

Today’s Show:

Kris Halterman has invited EJ Ledet back to discuss [Lake Whatcom](#) and the manner in which the City of Bellingham and Whatcom County propose to address TMDL and how Lake Whatcom is treated at the [Lake Whatcom Water Supply and Treatment Facility](#).

LIBERTY ALERTS:

The [Whatcom County Council approved two items of significance at last Tuesday’s Council meeting](#):

Ordinance establishing the Lake Whatcom Stormwater Utility District (AB2017-251C)

Adopted 6-1, Brenner opposed
Ordinance 2017-076 8.

Ordinance amending Whatcom County Code Chapter 16.16 (Critical Areas) and Whatcom County Code Chapter 23.10 (Shoreline Management Program – Purpose and Intent) pertaining to the protection and regulation of environmentally critical areas (AB2016-276L)

Amended (Ordinance language only, no change to CAO exhibits)
Adopted 6-1, Brenner opposed
Ordinance 2017-077

The newly established LWSWUD has not yet publicly disclosed how and how much they will charge the properties within this new utility district...it has been commented by Dr. Matthews of WWU to, “spend \$50 million over the first five-years to address phosphorus entering Lake Whatcom from natural runoff from developed properties within the watershed. With an estimated \$100 million-dollar expenditure over the next 50 years.” The listeners of this program know that there are less expensive and more effective ways to achieve this goal. But, are the department heads of Whatcom County Council, Whatcom County Public Works, the City of Bellingham, the Dept. of Ecology, and other agencies; willing to listen?

Regarding the newly approved CAO’s I hope to have others who have a better overall grasp of what these changes will mean to our local farmers, businesses, and rural properties.

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COMMON CENTS:

Voltaire: French Enlightenment writer who had a strong influence on not only the American and French Revolutions, but on many generations of thinkers in-regard-to civil liberties, free trade and freedom of religion.

It is dangerous to be right in matters on which the established authorities are wrong.

In general, the art of government consists in taking as much money as possible from one party of the citizens to give to the other.

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Work saves us from three great evils: boredom, vice and need.

It is clear that the individual who persecutes a man, his brother, because he is not of the same opinion, is a monster.

Editor’s note: Work is not a four-letter word. Work and the ability to freely choose who and where you will work, will keep you free. Once freedom is lost, in any aspect of your life, it is extremely difficult to restore.

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Kris Halterman has invited EJ Ledet back to [discuss Lake Whatcom](#) and the manner in which the City of Bellingham and Whatcom County propose to address TMDL and how Lake Whatcom is treated at the [Lake Whatcom Water Supply and Treatment Facility](#).

Lake Whatcom (from the [Lummi](#) word for "loud water") is located in [Whatcom County, Washington](#), United States. It is the [drinking water](#) source for approximately 85,000 residents in the city of [Bellingham](#) as well as Whatcom County. It is approximately 10 miles (16 km) in length and 1 mile (1.6 km) in width at its widest. Lake Whatcom is located and managed within three political jurisdictions: the city of Bellingham, Whatcom County, and the Lake Whatcom Water and Sewer District. The lake is a popular area for motor boating, swimming, fishing, and other recreational activities.

Brief history

The earliest known settlement was a [Northwest Coast Salish](#) village at the south end of the lake, occupied by the Saquantch tribe. [Around 1800 the Saquantch were pushed out](#) by the [Lummi](#) tribe. In the 1850s came the first known settlement of Westerners on Lake Whatcom. The first claim of private land was reported for \$8. Most of the area surrounding the lake was extensively logged by the end of the 19th century. Large coal mining operations also existed near the lake from the late 19th century through 1919, when the Whatcom Mining Company closed down. In 1946 J.H. Bloedel donated 12.5 acres to the city for what would eventually become Bloedel Donovan Park. In 1962 water was diverted from the Middle Fork of the [Nooksack River](#), through a tunnel, to supply water to a then-new paper-mill on the Bellingham waterfront.

Hydrology

Lake Whatcom is a [monomictic](#) lake. The water body is stratified for part of the year (late spring through mid-fall) and mixed during the rest. This phenomenon is important to the hydrology of the lake. The top layer of water ([epilimnion](#)) is warmed by the sun and sits atop

the [metalimnion](#) (also a [thermocline](#)). In this middle layer water temperatures take a pronounced decline and eventually a distinct third layer forms ([hypolimnion](#)), much colder and isolated from the rest of the water body. Minimal oxygen from the air diffuses down to the hypolimnion, causing very low dissolved oxygen (DO) levels. This combined with sediment oxidation, cause for near or complete anoxic conditions in the deeper levels of the lake. This stratification is more pronounced in Basin 3 where water is deepest. This layering of the lake, as well as the distinct physical barriers (sills) between basins cause for slow movement of water through the lake. (Ecology TMDL, 2008)

Another important hydrological phenomenon on Lake Whatcom is the occurrence of seiches. A [seiche](#) is the slow sloshing of water from one side of the lake to the other, due to winds in Lake Whatcom’s case. Winds will push water to one side of the lake, causing water levels to rise on one end and lower on the other. When the wind stops, the water rebounds back and forth until it is settled again. This up and down movement of the water causes the thermocline to rise and fall as well, which can result in the cold, anoxic water from Basin 3, to spill over the Strawberry Sill into Basin 2.

Major outputs of lake water are Whatcom Creek (77.5% of outflow),^[2] City of Bellingham intake (11.3%), evaporation (7.9%) and hatchery (2.5%). The estimated residence time of water entering the lake until it leaves is 7.4 years. (Lake Whatcom Annual Report, 2008/09)^[8]

Update on information received from Clean Flo and Other Communities or Water Reservoirs, regarding oligotrophic, mesotrophic, eutrophic, and hypereutrophic bodies of water.

Acknowledgement that Lake Whatcom [is a navigable water-way](#) and that the City of Bellingham have established a water-reservoir has not benefited the health of the waterway.

Disinfectants used by the Lake Whatcom Water Supply...what’s the issue?

[The Chemistry of Disinfectants in Water: Reactions and Products](#)

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What are: [trihalomethanes](#) aka, *haloforms*?

What are [ketones](#)? How do the two entities relate?

THM or trihalomethanes are formed during the *chlorination* of drinking water sources. *How?*

Potential *dangers of chlorination by-products* in drinking water and *menstrual cycle function*.

[Tumor activity related to drinking water and THM's.](#)

Your personal story: Mother and neighbors die from cancer. Why you believe these incidents of cancer are related to their drinking water and/or beverages made using chlorinated water?

Other ways to disinfect public, potable water?

Alternate to chlorine disinfectant is using oxygen chemistries like Ozone (O3), hydrogen peroxide (H2O2), or chlorine dioxide (ClO2). I'll talk about ClO2. EJ"

Chlorine dioxide by Industrial 60+ years' experience
Chlorine Dioxides International(ICl)

Safer?

Benefits: don't form THMs, HAAs carcinogens

Lower Dose rate than Chlorine or NaHOCl (bleach)
0.8ppm ClO₂ vs 4.0 ppm Cl₂

Also disinfects: Giardia, Cryptosporidium, Legionnaire

Negatives: neat materials cost more than Cl₂ but treat rate is 4 times less than Cl₂

DBP ClO₂- but they decompose to NaCl + H₂O

I. **Austin v. Bellingham, 69 Wash. 677, 126 Pac. 59 (1912).**

[No. 10348. Department One. August 24, 1912.]
GLADYS AUSTIN et al., Respondents, v. THE CITY OF BELLINGHAM, Appellant. «1»

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CHADWICK, J. - Lake Whatcom is a navigable body of water, with meandered border. Plaintiffs and their predecessors in interest settled upon lands bordering on the shores of the lake in 1888, and having complied with the public land laws of the United States, patent issued on June 30, 1889.

The city of Whatcom maintains a gravity water system, taking water from the lower end of Lake Whatcom at a point just above its outlet. In order to maintain a proper pressure during the summer months and to insure a greater degree of purity, the city, in April, 1911, put in a mudsill across the creek bottom and on it put a board dam, the object of which was to raise the waters of the lake. This action was brought by plaintiffs to restrain the city from longer obstructing the free flow of the waters of the lake, alleging that the dam had so raised the waters as to overflow, or to speak more accurately, back the waters into and over the low flat land owned by plaintiffs, and thus render it incapable of improvement and cultivation. From a decree in favor of the plaintiffs, the city has appealed.

It is further considered, ordered, adjudged and decreed by the court that the said defendant city is enjoined and restrained from obstructing the outlet of the said lake in any manner and enjoined and restrained from keeping or placing or causing to be kept or placed in Whatcom Creek at or near the outlet of the said lake, any dam or obstruction of any kind or character which shall interfere with the flow of the water and retard the natural and normal flow of the water at the outlet of said lake through Whatcom Creek."

The reason for requesting a modification is:

"The effect of an affirmation of this judgment in toto will be to make it the established law of this state, that a municipal corporation of the first class cannot build a dam of any kind on a navigable lake and must condemn the property of each and every littoral owner on such lake before it can establish a water system, if a dam be necessary for the establishment of such system."