

Investing in Water Reliability

Research Case Study Insights

The WaterReuse Foundation (WRF) Report, “Best Practices for Developing Indirect Potable Reuse Projects,” established 25 best practices for managing indirect potable reuse, or water supply replenishment. In the report, these best practices were used as a context for evaluating past and ongoing projects, and highlighting the relationships between utility behavior, public perceptions, and outcomes. In these website case study summaries, we focus on water reliability, water quality confidence, conflict management, and the policy decision. We do this to emphasize the issues that are arguably the most significant in determining outcomes. Looking at case studies from this perspective improves our clarity and understanding, but is not a substitute for reading the best practices and the detailed case study analyses in the WRF Report.

The insights and advice in this summary were not available when the case study projects were planned and proposed. They are not a measure of the professionalism or integrity of utility personnel and their consultants. Proposing Water Supply Replenishment typically requires that the utility significantly improve its ability to understand public perceptions, communicate about value and investment, and manage relationships. Those interviewed about the case study projects were very open and forthcoming about problems, project weaknesses, and successes.

The “Investing in Water Reliability” trust-building objective addresses the reasons for proposing Water Supply Replenishment. It addresses how well the utility defines the water supply problem or needed investment, the alternatives for solving the problem, the benefits of water supply replenishment, and how clearly the utility communicates its motivations and commitments related to water reliability.

Water Resources Recovery Project - Tampa, Florida – For years, the Tampa region had been looking for new water supply options in order to reduce its dependency on groundwater, so addressing water reliability and developing new water supplies was on the minds of the city and regional leaders. However, concerns about water quality from Pinellas County officials, and the fact that there were two other less controversial options that met the region’s needs (seawater desalination and a surface water project) contributed to the water resources recovery project being shelved. This illustrates that water supply replenishment will always be compared to other options, so the benefits and drawbacks of each must be clearly communicated. If the other alternatives are not consistently part of the communications, then the sponsoring utility can be branded as committed to a “pet project,” rather than solving problems, creating value, or ensuring water reliability.

Water Re-Purification Project - San Diego, California – The primary motivation for the San Diego Water Re-purification Project was that it was the most straightforward and cost-effective way to meet recycled water goals required by provisions in San Diego’s ocean waiver decision (being allowed to continue discharging primary effluent into the ocean). Although the water was touted as a valuable resource, and recycling was the right thing to do, the city council felt no significant water reliability pressure when they voted on the project (1998). The drought of the early 1990s was in the past.

It appears that San Diego’s Re-Purified Water Review Committee did consider alternatives such as non-potable reuse and agreed that dependence on imported supplies had a number of disadvantages. However, clear, succinct, and quantitatively stated alternatives were not part of the ongoing communications. The San Diego County Water Authority (SDCWA) was supportive throughout the process, but by the time of the city council vote, SDCWA was aggressively pursuing its Imperial County Water Transfer Project. This transfer was ultimately approved, is a major investment in addressing San Diego County water needs, and from a practical standpoint was an alternative to the Water Re-purification Project.

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Clean Water Revival Project - Dublin San Ramon, California - Dublin San Ramon Services District (DSRSD), a wastewater agency, originally sought approval for a new ocean outfall to increase discharge capacity in response to rapid growth. Dublin's partner communities of Pleasanton and Livermore refused to support the new outfall. DSRSD proposed the Clean Water Revival Project to address the disposal capacity issue. DSRSD was effectively asking the community to drink treated wastewater because of high growth rates (many times higher than both the county and state averages) and because they were unable get approval for disposal capacity. However, ingesting something instead of finding a way to dispose of it is not the most attractive idea. Clean Water Revival was shelved after much conflict, losing the support of the local water district, and after a new outfall was approved.

Water Campus - Scottsdale, Arizona - The driving forces for creation of the Scottsdale Water Campus related to two issues: the need to invest in increasing wastewater capacity, and a requirement to meet Arizona's Groundwater Management Code. The Scottsdale Water Campus was successful for many reasons including creating water quality confidence and managing the policy decision, to name a few. With respect to water reliability, the community ultimately supported the idea that it did not make sense to invest in disposing of a "valuable resource," when they needed a water resource to replenish local groundwater.

Another important factor in Scottsdale was that alternatives were thoroughly discussed by the City and a Technical Advisory Committee (TAC) that included academic, regulatory, public health, and technological representation. A major alternative was investing in new infrastructure and buying additional wastewater treatment capacity from the regional wastewater plant. Choosing this alternative would have also required buying additional surface water rights (from the Central Arizona Project or Salt River Project) to recharge the aquifer. The comparison against alternatives was a consistent theme in project communications, with simple, straightforward text and graphics that explained why the project had "won out" over the other alternatives.

Groundwater Replenishment System (GWRS) - Orange County, California - Support for GWRS to date can arguably be attributed to innovation, creating water quality confidence, and ensuring a good policy decision. However, since the 1970s Orange County Water District (OCWD) has injected recycled water into the ground (Water Factory 21) in order to prevent the intrusion of seawater into the aquifer. Due to consistent communications from OCWD, both professionals and laypersons have come to realize the tremendous value of the aquifer, and the need to protect it. Keeping seawater out is recognized as solving a major problem. The GWRS project is an upgrade of the Water Factory 21 technology, the addition of additional seawater barrier injection wells, and a pipeline to transport additional water upstream for percolation into the aquifer. OCWD communicates that this project provides the following benefits:

- **Seawater Barrier** - The GWRS increases the seawater barrier, which is necessary due to increased pumping by user communities. The barrier must be maintained, so the fact that recycled water is an extremely reliable and local source is very important. Coastal communities absolutely understand that if they do not prevent seawater intrusion, they will lose the ability to pump groundwater.
- **Increased Water Reliability and Drought Resistance** - The GWRS provides better drought resistance due to the ability to inject more water into the basin, keeping it at optimum levels. Groundwater is a tremendous storage asset if properly replenished and storage is necessary for weathering droughts. The project will also reduce dependence on imported, climate-dependent supplies.

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- **Ocean Discharge Reduction/Beach Closures** - The GWRS results in reduction of wastewater discharged into the ocean. Communities in Orange County have come to understand that the economic value of open/pristine beaches is staggering. Orange County led the nation in beach closures in the summer of 1999, which attracted significant media attention. The GWRS project has the support of key environmental groups and business leaders.
- **Avoidance of New Ocean Out Fall** - Use of the recycled water allows OCWD to avoid construction of a new ocean-discharge outfall. Although the numbers vary, the savings has been reported to be as high as \$170 million.

The need to maintain and expand the barrier and keep aquifer levels at optimum levels are important issues. Many Orange County communities count on the groundwater as a major source of supply and reliability.