



City of Sacramento City Council

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915 I Street, Sacramento, CA, 95814
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Meeting Date: 4/26/2011

Report Type: Staff/Discussion

Title: Fluoride Best Practices Study Report

Report ID: 2011-00268

Location: Citywide

Recommendation: Receive and File Fluoride Report.

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Department: Department Of Utilities

Division: Engineering Administration

Dept ID: 14001311

Attachments:

1-Description/Analysis

2- Background

City Attorney Review

Approved as to Form

Joe Robinson

4/14/2011 4:06:40 PM

City Treasurer Review

Prior Council Financial Policy Approval or
Outside City Treasurer Scope

Russell Fehr

4/8/2011 1:41:12 PM

Approvals/Acknowledgements

Department Director or Designee: Marty Hanneman - 4/14/2011 9:05:50 AM

Assistant City Manager: John Dangberg - 4/14/2011 3:56:58 PM



Description/Analysis

Issue: The City has been fluoridating the public water supply since 2000. Operation and maintenance costs have increased from \$350,000 in year 2000 to \$957,000 in year 2010, due to the increased cost of maintaining old infrastructure and the increased cost of fluoride. In October, 2010, the City accepted a \$75,000 grant from First 5 of Sacramento to prepare a study that evaluates the City's fluoride system and recommends improvements. The study makes the following high level observations and recommendations:

- Operational costs are within industry practice
- Immediate and future upgrades will be needed over a 20 year planning horizon to continue fluoridating and to achieve modest operational efficiency improvements.

Policy Considerations: Council adopted a Resolution in February 1998 stating that if another party would cover initial funding for purchase and installation of the fluoridation equipment, the Department of Utilities (DOU) would provide operational and maintenance costs. In 1999, the City Council authorized the City Manager to negotiate a \$1.41 million grant contract to fund the purchase and installation of the equipment necessary to add fluoride to the City's water supplies. Since the installation of its fluoridation facilities, the City has funded the annual costs of operating and maintaining these facilities with water rate revenues.

The California Health and Safety Code requires the fluoridation of all public water systems that have at least 10,000 service connections (the City has 136,713), if funding is provided from an "outside source". Once a fluoridation system has been installed, a public water system is not required to continue fluoridating if, in any given fiscal year, sufficient funding is not available from an "outside source" to pay the fluoridation costs for that year. An "outside source" of funding typically is a federal grant or a gift from a private foundation, and is defined in the Health and Safety Code to exclude revenues from the public water system's utility rates or other fees or charges or local taxpayers. What this means for the City is that, while the City can choose to fund its annual fluoridation costs with water rate revenues, State law does not require the City to do so, and the City's fluoridation program can be suspended in any fiscal year when the City does not receive sufficient outside funding to pay for the program.

This report does not address the health considerations associated with fluoridation, but rather, is strictly focused on the fiscal policy surrounding the capital and operational costs to the City to fluoridate its water. Therefore, no cost benefit analysis is incorporated into this report as adding fluoride is not essential for the production of safe drinking water.

Environmental Considerations: This is not considered a "project" under the California Environmental Quality Act (CEQA) Guidelines Section 15378(b)(5) because it is an administrative activity that will not result in direct or indirect physical changes in the environment.

Sustainability Considerations: Not considered applicable at this time.

Commission/Committee Action: Not Applicable

Rationale for Recommendation: Not Applicable

Financial Considerations: The City currently expends \$957,000 annually on fluoridation of the public water supply, or approximately \$0.58 per connection per month, and this is expected to increase to \$1.30 per connection per month in the next 20 years. The study recommends immediately replacing aged infrastructure that supports the fluoride process at an estimated cost of \$2.3 million to \$3.7 million depending on selected improvements.

Fluoride infrastructure not requiring immediate replacement will need to be replaced within the next 20 years at an estimated future cost of \$7.6 to \$9.5 million. The combination of present and future equipment scheduled for replacement equals \$9.9 to \$13.2 million.

The “Fluoride Best Practices Study Report” estimates the total cost to provide 20 years of fluoridation at \$43 to \$48 million if recommendations are implemented.

Grant funding may be available through First 5 to fund the installation of fluoride equipment, but this also would require the City to agree to fund the operational and maintenance costs over a 20 year period. No negotiation with First 5 has taken place.

It is notable that recent state budget decisions have targeted the reserve funds of First 5 Sacramento for diversion, putting potential grant funding opportunities at risk.

A preliminary evaluation suggests the \$43 to \$48 million total cost of service to the ratepayer over a 20 year period could be reduced to \$33 to \$35 million if potential grant funding is utilized.

Emerging Small Business Development (ESBD): Not Applicable.



BACKGROUND

History

City Council adopted a Resolution in February 1998 stating that if another party would cover initial funding for purchase and installation of the fluoridation equipment, the Department of Utilities (DOU) would cover the operational and maintenance (O&M) costs of \$350,000 per year at the two water treatment plants and 28 groundwater well sites to fluoridate the City's drinking water. In 1999, the City Council authorized the City Manager to negotiate a \$1.41 million grant contract with the representatives of Fluoridation 2000 Work Group to fund the purchase and installation of the equipment necessary to add fluoride to the City's water supplies.

Since then, the O&M costs associated with fluoridation have risen to approximately \$957,000 per year and increasingly, other maintenance activities are deferred as staff are diverted to maintain the fluoridation system. Notably, at program inception, no increase in personnel occurred to support the fluoride program.

In 2010, Management Partners, a consulting firm retained by the City, examined all Sacramento government operations to identify opportunities to close the structural deficit faced by the City. They recommended the City end fluoridation. The basis of this recommendation was to save money within the DOU Water Fund by eliminating a program not mandated by law. The study did not include an evaluation of the public health perspective of the program or a review of the current system's efficiency.

Also in 2010, the City was notified by First 5 Sacramento of the availability of up to \$75,000 in grant funds for a consultant study of the fluoridation system to reduce O&M costs as well as grants for capital improvements.

Subsequently, Utilities accepted the study grant with the understanding that no commitment to continue fluoridation would be required. This study was also a precursor to any application for capital project grant application, should the City wish to proceed.

In late 2010, Black and Veatch Corp. were retained through the competitive bid process to perform an objective evaluation of the fluoride program. The scope included:

- Identify best management practices (BMP's) for providing fluoride within the public water supply.
- Identify upgrades needed at fluoride delivery points to meet these BMP's.
- Identify opportunities to lower the total cost of providing this service.
- Develop preliminary design of recommended upgrades, including cost estimates for capital improvements and ongoing operations and maintenance.

This "Fluoride Best Practices Study" is now complete.

Contractual & Regulatory Obligations

- Section 116410 of the California Health and Safety Code requires the fluoridation of all public water systems that have at least 10,000 service connections (the City has 136,713), if funding is provided from an “outside source”. Once a fluoridation system has been installed, a public water system is not required to continue fluoridating if, in any given fiscal year, sufficient funding is not available from an “outside source” to pay the fluoridation costs for that year. (Health and Safety Code § 116415.)
- An “outside source” of funding typically is a federal grant or a gift from a private foundation, and is defined in the Health and Safety Code to exclude revenues from the public water system’s utility rates or other fees or charges or local taxpayers.
- This means that the City can choose to fund its annual fluoridation costs with water rate revenues, but State law does not require the City to do so, and the City’s fluoridation program can be suspended in any fiscal year when the City does not receive sufficient outside funding to pay for the program.
- According to staff for the Department of Health & Human Services, Center for Disease Control & Prevention, if a utility suspends fluoridation, as authorized under the Health and Safety Code, the utility must notify the State drinking water administrator and dental director. They recommend alerting public health professionals and the public as well through local media.

Fluoride Best Practices Study: Summary of Conclusions by Black & Veatch

1. The City is currently meeting its fluoridation concentration targets, and operations and maintenance costs for the system are within an acceptable range.
2. To continue fluoridating, the City will need to upgrade facilities to improve operations and to replace aging equipment.
3. Some upgrades should occur now, while other facilities will require replacement within the 20 year planning horizon.
4. Current O&M Cost: The City is currently expending \$957K per year (\$79,750/month) on operational costs, or approximately \$7 per connection per year (\$0.58/connection/month). [*For comparison, a pending Sacramento County Water Agency Fluoridation Project is estimating \$1.57 per connection per month*]
5. Staffing: The City’s current O&M practices currently utilize a total of 3.1 FTE’s at the wells and 0.2 FTE at each of the two water treatment plants, for a total of 3.5 FTE’s for the fluoridation program. Implementation of improvements at the

Groundwater Wells could lower FTE requirements by 0.4 to 1.1 FTE's from the current 3.1 FTE estimate. There are no recommendations to reduce labor practices at the Water Treatment Plants.

6. Recommendations by Facility for Improvements *Needed Now*. [See Table 1].
- a. Sacramento River Water Treatment Plant: No projects are required in 2011. Expect to begin replacing equipment starting in 2017.
 - b. E.A. Fairbairn Water Treatment Plant: Equipment is due for replacement now. As a long term investment, the recommendation is to install new equipment inside a masonry building for complete protection from the elements and for increased service life and improved safety.
 - c. Groundwater Wells: The equipment is due for replacement now.
 - i. Option 1: If the City is willing to accept sole sourcing of the chemical and expend the time necessary to explore the nuances of potential solutions to the solid Sodium Fluoride system, then modifications to the existing system could potentially be the most affordable long term option.
 - ii. Option 2: If the City is uncomfortable with the limited chemical supply or uncertainty within Option1, then conversion of the Wells to a liquid fluoride system is recommended.

Table 1: Immediate Costs and Total 20 Year Cost of Service							
Description		Base 2011 Costs					Total City Fluoridation Costs for 20 Years
		2011 Projects	Equipment	Chemical	Labor	Total O&M	Future Worth ¹
	Current		\$20K	\$493K	\$444K	\$957K	
Opt. 1	Upgrade & Maintain All Current Systems	\$2.3M	\$18K	\$493K	\$399K	\$910K	\$43M
Opt. 2	Convert Wells to Liquid Fluoride. Maintain Other Facilities	\$3.7M	\$29K	\$587K	\$318K	\$934K	\$48M

1: Round to nearest million. Assumes 4% inflation for labor and materials and 6% inflation for chemicals.

7. Recommendations for Improvements *Needed Later*.
- Many components of a fluoridation system are not expected to last 20 years.
 - Thus, all fluoridation facilities will require periodic renewal of equipment at varying schedules over the 20 year planning horizon.
 - Fluoride infrastructure not requiring immediate replacement will need to be replaced within the next 20 years at an estimated future cost of \$7.6 to 9.5 million (\$4.4 to 5.1 million in present dollars). The combination of present and future equipment scheduled for replacement equals \$9.9-13.2 million.
8. Accounting separately for equipment replacement, the projected cost of chemicals and labor required to operate the system is illustrated on *Table 2*.

Description		Total City Fluoridation Costs for 20 Years ¹	2011 Projects	Future Equipment Replacement	Total Equipment Cost	Remaining Chemical & Labor for 20 Years ¹
Opt. 1	Upgrade & Maintain All Current Systems	\$43M	\$2.3M	\$7.6M	\$9.9M ²	\$33M ²
Opt. 2	Convert Wells to Liquid Fluoride. Maintain Other Facilities	\$48M	\$3.7M	9.5M	\$13.2M	\$35M

1: Round to nearest million

2: e.g. 2.3+7.6=\$9.9 M, and 43-9.9=\$33M

Cumulative Cost of Fluoride

Chart 1 graphically illustrates the projected cost of fluoridation, for the more conservative Option 2, over 20 years. *Chart 2* illustrates the estimated growth in cost per connection per month for Option 2 O&M costs. This projection would be expected to increase by perhaps 35% if equipment costs are born by the ratepayers as well.

Department of Utilities Position on Fluoride

The Department of Utilities considers fluoride to be an additive to the water for dental health purposes and not essential for the production of safe drinking water. The Department's concern with water fluoridation is strictly from a fiscal stand point and not from a health benefit perspective, as the latter remains outside of staff expertise. With regard to the validity of cost-benefit ratios for society at large, DOU remains neutral.

Other Water Agency Actions

On March 22, 2011, the Sacramento County Water Agency Board of Directors approved a resolution allowing the Director of Water Resources to enter into an agreement with First 5 Sacramento to accept grant funding for the full construction cost of fluoridation facilities at multiple facilities, and commit the County to funding the fluoridation Operations and Maintenance costs for 20 years. The estimated construction cost is \$9.6 million.

Capital Grant Funding Availability

Capital improvement grants may be available from First 5 Sacramento, and would require a 20 year commitment to continue fluoridation regardless of cost or financial status, with no funding for operational or maintenance costs. Additionally, future grant opportunities could be more difficult to acquire as the City would have locked itself into the 20 year program. No negotiation on the grant terms has occurred.

It is notable that recent state-level budget decisions have targeted the reserve funds of First 5 Sacramento for diversion. The immediate and long term effect on the First 5 Water Fluoridation Grant Program remains an unanswered question.

The Department of Utilities will continue fluoridation unless directed otherwise by City Council. Staff does not intend to negotiate or apply for any capital grant funds unless Council provides direction to do so.

Chart 1

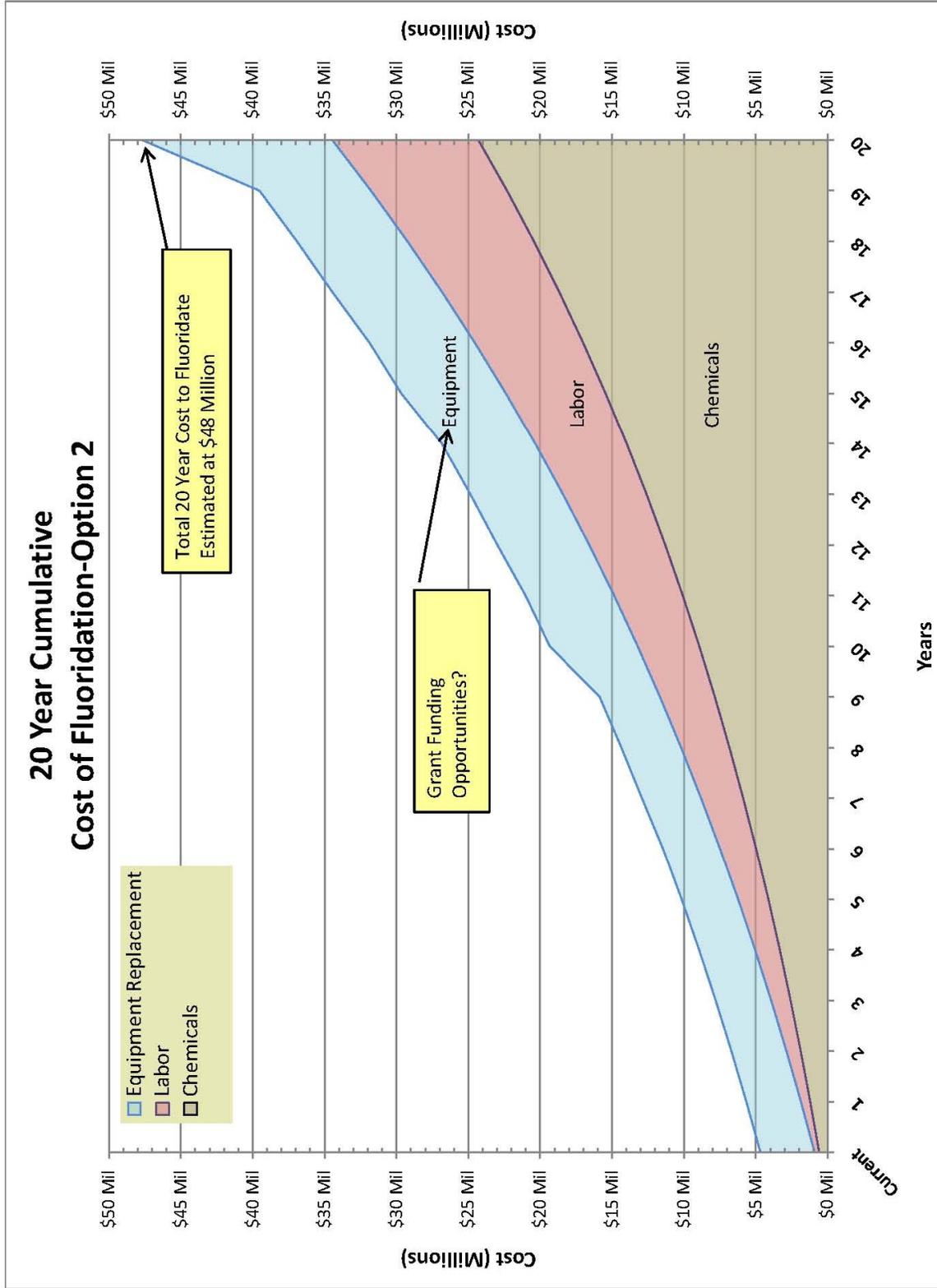


Chart 2

