



## A new approach to stormwater management to incorporate placemaking and resilience benefits

Glenn Browning<sup>1</sup>, Kristy Good, Andrew O'Neil<sup>f</sup>

<sup>1</sup>Healthy Land and Water,

Management of stormwater through water sensitive urban design (WSUD) is a well-established concept in urban water management. Over the past 15 years there has been significant effort to promote and demonstrate the benefits. Despite these efforts WSUD is still perceived by some government and community stakeholders as being poorly constructed and costly to maintain. Further WSUD was not being designed to maximise the full range of potential benefits.

Water by Design (now Healthy Land and Water<sup>1</sup>) and key stakeholders from government and industry recognised that WSUD was not delivering the range of placemaking and liveability benefits it can deliver. It was deemed that a broader perspective of urban water management was required to maximise the economic, social and environmental benefits of these urban water systems and that practitioners needed a set of guiding principles. Living Waterways (LW) is a policy framework that was developed by Water by Design to help local and state government as well as water utilities articulate their desired urban water outcomes. The LW approach is site driven and focusses on aligning values that motivate traditional stormwater principles with place making benefits. It encourages the recognition that all stormwater and waterway projects have the potential to contribute to a community's health and wellbeing.

The framework provides a methodology that encourages and incentivises practitioners to move away from traditional stormwater and waterway engineering and management. Instead the framework promotes an integrated and multidisciplinary approach to designing stormwater infrastructure and waterways that are an integral feature within the urban landscape and community.

Recently Healthy Land and Water partnered with Splash<sup>2</sup>, the Central West Environment and Waterways Alliance and Water NSW to build new measures into the framework to better support practitioners in their efforts. These new measures will help government and water utilities include elements within their stormwater and waterway projects that will help reduce vulnerabilities to climate change by building the resilience of infrastructure and communities.

LW is an approach and framework that incentivises collaboration and integrated planning and design of urban water systems. The framework describes a set of four principles that connect the essential relationship between natural water processes and the environment to human activities and experience. The four principles of LW are:

- Living Water - Protect and enhance our water systems and their environments.
- Living Places - Create places that people can connect with because they are liveable, beautiful, education and inspiring.
- Living Communities - Create versatile places that enable safe, healthy, inclusive and resilient communities.

- Living Local Economies - Provide affordable, enduring solutions that are viable to build, use and maintain.

These principles underpin a scoring system that motivates, encourages and incentivises outcomes that are socially, economically and environmentally sound by shifting the focus to where it has the greatest impact. These principles will assist industry and local government to co-design, assess and construct stormwater and waterway infrastructure that delivers multiple benefits to communities. The framework is applicable to the design of both greenfield and infill development on a precinct scale down to an individual lot.

There are a few ways LW can be applied by local and state government and developers. Firstly, the framework can be applied by developers or local and state government on a project by project basis. It is an easy to use tool for a multidisciplinary project team to design stormwater and or waterway project to embed additional placemaking and resilience benefits that would otherwise not be considered in a project. Local government can also embed LW in a Development Control Plan (DCP) and require any new development to have regard for the framework. Local government can choose to set a minimum score a development must achieve which will maximise the benefits from the development over and above good stormwater quality outcomes. In a DCP the framework can be applied to all development or only for sensitive land use zoning and development types whereby water quality, liveability and resilience outcomes would benefit from being increased. Thirdly LW can be used by a local or state government as key weighting criteria in a tender assessment process for stormwater infrastructure or waterway projects. In this way an organisation can set a minimum score industry must reach as well as a costing to achieve this score. Local and state government are then able to quantify the benefit per investment for a project. Using the LW framework in this way can be a powerful decision support tool that can be used when allocating budgets, awarding tenders or even designing value for money grant programs.

The LWF approach can help design teams in government and industry to deliver successful projects by: Providing an easy to use framework to guide multiple outcomes during the design phase

- Encouraging the project team to understand and optimise the relationship between the site its immediate surroundings and its community
- Consider synergistic solutions that deliver a high performing site that respects its physical place in the broader community as well as its role in meeting broader community goals and expectations.
- Establishing the desired outcomes of the project early in the design process so that associated goals and requirements can be achieved efficiently
- Ensuring integrated sustainable water management and amenity outcomes are at the forefront of an early design process, preventing costly and untimely design conflicts during the planning and construction phases
- Promoting a process whereby planners, urban designers, landscape architects, civil environmental engineers and certified environmental practitioners are present and accountable in the initial design phase of a project
- Promoting collaborative thinking when developing design solutions and strategies for the site layout
- Enabling communities to be engaged in a meaningful consultation or co – design process
- Enabling continuity from the initial design phase through to the planning approval and construction stages and finally the operation and maintenance phases.
- Promoting the support and establishment of an informed development community that has ownership of Living Waterways and Resilient Principles as an outcome of the process.