



# TRACER ALTERNATIVE RESEARCH

WEST BASIN MUNICIPAL WATER DISTRICT



This project was funded in part through Metropolitan’s Foundational Actions Funding Program. The study report is available on [mwdh2o.com/AboutYourWater/FAFprogram](http://mwdh2o.com/AboutYourWater/FAFprogram).

## Xenon as a Proposed Groundwater Tracer

ENVIRONMENTALLY BENIGN REPLACEMENT NEEDED FOR SULFUR HEXAFLUORIDE (SF6)

Recycled water recharge regulations include the use of a tracer to prove residence time of recycled water in aquifers before extraction. Existing tracer, SF6, was recently banned due to greenhouse gas concerns. Groundwater samples from monitoring wells were collected and analyzed to determine the arrival of Xenon from injection wells.

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### GOAL

Identify a cost-effective, reliable, and safe alternative to SF6 for a groundwater tracer to support future permitting of recycled water recharge projects

2

### FINDINGS

Xenon was found to be a potentially viable groundwater tracer; however, tracer was not detected at some monitoring wells

3

### NEXT STEPS

Promote use of noble gases as groundwater tracers; provide information to regulatory agencies to help with future permitting; use improved methods for future xenon tracer application

WATER TOMORROW  
Foundational Actions Funding Program



### ISSUES ADDRESSING

Lack of a viable tracer for recycled water, thereby limiting the percentage allowed for groundwater recharge



### POTENTIAL REGIONAL BENEFITS

Confirmation of a viable tracer for permit requirements will allow for increased recycled water recharge



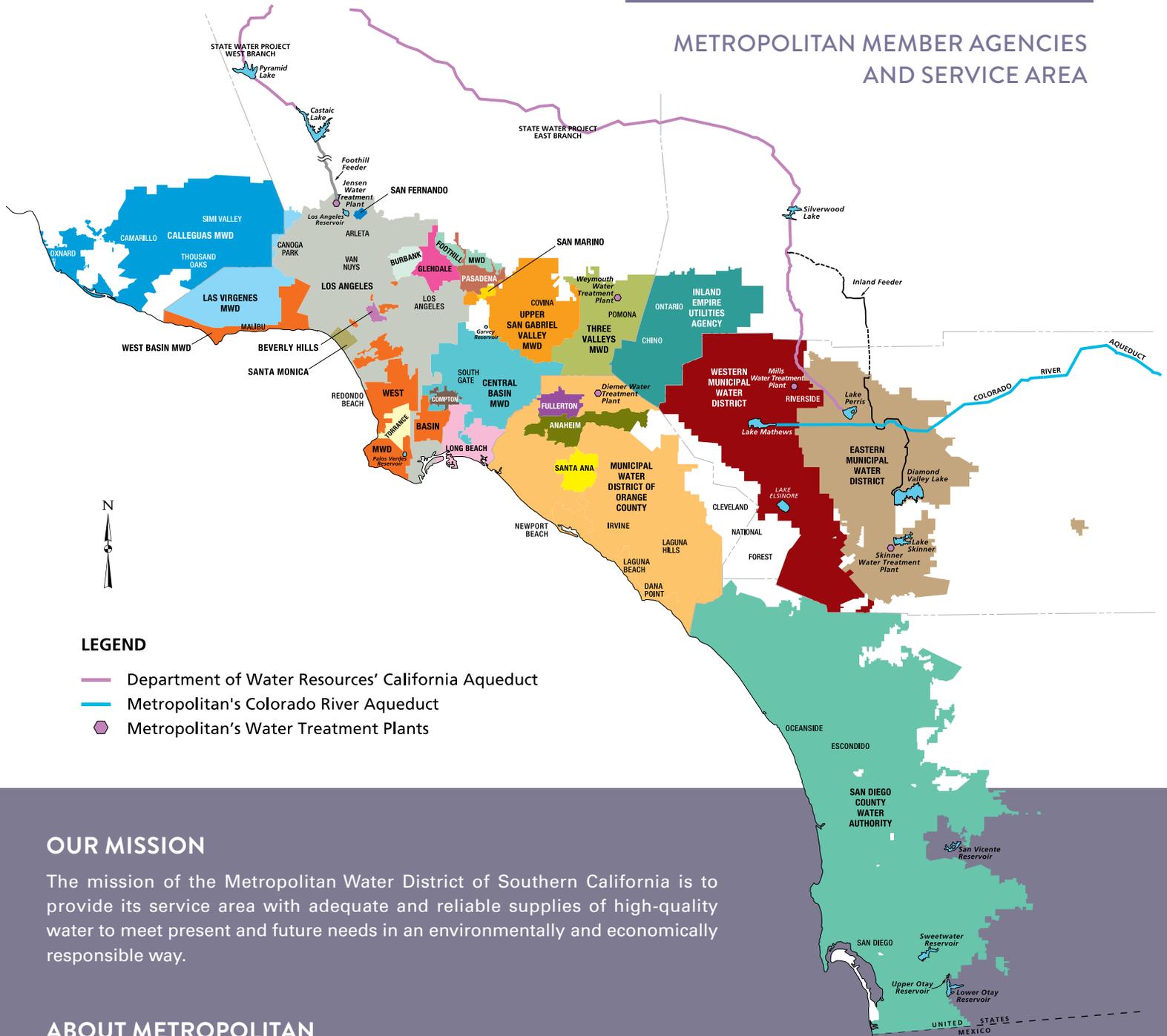
### PROJECT PARTNERS

Water Replenishment District of Southern California

# Reducing Barriers to Future Water Resource Production

Metropolitan’s Integrated Water Resources Plan was developed as a blueprint for water supply reliability for Southern California. To implement this plan and address future water supply uncertainties, Metropolitan’s Board of Directors approved a pilot funding program for technical studies and pilot projects that reduce barriers to future production of groundwater, recycled water, seawater desalination and stormwater. The request for proposals to Metropolitan’s Member Agencies resulted in agreements for 13 projects totaling approximately \$3 million in funding. These projects evaluated new water treatment technologies, developed data to inform regulations, studied options for infrastructure innovation and identified future resource potential.

## METROPOLITAN MEMBER AGENCIES AND SERVICE AREA



### LEGEND

- Department of Water Resources' California Aqueduct
- Metropolitan's Colorado River Aqueduct
- ◆ Metropolitan's Water Treatment Plants

### OUR MISSION

The mission of the Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

### ABOUT METROPOLITAN

The Metropolitan Water District of Southern California is a state-established cooperative of 26 member agencies – cities and public water agencies – that serve nearly 19 million people in six counties. Metropolitan imports water from the Colorado River and Northern California to supplement local supplies and helps its members develop increased water conservation, recycling, storage and other resource management programs.

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