



Water Reclamation and Reuse

With growing populations, more stringent regulations, and diminished availability of new water sources in many areas of the United States, reclaiming wastewater is an increasingly viable solution to the challenges of water supply shortfall and effluent disposal.

Reuse Options

Reuse of processed wastewater conserves valuable potable water supplies—a particularly important consideration in areas where new sources are difficult to obtain or expensive to develop. Reclaimed water also serves as a revenue-producing resource because it can be marketed for landscape irrigation and many other nonpotable uses.

By reducing effluent-disposal needs, decreasing discharge of contaminants to surface waters, and providing cost-effective water supplies for nonpotable uses, reclamation can be mutually beneficial to wastewater managers, reclaimed water users, and the environment. For example, although nutrient-rich effluent might adversely affect receiving waters by causing algae blooms, when treated wastewater is reclaimed for irrigation purposes, nutrients become an asset rather than a liability. And wastewater managers save money by not having to pay for nutrient-removal treatment.

Reuse programs are becoming increasingly viable as membrane processes that improve effluent quality to levels suitable for recharging potable-water aquifers become more economical.

Implementing Successful Programs

Brown and Caldwell provides broad expertise to assist in planning, designing, and operating successful water reclamation programs. As a leader in advanced treatment technologies, we design reliable treatment facilities that consistently produce high-quality reclaimed water at low cost. We also design pumping, storage, and distribution facilities to convey reclaimed water to end users.

Our experts help develop the necessary institutional arrangements among reclaimed water producers, purveyors, and users. We develop financing approaches and prepare rate studies that help you find optimum ways to fund programs. We also work with regulatory agencies to obtain permits and ensure regulatory compliance.

Services

- Feasibility investigations
- Master planning
- Treatment technology evaluation
- Treatment, pumping, storage, and distribution design
- Reclamation policy and institutional arrangements
- Permitting and regulatory assistance
- Market assessment and end-user interface
- Financial/rate studies

Representative Experience

| | Reuse Planning and Treatment Plant Design | Treatment Technology Evaluation | Disinfection Technology/ Nutrient Control | Storage and Distribution System Design | Permitting and Regulatory Assistance | Market Assessment and End-user Interface | Interagency Coordination/Management | Construction Management |
|---|---|---------------------------------|--|--|--------------------------------------|--|-------------------------------------|-------------------------|
| South Bay Water Recycling Program City of San Jose, Calif., 9,000 ac-ft | | | | X | X | X | X | |
| Reclaimed Water System Implementation Plan Miami-Dade Water and Sewer Department, Fla., 14 mgd/15,500 ac-ft | X | X | X | X | X | X | | |
| Kihei and Lahaina Wastewater Reclamation Facilities County of Maui, Hawaii, 10,000 ac-ft | X | X | X | | X | | | X |
| Reclaimed Water Distribution System Walnut Valley Water District, Calif., 2,200 ac-ft | X | X | | X | | X | X | |
| Reuse Planning and Pilot Project Department of Metropolitan Services, King County, Wash., 1.3 mgd | X | X | X | X | X | X | X | X |
| Southeast Water Reclamation Plant Expansion City of Mesa, Ariz., 4 mgd | X | | X | | X | | | X |
| Reclaimed Water Distribution System Planning and Project Design Review City of San Diego, Calif., 45 mgd/120,000 ac-ft | X | X | | X | X | X | X | |
| Reuse Management Planning and Distribution System Design Unified Sewerage Agency (USA), Ore., 3,000 ac-ft | X | X | X | X | X | X | | X |