NORTHERN WATER

BACKGROUND

Northern Water aims to provide a new, climate independent water source for the Far North, Upper Spencer Gulf and Eastern Eyre Peninsula regions of South Australia, to enable the growth of industries that are crucial to achieving net-zero goals, including the emerging green energy and hydrogen industries. The project proposes a desalination plant in the Spencer Gulf connected to northern South Australia via up to 600km of pipeline.

The transition to renewable energy requires significantly increased volumes of minerals such as copper. Increasing production in northern South Australia is critical to meeting this demand but requires large volumes of water. The emerging green hydrogen industry, which uses water to generate hydrogen via electrolysis, and the defence and pastoral industries also contribute to this demand for water.

Industries in the Far North of South Australia and the Upper Spencer Gulf are currently reliant on water from the Great Artesian Basin and the River Murray. Desalination provides the opportunity for a new and climate-independent water source, which will reduce reliance on these precious resources.

A rigorous environmental assessment and approval process will be undertaken prior to a final decision to proceed with construction. Subject to approval, it is expected that construction could start in 2025 and water maybe delivered from 2029.

OVERALL PROJECT TIMELINE PHASES

- **2022-2023** BUSINESS CASE
- **2023-2025** PLANNING & ASSESSMENT
- **2025-2028** DETAILED DESIGN &CONSTRUCTION (subject to approvals)
- **2029 ONWARDS** OPERATION & MAINTENANCE

SELECTING A SITE FOR FURTHER STUDY

Selecting the right site to build a new desalination plant is critical. There are construction and maintenance costs to consider, along with proximity to a suitable water source and the locations of potential water users. Other important considerations include impacts to the land and marine environments, cultural and social impacts and how resilient the site would be to further changes in our climate.

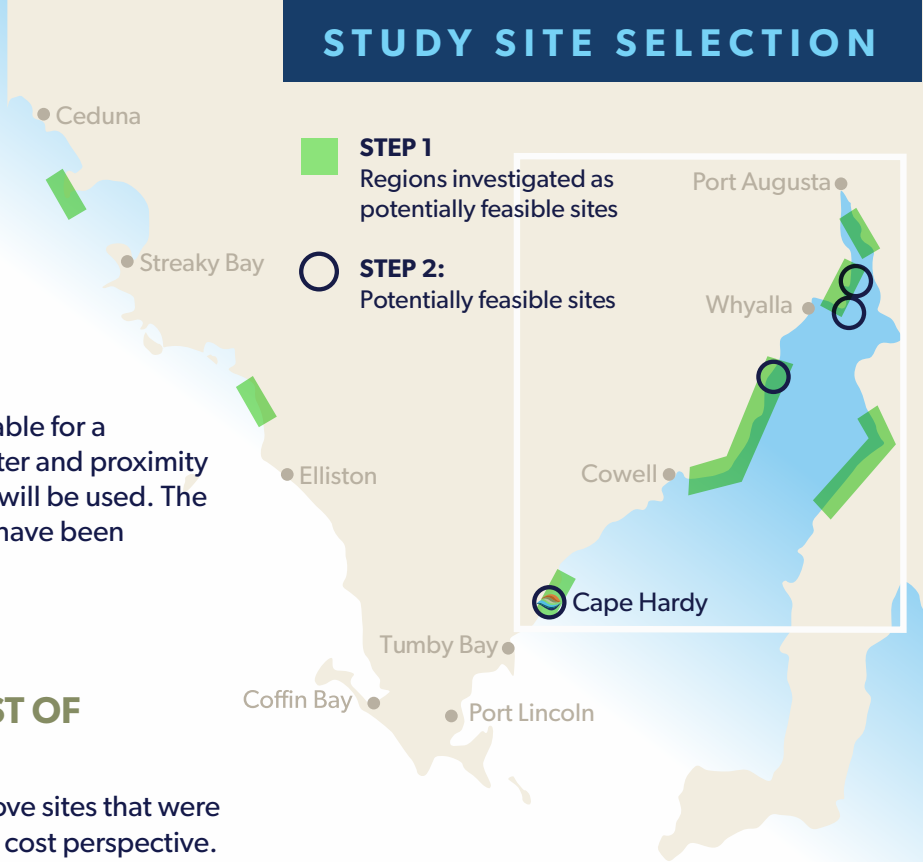
The study site selection process includes the following four steps:

STEP 1
Identify regions where a desalination plant may be possible

STEP 2
Screening to determine a list of potentially feasible sites

STEP 3
Assess the short-listed options to recommend a prefered site for further study

STEP 4
Selection of site for further study



STEP 1

IDENTIFY REGIONS WHERE A DESALINATION PLANT MAY BE POSSIBLE

First we looked at regions that might be suitable for a desalination plant based on access to seawater and proximity to northern South Australia where the water will be used. The map in the upper-right shows the areas that have been investigated.

STEP 2

SCREENING TO DETERMINE A LIST OF POTENTIALLY FEASIBLE SITES

A coarse screen was applied in order to remove sites that were clearly not feasible from an environmental or cost perspective. Sites were excluded from further consideration if:

- Their oceanographic features would cause significant issues for water quality and environmental management; or
- The expected capital cost was calculated to be more than $1 billion over the previously costed (2011) Port Bonython site, which was used as the 'base case' for cost comparison.

A qualitative and high-level assessment of sites in each region was undertaken in relation to surrounding environmental conditions and features including:

- Would there be enough suitable land available to build the plant and associated infrastructure?
- How far would pipes need to extend out into the sea to reach a suitable depth?
- Would there be any water quality issues or other factors that might make water difficult to access?
- How hard would it be to connect the site to an existing power source?

Three sites were initially short listed (at Crag Point, Point Lowly and at Mullaquana Station). A fourth site was added to the short-list in early 2023, after demand for water was identified south of Mullaquana. The new demand changed the value of the base case (as additional pipeline from Whyalla to Cape Hardy became part of the baseline assessment). This meant that the cost difference that previously excluded Cape Hardy was reduced to the point that Cape Hardy was able to be added to the short-list.

* Information and data in this map is approximate only

Site 1	Cape Hardy
Site 2	Crag Point
Site 3	Mullaquana Station
Site 4	Point Lowly

STEP 3

ASSESS SHORT - LISTED OPTIONS

The short-listed sites were assessed in detail using a Multi-Criteria Assessment (MCA), with the assistance of key stakeholders representing commercial and recreational fishers, conservation interests, local government, and business, tourism and industry groups. The MCA process compared each site against 17 criteria across five categories:

CRITERIA USED IN THE MCA:

ENVIRONMENTAL SUSTAINABILITY

How well would this site minimise marine and climate impacts, and are there risks to native flora and fauna?

SOCIAL SUSTAINABILITY AND LIVEABILITY

Can we ensure local heritage sites are preserved and maintained and how might development at that site impact community health, wellbeing and social values?

WHOLE-OF-LIFE COSTS

How much would it cost to build, operate and maintain at this location? Would it present value-for-money and is it a good use of public funds?

CONSTRUCTABILITY AND OPERABILITY

How complex would it be to build a plant there and would there be any operational issues that might affect the ongoing annual costs of running the plant?

CLIMATE RESILIENCE

Would the site be resilient against future climate changes or would there need to be special considerations incorporated into the design?

A stakeholder survey was conducted to collate local information and community sentiment to help stakeholders involved in the MCA process assess and compare the short-listed sites.

Whilst the initial MCA considered only three of the four sites, an additional MCA process was undertaken with the same stakeholders to complete the assessment of the fourth site.

The first MCA scoring workshop found the Mullaquana Station site performed the best. However, once the fourth site was subsequently scored, Cape Hardy performed even better when compared against the Mullaquana Station site.

The MCA process found the Cape Hardy site was the best performing site when considered against the range of assessment criteria.

STEP 4

STUDY SITE SELECTION

Cape Hardy has been identified by the Government of South Australia as the site option to focus any further studies.

NEXT STEPS

PLANNING AND ASSESSMENT PHASE

The planning and assessment phase includes detailed studies and research to feed into the environmental impact assessment process. The process will likely be in the form of an Environmental Impact Statement (EIS) that will assess the potential impacts and opportunities associated with the project. The specific assessment requirements will be known early in 2024.

During the Planning and Assessment phase, a range of activities will be undertaken to comprehensively understand expected project impacts, opportunities, costs and benefits.

Activities include:

- Evaluation of the overall environmental, social and economic impact of the project via an environmental impact assessment (expected to be in the form of an EIS).
- Formal tender process and development of agreed contract terms with a preferred contractor to design, build, operate and maintain the plant and pipeline.
- Progression of required project approvals including Native Title, development approval and other land access agreements for the plant and pipeline.
- Ongoing engagement with stakeholders and the community to ensure risks and opportunities are properly understood and addressed.
- Other activities required to provide Government with clear understanding of the risks and opportunities associated with the project.

ENVIRONMENTAL IMPACT ASSESEMENT

Detailed studies and research feeding into the environmental impact assessment process during the Planning and Assessment Phase include:

- **Marine quality**
- **Marine ecology**
- **Terrestrial ecology**
- **Soils, land, waterways, and coastal processes**
- **Air, noise and vibration**
- **Transport and traffic**
- **Climate change and sustainability**
- **Social and economic environment**
- **Aboriginal heritage**
- **Non-Aboriginal heritage**

The Northern Water team will be engaging with stakeholders and the wider community to help identify potential issues, concerns, impacts, opportunities, together with management measures to reduce risk and enhance local community benefits.

Feedback from the community will continue to provide valuable input toward the final project decision.

GET IN CONTACT

(08) 8429 4650
northernwater@sa.gov.au
northernwater.sa.gov.au
yoursay.sa.gov.au/northern-water

YourSAy

Website

NORTHERN WATER

Government of South Australia