

September 16, 2022

Richard Rodriguez  
Washington State Department of Health  
Northwest Drinking Water Operations  
20425 72<sup>nd</sup> Avenue South, Bldg. 2, Ste 310  
Kent, Washington 98032-2358

Ria Berns, Program Manager  
Water Resources - Department of Ecology  
Northwest Regional Office  
3190 - 160th Ave. SE  
Bellevue, WA 98008-5452

Dear Mr. Rodriguez and Ms. Berns,

I am writing on behalf of the Friends of the Snoqualmie Valley Trail and River (“FRIENDS”) in regard to the recent changes that the City of North Bend (CNB) has made to its water demand-supply-mitigation strategy.

## **BACKGROUND**

As you know, the City currently supplies customers with water from the Centennial Well, which is in hydraulic continuity with the Snoqualmie River. Since the river is subject to minimum instream flow (ISF) thresholds, pumping from this well triggers mitigation requirements, which are currently met using water from Hobo Springs.

CNB recently purchased the Cascade Golf Course (CGC), along with its water right, which has an instantaneous rate ( $Q_i$ ) of 120 gallons per minute (gpm) and annual volume ( $Q_a$ ) of 33 acre-feet (AF) (Ecology, 2019). Under this right, the City initially planned to divert water from the CGC well to the nearby South Fork for mitigation purposes.

In early 2020, the City began efforts to gain approval for a new 10-year Water System Plan (WSP). The proposed WSP proved to be highly controversial due to concerns about supply, demand, and mitigation. Because of uncertainty about the City’s ability to meet projected demands, WDOH asked the City to provide a “worst case scenario that considers instream flow mitigation needs” on December 9, 2020 (WDOH, 2020). Acting on behalf of the City, Gray & Osborne (G&O), the engineering firm that worked with City Staff to develop the WSP, prepared a “worst-case scenario” for October, one of the critical months when ISFs<sup>1</sup> are not met (CNB, 2020a). WDOH then approved this worst-case scenario on January 14, 2021.

---

<sup>1</sup> *Instream flows are also not met in other months—for example, from 2015 to 2018 ISFs were not met an average of 150 days per year.*

Based largely on this scenario, WDOH approved the WSP on March 4, 2021, (WDOH, 2021a). However, this plan was only approved for 5—not 10—years, reflecting uncertainties in the CNB’s ability to supply water for municipal demands and mitigation.

## SUMMARY OF CONCERNS

FRIENDS is concerned about the validity of this worst-case scenario and recent changes in the CNB’s approach that do not comply with the approved WSP.

### 1 — Unrealistic worst-case scenario

---

G&O’s worst-case scenario is summarized as follows:

*Table 1: G&O’s worst-case scenario*

Source	Amount assumed for ISF (cfs)
CGC well	0.27
Hobo Springs	1.00
<i>Hobo Springs Improvements</i>	<i>TBD</i>
Total Mitigation Supply	1.27
Projected October ADD 2025	1.21
<b>Surplus</b>	<b>0.06</b>

Unfortunately, this scenario is based on some flawed assumptions.

#### *1A — Limits on CGC contributions*

The CGC well’s assumed contribution to mitigation is based on its Qi of 120 gpm (0.27 cubic feet per second (cfs)). However, withdrawals from this well are strictly limited by its Qa, which varies monthly. For October, the Qa limit is 2.7 AF—only 0.044 cfs (Ecology, 2019)—overestimating this source’s contribution by 0.226 cfs, or about 146,000 gallons per day (gpd) for this critical month.

#### *1B — Hobo Springs contributions and reliability*

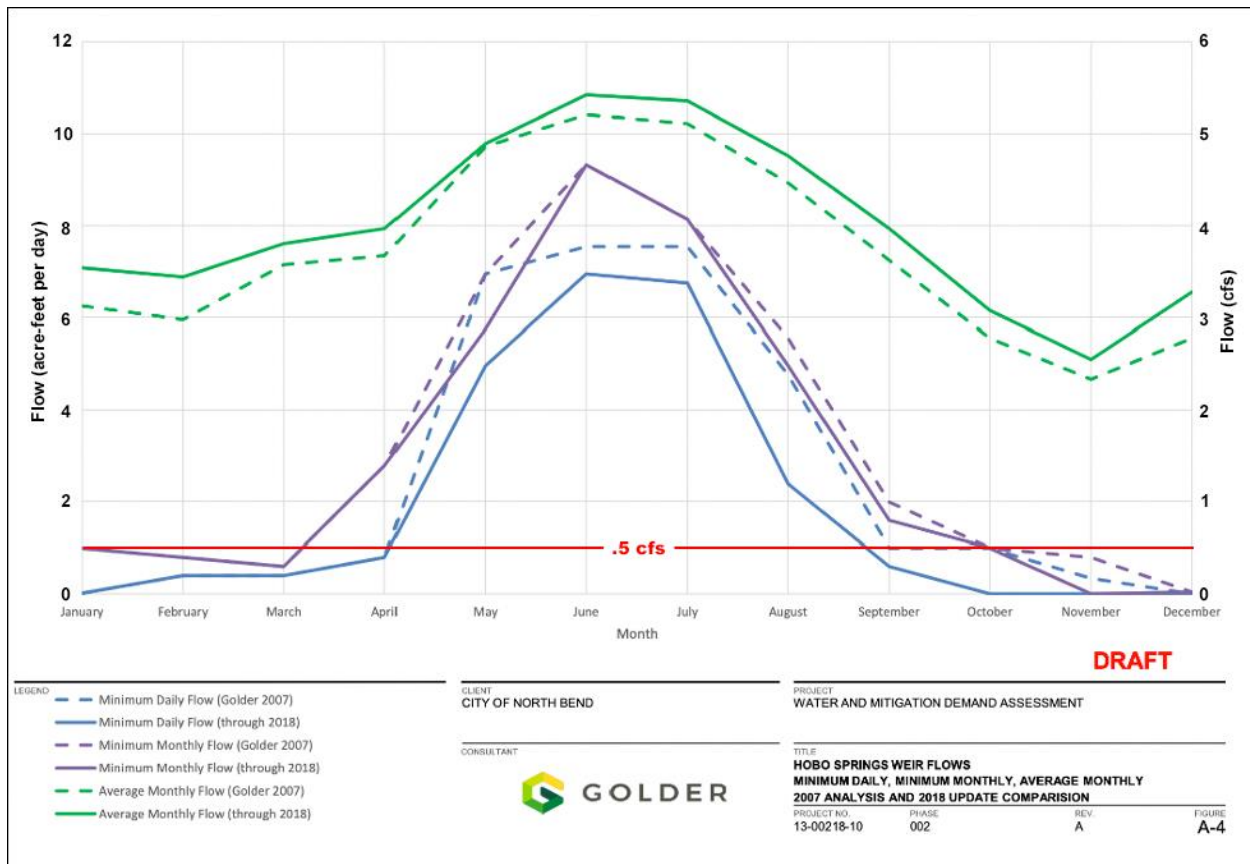
The assumption of 1 cfs for Hobo Springs is optimistic at best. G&O justifies this value as being “similar to 2018.” However, although Hobo Springs flow dropped to 0.94 cfs in October 2018, G&O failed to consider the fact that flow had dropped to 0.6–0.7 cfs by early November. Furthermore, flows have been typically less than 1 cfs in recent years (Golder Associates, 2015, 2017, 2018, and 2019b), as shown in **Table 2** below:

**Table 2: Hobo Springs flows in recent years that were approximately 1 cfs or less**

Year	Timeframe	Flow (cfs)
2019	early November	0.77
2018	early November	0.67
2017	October	1.09
2015	October	0*

\* Three weeks of mitigation were missed due to this lack of flow.

In addition, Figure A-4 of Golder Associates’ 2019 Water Supply and Mitigation Forecast (Golder Associates, 2019a) suggests that, for a worst-case scenario in the October timeframe, it is unreasonable to assume a flow exceeding 0.5 cfs for Hobo Springs.



**Figure 1: Hobo Springs flows, modified from Figure A-4 from Golder Associates, 2019a**

Spring flow is known to vary seasonally and depends largely on the stage level in Masonry Pool and Chester Morse Lake, which feed Hobo Springs. These sources are susceptible to the effects of drought and other influences. The Protested Report of Examination (ROE) for the Centennial Well acknowledged that “Hobo Springs flow varies throughout the year, ranging from zero to almost 6 cfs at the weir” (Ecology, 2007).

We understand that the Hobo Springs improvements will add to the total amount of available mitigation water. However, a preliminary review of historical data suggests that these improvements will only represent 5–25% of the total mitigation flow. We will be requesting and reviewing flow data for Hobo Springs at the end of 2022 to better understand the reliability of this source under various conditions. It is also important to note that the Centennial water right specifies that the City requires a second source of mitigation water in addition to Hobo Springs.

### ***IC — Impact of the Water Conservation Ordinance (WCO)***

The Average Daily Demand (ADD) value of 1.21 cfs assumes reductions in demand due to the WCO, despite a lack of historical data quantifying WCO impacts. In addition, conservation targets are phased based on the level of Masonry Pool, another new and unproven strategy. Based on these considerations, we believe that making assumptions about the impact of WCO restrictions on demand is inappropriate for a worst-case scenario.

### ***ID — Unrealistic growth estimates***

The worst-case scenario is also based on unrealistic growth rate estimates. CNB’s December 2020 letter to WDOH (CNB, 2020a) states that the estimated annual growth of 213 ERUs per year was...

*“... based on growth estimates rather than specific projects. Consequently, the project ERUs are adequate to include some of the anticipated larger projects, such as the National Guard project...”*

This approach yields lowball estimates since some upcoming projects are very large and will have high water demands. For example, the National Guard project was only assigned 175 ERUs for the WSP horizon (G&O, 2021), even though the total project is estimated at 398 ERUs (PWI, 2020; CNB, 2020b). Since development in the UGA involves other large projects, the worst-case scenario should incorporate realistic demands.

Furthermore, the number of connections needed to supply future developments is currently uncertain (connections are not quantified in CNB Resolution 2034 (CNB, 2022)).

These assumptions may lead to further unmitigated impacts to the Snoqualmie River.

## **2 — Compliance issues with the approved WSP**

---

On January 14, 2021, WDOH responded positively to the proposed worst-case scenario stating it to be “very responsive to the issues” raised in the DOH request. As previously noted, this became the basis for approval, which was granted for a period of not more than 5 years (WDOH, 2021). The approval letter states that:

*An approved update is required on or before March 4, 2026, unless the Office of Drinking Water (ODW) requests an update or plan amendment sooner pursuant to WAC 246-290-100(9).*

*The analysis provided in this WSP shows the water system has **sufficient capacity** to meet the growth projections during this planning period. The City of North Bend water system can support an “unspecified” designation for its approved number of connections. A specific number of approved connections will not be applied at this time. Development may occur in compliance with the schedule and information provided in this WSP. **This designation may be rescinded (and replaced with a specified number of approved connections)** if ODW determines that the WSP is no longer representative of system activities.*

The concerns listed below represent recent, fundamental changes that impact supply-demand calculations. These changes indicate that the WSP is no longer “representative of system activities.” New supply-demand numbers should be run to justify any additional approved connections and determine if CNB indeed has “sufficient capacity” to supply them.

### ***2A — Change in the use of the CGC source***

The WSP stipulated that the CNB’s newly acquired CGC well would provide a source of mitigation water to the Snoqualmie River. However, the City consent agenda dated December 7, 2021, indicates that the CGC source *would not* be used for this purpose—instead, the City plans to use it to supply drinking water to its customers. It is unclear how this “repurposing” of CGC water will impact the Snoqualmie River and its mitigation.

### ***2B — Requirement for Sallal water***

Another major concern is that, due to variations in Hobo Springs flow, the WSP is “predicated on the City reaching an agreement with Sallal Water Association to obtain additional mitigation water within the next 2 years.”

The WSP states this clearly:

*Under present peak summer demand, if a drier summer were to occur, the flows at Hobo Springs would be **at or just below those required to properly mitigate water demand**. The City must therefore increase its mitigation capacity by implementing two measures.*

- 1. Enact water conservation policies that curb peak season water use, allowing the City to manage demands during dry years and dry seasons. The ability to reduce peak uses would allow for a reduction in water production and the corresponding mitigation demands and would allow the City to keep peak water production within the available mitigation flow.*
- 2. Obtain additional sources for mitigation water in order to provide redundancy and increase overall mitigation capacity. A second or third source of mitigation water would ensure that the City can mitigate Centennial Well use even during periods of low flow in Hobo Springs. This plan is predicated on the City reaching an agreement with Sallal Water Association to obtain additional mitigation water within the next 2 years.*

This window is nearly expired, and no such agreement has been reached to date.

## 2C — Late addition of the National Guard site

It appears that the National Guard site demands may have been added to the WSP in January 2021; however, this addition is not documented in Appendix F, and it is not reflected in G&O’s worst-case scenario. Chapter 2, Table 2-15, specifically refers to “all consumption projections based on Golder water projections ... in Appendix F.” This is key because Table 2-15 is fundamental to supply-demand estimates.

## EFFECTS OF CNB’S RECENT MITIGATION CHANGES

**Table 3** summarizes the effects of changes that the CNB has made to its mitigation strategy since the WDOH approved the WSP on March 4, 2021. It reflects Hobo Springs low flow (**Figure 1**) and clearly illustrates that these changes will result in mitigation deficits.

*Table 3: Evolution of changes to CNB’s mitigation strategy*

	1	2	3	4	5
	WSP approved values	GCG well removed	Hobo Springs Revised	Hobo Springs Improvements	CGC Mitigation Reduction
<b>Mitigation supply (cfs)</b>					
CGC well	0.27	0.00	0.00	0.00	0.00
Hobo Springs baseline	1.00	1.00	0.50	0.50	0.50
Hobo Springs improvements	TBD	TBD	TBD	0.15	0.15
Total mitigation supply	1.27	1.00	0.50	0.65	0.65
<b>Mitigation demand (cfs)</b>					
Projected October ADD (2025)	1.21	1.21	1.21	1.21	1.21
CGC mitigation reduction	0.00	0.00	0.00	0.00	-0.27
Total October demand	1.21	1.21	1.21	1.21	0.94
<b>Mitigation surplus / deficit</b>	0.06	-0.21	-0.71	-0.56	-0.29
<b>Margin of safety</b>	5%	-17%	-59%	-46%	-31%

G&O’s worst-case scenario predicts a surplus of 0.06 cfs, with a 5% margin of safety<sup>2</sup>, based on a 1-cfs contribution from Hobo Springs (1). This scenario, as previously noted, was a key factor in WDOH’s approval of the WSP, prior to CNB’s decision to use the CGC well for municipal

<sup>2</sup> The margin of safety is the percent difference between the mitigation demand (1.21 cfs) and the available mitigation supply under the conditions for each change in mitigation supply source.

supply (2). However, reducing the value for Hobo Springs flow to a more realistic 0.5 cfs (3) results in mitigation deficits. These deficits will be reduced, but not eliminated, by the following:

- Improvements to Hobo Springs (4), which will offset mitigation demand by 0.15 cfs.
- The use of the CGC well for municipal supply (5), which could reduce the mitigation demand by as much as 0.27 cfs based on the CGC's Qi of 120 gpm.

Even after considering these reductions, the mitigation deficit will be 0.29 cfs (–31% margin of safety).

## **WHAT WE ARE REQUESTING**

For the reasons stated herein, FRIENDS contends that CNB's WSP is "no longer representative of system activities" as required by WDOH. FRIENDS is deeply concerned about potential unmitigated impacts to the Snoqualmie River as well as impacts to the water supply of North Bend residents.

Therefore, we request that WDOH and Ecology require the City to update its overall demand-supply projections—specifically, the worst-case, demand-supply-mitigation scenario for the period of September 1 to November 1. This update should accurately represent conditions and data known through August 2022. We also request that, in addition to ADD, the updated table show the Peak Day Demand (PDD) for September 1 to November 1.

In addition, I hope to hear from each of you that the following conditions are met:

- The above requests are communicated to the CNB.
- CNB commits to providing WDOH, Ecology, and FRIENDS an updated, worst-case, demand-supply-mitigation scenario by a date in 2022 that is specified by WDOH.
- CNB's "sufficient capacity" designation is rescinded because the WSP no longer represents system activities.
- New supply/demand numbers are run to justify any additional development.
- No additional water certificates for development are approved until WDOH signs off on a new analysis.

Sincerely,



James T. Mathieu

**James T. Mathieu, LG, LHg**  
**President / Principal Hydrogeologist, Northwest Land & Water**

Email cc to:

Anne Savery, The Tulalip Tribe  
Matt Baerwald, The Snoqualmie Tribe  
KC Council Members  
Jae Hill, UTRC Chair  
State Representative Bill Ramos  
State Senator Mark Mullet

## **REFERENCES**

City of North Bend, 2022. *Resolution 2034*, passed by the North Bend City Council on August 2, 2022, approving the reallocation and prioritization of new water service connections to first-serve development projects within the city limits and otherwise within the City's water service area.

City of North Bend, 2020a. Letter to WDOH dated December 23, 2020, re: Follow-up comment responses for Water System Plan, City of North Bend, King County, Washington, G&O #19473.00.

City of North Bend, 2020b. Letter to Richard Rodriguez, WDOH, from Mark Rigos, re: Response to our December 8, 2020, phone conversation on the City of North Bend 2020 Water System Plan, dated December 9, 2020.

Golder Associates, 2019a. *City of North Bend Water Supply and Mitigation Forecast*. Consultant report dated October 2019.

Golder Associates, 2019b. *City of North Bend Mitigation System Under Water Right G1-26617(A), Annual Report for 2019*. Consultant report providing an update of mitigation activities conducted by the City of North Bend from January 1 to December 31, 2019.



- Golder Associates, 2018. *City of North Bend Mitigation System Under Water Right G1-26617(A), Annual Report for 2018*. Consultant report providing an update of mitigation activities conducted by the City of North Bend from January 1 to December 31, 2018.
- Golder Associates, 2017. *City of North Bend Mitigation System Under Water Right G1-26617(A), Annual Report for 2017*. Consultant report providing an update of mitigation activities conducted by the City of North Bend from January 1 to December 31, 2017.
- Golder Associates, 2015. *City of North Bend Mitigation System Under Water Right G1-26617(A), Annual Report for 2015*. Consultant report providing an update of mitigation activities conducted by the City of North Bend from January 1 to December 31, 2015.
- Gray & Osborne, Inc., 2021. *City of North Bend Water System Plan*. Dated January 2021.
- Puget Western, Inc., 2020. Letter to Jae Hill, King County Utilities Technical Review Committee, from Joel Molander, requesting basic utility services for the Washington State National Guard Readiness Center, dated December 15, 2020.
- Washington State Department of Ecology, 2007. Protested Report of Examination Application Number G1-26617(A), City of North Bend Well NB-3 (Centennial Well), September 27, 2007.
- Washington State Department of Ecology, 2019. Amended Superseding Certificate of Water Right G1-00142C, issued for the Cascade Golf Course well, dated August 23, 2019.
- Washington State Department of Health, 2021a. Letter to Mark Rigos, City of North Bend, from Richard Rodriguez and Brietta Carter, dated March 4, 2021, re: Water System Plan Approval Submittal #20-0303.
- Washington State Department of Health, 2021b. Letter to Mark Rigos, City of North Bend, dated January 14, 2021, re: City of North Bend, ID# 60100 King County Water System Plan Review – 2020 Submittal #20-303.
- Washington State Department of Health, 2020. Letter to the City of North Bend, dated December 9, 2020, requesting that the City present a worst-case scenario for mitigation.