

Protecting Australia's Investment in the National Hydrological Modelling Platform

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Abstract: eWater Source™ is the national water modelling platform, representing the culmination of more than 25 years of research, scientific development and strong collaboration by Australian Governments, water authorities, industry partners, and Australia's leading hydrologic and ecological scientists. eWater has been the custodian of Source since 2009.

Despite the growing dependence on the Source™ platform, long-term challenges in securing sustainable and sufficient funding have increased viability risk. In 2024, eWater, together with the Australian Government, initiated changes to the management and funding of eWater Source™ to secure its long-term viability. This includes planning for a modernisation program and establishing a Source Maintenance Roadmap ('roadmap').

The proposed Source modernisation program will focus on rearchitecting the current Source™ platform to improve performance, usability and scalability. It will employ a hybrid approach with a desktop-based solution that is also cloud deployable.

Whilst the Source Modernisation Business Case is under consideration, eWater remains focused on maintaining the existing Source™ platform. The Source™ Maintenance Roadmap establishes for the first time clear priority areas for Source maintenance and sets key principals to inform decisions relating to both maintenance of the existing platform and the development of any potential modernised platform.

The roadmap is built on four key pillars:

- Risk Remediation - the roadmap identifies current vulnerabilities and the resulting stakeholder impacts alongside appropriate proactive risk management measures.
- Improved Performance and Stability - a series of targeted maintenance tasks and testing protocols to enhance system stability.
- Operational Efficiency - will be enhanced through a combination of external and internal improvements, such as clearer and more consistent documentation, a more active community of practice, increasing automation and refining internal development workflows to support faster, more reliable delivery.
- Core Hydrological Domain Capabilities - domain enhancements will be targeted at areas with the most pressing impact on stakeholder needs, such as supporting the Murray-Darling Basin Plan, and towards core functionality, such as ordering and ownership.

Maintenance of a platform as extensive as Source™ will always exceed available budgets, the roadmap will guide the investment of eWater's funds and support increased collaboration within the Source user community by providing clearer pathways and more certainty on the benefits of any additional investment.

The roadmap responds to needs and priorities communicated to eWater by the Source user community. Recognising that priorities change and that water management is constantly evolving, the roadmap will be a living document. Stakeholders will be actively engaged in implementing the roadmap, to ensure the specific work programs meet the community's needs.

By systematically addressing issues that are having an immediate impact on agreed functionality, we not only improve the reliability and performance of Source™ today but also lay the groundwork for a seamless transition when we fully modernise the platform in the future.

Keywords: eWater Source™, hydrological modelling, software maintenance, National Hydrology Modelling Platform