



THE CITY-COUNTY OF Butte-Silver Bow

Water Treatment
Jim Keenan, Chief Operator
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December 28, 2022

Tim Lahey
Butte District Ranger
1820 Meadowlark
Butte, MT 59701

Dear Tim,

In an effort to provide a reliable source of water to a thirsty mining industry and a growing population, construction two reservoirs in the Basin Creek Watershed occurred in the 1890s. For over 100 years, the Basin Creek Reservoirs provided Butte with a pristine and economical water supply that provided around 40% of Butte's drinking water. In the early 2000's, the entire Basin Creek Watershed was impacted by the mountain pine beetle which led to the death of tens of thousands of mature pine trees around the Basin Creek Reservoirs. As the trees in the watershed began to die and lose their needles, the concentration of organic matter present in the reservoir increased as a result. The organic matter in the water reacted with the chlorine disinfectant to form a group of regulated disinfection by products known as Haloacetic Acids. The exceedance of the EPA's standard for Haloacetic Acids prompted the construction of the new Basin Creek Water Treatment Plant.

The new \$30M+ Basin Creek Plant came online in May of 2017 and has since been Butte's most productive and economical treated water supply producing excellent quality drinking water for the residents of Butte-Silver Bow. Since coming online, the new plant has been able to produce up to nearly 60% of Butte's annual potable water supply during decent precipitation/snowpack years and has allowed for a significant reduction in withdrawals from the Big Hole River. Reduced withdrawals from the Big Hole can increase water volume in the river benefitting local fish populations as well as important recreational and agricultural based economies. Butte Silver-Bow has calculated that the increase in production from the Basin Creek supply saved approximately 1.2-million kilowatt hours (kWh) of electricity per year during the first few years of operation of the new plant. Water treated at the Basin Creek facility requires approximately 503 kWh per million gallons (MG) of water treated compared to approximately 3,303 kWh/MG from the Big Hole Supply. During the first few years of operation of the Basin Creek Water Treatment Plant (BCWTP), reduced withdrawals from the Big Hole River saved enough energy each year to power an average of nearly 120 Montana households. However, the new water treatment plant is not capable of treating water that has been impacted by wildfire; furthermore, the condition of the Basin Creek Watershed has continued to deteriorate at a rapid rate and has become a disaster area of fallen and standing dead trees that are a dire threat to the future of the Basin Creek water supply. If a large wildfire were to occur in the Basin Creek Watershed, slopes and hillsides could be made unstable which could fill reservoirs and choke intakes with ash and sediment mobilized by subsequent storms and snowpack runoff.



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As a result, Butte's most productive and economical water supply would likely be rendered unusable and full recovery could take a decade or more. If the Basin Creek Supply were unavailable for 10 years, the total estimated increase in energy consumption would be 38,812,993 kWh and the estimated increase in power costs would be \$4,347,055.

To protect the Basin Creek Watershed, Butte-Silver Bow has been working with partners to begin fuels reduction efforts on Butte-Silver Bow owned property around the Basin Creek Reservoirs. However, BSB only owns a narrow band of property located around the reservoirs and their tributaries and protecting the water supply will ultimately require a much larger effort in the watershed. Therefore, it is very critical that the fuels situation in the Basin Creek Municipal Watershed is addressed as soon as possible. High quality, reliable drinking water is the life blood of our community, and the Basin Creek Water Supply is Butte's most economical, most productive, and highest quality drinking water source. Given the immense quantity of beetle-killed lodgepole pine in the watershed along with the steep slopes and erodible granitic soils, our concern is that a high severity wildfire in the watershed could render the Basin Creek Municipal Water Supply (and recently constructed \$30M+ Basin Creek Water Treatment Plant) unusable for up to a decade, maybe longer. Further, costs associated with increased power requirements, recovery of reservoir storage, and infrastructure repair and replacement could run into the tens of millions of dollars. For good of our community, it is imperative that the Basin Creek—Butte Watershed Project proceed without delay.

Thank you for the opportunity to comment on this very important project.

Very Respectfully,

A handwritten signature in black ink that reads "Jim Keenan". The signature is fluid and cursive.

Jim Keenan
Chief Water Operator
Butte-Silver Bow