

Lower Hunter Water Plan 2016 Evaluation

Evaluating the Lower Hunter Water Plan

The 2014 Lower Hunter Water Plan sets out how we will ensure there is enough water to supply the people and businesses of the lower Hunter region, and how we would respond to a severe drought.

Monitoring and evaluation are an important part of the planning cycle, to ensure the plan can adapt to new information and meet the region's ongoing needs.

The 2016 evaluation assessed:

- to what extent the plan is meeting its objectives
- whether actions have been implemented as planned
- how the measures in the plan have performed
- if the plan's key assumptions still apply, and whether the plan needs to adapt to any changes.



Is the plan meeting its objectives?

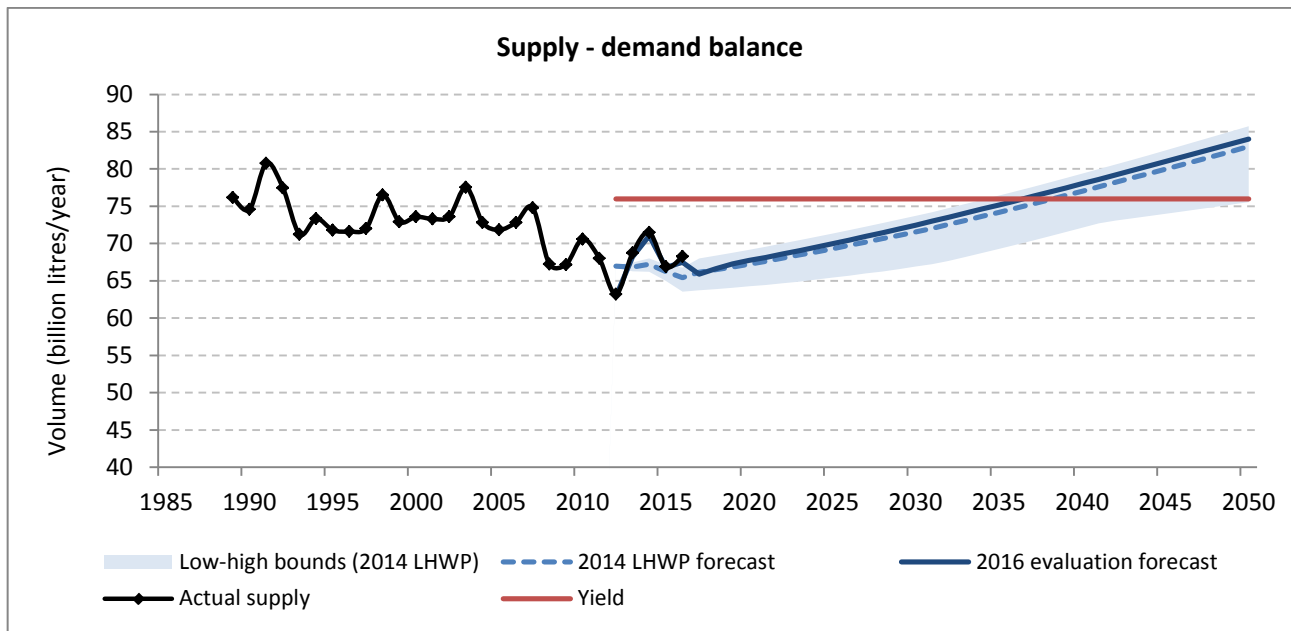
The objectives of the Lower Hunter Water Plan are to:

- provide water security during drought
- ensure reliable water supplies to meet growing demand due to a growing population and increased business and industry activity
- help protect aquatic ecosystems
- maximise net benefits to the community.

The evaluation found that the objectives of the plan are generally being met, although the region has not had a drought since the plan was released to fully test its performance.

The supply-demand balance is reviewed each year to include the latest water usage information and population projections. As shown in the graph on the next page, the updated forecast from the 2016

evaluation indicates a small increase in demand compared with the forecast when the plan was developed, although the forecast is still within the high and low bounds of the original forecast (shaded in light blue in the graph). The 'yield' of the water supply system (the volume that can be supplied each year on average over the long term) is shown in red, and is currently estimated at 76 billion litres per year. The supply-demand balance indicates there is still enough capacity to meet the region's needs until 2035/36 under typical climate conditions, although some risks to supply were identified in the evaluation (discussed further below).

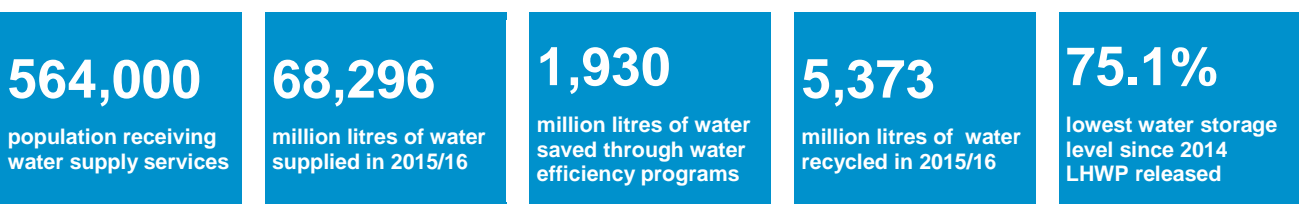


Have the measures in the plan delivered what we expected?

The ongoing (non-drought) measures in the Lower Hunter Water Plan have generally been effective and met expectations for the supply, saving and substitution of water.

The estimated savings from customer water efficiency measures were slightly higher than forecast, while the savings from loss minimisation measures (including leak detection programs) were less than forecast, although this was mostly due to timing delays.

Since the Kooragang Recycled Water Scheme started operation in late 2014, an extra two billion litres per year of water has been recycled for industrial use, replacing drinking water use. This was less than the forecast of three billion litres per year, due to lower customer demand for recycled water.



Is implementation on track?

Implementing the Lower Hunter Water Plan has achieved the following:

- 💧 Water Wise Rules were introduced in July 2014
- 💧 the Kooragang Recycled Water Scheme was commissioned in November 2014
- 💧 a new model has been developed to optimise inter-regional transfers with the Central Coast
- 💧 readiness activities for temporary desalination have been initiated as a contingency measure for severe drought
- 💧 investigations have progressed to enable enhanced environmental flow rules for Chichester Dam and Seaham Weir to start in 2017, and a new fishway at Seaham Weir should be completed in 2020.

Most of the implementation actions were delivered on time or are on track. Design and construction of new works to enable more water to be transferred from the Central Coast to the Hunter is slightly behind schedule,

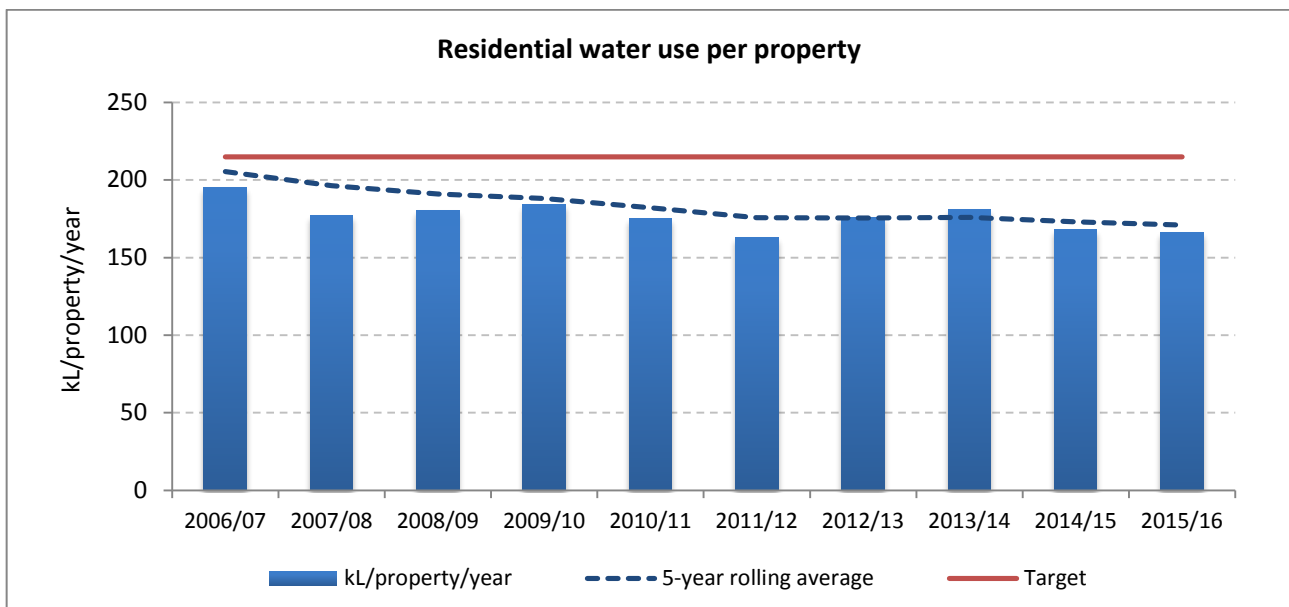
and will be completed in 2018 instead of 2017. This delay has minimal impact on drought security, as the storage levels in both regions are relatively high so transfers are unlikely to be needed before 2018.

More detailed investigations for the contingency measure of temporary desalination have provided new information on the costs and planning approval pathway. To ensure water can be provided in time if a severe drought occurs, changes have been made to bring forward the concept design, environmental impact assessment and planning approval under 'readiness activities', with a revised completion time of December 2018. Further work on design and construction would not be triggered unless storage levels fall to 65%. These investigations also found it is feasible to increase the amount of water produced from 9 to 15 million litres per day to provide more security in a severe drought, although at a higher cost.

Have any assumptions changed?

The evaluation found that most of the assumptions underpinning the Lower Hunter Water Plan are still appropriate.

Over the last ten years, household water use has continued to decline, as shown in the graph below. This was influenced by a combination of factors, including ongoing improvements in the water efficiency of household appliances and the introduction of Water Wise Rules in 2014. While the Lower Hunter Water Plan estimated that Water Wise Rules would achieve a saving of 2.5% of residential demand, there is not enough evidence to distinguish the savings due to Water Wise Rules from the impacts of other factors, including ongoing water efficiency improvements and variations in weather conditions (for example, 2012/13 and 2013/14 had periods of hot, dry weather that led to higher water use).



Some risks to the supply assumptions were identified that could impact the supply-demand balance in future:

- 💧 the amount of groundwater that can be accessed from Tomago and Tomaree sandbeds might reduce due to potential changes to rules in the water sharing plan, or due to operational changes to avoid groundwater contamination from the Williamstown RAAF Base
- 💧 possible changes to the operation of Campvale Pumping Station near Medowie to protect water quality could slightly reduce the supply from Grahamstown Dam.

New information from research into climate change and climate variability, new population projections, and developments in desalination technology were identified as having potential to impact the measures in the plan, and these will be further investigated in developing the next Lower Hunter Water Plan over the next few years.

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