

Creating Water Quality Confidence

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 “Creating Water Quality Confidence” trust-building objective deals with the need for the utility to become the *trusted source of quality*, instead of the physical source of the water. This is very important because people associate water quality with where the water came from (for example, “mountain spring water is healthy”). As such, thinking about wastewater as a source for drinking water is arguably repulsive. Not surprisingly, water quality concerns were an important factor in all of the research case studies.

Water Re-Purification Project - San Diego, California - The City of San Diego Sanitation Department was responsible for the water quality for the North City Reclamation Plant, and was the most visible project sponsor. Neither the City of San Diego Water Department nor the San Diego County Water Authority (SDCWA) accepted the leadership role in defining and ensuring drinking water quality. Given that the SDCWA had never managed drinking water purification before, they were not a credible leader with respect to this issue. The City of San Diego Water Department would have been more credible, but was not in the leadership position due to either funding or other organizational issues. This was a significant flaw that impacted water quality confidence.

The project team was also caught unprepared for the emergence of the “Toilet-to-Tap” brand. The term was picked up by Steve Peace, a local state politician, and used by the press to create a more controversial and interesting story. There was little counter information presented to the media to help break this connection between the source and the final quality of the water. In San Diego, water quality concerns turned into environmental justice issues when people in the communities that were slated to receive the water felt they were being singled out and treated like test subjects. The wastewater was being collected from affluent communities and the majority of the water users would be in the less affluent communities.

Clean Water Revival Project - Dublin San Ramon, California - Dublin San Ramon Services District (DSRSD), the sponsor and champion for the Clean Water Revival Project, is a wastewater district. Wastewater organizations are not a credible source of quality with respect to drinking water. Project opponents felt that DSRSD had no real “water quality plan” to address issues like emerging contaminants. The pertinent drinking water authority ultimately pulled their support due to concerns that the project had lost public support. Without a credible water quality authority in the lead, water quality confidence is difficult to achieve.

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Water Resources Recovery Project - Tampa, Florida - In the Tampa Bay case, even the *water professionals* were divided on the issue of water quality. One interviewee stated, “There seems to be a difference between the wastewater and water professionals. The wastewater professionals seem to be comfortable with the water quality while the water professionals seem to balk at it.” This is not surprising since water and wastewater organizations have different requirements and arguably have different professional cultures.

At least one water retailer (Pinellas County) stated that they had “serious concerns” about the variable water quality (especially taste and odor) currently being provided to them by Tampa Bay Water. Given these *basic* concerns, it is not surprising that Pinellas County was not supportive of moving forward with the water resources recovery project. The project was ultimately tabled in favor of less controversial alternatives. This is an example of how perceptions of the quality of the current drinking water (negative or positive) affect water quality confidence and influence people’s support for water supply replenishment.

Water Campus - Scottsdale, Arizona - The City of Scottsdale did a variety of things that encouraged water quality confidence. Just the name “Water Campus” has an academic and positive flavor. Scottsdale employed a multi-step water purification process that includes reverse osmosis and natural purification. This process was clearly communicated with both text and graphics. Scottsdale also has a laboratory at the Water Campus that conducts comprehensive process water testing, and tests water from various points around the city. The Water Campus is an impressive and extremely clean facility. The city is responsible for drinking water, and they take water quality issues, including taste and odor, seriously.

Groundwater Replenishment System (GWRS) - Orange County, California - The Orange County Water District (OCWD) has also designed a multi-step purification process as part of its GWRS. Possibly more important are OCWD’s water quality track record, planning, and water quality ethics. OCWD has over 20 years of experience with injecting recycled water into the ground to create a seawater intrusion barrier. Using its state-certified laboratory, it has consistently tested for more contaminants than required by regulations, and developed the protocols for some of these tests. OCWD has been proactive in addressing and communicating with the public about compounds such as NDMA and 1-4 dioxane. Other confidence-building activities include the following:

- **Water Quality Studies** - OCWD is involved in the Santa Ana River Water Quality and Health Study which has spent \$8-10 million over six years addressing water quality issues. This study is overseen by a dozen or so third party experts.
- **Pre-Treatment of Source Water** - OCWD is supporting the idea that Department of Health Services (DHS) be the responsible party for setting standards and permitting treatment processes at the sanitation districts. This is because typical discharge regulations are geared toward protecting aquatic health rather than addressing human health risks.
- **Response to Water Quality Issues** - OCWD has brought water quality issues to the attention of the public even when they were not required to do so. They have also shut down wells when contaminant levels were below action levels. This has built trust by demonstrating a water quality ethic that goes beyond regulations and requirements.

The net result is that GWRS has virtually no opposition that is based on water quality concerns, even

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though projects nearby have been derailed due to the “Toilet-to-Tap” brand. OCWD’s experience, testing, and open communications have created water quality confidence with the public, regulators, and health officials.

Upper Occoquan Sewage Authority (UOSA), Virginia – This project was focused on water quality from the beginning because it was designed to address significant water quality problems in the Occoquan Reservoir. Problems included viruses, algae blooms, frequent taste and odor problems, and fish kills. This project had significant advantages. It was solving noticeable and accepted problems with water quality, there were clear and immediate benefits, and it was clearly improving the current situation. The UOSA increased water quality confidence by creating the Occoquan Watershed Monitoring Laboratory (OWML), an independent authority charged with monitoring the water quality of the watershed and reporting to UOSA and state regulators. This was an important step given that UOSA is a wastewater authority.