PARKS & PUBLIC WORKS COUNCIL COMMITTEE & COMMITTEE OF THE WHOLE HYBRID MEETING

Wednesday, July 05, 2023, at 5:00 PM

Snoqualmie City Hall, 38624 SE River Street & Zoom

COMMITTEE MEMBERS
Ethan Benson, Chair
Bryan Holloway, Councilmember
Jolyon Johnson, Councilmember

This meeting will be conducted in person and remotely using teleconferencing technology provided by Zoom.

Join by Telephone: To listen to the meeting via telephone, please call **253.215.8782** and enter Webinar ID **867 8554 3964** and Password **1700050121** if prompted.
Press *9 to raise your hand to speak. Raising your hand signals the meeting moderator that you have a comment.
Press *6 to mute and unmute.

Join by Internet: To watch the meeting over the internet via your computer, follow these steps:
1) Click this link.
2) If the Zoom app is not installed on your computer, you will be prompted to download it.
3) If prompted for Webinar ID, enter **867 8554 3964**; Enter Password **1700050121**
4) Please confirm that your audio works prior to participating.

CALL TO ORDER & ROLL CALL

PUBLIC COMMENTS

MINUTES

1. Approval of minutes dated June 21, 2023.

AGENDA BILLS

2. **AB23-091**: Amendment to Public Works Contract with CPM Development Corporation DBA ICON Materials, Inc for the 2023 Overlay Project
3. **AB23-092**: Resolution No. 1651 Adopting the Water System Plan and Water Use Efficiency Goals

DISCUSSION

ADJOURNMENT

PARKS & PUBLIC WORKS COUNCIL COMMITTEE & COMMITTEE OF THE WHOLE HYBRID MEETING MINUTES JUNE 21, 2023

This meeting was conducted in person and remotely using teleconferencing technology provided by Zoom

CALL TO ORDER

Councilmember Ethan Benson called the meeting to order at 5:00 pm.

Committee Members: Councilmember Bryan Holloway was present. Mayor Katherine Ross was also present.

It was moved by CM Holloway, seconded by CM Benson, to excuse CM Johnson from this evening's meeting.

City Staff:
Mike Chambless, Interim City Administrator; Jeff Hamlin, Interim Parks & Public Works Director; Drew Bouta, Budget Manager; Janna Walker, Budget Analyst; Deana Dean, City Clerk; Andrew Vining, Project Engineer; Dylan Gamble, CIP Project Manager; Jason Battles, Parks Maintenance Technician (remote); Patrick Fry, Project Engineer (remote); and Andy Latham, IT Support.

PUBLIC COMMENTS –

- Ms. Millie Benson and Ms. Franklin, both of Snoqualmie, spoke regarding ways to save the bees. Buttons were handed out.
- Lisa Hoyt, of Snoqualmie, spoke regarding landscaping on the Ridge and requested the city consider a landscape committee.
- Tricia Benson, of Snoqualmie, spoke regarding maintenance of gravel alleys in downtown.

AGENDA APPROVAL – The agenda was approved as presented.

MINUTES

1. The minutes from the June 6, 2023, meeting were approved as presented.

AGENDA BILLS

2. **AB23-076**: Six Year Transportation Improvement Program for the Period 2024-2029. Dylan Gamble, CIP Manager, spoke to this item which is a follow up from prior committee meetings. He noted there is a public hearing at the June 26, 2023, City Council Meeting. Brief discussion followed. This matter is approved to move forward at the June 26, 2023, City Council Meeting non-consent agenda.
3. **AB23-078**: Awarding Prospect Construction Inc. a Contract for the WRF Phase 3 Improvements. Andrew Vining, Project Engineer, spoke to this item indicating it is approximately 10% over the engineers estimate which was due to higher structural and electrical costs. Dan Mahlum, RH2

Engineering, spoke to the bid and options. Mayor Ross provided information regarding the project and funding. Drew Bouta, Budget Manager, provided information regarding the overage and impacts to the budget and other projects. Discussion followed. This matter is approved to move forward at the June 26, 2023, City Council Meeting non-consent agenda.

4. **AB23-083**: Awarding RRJ Company a Contract for 2023 Urban Forestry Improvements. Andrew Vining, Project Engineer, spoke to this item noting these are replacing 123 street trees that were damaged by recent storm activities. The bid was 25% below the engineer's estimate and there is sufficient appropriate available in the budget. The project is scheduled to occur this summer which will allow for tree planting to occur in the fall. Ellen Clark, of Snoqualmie, spoke regarding the trees along O'Neil Street. Brief discussion followed. Lisa Hoyt, of Pinnacle Place in Snoqualmie, questioned the tree replacement process. Brief discussion followed.
5. **AB23-088**: Awarding Contract for Installation and Site Preparation for Centennial Fields Inclusive Park. Dylan Gamble, CIP Manager, spoke to this item for Centennial Fields Inclusive Park installation. He noted the design work has been completed and equipment has already been purchased. Drew Bouta, Budget Manager, spoke to cash balance in that fund. Brief discussion followed. This matter is approved to move forward at the June 26, 2023, City Council Meeting non-consent agenda.
6. **AB23-089**: Awarding Contract for Planning Services for Parks, Recreation, Open Space and Trails Plan (PROST). Dylan Gamble, CIP Manager, spoke to this item which is the hiring of a consultant to do the planning work for the PROST plan. Discussion followed. This matter is approved to move forward at the June 26, 2023, City Council Meeting non-consent agenda.

DISCUSSION

7. Interim Parks & Public Works Director Jeff Hamlin provided updates on staffing and other projects noting there are six vacancies; two in parks, two in water, and two in wastewater and they are working to fill those vacancies. Project status updates were provided for the Snoqualmie Parkway Pavement Rehabilitation Project and the Street Re-Surfacing Program on Mill Pond.

ADJOURNMENT - The meeting was adjourned at 6:04 pm.

Minutes taken by Deana Dean, City Clerk
Recorded meeting audio is available on the City website after the meeting.
Minutes approved at the _____ Parks & Public Works Committee Meeting.

BUSINESS OF THE CITY COUNCIL
CITY OF SNOQUALMIE

AB23-091
July 10, 2023
Committee Report

AGENDA BILL INFORMATION

TITLE:	AB23-091: Amendment to Public Works Contract with CPM Development Corporation DBA ICON Materials, Inc for the 2023 Overlay Project	☐ Discussion Only ☒ Action Needed:
PROPOSED ACTION:	Approve Amendment No. 1 to the Public Works Contract with CPM Development Corporation DBA ICON Materials, Inc for the 2023 Overlay Project	☒ Motion ☐ Ordinance ☐ Resolution

REVIEW:	Department Director	Choose an item.	Click or tap to enter a date.
	Finance	Janna Walker	6/24/2022
	Legal	David Linehan	6/25/2022
	City Administrator	Mike Chambless	6/26/2022

DEPARTMENT:	Parks & Public Works	
STAFF:	Hind Ahmed	
COMMITTEE:	Parks & Public Works	**COMMITTEE DATE:** July 5, 2023
MEMBERS:	Ethan Benson Bryan Holloway Jo Johnson	
EXHIBITS:	1. AB23-091x1 (Amendment) 2. AB23-091x2 (Paving Location) 3. AB23-091x3 (Fees) 4. AB23-091x4 (CIP)	

AMOUNT OF EXPENDITURE	$ 104,607.50
AMOUNT BUDGETED	$ 1,165,000
APPROPRIATION REQUESTED	$ n/a

SUMMARY

INTRODUCTION

This Agenda Bill seeks to amend the existing Public Works contract with CPM Development Corporation DBA ICON Materials, Inc. for the 2023 Street Overlay Project. The 2023 Overlay Project includes grind and overlay of a portion of Tokul Rd, portion of Stone Quarry, SE Mountain Avenue, and a portion of Mill Pond Rd. This amendment adds to the scope of work on Mill Pond Rd. and to total contract amount.

LEGISLATIVE HISTORY

The original contract with ICON Materials was approved by Council on May 22, 2023 under AB23-064 for the construction of 2023 Overlay Project.

BACKGROUND

The City of Snoqualmie's 2023-2028 Capital Improvement Plan (CIP) includes the street resurfacing program, which rehabilitates City streets and alleys before they require extensive reconstruction. The 2023 Overlay Project is part of the street resurfacing program and includes a 2-inch grind and overlay of a portion of Tokul Road, Stone Quarry Road, all of SE Mountain Avenue and a portion of Mill Pond Road. Work will also include full depth repair sections on Mill Pond Rd.

On May 22, 2023 council approved the Award of a public works contract to the lowest responsible, responsive bidder; ICON Materials Inc. at total bid of $622,095, per AB23-064. This amendment adds to the scope of work in Mill Pond Rd. a total of 6000 SY of grind and overlay to address a section that needs repair and to close the gap between 2021 and 2023 overlay limits.

The added work is estimated to cost $104,605.50 which will increase the total contract amount to $726,702.50.

ANALYSIS

The pavement condition of Mill Pond Rd, currently outside the scope of the existing contract, also needs repair. Engineering estimates for the costs of repaving under the original 2023 Overlay Project scope of work indicated that the City would not have enough budgeted funding for a full repaving of all of Mill Pond Rd. To remain under the budgeted revenue for repaving for the 2023-2024 biennium, scope controls efforts were implemented. When Staff reviewed final bids for the 2023 Overlay Project, and the subsequent below-budget bid, considerations for the remaining repaving funding were investigated. To maximize benefits for our citizens, staff recommends increasing the existing contract scope of work which utilizes the low-bid price and benefits from eliminating any additional construction cost that may occur if the repair were to happen later.

BUDGET IMPACTS

Administration recommends approving the amendment to the CPM Development Corporation DBA ICON Materials, Inc. contract in the amount of $104,608 to grind and overlay an additional portion of Mill Pond Road as part of the Street Resurfacing Program. This program is incorporated in the 2023-2028 Capital Improvement Plan (CIP) (See Exhibit #4). The 2023-24 Budget appropriates $1,165,000 for this and other similar work through the Street Resurfacing Program. Currently, $1,159 has been spent in the current biennium and $622,095 is encumbered for the original contract value. With the addition of this amendment to the CPM Development Corporation DBA ICON Materials, Inc. contract, the remaining Biennial Budget appropriation is $437,139. Therefore, sufficient appropriation exists within the 2023-2024 Biennial Budget (Non-Utilities Capital Fund #310) to fund the contract.

Street Resurfacing Program

		2023-2024 Biennial Budget
Beginning Budget	$	1,165,000
Expenditures	$	(1,159)
Outstanding Contract Value *(Previously Approved by Council)*	$	(622,095)
Current Available Budget	$	541,746
Value of this Contract *(AB23-091)*	$	(104,608)
Available Budget after AB23-091	$	437,139

NEXT STEPS

Following Council approval staff will work with the Mayor to execute Amendment No. 1 with CPM Development Corporation DBA ICON Materials, Inc. Construction of the 2023 Overlay Project with the added scope of work on Mill Pond Rd. will then commence and be completed by October 2023.

PROPOSED ACTION

Move to approve Amendment No. 1 to the Public Works Contract with ICON Materials, Inc. for the 2023 Overlay Project.

CITY OF SNOQUALMIE
PUBLIC WORKS CONTRACT
Amendment No. 1
2023 Overlay Project

This Amendment No. 1 amends that certain Public Works contract for the 2023 Overlay Project dated June 08, 2023 ("June 08, 2023 Agreement"), which was previously entered into by and between the City of Snoqualmie, a Washington municipal corporation ("City") and CPM Development Corporation dba ICON Materials, Inc., a Washington corporation ("Contractor"). City and Contractor are collectively referred to in this Amendment No. 1 as "the Parties."

WHEREAS, the June 08, 2023 Agreement between the Parties provided for Contractor to complete the construction of the 2023 Overlay Project as described therein; and

WHEREAS, the City has requested Contractor to provide additional services, including grind and overlay of an additional 6000 SY on Mill Pond Rd; and

WHEREAS, Contractor has the resources and capability to perform this work and has provided fee estimate for such additional work: and

WHEREAS, the City finds that the fee estimate provided by Contractor is fair and reasonable and provides substantial benefits to the City that would not be obtained by rebidding a separate contract for this additional work;

NOW, THEREFORE, the parties herein do mutually agree as follows:

Section 1 Scope of Work Amended. The work ("Work"), as described in the parties' June 08, 2023 Agreement is hereby amended as follows:

Section 00 03 00. Form of Bid and Bid Schedule. The Bid Schedule of the June 08, 2023 Agreement is hereby amended to add the additional work tasks set forth in Exhibit A to this Amendment No. 1.

Project Drawings or Plans. The project drawings and plans of the June 08, 2023 Agreement are hereby amended to add the additional work tasks set forth in Exhibit B to this Amendment No. 1.

Section 2. Compensation Amended. Section 2 of the June 08, 2023 Agreement is hereby amended to increase the total compensation to be paid Contractor for the Work from $622,095 to $726,702.5.

ACCEPTED AND AGREED TO BY:

CITY OF SNOQUALMIE, WASHINGTON By:_____ Its: Mayor Date:_____	CONTRACTOR: ICON Materials, Inc By:_____ Typed/Printed Name:_____ Its:_____ Date:_____
ATTEST: _____ Deana Dean, City Clerk Date:	
APPROVED AS TO FORM: _____ City Attorney Date:_____	

Exhibit B: Mill Pond Rd

PAVING LIMITS
1750-LF X 30 FT
APPROX. 6000SY - 2" DEPTH


City of Snoqualmie
Paving Location
2023 Paving Locations
Section Added by AB 23-091
2021 Overlay Limit
City Limits
June. 29th, 2023
0 150 300 600
Feet
Lake Borst
Snoqualmie River
SE REINIG RD
SE MILL POND RD
POSTED BRIDGE
SE RIVER ST
PARK AVE SE
FALLS AVE SE
RAILROAD AVE SE
SE NEWTON ST
Riverview Park - Snoqualmie
SE Park St
SE PARK ST
415 ft
EUCLID AVE SE
SCHUSMAN AVE SE
SE ALPHA ST
MAPLE AVE SE
MEADOWBROOK WAY SE
SE WALNUT ST
SE SPRUCE ST
MOUNTAIN AVE SE
SPRUCE ST
SPRUCE PL SE
MOUNTAIN DR SE
SE HEMLOCK ST

Exhibit A

Fees of Additional work (Mill Pond Rd.)

Item No.	Description	Unit	Quantity	Unit Price	Total Amount
1	Unexpected Site Changes	EST	1	$10,000	$10,000
2	Planing Bituminous Pavement	SY	6000	$ 4.01	$24,060.00
3	HMA Cl. ½-inch PG 64-22	TON	700	$ 97.1	$67,970.00
4	Painted 4” Edge Line - White	LF	3500	$ 0.31	$1,085.00
5	painted Centerline (Double Yellow)	LF	1750	$ 0.31	$542.5
7	**Mobilization**	**LS**	**1**	$ 950	$950
				Subtotal Price	$104,607.5

BUSINESS OF THE CITY COUNCIL
CITY OF SNOQUALMIE

AB23-092
July 10, 2023
Committee Report

AGENDA BILL INFORMATION

TITLE:	AB23-092: Resolution Adopting the Water System Plan and Water Use Efficiency Goals (Resolution No. 1651)	☐ Discussion Only ☒ Action Needed:
PROPOSED ACTION:	Approve Resolution No. 1651 Adopting the Water System Plan and Authorize Final Submittal to Agencies	☐ Motion ☐ Ordinance ☒ Resolution

REVIEW:	Department Director/Peer	Choose an item.	6/27/2023
	Finance	Choose an item.	6/27/2023
	Legal	Outside Counsel	6/28/2023
	City Administrator	Choose an item.	6/27/2023

DEPARTMENT:	Parks & Public Works	
STAFF:	Jeff Hamlin	
COMMITTEE:	Parks & Public Works	**COMMITTEE DATE:** July 5, 2023
MEMBERS:	Bryan Holloway Ethan Benson Jo Johnson	
EXHIBITS:	1. Resolution No. 1651 2. Resolution No. 1593 3. WSP Executive Summary 4. WSP Appendix F 5. WSP Appendix P	

SUMMARY

INTRODUCTION

This agenda bill seeks council approval to adopt the Water System Plan (WSP), dated July 2, 2022 and authorize final submittal to agencies. WSPs are required by governmental entities prior to providing water service and must be prepared in accordance with Washington State Department of Health (DOH) regulations under Chapter 246-290 of the Washington Administrative Code (WAC), which requires water purveyors to update their water system plans every 10 years. The primary purpose of the WSP is to identify and schedule water system improvements that correct existing deficiencies and ensure a safe and reliable system for current and future customers.

LEGISLATIVE HISTORY

On July 26, 2021 a Council roundtable discussion was conducted by RH2 Engineering to provide councilmembers an overview of the draft WSP and the opportunity to ask questions about the plan. Included was a review of the Water Use Efficiency Goals, attached here as **Appendix F** of the WSP. Subsequently, at its September 9, 2021 meeting, Council approved the WSP for submittal to State and Local agencies (see Resolution No. 1593).

BACKGROUND

Following council action on September 9, 2021, the draft WSP was submitted to agencies and was reviewed for compliance with applicable code and policy requirements. **Appendix P** of the WSP documents all agency review comments along with the City's responses and updates to the plan.

ANALYSIS

This WSP is a comprehensive planning document prepared in accordance with Washington Administrative Code (WAC) Chapter 246-290. The primary purpose of the WSP is to identify and schedule water system improvements that correct existing deficiencies and ensure a safe and reliable drinking water system for current and future customers. Final approval of the WSP is an important task necessary to advance water related capital improvements and fulfill obligations to current and future water utility customers.

BUDGET IMPACTS

This agenda bill does not include approval of any expenditures.

NEXT STEPS

Following council approval, this final WSP will be sent back to agencies as the City's adopted plan on file.

PROPOSED ACTION

Move to approve Resolution No. 1651 adopting the Water System Plan and authorize final submittal to agencies.

RESOLUTION NO. 1651

A RESOLUTION OF THE CITY OF SNOQUALMIE, WASHINGTON, ADOPTING THE WATER SYSTEM PLAN AND WATER USE EFFICIENCY GOALS

WHEREAS, the City of Snoqualmie previously authorized RH2 Engineering, Inc., to prepare an update to the City's Water System Plan in conformance with current regulations and guidelines, which Draft update was completed in August 2021; and submitted for agency review, including Washington State Department of Health, Washington State Department of Ecology, and King County Utilities Technical Review Committee; and

WHEREAS, agency review comments have been addressed and resubmitted for final approval; and

WHEREAS, the Washington State Legislature passed Engrossed Second Substitute House Bill 1338 in 2003, better known as the Municipal Water Law, to address the increasing demand on our state's water resources; and

WHEREAS, the law established that all municipal water suppliers must use water more efficiently in exchange for water right certainty and flexibility to help them meet future demands, and directing the Department of Health to adopt an enforceable Water Use Efficiency Program, which became effective on January 22, 2007; and

WHEREAS, the Water Use Efficiency Program states "you must set your own goals through a public process [WAC 246-290-830(4)(a)]", the deadline for the first goal being January 22, 2008 for municipal water suppliers with 1,000 or more connections; and

WHEREAS, the Water Use Efficiency Program states that goals must be evaluated and reestablished at least every six years [WAC 246-290-830(7)]; and

WHEREAS, goals may consist of demand side (customer) and production side goals; and

WHEREAS, a public hearing was conducted on July 26, 2021 during a round table discussion to obtain public comment on the Water System Plan and water use efficiency [WUE] goals; and

WHEREAS, it would promote the public health, safety and welfare to approve and adopt the Water System Plan; and

WHEREAS, the Snoqualmie City Council wishes to adopt water use efficiency goals consistent with its WSP; now, therefore, be it

RESOLVED by the City Council of the City of Snoqualmie as follows:

Section 1. The Water System Plan, dated July 2, 2022, prepared by RH2 Engineering, Inc., is hereby approved and adopted pursuant to WAC 246-290-100(8)(b), provided this approval shall be subject to approval by the Washington State Department of Health, and

Section 2. Per Washington Administrative Code (WAC) 246-290-830, WUE goals have be set through a public process and evaluated and re-established as part of a WSP update.

PASSED by the City Council of the City of Snoqualmie, Washington, this 10th day of July, 2023.

_____
Katherine Ross, Mayor

Attest:

_____
Deana Dean, City Clerk

Approved as to form:

_____
David Linehan, Interim City Attorney

RESOLUTION NO. 1593

A RESOLUTION OF THE CITY OF SNOQUALMIE, WASHINGTON, APPROVING THE SUBMITTAL OF THE DRAFT WATER SYSTEM PLAN TO THE DEPARTMENT OF HEALTH AND TO KING COUNTY FOR REVIEW, AND APPROVING THE SUBMITTAL OF THE DRAFT GENERAL SEWER PLAN TO THE DEPARATMENT OF ECOLOGY FOR REVIEW

WHEREAS, in April, 2018, the City of Snoqualmie authorized RH2 Engineering, Inc. to prepare an update of the City's water system plan pursuant to WAC 246-290-100 and in conformance with current regulations and guidelines; and

WHEREAS, a draft water system plan is ready to be submitted to the Washington State Department of Health for review; and

WHEREAS, in April, 2018, the City of Snoqualmie authorized RH2 Engineering, Inc. to prepare an update of the City's general sewer plan pursuant to WAC 173-240-050 and in conformance with current regulations and guidelines; and

WHEREAS, a draft general sewer plan is ready to be submitted to the Washington State Department of Ecology for review,

NOW, THEREFORE, BE IT HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF SNOQUAMIE AS FOLLOWS:

Section 1: The City of Snoqualmie Draft Water System Plan, August 2021, as prepared by RH2 Engineering, Inc., is hereby approved to be submitted to the Washington State Department of Health and to King County for review.

Section 2: The City of Snoqualmie Draft General Sewer Plan, July 2021, as prepared by RH2 Engineering, Inc., is hereby approved to be submitted to the Washington State Department of Ecology for review.

PASSED by the City Council of the City of Snoqualmie, Washington, this 9th day of September, 2021.

Matthew R. Larson, Mayor

Attest:

Nicole Wiebe, Interim City Clerk

E | EXECUTIVE SUMMARY

PURPOSE OF THE WATER SYSTEM PLAN

The City of Snoqualmie's (City) water system is a major infrastructure, much of which is invisible to the customers that receive its water. The water system requires qualified staff to operate and maintain an ongoing capital improvement program to replace old components to meet the requirements mandated by federal and state laws. The primary purpose of the City of Snoqualmie Water System Plan (WSP) is to identify and schedule water system improvements that correct existing system deficiencies and ensure a safe and reliable supply of water to current and future customers. This WSP complies with Washington State Department of Health (DOH) regulations under Chapter 246-290 Washington Administrative Code (WAC), which requires water purveyors to update their water system plans every 10 years.

The City's previous WSP was prepared in February 2013. This updated 2021 WSP reflects King County's (County) population allocation to the City and the City's current Urban Growth Area (UGA), which are consistent with the 2014 City and 2018 County *Comprehensive Plan* updates. The WSP also reflects improvements and changes to the water system since the completion of the 2013 WSP.

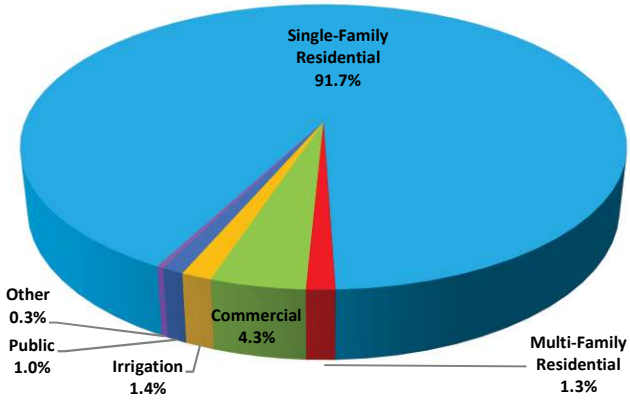
SUMMARY OF KEY ELEMENTS

This WSP presents a description of the existing water system and service area, a forecast of future water demands, policies and design criteria for water system operation and improvements, the operations and maintenance program, staffing requirements, a schedule of improvements, and a financial plan to accomplish the improvements. The WSP also includes several ancillary elements that include a water use efficiency plan, a water quality monitoring plan, a wellhead protection plan, a watershed control plan, and a cross-connection control program. A summary of the key issues related to these elements is provided in the following sections.

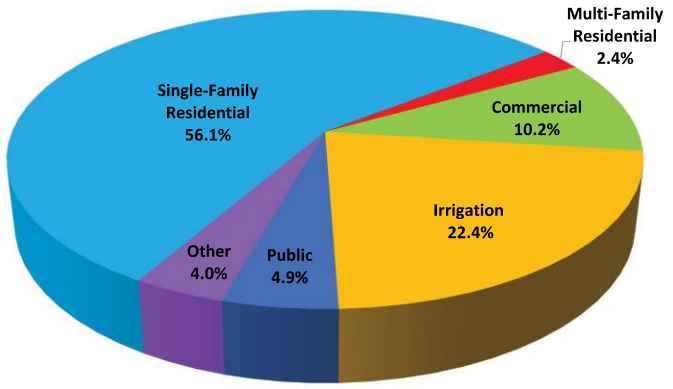
Water Service Area

The City provides water service to approximately 14,322 people throughout its water service area boundary, which extends beyond the City's corporate limits. The City is responsible for providing public water service, utility management, and water system development within this area. The City will provide new water service within the City limits and where there are existing water mains (i.e., the retail water service area). Requests for new water service outside of the City limits but within the UGA, where there are no existing water mains fronting the property, will only be granted after completion of an annexation agreement.

In 2017, the City provided water service to an average of 4,911 connections, which were mainly comprised of single-family connections. Single-family connections represent approximately 91.7 percent of all accounts, but the single-family class only consumed 56.1 percent of all water supplied to the system in 2017.



2017 Water Connections



2017 Water Consumption

Existing Water System

The City's water system was initially established from springs and surface streams. In 1950, the City began to utilize the Canyon Springs source. Well No. 1 was the City's next source, which was constructed in 1973 on the Mount Si High School property. This well was eventually decommissioned and replaced with Well No. 1-R in 2006. Well No. 2 was drilled by a developer in 1995 and fully developed in 2009 as a second well. Both Well Nos. 1-R and 2 currently comprise the South Wellfield. Well Nos. 6 and 7 were drilled in 1995 and equipped in 1996 to become the North Wellfield. Well No. 8 was drilled in 2001 and equipped in 2002 to become a part of the North Wellfield. A summary of the City's sources is shown in **Table ES-1**.

Table ES-1
Supply Facilities Summary

Facility	Pressure Zone	Year Installed	Use	Existing Capacity (gpm)	Well Depth (feet)	Water Treatment
Canyon Springs	599 Zone	1950s	Active	898	N/A	Chlorination
North Wellfield[1]						
Well No. 6	705 Zone	1996	Active	550	589	Chlorination, Filtration (Iron, Manganese, and Arsenic Removal)
Well No. 7	705 Zone	1996	Active	550	541	Chlorination, Filtration (Iron, Manganese, and Arsenic Removal)
Well No. 8	705 Zone	2002	Active	1,250	694	Chlorination, Filtration (Iron, Manganese, and Arsenic Removal)
South Wellfield[2]						
Well No. 1-R	599 Zone	2006	Active	600	557	Chlorination, Filtration (Iron and Manganese Removal)
Well No. 2	599 Zone	2009	Active	600	564	Chlorination, Filtration (Iron and Manganese Removal)

1 = Well No. 6 cannot be run simultaneously with Well No. 8, so the maximum combined capacity of the North Wellfield is approximately 1,800 gpm.
2 = The capacity of the South Wellfield is currently limited to 563 gpm by the South Wellfield WTP.

The City's water system currently has six storage facilities that provide storage directly to the 599 Zone, 705 Zone, 1040 Zone, and 1172 Zone. A summary of the City's storage facilities are shown in **Table ES-2**.

Table ES-2
Storage Facilities Summary

Reservoir	Approximate Location	Pressure Zone	Year Constructed	Construction Type	Capacity (MG)	Overflow Elevation (feet)	Diameter (feet)	Height (feet)
599 Zone								
599 Reservoir	South of Cortland Avenue SE	599 Zone	1961	Steel	0.51	599	52	32
Snoqualmie Ridge Pressure Zones								
705 Reservoir No. 1	Fisher Creek Park	705 Zone	1996	Steel	0.03	705	15	24
705 Reservoir No. 2			2018	Steel	0.13		30	24
1040 Reservoir No. 1	South of SE Jacobia St, between Hancock Ave SE and SE Keller St	1040 Zone	1997	Concrete	2.10	1,040	122	24
1040 Reservoir No. 2			2004	Concrete	1.72		110.5	24
South Pressure Zones								
1172 Reservoir	South of Snoqualmie Point Park	1172 Zone	1989	Steel	0.40	1,172	47	31

The City's water system currently has five booster pump station (BPS) facilities. The 705 BPS, 1040 BPS, and 1180-1260 BPS provide water to pressure zones in the Snoqualmie Ridge area. The 384th Avenue SE BPS and Snoqualmie Point BPS provide water to pressure zones in the southern areas of the system. A summary of the pumping facilities is shown in **Table ES-3**.

Table ES-3
Booster Pump Station Facilities Summary

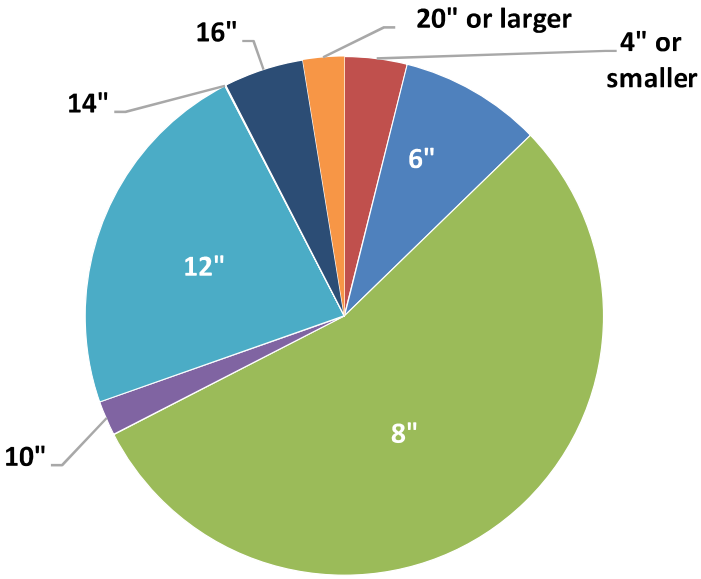
Pump Station	Suction Pressure Zone	Discharge Pressure Zone	Year Constructed	Number of Pumps	Pump Type	Pump Motor Size (HP)	Pump Capacity	Has VFDs?	Sum of Pump Capacities (gpm)[1]	Generator
Snoqualmie Ridge Pressure Zones Booster Pump Stations										
705 BPS	599 Zone	705 Zone	1997	2	Horizontal end-suction	(2) 60	(2) 600 gpm @ 175' TDH	No	2,400	Kimball Creek LS Diesel Generator
			2008	2	Horizontal end-suction	(2) 60	(2) 600 gpm @ 175' TDH	Yes		Portable Diesel Generator
1040 BPS	705 Zone	1040 Zone	1996	4	Vertical turbine	(2) 100	(2) 625 gpm @ 385' TDH	No	2,500	Diesel Generator
						(2) 125	(2) 625 gpm @ 385' TDH	No		
1180-1260 BPS	1040 Zone	1180 Zone	2008	6	Vertical turbine	(1) 10	(1) 155 gpm @ 164' TDH	Yes	4,748	Diesel Generator
						(3) 40	(3) 531 gpm @ 215' TDH	Yes		
						(2) 125	(2) 1,500 gpm @ 210' TDH	No		
		1260 Zone		6	Vertical turbine	(1) 15	(1) 137 gpm @ 245' TDH	Yes	4,445	
						(3) 50	(3) 436 gpm @ 290' TDH	Yes		
						(2) 150	(2) 1,500 gpm @ 290' TDH	No		
South Pressure Zones Booster Pump Stations										
384th Avenue SE BPS	599 Zone	799 Zone	1982	3	Vertical turbine	(2) 20	(2) 200 gpm @ 216' TDH	No	1,600	Natural Gas Generator
					Horizontal end-suction	(1) 125	(1) 1,200 gpm @ 272' TDH	No		
Snoqualmie Point BPS	799 Zone	1172 Zone	1989	2	Submersible	(2) 25	(2) 150 gpm @ 414' TDH	No	300	None

1 = The actual total station capacity is typically less than the sum of pump capacities, due to increased head losses at higher flow rates. Total capacity may also be limited if the BPS electrical system is not designed to run all pumps concurrently.

The City's water system contains approximately 69 miles of water main ranging in size from 2 inches to 24 inches. As shown in **Table ES-4**, most of the water main (approximately 92 percent) within the system is 12 inches in diameter or less. The remaining 8 percent of the water main is 14 inches in diameter or larger.

Table ES-4
Water Main Diameter Inventory

Diameter (Inches)	Length (Feet)	% of Total
4 or smaller	14,151	3.9%
6	32,069	8.8%
8	198,496	54.7%
10	7,872	2.2%
12	82,597	22.8%
14	227	0.1%
16	18,077	5.0%
20 or larger	9,338	2.6%
Total	**362,827**	**100%**



Past Water Usage

Table ES-5 presents the total annual supply and average day demand for 2011 through 2017. Water demands have generally been increasing since 2011. This is most likely the result of new development, which primarily consists of single-family residences in the Snoqualmie Ridge area.

Table ES-5
Historical Water Supply and System Demand

Year	Canyon Springs Supply (MG)	North Wellfield Supply (MG)	South Wellfield Supply (MG)	Total Supply (MG)	Average Day Demand (gpm)
2011	127.5	248.7	65.9	442.1	841
2012	128.8	239.1	104.2	472.2	896
2013	143.0	297.2	66.1	506.3	963
2014	156.1	300.7	79.3	536.0	1,020
2015	350.2	139.2	29.8	519.2	988
2016	398.7	90.7	0.0	489.4	929
2017	360.5	148.2	52.9	561.6	1,068

Per Capita Demands

Table ES-6 show the computation of the existing residential population per capita demand based on 2017 data. The existing per capita demand of 86 gallons per day (gpd) was calculated by adding the estimated distribution system leakage with the residential consumption.

Table ES-6

Existing Residential Population Per Capita Demand

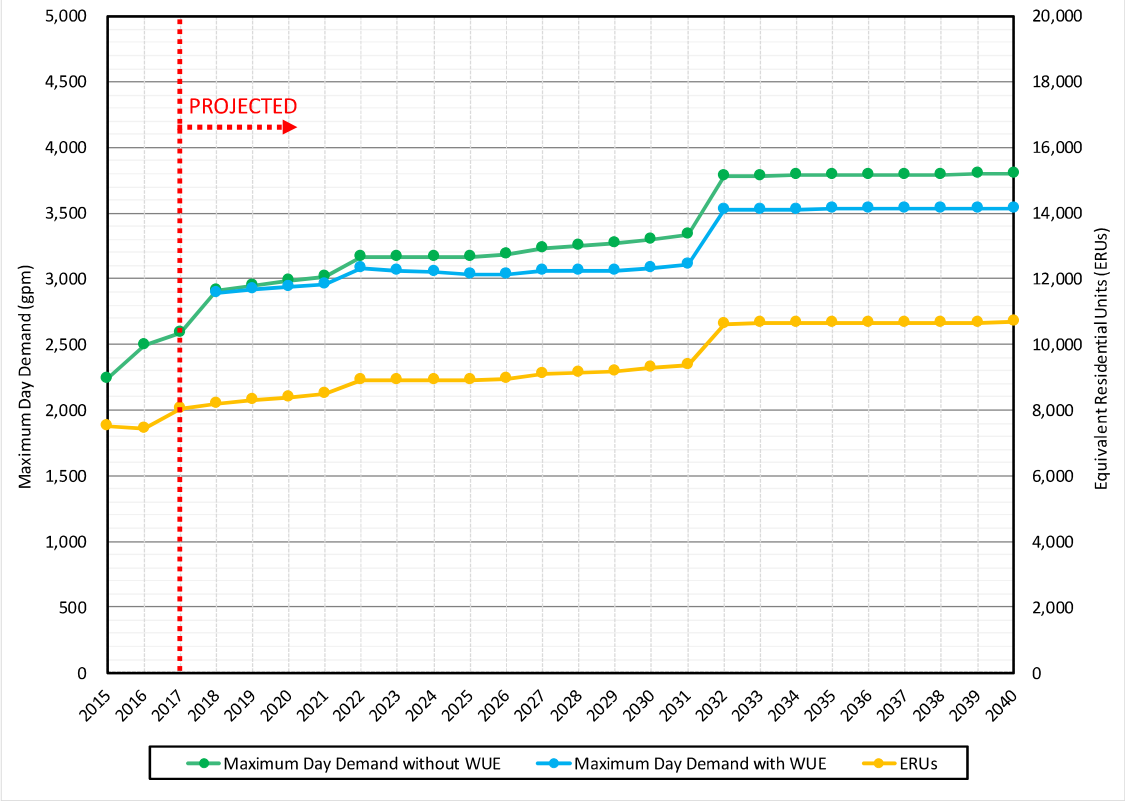
Calculated 2017 Residential Population Served	14,322
2017 Total Annual Residential Population Consumption (gallons)	441,469,877
Existing Residential Population Per Capita Consumption (gpd/capita)	84
2017 Estimated Residential Population DSL (gallons)	8,260,265
2017 Total Annual Residential Population Demand (gallons)	449,730,142
Existing Residential Per Capita Demand (gpd/capita)	**86**

Future Water Demands and Water Supply

Overall water demand within the City's system is expected to increase by approximately 32 percent of 2017 demand by the end of the 20-year planning period. Future demand projections were calculated with and without water savings expected from implementing the City's water use efficiency measures. **Chart ES-1** shows the Maximum Day Demand and ERU projections for the system through the end of the 20-year planning period.

Chart ES-1

Maximum Day Demand and ERU Projections (Demand Basis)



Water Source and Quality

Water is supplied to the City from Canyon Springs, the North Wellfield, and the South Wellfield. Canyon Springs is located in a deep canyon on the north hillside bank of the North Fork of the Snoqualmie River and has a capacity of 898 gallons per minute (gpm).

The North Wellfield consists of Wells No. 6, No. 7, and No. 8 located in the northernmost area of the City's water service area. Due to interference, Wells No. 6 and No. 8 are not operated simultaneously, so the wellfield has a combined capacity of approximately 1,800 gpm.

The South Wellfield consists of Wells No. 1R and No. 2 on property currently occupied by Mount Si High School. The wellfield has a capacity of 563 gpm.

All City water sources are chlorinated. The North Wellfield Water Treatment Plant (WTP) and South Wellfield WTP remove iron and manganese from the water produced by their respective wells. The North Wellfield WTP also treats the water to remove arsenic. At the North Wellfield WTP, a sodium hypochlorite solution is added to the raw water for oxidation, while ferric chloride is added to the raw water to coprecipitate with arsenic. Three filter trains are used to remove iron, manganese, and arsenic that binds with the ferric chloride.

At the South Wellfield WTP, sodium hypochlorite is used for oxidation and then filtered with pyrolusite media to remove iron and manganese compounds. Canyon Springs water currently is treated with sodium hypochlorite generated onsite. The sodium hypochlorite is injected into the 12-inch PVC transmission main from the springs 1,320 feet upstream of the disinfection building.

Operations and Maintenance

The City's operations and maintenance organization is staffed by well qualified, technically trained personnel. City staff regularly participate in safety and training programs to keep abreast of the latest changes in the water industry and ensure a smooth and safe operation of the water system. The current staff have effectively operated and maintained the water system in the past. However, to optimize the preventive maintenance program and operations of the water system, additional personnel are recommended. As the water system expands in the future and continues to age, additional staff will be required. The City plans to add staff to meet the increased requirements from system expansion as the budget allows.

The City has taken several steps to prepare for emergency situations. Vulnerability Assessment and Emergency Response Plans (ERP) have been prepared that conform to the requirements of the Bioterrorism Act of 2002. Per America's Water Infrastructure Act (AWIA) of 2018, the City is required to complete an all-hazards risk and resilience assessment (RRA) and ERP. The City's RRA was completed in June 2021. The ERP is currently being updated and will be completed in December 2021.

Water System Evaluation

The existing water system was evaluated to determine its ability to meet the policies and design criteria of the City and those mandated by DOH. The results of the evaluation are summarized as follows.

- The City will have a source capacity deficiency of approximately 41 gpm by 2030, increasing to 537 gpm at the end of the 20-year planning period. As part of a long-rang water supply plan, the City is considering implementation of an Aquifer Storage and Recovery program and other improvements to resolve the deficiency.

- Canyon Springs needs collector box upgrades and new access trail/road to replace the aging existing infrastructure. The City also is considering installation of a BPS to maximize source output.
- The City plans to install permanent backup power with an automatic transfer switch for Well Nos. 6 and 7.
- The South Wellfield's on-site hypochlorite generation system is aging. The City plans to upgrade the system to standardize with the Canyon Springs and North Wellfield WTP manufacturer.
- The 705 BPS is equipped with four pumps: two fixed speed and two variable frequency drives (VFDs). The City plans to retrofit the fixed speed pumps with VFDs to allow for more efficient operation.
- The City plans to install a fifth pump at the 1040 BPS to increase the capacity by approximately 625 gpm.
- The City plans to construct a new 1.6 million gallon (MG) 599 Reservoir No. 2 to resolve the storage deficiency for the 20-year planning period.
- The City plans to construct a new 1040 Reservoir No. 3 by 2030 to remedy storage deficiencies in the 1040 Zone operating area. The 1.8 MG capacity will remedy storage deficiencies in both the 1040 and 705 Zones.
- The City's Reinig Road PRV/PSV has been installed but is currently inactive. The City plans to activate this PRV/PSV and install a supervisory control system. An additional PRV also is recommended to supply water from the 705 Zone to the 599 Zone.
- Several pressure zone improvements, consisting of new water main, PRVs, and valve configuration changes, need to be implemented to address high and low pressures.
- Several areas of the system require water main replacements to resolve deficiencies related to low fire flows, aging water main, and undesirable materials.

Proposed Water System Improvements and Financing Plan

Improvements to the water system are necessary, primarily to resolve existing system deficiencies, but also to accommodate the increase in water demands from future growth. Improvements identified for the first 11 years (2020 through 2030) are estimated to cost approximately $50.7M. The 21-year period through 2040 includes $63.4M in total project costs.

The financial analysis is intended to illustrate the feasibility of funding the operation and maintenance and capital improvements recommended for the water system in the next 10 years. The results of the financial analysis indicate that rates must increase to provide sufficient revenue to cover all utility financial obligations. The City completed a rate study in 2020 that was based on a modified version of the CIP presented in **Table ES-7** that was adjusted based on comments received as part of the study. The results of the rate study indicated that beginning in 2022, annual rate increases of 4.80 percent through 2030 should provide for continued financial viability while maintaining affordable rates.

Table ES-7
Proposed Improvements Implementation Schedule

No.	Description	Estimated Cost (2020 $)	Schedule of Improvements Planned Year of Project and Estimated Cost in 2020 $ 2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030-2040
	Water Main Improvements												
WM1	Annual Water Main Replacement Program[1]	$21,036,000				$1,500K	$1,500K	$1,500K	$1,500K	$1,500K	$1,500K	$1,500K	$10,536K
WM2	SR 202 Bridge Water Main Replacement Feasibility Analysis	$75,000	$50K	$25K									
WM3	SR 202 Bridge Water Main Replacement	$1,424,000					$475K	$949K					
WM4	Infrastructure Improvement Program/Street Preservation Program	$8,500,000	$2,500K	$1,870K	$3,570K	$560K							
WM5	Investigation and Potential Replacement of Fisher Ave Water Main	$200,000					$200K						
WM6	Investigation and Potential Replacement of Denny Peak Water Main	$80,000						$80K					
WM7	SE 76th St in Ernie's Grove	$780,000											$780K
WM8	Williams Addition Water System	$580,000	$145K	$218K	$218K								
WM9	Spruce St SE Water Main Replacement	$550,000	$138K	$206K	$206K								
WM10	SE King St Water Main Replacement	$30,000					$30K						
WM11	Maple Ave SE Water Main Replacement	$240,000					$240K						
WM12	Mill Site WM Loop (Developer Funded)	$5,770,000			$1,443K	$2,885K						$1,443K	
	Pressure Zone Improvements												
PZ1	599 Zone Evaluation and Reinig Road PRV/PSV Station Activation	$10,000	$10K										
PZ2	SCADA for Reinig Rd PRV/PSV Station	$110,000	$110K										
PZ3	705 Zone to 599 Zone Conversion	$100,000				$100K							
PZ4	599 Zone to 705 Zone Conversion[2]	$90,000				$90K							
	PRV Improvements												
PRV1	670 Zone PRV Adjustment[2]	$19,000	$19K										
PRV2	1180/1040 Zone PRV at Raines Ave SE and Water Main	$830,000											$830K
PRV3	PRV Recirculation Study and Improvements	$140,000				$140K							
	Facility Improvements												
F1	1040 BPS Additional Pump	$390,000	$390K										
F2	South Wellfield VFDs	$50,000	$50K										
F3	Canyon Springs Improvements	$5,520,000								$920K	$2,300K	$2,300K	
F4	South Wellfield Chlorine Contact Time Improvements	$800,000				$267K	$533K						
F5	South Wellfield On-Site Sodium Hypochlorite Generation Improvements	$470,000				$157K	$313K						
F6	Permanent Backup Generator for South Wellfield/South Wellfield Treatment Plant	$1,020,000				$1,020K							
F7	Permanent Backup Generator for Well No. 6 and Well No. 7 (North Wellfield)	$1,020,000										$1,020K	
F8	Retrofit 705 BPS with VFDs	$70,000					$70K						
F9	705 BPS Additional Pump	$390,000					$390K						
F10	Install Drain System for 1040 Reservoir Valve Vaults	$30,000				$30K							
F11	Reservoir Siting Study	$40,000				$40K							
F12	1.6 MG 599 Reservoir No. 2 (Partially Developer Funded)	$3,970,000					$662K	$1,654K	$1,654K				
F13	1.8 MG 1040 Reservoir No. 3	$4,470,000						$745K	$1,863K	$1,863K			
F14	0.2 MG 1172 Reservoir No. 2/799 Reservoir	$1,180,000									$393K	$787K	
	Miscellaneous Improvements												
M1	Source of Supply Improvements - Study	$200,000	$200K										
M2	Source of Supply Improvements - Implementation	$2,000,000		$1,000K	$1,000K								
M3	Risk & Resiliency Assessment and Emergency Response Plan[3]	$60,000	$30K	$30K									
M4	Water Use Efficiency Audit and Programming	$299,000	$46K	$46K	$12K	$12K	$12K	$12K	$12K	$12K	$12K	$12K	$115K
M5	Water System Plan Update	$805,000										$403K	$403K
M6	Pump Condition Evaluation	$60,000				$60K							
Total Estimated Costs of City Funded Improvements		**$55,653,000**	**$3,688K**	**$3,395K**	**$5,005K**	**$3,975K**	**$4,094K**	**$4,113K**	**$4,201K**	**$4,294K**	**$4,205K**	**$6,021K**	**$12,664K**
Total Estimated Costs of Developer Funded Improvements		**$7,755,000**			**$1,443K**	**$2,885K**	**$331K**	**$827K**	**$827K**			**$1,443K**	

1 = Annual project cost can be adjusted to meet City budget goals. Remainder of project costs can be shifted to the 2040+ horizon.
2 = Project should be completed in the short-term due to pressures below 30 psi and/or significant impact on available fire flow.
3 = America's Water Infrastructure Act of 2018 requires development or update of the Risk and Resilience Assessment by June 30, 2021, and the Emergency Response Plan by December 30, 2021.

WATER USE EFFICIENCY PROGRAM

INTRODUCTION

The City of Snoqualmie (City) recognizes that water is a valuable and essential natural resource that needs to be used wisely. This Water Use Efficiency (WUE) program provides an approach to increase water use efficiency within the City's water service area.

BACKGROUND

The Water Use Efficiency Rule

In September 2003, the Washington State Legislature passed the Municipal Water Supply – Efficiency Requirements Act, also known as the Municipal Water Law. The Municipal Water Law required the state to implement the WUE Rule. The intent of this rule is to help reduce the demand that growing communities, agriculture, and industry have placed on our state's water resources, and to better manage these resources for fish and other wildlife. Municipal water suppliers are obligated under the WUE Rule to enhance the efficient use of water by the system and/or its consumers.

The WUE Rule applies to all municipal water suppliers and requires suppliers to:

- Develop WUE goals through a public process and report annually on their performance;
- Maintain distribution system leakage (DSL) at or below 10 percent of production;
- Meter all existing and new service connections;
- Collect production and consumption data, calculate DSL, and forecast demands;
- Evaluate WUE measures; and
- Implement a WUE program.

Water Use Efficiency Program Requirements

The *Water Use Efficiency Guidebook,* originally published by the Washington State Department of Health (DOH) in July 2007, and revised in January 2009, January 2011, and January 2017, identifies the water use reporting, forecasting, and efficiency program requirements for public water systems. A WUE program meeting these requirements is a necessary element of a Water System Plan as required by DOH and is necessary to obtain water right permits from the Washington State Department of Ecology (Ecology). The *Water Use Efficiency Guidebook* defines the necessary components of a WUE program as the following four fundamental elements.

1. Planning requirements that include collecting data, forecasting demand, evaluating WUE measures, calculating DSL, and implementing a WUE program to meet goals.
2. A DSL standard of 10 percent or less based on a 3-year rolling average. For systems with less than 500 connections, the DSL standard may be increased to 20 percent if a request with supporting data is provided to DOH.

3. Goal setting to provide a benchmark for achievement and to help define the success of the WUE program.
4. Annual performance reporting on progress towards meeting WUE goals.

WATER SUPPLY CHARACTERISTICS

Water in the City's system is currently only supplied by Snoqualmie-owned sources. Snoqualmie-owned sources include Canyon Springs, the South Wellfield (Well Nos. 1R and 2), and the North Wellfield (Well Nos. 6, 7, and 8). The South Wellfield has elevated raw water ammonia that can result in taste and odor issues; therefore, water is only supplied through this source when customer demand is high.

A summary of the Snoqualmie-owned sources is shown in **Table 1**, and a more detailed description of each source of supply is provided in **Chapter 2** of the City's Water System Plan (WSP).

Table 1

Supply Facilities Summary

Facility	Pressure Zone	Year Installed	Use	Existing Capacity (gpm)	Well Depth (feet)	Water Treatment
Canyon Springs	599 Zone	1950s	Active	898	N/A	Chlorination
North Wellfield[1]						
Well No. 6	705 Zone	1996	Active	550	589	Chlorination, Filtration (Iron, Manganese, and Arsenic Removal)
Well No. 7	705 Zone	1996	Active	550	541	Chlorination, Filtration (Iron, Manganese, and Arsenic Removal)
Well No. 8	705 Zone	2002	Active	1,250	694	Chlorination, Filtration (Iron, Manganese, and Arsenic Removal)
South Wellfield[2]						
Well No. 1-R	599 Zone	2006	Active	600	557	Chlorination, Filtration (Iron and Manganese Removal)
Well No. 2	599 Zone	2009	Active	600	564	Chlorination, Filtration (Iron and Manganese Removal)

1 = Well No. 6 cannot be run simultaneously with Well No. 8, so the maximum combined capacity of the North Wellfield is approximately 1,800 gpm.
2 = The capacity of the South Wellfield is currently limited to 563 gpm by the South Wellfield WTP.

The City currently holds one surface water certificate, three groundwater certificates, and one ground water permit for its sources of municipal supply. A summary of these water rights is

presented in **Table 2**. Additional water rights information for each source may be found in **Chapter 6** of the WSP, and on the certificates, permits, and water rights self-assessment that are included in **Appendix I**.

Table 2

Existing Water Rights

Water Right	Priority Date	Document	Source Name	Instantaneous Rate (gpm)		Annual Volume (afy)	
				Additive	Non-additive	Additive	Non-additive
GWC 91-D	1/1/1930	Superseding Certificate	North and South Wellfield	90	0	100	0
GWC 92-D	1/1/1940	Superseding Certificate	North and South Wellfield	90	0	100	0
G1-20316C	10/13/1972	Superseding Certificate	North and South Wellfield	600	0	0	500
G1-25449P	5/30/1989	Permit	North Wellfield	1,650	0	724	0
			Ground Water Subtotal	***2,430***	***0***	***924***	***500***
SWC 4553	10/18/1944	Certificate	Canyon Springs	898	0	1,448	0
			Total	**3,328**		**2,372**	

Notes:
A maximum of 2,430 gpm and 1,424 afy can be pumped from the North Wellfield.
A maximum of 600 gpm and 500 afy can be pumped from the South Wellfield.
G1-20316C annual volume is non-additive to the annual volume granted under GWC 91-D, GWC 92-D, and SWC 4553.
Instantaneous rate under SWC 4553 is equal to 2 cubic feet per second.
No annual volume specified under SWC 4553. Annual volume calculated here is equal to 898 gpm continuously, year round.
Development Schedule on G1-25449P requires full beneficial use by September 30, 2020.
Maximum of all rights is 3,328 gpm and 2,372 afy.

WATER USE EFFICIENCY PROGRAM

As previously described, the fundamental elements of a WUE program include planning requirements and DSL standards, as well as goal setting and performance reporting. The City's water use data, demand forecasts, and other planning requirements are contained in **Chapter 4** of the WSP. The City is committed to continue collecting water use data beyond that presented in **Chapter 4** for evaluation of its WUE program and water use patterns, and for forecasting demands for future facilities. The City's WUE program that follows includes a statement of its goals and objectives, the evaluation and selection of alternative efficiency measures, the schedule and budget, and the method of program monitoring.

Water Use Efficiency Goals and the Public Process

Per Washington Administrative Code (WAC) 246-290-830, WUE goals must be set through a public process and shall be evaluated and re-established as part of a WSP update. The City formally adopted water use efficiency goals in 2004 with the adoption of its WSP that year, and last updated its WUE Program as part of its 2013 WSP. The City has established new WUE goals for this update, building on the previous goals of reducing DSL and summer water use. The new WUE goals are as follows:

- Reduce the maximum day demand/average day demand (MDD/ADD) peaking factor to 2.5 by 2030.
- Maintain system-wide DSL at less than 6.0 percent per year based on a 3-year rolling average.

The City's highest annual MDD/ADD peaking factor of 2.68 was observed in 2016, as shown in **Table 3**. This peaking factor is above the typical range of 1.2 to 2.5 observed for most Puget Sound area systems. The City has established the goal of reducing the MDD/ADD peaking factor to 2.5 by 2030. Reducing the peaking factor will help mitigate the City's need to acquire additional water rights in the future and minimize the need to increase other aspects of system capacity.

Table 3

Demands and Peaking Factors

Year	Average Day Demand (gpm)	Maximum Day Demand (gpm)	Peak Hour Demand (gpm)	MDD/ADD Peaking Factor	PHD/MDD Peaking Factor
2015	988	2,241	4,214	2.27	***1.88***
2016	929	2,491	***4,495***	***2.68***	1.80
2017	1,068	***2,585***	4,284	2.42	1.66

As shown in **Table 4**, the system-wide DSL 3-year rolling average has been under 6 percent since 2015, well below the state DSL standard of 10 percent. The City's goal is to maintain the 3-year rolling average below 6 percent through 2030.

Table 4

Distribution System Leakage

	Year						
Description	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Metered Customer Use (MG)	360.7	459.9	464.5	490.9	519.4	471.2	551.3
Total Supply (MG)	442.1	472.2	506.3	536.0	519.2	489.4	561.6
Total DSL Volume (MG)	81.4	12.3	41.8	45.0	-0.2	18.2	10.3
Total DSL Percentage	18.4%	2.6%	8.3%	8.4%	0.0%	3.7%	1.8%
Rolling 3-Year Average DSL Percentage	---	---	9.8%	6.4%	5.5%	4.0%	1.8%

In compliance with the WUE Rule, a public hearing was held on July 26, 2021 at a City Council meeting to present and discuss the new goals. The City Council adopted the new goals on September 9, 2021.

Evaluation and Selection of Water Use Efficiency Measures

The City's evaluation of WUE measures and selected levels of implementation are presented within this section. The measures fall within three categories of implementation: 1) mandatory measures that must be implemented; 2) measures that must be evaluated; and 3) additional measures selected by the City that must be either evaluated or implemented.

The City served an average of 4,911 water service connections in 2017. Based on the number of connections, at least six WUE supplemental measures must be evaluated or implemented. Measures that are mandatory cannot be credited towards the system's WUE measures. Since the City implements the minimum number of required measures, a cost-effective evaluation is not required.

Mandatory Measures

Source Meters

The volume of water produced by the system's sources must be measured using a source meter or other meter installed upstream of the distribution system. Source meters are currently installed and operating at each of the City's sources. If any new sources are installed in the future, they will be equipped with a source meter.

Service Meters

All public water systems that supply water for municipal purposes must install individual service meters for all water users. Service meters are currently installed and operating at all connections throughout the distribution system. All future connections that are installed or activated will be equipped with a service meter.

Meter Calibration

The City must calibrate and maintain meters based on generally accepted industry standards and manufacturer information. Currently, the City evaluates and calibrates source meters every 2 years. The City began a customer meter replacement program in 1999. Customer meters are inspected regularly and replaced as necessary. Damaged or suspect meters are replaced as soon as they are discovered.

Water Loss Control Action Plan

To control leakage, systems that do not meet the state DSL standard of 10 percent must implement a Water Loss Control Action Plan (WLCAP). The City's rolling 3-year average DSL has been less than 10 percent for the past 5 years based on the information presented in **Table 4** and **Chapter 4** of the WSP. Therefore, a WLCAP is not required to be implemented.

Customer Education

Annual customer education regarding the importance of using water efficiently is a required element of all WUE programs. The City intends to provide water conservation tips along with the Consumer Confidence Report (CCR), on the City's website, and at City Hall. These materials include lawn watering and indoor conservation tips. Additional customer education and outreach measures are identified in the **Selected Supplemental Measures** section.

Measures that Must be Evaluated

Rate Structure

A rate structure that encourages WUE and provides economic incentives to conserve water must be evaluated but is not required to be implemented. The City's current utility rates are designed to discourage excessive water use. A base water rate is charged, depending on the meter size, regardless of consumption. An increasing block rate structure imposes a unit charge for water use that increases as the volume of water consumed increases.

Reclamation Opportunities

Revised Code of Washington (RCW) 90.46.010 defines reclaimed water as "water derived in any part from wastewater with a domestic wastewater component that has been adequately and reliably treated, so that it can be used for beneficial purposes." Water systems with 1,000 or more connections must evaluate reclamation opportunities (WAC 246-290-100(4)(f)(vii)), but only actual use of reclaimed water counts as a WUE measure (WAC (246-290-810(4)(d)) or multiple WUE measures if the reclaimed water is used for multiple purposes.

The City produces Class A reclaimed water at its Water Reclamation Facility (WRF). The reclaimed water is used for golf course irrigation and municipal irrigation purposes in the Snoqualmie Ridge area. The reclaimed water irrigation system is operated by a program called Maxicom, which computes the evapotranspiration rate on a daily basis and schedules irrigation in an efficient manner. This method of irrigation reduces the amount of water used for irrigation purposes.

Use of reclaimed water by the City's Irrigation and Public customer classes counts as two supplemental WUE measures.

Selected Supplemental Measures

The City has chosen to implement four different supplemental WUE measures in addition to those that are mandatory or required to be evaluated. Because several of these WUE measures affect multiple customer classes (detailed below), the City's WUE program counts as 16 WUE measures, which is greater than the requirement of 6 WUE measures based on the number of service connections.

Water Bill Showing Consumption History

The City is committed to including consumption history on all bills to its customers. The City's billing software, Springbrook, has the capability to include historic graphs on bills, and the City shows consumption history for all six of the City's customer classes. This counts as six supplemental WUE measures.

Notifying Customers about Leaks on Their Property

The City's billing department monitors customers' water bills for abnormally high water reads. When a significantly high read occurs that is outside the range of normal use, the customer is notified of a potential leak on their side of the water meter. The City provides this information to all six customer classes; thus, it counts as six supplemental WUE measures.

Snoqualmie Ridge (SR) I and II Irrigation Analysis and Water Audit

The City has conducted a thorough and exhaustive inventory and analysis of the irrigation systems within the Snoqualmie Ridge area. The City has identified all areas irrigated by either potable or reclaimed water and verified all meter data and account information to ensure all irrigated water is being properly accounted for and billed. The City now monitors monthly irrigation data for all services to help determine if additional conservation measures are needed

to curtail water use. This WUE measure applies to the City's Irrigation customer class; therefore, it counts as one supplemental WUE measure.

Purveyor Assistance

The City provides wholesale water to the Walter Walker Water Works system. The Walter Walker system includes approximately 14 homes. Conservation and efficient water use efforts made by the City intended for residential customers will be extended to the homes in the Walter Walker system as well. Because the Walter Walker system is included in the City's Residential customer class, this counts as one supplemental WUE measure.

Water Use Efficiency Program Schedule and Budget

The WUE measures described above and selected for implementation by the City are summarized in **Table 5** with their corresponding schedule and budget. The successful implementation of this program is expected to achieve the City's WUE goals.

Table 5

WUE Program Schedule and Budget

Mandatory WUE Measures		
Measure	**Schedule**	**Budget**
Source Meters Installed	Ongoing	O&M Funded
Service Meters Installed	Ongoing	O&M Funded
Meter Calibration Compliance	Ongoing	O&M Funded
Customer Education	Ongoing	O&M Funded
WUE Measures That Must Be Evaluated		
Measure	**Schedule**	**Budget**
Rate Structure	Ongoing	Not Applicable
Reclamation Opportunities	Ongoing	Not Applicable
Selected WUE Measures		
Measure	**Schedule**	**Budget**
Water Bill Showing Consumption History	Ongoing	Not Applicable
Notifying Customers About Leaks	Ongoing	O&M Funded
SR I and II Irrigation Analysis and Water Audit	Ongoing	O&M Funded
Purveyor Assistance	Ongoing	Not Applicable

O&M = Operations and Maintenance

Water Use Efficiency Program Evaluation and Reporting

The City will continue to evaluate overall demand, per capita and per equivalent residential unit water use, peaking factors, and the amount of DSL on an annual basis. The City will evaluate the performance of its WUE program and implemented measures by analyzing demand data and determining the long-term trend towards reducing water usage and meeting WUE goals. If the program monitoring shows that progress towards meeting the WUE goals is not being

accomplished, more rigorous program implementation or additional program items will be considered, along with a cost-effective evaluation of measures.

The City will provide annual WUE performance reports to its consumers in the CCR and will detail the results of water use monitoring and progress towards achieving the system's WUE goals. A copy of the City's current CCR is included in **Appendix L** of the City's WSP.

RH2 ENGINEERING
Bothell
22722 29th Drive SE, Suite 210
Bothell, WA 98021
1.800.720.8052 / rh2.com

July XX, 2023

Mr. Richard Rodriguez
Regional Planner
Northwest Drinking Water Operations
20425 72nd Avenue South, Suite 310
Kent, WA 98032-2388

Sent via: *Email*

Subject: **Submittal #21-1013 – City of Snoqualmie Water System Plan Response to Comments**

Dear Mr. Rodriguez:

On behalf of the City of Snoqualmie (City), RH2 Engineering, Inc., (RH2) is submitting one updated electronic copy of the City's Water System Plan (WSP). The review comments from the Washington State Department of Health's (DOH) letter dated February 10, 2022 are addressed below. DOH comments are provided below in bold text, with RH2 responses in normal text.

Water System Description

1. **Please provide a WSP adoption ordinance from King County.**

   This will be included in Appendix D when received from King County.

Basic Planning Data

2. **The WSP contains actual water use data up to 2017. Please explain the absence of 2018 and 2019 data.**

   Development of the WSP update began in 2018; 2017 was the most recent full calendar year of data available at the time.

3. **Actual water use efficiency total annual consumption figures for 2018 and 2019 are greater than forecasted consumption for those years. Please discuss.**

WASHINGTON LOCATIONS
Bellingham
Bothell (Corporate)
East Wenatchee
Issaquah
Richland
Tacoma

OREGON LOCATIONS
Medford
Portland

IDAHO LOCATIONS
Meridian

RH2 compared the reported total production (TP) in the City's 2018 – 2021 Water Use Efficiency (WUE) Annual Performance Reports to the average day demand projections shown in Table 4-13. The City's actual demands are consistently approximately 10 to 20 percent less than the projected demands. This demonstrates that the projected demands presented in the WSP have so far been somewhat conservative.

4. **Distribution System Leakage (DSL) in 2015 was reported as 0% and has been acknowledged as a metering error. However, this value was still used to calculate the 3-year Rolling Average DSL Percentage (Table 4-6). Would using a more conservative DSL estimate, rather than 0%, provide a more accurate 3-Year Rolling Average DSL Percentage?**

   Comment acknowledged. It would be ideal if better information was available to estimate the DSL for this year, but RH2 and the City have been unable to confirm the reason for the negative DSL calculation, so the table has not been changed. The City is committed to monitoring DSL accurately and ensuring that DSL remains below 10 percent of total water use. The City's 2018 – 2021 WUE forms show that DSL has been maintained at 10 percent or less for each of these years.

5. **Table 4-9 only displays three years of peaking factor data. Have peaking factors stayed relatively stable since 2011, or are they decreasing/increasing?**

   Unfortunately, SCADA data prior to 2015 was not available for calculation of peaking factors. As shown in Table 4-9, the 2015-2017 MDD/ADD peaking factor had an upward trend, while the PHD/MDD peaking factor has decreased each year. The City will continue to monitor peaking factors and evaluate trends. The City has a WUE goal to reduce the MDD/ADD peaking factor to 2.5 by 2030.

6. **What would account for the sudden increase in forecasted employment figures for 2031 to 2032?**

   This employment growth is associated primarily with the currently-anticipated timing of Phase 3 of the Snoqualmie Mill Site development.

System Analysis

7. **It is acknowledged that the plan demonstrates adequate capacity up to the year 2030 provided the capital storage projects are built as planned. The source capacity deficiency will have to be resolved in a subsequent water system plan that is reviewed and approved prior to 2030.**

   Comment acknowledged.

Water Use Efficiency Program (WUE) and Water Rights Assessment

8. **Respond to any review comments from the Department of Ecology.**

   Responses to Ecology's comments are included in Appendix P.

Source Protections

No Comment.

Water Quality

Coliform Monitoring Plan; Include five additional sample locations to Table 8 in Appendix J to align with increased monthly requirements.

The City received concurrence for a WFI form update from Brian Wilson (Operating Permits and WFI Program Coordinator, DOH Office of Drinking Water) in April 2022. The updated WFI form results in 15 sample locations which are shown in Table 8. If needed, the City can provide associated e-mail correspondence.

Operations & Maintenance

9. **Thank you for keeping the water facilities inventory updated. Is the City currently working with our operator certification team to ensure meeting the system requirements for Water Distribution Manager 3 and cross-connection control specialist certification?**

   The City currently employs one Water Distribution Manager (WDM) 3 staff and one additional staff is preparing to take the exam. The City also employs one cross-control specialist and one Water Treatment Plant Operator 2.

10. **Consider adding annual or quarterly inspection of reservoir seals and screens (access hatch gasket, vent screen etc.) to the preventative maintenance schedule.**

    Quarterly reservoir seal and screen inspection has been added to the preventive maintenance schedules in Chapter 8.

11. **Does your valve maintenance program include inspection and testing of the air/vacuum valves? If not, please consider incorporating.**

    Air/vacuum valve inspection, cleaning, and maintenance has been added to the preventive maintenance schedules in Chapter 8.

Distribution Facilities Design and Construction Standards

12. **Consider updating distribution construction standards from the 2004 version provided.**

    a. **Please provide design standards for all types of backflow prevention assemblies found in the system (RPBA for example).**

    b. **The combination air valve assembly standard drawings show a drain in the vent line. The Department considers this a potential cross-connection. Think about eliminating the drain line from the air vacuum assemble design.**

    c. **Please include more detail on the disinfection procedure and bacteriological testing of new water main projects in the construction specifications.**

    The City is in the process of updating distribution system construction standards in conjunction with utility system capital improvement projects. These updates are expected to be completed later this year.

Improvement Program

13. Does the City have plans to build a two-way intertie with the City of North Bend? If so, please consider incorporating the project, project feasibility study, or both in the improvement schedule.

Due to the proximity of these systems, an intertie is potentially feasible. It is anticipated that water supply alternatives such as this will be evaluated as part of CIP M1 (Source of Supply Improvements – Study), which seeks to procure an additional source(s) of water supply for the City or to increase the capacity of existing sources.

Financial Planning

No comment.

Other Documentation

14. The water system must meet the consumer input process outlined in WAC 246-290-100(8). Please include documentation of a consumer meeting discussing the WSP, prior to DOH approval of the WSP.

The draft WSP was presented at the July 26, 2021 City Council roundtable meeting; minutes are included in Appendix P. Resolution 1593, Approving the Submittal of the Draft Water System Plan for review to the Department of Health, was adopted at the September 27, 2021 City Council regular meeting (minutes included in Appendix P).

15. Prior to DOH approval, the District's governing body must approve and adopt the WSP.

Documentation is included in Appendix P of the City's adoption of the plan at the July 10, 2023 City Council meeting.

16. Provide a signed SEPA Checklist and SEPA threshold determination with the final WSP submittal.

These are included in Appendix E.

17. Include any comments from adjacent purveyors, the Snoqualmie Tribe, and the District's response to those comments.

These are included in Appendix P.

RH2 has enclosed one electronic copy of the final WSP. If this submittal of information meets your needs for WSP approval, RH2 requests, on behalf of the City, that the WSP be approved. If you have any questions, please contact me at (425) 951-5319 or via email at zschrempp@rh2.com.

Sincerely,

Zach Schrempp, PE
Project Engineer
ZS/mrc

Enclosures: City of Snoqualmie Water System Plan (one electronic copy)

RH2 ENGINEERING
Bothell
22722 29th Drive SE, Suite 210
Bothell, WA 98021
1.800.720.8052 / rh2.com

July XX, 2023

Mr. Jay Cook
Hydrogeologist
Department of Ecology
Northwest Regional Office
PO Box 330316
Shoreline, WA 98133-9716

Sent via: *Email*

Subject: **City of Snoqualmie Water System ID 81080 Water System Plan Response to Comments**

Dear Mr. Cook,

On behalf of the City of Snoqualmie (City), RH2 Engineering, Inc., (RH2) is submitting the following responses to the Washington State Department of Ecology's (Ecology) review comments on the City's Water System Plan (WSP). The review comments from Ecology's letter dated March 1, 2022 are addressed below. Excerpts of Ecology comments are provided below in bold text, with RH2 responses in normal text.

While current use appears to be well below the City's total authorized quantities, projected future demand is expected to increase by approximately 32 percent by the end of the 20-year planning period. Chapter 7 of the WSP estimate the City of Snoqualmie will have a source capacity deficiency of approximately 41 gpm by 2030 and 537 gpm at the end of the 20-year planning period. *These estimates do not track with the City of Snoqualmie's Water Rights Self-Assessment, as provided in Appendix I of the WSP.* Estimates provided in the Self-Assessment indicate no deficiency for the 10-year planning period and a 470 gpm deficiency at the end of the 20-year planning period. No deficiency in annual quantity (ac-ft/yr) was identified in the WSP.

Based on the information provided in the City of Snoqualmie WSP, dated August 2021, future source capacity, as limited by legal availability under state- issued water rights, appears to be an issue. According to the WSP, the City of Snoqualmie is considering an aquifer storage and recovery project as well as other improvements to resolve the projected deficiency in instantaneous quantity. Ecology understands that City of Snoqualmie has active water right applications, G1-27589 and S1-28833 on file, and that the City is actively evaluating the technical and regulatory considerations associated with these pending applications.

RH2 acknowledges this comment; Table 7-2 shows the water source capacity including physical (pumping/treatment) limitations, so the reported capacities for the North and South Wellfields are less than the water rights limitations reported on the Water Right Self-Assessment form in Appendix I.

The City is working to determine the best path forward to resolve the projected water rights deficiency; multiple capital improvement projects have been identified in Chapter 9 to address the deficiency, including exploration of aquifer storage and recovery. The City recently received a Water Resources Streamflow Restoration grant from the Department of Ecology that will fund part of the costs of model development and a feasibility analysis of Aquifer Storage and Recovery.

If you have any questions, please contact me at (425) 951-5319 or via email at zschrempp@rh2.com.

Sincerely,

Zach Schrempp, PE
Project Engineer
ZS/mrc

RH2 ENGINEERING
Bothell
22722 29th Drive SE, Suite 210
Bothell, WA 98021
1.800.720.8052 / rh2.com

July XX, 2023

Mr. Dan Cardwell
Chair of the King County Utilities Technical Review Committee
King County Department of Local Services
201 S Jackson Street
KSC-LS-0815
Seattle, WA 98104

Sent via: *Email*

Subject: **City of Snoqualmie Water System Plan**
Response to Comments

Dear Mr. Cardwell,

On behalf of the City of Snoqualmie (City), RH2 Engineering, Inc., (RH2) is submitting one updated electronic copy of the City's Water System Plan (WSP). The review comments from the King County Utilities Technical Review Committee's (UTRC) open meeting on April 20, 2022 are addressed below. UTRC comments are provided below in bold text, with RH2 responses in normal text.

Table 3-3: The City's population shows zero population growth from 2021-2025. There are only 1000 new residents in the next twenty years? At the same time, 4000 new jobs? Table 4-13 shows the City growing by only nine residents per year from 2025-2029. These numbers all seem ultraconservative. There's no mention of a moratorium anywhere in the document, if that's any part of the rationale.

The population and employment projections reported in the WSP are consistent with the projections provided by the City's Community Development Department, which do not depend upon enactment of a moratorium. The City assumes zero net population growth from 2023 – 2025, and relatively low growth from 2026 - 2029. The majority of the City's current population primarily resides in two master planned developments, Snoqualmie Ridge I and II, which are nearly fully built-out. The three remaining undeveloped parcels are slated for non-residential commercial, a school, and a 46-unit duplex/townhome project for which occupancy is not likely until 2025.

The total City population growth from 2017 to 2040 is projected to be approximately 2,300 people and the total City employment growth from 2017 to 2040 is projected to be approximately 4,600 jobs. Approximately 2,900 of the projected 4,600 jobs are associated with Mill Site Phase 2 and 3, which do not have a residential component. Opportunities for infill residential growth outside of Snoqualmie Ridge I and II, i.e., in historic downtown are severely limited by the presence of regulated floodplain/floodway designations.

Population and employment projections and the their role in the WSP, were explained in some detail by Michele Campbell of RH2, during testimony on a SEPA Environmental Impact Statement appeal in April, 2022, at which the UTRC's Jae Hill attended and also testified.

Page 3-8: "It was assumed that the customers in the UGA outside the City limits would all be annexed to the City by 2040." Are these annexations part of the extremely limited growth in Tables 3-3 and 4-13?

The water system population and employment projections presented in Table 3-3 and Table 4-13 carefully consider that projected City population/employment growth may include annexation of existing water system customers and endeavor not to "double count" these customers when projecting water system growth.

Page 4-2: Priority for extension. City maintains a duty to serve within its retail service area, but specifically deprioritizes properties outside of the corporate limits of the city. This mentions the order of priority for applications, but not how that priority is allocated. Is it done annually? As applications are made?

The City maintains priorities for the extension of water service and acknowledges its duty to serve as noted on pages 4-1 and 4-2. Similar priorities for extension of service were adopted in the City's 2013 Water System Plan, in Appendix E. These priorities are evaluated at the time of determination of water availability based on information available, including development vested by an approved development agreement and related master plan approval, other applications and water demand projections outlined in the water system plan.

Table 4-14: Assuming that no ERUs are added, due to no population increase during the period from 2022-2025, what causes the additional ERUs to begin specifically at 2025?

Table 4-14 shows ERU growth after 2025, commensurate with the water system growth projected in Table 3-3.

Page 10-11 mentions non-rate revenues, and are shown in Table 10-5 to measure 4% of total projected revenue. What do these revenues include? If connection charges, there are probably zero new connections if there is zero population growth.

Per FCS Group, the non-rate revenues include the following: Fire hydrant use permits, water hookup charges, water finance charge/late fees, sales of scrap & junk, miscellaneous revenue, interest on investments, and irrigation finance charge/late fees.

There's not a single mention of "climate change" in the document, much less an analysis of the potential impacts on climate change with regards to instream flows. The document does

mention that minimum instream flows are not met on 66% of days currently (Page 6-8), but doesn't say what will happen in the future.

A new section has been added at the end of Chapter 4 describing potential climate change impacts to the City's water system.

The discussion on potential sources doesn't identify any specific sources. Is the Tolt River pipeline concept being revived?

It is not known whether it is feasible for the City to purchase drinking water directly from Seattle Public Utilities (SPU) due to the distance between the City's distribution system and any existing SPU transmission mains. It is anticipated that water supply alternatives such as this will be evaluated as part of CIP M1 (Source of Supply Improvements – Study), which seeks to procure an additional source(s) of water supply for the City or to increase the capacity of existing sources. Other potential supply alternatives include Aquifer Storage and Recovery (ASR), as well as development of two pending water right applications currently on file with the Department of Ecology, G1-27589 and S1-28833, for which the City is actively evaluating the associated technical and regulatory considerations.

Is there potential for an intertie with North Bend, for either potable water or mitigation supply?

Due to the proximity of these systems, an intertie is potentially feasible. It is anticipated that water supply alternatives such as this will be evaluated as part of CIP M1 (Source of Supply Improvements – Study), which seeks to procure an additional source(s) of water supply for the City or to increase the capacity of existing sources.

Page 13 of the Water Quality Monitoring Plan has the box checked "Yes" for "We can activate an emergency intertie with an adjacent water system in an emergency", but no emergency intertie source is indicated anywhere else in the document.

This portion of the Water Quality Monitoring Plan has been revised, as the City does not have an emergency intertie with an adjacent system that can be used as a source of supply.

There's no reference in the document to the proposed Snoqualmie Mill project. Is this water already allocated? Is it accounted for in the planning documents? Are all three phases considered?

The population and employment growth projected for the Mill Site are included in Table 3-3, which is the basis for the water system demand projections utilized for the WSP capacity analysis and CIP.

RH2 has enclosed one electronic copy of the final WSP. If this submittal of information meets your needs for WSP approval, RH2 requests, on behalf of the City, that the WSP be forwarded to the King County Council for review and approval. If you have any questions, please contact me at (425) 951-5319 or via email at zschrempp@rh2.com.

Sincerely,

Zach Schrempp, PE
Project Engineer
ZS/mrc

Enclosures: City of Snoqualmie Water System Plan (one electronic copy)

RH2 ENGINEERING
Bothell
22722 29th Drive SE, Suite 210
Bothell, WA 98021
1.800.720.8052 / rh2.com

July XX, 2023

Mr. Matt Baerwalde
Environmental Policy Analyst
Snoqualmie Indian Tribe
PO Box 969
Snoqualmie, WA 98065

Sent via: *Email*

Subject: **City of Snoqualmie Water System Plan**
Response to Comments

Dear Mr. Baerwalde:

Thank you for your review comments on the City of Snoqualmie's (City) Water System Plan (WSP). In coordination with the City, RH2 Engineering, Inc. (RH2) has prepared the following responses to the review comments from the Snoqualmie Indian Tribe's e-mailed letter (received on September 20, 2021). Snoqualmie Indian Tribe comments are provided below in bold text, with RH2 responses in normal text.

Snoqualmie Indian Tribe Comment:

Regarding Irrigation

***Concern*: With irrigation representing 1.4% of the City's 2017 connections, but 22% of its 2017 consumption, there is clearly a responsibility for the City to reduce this over-representation for a largely optional consumptive connection class. According to Chart 4-4 of the WSP, irrigation demand has been continually increasing as well. What is not clear from the WSP is if the Class A reclaimed water discussed in Appendix F is a part of the reported irrigation demand in Chart 4-4, and/or the 22.4% of 2017 irrigation consumption. Overall, the WSP should be very careful and deliberate to distinguish "demand" from "consumption."**

***Recommendation*: The Water System Plan update should describe how the City will vigorously pursue options to reduce irrigation demand. This may include installing more resilient landscaping, identifying appropriate measures for droughts, and investigating expansion of using reclaimed water for irrigation. A schedule for feasibility and implementation with associated benchmarks should be included as a component of this work.**

WASHINGTON LOCATIONS
Bellingham
Bothell (Corporate)
East Wenatchee
Issaquah
Richland
Tacoma

OREGON LOCATIONS
Medford
Portland

IDAHO LOCATIONS
Meridian

City/RH2 Response:

Thank you for your comments regarding irrigation use.

The City's WSP only addresses the potable water system; Class A reclaimed water production and use is evaluated in the City's Reclaimed Water Reuse Plan.

While the potable water system's peak monthly irrigation consumption occurred in August 2017 (as shown on Chart 4-4), Table 4-1 shows that annual irrigation consumption peaked in 2015 and was lower in 2016 and 2017, even as the number of irrigation connections increased.

As described in the City's Water Use Efficiency (WUE) Program (WSP Appendix F), the City is committed to use of reclaimed water for irrigation. The WUE Program also describes the extensive efforts the City has undertaken to analyze and audit irrigation use in the Snoqualmie Ridge area, including ongoing monthly monitoring. The City is also committed to providing customer education regarding efficient outdoor water use, as described in the WUE Program.

The City has also included a capital improvement program project to assist with achieving these goals. CIP M4, Water Use Efficiency Audit and Programming, as described in Chapter 9, includes plans to hire a consultant to develop and implement a robust city-wide water/irrigation conservation program.

The terms "consumption" and "demand", as utilized in the WSP, are defined in Chapter 1.

Snoqualmie Indian Tribe Comment:

Regarding Residential Use

***Concern*: With single-family residential connections representing 91.7% of the number of connections, and 56.1% of the City's consumption, this is another obvious area where targeted improvements are badly needed. Table ES-6 of the WSSP draft states that per capita residential demand is 86 gallons per day (gpd).**

***Recommendation*: Relative to data reported from other locales within the Puget Sound region, this is an extremely high per capita rate, and should be improved through outreach, education, and potentially code revisions*. Recognizing the precious nature of water resources in the Snoqualmie Valley, the City of North Bend recently passed water conservation code, effective during times of drought. The City of Snoqualmie should consider such common-sense measures and plan for them in the WSP. Regrettably, the WSP does not account for changing future conditions as a result of climate change. Since our region is already suffering from the effects of climate change, including changes in environmental water supply and delivery patterns, the WSP should immediately begin resiliency and adaptation measures aimed toward reducing per capita consumption. At a minimum, this should be a newly adopted goal, and a detailed implementation outline which includes benchmarks and dates should be included for the next 10-year planning period, if not for a longer time horizon.**

City/RH2 Response:

Thank you for your comments regarding residential use.

In evaluating the City's per-capita water use data versus other water systems, it is important to verify that the data is of the same format. While RH2 was unable to confirm the data presented by the Snoqualmie Indian Tribe from Mason PUD (approximately 50 gpd) and SPU (36.7 gpd), it appears that this may be per capita *single-family metered consumption*, whereas the City's residential per capita *demand* of 86 gpd reported in WSP Table 4-7 includes consumption and estimated distribution system leakage (DSL) for several customer classes (including residential, schools, hydrants, outside City connections [not including Snoqualmie Casino], as well as associated irrigation). Accordingly, it is not reasonable to directly compare these numbers. RH2 maintains an extensive database of system-wide per-capita demand data for Washington state water systems, and the City's system-wide per-capita demand appears to be below-average when compared to this dataset.

In response to Snoqualmie Indian Tribe and King County comments, a new section has been added at the end of Chapter 4 describing potential climate change impacts to the City's water system.

Snoqualmie Indian Tribe Comment:

Regarding Water Use Efficiency

***Concern*: The Water Use Efficiency measures described in Appendix F could be strongly improved. While reducing the maximum day demand/average day demand (MDD/ADD) peaking factor (which is likely abnormally high due to the City's overly high seasonal irrigation-related demands) will be important, the WSP does not explain how this will be accomplished. The City is missing opportunities here, as the Selected Supplemental Measures comprise a short list that seems unlikely to produce the stated desired results.**

***Recommendation*: As mentioned above, the City should vigorously pursue resilient landscaping strategies across the City, including new and additional improvements at local golf courses, parks, and private residences. This should be backed up by a modern and well-supported multi-dimensional outreach program, which should go so far beyond the minimal and likely ineffective outreach measures stated in Appendix F.**

City/RH2 Response:

Thank you for your comments regarding water use efficiency.

The City is committed to achieving its stated WUE goals through the measures described in the WUE Program and through CIP M4, Water Use Efficiency Audit and Programming. Reclaimed water use, customer education, and irrigation use analysis (including follow-up conservation measures if needed, as described in the WUE program), are examples of measures that will directly support achieving the City's goal of reducing the MDD/ADD peaking factor. As described in Chapter 9, CIP M4 includes plans to hire a consultant to develop and implement a robust city-wide water/irrigation conservation program. The Snoqualmie Indian Tribe's comments are valued and will be considered as the City continues to work towards more efficient use of water.

Snoqualmie Indian Tribe Comment:

SEPA Checklist Additions Needed:

(1) The SEPA Checklist in Appendix E, Question 5b should be revised to include Endangered Species Act Threatened Status Puget Sound Chinook, Puget Sound Steelhead, and Bull Trout. The City's WSP directly affects water resources in the Snoqualmie River, which will affect these species.

(2) Section 13 of the Checklist should be revised to include, at a minimum, Snoqualmie Falls, a Traditional Cultural Property of the Snoqualmie Tribe as listed on the National Register of Historic Places, and the flows over which have been federally-protected as part of the religious practices of the Snoqualmie Tribe.

City/RH2 Response:

Thank you for your comments on the SEPA checklist. The checklist has been revised to include references to threatened species present in the Snoqualmie River, a description of the Falls Traditional Cultural Property's National Register Status, and FERC hydropower license minimum flow limitations.

Once again, thank you for your review and comments on the City's WSP. If you have any questions, please contact me at (425) 951-5319 or via email at zschrempp@rh2.com.

Sincerely,

Zach Schrempp, PE
Project Engineer
ZS/mrc