

# The Pathway to Sustainability in Transdisciplinary System Development

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**Abstract.** In support of a conference theme 'leveraging transdisciplinary engineering in a changing and connected world, this paper examines potential pathways to sustainable development in one system of systems supporting the implementation of United Nations Sustainable Development Goal 6: 'Ensure availability and sustainable management of water and sewage for all'. We investigate a 20-year journey of an innovative Australian water utility committed to customer and community engagement that also has to embrace an increasingly wide range of technologies to achieve this. The practices established evolved from learning via a myriad of projects and more recent ones employing digital technologies may be viewed collectively as an instance of 'Water 4.0'. Some projects drew on disciplines founded in the social sciences, some on physical science, computer science and engineering disciplines, and some on a combination. The sustainability pathway evolved in response to external drivers via unique sets of pilot projects followed by further development and deployment. Suggestions for further research are provided.

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