Department of **Industry, Tourism and Trade**

THE TERRITORY

Adelaide River Off-stream Water Storage Project

Detailed Business Case
key findings overview

Water, it's one of our most precious resources.

As the Territory grows, water security is critical - for people, agriculture and industry.

Australian Government

National Water Grid

PowerWater

NORTHERN TERRITORY GOVERNMENT

The challenge and opportunity

The Northern Territory Government is committed to delivering secure, reliable and cost-effective water for Territorians, now and into the future.

In the greater Darwin region the majority of our water supply, around 85%, comes from the Darwin River Dam, which is operating at or above its sustainable supply level. The remaining15% of the greater Darwin region water supply is provided through groundwater resources.

Our current water supply is operating at capacity.

With no intervention, there is an emerging risk to urban water security in the greater Darwin region. By 2050, it is forecast that an additional supply of 11,000 ML p.a. is required to meet future population growth.

A strong Territory economy benefits all Territorians. Water is a critical enabler of economic growth.

The NT Government has an ambitious target to achieve a $40 billion economy by 2030. The Territory Economic Reconstruction Commission Final Report (November 2020) identified that a step change in the Territory's approach to water is needed to support the Territory's plans for increased private investment and economic growth of the region.

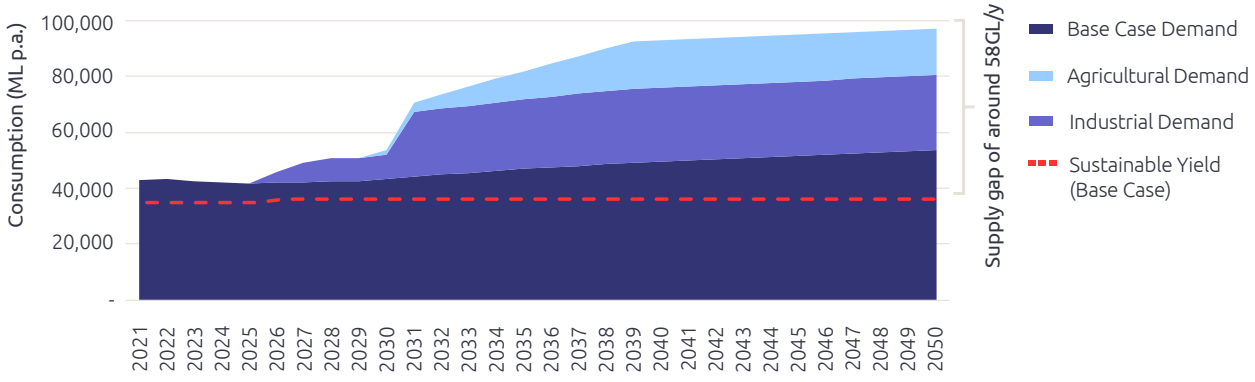
A key strategic priority of the NT Government, the Middle Arm Sustainable Development Precinct, is forecast to require an additional 27,000 ML p.a. of water by 2050.

There is land suitable for high value agriculture and horticulture expansion across the greater Darwin region, however production is constrained by lack of available groundwater. Access to additional water is estimated to unlock approximately 2,000 ha of greenfield development.

Water demand from agricultural and horticultural users is forecast to increase by 17,000 ML p.a. by 2050.

Growing our water supply will enable ongoing benefits to Territorians, providing secure drinking water, ongoing economic opportunities and jobs.

The total demand for water in the Darwin region is expected to more than double from 2021 to 2050, increasing from 42,000 ML p.a. to almost 100,000 ML p.a. by 2050.



Assessing the options

After a comprehensive shortlisting process, two options were considered in the Detailed Business Case:

Option 1 Manton Dam Return to Service (RTS) and Adelaide River Off-stream Water Storage (AROWS)

- Manton Dam RTS to be implemented in the short term to overcome the impending urban supply shortfall and provide short term supply security to support investment decisions from industry.
- Returning Manton Dam to service could supply an additional 7,300 ML p.a.
- Delivering AROWS would provide 60,200 ML p.a. of additional water providing further urban water security in the long term and will assist in realising growth in industrial demand and providing opportunities for the agricultural and horticulture sector.

Option 2 Disaggregated water supply

- Disaggregated water supply was investigated as an alternative lower capital cost option.
- This option includes delivery of small-scale desalination plant at Middle Arm and development of a recycled water plant to treat waste water from the Palmerston Waste Stabilisation Ponds.

The recommended infrastructure solution

The Detailed Business Case concluded that Option 1 Manton Dam RTS and the AROWS project are the superior infrastructure solution to meet the Darwin region's water requirements for the short, medium and long term.

Option 1 Manton Dam RTS and AROWS

COST	ECONOMIC VIABILITY	COST PER ML	SUPPLY CAPACITY	END USERS
$1.45B	Benefits outweigh the costs	$1,686	67 GIGALITRES PER YEAR	Urban Irrigated agriculture Industry

Option 2 Disaggregated water supply

COST	ECONOMIC VIABILITY	COST PER ML	SUPPLY CAPACITY	END USERS
$633M	Benefits do not outweigh the costs	$4,738	17 GIGALITRES PER YEAR	Industry

AROWS

A sustainable long term infrastructure solution

The AROWS project is an innovative approach that provides complementary outcomes of water availability and environmental sustainability.

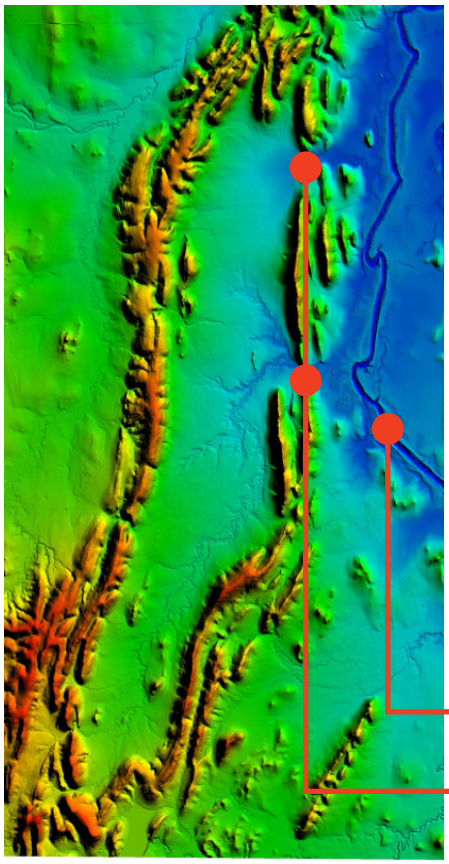
AROWS has a positive Benefit Cost Ratio, demonstrating that this is an economically viable project and there is a robust justification for investment.

Key characteristics:

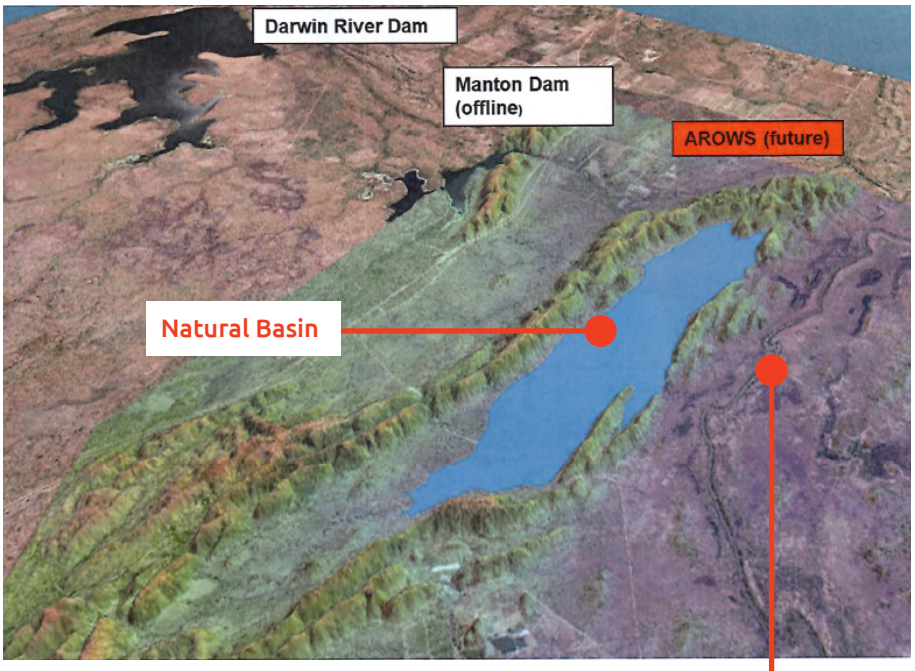
- There is no dam infrastructure that restricts the flow of the Adelaide River. There are two main dam structures at low points to secure water within the proposed basin.
- Water extraction from the Adelaide River would only occur during the wettest months. There is no extraction during the remaining months of the year.
- Water will be treated at the proposed Strauss Water Treatment Plant prior to distribution to customers.
- Current modelling shows that when full, AROWS will hold around 250,000 ML of water and supply 60,200 ML per year. By comparison, this is almost double the water supply capacity of Darwin River Dam.
- The Adelaide River Catchment is one of the largest catchments in the Darwin region, which means that the water availability is extremely reliable each year. As the climate continues to change, AROWS can provide a secure and reliable source of water to the Darwin region.
- There is unlikely to be any impact on fishing accessibility for the Adelaide River.
- The recommended solution delivers a sustainable and robust reticulated network for the Darwin region, with multiple sources to provide increased resilience and capacity over the long term.

The natural geographical advantages of the AROWS project are demonstrated below.

Existing Geographical Characteristics



A natural basin adjacent to the Adelaide River



Adelaide River

Dam structures at low points to secure water in the basin

For more information visit watersecurity.nt.gov.au
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