

INTEGRATING 'ONE WATER' INTO URBAN LIVEABILITY

Strong leadership and a change in organisational culture are two key drivers in transitioning to a One Water approach, writes Pierre Mukheibir of the Institute for Sustainable Futures.

Liveability is the new catch phrase in urban planning, where residents get to enjoy an urban landscape that consists of green open spaces, trees to keep the concrete jungle cool, and a water system that is resilient to drought and disruptions. For the water industry this means a shift in the way we view service delivery, from one of avoiding bad impacts, to one where the services we provide add more value. This means viewing all forms of water in the urban landscape as potential resources, and not problems to get rid of. Water-sensitive urban design (WSUD) considers this to be a whole-of-water approach, or a "One Water" approach, as termed by some in the US. This approach attempts to integrate planning and management of water supply, wastewater and stormwater systems in a way that minimises the impact on the environment and maximises the contribution to social and economic vitality.

Regulatory drivers for issues such as combined sewer overflows and impaired waterways are driving some aspects of the One Water approach, as are resource constraints such as water scarcity, but an overall systems approach is still missing. Looming capital investment required to refurbish ageing infrastructure, upgrade and upsize existing infrastructure to meet growing demands through urbanisation and densification is putting financial strain on utilities and local government institutions, and is a further driver for decentralised systems that produce fit-for-purpose water where it is needed.

Recent research led by the Institute for Sustainable Futures (ISF) found that institutional efforts to progress the concept of One Water across all aspects of the urban water cycle have been limited. Most case studies analysed reveal that they are primarily engaged with the delivery of discrete water, sanitation or stormwater services. Some have moved towards waterways protection, but very few incorporate a whole-of-water cycle approach. The research found that institutional challenges to One Water planning limited the ability for organisations to collaborate with each other both vertically and horizontally, to integrate activities within their own organisations, and to move forward with new systems that optimise green-grey infrastructure and resource recovery. This lack of a unifying culture has ensured reliance on existing institutional silos and inertia in the water industry.

HOW TO TRANSITION TO A 'ONE WATER' APPROACH

Twenty-seven case studies drawn from Australia and the US, detailing innovative methods of overcoming institutional challenges, were documented. The case study work produced some common themes for transitioning to a One Water approach:

Strong leadership and vision from politicians and senior positions is key to drive the One Water vision and make public funds available to incentivise the transition, and to drive implementation of One Water strategies and address institutional capacity requirements.

Improved institutional co-ordination for building partnerships and long-term, mutually beneficial relationships with a broad range of agencies, including the private sector, will create the collaboration and data sharing needed for development projects to be aligned with the strategy and implemented in a coordinated fashion. This should be driven at both state and city levels.

Change the current organisational culture to one that sees urban livability as the starting point. In addition, improve the knowledge and capacity of staff to include alternative approaches and recognition of urban needs, and the potential to use previously considered 'problems' as potential resources that could add value. It may be necessary to set up a dedicated team to implement the strategy and manage related projects, while the One Water approach is gradually mainstreamed into everyday practices and thinking.

Transparent engagement with the community and both private and public stakeholders is key for confirming the vision and to support the implementation of the strategy. Use of clear branding and vocabulary can help reflect a positive message of the benefits provided by utilities, such as shifting from "treated wastewater" to "reclaimed water". This allows for a different conversation with customers, stakeholders and policy makers. Some case examples showed that early consultation with the community and customers avoided confusion and helped in acceptance of required rate increases, fees or costs.



Sydney Park stormwater biofiltration pond.

Photo: City of Sydney



Central Park Sydney green building.

The development and application of a common economic evaluation framework has been shown to be a major hurdle for justifying the broader benefits of integrated water cycle management approaches in water and urban planning decision-making. Economic assessments need to go beyond traditional cost-benefits analysis to include the recognition of non-monetised social and environmental costs and benefits. New pathways for cost-effective revenue generation should be explored that provide multiple benefits to the customers and that could cross-subsidise the creation of livability benefits.

Financial constraints have been cited as a further challenge to innovation, however, as illustrated by some of the case examples, public capital funding has been allocated to key bulk infrastructure schemes to create an enabling infrastructural environment that will



The Guidebook for transitioning to a One Water approach.



Key themes for integrating One Water.

encourage the private sector to invest in decentralised infrastructure. The provision of subsidies for on-site treatment and use could be an incentive for decentralised systems that relieve the need for expensive network upgrades.

Enabling regulations that encourage integrated water management are rare. A key action in many of the case studies involved local government showing leadership through the enactment of regulations or guidelines to encourage or require One Water approaches. By streamlining the permitting process (for areas like non-potable recycling) through close collaboration between agencies, the compliance processes for design, construction and operation of schemes can be made more attractive for operators and owners.

To support planners and policy makers, the research team has produced a guide for transitioning to a One Water approach, which provides a range of enabling actions required to begin a successful transition at the knowledge, planning and implementation stages, together with a range of illustrative examples. You can view the guide, titled *Pathways To One Water – A Guide For Institutional Innovation*, at www.werf.org/c/KnowledgeAreas/IntegratedInstitutionsinfo.aspx

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