



**Alkimos
Seawater
Desalination Plant
investigations**

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As part of our long term planning to secure Perth's water supply, Water Corporation has completed feasibility investigations and is seeking environmental approvals for a seawater desalination plant at Alkimos. Seawater desalination is a proven water supply solution that does not depend on climate. Almost 50 per cent of Perth's current water supply is from existing desalination plants in Kwinana (45 billion litres per year, since 2006) and near Binningup (100 billion litres per year, added in 2011).

Where will the plant be located?

The preferred site for the plant is within the Water Corporation owned Alkimos Water Precinct, found west of Marmion Avenue. The plant would be located next to the existing wastewater treatment infrastructure and would be contained entirely within the Precinct boundary. The Precinct is accessed by a private, secure road and includes two conservation areas to the north and south that separate infrastructure from current and future residential development.



What is being investigated?

- A seawater desalination plant, starting with a capacity of 25 billion litres per year, and expanding in increments of 25 billion to an ultimate capacity of 100 billion litres per year
- Two ocean pipelines, below the seabed, that bring seawater into, and take brine (salty water) away from the plant. These would be built to ultimate capacity removing the need for future expansion or additional pipes to be built later
- A water transfer pipeline to take water from the Precinct to the existing Wanneroo Reservoir to be incorporated into Perth's water supply
- A co-located groundwater treatment plant.

When will the plant be built?

The Alkimos Seawater Desalination Plant is one of a number of water source options being considered. A decision on when a new water source will be needed for Perth and which source is selected is dependent on a range of factors including population growth, climate and demand. By taking a proactive approach and applying for approvals early, Water Corporation is in a good position to take all feedback into consideration. No firm timing is known, but we expect a new water source will be required within the next 5-10 years.

What does the plant involve?

Like the existing desalination plants near Binningup and at Kwinana, the plant would comprise a number of buildings, storage tanks and processing areas and would use reverse osmosis technology to remove salt and impurities from seawater to produce fresh water.

All infrastructure would be located within the Precinct to maximise efficiency and minimise impact on the surrounding community.

Working with the Alkimos community

Water Corporation has sought feedback from, and worked extensively with the Alkimos community and key stakeholders since the feasibility investigations began, and will continue to do so.

Priority has been placed on understanding what is important to the community and how we as an organisation can work towards improved outcomes for all.

Consultation has made sure we are aware of plans for significant infrastructure projects for the Alkimos area, such as the Metronet rail project, surrounding developments and road improvements. We have considered how this might affect our long term plans for the Alkimos Water Precinct.

How have we engaged with the community?



1,000 letters to all owners and occupiers in Alkimos

Recipients were invited to provide feedback online



Launched March 2018
More than **2,000** visitors to our info web page
42 feedback surveys currently returned



4 dedicated cafe sessions
4 community events
2 briefings at Progress Association
More than **300** community conversations



More than **45** meetings run by our community engagement officer

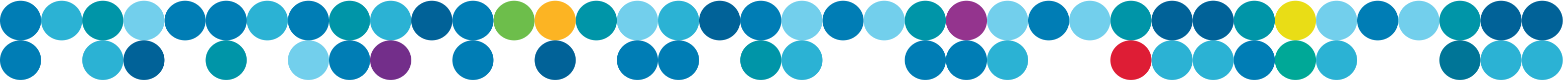


Social impact assessment
Complete August 2018



October 2018 survey
86% of the Alkimos and surrounds community are either neutral or support the project
95% of the Perth community are either neutral or support the project

We value your ongoing feedback. Turn overleaf to find out what happens next and how to have your say.



How are we planning to protect the marine environment?

Extensive research has been conducted to ensure the offshore pipelines, required to bring seawater in and take brine away from the plant, are developed and constructed with the least possible environmental impact. These pipelines are planned to be constructed using tunnelling. This is a non-invasive construction technique, with benefits including:

- minimal impact to the sea bed, as a structure will be attached to the end of each pipeline which will sit approximately 3-4m above the sea bed. All other infrastructure will be many metres below, preventing disturbance to the reef and marine life.
- no impact to the dunes and coastal landscape.

Marine investigations have been undertaken using wave, current and wind monitoring. These concluded that environmental impact will be minimal when brine, which has a higher concentration of salt, returns back into the ocean via the outfall pipeline.



This concept view shows infrastructure for the Alkimos Desalination Plant built to operate at maximum capacity (100 billion litres per year).

How are we planning to protect the land environment?

Minimising disturbance to the Alkimos community during construction and operation is a key priority. The community has told us reducing noise and visual impact is important to them and we are addressing this by:

- keeping all infrastructure within the Precinct
- undertaking significant earthworks to lower the plant below the existing sand dunes. A noise study has confirmed this will also mitigate noise levels
- installing marine tunnels from within the Precinct to minimise dune, beach and vegetation impact
- construction and revegetation of the mound west of the plant
- retaining a conservation area to the north and south of the plant
- revegetation of temporarily cleared areas.



Offshore research ensures we minimise environmental impact

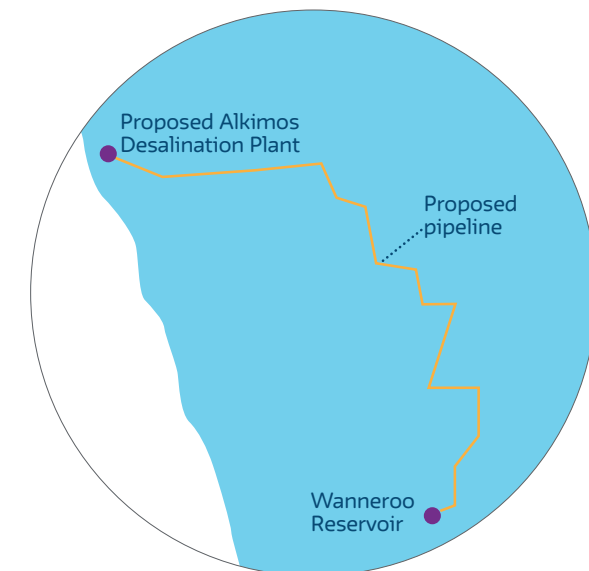
What about the pipeline connecting the plant to Perth's water supply scheme?

Water from the plant will join Perth's water supply scheme through a 35km pipeline from the Carabooda Tank to Wanneroo Reservoir. This large sized pipe is planned to be installed within road reserves, with small lengths travelling through an area of forest (to the south east of the Carabooda Tank). We have worked closely with the City of Wanneroo, Main Roads developers and other stakeholders to identify the most viable route that requires minimal clearing and has the least impact to the environment and community.

We completed environmental surveys of our intended route. Impacts of the pipeline installation on the community (such as traffic management) will be managed and will be subject to further consultation.

A local groundwater scheme

As part of our future planning we are also investigating the development of a groundwater scheme, which will involve a series of bores built in Eglinton and Alkimos, connecting through pipelines to a treatment plant also located within the Precinct.



The environmental approvals process

Water Corporation will submit proposals to the State Government's Environmental Protection Authority and the Commonwealth Government's Department of the Environment and Energy in early 2019 to seek environmental approvals. During the assessment process there will be opportunity for public comment.

Find out more and have your say

Community members and stakeholders are invited to give feedback by visiting yoursay.watercorporation.com.au

Register your details to stay informed and continue to provide feedback as the project progresses.

Visit watercorporation.com.au/securingssupply to read more about our plans for Perth's water supply.

We will continue our conversations with the community for years to come as the Alkimos Water Precinct develops and as we respond to the growing needs of the community.

watercorporation.com.au

This information is available in alternative formats on request.

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