Collaborative Stormwater Management: Co-design and Co-delivery for Long-Term Success

Little Stringybark & Dobsons Creek Projects
Fact Sheet Series: 2

The Little Stringybark Creek (LSC) and Dobsons Creek projects were long-term catchment-scale experiments designed to test if Stormwater Control Measures (SCMs)—primarily rainwater tanks, raingardens and infiltration systems—applied across an urban catchment can help restore stream condition. Commencing in 2008, the projects were led by The University of Melbourne and Melbourne Water, in collaboration with local government, industry, and property owners. We monitored changes to stream water quality, hydrology, and ecology (Fact Sheet 10), and also assessed techniques for local government collaboration (Fact Sheets 3 & 4), community engagement (Fact Sheet 5), as well as SCM design, performance and maintenance (Fact Sheets 6 & 7).

About the fact sheets

These fact sheets summarise our scientific and practical findings and insights on catchment-scale stormwater management over the long-term LSC and Dobsons Creek projects. We hope that they might inform and guide the planning and delivery of future waterways management projects for improved stream health.

Collaborative stormwater management

This fact sheet reflects primarily on two long-term, large collaborative **research-practice** projects that aimed to provide proof-of-concept that stormwater management can help restore stream health in existing urban areas. It focuses on the lessons learned about planning and implementing complex, collaborative projects with multiple stakeholders, that the project team believe to be important for successful delivery. In addition to drawing on the experiences of Little Stringybark and Dobsons Creek Projects, this fact sheet also reflects on lessons from a more recent project, the Monbulk Creek Smart Water Network (MCSWN).

Findings and insights

1. Have a clear and compelling narrative of the project's purpose
2. Establish a clear and capable governance structure
3. Establish and maintain the project's key delivery agents
4. Identify and secure early, the resources needed for implementation
5. Coordinate project reporting requirements
6. Ensure project partners have an appetite for risk
7. Choose the model of delivery that is most conducive to long-term success

See over for more details

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1. Have a clear and compelling narrative of the project's purpose. Establish a shared narrative that clearly articulates why the project is important, particularly how it contributes to each partner's mission, to facilitate 'buy-in'. Having an agreed narrative that is communicated by all partners is important for reinforcing the value of the project and for maintaining motivation and sustained effort over the long-term. This message can also reference what the project is not doing, which can help to ensure stakeholders have realistic expectations and avoid potential conflict or negative perceptions of the collaboration where there is a mismatch in expectations. A clear and compelling narrative can also be refined as the project matures or evolves (e.g. the narrative may shift to include project achievements or incorporate initially unexpected benefits).

The narrative should convey the evidence-base that underpins the hypotheses and means of achieving project objectives, but also clearly acknowledge (when appropriate) the experimental nature of the project and thus the potential risks about the likelihood of success. We addressed this by involving core partners in developing the experimental design to foster an in-depth understanding of what the project involves, an appreciation of the potential opportunities, constraints and uncertainties and, ultimately, shared ownership of the outcomes. This lays the groundwork for valuable learning even if the project does not achieve all its objectives.

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2. Establish a clear and capable governance structure. Establish a governance structure that has a clear mandate, terms of reference, oversight of the entire project, and the capacity and authority to provide direction. Governance arrangements should span project delivery, ongoing operation, monitoring, and reporting of project outcomes. Identify early who needs to be involved in what aspects of governance, with clear demarcation of roles and accountabilities where there are multiple layers of governance.

Creating working groups dedicated to specific aspects of the project (e.g. community engagement, IT systems or infrastructure works) can be beneficial for helping to focus and drive collaboration. If a project is faced with significant challenges (e.g. it encounters an obstacle that halts progress), consider establishing a short-term, intensive, high-level working group dedicated to identifying the cause of the delay and developing a path to resolve it. Such a group would ideally consist of staff from each organisation with the authority to affect change within their organisation, and who are invested in seeing the challenges resolved. This approach was used successfully for the MCSWN.

3. Establish and maintain the project's key delivery agents. To be successful, collaborative stormwater management projects typically require contributions from a variety of actors within each participating organisation – with key staff forming a core team with oversight of delivery. It is important that each representative on that team has sufficient time to contribute, has an invested accountability, and is sufficiently motivated to act as a project 'champion'. The likelihood of timely and successful delivery of long-term projects is increased through staff continuity; however, it is likely that the composition of that team will change over time as people move roles within or leave their organisation. To help avoid delays in delivery, it is critical to engage with replacement staff quickly and upskill them on their role (and the role of their organisation).

In addition to the core-team, the project will likely require the participation of other staff within each organisation at various stages of the project to ensure success. While these staff can play a critical role in the project's delivery (e.g. provision of specific technical knowledge) and can help foster buy-in more broadly across partner organisations (including senior management that may be fundamental for ensuring long-term partner commitment), they can be easily overlooked for communication because they are not part of the core team. To help support their participation and important role, it can be advisable to have ongoing communication across all staff involved in the project's delivery (e.g. via broader progress meetings or workshops, an email bulletin or webinars).

4. Identify and secure early, the resources needed for implementation. The resources primarily include staff and funding (to design, implement and maintain SCMs), but could also include knowledge (e.g. SCM technical designs); materials (e.g. supply of critical components), or specialised support (e.g. aid with media and community engagement). Having a line of sight to what is required over the stages of the project, as well as the necessary partner staff for each task, will facilitate timely

delivery. Project leaders might also consider upfront what resources will be required to monitor, evaluate, and report on the project's successes (or failures). This is important to support continuous improvement in project delivery (for current and future projects).

5. Coordinate project reporting requirements.

Most projects will require reporting to a higher body or a supporting organisation. This is especially true where grant funding is supporting project delivery (typical in research-driven projects) or when multiple agencies are financing the work. While this type of reporting is critical for transparency, accountability, and partner confidence in the project, it can be a substantial time commitment. To streamline this process and reduce the administrative load, ensure all partners are aware of their responsibilities to contribute to reporting and, where possible, harmonise the reporting intervals and processes so that reporting data and templates can be reused.

6. Ensure project partners have an appetite for risk.

Risk is inherent in research-led projects trialling new approaches for stormwater management or when scaling known techniques up for large scale operation. Financial and reputational risks arising from project expectations and delivery are an understandable concern for any agency or organisation with obligations to responsibly acquit public funding. It is therefore important to acknowledge and explicitly discuss the risks involved in a multi-agency stormwater project, identify possible risk minimisation and mitigation strategies, and foster a 'safe-to-fail' culture. Seeking funding through competitive grants that support innovative, novel projects can be a way to reduce the financial risk, as too will sharing the financial burden across multiple partners. Creating a multi-agency project team with shared responsibility for delivery may help to mitigate reputational risk.

7. Choose the model of delivery that is most conducive to long-term success.

The LSC adopted a researcher-led approach for delivery, which was an excellent way to get a research-focussed project started, as it could advance works and solve problems quickly (because it had a single lead agency). The quick wins in the LSC gave Melbourne Water the confidence to lead the delivery of the Dobsons Creek project. However, it is recommended that the wider stormwater industry plays a role in project planning and delivery at the cost of potentially slower project delivery if replication of this type of intensive, catchment-scale stormwater management is to become more common. Failing to do so may limit opportunities for industry capacity building and research adoption in the long-term.

The increased confidence and experience in delivering innovative stormwater management projects and trust between stakeholders has meant that the MCSWN has adopted a more collaborative approach, with four prime delivery agencies. While the MCSWN has been slower to start, this model is expected to provide more sustainable long-term outcomes, and is more likely to be adopted in other catchments. Moreover, it is expected that the project will continue long-term, given the broader and higher level of investment across partner organisations.

For more details on the outcomes of this project, please refer to:

- Prosser, T., Morison, P. J., & Coleman, R. A. (2015). Integrating stormwater management to restore a stream: perspectives from a waterway management authority. Freshwater Science, 34(3), 1186-1194.
- Walsh, C. J., D. G. Bos, M. J. Burns, M. Imberger and T. D. Fletcher (2023), "Restoring the health of urban streams through stormwater management: A synthesis of the Little Stringybark and Dobsons Creek research projects", Technical report 23.2, Melbourne Waterway Research-Practice Partnership
- Walsh, C. J., Fletcher, T. D., Bos, D. G., & Imberger, S. J. (2015). Restoring a stream through retention of urban stormwater runoff: a catchment-scale experiment in a social–ecological system. Freshwater Science, 34(3), 1161-1168
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