

- **Board of Directors**
Engineering and Operations Committee

February 11, 2003 Board Meeting

9-3

Subject

Drinking Water Fluoridation Policy

Description

In October 1995, Governor Pete Wilson signed into law Assembly Bill 733, which conditionally mandated fluoridation of any public water supplies that have at least 10,000 service connections. Under this law, a water utility would not be required to comply with the provisions of the adopted regulation unless sufficient funds were made available. Metropolitan is exempt from conditions of this law. Since AB 733 became law and the California Department of Health Services (CDHS) adopted regulations for its implementation, state, regional and local public health officials have indicated their strong desire to see fluoridation implemented on the largest possible scale in order to maximize the financial and medical benefits of treating municipal drinking water supplies. The state of California has concentrated its ongoing efforts on securing limited funding for the largest public water systems with an interest in fluoridating its supplies, including the cities of Sacramento, Los Angeles, and San Diego.

Dental health directors and county health officials from within Metropolitan's service area (Los Angeles, Orange, Ventura, Riverside, San Bernardino and San Diego counties) addressed Metropolitan's Board of Directors at the December 2001 board meeting with a formal request to have Metropolitan consider fluoridating its supplies at each of its five water treatment plants. These health officials believe that implementing treatment at Metropolitan's facilities is the most cost-effective method to provide fluoridation on a regional scale. Following this appeal, the matter was referred to Metropolitan's Engineering and Operations Committee for further discussion, examination and consideration.

After E&O Committee discussion, staff conducted an informal survey of member agencies in order to gauge utility attitudes and existing policies toward fluoridation practices. The survey indicated no clear consensus among Metropolitan agencies on the issue of regional drinking water fluoridation.

The California Dental Association Foundation, a non-profit public benefit corporation, in conjunction with a statewide fluoridation taskforce, has offered Metropolitan the capital costs for construction and installation of fluoridation equipment at each of its five treatment plants, as well as operations and maintenance costs for one year.

If Metropolitan fluoridates its supplies, then the operational activities presented in [Attachment 1](#) would need to take place at each of its five treatment plants. Metropolitan developed preliminary capital and O&M cost estimates for 14-day fluorosilicic acid storage and chemical feed facilities at its five treatment plants in May 1996, which have been escalated to 2002 dollars (see [Attachment 2](#)). A preliminary timeline for adding fluoridation at Metropolitan's treatment plants estimates approximately 30 months for design, construction and start-up pending board action (see [Attachment 3](#)).

Policy

Metropolitan has no existing policy on drinking water fluoridation.

California Environmental Quality Act (CEQA)

CEQA determination for Options #1 and #2:

The proposed actions will involve minor alterations to utilities to comply with the water system fluoridation requirements of the Health and Safety Code. As such, the proposed actions qualify for a statutory exemption under Section 21080.26 of the Public Resources Code.

The CEQA determination is: Determine that pursuant to CEQA, the proposed actions qualify for a statutory exemption under Section 21080.26 of the Public Resources Code.

CEQA determination for Option #3:

None required

Board Options/Fiscal Impacts

Option #1

Adopt the CEQA determination and adopt a policy to fluoridate at Metropolitan's five treatment plants.

Fiscal Impact: None

Option #2

Adopt the CEQA determination and adopt a policy not to fluoridate at Metropolitan's five treatment plants.

Fiscal Impact: None

Option #3

Defer any action at this time

Fiscal Impact: None

Staff Recommendation

No staff recommendation

	1/16/2003
Jill T. Wicke	Date
Manager, Water System Operations	

	1/20/2003
Ronald R. Gastelum	Date
Chief Executive Officer	

Attachment 1 – Proposed Operations Plan

Attachment 2 – Preliminary Metropolitan Fluoride Program Cost Estimates

Attachment 3 – Preliminary Timeline for Adding Fluoridation Facilities at Metropolitan's Treatment Plants

Proposed Operations Plan

If Metropolitan fluoridates its supplies, then the following operational activities would need to take place at each of its five treatment plants:

1. Design and construct 14-day chemical storage, containment and feed systems.

Chemical supply contracts would be secured to assure long-term, uninterrupted supplies of fluoride necessary to provide reliability.

2. Identify fluorosilicic acid (20 – 35 percent aqueous solution) as the chemical necessary to provide fluoride treatment.

Offers Metropolitan the safest, most reliable method of fluoridating its supplies.

3. Optimize fluoride levels throughout Metropolitan's distribution system by adding fluorosilicic acid to achieve the target dosages of 0.7 – 0.8 mg/L, as established by CDHS Title 22, based on air temperature.

Because fluoride is a conservative element, fluoride levels at treatment plant effluents will remain constant throughout Metropolitan's entire distribution system. For example, the Mills treatment plant in Riverside is the only plant serving exclusively inland areas; therefore, based on the average of the annual maximum daily air temperature, the optimal treated water fluoride level for the Mills treatment plant is 0.8 mg/L. The fluoride levels for agencies receiving Metropolitan supplies will be calculated by mass balance and monitored by on-line fluoride analyzers. Agencies receiving treated Metropolitan water will not be required by regulation to add any additional fluoride. Agencies receiving 100 percent Metropolitan supplies will have optimized water (fluoride concentrations of 0.7 – 0.8 mg/L), while agencies blending with other sources could have less than optimum fluoride levels based on fluoride levels in local supplies. Fluoride concentrations at less than optimal levels still provide an incremental benefit in reducing dental caries.

4. Institute on-line fluoride monitoring at treatment plant effluent (reservoir inlet and outlet) and record data once every 2 hours for plant status and compliance reporting.

Ensures that the target range of 0.7 – 0.8 mg/L will be reliably delivered to Metropolitan's member agencies.

5. Train Metropolitan treatment plant operators and staff in the safe handling, storage and containment of fluorosilicic acid.

Ensures compliance with Workplace Health and Safety requirements for the safe handling and use of fluoride chemicals.

6. Notify Metropolitan member agencies of fluoridation plans and schedule.

Early notification of Metropolitan member agencies will provide ample time to provide their customers and other members of the public with any information needed prior to receiving fluoridated supplies.

7. Apply for an amended permit from the CDHS to add fluoride to Metropolitan's treated water supply.

Ensures continued 100 percent compliance with state and local drinking water regulations.

Preliminary Metropolitan Fluoride Program Cost Estimates ¹

Cost Item	Diemer	Jensen	Mills	Skinner	Weymouth	TOTAL
Total Capital Cost ²	708,400	828,000	481,850	725,650	708,400	3,452,300
Planning and Design, 20%	141,450	165,600	96,600	144,900	141,450	690,000
Contract Administration, 10%	71,300	82,000	48,300	72,450	70,150	344,200
Contingencies, 15%	105,800	124,000	72,450	109,250	105,800	517,300
Total Program Cost	1,026,950	1,199,600	699,200	1,052,250	1,025,800	5,003,800
Annual Program Cost:						
\$/yr	69,900.00	81,700.00	47,600.00	71,600.00	69,800.00	340,600.00
\$/acre-foot	0.22	0.28	0.54	0.28	0.26	0.28
Annual Chemical Cost, \$/yr	411,400.00	383,800.00	132,300.00	335,800.00	351,800.00	1,615,100.00
Annual O&M Labor Cost, \$/yr	40,000.00	40,000.00	40,000.00	40,000.00	40,000.00	200,000.00
Total Annual Cost:						
\$/yr	521,300.22	505,500.00	219,900.00	447,400.00	461,600.00	2,155,700.00
\$/acre-foot	1.64	1.71	2.51	1.73	1.70	1.75

¹ Revised From May 2, 1996 Memo, to include Annual O&M Labor Cost

²Capital cost escalated from April 1996 to December 2002 using Engineering News - Record construction cost indices.

**Preliminary Timeline for Adding Fluoridation Facilities at
Metropolitan's Treatment Plants**

Preliminary Design/Planning	9 months ¹
Update Cost Estimates/Criteria	
Revisit Site Plans	
Create Project Descriptions	
Prepare Preliminary Designs	
Prepare CEQA Documents	
Perform Corrosion Studies	
Certify CEQA Documents ² /Request Final Design Authorization	1 month
Perform Final Design	6 months ¹
Advertisement and Bid	3 months
Award Construction Contract(s)	1 month
Construction	9 months
Start-up & As-Builts	1 month
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Total Estimated Duration	30 months

¹ Estimate assumes staffing is available. Consultants may be used.

² CEQA Information

- Diemer Treatment Plant EIR currently includes fluoridation facilities (Certified February 2001).
- The Skinner and Weymouth Treatment Plants' EIRs are scheduled to be recommended to the Board for certification in June 2003 and October 2004 respectively and will include fluoridation facilities additions.