



Short-term desalination system on Norfolk Island

— FAQ

Overview

In response to water scarcity and drought conditions on Norfolk Island, the Department of Infrastructure, Transport, Regional Development and Communications (the Department of Infrastructure) requested the Australian Defence Force (ADF) provide a short-term alternative water source for the community of Norfolk Island. This decision was supported by the Administrator, Emergency Management Norfolk Island (EMNI), Norfolk Island Regional Council (NIRC), the ADF and Emergency Management Australia (EMA). A significant amount of evidence had also been provided by the community on the need for such action.

The Army water purification and desalination system arrived on island on 7 February, was set up the following day at Cascade Pier and began producing desalinated water for community members in need.

Frequently asked questions

The Department of Infrastructure is committed to ensuring the community has information on the operation of the desalination system and arrangements for water delivery to those in need. Answers to a range of common questions are available below.

Who is operating the desalination system?

A team from the ADF is operating the system on Norfolk Island and will continue to do so for the duration of the operation. The ADF routinely operates these systems as needed around Australia and the Asia-Pacific region. The team has just spent some weeks on Kangaroo Island to assist with replenishing supplies there following the devastating bushfires.

How is the desalination system powered?

Diesel generators owned and operated by the ADF.

How much does the desalination system produce every day?

The desalination system is capable of producing a maximum of 100,000 litres per day.

Will it operate at maximum output every day?

The desalination system operates 24 hours per day. It produces as much as is needed and to the maximum that can be stored while water is not being taken (such as through the night). Since commencement of operation on Norfolk Island, the system has been producing approximately 90,000L per day. This may fluctuate over the coming weeks.



What process does the ADF purification and desalination system use to produce water from seawater?

Microfiltration and reverse osmosis.

How concentrated is the discharge produced by the desalination system?

The discharge water has salinity 1.38 times that of seawater. The discharge point selected is in a high wave action area to ensure the saline discharge is rapidly dissipated into the surrounding sea water.

How is the water being delivered?

Water carters are delivering the water and charging recipients for the cartage only. Water is being delivered in accordance with a priority list as determined by EMNI in consultation with others, including Customer Care and the water carters.

How much does the water cost recipients?

The water produced by the desalination system is free of charge. Only cartage fees apply. The fee charged is determined by the water carter.

Can residents take water home or to their businesses in their own containers?

The ADF require the quality of water produced by the purification and desalination system be retained to the point of delivery. Water cartage is the process for this to occur on Norfolk Island. Prior to beginning to deliver the desalinated water, the water carters' tanks and equipment were treated to ensure the required standard of water quality.

How do I get water?

Residents and businesses can obtain water by contacting Customer Care on 22244, freecall 0100 or afterhours, 55254 to register their need. Water will be delivered in order of priority.

Can I receive more than one load of water?

Yes. Once a load has been received, recipients may register again for another load by calling Customer Care. Delivery will be made in accordance with priorities. Charges for delivery of each load of water apply (paid to the water carter). The community is encouraged to make the most of the water produced by the desalination plant while it is available.

How much water is being delivered each day?

At current operations and speed, some 15-20 residents and businesses are being delivered water each day.

Will surplus water be stored?

When water carters have delivered to priority households and businesses, they will then also be delivering to critical community locations including the Norfolk Island Residential and Aged Care Service (NIHRACS), Norfolk Island Central School (NICS) and Norfolk Island Regional Council (NIRC) assets.

Will the water be available for livestock as well?

Once all residents, businesses and community assets have been serviced, livestock water deliveries may be considered, as we understand this is also a concern.

How long will the Army desalination system be on Norfolk Island?

At this stage, it will be on island until the end of February at which time the need will be re-assessed.

Why didn't the Australian Government through the ADF provide Norfolk Island with desalination before now?

Prior to the water being delivered, EMNI needed to obtain information from the community to make decisions about emergency prevention measures. Once EMNI had obtained enough information, decisions could be made and action taken accordingly. It is important to also recognise the recent high demands on ADF resources resulting from the bushfire crisis.

Where did the decision to provide Norfolk Island with an Army water purification and desalination system to prevent an emergency originate?

The Administrator has kept the Australian Government well informed about water needs on Norfolk Island.

This particular option was originally discussed at a Water Workshop on Norfolk Island on 1 April 2019 involving the community's emergency management network and the Australian Government. Norfolk Island water needs were also raised with Assistant Minister Nola Marino during her visit to Norfolk Island in December 2019. During this visit the Assistant Minister visited properties impacted by reduced rainfall, and was briefed by the CSIRO on its investigations (more information on these investigations is outlined below).

In December 2019, Assistant Minister Nola Marino announced that the Government would make portable desalination equipment available as a short term contingency for water shortages over this summer. Assistant Minister Marino also noted that work to establish a longer term solution to water security needs to continue. This matter was discussed again during the Administrator's meeting with Assistant Minister Marino on 12 February 2020, in Canberra.

Was Norfolk Island out of water?

The community has been experiencing water stress, with a growing number of households and businesses experiencing a week or more without water as well as many expecting to exhaust supplies imminently without an alternative source. High rates of water sharing has been occurring between neighbours, friends and families.

According to the Bureau of Meteorology (BoM), Norfolk Island had its driest month on record in January 2020 with just 0.6mm of rainfall. Combined with November and December 2019, this resulted in the driest three-month period on record for Norfolk Island. More information about Norfolk's rainfall can be found at <http://www.bom.gov.au/climate/current/month/ria/summary.shtml>

Rainfall on Norfolk Island has been declining since the early 1970s and is projected to continue to decline. Reductions in rainfall can result in amplified reductions in surface and groundwater resources. The CSIRO is currently undertaking an assessment of Norfolk's hydrology and hydrogeology and options available to the



community to increase water security. More information about the CSIRO's Norfolk Island Water Resources Assessment (NIWRA) project can be found at https://www.regional.gov.au/territories/norfolk_island/norfolk_island_projects/norfolks_island_water_resources_assessment_project.aspx

Have potential environmental impacts of the desalination system's operations been considered?

Yes. Both the ADF and the Department of Infrastructure have made decisions and conducted operations in line with environmental considerations. As the waters surrounding Norfolk Island are a Marine Park, a permit for the Army water purification and desalination system for the purposes of emergency prevention was obtained. The ADF and the Department of Infrastructure are working together to ensure the environment and any potential environmental impacts are appropriately considered and that the operation is conducted in accordance with the conditions of the Australian Marine Park Activity Permit.

Was an Environmental Impact Assessment conducted?

Associated with Assistant Minister Nola Marino's announcement of funding for desalination for Norfolk Island in December 2019, the Department of Infrastructure has been liaising with Marine Parks in relation to desalination. The Army water purification and desalination system was deployed in the context of emergency management, and an Australian Marine Park Activity Permit has been issued by the Director of Marine Parks for that purpose. While there is no legislative requirement to conduct an Environmental Impact Assessment in such circumstances, the Department of Infrastructure has been working closely with the ADF, NIRC and Marine Parks to ensure the operation takes environmental and heritage protection into consideration and that activities are conducted and the environment is considered in accordance with the conditions of the permit.

Did the desalination system go through appropriate biosecurity checks on arrival?

Yes. The Department of Agriculture, Water and the Environment (Department of Agriculture) undertook thorough biosecurity checks on arrival. A biosecurity issue was identified and the Department of Agriculture worked quickly and effectively with the ADF and the Department of Infrastructure to manage biosecurity risks. Once cleared by the Department of Agriculture, the desalination system was moved to Cascade Pier. To preserve Norfolk Island's pristine biosecurity rating, the Department of Infrastructure will continue to work with the ADF and Department of Agriculture to ensure robust biosecurity handling strategies are in place.

Who is paying for the ADF to come to Norfolk Island to provide desalination?

The ADF can recover costs in relation to any activities conducted in the context of emergency management. Should the ADF seek to recover costs, these will be borne by the Department of Infrastructure.

Will a permanent desalination system be provided to Norfolk Island and are options to increase water security other than desalination being explored?

In December 2019, Assistant Minister Nola Marino announced funding for the provision of a permanent desalination solution for Norfolk Island as part of the response to addressing recurring water scarcity. It would be one of a number of measures to improve Norfolk Island's water security.



Before a permanent desalination solution is commissioned, options will be carefully assessed to ensure selection of an option that best suits Norfolk Island and the community's needs. A permanent desalination solution will be progressed alongside the consideration of other options assessed by the CSIRO. The views of the community on this matter are also important. Community members have suggested water tanks and collecting run-off from buildings as other viable solutions. All of these options are being considered. Together, the community, Norfolk Island Regional Council and the Australian Government will be able to take into consideration the recommendations of the CSIRO in pursuing a range of measures to increase water security.