Belmont Desalination Plant

Project update - January 2026

Hunter Water is building a desalination plant at Belmont to help secure our region's water future.

As one of the few water source options not dependent on rainfall, desalination was identified in the NSW Government's Lower Hunter Water Security Plan as a critical step to provide a safe and reliable water source regardless of changes in weather or climate. Construction of the plant began in January 2025 with our delivery partner, John Holland, and is progressing well.

On completion, the plant will form part of the Lower Hunter's water supply system for the future and will:

- **add up to 30 million litres per day of rainfall-independent water to our supply system**
- **increase the diversity of the region's water supply system**
- **help to reduce the rate that storages deplete during drought by around six months**
- **provide a flexible water supply source where production can be ramped up and down as needed.**

Find out more hunterwater.com.au/desal

Marine yard at Kooragang

Aerial view of site - December 2025

Progress update

Major work is progressing well on the Belmont Desalination Plant. Over the past six months we have:

- completed foundations for the main building
- received, fitted out and launched 'Rhiannan', the micro tunnel boring machine which will help build the underground intake pipeline for the plant
- excavated and prepared the intake shaft where Rhiannan launched
- installed the jack-up barge ~800m offshore from Nine Mile Beach
- set up a marine construction zone around the jack-up barge to help keep everyone safe
- started installation of temporary piles, which will be used to guide placement of large concrete rings (caissons) to build the direct ocean intake structure
- construction of caissons at our offsite marine construction yard in Kooragang.

Upcoming activities

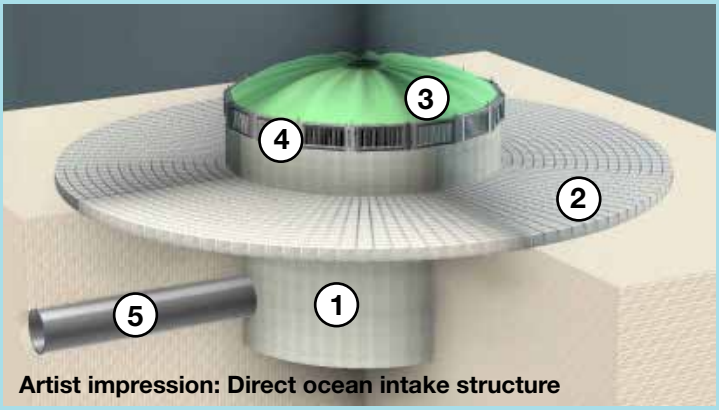
Over the next six months we will be:

- building the direct ocean intake structure
- tunnelling from the plant site to the direct ocean intake structure
- continuing caisson construction at the marine yard
- installing structural steel and wall panels for the main building
- progressing ancillary buildings like electrical switch rooms.

How will seawater enter the plant?

A direct ocean intake will gently draw seawater into the desalination plant. The direct ocean intake:

1. is built from stacked precast concrete caissons, forming a chamber about 15m high and wide, with 9m below the seabed and 6m above the ocean floor.
2. is surrounded by concrete matting on the sea floor, adding stability around the intake by preventing erosion.
3. has a dome-shaped roof that minimises turbulence and sediment disturbance.
4. is low-velocity, drawing seawater in slowly through screened openings that help to to keep out debris and marine life.
5. connects to an intake pipeline that runs beneath the seabed to bring seawater into the plant for pre-treatment and reverse-osmosis desalination.



Artist impression: Direct ocean intake structure

Did you know...

The three guide piles for offshore marine works weigh 134 tonnes each and are 54.4m long. Each caisson ring weighs over 120 tonnes with an outside diameter of 15.6m.

Where will the desalinated water go?

We're introducing desalinated water as an additional source into our water supply system so we're prepared for population growth and future climate uncertainty.

To distribute desalinated water from the plant to our customers and network, we're building two new water mains to provide additional drinking water to eastern Lake Macquarie communities. The new water mains will connect the desalination plant into two existing trunk water mains in Belmont South and Jewells.

Find out more at hunterwater.com.au/belmont-water-mains

Tunnel boring machine named after local diving champion

Students from Belmont Public School and Marks Point Public School put their creative stamp on the Belmont Desalination Plant by naming the project's tunnel boring machine after cliff-diving champion and local legend, Rhiannan Iffland.

The tunnel boring machine, affectionately named "Rhiannan", is now building the underground intake pipeline that will form a vital part of the Belmont Desalination Plant's seawater intake system.

Marine works surging ahead

Late last year we reached a significant milestone with the arrival of the jack-up barge (JUB) about 800m off Nine Mile Beach.

This specialised piece of equipment is crucial in building the plant's direct ocean intake, which will bring seawater in for treatment. Equipped with a large-scale crane, the JUB will do all the heavy lifting in terms of installing the large concrete rings (caissons) that will form the direct ocean intake structure.

Connecting with community

Late last year we hosted pop-up stalls at Belmont South, Blacksmiths Beach and Redhead Beach, and a community information session at the Belmont Library, to share information about offshore construction activities before this work started.

Locals were curious about how we'll build the ocean intake under the waves – and many enjoyed watching a video that shows the process step by step.

Rotor-ready: Helicopter awareness

To support safe offshore construction, the John Holland marine team recently completed Helicopter Awareness Training at Lake Macquarie Airport. This training is essential for crews who will travel by helicopter to the offshore jack-up barge.

The session covered critical safety protocols and emergency response measures, ensuring everyone is prepared for safe and efficient transit during marine construction activities.

Managing marine construction

Protecting the marine environment and keeping people safe during offshore construction guided every step of our planning process. Before work started, we completed detailed studies to reduce impacts on marine life, including:

- a full Environmental Impact Statement approved by the NSW Department of Planning, Housing and Infrastructure
- a Marine Environment Impact Assessment covering species, habitats and water quality
- an ongoing Marine Monitoring Program with regular audits and checks.

Safety remains our top priority offshore. Key measures include:

- a designated maritime construction zone to protect vessels and marine life
- a coordinated Maritime Management Plan
- onboard watchkeepers to safely manage vessel movements
- a dedicated marine-fauna observer present throughout all offshore activities.

Learn more about marine works

Belmont Desalination Plant

Project history & timeline

2014 Lower Hunter Water Plan identifies desalination as drought response measure

2014-2017 Initial planning and site selection

2018-2019 Develop concept design and Environmental Impact Statement

2019 Public exhibition of Environmental Impact Statement

2020 Submissions considered and scope changed; Public exhibition of Environmental Impact Statement Amendment Report; Response to submissions

2021 Planning approval for drought response desalination plant

2022 Lower Hunter Water Security Plan released – identifies a permanent desalination plant as a key measure for securing our water supply

2022-2023 Planning investigations for a permanent desalination plant

2024 Modification to Environmental Impact Statement on public exhibition; Response to submissions; Planning approval for permanent desalination plant

2025 Construction started

2025-2027
- ✓ Site establishment
- ✓ Earthworks to raise plant site
- – Tunnelling and marine works (in progress)
- – Building main plant and ancillary buildings (in progress)
- O Testing and commissioning

We are here

2028 Desalination plant begins operating

Did you know...

when in operation, the Belmont Desalination Plant will be capable of producing up to 30 million litres of drinking water a day ... that's around 12 Olympic swimming pools a day!

Fast facts

- The plant site has been raised by between 1.5 to 2.5 metres and sits at about 3.8-4.3 metres above sea level - this will help protect the plant from flooding and sea level rise.
- Once in operation, the plant will reduce the rate our water storages deplete in a long and severe drought by around six months.
- The intake pipeline is about 10 metres beneath the seabed, and is 2.5 metres in diameter.
- Desalination by reverse osmosis works by pushing seawater through ultra-fine membranes that only water molecules can squeeze through, leaving salt and impurities behind.

Thirsty for more information

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Find out more hunterwater.com.au/desal