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## FROM WATER STRATEGIES TO STRATEGIC WATER INVESTMENTS

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Australia needs to plan for, and adapt to, the changing nature of climate risks to water resources now and in the decades ahead.<sup>1</sup>

The value of a water strategy is optimised when the right decision support tools are applied to inform an effective implementation plan that articulates clear priorities and actions for prudent, strategic water investments over future time horizons.

### Introduction

Strategic water investments are essential to support positive long term water related outcomes for communities, businesses and industries, and the environment.

There is broad support for strategic water planning to identify what needs to be done and why in the context of climate change, population growth, industry and lifestyle changes and other

current or emerging risks to water resources. Indeed, many governments and large corporate water users have developed or are developing water strategies.

Most water strategies in Australia have been prepared with drought in mind and hence a water security lens, but the 'Great Deluge of 2022'<sup>2</sup> together with climate forecasts in CSIRO's latest State of the Climate report<sup>3</sup> show that integrated strategies for dealing with water supply shocks from other extreme events such as intense and repeat flooding are needed too.

A significant challenge is answering the question of how best to prioritise, resource and stage the implementation (execution) of water strategies via strategic water investments i.e., what exactly to invest in and when, given limited resources (skills, money and time) and potentially many investment options, including infrastructure and non infrastructure options.

In this article, we advocate a need for effective water strategy implementation planning to underpin evidence based, economically prudent and strategic water investments that are adaptive and responsive to changing circumstances and stakeholder expectations.

<sup>1</sup> <https://www.csiro.au/en/research/environmental-impacts/climate-change/State-of-the-Climate/Report-at-a-Glance>

<sup>2</sup> <https://www.climatecouncil.org.au/resources/the-great-deluge-australias-new-era-of-unnatural-disasters/>

<sup>3</sup> <https://www.csiro.au/en/research/environmental-impacts/climate-change/state-of-the-climate>

## A strategy is not a plan

A successful strategy will provide overarching direction and guidance to an organisation to prepare for uncertainty; navigate emerging and future challenges; develop adaptive business, financial and operating models; and align staff and resourcing to achieve a shared vision and outcomes.

Once a strategy has been prepared, work is required to identify and understand the most important strategic decisions and develop agreed positions and pathways in response to those decisions. i.e., to develop a practical and realistic implementation plan that justifies and articulates clear priorities and actions for strategic investments over future time horizons.

## It is more important than ever that investments in water projects are strategic, prudent and planned

Water projects can be diverse, ranging from (for example) maintaining or building new storage, pumping, delivery and/or water manufacturing infrastructure, to developing improved climate modelling and forecasting abilities, implementing demand and supply management measures, integrating new supply sources, developing new data and information platforms, undertaking catchment management and environmental rehabilitation projects, and trialling innovative water resource management and monitoring technology.

Water projects can also be expensive, with single large infrastructure projects costing tens to hundreds of millions or even billions of dollars.<sup>4</sup> For example, the 2021 Productivity Commission's Water Reform Inquiry report estimated capital expenditure across the urban water sector rising to \$6 billion a year to 2022/23;<sup>5</sup> a figure that may ultimately be dwarfed by the direct and indirect costs of flood response and recovery actions in 2022/23<sup>6</sup>. It also does not take into account investment needs relating to stormwater or regional and remote urban water investments<sup>3</sup>, drinking water supplies for indigenous remote communities around Australia<sup>7</sup>, or costs for implementing impending state and regional water strategies<sup>8</sup>.

With unprecedented pressure on government budgets resulting from recent large-scale climate issues (drought, bushfires, flooding), health services (Covid-19, Medicare, NDIS) and social and economic challenges, as well as priorities in other parts of government (such as national security and Defence), it is critical to ensure that future investments in water projects maximise the value of water for water users, communities, the environment and Traditional Owners.

## There can be significant challenges in long-term water planning and investment decision making

Individual water strategies can contain long lists of potential actions or options, identified in collaboration with stakeholders. Sometimes all the options or actions are considered important or a priority, but these generally need to be short-listed and prioritised. Long-lists of options therefore lead to challenges in implementation planning in terms of making decisions between options, including where:

- + funding is limited and contested and/or limited to specific policy or investment priorities
- + the potential actions have not been further scrutinised such as to identify 'low hanging fruit', 'no regrets' or impracticable options, or to identify the likely highest value actions, groupings of actions or priorities for implementation staging (timing)
- + the costs and benefits of implementing the proposed actions are unknown, inherently uncertain, or inter-dependent on other proposed action(s)
- + multiple water strategies are required across a planning area, but only one or a handful of them are completed, which precludes a holistic view and may adversely affect the potential options and actions available to the strategies that are yet to be completed
- + there is ambiguity in how specific options or actions could or should be implemented and by whom.

## Decision-making can be made easier through the development of effective implementation plans

Effective water strategy implementation plans communicate an agreed way forward in terms of:

- + governance and oversight
- + roles and responsibilities
- + priorities for strategic water investments
- + phasing for strategic water investments over the short , medium and longer-term
- + interdependencies between investments
- + stakeholder engagement and communication
- + risk management
- + monitoring, evaluation, reporting and improvement (adaptive management)

## Existing frameworks can help to assess and refine potential investment options for implementation planning

Identifying priority investment options and actions over future time horizons will necessarily involve judgements and

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<sup>4</sup> For example, the Adelaide Desalination Plan cost \$1.8 Billion. See: <https://www.abc.net.au/news/2018-12-14/adelaide-desal-plant-revival-plan-to-ease-use-of-murray-water/10619960>

<sup>5</sup> <https://www.pc.gov.au/inquiries/completed/water-reform-2020/report>

<sup>6</sup> For example, see: <https://www.theguardian.com/australia-news/2022/oct/25/australia-floods-natural-disasters-impact-on-2022-federal-budget-economy-insurance> and <https://www.theguardian.com/australia-news/2022/nov/28/potholes-warped-rail-lines-and-washed-away-roads-flood-hit-regions-face-infrastructure-crisis>

<sup>7</sup> <https://www.wsa.asn.au/publication/closing-water-people-and-communities-gap-review-management-drinking-water-supplies>

<sup>8</sup> For example, see: New South Wales' Regional water strategies, Victoria's Sustainable Water Strategies, South Australia's Barossa Water Security Strategy 2050 and the draft Territory Water plan (Northern Territory).

should be informed by best available science, hydrology incorporating climate change, social and economic analysis and community input.<sup>9</sup>

Initial options filtering frameworks like Multi-Criteria Analysis (MCA; or Multi-Criteria Decision Making, MCDM), rapid cost-benefit analysis (CBA) and Action-Priority assessments present well established approaches for categorising and short listing options for further assessment.

Once the options have been short listed, detailed CBA and Business Case processes incorporating sensitivity analysis and scenario analysis are generally required to identify full community costs and benefits and to identify preferred options under a range of sensitivities and scenarios.

Where the costs and risks involved in a project(s) are very high, or where decision makers require maximum transparency or confidence with regards to the preferred options or proposed pathways, more detailed CBA, including Monte Carlo analysis and Real Options Analysis may be warranted.

## Effective water strategy implementation planning offers multiple benefits for governments

Some of the benefits of effective water strategy implementation planning include:

- + helping to justify the proposed prioritisation and sequencing of investment actions over multiple time horizons as an effective means to address the identified needs
- + providing a strong rationale for state and federal (co-) investment.
- + increased transparency and accountability, leading to increased public confidence and trust in government management, decision-making and investments
- + building trusted partnerships, collaboration and buy-in with stakeholders
- + The ability to better monitor, evaluate and communicate progress and achievement of outcomes, and to adapt accordingly as circumstances and community expectations change.

## Conclusions

It is more important than ever that investments in water projects (of any type) are evidence based, prudent and strategic.

Moving from water strategies to strategic water investments is achievable through effective water strategy

implementation planning, supported by existing frameworks for assessing and refining potential investment options and actions.

At Aither, we believe in the value of making better decisions, informed by robust strategy, policy and economic advice, which we deliver for government and the private sector. Feel free to contact us if you would like to discuss water strategy development, decision support tools for investment options assessment and prioritisation, or water strategy implementation planning.

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<sup>9</sup> <https://www.pc.gov.au/inquiries/completed/water-reform/national-water-initiative-agreement-2004.pdf> (clause 36)