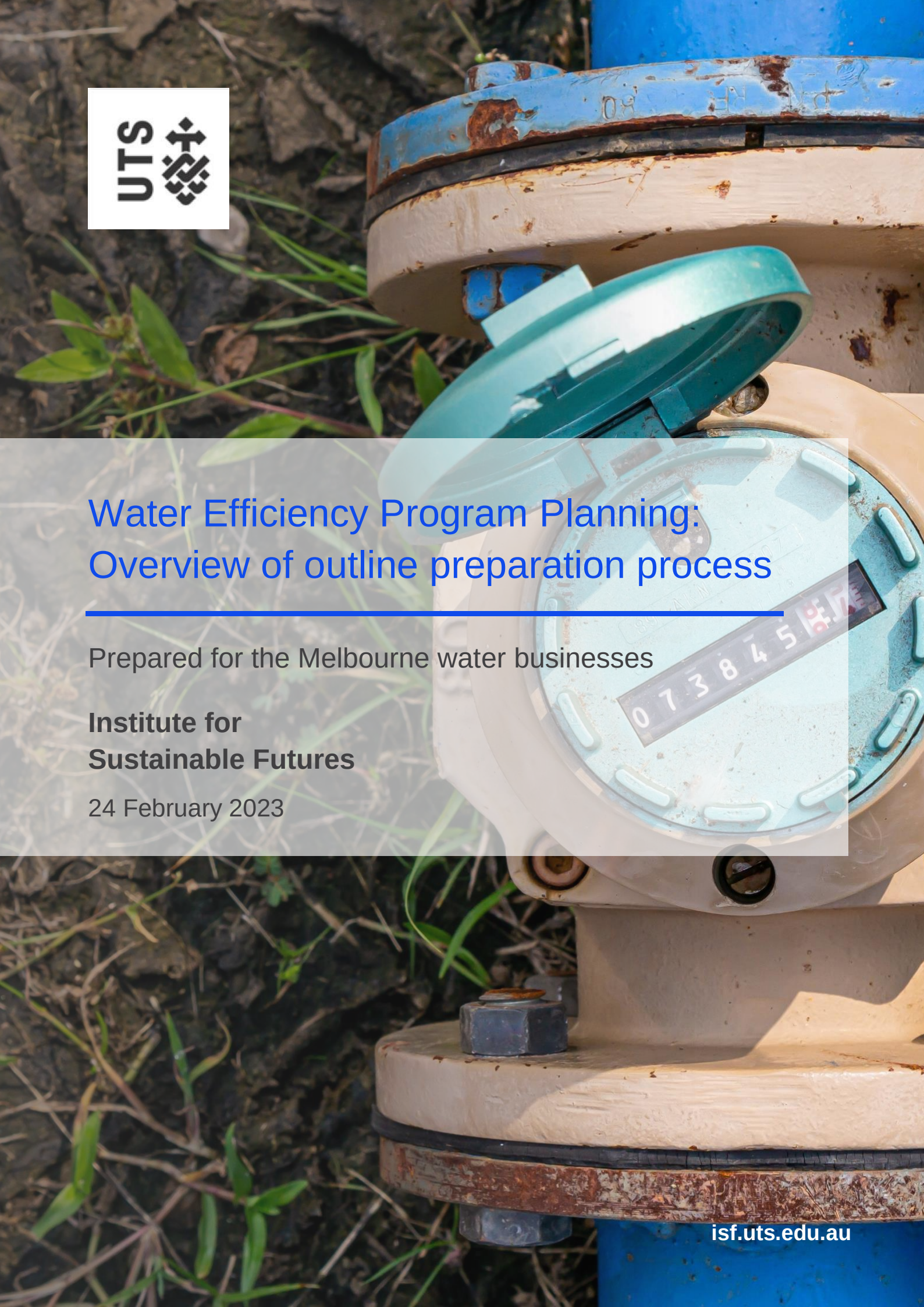

Water Efficiency Program Planning: Overview of outline preparation process

Prepared for the Melbourne water businesses

Institute for Sustainable Futures

24 February 2023

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About the authors

The Institute for Sustainable Futures (UTS-ISF) is a transdisciplinary research and consulting organisation at the UTS. ISF has been setting global benchmarks since 1997 in helping governments, organisations and communities achieve change towards sustainable futures.

BMT is one of Australia's leading specialist environmental consultants with a track record of successful projects stretching back 40 years. The ongoing success of BMT is found in dedication to scientific and engineering excellence, value for money and a strong customer focus.

ISF and BMT acknowledge and respect the Aboriginal and Torres Strait Islander custodians of Australia. We pay our respect to their Elders past, present and emerging.

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Overview

Improving water efficiency is in many cases the most cost-effective integrated water management option available. The implementation of a wide range of water efficiency programs can make a significant difference to water demand, not only in the residential sector, but also across non-residential buildings and business. The Institute for Sustainable Futures (UTS-ISF) and BMT (the researchers) partnered with Greater Western Water, Melbourne Water, South East Water and Yarra Valley Water (the Melbourne water businesses) to develop a suite of water efficiency program outlines that aimed to reduce demand, and in turn could reduce the pressure on natural water supplies and delay large investment in new supply and distribution augmentations. The project was lead on behalf of the Melbourne water businesses by the Water Efficiency Working Group (WEWG).

Background

The project contributed towards Action 4.1 of the Greater Melbourne Urban Water and System Strategy (GMUWSS) to develop and deliver a water efficiency plan to increase the focus on water conservation and efficiency. Although significant previous work has been done on water efficiency planning by the Melbourne water businesses and the Australian water industry more broadly, the Melbourne water businesses recognised multiple challenges in their current context including:

1. Insufficient recent direct experience within businesses on delivering water efficiency programs.
2. A resource-constrained environment, both in terms of staff time and funding. Resource constraints are particularly relevant for operational funding; constraints are reduced (though still present) for capital funding.
3. A need to deliver programs proportionally to current conditions (i.e. limited public appetite for water efficiency during wet periods)

Seeking to revive a sustained water efficiency effort across the utilities, the Melbourne water businesses sought to develop a ‘menu’ of water efficiency program outlines that could inform the development of future business cases.

Objective

The objective of this project was to select 10 water efficiency programs and collate relevant information and ideas into ‘program outlines’ for each to support the Melbourne Water Businesses in selecting preferred programs and developing business cases to implement these in the future.

This required curation of a wide range of program options into a shortlisting and selection process, followed by development of outlines that would work around knowledge gaps to provide guidance on program delivery, resourcing, scalability, key considerations and drivers, risks, costs, benefits and evaluation.

Approach

ISF and BMT’s approach to developing programs was to first understand the **target** for the water savings (e.g., reduce water used by washing machines or reducing outdoor use) and then secondly to determine what delivery **mechanism** would be most effective for achieving those savings (e.g., a targeted rebate to large households or a garden irrigation tune-up rebate). This can be expressed as:

$$An\ effective\ \boldsymbol{program} = clearly\ defined\ \boldsymbol{target} + appropriate\ delivery\ \boldsymbol{mechanism}$$

The defining of the targets and then establishing the delivery mechanisms was pivotal to the methodology and research approach. The targets already proposed were identified and assessed as to whether there were alternatives to consider. The research team drew on their knowledge and available information to recommend the most effective delivery mechanism for each proposed target and present this to the WEWG.

Task 1 – Initiative analysis

A desktop review was undertaken of the water efficiency programs, the demand data provided by the Melbourne water businesses, the collated targets and mechanisms currently proposed by WEWG, and the existing information that sat behind these options. Following this review, a gap analysis of the proposed water efficiency initiatives was undertaken by the researcher team. A long list of potential water saving targets or possible delivery mechanisms was prepared (Figure 1).

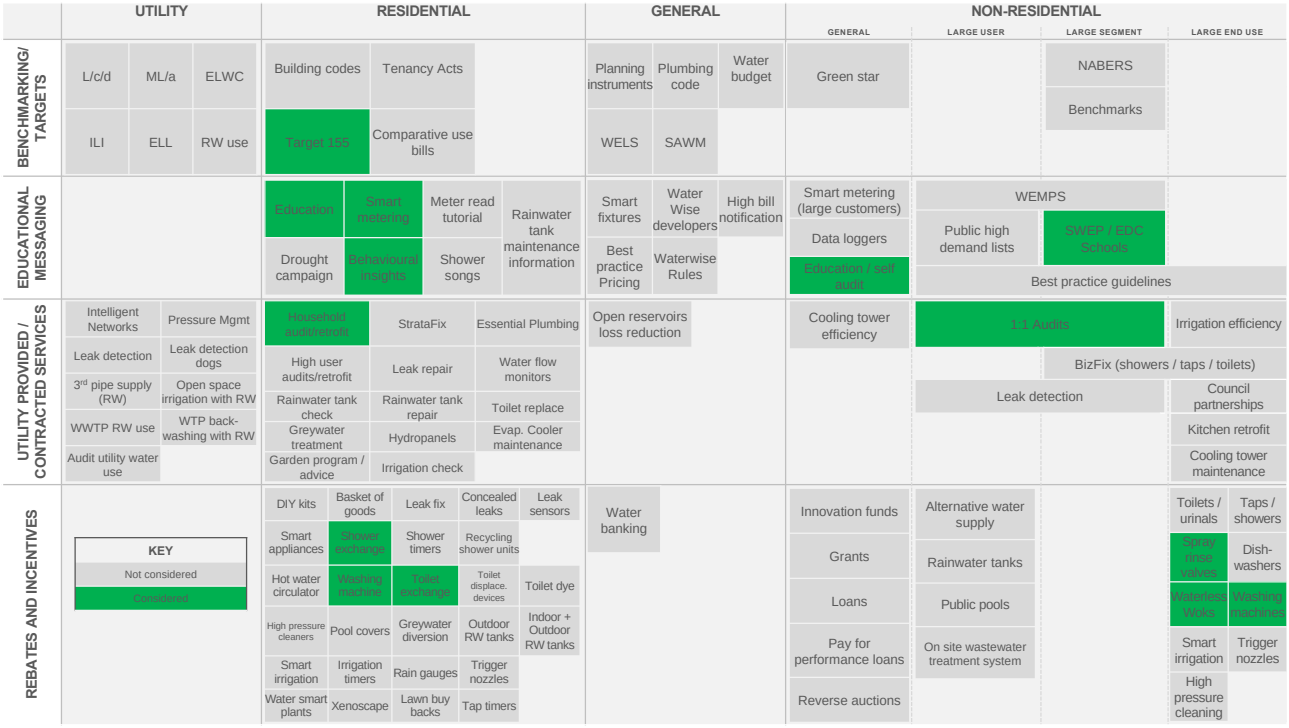

Figure 1 ISF options scan framework, highlighting initiatives currently proposed by WEWG

A long list that included over 150 possible programs implemented locally and globally was prepared. These were clustered and synthesized down to a short list of 16 using mural (Figure 2).

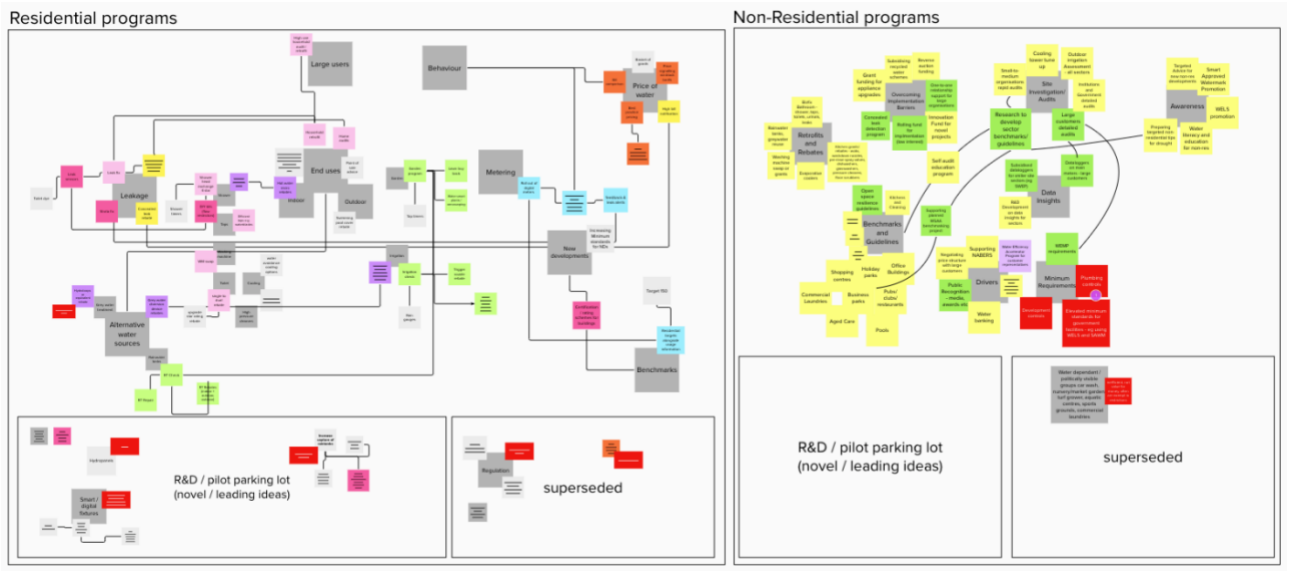

Figure 2 Mural board showing the clustering process to group targets and mechanisms.

The clustering and short-listing processes screened in the proposed targets and mechanisms most appropriate to the Melbourne water businesses to streamline the collaborative process of program selection proposed.

Task 2 – Program selection

Initial high-level descriptions of the short listed programs were created to prime workshop participants for discussion, including both quantitative and qualitative information sourced from the gap analysis, expert consultation, reference materials, and ISF and BMT technical expertise. They included where possible the results of any previous evaluation of the potential uptake and relative feasibility of each of these initiatives.

An in-person 1 day Program Selection Workshop was facilitated by the research team, and attended by WEWG and key utility representatives to select the options for further development into program outlines (Figure 3).

The participants of the program selection workshop were:

ISF and BMT	Yarra Valley Water	Greater Western Water	South East Water	Melbourne Water
Pierre Mukheibir Adam Jones Alexandra Butler	Kyle Olsen Cindy Kozel Ryan Jamieson	Jack Cunnington Sam Innes Luke Veale Gayathri Jasper	Sean Simpson Justin Peters Ash Walsh Alana Jones	Tim Hatt

The 10 water efficiency programs chosen were:

1. Showerhead exchange
2. Household rebates
3. Household retrofits
4. Raintank audit and maintenance
5. Large customer partnerships
6. Business grants
7. Business rebates
8. Business bathroom retrofits
9. Open space assessments
10. Leak repair program

Figure 3 During program selection workshop

Task 3 – Program outline development

A key challenge for this project was that many of the insights, evaluations and lessons learned from water efficiency programs throughout Australia were not publicly available, and it is traditionally challenging to find and engage the people who have this information.

ISF and BMT consulted with appropriate utility experts with experience in implementing the proposed water efficiency programs to explore the challenges, constraints, and opportunities of implementing one or more of the selected programs across the Melbourne water businesses. The consulted experts included:

South East Water	DELWP	Barwon Water	Hunter Water	Water Corporation
Alana Jones Justin Peters	Les Walker	Darren Milverton Sandra Brandy	Steve Askew Kirsty Jones	Damien Postma

Sydney Water	Kingspan	SA Water	Peak Water	Customer account manager
Rahi Sehat Tony Robinson Andre Boerema	Michael Smit	Andrew Bisset	Paul Lamble	Maria Armenio

The research team, WEWG, and key identified stakeholders within the Melbourne water businesses were also involved in collaboratively reviewing the program outlines and contributing further information to fill gaps in knowledge.

Task 4 – Finalise program outlines

The final suite of 10 program outlines have incorporated the insights from the collaborative review process.

Outcomes

The final 10 water efficiency program outlines each provide a brief and clear narrative of why and how this program would achieve the expected water efficiency outcomes. They detail the customers and water end uses that would be targeted, and the proposed mechanisms to select to incentivise action. A summary page has been developed that provides an overview of each initiative with key metrics for comparison between the programs, for example, see the included bubble graph comparing ease of implementation and levelised costs (Figure 4).

Guidance on how to deliver the program, noting responsibilities and tasks mapped out for the interactions of various delivery agents has also been included alongside recommendations on the various resources needed to run the program to the proposed delivery method.

The researchers have outlined the relative potential for the program to scale effectively, highlighting key scalable elements and flagging key constraints that would be likely to constrain minimum or maximum limits to program scale with the proposed mechanism and delivery method. Key risks and mitigations were flagged, and suggestions were included on mitigation strategies wherever possible.

Estimations of program savings, costs and benefits have been provided. Costs have only included indirect costs where relevant, and benefits note both indirect benefits and potential co-benefits. This process was not scoped to be a Full Cost Benefit Analysis (CBA), rather it sought to provide a useful framework to be built on for more specific business case development. Suggestions for the ongoing monitoring and evaluation plan for each program have been included to support future decision-making on program selection and scaling.

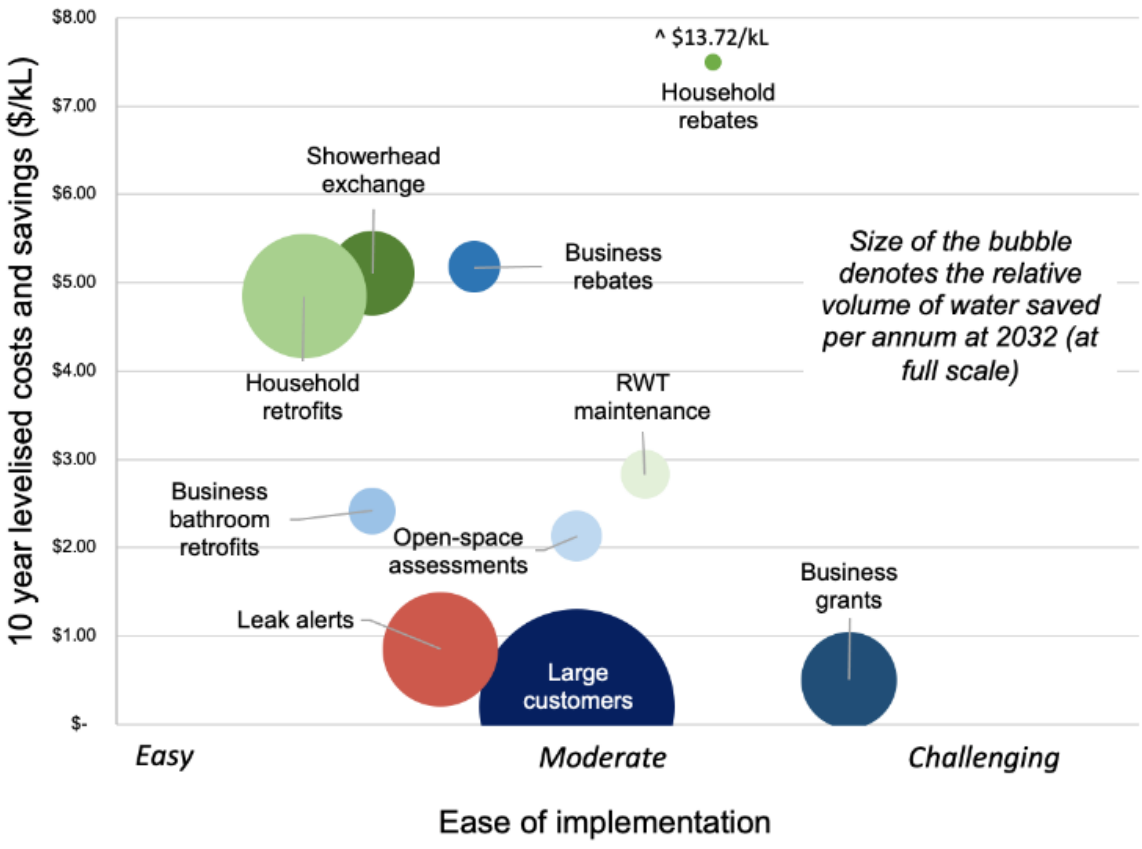

Figure 4 Comparison of programs

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