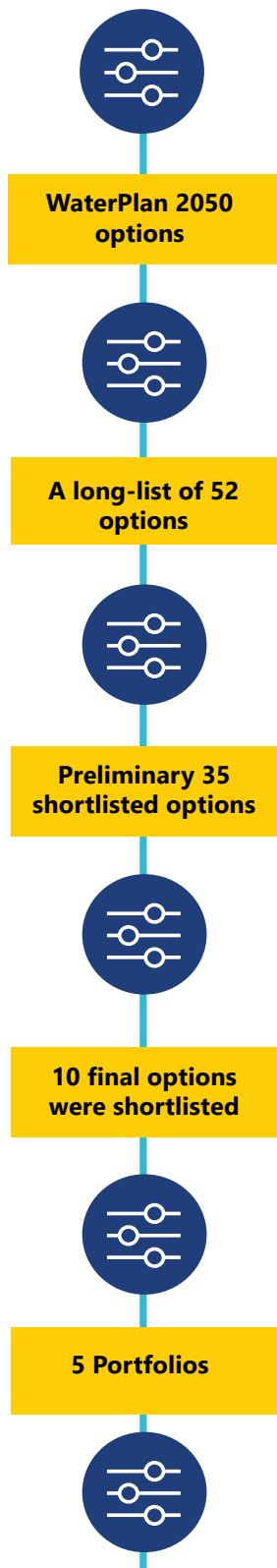


Technical paper factsheet: Options and portfolio shortlisting



The draft Central Coast Water Security Plan lists our preferred water supply and demand option types. You may be asking, how did we come up with this shortlist?

Figure 1 shows the overall process – so let’s break it down into the steps we took.

Firstly we revisited the potential options identified from our last strategy, WaterPlan 2050 (adopted in 2007).

We took an ‘all options on the table’ approach and combined:

- the options from WaterPlan 2050
- new options suitable for the Central Coast
- the option types considered by Hunter Water Corporation (HWC).

This resulted in a **long list of 52 options**, which were at varying stages of preliminary development.

With a group of experts and stakeholders, we then applied some engineering judgement using a range of criteria to reduce the longlist to a **preliminary shortlist of 35 options** that were marked for further consideration.

Engineering consultants were brought in to further develop some of the most promising options so that we’d have a better idea of the: cost, technical feasibility, delivery timeframes, regulatory approval pathways, environmental and social implications.

From there, the consultant’s feasibility studies, community engagement and hydrological modelling (joint with HWC), helped us to land at a list of **10 shortlisted options**.

Out of those 10 options, we formed **five shortlisted portfolios**, according to various themes.

An economic **cost benefit analysis (CBA) model** was then used to compare and rank the portfolios against each other according to total expected net present value (NPV) and comparative cost benefit. The model also outputted the indicative timing of options and overall Long Run Marginal Cost (LRMC) of the portfolios.

The results of the CBA model, and other earlier steps, then fed into our **Multi-Criteria Assessment (MCA)** which gave us our decision-making framework that assisted us in deciding what was the **preferred Portfolio**. You can read more about the MCA process in the Decision making framework technical paper factsheet.

Figure 1 – Shortlisting process

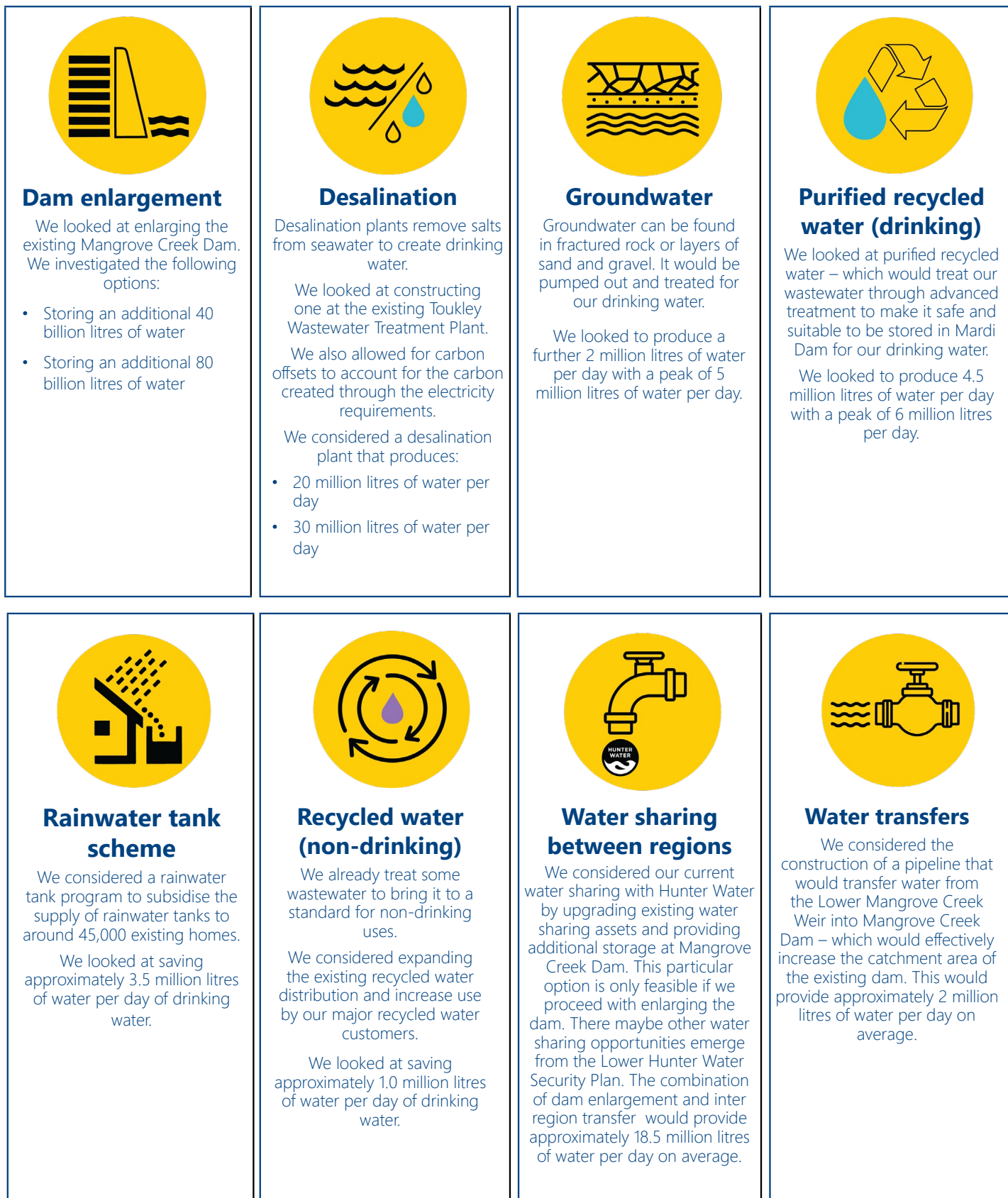


Figure 2 - Shortlisted options

Figure 2 shows a summary of the 10 shortlisted demand or supply options; both the dam enlargement and desalination options have two options listed within them.

Portfolio 2 - Summary






Climate independent (upfront capacity)	 Water conservation	 5 ML/d Groundwater	 1.1 ML/d Recycled Water (non-drinking)	 6 ML/d PRW	 30 ML/d Desalination
Capital Cost (\$M)		0.5	6.6	47.7	230.1
Yeild - modelled (ML/d)		1.9	1.1	4.4	26.6
Year Commissioned		2035	2037	2038	2043
Shortfall in drought (ML/day) assuming 125 L/p/d		33.0	33.0	28.1	No further work

Figure 3 - Preferred Portfolio 2 - Climate Independent (upfront capacity)



Figure 3 shows the key information for the preferred portfolio: Climate independent (upfront capacity). Overall, this portfolio was cost effective, highly reliable, high yielding, while minimising environmental and social impacts, relative to the other portfolios.

This factsheet is a summarised version of a technical paper used to inform the development of the draft Central Coast Water Security Plan.

*If you would like to read the full technical paper, please contact us to request a copy.
wsp.enquiries@centralcoast.nsw.gov.au*