

Date Submitted

Jan 20, 2012

Option Name

Water Reuse/Recycling

Description

Water recycling reuses water that normally would be discharged as treated wastewater to meet potable and nonpotable demands. Recycled water is a drought-proof, locally controlled, and highly reliable source of water supply.

Location

The metropolitan areas of southern California, Phoenix, Tucson, and Las Vegas are specifically analyzed in a white paper prepared during the 2007 augmentation study.¹ Additional reuse potential is evaluated for the Front Range of Colorado in two published reports by the NGO conservation community.²

Quantity & Timing

1.5 million AF of treated wastewater is discharged to the ocean in southern California without being reused. Over the next several decades, municipal reuse is expected to grow, leaving 900,000 AF for potential agricultural reuse. We estimate 200,000 AF of additional reuse in the Denver metropolitan area and 70,000 AF of additional reuse in the Arkansas basin are possible as well.

Reuse plants could be brought online gradually and incrementally increased as demand dictates.

Technical Feasibility

Water reuse for meeting municipal and agricultural demand already exists throughout the Colorado River Basin. Key technical issues include water availability, seasonal storage, and salinity mitigation.

Costs

\$900 to \$1,700 per AF.

Permitting

Federal and state permitting likely required (NEPA, PPA, NPDES). Local permitting also probable.

Legal/Public Policy Considerations

Public perceptions can dramatically impact acceptance for water supply from reuse. Where extensive education has preceded reuse projects, public acceptance is high. In Singapore, direct potable reuse water is bottled and sold in convenience stores (it's called "NEWater").

Implementation Risk/Uncertainty

Little to no risk or uncertainty.

¹ Colorado River Consultants. 2008. Technical Evaluation of Options for Long-Term Augmentation of the Colorado River System: White Paper on Water Reuse. March.

² Western Resource Advocates, Trout Unlimited, Colorado Environmental Coalition. 2011. Filling the Gap: Commonsense Solutions for Meeting Front Range Water Needs. Boulder, CO.

Reliability

Drought-proof, locally controlled, highly reliable.

Water Quality

Impacts are heavily location specific and depend on source water quality, treatment method, and the quality requirements of end users.

Energy Needs

Additional energy will be required to further treat wastewater effluent to meet higher water quality standards and to pump treated water to customers. In some cases (e.g. Los Angeles/Las Vegas), the energy required to treat and distribute reuse water is smaller than the energy required to import raw water supplies.

Hydroelectric Energy Generation

No impacts.

Recreation

See next.

Environment

Reuse dependent ecosystems do exist where effluent provides perennial flow – impacts to these ecosystems may be significant if water is reused instead of discharged. Construction site impacts are also possible.

Socioeconomics

Unknown.

Other Information

See:

Colorado River Consultants. 2008. Technical Evaluation of Options for Long-Term Augmentation of the Colorado River System: White Paper on Water Reuse. March.

Western Resource Advocates, Trout Unlimited, Colorado Environmental Coalition. 2011. Filling the Gap: Commonsense Solutions for Meeting Front Range Water Needs. Boulder, CO. Available at:

www.westernresourceadvocates.org/gap.