

Anticipating the Development of Technologies that will Enable the Fourth Urban Water Revolution

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The system of water supply, treatment and drainage used by modern cities has undergone a series of technological revolutions that occurred when the existing water infrastructure was unable to meet societal needs. Cities currently grappling with water shortages, pollution, and other urban water problems provide a glimpse into some of the approaches that may enable a fourth revolution in urban water. To identify opportunities for research, development, and investment in water systems that will facilitate a faster transition to a more secure and sustainable state, we analyzed the existing state of technology, ongoing research and development initiatives, and considered the limits of technologies with the current system. This analysis identified key areas of technology needs as well as institutional reforms that are essential to changing current modes of water management to facilitate the spread of improved technologies, especially for distributed treatment systems.