Varying fire risk areas & site conditions. - Varying proximity to emergency services.	STANDARD
HR2	Flooding	Flooding risk to desalination plant, substations, pump stations, storage facilities and surrounding areas from surface waters / stormwater or storm surge.	Localised to facilities, potentially extending up-stream and downstream.	- Direct: damage to property; inundation of land. - Indirect: mobilisation and transmission of contaminants / pollutants.	Desal Plant - Storm surge hazard area. - Hazards (Flooding – Evidence Required) Overlay - SA State Emergency Service (SES) station at Whyalla. Water Transfer System & Electricity Transmission Infrastructure - Hazards (Flooding – Evidence Required) Overlay - Covers large geographical area – SES North Region (Eyre and Outback districts). - Varying site conditions (largely semi-arid environments). - Varying proximity to emergency services.	STANDARD
HR3	Site and Groundwater Contamination	- Potential for contamination to be encountered during construction including acid sulphate soils which can release acid and heavy metal ions to the environment. - Operational activities may include chemical storage and warehousing. - Potential for spills / leaks of contaminants during construction and operation.	- Potential impacts during construction and operation. - Extent of impact depends on location, type of contaminant, mobilisation and transmission due to wind, water action etc.	- Direct: impacts to soil and water quality; risk to human health. - Indirect: transmission to flora and fauna; impact to viability of primary production land.	Desal Plant - Historical sheep grazing on majority of desalination plant site. - Potential for acid sulfate soils. Water Transfer System & Electricity Transmission Infrastructure - Covers large geographical area. - Site conditions variable along the corridor. - Potential for acid sulfate soils. - Section 83A (EP Act) site contamination notifications over land at Whyalla, adjacent Stuart Highway at Pernatty Lagoon (Oakden Hills) & Olympic Dam.	STANDARD
HR4	Dangerous Substances	- Construction activities may include abrasive blasting, concrete batching, fuel burning, chemical use and storage, water treatment (chlorine etc), flushing of pipeline. - Operational activities may include chemical use and storage in the desalination plant, and may be	- Potential impacts during construction and operation. - Extent of impact depends on location, type of dangerous substance, mobilisation and transmission due to wind, water action etc.	- Direct: loss or damage to flora and fauna; impacts to soil and water quality; risk to human health (fumes, burns etc). - Indirect: ignition / fire hazard; impact to viability	Desal Plant - The marine environment is sensitive to changes in water quality. Water Transfer & Electricity Transmission Infrastructure - Covers large geographical area. - Site conditions variable along the corridor.	STANDARD

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
		required for maintenance activities along the water transfer system. Potential for spills / leaks of pollutants during construction and operation.		of primary production land.	Sensitivity increases around watercourses; in vicinity of areas managed for conservation; and in identified threatened species habitat.	
Land Use and Site Conditions (LUSC)						
LUSC1	Land tenure, protected areas and land use	- An access licence will provide temporary access rights during construction. - Permanent tenure for the project will vary and may include reserved Crown land, dedication on Crown land, freehold, easements and/or access licences. - Existing land uses may experience disruption and other interface impacts during construction and operation. - Sections of the development will result in a permanent conversion of primary production / pastoral land to an infrastructure land use. - Marine exclusion zone around the desalination plant – may extend into commercial fishing areas.	Desal Plant - Temporary, localised impacts during construction. - Ongoing, localised impact during operation. Water Transfer System & Electricity Transmission Infrastructure - Temporary, localised impacts during construction along the pipeline route (estimated rate 500m/day). - Permanent impacts during operation. Use of land above the buried pipeline will be subject to access licences or easements. - Temporary construction camps and laydown areas will be rehabilitated and returned to existing land use.	- Direct: temporary and permanent disruption of existing land uses; fragmentation of land by infrastructure corridors. - Indirect: land not available / restricted for future, intended purposes.	Desal Plant Land: - Subject site is within Mullaquana Station (CL 6186/2) under Perpetual Crown Lease to Joyce Pastoral Pty Ltd. - Historical sheep grazing over native vegetation, and Mullaquana homestead. - Approx 200ha of land required for the construction and operation of the project. 30m wide strip of Crown land along the coastline. - Exploration Lease and Retention Lease to S Uranium Pty Ltd (Alligator Energy). In-situ recovery trial approx. 1.4km NW of desal plant site. - Remote Areas and Conservation Zones. - No conservation parks or vegetation heritage agreements areas over land. Nearest NPWSA property is Munyaroo Conservation Park to south. Desal Plant Marine: - Coastal Waters and Offshore Islands Zone. - No areas protected under Marine Parks Act in vicinity of marine infrastructure. Upper Spencer Gulf Marine Park approx. 8km to north-east, and Franklin Harbour Marine Park approx. 11km south. - No marine aquaculture zones within 40km. - Prawn Commercial Fisheries Block 12 and recognised Snapper nursery area located directly offshore. - Juvenile prawn nursery sites at Cowleds Landing (8km north) and the Spit (15km south). - USG waters are an important shipping lane for export of bulk goods and petroleum products. Water Transfer System & Electricity Transmission Infrastructure - New transmission line and substation for the desal plant traverse proposed Nonowie Wind Farm. - Water pipeline traverses three (3) local government areas (Whyalla, Port Augusta, Roxby Downs) and unincorporated pastoral areas.	STANDARD

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
					- Predominantly Rural and Remote Areas Zone, with variability closer to townships. Major land uses in the region are livestock grazing and mining operations. - Various mining tenements and mineral exploration licences along and around the pipeline. - Department of Defence land including Cultana Training Centre, Woomera Commonwealth land. - The pipeline traverses the Conservation Zone near Roxby Downs.	
Physical Environment (PE)						
PE1	Coastal and Marine	Construction - Minimal physical impact to coastal and intertidal zones due to infrastructure being tunnelled beneath these areas. - Physical impact of marine infrastructure depends on final construction methodology. Physical infrastructure may impact nearshore coastal processes (water movement, sand movement and erosion). - Discharge of concentrated seawater discharge, and low levels of chemical contaminants into the marine environment (refer also to BE2).	Construction - Extent of physical impact on the seabed depends on final construction methodology for the marine infrastructure. - Short term and localised impacts. Operation - Localised effects from presence of physical infrastructure. - Ongoing seawater intake during operation – localised impacts. - Ongoing discharge during operation – localised zone of influence (500m max). - Severity, extent and duration of impacts from marine discharge influenced by hydrodynamics of the Spencer Gulf, seasonal variations, weather events.	- Direct: disturbance of seabed and coastal areas; sand erosion and deposition; change in hydrodynamics and water quality (salinity, turbidity, temperature). - Indirect: flow on effects to ecosystems; impact on recreation activities; reduction in revenue from aquaculture and fisheries. - Perceived impacts: community concern / prejudice around desalination plants and impacts on marine environment.	- Coastal Areas Overlay. - Upper Spencer Gulf Bioregion, Yonga Marine Biounit (relatively sheltered with low to moderate wave energy). - Coastal areas comprise samphire, mangroves and intertidal sand flats. - The benthic environment is sandy and flat with extensive seagrass meadows (high environmental value) and intertidal mangroves. - Spencer Gulf is 'Inverse estuary' with minimal freshwater inputs and high evaporation. - Whole of gulf circulation with annual exchange of water via a clockwise 'gyre', with ocean water drawn northwards along the western gulf.	DETAILED
PE2	Soils, Landform and Geology	Desal Plant - Bulk earthworks (excavation and filling of land) for the desal plant. - Below ground disturbance (via tunnel boring machine) to construct the intake and outfall pipelines. - Potential for accidental spills from equipment, fuel and/or chemical storage. Pipeline & Ancillary - Extensive land disturbance to construct the pipeline (trenching). - Trenchless (below ground) installation (under boring) proposed	Desal Plant - Localised modification to landform will occur during construction phase, both temporary (ie stockpiling) and permanent. - Extent of impact on the seabed depends on final methodology for intake and outfall pipelines. Water Transfer System & Electricity Transmission Infrastructure - Temporary, localised disturbance during construction period - typical 40m wide construction	- Direct: changes to natural landform; subsidence, soil compaction, instability, deposition and/or erosion; pollutants from accidental spills. - Indirect: movement of water and pollutants (from accidental spills) may impact flora / fauna	Desal Plant - Gawler IBRA Bioregion, Myall Plains Subregion, characterised by undulating, sand-covered calcareous plains. - Roopena Pastoral Land System. - Subject site is relatively flat and low-lying coastal plain, gently rising to the west. - Soils include coastal sands, and colluvial, alluvial / fluvial sands and clays. - Mangrove areas may contain actual or potential acid sulfate soils. Water Transfer System & Electricity Transmission Infrastructure	STANDARD

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
		for discreet locations (eg under railway lines). ▪ Bulk earthworks for new electricity infrastructure, pump stations and water storage facilities. ▪ Potential for accidental spills from equipment, fuel and/or chemical storage.	corridor for the water transfer pipeline. ▪ Minimal ongoing impact to landscape features from water pipeline due to trenching methodology, and regeneration of disturbed areas atop the pipeline ▪ Permanent change to landform from electricity infrastructure and pump stations / water storage facilities.		▪ Gawler IBRA Bioregion, traversing Myall Plains, Arcoona Plateau, Gawler Lakes and Roxby Subregions. ▪ Covers large geographical area, with varying site conditions along the corridor (semi-arid and arid landscapes). ▪ Generally flat or broadly undulating open plains which are traversed by highly ephemeral broad waterways. ▪ The Carrapateena lateral pipeline traverses the Arcoona Plateau (stony tablelands landscape).	
PE3	Surface Water and Groundwater	Desal Plant ▪ Construction of the desal plant will alter natural surface water conditions and increase run-off (hard surfaces). ▪ Groundwater dewatering during bulk earthworks. ▪ Potential groundwater inflows and drawdown during construction of tunnel boring machine launch infrastructure and marine infrastructure. Water Transfer System & Electricity Transmission Infrastructure ▪ Construction of the transfer pipeline (via trenching or other methods) may intersect with groundwater and surface water (ie creek crossings). ▪ Release of water to environment from pipeline flushing or drainage events.	Desal Plant ▪ Temporary, localised disturbance during construction period. ▪ Potential impacts beyond the construction footprint dependent on local factors (hydraulics, hydrology, soil and topography, vegetation). ▪ Minimal impacts during operation, with stormwater / run-off management. Water Transfer System & Electricity Transmission Infrastructure ▪ Discharge from the pipeline from (planned) periodic flushing or draining events may occur during construction / commissioning and operation / maintenance. ▪ Potential for unplanned water discharge from the pipeline (scour valves) during construction and operation is unlikely.	▪ Direct: changes to surface water flows; groundwater inflows and drawdown; acid sulfate soils; sedimentation of surface waters; pollutants from accidental spills. ▪ Indirect: movement of water and pollutants (from accidental spills) may impact flora / fauna; potential reduced reliance on existing groundwater sources.	Desal Plant ▪ Surface water features across and around the site are scarce and ephemeral. ▪ Not within a prescribed water resource area under the Landscape SA Act 2019. ▪ Shallow groundwater and hypersaline. ▪ No Groundwater Dependent Ecosystems (GDEs) known to occur near the site. Water Transfer System & Electricity Transmission Infrastructure ▪ Covers large geographical area, with varying site conditions along the corridor (semi-arid and arid landscapes). ▪ The southern portion of the pipeline corridor is characterised by ephemeral creek systems draining towards the coast. ▪ The northern portion of the pipeline corridor is characterised by a series of internally draining catchments. ▪ The pipeline traverses the fringes of ephemeral salt lakes (eg Lake Dutton and Lake Windabout). ▪ No surface water features of formal conservation significance. ▪ Groundwater is generally of poor to marginal quality. ▪ Potential presence of GDEs along the pipeline alignment.	STANDARD
Design (DQ)						
DQ1	Design Quality	▪ New built infrastructure within the landscape. Potential visual and amenity impacts. ▪ Opportunities for landscaping / re-vegetation. ▪ Durability of buildings and infrastructure in environmental conditions (ie coastal location of desal plant).	▪ Ongoing impact over life of project. ▪ Day time vs nighttime impacts may be different.	▪ Direct: salt corrosion to desal plant buildings; presence of new buildings / infrastructure in the landscape ▪ Indirect: impacts to use and enjoyment of surrounding coastal land and marine waters.	Desalination Plant ▪ Undeveloped coastal and marine environment. ▪ Historical sheep grazing over native vegetation. Water Transfer System & Electricity Transmission Infrastructure ▪ Covers large geographical area, with varying site conditions along the corridor (semi-arid and arid landscapes).	STANDARD

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
		Crime prevention through environmental design, and susceptibility of infrastructure to vandalism / graffiti.		Perceived: Reduced amenity due to industrial-scale development on the coast.		
Social and Community (SC)						
SC1	Aboriginal Cultural Heritage	- Disturbance of known and unknown cultural heritage sites, objects or remains during construction. - Potential impact on intangible cultural values and connection to country.	- Large geographical area with numerous sites and various Traditional Owner interests, including native title Permanent damage during construction. - Low ongoing risk of impacts during operation and maintenance activities. Unlikely to require ground disturbance outside of previously disturbed footprints	- Direct: impact to cultural heritage sites / cultural landscapes; connection to country; intangible cultural values. - Indirect: relationship with government; wellbeing of Aboriginal communities; potential reduced reliance on existing groundwater sources.	- Determined native title lands of the Barngarla People and Kokatha People. - Other cultural groups assert Traditional interests in some cultural heritage within the Project Footprint. - Numerous recorded and / or registered sites exist within or adjacent the Project area. - Areas of cultural heritage significance are located within parts of the project footprint and broader landscape. - Undisturbed coastal areas, sand dunes, ephemeral water courses, claypans and salt lakes are generally accepted as representing areas of cultural value and have a higher risk profile for presence of cultural heritage sites, objects or remains. - Legislative requirements for Traditional Owners under Native Title (SA) Act 1994 and Native Title Act (Cth) 1993. - Legislative requirements under Aboriginal Heritage Act 1993: it is an offence to damage, disturb or interfere with an Aboriginal site, object or remains without authorisation.	DETAILED
SC2	Community Wellbeing / Social Impact Assessment	- Interface and amenity impacts during construction. - Housing availability, affordability and quality. - Demand on and redirection of social services. - Job creation, demand for goods and services, new skill development, pathways for further education. - Community concern regarding infrastructure land uses in pastoral, coastal and marine environments. - Impacts to social character, community safety, lifestyles, cultural practices, physical and mental health.	- Impacts on housing, social services primarily temporary during construction. - Job creation and demand for local goods and services primarily temporary during construction. - Interface impacts will be temporary and localised during construction and depend on proximity to site and sensitivity of receptors. - Ongoing impacts expected to be minor (small workforce).	- Direct: jobs, income for local businesses. - Indirect: regional economic benefits; redirection of housing and services from lower socio-economic groups; community wellbeing and mental health effects.	Desal Plant - Few sensitive receptors. - Transient / tourist population on Eyre Peninsula. - Coastal holiday settlements of Cowleds Landing (8km north) and Murninnie Beach (10.5km south). Water Transfer System & Electricity Transmission Infrastructure - Covers large geographical area. - Various communities including Whyalla, Port Augusta, Pimba, Woomera, Roxby Downs.	DETAILED
SC3	Heritage Places and Areas	Potential impact to shipwreck materials during construction.	- Disturbance of heritage would occur during construction. - Ongoing visual impact from new infrastructure.	Direct: potential impact to archaeological evidence and/or shipwreck material.	Desal Plant Registered sites have been avoided in the project footprint. - Nearest local and state heritage places are in Whyalla, approx. 25km north of site.	STANDARD

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
		- Potential impact to known / unknown archaeological evidence during construction. - Potential impact to visual landscape context of listed places and/or archaeological evidence.		Indirect: new transmission lines / ancillary infrastructure may form part of landscape context for listed places.	- Nearest protected shipwreck (Mary Ann) approx. 10km to south, however wreck site not located, and it could be closer to the project area. - Nearest geoheritage site approx. 8.5km to west. - Cuttlefish Coast Sanctuary Zone (National Heritage listed, EPBC listed habitat) located approx. 35km north-east at Stony Point, near Port Bonython. Water Transfer System & Electricity Transmission Infrastructure - Registered sites have been avoided in the project footprint. - Nearest heritage place is approx 10km from transfer pipeline. - Two geoheritage sites in proximity to the transfer pipeline at Whyalla. - Nearest National Heritage Place (Edicara Fossil site) is approx. 45km from project area (Flinders Ranges). - Evidence of historical settlement associated with the pastoral industry is scattered throughout the regional (eg cemeteries, fences, stockyards, building ruins, windmills). - Phillips Ponds Homestead (ruins and graveyard) is approx. 50 south-west of transfer pipeline near Woomera – not protected under legislation, but a notable local landmark.	