Integrating Sustainability into Water Reuse Decision-Making

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Water reuse experiences different levels of acceptance across the United States. Every recycled water project is unique, requiring evaluation of technical, regulatory, and public acceptance issues in context of the local environment. Sustainability is an increasingly important issue that provides multiple benefits of meeting community goals and improving environmental performance in the most cost-effective manner.

Sustainability is the practice of "…..meeting the needs of the present without compromising the ability of future generations to meet their own needs." Many sectors of private industry, including the water industry, are integrating sustainability goals into their projects and organizations in response to the drive to reduce costs, future regulatory uncertainties, pressures on the environment, and the drive for new leadership practices.

The path to sustainability begins with how we make decisions - rather than continuing the traditionally narrow focus on immediate costs to solve a problem, our challenge is to also assess social and environmental criteria.

Advances in scientific knowledge and decision science allow us to "re-frame" decision-making processes to reduce the risk of making choices with unintended harmful results. Incorporating sustainability into our decision frame requires us to master a basic understanding of what the scientific definition of a sustainable system is, and then apply that knowledge when making choices. This paper will give a concrete definition of sustainability, as well as describe tools and strategies to incorporate sustainability into the various phases of planning and implementing water recycling projects. This concept can also be applied to other areas of water resources.

The paper will:
Describe the value of incorporating sustainable principles into reuse projects.
Define sustainability from a scientific perspective.
Describe useful tools and strategies to increase levels of sustainability at all stages - planning, design, construction, and operation.
Provide examples of implementing sustainable strategies into reuse projects.

Key Words: Sustainable System, Decision-Making, Value of Sustainability in Reuse Projects

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