

## TECHNICAL MEMORANDUM

**DATE:** September 29, 2022  
**TO:** City of Spokane  
**FROM:** Parametrix and Murraysmith  
**SUBJECT:** Task 4 – Fluoride Regulatory and Planning Review  
**CC:**  
**PROJECT NUMBER:** 376-4109-001

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### INTRODUCTION

The Preliminary Engineering Study for Fluoridation (Study) is to provide a comprehensive understanding of the ramifications of implementing fluoridation of the City of Spokane’s water system. Task 4 – Fluoride Regulatory and Planning Review of the Study is to identify and review code and industry recommendations for fluoride feed and monitoring systems and identify any conflicts with existing City planning documents and water agreements. A review of local, state, and national regulatory requirements, City planning documents, and applicable City water service agreements as they pertain to fluoridation system implementation and design. The City must thoroughly analyze the implications of fluoridation implementation, including the effects of fluoride chemical feed systems on existing facilities, continuous operations and maintenance, and safety.

### BACKGROUND

The City of Spokane operates the third largest water system in the state of Washington. The Water Department’s priority is continuing to deliver safe, high-quality drinking water to its residents with efficient operations, while keeping rates affordable for our community. To inform future decisions, the City is completing a feasibility study to better understand the costs and implementation steps associated with providing fluoridated water to the community. The study will take about a year and a half to complete and is fully paid for with grant funds. City of Spokane’s elected leaders are committed to a full and transparent public process throughout, including a public engagement period once the study is complete.

The City is committed to thoughtful preparation, asset management, ongoing education regarding the purpose of this study, and implementation planning, as well as a complete understanding of the alternatives and implications for installing the fluoride chemical feed system that utilizes the best alternative. Murraysmith and Parametrix are performing this Study to meet the City’s goals and offer a comprehensive understanding of the ramifications of implementing one of the proposed fluoride system alternatives.

### TASK 4 – FLUORIDE REGULATORY AND PLANNING REVIEW

#### Subtask 4.1 – Regulatory Review

As a part of Subtask 4.1, Parametrix reviewed national, state, and local regulatory requirements as it relates to fluoridated water systems. The following is a list of documents reviewed:

## Washington State Department of Health Guidance

### Regulations

The State Board of Health (Board) updated and adopted [WAC 246-290-460](#), fluoridation of drinking water, on May 9, 2016. The major changes to the rule include the following:

- Purveyors will notify the Department of Health (DOH) before permanently discontinuing fluoridation.
- Optimization level is 0.7mg/L.
- New terminology:
  - Operating Tolerance – Daily sampling results must fall between 0.5 – 0.9 mg/L.
  - Off Measure – The drinking water certified laboratory results differ by more than 0.2 mg/L from the purveyor’s analytical results.
- Starting July 2016, purveyors must use the required department’s Monthly Operating Reports listed below.
- Starting in January 2017, water systems will be automatically enrolled in the fluoride optimization program (F-TOP).
- Starting January 2017, water system’s monthly fluoride performance will be tracked in the Center for Disease Control (CDC) Water Fluoridation Reporting System (WFRS) (Fluoride for Water Systems, 2022).

If the City decides to fluoridate the municipal water supply, these procedures will need to be taken into consideration.

### Required Reports and Forms

The DOH requires monthly operating reports (MOR) from water districts who fluoridate. If the City decides to fluoridate the water system, MORs will be required. These forms are generated in an unprotected Excel format and can be customized for use. Links to the forms are provided below.

- [Monthly Operations Report for Sodium Fluoride Saturators \(Excel\)](#)
- [Monthly Operations Report for Fluoride Acids \(Excel\)](#)
- [Fluoridation Monthly Operations Report Guidance \(PDF\)](#)

### Overfeed Guidelines

The DOH provides information on appropriate actions to take in the event of an overfeed of fluoride to the water system. If the City decides to fluoridate, the City will be required to ensure that proper remediation actions are taken if there is an overfeed of fluoride to the municipal water system. The recommended actions information is provided in the following link: <https://doh.wa.gov/sites/default/files/legacy/Documents/Pubs//331-609.pdf?uid=625ef4322a954>.

### Washington State Administrative Code (WAC)

Section 246-290-460 of the WAC outlines information regarding the fluoridation of drinking water and references other applicable WAC sections.

## WAC 246-290-460

### Final Significant Rule Analysis Full Report March 2016

This document provides requirements for Washington Administrative Code (WAC) 246-290-460, Fluoridation of Drinking Water, and sets the allowed fluoridation concentration range for water systems that add fluoride to its water for dental health benefits. To meet these obligations, both the Board and DOH rely on federal agencies that evaluate best available science to guide rulemaking and program administration. For standards regarding the safety of drinking water, the Board and DOH rely predominantly on the U.S. Environmental Protection Agency (EPA). For setting the optimal fluoride concentration, the DOH relies predominantly on guidance from U.S. Department of Health and Human Services (HHS) (Final Significant Rule Analysis, 2016). The following is a link to the referenced document. <https://doh.wa.gov/sites/default/files/legacy/Documents/4200/FINALFluorideSA.pdf>.

This section of the WAC sets the fluoridation concentration range for Group A public water systems that fluoridate. It also provides guidance for the requirements of fluoridation treatment facilities, including fluoridation start and discontinuation notice guidelines, optimal fluoride concentrations, monitoring, and recording. <https://apps.leg.wa.gov/wac/default.aspx?cite=246-290-460>.

If the City decides to fluoridate, it will be required to ensure that fluoride levels are set to DOH standards.

### **WAC 246-290-71002: Public Notice Content**

This section of the WAC provides requirements for the public notice of water sample results, violations, health risks, and steps taken to remedy the situation. The following is a link to this section: <https://app.leg.wa.gov/WAC/default.aspx?cite=246-290-71002>.

If the City decides to fluoridate, it will be required to provide this public notice.

### **WAC 246-290-71004: Public Notification Mandatory Language**

This section of the WAC provides requirements for public notice and specific health effects language and other standard language in the notification of the exceedance of the secondary maximum contaminant level (MCL) for fluoride and when issued a category red operating permit. The following is a link to this section: <https://apps.leg.wa.gov/WAC/default.aspx?cite=246-290-71004>.

If the City decides to fluoridate, it will be required to provide this language.

### **WAC 246-290-71005: Special Public Notification Requirements**

This section of the WAC provides requirements for notifying the water system users of the availability of the results of monitoring for unregulated contaminants no later than 12 months after the monitoring results are known. The following is a link to this section: <https://apps.leg.wa.gov/WAC/default.aspx?cite=246-290-71005>.

If the City decides to fluoridate, it will be required to provide this information to the public water users.

## WAC 246-290-135

This section of the WAC explains how to set up a source water protection program in conjunction with the requirement that all Group A water systems keep a sanitary control area (SCA) around all drinking water sources

to protect them from contamination. The following is a link to this section:

<https://apps.leg.wa.gov/WAC/default.aspx?cite=246-290-135>.

If the City decides to fluoridate, they will be required to meeting secondary containment requirements for storing fluoride chemicals within the defined SCA around all of their drinking water sources.

## Revised Code of Washington (RCW) Requirements

### ***RCW 57.08.012 Fluoridation of Water Authorized***

This section of the RCW states that a water district by a majority vote of its board of commissioners may fluoridate the water supply system of the water district. The commissioners may cause the proposition of fluoridation of the water supply to be submitted to the water district at any general election or special election to be called for the purpose of voting on the proposition. The proposition must be approved by a majority of the electors voting on the proposition to become effective. If the City decides to fluoridate, they will be required to submit this proposition along with resulting voting process. The following is a link to this section:

<https://app.leg.wa.gov/rcw/default.aspx?cite=57.08.012>

## International Fire Code (IFC) and Fire Department Requirements

The IFC does not specifically call out any of the fluoride additives commonly used in community water systems; although it does provide guidelines for the indoor storage of highly toxic and toxic materials, which will in the case of storing fluorosilicic acid, sodium fluorosilicate, or sodium fluoride.

The code outlines storage requirements depending on the chemical and gives guidelines on equipment testing requirements, displaying of safety data sheets, and hazard identification signage to name a few. If the City were to fluoridate and store fluorosilicic acid, sodium fluorosilicate, or sodium fluoride, the recommendation would be to work with the local fire department on recommended codes and procedures. This item may need further review.

The following is a link to this section of the code: [https://codes.iccsafe.org/content/IFC2021P1/chapter-50-hazardous-materials-general-provisions#IFC2021P1\\_Pt05\\_Ch50\\_Sec5003.1.1](https://codes.iccsafe.org/content/IFC2021P1/chapter-50-hazardous-materials-general-provisions#IFC2021P1_Pt05_Ch50_Sec5003.1.1)

## Consumer Confidence Report (CCR) Requirements

CCR documents provide a summary on the quality of the water provided to the community for the year. The federal EPA Safe Drinking Water Act (SDWA) requires that utilities issue an annual CCR to customers in addition to other notices that may also be required by law. This report details where the water comes from, what it contains (natural or additive), and the risks that water testing and water treatment are designed to prevent. If the City decides to fluoridate, it would be required to provide similar types of reports. As examples from communities that currently fluoridate their water, links to the Cities of Cheney and Pullman CCR documents are provided below:

### **City of Cheney, WA CCR (2021)**

[http://cheneyks.org/images/Consumer\\_Water\\_2021.pdf](http://cheneyks.org/images/Consumer_Water_2021.pdf)

### **City of Pullman, WA CCR (2021)**

[https://p1cdn4static.civiclive.com/UserFiles/Servers/Server\\_15252867/File/Departments/M-O/2021%20Consumer%20Confidence%20Water%20Report%20-%20Final.pdf](https://p1cdn4static.civiclive.com/UserFiles/Servers/Server_15252867/File/Departments/M-O/2021%20Consumer%20Confidence%20Water%20Report%20-%20Final.pdf)

## Subtask 4.2 – City Planning Documents Review

The team reviewed the following planning documents and municipal codes associated with past fluoridation resolutions to determine impacts to City planning associated with the fluoridation of the water system.

### City of Spokane Comprehensive Plan

The 2017 City of Spokane Comprehensive Plan includes land use, capital facilities planning, transportation, housing, rural, and other chapters that address the needs of Spokane County for the next 20 years and ensures compliance with the Growth Management Act (GMA). There was no mention of or information pertaining to fluoride included in the City of Spokane Comprehensive Plan.

### Spokane Municipal Code (SMC)

There was no mention of or information pertaining to fluoride included in the SMC. If the City decides to fluoridate, an ordinance adding a new section to SMC Chapter 13.04 directing the adjustment of the fluoride level in the Spokane water supply would need to be adopted.

### City Clerk

A search of the City Clerk's website revealed a City Council action memorandum dated August 31, 2004, for Council Action on August 23, 2004, which contains details on an ordinance that would be enacted if the proposition for fluoridation adjustment to the City's municipal water were to pass. The following is the text of the proposed ordinance:

#### **Council Action Memorandum, August 31, 2004**

INITIATIVE 2004-1, FILED BY FLUORIDATION WORKS, PERTAINING TO THE CITY OF SPOKANE PERIODICALLY ADJUSTING THE FLUORIDE CONTENT OF ITS WATER SUPPLY WITHIN THE RANGE PRESCRIBED BY THE WASHINGTON STATE ADMINISTRATIVE CODE, AS PROVIDED BY ORDINANCE C33477

During the Spokane City Council 3:30 p.m. Briefing Session held Monday, August 23, 2004, Deputy Mayor Jack Lynch advised that the City Clerk's Office received notification from the County that the fluoride initiative did not meet the 5 percent threshold for the number of valid signatures required for submission of this ballot item on the November 2005 ballot. Subsequently, the Council took the following actions: The City ordained that there be added to SMC Chapter 13.04 a new section, designated SMC 13.04.045 to read as follows:

#### **13.04.045 Fluoride Adjustment**

An ordinance directing the adjustment of the fluoride level in the Spokane water supply; adding a new section to SMC Chapter 13.04; and providing for the submittal of a proposition to the electors of Spokane.

The City of Spokane does ordain:

Section 1. That there be added to SMC Chapter 13.04 a new section, designated 13.04.045, to read as follows:

### 13.04.45 Fluoride Adjustment

A. The chief executive officer from time to time determines a specific level, in accordance with state standards, to assure the healthful dental effects of fluoride for persons consuming such water.

B. The city engineer takes whatever measures are necessary to adjust the fluoride level as determined under subsection A.

Section 2. The initial determination of a specific fluoride level shall be made by February 28, 2001. The program for adjusting fluoride content shall begin as soon as practical, no later than December 31, 2001.

Section 3. That this ordinance be submitted to the electors of the City of Spokane for their approval or rejection at a special municipal election to be held in conjunction with the state general election of November 7, 2000. If approved by the electors, this ordinance shall take effect and be in force upon issuance of the certificate of election by the Spokane County Auditor.

### Impacts to the Urban Growth Area (UGA)

The Spokane County Long Range Planning Program is responsible for preparing, maintaining, and updating the Spokane County Comprehensive Plan and the Urban Growth Area (UGA) boundary which guide the County's and UGA's future growth. The City would have to enlarge its service area to accommodate the additional acreage if the UGA were to increase its current boundary for future development. Infrastructure such as municipal water delivery would be provided by the City. If the City chose to fluoridate its water, the fluoridated water supply would have to be extended to the new boundary area. This would most certainly have an impact on capital improvement fund spending for extra infrastructure to ensure that fluoridated water is available throughout the expansion. Please refer to Figure 1 for a map, which outlines the UGA, current and future service areas.

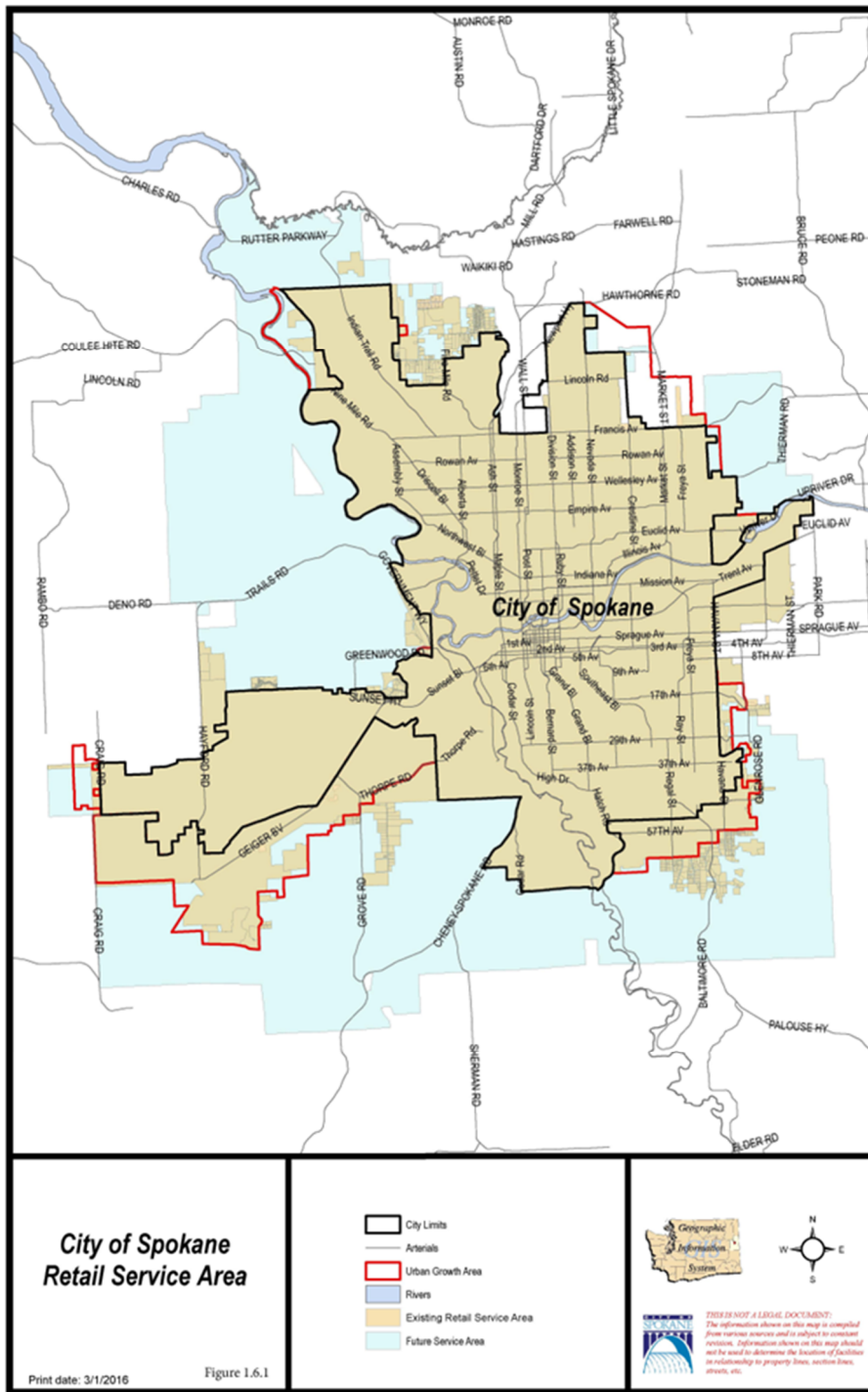


Figure 1. City of Spokane retail service area map

Source: (City of Spokane Water System Plan, 2016)

## Public Infrastructure, Environment, and Sustainability Committee

Parametrix reviewed past committee minutes for 2022 through April 26 of 2021, for the Public Infrastructure, Environment, and Sustainability Committee. There was mention of the UGA in the June 28, 2021, committee minutes. Below is the paragraph in which it is mentioned.

### “4. Retail water service area amendment

Eldon Brown, Principal Engineer, head of Developer Services and Elizabeth Schoedel, Assistant City Attorney presented the retail water service area amendment, which would allow city water service to parcels located outside the Urban Growth Area (UGA), outside the City’s Retail Water Service (RWS) Area, but inside the City’s Future Water Service Area. There are four criteria under consideration in evaluating these parcels for water service. These include: 1) is water available in a timely and reasonable manner; 2) are there sufficient water rights available; 3) is there sufficient capacity to serve; and 4) is it consistent with requirements of local plans and regulations. Eldon reviewed the applications and explained which of the appropriate criteria applied to each request. Locations where water service applications have been received include: 1) a facility in the Glenrose Prairie area that will provide public parks and recreation services; 2) various parcels zones for single-home dwellings on Five Mile Prairie; 3) a property which operates an existing farm; and 4) various parcels located in Spokane County. The resolution must come to a public hearing before it is presented to City Council for approval.”

(Public Infrastructure, Environment, and Sustainability, 2021).

The City evaluates all water service requests according to the Duty to Provide Water Service Policy and Chapter [246-290 WAC](#). The City of Spokane Water Department, as a municipal water supplier, has a duty to provide service to all new connections requested in its retail service area. Service within the retail service area will be provided when the service connection request meets all four elements stated in [RCW 43.20.260](#).

Upon review of this document and the WAC 246-290 and RCW 43.20.260, the City will need to provide water services to any extension to the UGA and within the City’s service area.

### Subtask 4.3 – Wholesale-Direct Services Agreements Review

The City of Spokane has intertie agreements with City of Airway Heights, Fairchild Air Force Base, City of Medical Lake, North Spokane Irrigation #8, Spokane County Water District #3, Vel View Water District #13, and Whitworth Water District #2. Parametrix reviewed the City’s intertie water service agreements. If the City decides to fluoridate the municipal water system, the current intertie agreements and water wholesale agreements will need to be amended to include fluoridation language. This item will need further review.

### List of Current Intertie Agreements

- City of Airway Heights
- Fairchild Air Force Base
- City of Medical Lake
- North Spokane Irrigation #8
- Spokane County Water District #3



- Vel View Water District #13
- Whitworth Water District #2

### List of Current Wholesale Agreements

- City of Airway Heights
- Whitworth Water District #2
- Spokane County Water District #3
- Fairchild Air Force Base
- Vel View Water District #13

Source: <https://static.spokanecity.org/documents/publicworks/water/spokane-water-system-plan-march-2016-exhibits-appendices.pdf>.

### Potential Impacts to Direct Service and Wholesale Water Agreements

If the City decides to fluoridate the municipal water system, the current direct service and wholesale agreements would need to be amended to include information pertaining to fluoride being added to the water supply. Further, confirmation with DOH has indicated that there is not a requirement for a wholesale customer that receives fluoridated water through an intertie to fluoridate their other sources, even if blending fluoridated with non-fluoridated. Thus, blending two sources, one that is fluoridated and one that is not fluoridated does not trigger a need for the wholesale customer to implement fluoridation in their own supply.

### Spokane Municipal Code and Ordinance Notification Requirements

If the City decides to fluoridate the municipal water supply, it will need the City Council to draft an ordinance to be added to the Spokane Municipal Code as a subsection under Chapter 13.04 outlining guidelines pertaining to fluoridation. The Spokane Municipal Code outlined under Section 01.01.070, Publication of Code, provides notification requirements for the adoption of codes:

#### **Title 01 General Provisions**

#### **Chapter 01.01 Adoption of Code**

#### **Section 01.01.070 Publication of Code**

The Spokane Municipal Code shall be published pursuant to the following schedule and standards:

- The Spokane Municipal Code shall be republished on a calendar quarterly basis at the end of each calendar quarter.
- Each republication of the code shall include publication on the City's website at the time of each republication.
- Publication on the City's website shall include a search engine at the site of each republished code that is for the context of the code.
- Copies of each republication of the code shall be made available for download on the City's website. The City will also provide a text-based format on CD to any database provider upon request, free of charge.

A link to the SMC is provided here: <https://my.spokanecity.org/smc/?Section=01.01.070>.

The RCW outlines the below notification requirements for the adoption of codes:

### RCW 35.21.180

#### Ordinances—Adoption of codes by reference.

Ordinances passed by cities or towns must be posted or published in a newspaper as required by their respective charters or the general laws: PROVIDED, That ordinances may by reference adopt Washington state statutes and codes, including fire codes and ordinances relating to the construction of buildings, the installation of plumbing, the installation of electric wiring, health and sanitation, the slaughtering, processing and selling of meats and meat products for human consumption, the production, pasteurizing and sale of milk and milk products, or other subjects, may adopt by reference, any printed code or compilation, or portions thereof, together with amendments thereof or additions thereto, on the subject of the ordinance; and where publications of ordinances in a newspaper is required, such Washington state statutes or codes or other codes or compilations so adopted need not be published therein: PROVIDED, HOWEVER, That not less than one copy of such statute, code or compilation and amendments and additions thereto adopted by reference shall be filed for use and examination by the public, in the office of the city or town clerk of said city, or town prior to adoption thereof. Any city or town ordinance heretofore adopting any state law or any such codes or compilations by reference are hereby ratified and validated.

A link to the RCW is provided here: <https://app.leg.wa.gov/RCW/default.aspx?cite=35.21.180>.

## REFERENCES

- (2016). *City of Spokane Water System Plan*. Retrieved from <https://static.spokanecity.org/documents/publicworks/water/spokane-water-system-plan-march-2016.pdf>
- Final Significant Rule Analysis*. (2016, March). Retrieved from Washington State Department of Health: <https://doh.wa.gov/sites/default/files/legacy/Documents/4200/FINALFluorideSA.pdf>
- Floride for Water Systems*. (2022). Retrieved May 2022, from Washington State Department of Health: <https://doh.wa.gov/community-and-environment/drinking-water/fluoride-drinking-water/fluoride-water-systems>
- Public Infrastructure, Environment, and Sustainability. (2021, May 24). *Standing Committee Minutes*. Spokane, WA. Retrieved from <https://static.spokanecity.org/documents/bcc/committees/public-infrastructure-environment-sustainability/minutes/2021/05/pies-minutes-2021-05-24.pdf>