



**REVISED
ACTION ITEM**
March 20, 2019

TO: Board of Directors

FROM: **Public Affairs and Legislation Committee**
(Directors Dick, Osborne, and Thomas)

Robert Hunter
General Manager

Staff Contact: Heather Baez

**SUBJECT: Sole Source Contract for Brown and Caldwell to Develop Information
Relative to Small Non-Compliant California Drinking Water Systems**

STAFF RECOMMENDATION

Staff recommends the Board of Directors to authorize the GM to enter into a contract with Brown and Caldwell to complete the scope of work attached at a cost not to exceed \$141,772. The Committee also directed staff to seek contributions towards work from agencies within and outside of Orange County.

COMMITTEE RECOMMENDATION

Committee discussed the study in detail and had a number of questions. During the meeting, staff received an email and reported the Brown & Caldwell (B&C) estimated cost of the study at \$141,772. Questions raised and responses to those questions are:

- Will MWDOC own the database upon completion of the study? This issue was discussed with B&C. CUWA is paying B&C to develop one database (who are the non-compliant entities, what water quality problems do they have, what will it take to correct, etc) and CUWA will be the owner of this database, parts of which they will share for portions of the MWDOC study. MWDOC is paying B&C to develop the financial database (what has been spent, what was achieved, what is the remaining gap, how much funding is available, etc.) and per our contract, MWDOC would be the owner. At that point, we can share our database and make it available to whomever we desire.

Budgeted (Y/N): No	Budgeted amount: TBD	Core X	Choice __
Action item amount: TBD		Line item:	
Fiscal Impact (explain if unbudgeted):			

- The Board asked if staff can solicit funding assistance from agencies within and outside of OC to help support our costs. MWDOC will commit to the entire amount and will seek funding partners in such a way that the contract will not be held up or delayed in waiting for other contributions. Staff also confirmed that CUWA nor B&C would have a problem with these efforts as long as MWDOC is the only signatory to the contract.
- Will any intellectual property (IP) be maintained by MWDOC? Neither staff nor B&C see the likelihood of any IP coming out of the study, but our contract provides that any IP is owned by MWDOC?
- What is the cost of the study? The budgeted costs developed by B&C were \$141,772 in accordance with the attached breakdown. Staff confirmed that B&C is comfortable working on a time and materials basis not to exceed the amount shown. In this manner, if all the money is not needed, it will not be spent.

BACKGROUND

In September 2018, the MWDOC Board of Directors authorized a scoping study for Black & Veatch to begin preparation of cost estimates to bring, small, non-compliant water systems, statewide, into compliance. In the process of researching this effort, and meeting with other groups who have done similar work, it was determined that Brown and Caldwell, collaborating with the California Urban Water Agencies (CUWA) and the Pacific Institute, was developing a similar study. MWDOC staff reached out to Brown and Caldwell to see if there was an opportunity to “add-on” to what was already being funded by CUWA to take advantage of economies of scale.

REPORT

MWDOC discussed our interests with staff from Brown and Caldwell and requested that they prepare a scope of work and cost estimate. We requested that they focus on a financial analysis of funds that have been spent so far on chronically non-compliant water systems, and what has been accomplished. We believe the insight from this analysis will assist in presenting information to the SWRCB and others to re-focus the “water tax” discussions.

Attached is the scope of work that Brown and Caldwell has proposed for MWDOC to research to determine the impacts/outcomes of past investments and delineate areas where additional funds could be targeted now to address systems with persistent health-based violations.

In addition, Brown and Caldwell has shared an overview of the work they will be completing concurrently for CUWA and the Pacific Institute. The CUWA study focuses on small public water systems with persistent drinking water quality violations (at least 12 or more quarters of violations out of the 20 quarters between 2013 and 2017). Although in some instances, there is more current data available, not all water quality data is housed in the same database, especially if a contaminant is not regulated. CUWA has augmented information on drinking water violations and then added information relative to 1,2,3-TCP (only regulated since 2017) and Chromium VI (not yet regulated but being developed). The report will identify systems with long-term water quality problems, the approaches best

suited for those systems based on type of contaminant and proximity to water of higher quality, and the potential range of costs for these solutions. This can inform the ongoing discussions at the State level on the best way to find long-lasting sustainable solutions for all failing water systems.

Work on both studies is expected to be done concurrently, with both studies complementing one another without conflicting with one another. When advised about MWDOC's areas of interest, the CUWA Board expressed enthusiasm for the additional work as it will improve the overall effort. The completion date is estimated to be August 2019.

Brown and Caldwell has not yet provided a cost to complete the scope of work. They indicated the scoping would be completed and provided to MWDOC prior to the March 18 PAL meeting. Staff will provide it to the Board as soon as it is received.

Attached:

- Brown and Caldwell proposed Scope of Work - Proposal for MWDOC Financial Analysis for Small Non-Compliant Drinking Water System
- CUWA and the Pacific Institute - Summary of Work, Solutions for Failing Drinking Water Systems in California

Municipal Water District of Orange County (MWD OC) - Financial Analysis for Small Non-Compliant Drinking Water Systems

Phase	Phase Description	Porter, Katie	Hooks, Paulette E	Paulson, Cindy	Ruby, Katie	McCauley, Taylor	Surto, Lindsay B	Total Labor Hours	Total Labor Effort	ODCs	Total Effort
		PM	PA								
		\$280.00	\$123.00	\$348.00	\$145.00	\$123.00	\$101.00				
100	Project Management	24	16	0	0	0	8	48	9,496	100	9,596
200	Identify Funding Sources and Existing Utiliza	48	0	8	80	40	0	176	32,744	0	32,744
300	Determine Funding Gap	80	0	8	150	150	0	388	65,384	0	65,384
400	Develop Draft and Final Report	40	8	8	80	60	0	196	33,948	100	34,048
	GRAND TOTAL	192	24	24	310	250	8	808	141,572	200	141,772

Hours and Dollars are rounded to nearest whole number. To display decimals, change the format of the cells.

808

Proposal for MWDOC Financial Analysis for Small Non-Compliant Drinking Water Systems

Background: Nearly a million Californians receive drinking water from failing public water systems, primarily from small sized water systems with persistent compliance issues. The State of California, State Water Resources Control Board (SWRCB) is exploring various approaches to funding their Human Right to Water (HR2W) initiative and has embarked on a needs assessment, which is expected to be completed in 2021. A number of funding sources are being leveraged to address systems in violation; however, the reporting of results of improvements and the need for additional funding has not been quantified. Estimates in legislative discussions have indicated that the need is around \$140 million, however it is unclear how this was quantified and there is no central source of information that documents the collective financial efforts and results of efforts being undertaken to solve this problem.

A recent analysis by the California Urban Water Agencies (CUWA) showed that nearly 700,000 people are served by small public water systems with one or more water quality violation(s) over the last five years. Of these, 150 systems collectively serving over 137,000 people have had persistent violations, defined for the purpose of their analysis as health-based violations in 12 or more quarters from 2013-2017 (Figure 1), but additional information is required to ascertain the cost of returning to compliance and how 100% compliance might be achieved. Figure 1 also predicts potential persistent non-compliance from chromium VI which is expected to be regulated in the near future.

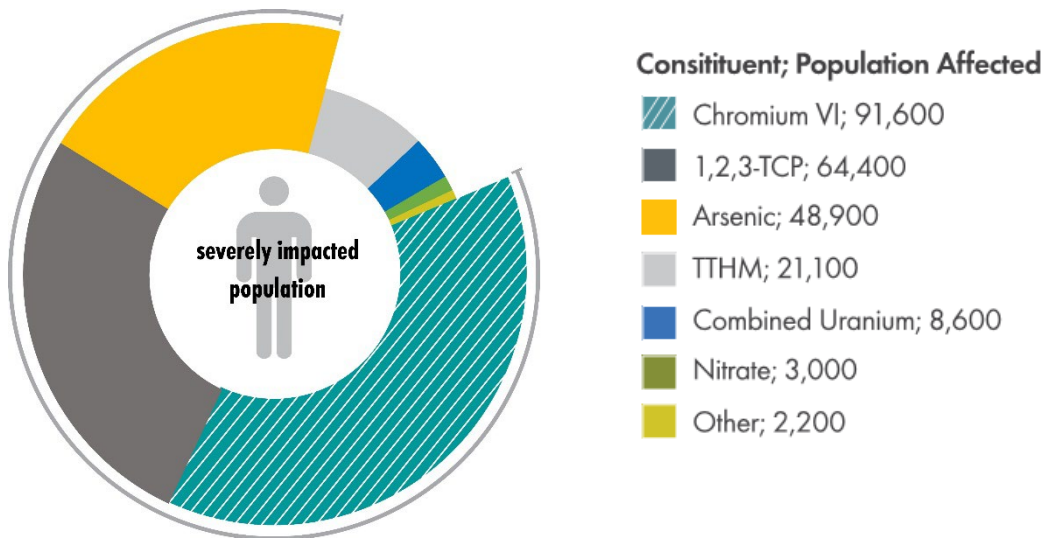


Figure 1: Types of Water Quality Challenges for Public Water Systems with Persistent Violations (2013-2017). Source: CUWA, 2018

An analysis of where funds have been spent to date, the resultant outcomes, and where additional funds are needed would provide valuable information to the State Board in its current needs assessment and help to direct resources where they would have the greatest impact. It is also complementary to an ongoing Water Research Foundation (WRF) project by CUWA/Pacific Institute which will match potential solutions and develop a high-level estimate of costs for persistently violating systems.

Brown and Caldwell (BC) staff have been engaged in various discussions regarding Safe and Affordable Water in California via our involvement with CUWA and the California-Nevada Section of AWWA (CA-NV AWWA). These organizations have been examining ways to make progress and leverage existing resources. The information developed from the project described below can contribute to and

complement this body of work by informing the ongoing discussions at the State level and encourage lasting solutions rather than short-term fixes requiring additional assistance/intervention down the road.

Project Goal/Outcome: Determine the impacts/outcomes of past investments and delineate areas where additional funds could be directed to address systems with persistent health-based violations.

Scope: This effort funded by Municipal Water District of Orange County (MWDOC) will help to examine which specific system's needs can be met with existing funding sources, and which will require new or additional sources of funding.

- **Existing Resources/Identified Projects** - Review existing financial reports (e.g. Drinking Water State Revolving Fund (DWSRF), Proposition 1, Proposition 84, others,) and what remedies and investments are already in process to the extent data and information are available. For example, several projects to improve drinking water quality have already been identified and are in various stages of the funding approval process. Based on conversations with Division of Drinking Water (DDW) staff, systems with arsenic compliance issues are in various stages of funding and the process is regularly being tracked by DDW and USEPA Region 9. Since this information is not readily available outside these agencies, it is possible that the financial need to address these systems may be double-counted. The Office of Financial Assistance also tracks the status of funding applications. It would be good to understand where systems are on the funding path, and what additional steps and funding are needed to provide solutions. To accomplish this, BC will:
 - Classify projects as either temporary (e.g. interim water source such as provision of bottled water) or long-term solutions (e.g. new treatment system, new management structure). The focus would be on long-term solutions as the ultimate goal to establish system sustainability and resolve the recurring compliance issues and prevent them from recurring, rather than continuing to subsidize interim fixes.
 - Understand whether one-time funding measures have been effective.
 - Classify additional funding needs for projects in progress.
 - Identify existing funding sources that are underutilized.
 - Review grants for technical assistance providers and NGOs (e.g. RCAC, CA Rural Water, CWC, Self-Help, etc.) to determine what work is underway and how effective the work has been in identifying costs and solutions.
- **Future Projects** – Identify which systems do not have an identified project (remedy) or potential funding source and leverage the upcoming WRF project by CUWA/Pacific Institute for class 5 treatment costs for arsenic and 1,2,3-TCP as well as the SWRCB estimate of needs if available.

A targeted approach to this analysis will help identify where the greatest progress can be made. The 2018 CUWA Issue Brief further determined that of the 150 systems in persistent violation, 80% of the population affected by persistent violations can be addressed by initially targeting 20% of these systems (those with ≥ 200 connections), or 33 systems (Table 1).

Table 1: Population Impacted by System Size for Public Water Systems with Persistent Violations (2013-2017). Source: CUWA, 2018

Number of Connections	Number of Systems with Persistent Violations	Population Impacted
≥200	33	111,700
<200	117	25,800
TOTALS*	150	137,500

*Chromium VI violations not included (no current MCL).

We recommend segmenting this financial analysis to first consider the 33 systems with ≥200 connections and then examine the remaining 117 systems.

This analysis will leverage CUWA’s compiled data which focuses on community water systems and schools/daycares serving < 10,000 people and is more robust than the HR2W database.

Deliverable: BC will produce a report documenting findings from the above document review and analyses. The overall goal of the report will be to articulate and quantify the needs met by existing funding and what additional funding may be needed to achieve compliance for persistently violating systems.

Schedule: Assuming NTP of April 2019, BC proposes to deliver a draft report by August 2019 to inform the ongoing discussions at the State level on sustainable solutions for failing water systems. BC will incorporate comments from MWDOC and will deliver a final report by October 2019.

Technical Lead: Katie Porter

Katie Porter is based in Brown and Caldwell’s Los Angeles office and has been focused on California water issues for the last ten years consulting on regulatory compliance, resource planning, and aging infrastructure projects. She previously served as an Associate Branch Chief in USEPA’s Office of Ground Water and Drinking Water in Washington DC, where she developed national policy in conformance with the Safe Drinking Water Act (SDWA), participated on workgroups for regulatory development, and implemented programs to improve system sustainability and small system compliance. Katie is a staff member for the California Urban Water Agencies (CUWA) focused on Water Accessibility & Affordability issues and Water Quality issues. She also serves as the Chair of the SDWA committee for the California-Nevada Section of AWWA, and is a Board Member of the Urban Water Institute. Katie has a BS in Chemical Engineering from MIT and an MS in Chemical Engineering from Tufts University. She is a registered Professional Engineer in CA and a certified Envision Sustainability Professional.

Reference:

California Urban Water Agencies. Issue Brief - Restoring Water Accessibility in California. 2019 <https://www.cuwa.org/pubs/2019/accessibility-update>



Project Summary: Solutions for Failing Drinking Water Systems in California

Research Team: California Urban Water Agencies (CUWA) and Pacific Institute

Supported by the Water Research Foundation

February 2019

An estimated million Californians receive unsafe drinking water from failing public water systems. Yet there are solutions at hand: capital improvements for treatment systems, consolidation, water trading, and financial assistance for operations and maintenance can help systems deliver safe drinking water. CUWA and Pacific Institute plan to develop a decision tree to match failing systems with likely solutions. The project will focus on small public water systems with persistent drinking water quality violations. The report will identify systems with long-term water quality problems, the approaches best suited for those systems based on type of contaminant and proximity to water of higher quality, and the potential range of costs for these solutions. This can inform the ongoing discussions at the State level on the best way to find long-lasting sustainable solutions for all failing water systems. Accessibility to safe drinking water is a national problem, and the strategy developed under this research could be leveraged by other states.

Project Goal/Outcome: Develop a report detailing a systematic approach to dealing with communities lacking consistent access to safe water, using small failing public water systems in California as a case study for a framework that could be applied in other states.

Scope: Develop a decision tree to classify systems and match them with potential solutions, and develop a high level estimate of costs. Focus on small systems (200 – 10,000 people served) with persistent Safe Drinking Water Act violations, along with smaller systems that could be consolidated relatively easily.

Task 1: Develop Decision Tree and Match Systems with Solutions

- Focusing on small systems with long-term water quality problems, classify systems according to major characteristics: type of contaminant, proximity to other water systems, potential for water trading, and capacity deficiencies.
- Link categories of systems with likely solutions: treatment upgrades, consolidation, water trading, and operations and maintenance support.

Task 2: Explore Likely Solutions and Estimate Costs

- Identify innovative technology solutions (e.g. BATs, package systems, remote operation)
- Provide high level estimates of treatment and operation costs to the extent possible

Task 3: Gather Stakeholder Input

- Consult an Advisory Committee representing a range of viewpoints
- Conduct site visit to provide better understanding of existing conditions and technical challenges
- Convene a thought-leaders workshop to brainstorm innovative technical solutions.

Schedule:

- Site Visit: March 2019
- Thought-Leaders Workshop: April 2019
- Preliminary Findings: Summer 2019
- Final Report: Spring 2020