

LUP-Comments@multco.us

1600 SE 190th Avenue
Portland OR 97233-5910

June 27, 2023

Dear Land Use Planning Board Members

I served as Multnomah County Health officer from 2014 through 2019 and Deputy Multnomah County Health Officer from 2008 to 2014. I now work as a hospital-based pediatrician. During my County Health Officer service, the Portland Water Bureau experienced a number of regulatory events which required 'boil water' alerts to large numbers of County residents and businesses. During the same time, the Portland Water Bureau worked with the Oregon Health Authority (OHA) to develop a long-term plan to mitigate the risk posed by the lack of filtration in their system, by far the largest in Oregon.

Then, and now, I strongly support the construction of a filtration system to treat the water from the Bull Run Reservoirs, the primary water source used to the supply water for the majority of Multnomah County residents, visitors and businesses.

The public good from constructing a filtration system includes, but is not limited, to the following benefits:

1. Decreased risk of bacterial contamination and preventive 'boil water' alerts
2. Eliminates risk of waterborne cryptosporidiosis and meets federal Environmental Protection Agency and OHA requirements of all surface water systems
3. Provides increased capacity of the existing reservoir system in the event of a prolonged drought
4. Decreases the dependence on the Columbia River Well fields back-up system which is prone to supply limitations and mechanical failure if needed for long-term use
5. Allows the system to provide safe water in the event of severe weather, landslides, earthquake or forest fire that increase the turbidity of the water which in turns limits the effectiveness of disinfection
6. Significantly decreases the formation of potentially hazardous disinfection by products linked to cancer and other chronic health problems
7. Enhances water quality for business and industry which now may need to have their own secondary water treatment plants to eliminate turbidity from unfiltered Portland Water Bureau water
8. Increases safety for dialysis centers and hospitals which need the cleanest possible water for lifesaving kidney failure treatment, intensive care units and oncology centers

More detail on some of these topics is included in my testimony to the Portland City Council in 2017 (attached). I urge the Land Use Planning Board to approve the Water Bureau's application.

Sincerely,



Paul Lewis MD, MPH

Attachment

July 18, 2017

Nick Fish
Commissioner City of Portland
1221 SW 4th Ave
Portland, OR 97204

Dear Commissioner Fish,

Multnomah County appreciates the opportunity to provide input to the up-coming Portland City Council decision on a long-term strategy to improve drinking water quality and to enhance the ability of the system to handle future threats that would prevent uninterrupted delivery of safe drinking water.

To conclude that the County strongly favors filtration over ultraviolet treatment to improve the health, safety, and resilience of the water supply, we conducted extensive internal discussions with health and emergency management leadership. These discussions were informed by technical input from Portland Water Bureau(PWB) and the external experts convened by PWB to review the *Cryptosporidium* detection events of early 2017. Under an overarching public health framework of the ‘precautionary principle’ we also reviewed reportable disease records, PWB water quality data, current and anticipated EPA and OHA regulations, plus known and anticipated environmental threats to the region. We understand that City Council must balance many factors when making decisions about management of the utility bureaus but from the health, safety, and emergency preparedness perspectives, filtration is the best choice.

The City and State of Oregon regulators need to agree on the timing of an upgrade to eliminate the risk of spreading cryptosporidium through the water supply. We believe that the on-going risk of illness remains low and, consequently, the specific timeframe for the upgrade should not be a major factor in the decision. More specifically, we do not anticipate any health benefit from the shorter timeframe for installing ultraviolet versus filtration. During the series of cryptosporidium detections in early 2017, Multnomah County worked extensively with the Portland Water Bureau to understand and communicate the risk to the public and to vulnerable populations. By March 2017 enough time had passed for potential illnesses related to drinking water to have occurred so that we could complete our review of lab confirmed cases of Cryptosporidiosis. Diarrhea caused by *Cryptosporidium species* has been a reportable disease in Oregon for many years so we have a high degree of confidence in the expected seasonal reports of cryptosporidiosis in Multnomah County. In our review of such reported cases for 2017, we observed no change in the expected number of illnesses that began in January, February and March compared to previous years. It is also worth noting that the average number of *Cryptosporidium* illnesses detected per month during the winter in Multnomah County is low- usually less than 5 cases per month. In 2017, laboratories reported only two cases from January and four each from February and March in Multnomah County residents.

During normal times, both ultraviolet treatment and filtration will be effective in reducing the low risk of cryptosporidium in the Bull Run water supply. Filtration however has advantages

Attachment-2

whenever the turbidity increases in the reservoirs. Periods of high turbidity are also when the risk of *Cryptosporidium* would be the greatest, yet ultraviolet treatment is less effective in cloudy water. Ironically, if ultraviolet treatment is chosen to protect against *Cryptosporidium*, it might fail when the risk is greatest. There are a number of plausible scenarios in which turbidity increases beyond historical norms including extreme precipitation or normal winter rains following a summer forest fire in the watershed.

In addition to the risk from *Cryptosporidium*, turbidity from Bull Run water has other consequences which can be mitigated by filtration but not by ultraviolet treatment. Our first health concern related to turbidity is the unintended chemical reactions from chlorination of water containing dissolved organic material. These reactions lead to ‘disinfection by-products’ such as trihalomethanes which are a concern because they are related to similar chemicals which promote the development of cancer. As such, disinfection by-products in drinking water are regulated by EPA and while PWB is currently in compliance with these regulations, future standards may be more rigorous. The County supports an infrastructure upgrade to the water system that prevents unnecessary exposure to disinfection by-products.

Control over turbidity through filtration has several other benefits when considering current and future threats. As concerns about climate change continue to be confirmed, more extreme weather including droughts are anticipated. We understand that a greater volume of the existing Bull Run reservoirs could be used during a drought if filtration were in place but this additional capacity would not be available if ultraviolet treatment were installed. An additional concern from the warming climate is that water temperatures in the Bull Run will tend to rise and lead to toxic blooms of algae. Toxic blue-green algae must be removed from drinking water to make it safe and while this can be achieved with filtration, ultraviolet treatment is not effective. High and variable turbidity also burdens certain healthcare facilities with the requirement to install their own filtration systems; those that already have filtration can be burdened with additional maintenance when the turbidity from PWB water increases.

A final but unpredictable threat to the region is a Cascadia subduction zone earthquake and we support the PWB’s comprehensive efforts to mitigate the consequences to the water supply and distribution system. Among the many needs in the days following an earthquake, a safe water supply is one of the most pressing. It is our understanding that a filtration system will provide more resilience in providing safe drinking water than an ultraviolet treatment facility in this scenario.

Multnomah County urges the Portland City Council to consider the many health and resilience benefits of filtration over ultraviolet treatment as it makes decisions about improving water quality while also helping the region respond to the threats of climate change and the risk of a major earthquake.

Please contact me if I can provide additional information

Attachment-3

Sincerely

A handwritten signature in black ink that reads "Paul Lewis MD". The signature is written in a cursive, slightly slanted style.

Paul Lewis, MD, MPH

Multnomah County Health Officer

cc:

Chloe Eudaly, Commissioner City of Portland

Amanda Fritz, Commissioner City of Portland

Dan Saltzman, Commissioner City of Portland

Ted Wheeler, Mayor City of Portland

Joanne Fuller, Director, Multnomah County Health Department



Portland Water Bureau Application

1 message

Paul Lewis <pfxlewis@gmail.com>

Tue, Jun 27, 2023 at 1:02 PM

To: LUP-Comments@multco.us



External Sender - Be Suspicious of Attachments, Links, and Requests for Payment or Login Information.

Please see my attached testimony. Let me know if you are unable to open it.

Thank you

Paul Lewis



Land Use Lewis 06272023.pdf

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