

MokeWISE Program Scope of Work:
Project 5a: Regional Urban Water Conservation Program

April 2015

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Problem Statement and MokeWISE Stakeholder Interests

Environmental stakeholders are very interested in reducing water use by customers of small, medium and large urban water suppliers throughout the Mokelumne watershed and in the EBMUD service area in order to benefit environmental flows, groundwater basin levels, and to avoid the need to seek additional water supply and build new dams. They are interested in ensuring that water not used due to conservation serves the environment or is well accounted for in groundwater banks for use as a reserve in extreme drought.

Environmental stakeholders are concerned that the full benefits of conservation are often not quantified. Water conservation strategies represent environmental benefits and avoided costs from water purchases, litigation and project delays, and new infrastructure, including wastewater treatment capacity. They would like to see feasibility studies consider those benefits and avoided costs.

Known and available demand reduction strategies that environmental interests would like to see instituted and/or widely expanded include metering and irrigation technology, information programs, steeply-tiered pricing, and broader incentives and rebates. They would like to see increased use of technology to eliminate waste: separate metering for irrigation, weather-based and soil moisture-based irrigation controllers, high-tech leak detection, Smartmeters providing real-time usage information. They support programs to fast track universal water meter installation and strong incentives for commercial and multi-family building owners to install sub-meters and facilitate individual unit billing.

The success of water information as a tool for reducing demand is encouraging. Environmental stakeholders would like EBMUD to more quickly expand its Home Water Reports program, which yielded an average 5% reduction in water use by customers in a 2012-2013 pilot. This program could benefit other Mokelumne Watershed urban suppliers as well.

They are interested in adoption of pricing structures at utilities throughout the MokeWISE area that allow every person to meet their essential personal water needs at a reasonable cost, while charging incrementally higher rates for all usage beyond that base amount.

They would like conservation rebates, incentives and technical assistance to be expanded, particularly for conversion of irrigated lawn and landscapes to low- or no-water plantings, and for on-site rainwater catchment and graywater systems.

Environmental interests would be very supportive of projects to slow and infiltrate or store stormwater runoff for later use, for its potential in reducing river diversions, replenishing groundwater, and improving water quality.

Entities understand that when we conserve water in an urban setting, we enhance our ability to serve the full spectrum of uses for which the water is delivered. We can serve more homes and more businesses with less water. When we conserve Mokelumne River water through low water use appliances, or other techniques, we make the most out of the water we have removed from the river. Water conservation provides environmental benefits by allowing us to leave more water in the river to serve in-stream needs. In some circumstances, water conservation can produce economic benefits to water users. Reducing water costs through conservation can improve a business' bottom line and reduce pressures on household budgets. There is some concern that the proposed project does not meet an interest that some entities have regarding how water utility activities should be carried out, including that these activities be carried out in forums with more effective, more valued, and more heeded public participation activities. Unlike other proposed project, there is no provision for coordinating implementation with MokeWISE stakeholders.

Many water agencies have developed, approved, and partially implemented its Conservation Plan. Given the financial downturn, lack of new customer connections, and the current drought, funding a water conservation coordinator as well as funding some portions of conservation plans have been challenging. Outside funding can assist in the implementation of the conservation plan.

The Regional Urban Water Conservation Program will develop a program to reduce demand through implementation of efficient urban water use practices. The program will evaluate existing conservation measures and programs being implemented in the region and identify opportunities for further water efficiency gains. The program will develop a regional conservation plan to pursue funding opportunities, which would then be distributed among participating agencies to fund municipal conservation plan implementation. Costs for this program are estimated to be \$80,000, with \$60,000 for planning and \$20,000 to prepare materials for a funding application.

Background Information

Cities, agencies, and districts throughout the state have been implementing water conservation and efficiency programs for many years. Most recently, requirements set forth in the Water Conservation Act of 2009 (also known as Senate Bill [SB]x7-7) have been driving water conservation to achieve the goals outlined in the state's *20x2020 Water Conservation Plan*. These goals are generally reflected in the 2010 Urban Water Management Plans (UWMPs). Further water conservation goals and progress toward achieving 2010 plan goals are expected in 2015 UWMP updates.

UWMPs are prepared by urban water suppliers that provide over 3,000 acre-feet of water annually, or serve more than 3,000 urban connections. There are multiple UWMPs covering urban water suppliers in MokeWISE region.

Reference Programs

Examples of other regional urban water conservation planning efforts are available. Generally, these examples are for large, single water supply entities with broad coverage in urban areas. Example plans include:

- EBMUD's Water Conservation Master Plan
- San Francisco PUC's Retail Water Conservation Plan
- Metropolitan Water District's Long Term Conservation Plan
- Santa Clara Valley Water District's Water Use Efficiency Strategic Plan

Additionally, the Bay Area Water Supply and Conservation Agency (BAWSCA) administers several water conservation programs in the Bay Area. BAWSCA represents a collection of cities, water districts and private utilities that purchase water on a wholesale basis from the San Francisco regional water system.

Project Information

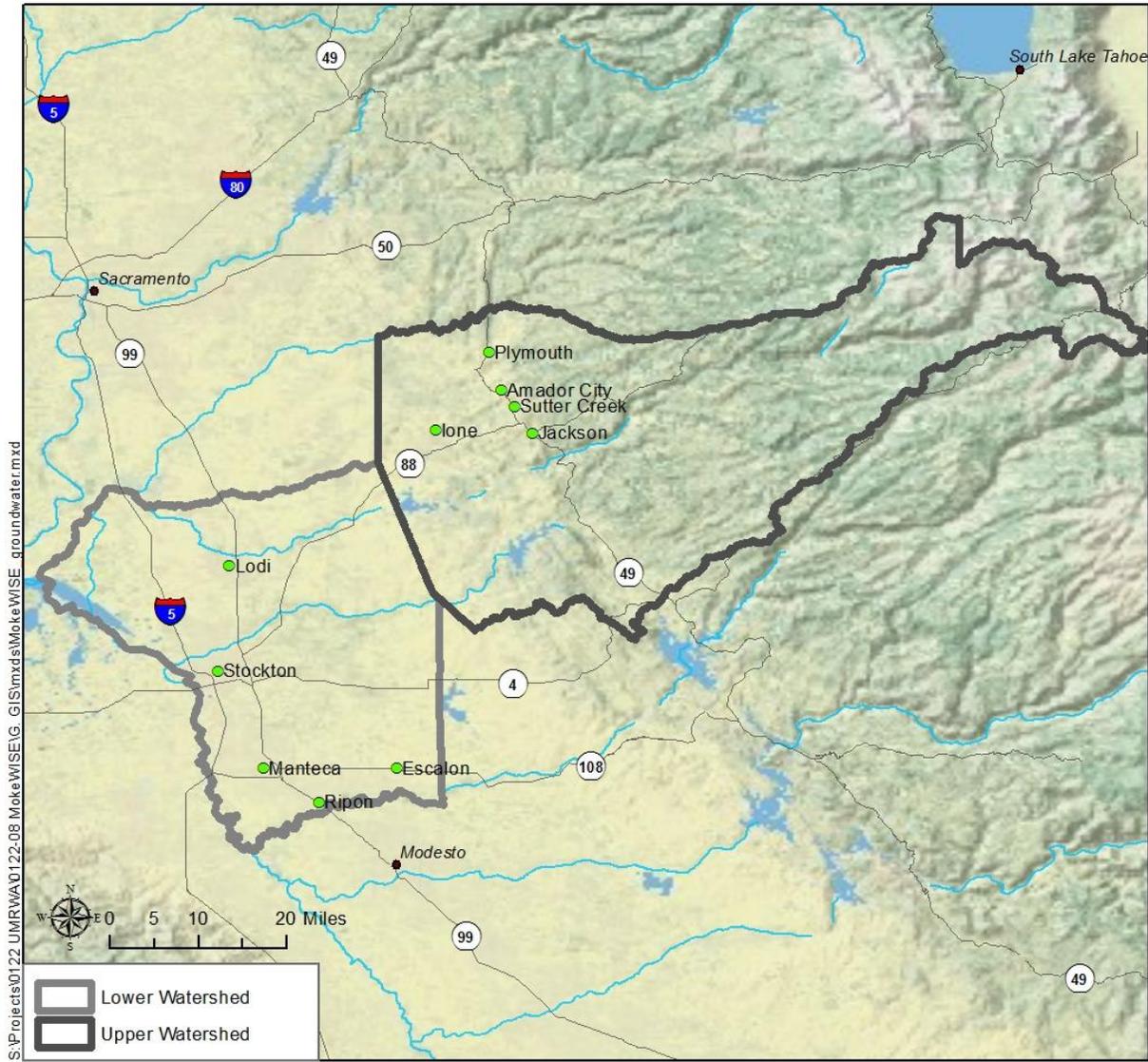
Project Description

The purpose of this project is to develop a program to reduce demand through implementation of efficient urban water use practices. The project will evaluate existing conservation measures and programs being implemented in the region and identify opportunities for further water efficiency gains. The project would develop a regional conservation plan to pursue funding opportunities, which would then be distributed among participating agencies to fund municipal conservation plan implementation.

Project Location

The project concept would focus on urban areas in the Mokelumne watershed (**Figure 1**).

Figure 1: Cities Identified Within the Watershed



Project Sponsor

The urban water conservation project sponsors are the Upper Mokelumne River Watershed Authority, the Eastern San Joaquin Groundwater Basin Authority, the City of Stockton, and the City of Lodi. No co-sponsor has been identified.

Scope of Work

Task 1. Identify Water Conservation Opportunities

The MokeWISE Water Availability Analysis estimated the amount of water that can be made available through expansion of conservation programs within the MokeWISE region. Water conservation and demand management projects which were already planned or in place were noted, as these projects will not create additional water available in the future for beneficial use. However, these existing projects can still be used to guide conservation project implementation in new areas of the region.

Subtask 1.1 Collect and Evaluate Conservation Measures and Programs in the Region

The first step in this project is to collect and evaluate existing water conservation measures and programs already being implemented in the region. The MokeWISE Water Availability Analysis outlines some of these measures and identifies where they are occurring. This task will inventory water conservation measures and programs being implemented in the region. Sources for conservation information will include the Water Availability Analysis, individual UWMPs found within the region, BMP reporting to the California Urban Water Conservation Council (CUWCC), and local conservation plans.

Subtask 1.2 Identify Regional Water Conservation Program Opportunities

Water conservation measures and programs identified in Task 1 can be used to explore expansion opportunities within the region. As part of this task, water conservation opportunities will be identified by performing conceptual feasibility analyses on increasing the penetration of programs within existing geographies, and expanding the geographical extent of existing programs.

In addition to expanding programs already in place, this task will identify new water conservation measures and programs that could be implemented to further reduce demands. Existing plans will be reviewed to identify new measures that could be implemented in the region. An example of the type of conservation measures that may be found in water conservation plans is shown below in **Figure 2**. Additional water conservation plans or measures may be reviewed as well. For instance, the Mokelumne-Amador-Calaveras (MAC) and Eastern San Joaquin (ESJ) Integrated Regional Water Management (IRWM) regions likely have urban conservation projects that can be incorporated into this project.

Figure 2: Example Evaluated and Potential Conservation Measures (EBMUD)

Voluntary Measures for Existing Customers	
Advanced metering infrastructure	High-efficiency toilet rebates
Artificial turf	High-efficiency urinal rebates
Cisterns or rainwater catchment	Landscape and irrigation upgrade incentives
Dental vacuum pump retrofits	Multi-family submetering
Equipment upgrade incentives	Submetering retrofit
Garbage disposal removal	Water use surveys (indoor and outdoor)
Graywater retrofit	Self-adjusting irrigation controller rebates
High-efficiency clothes washer rebates	
Mandatory Measures for New Services	
Advanced metering infrastructure	High-efficiency hose nozzles (water brooms)
Dedicated irrigation meters	Multi-family and commercial unit and irrigation metering
Graywater piping	On-demand hot water systems
High-efficiency clothes washers	Plan check review
High-efficiency dishwashers	Rain sensors
High-efficiency faucets and showers	Self-adjusting irrigation controllers
High-efficiency toilets	Water-efficient landscaping
Supply-Side Measures	
Pipeline leak detection	Distribution system water loss reduction

Source: EBMUD Water Conservation Master Plan, 2011

Task 2. Prepare Regional Conservation Plan

In addition to the UWMPs discussed previously, water conservation plans exist within the region. For example, the Amador Water Agency prepared a water conservation plan in 2009 and the City of Stockton has a dedicated Water Conservation Program. The MokeWISE regional conservation plan would roll existing local plans up to the regional level and expand urban water conservation in new areas.

In this task, a regional water conservation plan will be prepared. This plan will roll up and formalize the region’s existing water conservation programs and will include water conservation goals, objectives, tools, and incentives.

In preparing the water conservation plan, existing local water conservation plans and programs will be compiled and evaluated for region-wide application and compliance with

the CUWCC BMPs. For each of the BMPs, this task will either (1) document the program as it is currently implemented; (2) document the program with proposed changes to increase the program effectiveness; or (3) outline a new regional conservation program to be implemented for compliance with the BMPs and/or the regional conservation goals. Conservation plan elements may include:

- Initiating a pilot program for replacement of water reliant landscaping
- Utilizing landscaping BMPs to reduce runoff and improve water quality
- Increasing irrigation efficiency
- Expanding water metering and implementing water use based rates
- Detecting leaks
- Capturing rainwater
- Capturing stormwater
- Offering conservation incentives for water-saving technologies
- Preparing education and outreach materials

A draft conservation plan will be prepared using the documentation developed above. The draft plan will be made available for review by interested former members of the Mokelumne Collaborative Group (MCG), other interested parties, and the general public. Feedback will be solicited during a public meeting or workshop. Following receipt of comments, the conservation plan will be finalized.

Task 3. Implementing the Regional Conservation Plan

The regional conservation plan will be used to pursue funding opportunities to implement water conservation measures and programs. Funding received will be distributed among agencies to implement individual local conservation plans.

Subtask 3.1 Identify Funding Opportunities for Water Conservation

Existing and upcoming water conservation funding opportunities will be identified and tracked in this task. Funding opportunities will likely influence the plan development timeline. One potential source of funding is the \$100 million identified in Proposition 1 for water conservation, \$23 million of which has been recommended by Governor Brown for appropriation in the 2015-2016 budget cycle. IRWM funding through Propositions 84 and 1 may also be potential grant sources.

Subtask 3.2 Prepare and Submit an Application for Water Conservation Funding

The objective of this task will be to prepare and submit a grant application (likely to DWR) to help fund the implementation of opportunities outlined in the MokeWISE regional conservation plan. This task will include the following actions:

- Review the identified grant application packet or project solicitation
- Identify and collect relevant project information
- Draft the grant application and all attachments
- Finalize and submit the grant application following a comment period from the MokeWISE application entities.

Budget

The budget for this project is anticipated to be \$80,000. Costs associated with the project are broken down as follows:

- Planning Costs: \$60,000
 - \$10,000 for identifying opportunities
 - \$50,000 for preparing the regional conservation plan
- Grant Funding Costs: \$20,000
 - \$20,000 for the preparation and submittal of a conservation funding application
- **Total Project Cost: \$80,000**

References

East Bay Municipal Utility District. 2011 Water Conservation Master Plan. Available at:
<https://www.ebmud.com/for-customers/water-conservation-rebates-and-services/water-conservation-master-plan>