



BACKGROUND

Northern Water aims to address the limited sustainable water supplies in the Far North, Upper Spencer Gulf and Eastern Eyre Peninsula regions of South Australia whilst enabling 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 approximately 600 km 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 contributes 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 will start in 2025 and water will be delivered from 2028.



SELECTING A SITE FOR FURTHER STUDY

Selecting where a new desalination plant could be built is critical. There are construction and maintenance costs to consider, as well as proximity to a suitable source of water and potential water users. Impacts to the land and marine environments, cultural and social impacts and how resilient the site will be to further changes in our climate need to be considered.

The study site selection process includes 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 preferred site for further study

STEP 4

Selection of site for further study

OVERALL PROJECT TIMELINE PHASES



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 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 would 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

The short-listed sites were assessed in detail using a Multi Criteria Assessment, 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 the 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 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

The results from both Multi Criteria Assessment processes have been provided to the Government of South Australia to consider as part of selecting the preferred site for further planning and assessment.