

Yuma Desalting Plant (YDP) Public-Private Partnership (P3) Initiative

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Topics

- Background
- Overview and Status of the YDP
- Policy Considerations
- Alternative Finance and Delivery Considerations
- Questions/Discussion



YDP Desalting Membranes

Background

- YDP is located four miles west of Yuma, AZ, adjacent to the Colorado River
- Downstream of all U.S. water users, just upstream from the Northerly International Boundary (NIB) with Mexico
- Authorized in 1974 to reduce salinity of water delivered to Mexico¹



¹ Title I of the Colorado River Basin Salinity Control Act (P.L. 93-320)

Map source: New York Times

Background

- YDP constructed to treat highsaline agricultural drainage flows arriving above NIB
 - Operated in 1992-1993, 2008, and 2010-2011
- Extension of bypass drain also authorized to carry drainage water to a "slough" in Mexico
- "Bypass flows" are a recurring "system loss"
 - Each gallon recovered by the YDP makes a gallon available in system storage



YDP Solids Contact Reactor

Background



YDP Overview



- 72 Million Gallon per Day (MGD) plant as currently configured
- Conventional water treatment on the front end ("pretreatment")
- Followed by desalination, performed through reverse osmosis

YDP Overview



Current Status

- Plant is maintained
- Some improvements and upgrades are necessary for long term sustained plant operations
- These projects are being completed as funding allows



YDP Desalination Process Area

Future - Improvements and Upgrades 1/3 Operations

- Nine Capital Improvement projects remaining
- \$6.09 million in funding received 2015 2017
- \$24.63 million estimated remaining balance needed
 - 3 pretreatment projects \$9.63M
 - 4 Reverse Osmosis projects- \$13.34M
 - 2 Common Work projects \$0.58M
 - Routine Startup Activities –\$1.08M
- Work continues on all projects as funding allows
 - Planning & Design
 - Equipment upgrades
 - Construction

Sustained Operations (at 1/3 capacity)

- Achievable in 3 years or less after receipt of funding to complete projects
 - Would recover an estimated 35,000 acre-feet annually
 - Water no longer released from Lake Mead for delivery to Mexico and therefore remains available for U.S. use
- Approximately \$400 per acre-foot to run the plant on a long term sustained basis
 - Primary determinant of on-going costs are the price fluctuations associated with chemicals and power

Policy Considerations

- Quantity/quality of water reaching the Cienega de Santa Clara wetland in Mexico
- Use of local groundwater as an alternative source of water
- Legal/policy viability of monetizing or trading water credits ("ICS" credits)
- Use of YDP as a drought mitigation measure



Cienega de Santa Clara wetland

• Other

Alternative Finance & Delivery Considerations



Questions/Discussion



Final Pilot Run Report: https://www.usbr.gov/lc/yuma/facilities/ydp/YDPPilotRunFinal072712.pdf