



● **Board of Directors**

***Joint Meeting of the Water Planning and Stewardship Committee and
Conservation and Local Resources Committee***

1/12/2021 Board Meeting

9-2

Subject

Municipal Leak Detection Assistance Demonstration Program

Executive Summary

This letter provides an update on Metropolitan’s current support for municipal distribution system leak detection through the Member Agency Administered Program (MAAP). For the past two years, Metropolitan partnered with the Municipal Water District of Orange County (MWDOC) on a novel distribution system leak detection and repair pilot program through the MAAP. This project provided financial assistance for finding and repairing municipal distribution system leaks as a possible water conservation measure. Leak detection and repair reduces non-revenue water loss and provides substantial water savings. Preliminary program data show benefits, but program expansion to other MAAP participants would yield more information on water savings capability and gauge agency interest.

Water loss reduction is one of the State of California’s Water Use Objectives developed to help agencies meet the overall requirements of the “Conservation as a California Way of Life” legislative framework. In 2015, the California legislature passed Senate Bill (SB) 555 requiring water agencies to conduct audits of their distribution systems to identify water loss. However, agencies are not required to proceed past the initial audit to investigate losses further.

Metropolitan is expanding the scope of the current research into a broader member agency demonstration program with financial assistance continuing through MAAP. Expanding program participation and creating a standardized incentive of \$170 per mile of distribution system lines tested will supplement local funding, streamline project review, and standardize information submitted from participating agencies. These adjustments should facilitate greater member agency participation, build upon MWDOC’s success, and provide sufficient information to confirm long-term program efficacy.

Details

Background

Metropolitan is working with MWDOC and its members in Orange County as part of a project to determine if distribution system leak detection and repair can reduce water loss. Typically, water distribution systems can experience losses through pipe leaks, seepage, loose pipe connections, inaccurate water meters, and improper system pressure.

Water loss reduction is also an important element of the comprehensive “Conservation as a California Way of Life” legislative framework. The California legislature enacted SB 555 requiring water agencies to conduct distribution system audits to identify water loss. According to the California Department of Water Resources, water utilities can increase water supplies and recover revenue by identifying the scale and cost of these losses.¹

¹ <https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Validated-Water-Loss-Reporting>

SB 555 also directs the State Water Resources Control Board (State Water Board) to develop rules requiring urban retail water suppliers to meet water loss targets. Water loss audits performed through mathematical calculations are the first step in helping an agency identify the volume of losses and areas in the distribution system where those losses may be occurring. The Department of Water Resources collects water loss data annually from water suppliers. Per SB 555, the State Water Board is currently in the process of developing Water Loss Performance Standards for urban retail water suppliers with regulations expected to be adopted in mid-2021.

MWDOC, in partnership with its members, analyzed 870 miles of distribution systems. Fixing identified leaks subsequently saved an estimated 747 acre-feet over the period of time since the leak detection and repair activity began. The majority of the leaks detected were small and were found either on the service connection, the stretch of pipe between the main pipeline and the individual meter, or at the meter itself. The largest leaks were found on the main pipelines, resulting in the greatest amount of water loss. However, these leaks were relatively rare and accounted for about three percent of the total leaks discovered. Most leaks were found in the service lines or meter boxes. The remaining leak areas were located on the consumer side of the meter, where the customer was then notified by the technicians. All detected leaks were addressed, and all cost-effective repairs were either completed or flagged for further action.

As part of Metropolitan's expanded demonstration program, staff plans to implement a flat incentive of \$170 per mile for agencies to facilitate performing leak detection and leak repair activities. In this biennial budget cycle, with COVID-19 preventing agencies from performing some hands-on conservation programs, agencies are now looking for other approaches to apply MAAP funding for conservation activities in their service areas. Metropolitan based its current customized incentive on volumetric water savings from leaks detected and addressed in Metropolitan's service area. An incentive amount of \$170 per mile inspected was based on water savings gathered during the MWDOC pilot program and on the approved baseline of \$195 per acre-foot saved. Agencies will be able to plan for future expenditures to perform acoustic leak detection.

Metropolitan will require agencies to submit standardized information to access the MAAP funds to streamline the process and encourage more participation. Metropolitan will also require all participating agencies to meet program terms developed through the pilot program prior to reimbursement and will manage funds within the current budgeted MAAP funding allocations. Staff projects that there is sufficient funding to support a leak detection demonstration program.

Reducing distribution system water loss will be beneficial to participating agencies by reducing non-revenue related water purchases and saving water purchased but not used beneficially. In turn, that saved water would then be available to Metropolitan to meet its regional water demands, thereby enhancing water supply reliability. As the program incentivizes agencies to investigate and repair water loss/potential leaks, water savings will increase as agencies take these proactive steps

The goals of this program are to increase agency participation, collect additional water loss and recovery data while developing a program that can meet the needs of a broader range of agencies within Metropolitan's region. With this additional data, Metropolitan can better quantify the water savings resulting from leak detection activities. Additionally, staff will be able to gauge the interest level from agencies that have not previously considered leak detection efforts as a part of their water efficiency efforts. This will help Metropolitan modify aspects of program design as the results are analyzed and to further water saving in the region.

Metropolitan presented and discussed expanding this program with the member agency managers and conservation coordinators. Following any Board input, Metropolitan will make any necessary adjustments to add a flat-rate leak detection incentive to our MAAP at \$170/mile. Metropolitan will be sending agencies an addendum to their agreements in order to clarify the opportunity to participate in this program. Metropolitan hopes that the addition of the flat-rate incentive leads to more leak detection activity with the region, to the collection of additional leak incident data, and to increased overall regional water use efficiency.

Policy

By Minute Item 51426, dated December 11, 2018, the Board authorized use of Member Agency Administered Funds subject to staff approval of programs.

By Minute Item 50883, dated July 11, 2017, the Board adopted revised policy principles for guiding Metropolitan's role in regional implementation of IRP targets for conservation.

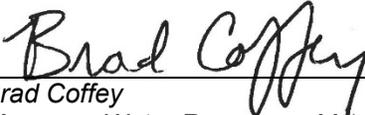
By Minute Item 50358, dated January 12, 2016, the Board adopted the 2015 IRP Update.

By Minute Item 46486, dated December 13, 2005, the Board set a baseline conservation incentive rate of \$195 per acre-foot of water saved.

By Minute Item 48772, dated August 16, 2011, the Board adopted the Long-Term Conservation Plan and revisions to the water conservation policy principles.

Fiscal Impact

Funds for municipal leak detection assistance are already in the Member Agency Administered Program budget. All expenditures would be managed within the existing Conservation Program Budget.



Brad Coffey
Manager, Water Resources Management

12/28/2020

Date



Jeffrey Nightlinger
General Manager

12/29/2020

Date