

VICTORIA

Victorian
Auditor-General

Audit summary of Irrigation Efficiency Programs

Tabled in Parliament
09 June 2010

Audit summary

Background

Irrigators are significant consumers of Victoria's water. They use around 74 per cent of all the harvested water in Victoria—on average around 2 600 gigalitres (GL) each year. In comparison, Melbourne's annual water use is around 460 GL.

Victoria's irrigation delivery system is inefficient—around one third of the water diverted into the irrigation channels and pipes does not reach the end users. Recognising the inefficiency of existing irrigation delivery systems, the 2004 policy *Our Water, Our Future* committed to increase the efficiency of irrigation systems across the state by 25 per cent, by the year 2020. In addition, it committed to develop responsive irrigation systems to better meet the needs of irrigators. A range of remedial and modernisation works on Victoria's irrigation infrastructure have subsequently started.

Audit objective

This report examines how effectively, efficiently and economically irrigation-related programs have been planned and managed to achieve intended outcomes. The audit examined the planning processes for the Foodbowl Modernisation Project and the Sugarloaf Pipeline, but not the achievement of outcomes. This will occur in a subsequent audit, following completion of the projects.

The audit also examined the planning, project management and project outcomes for the Central Goulburn 1234 Channel Automation Project, Shepparton Irrigation Area Modernisation Project and the Macalister Channel Automation Project.

Conclusions

Victorian Government decisions to invest around \$2 billion in irrigation efficiency and related projects between 2004 and 2007 were poorly informed. Whether these projects represent the best solution to achieve the government's policy objectives of saving water and securing Victoria's water, remains unclear.

This was particularly evident for the Foodbowl Modernisation Project, where the decision to commit \$1 billion was based on advice of water savings and cost assumptions that had not been verified, technology that had not yet proven itself and the feasibility of the project, which was unknown. As a consequence, assumed water losses have been significantly revised down, making the achievement of intended water savings less certain.

That all projects went straight to the development of business cases, without adequately demonstrating the need to invest or properly consider the most appropriate solution, represents a significant departure from mandatory requirements. Poor documentation and record keeping has been a consistent concern in this audit and has inhibited The Department of Sustainability and Environment's (DSE) ability to provide the necessary assurance on the status of the irrigation efficiency programs.

From the information provided, while the three irrigation projects have generally progressed as planned against their time frames for completion, in some instances the costs of the projects exceeded the planned costs, expected water savings had not been achieved and the effectiveness of the modernisation was uncertain.

While the Foodbowl Modernisation Project was conceived and developed in what the government considered a 'crisis' situation due to record low inflows, this was not the case for the other irrigation efficiency projects.

Main findings

Planning for irrigation efficiency

Each of the irrigation projects selected asset solutions, primarily involving channel automation, to achieve the government's priorities. There was no evidence that any of the projects had undergone a robust assessment of the need to invest in asset solutions, rather than non-asset solutions, as the main way to increase irrigation efficiency or to secure Victoria's water supplies. This was also the case for the Sugarloaf Pipeline.

For each of the four irrigation projects, the choice of the new channel automation technology was assumed, rather than being considered as one of a number of possible options. As a consequence, the decision-making process from the concept stage to development of a service requirement lacked transparency and rigour.

The consideration of investment options to meet the identified need was limited. There was not evidence to show that the planning for any of the projects considered investment options, including evaluation, ranking and detailing the actions required to progress to the business case. In most cases, the only option considered was the asset solution presented in the final business case.

While business cases were developed for the four irrigation projects and the Sugarloaf Pipeline, in all instances they lacked the evidentiary rigour appropriate to the risk and cost of the proposed projects. Analysis of costs and benefits was superficial and information to support the basis for water savings assumptions was lacking.

None of the business cases set out options other than the proposed solution, or variations of the solution. While it is acceptable in some situations for the business case to focus on the preferred option only, this should only happen where the business case has been preceded by a detailed options analysis. This was not the case for the projects audited.

The timeliness of the development of the business cases was also an issue for most projects, with instances of project works starting before the final business case was actually approved.

Managing irrigation efficiency projects

There was limited management information to enable these projects to be assessed, including how they are progressing and to what extent they have met, or are meeting, their intended outcomes. This was exacerbated by the lack of centralised project status information, which was significant given the large number of stakeholders involved and the high-risk and high-cost nature of the projects. Combined with the repeated revisions to scope, it was difficult to determine the final outcomes for some projects, particularly for water savings.

From the information provided, the projects have generally progressed as planned against their time frames for completion. However, in some instances the costs of the projects exceeded the planned costs, expected water savings had not been achieved and the effectiveness of the modernisation was uncertain. Where costs were less than expected, this was due to reduced project scopes.

A new water savings protocol to guide the assessment of water savings was developed in June 2009. The water savings protocol and accompanying technical manual are comprehensive and reflect better practice.

An independent auditor has been engaged to assess water savings using the new protocol. The auditor focused on savings for the period between 1 March 2009 and 15 May 2009, and shows that around 4.2 GL was saved during this period, generally in accordance with expectations. There was no evidence of audits to verify water savings in the period before 1 March 2009. Southern Rural Water has recently appointed an independent auditor to verify the water savings from the Macalister project.

Recommendations

Number	Recommendation	Page
1.	The Department of Sustainability and Environment should: <ul style="list-style-type: none">• develop processes and quality assurance mechanisms for the planning of major investments so that future investment decisions are appropriately informed and considered, consistent with mandatory guidance• develop an approach to cost-benefit analysis that demonstrates consistency and enables comparisons over time.	20
2.	The Department of Sustainability and Environment should: <ul style="list-style-type: none">• better document decisions and project information, with particular emphasis on demonstrating outcomes• routinely report publicly on the status of projects, including time, cost, quality and achievement of water savings.	31
3.	The Department of Sustainability and Environment and water authorities should produce more comprehensive project status information to provide greater transparency around the status of projects.	31