

## Moore-Love, Karla

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**From:** Dee White <deewhite1@mindspring.com>  
**Sent:** Monday, March 06, 2017 1:14 PM  
**To:** Moore-Love, Karla  
**Subject:** Agenda item 215/235 for March 8 PWB contract with Confluence  
**Attachments:** 20170125 OHA to PWB accepting interim plan and use existing infrastructure.pdf; EPA says Portland may need short-term fix for lead in water \_ OregonLive.pdf; EPA to Portland\_ current lead levels in drinking water 'aren't good enough' \_ OregonLive.pdf; 00657 Contact Report\_Assistance Action \_ Data Online \_ Oregon Drinking Water Services.pdf; EPA ltr to Leland\_OHA re PWB OCCT.2016\_09\_09.pdf; PWB Treatment Schedule final revised letter from OHA Nov. 4 2016.pdf; Portland must reduce lead in water now, state says \_ OregonLive.pdf; Portland Water Bureau changes approach to treating lead in water \_ OregonLive.pdf; Portland gets call from EPA to review lead-prevention efforts \_ OregonLive.pdf; Lead Levels in Water Misrepresented Across U.S. (washingtonpost.pdf

Karla,

Please include these documents in the record for this agenda item. Please also send me a receipt that you have received. THANKS so much.

Dee White



PUBLIC HEALTH DIVISION  
Center for Health Protection, Drinking Water Services

Kate Brown, Governor



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January 24, 2017

Mike Stuhr, PE, Administrator  
Portland Water Bureau  
1120 SW 5<sup>th</sup> Street, Rm 600  
Portland, OR 97204-1926

Dear Mr. Stuhr:

The Oregon Health Authority (OHA) has received your Interim Lead Reduction Plan dated December 2, 2016. You provided this plan in response to our requirement for immediate interim measures in our November 4, 2016 letter approving your schedule to improve corrosion control to reduce lead at Portland Water Bureau customer taps. We have since reviewed your plan with careful consideration, assuring that the strongest public health protections are in place by reducing lead levels at the tap in both the short- and long-term.

**OHA approves the action items proposed in your interim plan.** These interim measures reflect best management practices to reduce lead at taps with the infrastructure currently available. Specifically, we approve raising the pH at the entry point to the distribution system from the current target of 8.0, to 8.2, as recommended by the Environmental Protection Agency. We understand the Portland Water Bureau will raise the pH to 8.1 within two weeks, and up to 8.2 after the spring 2017 lead and copper tap sample results are analyzed. OHA will establish minimum regulatory pH values based on lead levels found in the spring 2017 sampling. Future adjustments to the regulatory minimum may be necessary.

Your interim plan also included a schedule update because the Portland Water Bureau announced that it intends to begin the Corrosion Control Study earlier than originally anticipated. Other schedule modifications may be appropriate. OHA will address official schedule modifications in a subsequent letter.

We look forward to receiving quarterly status reports and updates to the lead hazard reduction plan in addition to these interim action items. Thank you for your cooperation in this important public health matter.

Sincerely,

Jere High, ND, Administrator  
Center for Health Protection  
OHA Public Health Division

cc: Marie Jennings, Region 10 Environmental Protection Agency  
Dan Opalski, Region 10 Environmental Protection Agency

# EPA says Portland may need short-term fix for lead in water



By **Brad Schmidt** | The Oregonian/OregonLive

[Email the author](#) | [Follow on Twitter](#)

on September 12, 2016 at 2:44 PM, updated September 12, 2016 at 5:23 PM

Federal regulators are turning up the heat on Portland's lingering lead problem and now say the Rose City may need to take interim steps to reduce exposure at the tap.

The Environmental Protection Agency, **in a letter dated Friday**, said it will review Portland's efforts to limit pipe corrosion to **"ascertain whether more immediate action is warranted to protect public health."**

The declaration comes as city officials study corrosion problems that cause lead release and consider water treatment options that may not be instituted until 2022 -- if at all.

Portland Commissioner Nick Fish, who oversees city water operations, downplayed the letter Monday and said it was "entirely consistent with the conversations we've been having with regulators."

"We're all committed to considering ways to improve corrosion control," he said.

Portland caught the attention of federal regulators this spring because its high-risk homes have the **highest reported lead levels of any large water provider nationwide**. Concerns have only escalated as testing across Portland Public Schools found **high lead levels in virtually every building**.

The Portland Water Bureau could add more chemicals to reduce the corrosivity of its water, which in turn would reduce leaching from lead solder in pipes and lead from brass faucets. But the state of Oregon, which has regulatory authority over Portland, approved a plan in 1997 that didn't fully treat the water to minimize lead levels.

Instead, state officials endorsed Portland's plan to partially treat water in conjunction with public education and outreach, free water testing and home lead-paint abatements.

Now nearly two decades later, Portland is an outlier, and pressure is growing after the lead crisis in Flint, Michigan.

Local testing of high-risk homes, built between 1983 and 1985, regularly produces results just below the federal action level. But homes built between 1970 and 1985 are considered to be most at-risk from in-home plumbing with lead solder. An estimated 43,000 homes of that era received water from Portland, according to a tally this spring by The Oregonian/OregonLive.

City officials have yet to say if they'll add more chemicals to reduce corrosion and lead release, citing results from an in-progress study, but Fish has acknowledged **Portland could do more**. The City Council is expected to review results and vote next summer

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on potentially building a new treatment facility that would be expected to lower lead levels.

City officials have said it could take five years for the facility to become operational. EPA now says it wants the Oregon Health Authority to **"establish a schedule that is as aggressive as technically achievable."**

And even then, more action might be needed more quickly, according to the EPA.

"EPA will be requesting specific information from OHA and others to assess the current level of protection of public health, including any **interim measures and/or modifications to current corrosion control treatment or operations that could result in some reduction of lead levels**, while treatment modification efforts are underway," the agency wrote.

EPA also wrote that lead results, particularly in schools, underscore the need for a quick re-evaluation of Portland's approved treatment program, a decision by the state about "more protective" treatment and swift implementation by Portland.

And EPA, which for years has voiced concern about Portland's treatment program, reminded local officials it could step in "to take independent action" if necessary.

Fish said the letter amounted to a "non event."

EPA highlighted authority it already has while expressing a sense of urgency the Water Bureau shares, Fish said. Once final results of Portland's corrosion study are available next year, officials will decide what's next.

"We'll evaluate it and decide if there's any immediate action that's required," he said. "To me that's restating the obvious."

-- Brad Schmidt

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# EPA to Portland: current lead levels in drinking water 'aren't good enough'



By **Brad Schmidt** | [The Oregonian/OregonLive](#)

[Email the author](#) | [Follow on Twitter](#)

on July 16, 2016 at 5:01 AM, updated July 16, 2016 at 4:44 PM

Federal officials delivered an unmistakable message this spring to the city of Portland: lead levels detected in drinking water were too high.

That edict, conveyed during a closed-door meeting with the Environmental Protection Agency, cut through the otherwise mind-numbing bureaucratese accompanying Portland's growing lead saga.

"EPA was very clear that current lead levels at the tap aren't good enough," state regulators **summarized in notes from an April 21 meeting**, obtained by The Oregonian/OregonLive through a public records request. A spokesman for the Oregon Health Authority verified the accuracy of the summary.

Now, officials for the Portland Water Bureau find themselves under the gun to produce a schedule by August outlining how the city can lower detected lead levels, although actual changes could still be years away.

The EPA's declaration - made more than a month before **the Portland Public Schools lead scare** - followed a report in The Oregonian/OregonLive showing that **Portland had the highest reported lead levels of any large water provider nationwide**.

In the fallout over the Flint, Michigan, water crisis, federal officials have been **meeting with water providers across America** to review local lead concentrations. It's been clear for months that officials want to see more action from Portland, which **consistently hovers just below the federal action level for lead**.

But EPA officials have largely couched their public concerns in niceties, telling The Oregonian/OregonLive in April that they expected Portland to "maximize health protection" by reducing lead levels "as low as feasible." Later, in a letter to the state, federal officials wrote they "remain interested" in what more Portland can do to minimize lead.

In private, however, the message was blunter, records show. An EPA spokeswoman declined to comment.

On Friday, Portland Commissioner Nick Fish, who oversees the Portland Water Bureau, said the city is "completely aligned" with the federal goal to improve water quality.

"We think we can do better," Fish said of lead levels, adding that he also believes jurisdictions across America can make improvements.

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Portland is an outlier nationally because the state in 1997 approved a **unique plan allowing the city to minimally treat its water with chemicals**. Lead is hardly detectable in Portland's water supply and the city doesn't have lead service lines. But water from the Bull Run is corrosive and **prone to leaching lead from lead solder** found in some plumbing.

Since 2006, Portland has twice **exceeded federal standards**, with more than 10 percent of sampled high-risk homes exceeding 15 parts per billion. The most recent **high reading was in fall 2013**. Since then, levels have **ducked just below**.

"Specific to lead, we are committed to improving water quality," Fish said. "And we are working with our regulators to consider what the various options are, based on good science."

But Fish cautioned Portland may not simply add more chemicals to the water to reduce corrosion. Officials could explore options for "more robust outreach and education," more water testing or potentially some sort of program that helps homeowners replace lead-tainted plumbing.

## "We think we can do better" -- Portland Commissioner Nick Fish on lead levels in drinking water.

"Until we've completed our assessment, we don't know what's the best option," Fish said.

In August, city officials will meet with state and federal regulators to review preliminary results from a study looking at pipe corrosion within Portland's water system. The meeting has yet to be scheduled.

Although city officials haven't committed to making any changes to their treatment process, they have agreed to present a "detailed proposed schedule for selection, design, construction, and implementation" of treatment techniques to lower lead levels, **state records show**.

Construction costs could hit **\$15 million for a treatment facility**, according to city estimates. A timeline presented in April showed Portland projected spending three years studying treatment options, three years designing a facility and two years building it - for a **total of eight years**.

But federal officials told Portland they expect the schedule to be "aggressively timed," according to the state summary of that meeting.

"What EPA has told me directly they're looking for is some certainty in terms of when this process begins and when the decisions are made," Fish said. "A schedule allows them to monitor each of those things."

As it stands, Portland's corrosion study won't be fully complete until next summer. At that time, the Water Bureau plans to make a recommendation to the City Council about adding chemicals or seeking alternatives to reduce lead exposure.

In the meantime, city officials are reluctant to shoulder any blame for **high lead levels detected at many Portland Public Schools** and in **some city park facilities**. They say their decision to minimally treat water has **already reduced lead levels by about two thirds since the 1990s**.

"No amount of treatment can completely eliminate the presence of lead in water in homes, schools or buildings as evidenced by detections of elevated lead in water in schools across the country," Michael Stuhr, the Water Bureau director, said in a written response to questions.

"Only appropriate remediation," Stuhr added, "will solve the issue of lead in schools, homes and buildings."

-- Brad Schmidt

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<b>Water System</b>	PORTLAND WATER BUREAU	<b>PWS ID</b>	<u>00657</u>
		<b>County</b>	Multnomah
<b>Contact and Phone</b>	Mike Stuhr, Marie Jennings, et al		
<b>Date</b>	04/21/2016		
<b>Who Responded</b>	Salis, Kari		
<b>Staff</b>	Dwp		
<b>Contact Location</b>	Office		
<b>Summary</b>	meeting with EPA and PWB re: OCCT		
<b>Action Type</b>	REGULATORY ASSISTANCE		
<b>Reason/Rule 1</b>	Lead/Copper		
<b>Reason/Rule 2</b>	N/A		

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**Details**

We (Kari Salis, Dave Leland) had a meeting with EPA (Dan Opalski, Marie Jennings, Harold Rogers) and PWB (Mike Stuhr, Chris Wanner, Yone Akagi, Dave Peters, Kim Gupta, Scott Bradway) as proposed by PWB in their 3/21/16 letter to Dave Leland. The Water Bureau presented on the whole history and current state of the overall Lead Hazard Reduction Program, including corrosion control treatment of the water supply. Highlights of presentation and discussions: 1. Portland started work on a consultant-lead internal corrosion study in May 2014, which includes a detailed one-year field study during 2016 of characteristics of internal corrosion of Portland water on various plumbing materials under controlled conditions in the distribution system. 2. PWB/EPA/OHA to meet again in August (date TBD), where PWB will present the initial results of the corrosion field work, and present to EPA/OHA a detailed proposed schedule for selection, design, construction, and implementation of optimized corrosion control treatment of the drinking water supply as per EPA regulations. 3. Portland is currently updating their public communication on lead in drinking water, including increased outreach to specific vulnerable populations. 4. EPA was very clear that current lead levels at the tap aren't good enough, and they expect Portland's schedule for implementing optimized corrosion control to be aggressively timed, with option for renegotiating if external barriers emerge, such as land use approvals, etc. 5. PWBs intent is to maintain commitment to its Lead Hazard Reduction Program efforts, even with further treatment of the water supply.

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**Action Needed**

further discussions as needed, meet in summer 2016.

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION 10**  
1200 Sixth Avenue, Suite 900  
Seattle, WA 98101-3140

OFFICE OF  
WATER AND  
WATERSHEDS

September 9, 2016

David Leland, Program Manager  
Drinking Water Program  
Oregon Health Authority  
800 NE Oregon Street, Suite 930  
Portland, OR 97232

Dear Mr. Leland:

I am writing to follow up on the August 22, 2016, meeting between the Oregon Health Authority (OHA), the Portland Water Bureau (PWB) and the United States Environmental Protection Agency (EPA) during which PWB presented updates on their ongoing corrosion control study and other activities related to lead in drinking water. EPA appreciates the information provided by PWB and the opportunity to discuss and consider the work that is underway. The purpose of this letter is to provide clarity on EPA's expectations with respect to the protection of public health and next steps in the re-evaluation and implementation of optimized corrosion control treatment (OCCT).

At our meeting, PWB presented a summary of the lead results from water testing analysis done by them from some of the Portland Public Schools and City of Portland facilities. While they seem to indicate the presence of lead in fixtures, particularly in schools, these results underscore the need for the expeditious re-evaluation of PWB's currently approved corrosion control treatment, determination by OHA of more protective corrosion control treatment and implementation of this treatment by PWB. PWB also presented an update on its ongoing corrosion study, as well as an update on its thinking in terms of the schedule for completing the study and implementing revised corrosion control treatment. The definition of "optimal corrosion control treatment" in 141.2 is "corrosion control treatment that minimizes levels of lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any national primary drinking water regulations." Accordingly, we expect OHA to ensure that PWB's study continue to include evaluation of potential unintended water quality and public health consequences of operational changes to the system. At the same time, EPA expects OHA to work with PWB to complete its ongoing study as expeditiously as possible.

EPA expects that with the benefit of PWB's current corrosion control study, OHA will, consistent with 40 CFR 141.82(h) and OAR 333-061-0034(4)(b)(F), modify the State's determination of the optimized corrosion control treatment and modify the applicable water quality parameters to reflect the new OCCT determination. The revised OCCT determination must be made in writing and set forth (1) the new corrosion control treatment requirements for PWB, (2) the basis for these requirements, and (3) an enforceable implementation schedule for completing the treatment modifications. EPA expects OHA to establish a schedule that is as aggressive as technically achievable, including the time OHA allows for its own decision making. EPA recommends that OHA look to the regulations for guidance in setting timelines, recognizing that even shorter intervals than those found in the regulations may be achievable.

Notwithstanding OHA's efforts to modify its treatment decision under 141.82(h), EPA needs to ascertain whether more immediate action is warranted to protect public health during this process, especially with regard to vulnerable populations such as pregnant women and children under the age of

six. To this end, EPA will be requesting specific information from OHA and others to assess the current level of protection of public health, including any interim measures and/or modifications to current corrosion control treatment or operations that could result in some reduction of lead levels, while the treatment modification efforts are underway. EPA reserves its authority to take independent action to issue a federal treatment determination under 40 C.F.R. 141.82(i) and/or take any necessary action under 1431 of the Safe Drinking Water Act.

EPA appreciates OHA's and PWB's continued commitment to provide safe drinking water to PWB's customers. If you have any questions or would like to discuss the issues outlined above, please don't hesitate to call me at (206) 553-1893.

Sincerely

A handwritten signature in black ink, appearing to read "Marie Jennings", written in a cursive style.

Marie Jennings, Manager  
Drinking Water Unit

Cc: Michael Stur, P.E.  
Administrator, Portland Water Bureau

OREGON STATE PUBLIC HEALTH DIVISION  
Office of the State Public Health Director

Kate Brown, Governor



800 NE Oregon Street, Suite 930  
Portland, OR 97232  
Phone: 971-673-1229  
Fax: 971-673-1299

November 4, 2016

Mr. Michael Stuhr,  
P.E. Administrator  
Portland Water Bureau  
1120 S.W. 5th Ave., Room 600  
Portland OR 97214-1926

Dear Mr. Stuhr:

Thank you for your September 8 proposed schedule to enhance corrosion control treatment and further reduce lead levels at the tap. We have carefully considered your proposal, conferred with experts at EPA, and appreciate your clarifying of issues and questions during our evaluation process. We appreciate the steps the Bureau has taken to improve corrosion treatment. Portland needs to take additional immediate steps to reduce levels of lead in drinking water. Given the known elevated lead levels at some taps in the Portland water service area, we direct the Bureau to take the following interim actions take to further protect public health as it implements the corrosion control treatment improvement schedules committed to and described in this communication:

1. **Increase corrosion treatment using current facilities:** We expect the Bureau to move quickly to further reduce lead levels at the tap as much as possible using the existing treatment and water system facilities. While we agree that Portland must upgrade its water treatment facilities and infrastructure to achieve significant reductions in lead levels, there are short-term steps Portland must take within its current system to treat water and reduce lead. We expect the Bureau to submit a plan to OHA for interim lead reduction by December 2, 2016. This interim plan should include immediate steps and intermediate steps to reduce lead in drinking water. We then expect the Bureau to fully implement an OHA-approved plan as quickly as possible and report on deadlines.
2. **Implement changes in Lead Hazard Reduction Program to protect vulnerable populations:** We expect the Bureau to aggressively conduct, assess, and improve the components of the Lead Hazard Reduction Program: 1) water treatment, 2) free lead in water education and testing, 3) public outreach and education, and 4) lead hazard reduction. The bureau must focus its efforts on vulnerable populations such as pregnant women and children under the age of six. We also expect the Bureau to aggressively and fully implement any recommendations identified by OHA Program Design and Evaluation Services in its evaluation of program elements by December 31, 2017. The Bureau must increase reporting to OHA on status, changes and improvements in the Lead Hazard Reduction Program to quarterly from semi-annually.

We recognize the efforts the Bureau is making to evaluate the impact of corrosion treatment and plan for the construction of a new water treatment facility, which is necessary to make significant and systematic reductions of lead in Portland's drinking water. The Bureau took the first step in this process in spring 2014, when it initiated the water quality corrosion study which is currently underway, and which you have been updating OHA and EPA on its progress. OHA looks forward to reviewing this study when it is completed, no later than July 1, 2017.

We concur with the Bureau's corrosion control treatment improvement schedule as proposed. The action steps of the schedule are listed below with completion dates.

Action Step	Completion Date
Complete Water Quality Corrosion Study	June 1, 2017
Review study data and agree with OHA on treatment options; submit recommendation to City Council for consideration	June 30, 2017
Submit Water Quality Corrosion Study final report to OHA	July 01, 2017
Submit Corrosion Control Treatment Pilot Study Plan to OHA	September 30, 2017
Submit Corrosion Control Treatment Pilot Study results and treatment	December 31, 2018
Begin Improved Corrosion Control Treatment Facility Design	January 01, 2019
Submit Improved Corrosion Control Treatment Plans and Specifications to OHA	September 30, 2020
Begin Corrosion Control Treatment Facility Construction	January 01, 2021
Complete Improved Corrosion Control Treatment Facility	September 30, 2022
Complete demonstration tap monitoring round	November 30, 2022
Comply with Minimum Water Quality Parameters	March 01, 2023

OHA considers the above a compliance schedule. Steps, due dates, and completion dates will be posted and tracked on the Drinking Water Services website. Any modification requires OHA approval in advance, should unforeseen technical or permitting delays occur.

If you have questions, please contact me.

Sincerely,



Lillian Shirley, BSN, MPH, MPA  
Public Health Director  
Oregon State Public Health Division

Cc: Lynne Saxton, Director, Oregon Health Authority  
Jere High, Administrator, Center for Prevention and Health Promotion



# Portland must reduce lead in water now, state says



By **Brad Schmidt | The Oregonian/OregonLive**  
[Email the author](#) | [Follow on Twitter](#)

on November 09, 2016 at 2:09 PM, updated November 09, 2016 at 4:28 PM

Portland has been ordered to immediately reduce lead levels in drinking water, city and state officials announced Wednesday, a decision that comes in the face of growing federal pressure and test results reaffirming **Portland's place as the nation's worst big-city offender**.

New testing found too much lead in drinking water at high-risk homes this fall, the second time in three years that Portland has exceeded federal standards.

Portland's lead levels are higher than others nationally because state and federal regulators allowed Portland to sidestep regulations in 1997 meant to minimize lead and pipe corrosion.

But now, in the wake of scrutiny from the Environmental Protection Agency and an **investigation by The Oregonian/OregonLive**, state regulators say Portland must move immediately to reduce lead exposure in drinking water serving about 1 million Oregonians.

To further protect public health, "Portland needs to take additional immediate steps to reduce levels of lead in drinking water," Lillian Shirley, Oregon's public health director, **told Portland in a letter delivered last week**.

Portland has until Dec. 2 to submit a plan that will reduce lead levels. State regulators didn't prescribe how Portland must achieve reductions or set benchmarks for determining success.

City officials declined to immediately say how they can accomplish reductions, although past studies have suggested Portland could increase pH levels and alkalinity. Those chemical changes should reduce pipe corrosion that causes lead release, particularly in homes with lead-soldered plumbing or brass faucets.

"It's a pretty short deadline, but I think we will be able to be much more thoughtful" in coming weeks, said Yone Akagi, Portland's water quality compliance manager.

Although the state didn't set a deadline for improvements, Akagi said she expects Portland must make changes within months.

At the same time, state regulators gave Portland until 2022 to build a new water treatment plant to permanently reduce lead levels. The Portland City Council hasn't agreed to move forward, with a vote set next summer, but the state's declaration has seemingly forced their hand.

"Right now, our indications are this is probably the best path," said Scott Bradway, Portland's lead hazard reduction manager. "We're still going to go forward to City Council to get their approval."

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**Portland's outlier status came into sharp focus this spring** during the fallout over the lead crisis in Flint, Michigan, where children were poisoned from drinking water. Corrosive water leached toxins from lead service lines.

Portland doesn't have lead service lines and its Bull Run water supply is considered lead free. But Portland's water is corrosive and prone to leaching lead from plumbing. Local problems snowballed over the summer as virtually every Portland Public School facility tested high for lead, prompting the superintendent to resign.

Portland could have done more to reduce pipe corrosion and minimize lead levels, as required under federal law. But **state and federal regulators essentially gave Portland a free pass.**

In 1997, city officials argued that exposure to lead paint was a bigger problem. They convinced state regulators to approve a one-of-a-kind program to reduce -- but not minimize -- lead in water through light chemical treatment. In turn, city officials also agreed to tackle lead paint problems in older homes, provide free water testing and educate residents about lead hazards.

Federal officials strongly questioned Portland's program but nonetheless stood by as Oregon approved it.

In the following two decades, state regulators **never set clear standards to evaluate Portland's program and did not independently analyze results.** The Oregonian/OregonLive's investigation found a variety of problems, including **missed targets for paint reductions** and **residents who unknowingly lived in homes with lead problems.**

City and state officials defended the program and argued it had been a success.

But now, the Oregon Health Authority has ordered Portland to conduct, assess and improve the program -- although it's not clear what that will entail beyond an already-planned review. Additionally, Portland must provide quarterly instead of twice-yearly status reports.

The state's sudden push for action follows prodding from the EPA. In September, federal officials declared that Portland may need to take **"interim measures" to reduce lead levels.** And if the feds weren't satisfied with Oregon's response, they warned they might step in.

At the time, Portland Commissioner Nick Fish, who oversees the Water Bureau, attempted to downplay the situation. He **called it a "non event."**

On Wednesday, Fish said he's not surprised by the state's demand. He stressed that the Water Bureau would provide treatment options but he wouldn't "prejudge" if changes will be implemented.

"We are directed in the next month to come back with some recommendations," he said. Ultimately the state "is going to tell us if any of them are acceptable, and we'll have that conversation."

Even so, Fish insisted the city recognizes the urgency of the situation. Any action needs to be balanced against the potential for unintended consequences to water quality, he cautioned.

"The fact that we want to do this in a thoughtful and deliberative way should not obscure the fact that we are deeply committed to public health and safety," Fish said. "They are not mutually exclusive."

New testing of 112 high-risk homes all but forced the state's hand.

Twice-yearly testing of homes built between 1983 and 1985 found Portland's highest lead levels in a decade. Officials test water from homes in Portland and suburban communities that receive Portland's water.

Ten percent of tested homes had lead levels at or above 17 parts per billion, exceeding the federal standard of 15 parts per billion.

The highest lead test, at a home in Gresham's Rockwood area, had 88 parts per billion.

State regulators knew about those test results before issuing the new declaration to make improvements.

The Oregon Health Authority didn't respond to written questions and declined interview requests. In a statement Wednesday, the agency said it appreciates Portland's prompt action and "looks forward to continued improvement of Portland's drinking water."

-- Brad Schmidt

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# Portland Water Bureau changes approach to treating lead in water



By [Jessica Floum](#) | [The Oregonian/OregonLive](#)  
[Email the author](#) | [Follow on Twitter](#)

on February 26, 2017 at 7:00 AM, updated February 27, 2017 at 11:37 AM

The Portland Water Bureau will ask the City Council to try treating the area's drinking water to reduce the amount of lead leaching from pipes, a recommendation that pivots from the city's previous insistence such treatment was unnecessary.

Portland's water from the Bull Run watershed has a low enough pH level that it can leach lead from old pipes and fixtures. Adding chemicals that don't harm human health can make the water less corrosive.

But Portland water officials long had insisted that it was smarter and better for human health to put resources to reducing lead paint hazards rather than to reducing risks of lead in drinking water.

The city's about-face comes after the **Environmental Protection Agency** instructed Portland to review its lead-prevention efforts, the state **ordered** the city to come up with a plan to immediately reduce lead levels in drinking water and [an Oregonian/OregonLive investigation found](#) that regulators turned a blind eye to Portland's lead problems.

Federal regulators require water providers to ensure lead levels remain at or below 15 parts per billion. Portland **exceeded that measurement 10 times**. It **exceeded federal standards** for amounts of lead in drinking water at least twice in three years.

"Exceedances of the federal action level for lead in water in Fall 2013 and Fall 2016 have highlighted the need for further treatment," bureau officials wrote in a press release Thursday.

The treatment the water bureau now recommends aims to adjust the water's pH level, which is commonly done by adding sodium carbonate and CO<sub>2</sub>.

Such treatment could change the "feel" of the water, the report said.

"We have begun to reach out to many of our large users such as breweries, manufacturers, bakeries, dialysis clinics and bottlers to inform them of the potential changes," the report said. "So far the potential impacts are not expected to significantly impact their operations."

If the city approves the enhanced treatment program, it could take as long as 5 1/2 years for the water bureau to put the program into place.

## LEAD IN WATER

Portland Water Bureau changes approach to treating lead in water

Portland Water Bureau wants new approach to cut lead in drinking water

How can Portland cut lead levels in drinking water? EPA offers clues

Portland school board faces uphill battle with trust

Was Portland's lead crisis preventable?

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The water bureau has gotten ahead of itself in promoting this treatment program to the City Council.

The bureau said in a report to stakeholders that a water corrosion control study started in 2014 informed its decision to treat corrosion using chemicals. But that study has not been completed, water bureau spokeswoman Jaymee Cuti wrote in an email to The Oregonian/OregonLive.

One of the four quarterly reports remains in draft form. A final report hasn't even been authored.

Cuti said the fourth quarter report is incomplete because the water bureau requested engineering consulting firm Black and Veatch verify one of the data sets. She said data from the fourth quarter data analysis "was consistent with previous quarterly reports, again demonstrating that much of the lead observed is dissolved lead."

"This is not expected to change the conclusions," Cuti said.

Just last year, Portland's **lead levels made it the worst offender** out of the country's large cities. State and federal exemptions have let Portland bypass regulations meant to minimize lead and pipe corrosion since 1997. The water bureau provides water to about a quarter of Oregonians

Unlike Flint, Michigan, Portland's service lines and Bull Run water supply do not contain lead, but its corrosive water is prone to leach lead from plumbing.

Almost one in six homes in the Portland Water Bureau's service area--about 43,000 homes built between 1970 and 1985--are considered at greatest risk for high-lead exposure. Many of those homes have copper pipes connected with lead solder.

"With changes to the water system, and an increased understanding of health risks associated with low-level exposure to lead, the bureau began re-evaluating its compliance program," bureau officials wrote in a press release.

The bureau expects the project to cost between \$15 and \$20 million. That would cover the design and construction costs and some initial treatment. The bureau does not think the project will affect rates, the report said.

"The results of that study" - which Cuti said does not exist - "indicate that enhanced treatment would be the most effective means to further reduce the levels of lead in water," bureau officials wrote in a report.

**Note: This story has been updated to reflect the correct location of the homes serviced by the Portland Water Bureau at the greatest risk for high-lead exposure.**

--Jessica Floum

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## Portland gets call from EPA to review lead-prevention efforts



Michael Stuhr, the newly named administrator of the Portland Water Bureau, gives a tour of the agency's new \$50 million Interstate project in summer 2015. Commissioner Nick Fish attended. (Andrew Theen/The Oregonian)



By **Brad Schmidt** | [The Oregonian/OregonLive](#)

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on March 11, 2016 at 8:15 AM, updated March 11, 2016 at 11:33 AM

With a renewed sense of vigilance in the wake of the water crisis in Flint, Michigan, federal regulators are **reaching out to water providers nationwide** - including in Portland - to review safeguards to prevent lead poisoning.

On Monday, Portland Commissioner Nick Fish received a phone call from Dennis McLerran, the EPA's regional administrator. On Tuesday, Michael Stuhr, director of the Portland Water Bureau, participated in a conference call with federal regulators.

The purpose of the call: Portland told regulators about its efforts to monitor lead as the bureau embarks on major changes within its water-delivery system, Stuhr said in an interview Thursday.

Stuhr stressed that Portland is in compliance with federal regulations for lead and copper. Stuhr said the city hasn't received any official written notice from regulators and there's no reason for concern locally.

"We are absolutely compliant," he said. "Flint prompted the call. There's heightened concern everywhere about lead and copper."

Fish, who oversees the Water Bureau, said Friday that McLerran wanted to talk about "optimizing our compliance" as the city shuts down its open-air reservoirs.

"We are deeply committed to having safe water and meeting our regulatory requirements," he said. "It was in that spirit that we talked about next steps."

The regional office of the EPA has not responded to questions this week from The Oregonian/OregonLive about its contact with Portland.

Portland's water-delivery system does not include lead pipes, and city officials in recent weeks have gone on a **public-relations blitz** to insist Portland isn't like Flint. But officials have noted that some plumbing for homes built between 1970 and 1985 have lead solder that is susceptible to corrosion.

Officials test for lead twice a year at a sampling of at least 100 high-risk homes. Since the spring of 2007, officials have reported **just one instance - fall of 2013** - when results exceeded the 15 parts per billion standard for more public outreach. Results of that testing were **released in February 2014**.

Stuhr said city officials told regulators about their efforts to monitor lead as the Water Bureau makes major changes to its system. Last year, officials shut down open-air reservoirs at Mt. Tabor and this year they'll disconnect open-air reservoirs at Washington Park. The Water Bureau also has a new intake system at the Bull Run watershed that may impact water temperature.

As a result of those changes, officials may need to control the acidity of water by tweaking the amount of sodium hydroxide that's injected.

Portland contracted with an outside consultant in 2014 to study the system and make recommendations. Work was supposed to wrap up at the end of 2015 but, Stuhr said, it's not complete and a report won't be available until this summer.

Stuhr said Portland will invite regulators to review findings. A letter should go out within two weeks.

Together, he said, they'll decide if next steps are needed.

"What do we need to do, if we need to do anything more?" he said. "Or can we do less?"

-- Brad Schmidt

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**CORRECTION TO THIS ARTICLE**

An Oct. 5 article about lead levels in water incorrectly identified a utility that has tested its water more frequently and treated it more aggressively than the law requires. The utility is in Kansas City, Kan., not Kansas City, Mo.

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## Lead Levels in Water Misrepresented Across U.S.

Utilities Manipulate or Withhold Test Results to Ward Off Regulators

By Carol D. Leonnig, Jo Becker and David Nakamura  
 Washington Post Staff Writers  
 Tuesday, October 5, 2004; Page A01

Cities across the country are manipulating the results of tests used to detect lead in water, violating federal law and putting millions of Americans at risk of drinking more of the contaminant than their suppliers are reporting.

Some cities, including Philadelphia and Boston, have thrown out tests that show high readings or have avoided testing homes most likely to have lead, records show. In New York City, the nation's largest water provider has for the past three years assured its 9.3 million customers that its water was safe because the lead content fell below federal limits. But the city has withheld from regulators hundreds of test results that would have raised lead levels above the safety standard in two of those years, according to records.

The result is that communities large and small may have a false sense of security about the quality of their water and that utilities can avoid spending money to correct the problem.

In some cases, state regulators have helped the utilities avoid costly fixes. The U.S. Environmental Protection Agency, which is supposed to ensure that states are monitoring utilities, has also let communities ignore requirements to reduce lead. In 2003, records show, the EPA ordered utilities to remedy violations in just 14 cases, less than one-tenth of the number ordered in 1997.

Taken together, the records point to a national problem just months after disclosures that lead levels in the District's water are among the highest in the country, a problem the city's utility concealed for months. Documents from other cities show that many have made similar efforts to hide high lead readings, taking advantage of lax national and state oversight and regulations riddled with loopholes.

The Washington Post examined 65 large water systems whose reported lead levels have hovered near or exceeded federal standards. Federal, state and utility records show that dozens of utilities obscured the extent of lead contamination, ignored requirements to correct problems and failed to turn over data to regulators.

Jim Elder, who headed the EPA's drinking water program from 1991 to 1995, said he fears that utilities are engaging in "widespread fraud and manipulation."

"It's time to reconsider whether water utilities can be trusted with this crucial responsibility of protecting the public. I fear for the safety of our nation's drinking water," said Elder, now a water consultant. "Apparently, it's a real crashshoot as to what's going to

[enlarge photo](#)

Nimi Sandhu of Seattle worries that lead in the water may have endangered her children. (Patrick Haggerty For The Washington Post)

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come out of the tap and whether it will be healthy or not."

Recent attention to the dangers of the District's drinking water has prompted scientists and some members of Congress to call for revamping the lead rules in the 30-year-old Safe Drinking Water Act, which was aimed at limiting dangerous contaminants flowing out of the tap. EPA Administrator Michael Leavitt declined to be interviewed for this article, but his agency has said that a major overhaul to its regulations is unnecessary.

"We have not identified a systemic problem," EPA Acting Assistant Administrator Benjamin H. Grumbles told Congress in July. In an interview, Grumbles said, "We are going full throttle" to pinpoint lead levels across the country. "So far," he said, "we have not seen anything that closely resembles the District in the data we've received."

EPA data analyzed by The Post identified 274 utilities, which together serve 11.5 million people, that have reported unsafe lead levels since 2000. Those numbers do not include cities where testing methods concealed true lead levels.

Utility officials defend their testing methods, saying that they are not designed to deceive the government and that state regulators approved their practices. Others argue that they should not have to spend millions to remove lead that often leaches from their customers' own fixtures.

Some suppliers have worked hard to avoid lead problems. The utility in Kansas City, Mo., tested its water more frequently and treated it more aggressively than the law required. And after the District's problem surfaced, several other jurisdictions in the Washington region voluntarily tested their water and found less contamination than in the city.

Lynn Stovall, a Greenville, S.C., utility manager and member of the American Water Works Association, said many utilities are "hard-pressed" and need more public funding to comply with mounting regulations and improve aging plants.

"The drinking water community faces a complex array of expensive new federal requirements and new standards," Stovall told Congress at this summer's hearing on lead.

Lead exposure can cause serious health problems, including lower IQs in children and brain and kidney damage in adults. Although health experts agree that no amount of lead in drinking water is considered safe, there is some dispute about how much tainted water has to be consumed to cause permanent damage. Because the effect is cumulative, lead in water is particularly problematic in older, urban areas where children are more likely to also be exposed to lead paint, which utilities note is a more prevalent threat.

Despite the health risk caused by lead in water, efforts to eliminate it have run up against other realities, including the high cost of replacing underground pipes that contain lead. Recognizing that states lacked the resources to carefully monitor more than 90 contaminants covered by federal law, the EPA issued lists of priorities starting in 1996. In both cases, its top concern was microbes, which can sicken large populations overnight. Lead did not make the list, and this year, the EPA dropped drinking water altogether from its enforcement priority list, records show.

Competing interests were also in play in 1991 when the EPA wrote new rules on lead. The compromise that emerged requires that, when lead levels exceed 15 parts per billion, utilities must inform the public, treat the water to make it less corrosive or, in some cases, replace pipes.

Because of the cost, many utilities are reluctant to act. In the District, where the D.C. Water and Sewer Authority is under an order to replace service lines, water customers are expected to pay for most of the \$350 million project over the rest of the decade.

#### **Withholding Results**

Water suppliers are required by law to test for lead regularly -- the largest utilities must check the water in at least 50 homes once every three years. They must follow a strict regimen, trying consistently to test the same "high risk" homes most likely to have lead problems. High-risk homes are defined as those with lead service lines or built in the 1980s, before lead solder in plumbing was banned.

Because so few homes are tested, the results of just one or two can mean the difference between passing and failing. Utilities are required to report to regulators all their test results -- good and bad.

The D.C. Water and Sewer Authority knew in the summer of 2001 that its water contained unsafe lead levels, but it withheld six high test results and said the water was fine, records show. When it tested over the next two years, records show, WASA dropped half of the homes that had previously tested high for lead and avoided high-risk homes.

The EPA, which cited WASA for violations in June, called the utility's practices unprecedented and a "serious breach" of the law.

Documents show that water systems across the country have used similar practices.

In such cities as Boston and Detroit, records indicate that utilities have failed to test the high-risk homes they were required to check. State regulators and the EPA discovered in the spring that at least one-fourth of the locations tested in the Boston area were not high risk and ordered the utility to revamp its program, records show.

After several years of above-the-limit test results, New York water officials reported that tests in 2000 showed lead had fallen to safe levels. But the city had not reported all of its results.

Records obtained under a Freedom of Information Act request revealed more than 300 withheld test results that, if reported, would have given New York water a failing grade for safety in 2001 and 2002. That would have required the city to alert the public to the problem and take expensive steps to fix it.

Christopher O. Ward, commissioner of New York's Department of Environmental Protection, said his agency is "highly confident" the city's water is safe. He said extra tests were taken to ensure that the city had a sufficient number to report to regulators, though he said the agency did not formally notify state and city regulators of this practice or seek their approval. Ward said that he believed this complied with the rules and that it was unfair now to count irrelevant results.

"In light of the issues that have recently been raised, DEP is in the process of reviewing our lead and copper monitoring to ensure that all requirements in the regulations are being met," Ward said.

In a similar situation, when WASA said the six test results it withheld were replacement or backup samples, the EPA cited the utility and said it was a violation of the law.

In Philadelphia, state and utility officials said they could produce none of the required documentation for their decision to toss out a high test result in 2002. The federal law does not allow utilities to discard high tests except under very limited circumstances, and the utilities must carefully document their reason.

Utility director Gary Burlingame said in an interview that the high test result "didn't jibe" with past tests and that the utility decided it should be discarded after learning the house had undergone plumbing work. Had that test been counted, records show, it would have put Philadelphia over the federal safety limit and required corrective steps.

The law prohibits throwing out tests for the reasons given in Lansing, Mich., in 2001 -- that homeowners did not follow directions in collecting them. Four discarded tests would have put the water over the federal lead limit, documents show. In one case, the homeowner disputed the reason the utility gave for tossing her sample -- that the occupants had been away overnight.

"That's a big, fat lie," said Jennie Horiszny, an 85-year-old Lansing resident. She said she had not gone out of town and had carefully followed the utility's instructions not to run the water overnight. She remembers pouring glasses of water before going to bed in case she or her husband became thirsty -- and taking the sample first thing in the morning. "That's what the directions said to do, and that's what I did," she said. "It was a clean sample."

John Strickler, a spokesman for the Lansing water system, said, "I find it hard to believe that any of our employees would have made that up." He said the city has voluntarily embarked on an aggressive plan to replace lead service lines, in part because "we started seeing news stories" about the District's problem.

Federal law also requires utilities to try to test the same homes over time and prohibits dropping any merely because they have tested high.

After exceeding the acceptable limits in 2000, the Ridgewood, N.J., water system dumped "hot" houses that had tested high, records show. Frank Moritz Sr., director of operations for Ridgewood's water department, said that was not done by design. "Each year, we take out the previous year's list and ask if they want to participate," he said.

But five residents whose homes showed high lead readings said in interviews that the utility never informed them of the results or asked them to test again.

"It would have been nice if someone had looked out for us," said Matthew Criscenzo, whose son was 4 at the time. "Obviously, this news is causing some alarm."

Bradley M. Campbell, New Jersey's commissioner of environmental protection and an EPA official in the Clinton administration, said that his agency is "actively investigating" testing irregularities uncovered by The Post in Ridgewood and other communities in northern New Jersey and that it could take action against some utilities. "The public has a paramount right to know" the true lead levels in those communities, he said.

Just as dropping tests can lower the official lead figures, so can adding tests.

The utility in Providence, R.I., exceeded safe lead levels in 2002. Instead of informing the public, as required, records show that the utility waited and, the next summer, sampled 30 more homes, most of which showed very low lead and brought levels below the federal standard. Utility officials said they believed that their actions complied with the law. June Swallow, the Rhode Island official charged with overseeing utilities, said Providence did not comply and that the state will in the future ensure that utilities test within the requisite four-month period.

#### Frequent Irregularities

Under the Safe Drinking Water Act, states must oversee utilities to ensure that they follow the law and the EPA is required to step in when states fail to correct problems.

For the most part, states take the word of utilities, doing little to check whether they are testing properly. The EPA's most recent audits point out that testing irregularities are common. Also, states frequently miss the violations or fail to force utilities to take required steps to reduce lead, according to the audits.

The latest EPA audit of Hawaii's program, for instance, found in 2001 that regulators there "put an emphasis on 'helping' " utilities "rather than enforcing the law."

Records show that regulators rarely force communities to replace lead service lines, even in such cases as Yonkers, N.Y., where the law required it because repeated tests showed excessive lead levels.

In Seattle, the city missed a 1997 deadline to reduce lead by making its water less corrosive. The state of Washington gave it six extra years to correct the problem, allowing high lead to persist until last year. Denise Clifford, director of the state's office of drinking water, said the delay gave Seattle time to build treatment facilities that will reduce lead and other more serious contaminants.

"I know this doesn't look like a good decision to a lot of people," she said, but "there are more acute public health risks than lead."

In the interim, more than 43,000 Seattle residents -- including Nimi Sandhu -- gave birth, according to vital records statistics. Sandhu used unfiltered tap water to make her babies' formula, unaware of the lead levels.

"It's outrageous -- the state is supposed to be protecting us," said Sandhu, whose children are 5, 4 and 10 months old. "I don't know how they can live with themselves knowing that they were possibly endangering children."

State officials say they are forced to engage in a form of triage.

"It's tough, given all the other priorities out there for drinking water, to oversee this rule at that level of detail," said Barker G. Hamill, chief of the New Jersey Bureau of Safe Drinking Water.

If states fail to enforce the law, the EPA is the last line of defense. But the agency devotes four times the staff to enforcing the laws that govern sewage released into rivers and lakes as it does to safeguarding the nation's drinking water supply, records show. The agency has 72 enforcement employees to oversee the nation's drinking water laws -- one employee for every 2,238 water systems.

"We can't afford to do these kind of checks everywhere, and neither can the states," said Jon M. Capacasa, water administrator in the EPA's mid-Atlantic office.

Officials at EPA headquarters say the need for intervention has declined over the years, because more utilities understand and comply with the law. But sometimes the EPA is without the information it needs to act.

A March report by the agency's inspector general found that the data the EPA uses to assess water quality are "flawed and incomplete" because states are not reporting violations, despite legal requirements.

But even when it is aware of a problem, the agency does not always enforce the law, records show.

It didn't do so in Portland, Ore., for instance, where excessive lead



persisted through much of the past decade. The state approved the city's decision to launch a public education campaign on lead dangers rather than build an expensive treatment plant to comply with the law.

Lead levels climbed, and in 2002 the EPA stepped in, but not to discipline the city. Instead, the agency suggested testing more homes in the suburbs. The utility dropped more than half the homes with lead higher than the federal limit, replacing them with suburban homes that had, on average, significantly lower levels, records show.

"That change in the sampling population helped" the city slip back under the federal limit, said Mark Knudson, the Portland Water Bureau's director of operations. EPA officials said that that was not their goal and that they had recommended the changes to get a fuller picture across the area.

Although top EPA officials have contended that the law does a good job of catching most problems, those charged with enforcing it do not always agree. EPA regulators who met in the spring in Newport, R.I., noted in a three-page memo a series of loopholes that weaken the law. Among them: Nothing requires utilities to notify individual homeowners that their water has high lead, and the regulation does not allow the same stiff sanctions for high lead that it does for other contaminants such as bacteria.

At headquarters, the EPA's Grumbles has said in recent weeks that he will push to ensure that cities are complying with the law when they test and that he will consider changes early next year, such as stricter rules for notifying the public. But critics fear that, without much tougher laws and enforcement, unsafe water in other communities may not come to light.

"The problems we know about are just the tip of the iceberg," said Erik D. Olson of the nonprofit Natural Resources Defense Council, "because utilities are gaming the system, states have often been willing to ignore long-standing violations and the EPA sits on the sidelines and refuses to crack down."

*Database editor Sarah Cohen and staff researcher Bobby Pratt contributed to this report.*

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