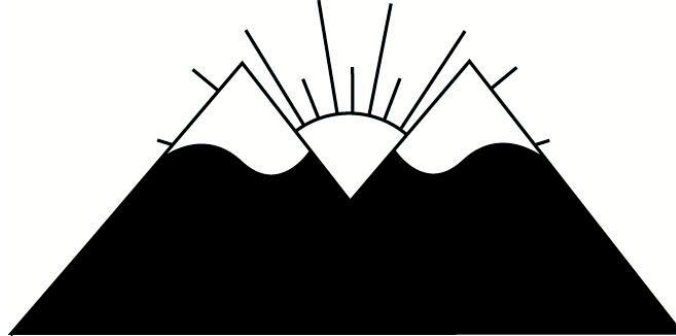


TOWN OF LYMAN

SKAGIT COUNTY

WASHINGTON



WATER SYSTEM PLAN EXTENSION

G&O #19620
SEPTEMBER 2020

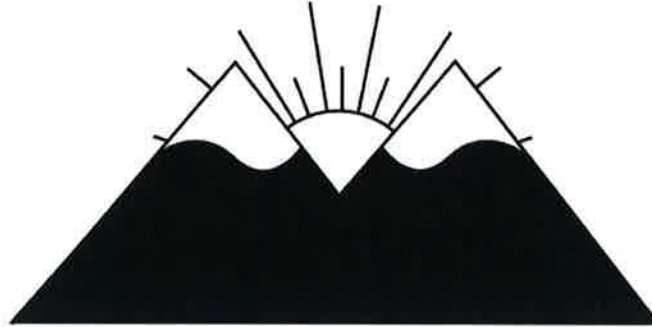


Gray & Osborne, Inc.
CONSULTING ENGINEERS

TOWN OF LYMAN

SKAGIT COUNTY

WASHINGTON



WATER SYSTEM PLAN EXTENSION



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SEPTEMBER 2020



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CONSULTING ENGINEERS

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EXECUTIVE SUMMARY

The Washington Department of Health (DOH) recently changed the planning period for a standard Water System Plan (WSP) from 6 years to 10 years. Soon after, DOH offered the ability for water systems, who have experienced relatively minor changes over their previous planning period, to apply for a 4-year WSP extension at the end of their 6-year WSP.

The Town of Lyman's WSP extension provides a comparative analysis of historical and forecasted planning parameters established in the Town's 2013 WSP as well as a revised planning forecast and updates to Town plans and protocols.

The planning parameters included population, number of equivalent residential units, distribution system leakage, average day consumption, average day demand, maximum day demand and peak hour demand. All the 2019 historical values were well below those initially forecasted for the same year in the previous plan. This was largely attributed to smaller than expected population and consumption growth as well as an overall decrease in distribution system leakage.

The forecast was revised after updating peaking factors and setting new baselines based on historical data. The updated forecast for 2023 (the end of the 4-year extensions planning horizon) yielded planning parameters that were still well below those predicted for 2019 in the previous WSP, making a strong case that the previous Plan is still be applicable today.

As part of this extension, the Town also updated its Capital Improvement Project (CIP) schedule. Five projects were completed since 2013, including two leak repair, one reservoir cleaning, and two well improvement projects. Five new projects were also added to the schedule, addressing concerns which are discussed in the Water Loss Action Plan and the 2016 Sanitary Survey. The City has scheduled \$27,700 of CIPs over the 4-year extension's planning horizon.

The Water System Plan Extension also includes updated Water Use Efficiency (WUE) goals, a Water Loss Control Action Plan, an updated Coliform Monitoring Plan, an updated Emergency Response Plan as well as a Standard Operating procedure document for switching between well sources.

WATER SYSTEM EXTENSION ANALYSIS

The objective of this Water System Plan (WSP) extension is to update planning and water demand information, Capital Improvement Projects (CIPs), and financial projections since the adoption of the Town of Lyman's (the Town) 2013 Water System Plan. Previous forecasted planning parameters shall be compared to actual historical data before the planning forecasts, CIP schedules, and budget projections are updated and revised and a supporting case is made for a 4-year extension of the current Plan.

PLANNING

In order to evaluate the validity of extending the use of the 2013 Water System Plan by 4 years, the Plan’s projected population and consumption for the previous planning period must be compared to the corresponding historical values. These are summarized in Table 1.

TABLE 1

2013-2019 Population and Consumption

Year	Population		Average Day Consumption (gpd)	
	WSP Projection	Historical ⁽¹⁾	WSP Projection	Historical ⁽²⁾
2013	480	440	30,700	28,628
2014	487	445	31,200	30,662
2015	495	455	31,600	30,662
2016	502	450	32,100	27,456
2017	510	455	32,600	30,407
2018	517	455	33,100	27,014
2019	525	450	33,600	29,745

(1) Office of Financial Management population estimates.

(2) Calculated from Town’s water bill data.

Both population and consumption have increased at significantly lower rates than projected in the 2013 WSP, suggesting the capacity assumptions laid out in the previous plan could still be valid today.

The subsequent sections will update peaking factors and other planning parameters in order to inform historical and projected comparisons and build the case for extending the Town’s previous WSP. In the process, forecasts and projections for 2020 through 2023 will be updated as well, drawing new baselines from historical data.

Updating Parameters: ERU Consumption and Peaking Factors

In order to further inform the 2013 through 2019 projection comparison and to revise the 2020 through 2023 forecast the Maximum Day Demand (MDD) peaking factor, the average day consumption per ERU (ERU_{ADD}), and the peak hour demand (PHD) peaking factors were re-calculated using the Town’s current consumption billing and well production data.

The Town does not record daily withdrawal rates, so peak day values are not note. The Town does, however, record monthly production data. The maximum day demand and ultimately the maximum day peaking factor can be determined using maximum month average day demand (MMADD) per the method outlined in the Department of Health’s 2019 *Water System Design Manual*. This process is summarized in Table 2.

TABLE 2

Maximum Day Demand Peaking Factor

Year	Maximum Monthly Average Day Demand⁽¹⁾	Max Day Demand⁽²⁾	Average Day Demand⁽³⁾	Peaking Factor
2014	47,003	77,555	41,323	1.88
2015	56,001	92,401	36,141	2.56
2016	60,641	100,058	41,138	2.43
2017 ⁽⁴⁾	79,569	131,290	55,730	2.36
2018	49,087	80,994	36,555	2.22
2019	53,852	88,855	37,376	2.38
Average Peaking Factor				2.30
2013 WSP Peaking Factor				1.99

- (1) Based on maximum month of production from well data.
- (2) MDD = MMADD *1.65, consistent with Chapter 3 of the 2019 DOH *Water System Design Manual*.
- (3) Average daily production from well data.
- (4) Two large leaks occurred in January 2017; the recorded volume of these leaks (616,217 gallons) was removed from the 2017 production totals for the sake of the peaking calculations.

A peaking factor of 2.30 shall be used when projecting max day demand for average day demand (see Table 6).

ERU_{ADD} is based on the average water demand for a typical single-family household. This value is dynamic overtime and unique to each municipality. Data was obtained from the Town’s consumer water bills. The ERU_{ADD} for 2013 through 2019 can be found in Table 3.

TABLE 3

ERU_{ADD} for 2013 through 2019

Year	SF Residential Consumption (gpd)	Number of SF Residential Connections	Historical ERU_{ADD} (gpd)
2013	24,856	187	133
2014	26,038	191	136
2015	26,038	191	136
2016	24,433	199	123
2017	28,097	205	137
2018	25,396	199	128
2019	24,551	200	123
Average ERU_{ADD}			133
2013 WSP ERU_{ADD}			137

An ERU_{ADD} value of 133 gpd shall be used for future projections which are summarized in Table 6.

The peak hour demand peaking factor will be used in the updated planning projections. The peak hour demand was determined using the equation below.

$$PHD = (ERU_{MDD}/1440)[(C)(N)+F]+18$$

Where:

- PHD = Peak Hour Demand, total system (gallons per minute)
- N = Number of ERUs
- C = Coefficient Associated with Ranges of ERU, C = 2 (when 101 < N < 251)
- F = Factor Associated with Ranges of ERU, F = 75 (when 101 < N < 251)
- ERU_{MDD} = Maximum Day Demand per ERU

The peak hour demand and peak hour peaking factors for 2014 through 2019 are summarized in Table 4.

TABLE 4

Peak Hour Peaking Factor

Year	Max Day Demand (gpm)	Peak Hour Demand (gpm)	Peak Hour Demand Peaking Factor
2013	61	154	2.52
2014	54	145	2.69
2015	64	165	2.57
2016	69	173	2.49
2017	169	387	2.29
2018	56	146	2.59
2019	62	158	2.56
Average Peak Hour Peaking Factor			2.53
2013 WSP Peak Hour Demand Peaking Factor			2.61

A peak hour peaking factor of 2.53 shall be used when determining peak hour demand in the projections summarized in Table 7.

Projection and Historical Comparison

Comparing the planning parameters from the 2013 WSP to the historical values which actually occurred is a key step used in assessing the validity of extending the existing WSP. Population, ERUs, average day consumption, and average day demand are

compared in Table 5 while maximum day demand, distribution system leakage, and peak hour demand are compared in Table 6.

Historic population was determined using the Washington State Financial Management's population estimates for the Town of Lyman. The WSP projection values for ERUs were revised as the previous document had calculated ERUs based on consumption rather than production or system ADD, leaving out distribution system leakage. The historical ERUs were determined using the historic ADD (from Table 2) and each year's respective ERU_{ADD} (from Table 3). Historical maximum day demand was determined from maximum monthly production as detailed in Table 2. The WSP projected peak hour demand had to be updated as well since the number of ERUs changed. Historical peak hour demands were taken for the respective years from Table 4.

The Town contracted with Water and Wastewater Systems, Inc. midway through 2014. As a result, it was not possible to get detailed 2013 production data and the 2014 data was fragmented. All historical production and production derived parameters for 2013 and 2014 were estimated based on the Town's distribution system leakage reports.

TABLE 5
Population, ERU, Average Day Consumption, and
Average Day Demand Comparisons for 2013 through 2019

Year	Population		ERUs		Average Day Consumption (gpd)		Average Day Demand (gpd)	
	WSP Projection	Historical ⁽¹⁾	WSP Projection ⁽²⁾	Historical ⁽³⁾	WSP Projection	Historical ⁽⁵⁾	WSP Projection	Historical ⁽⁶⁾
2013 ⁽⁴⁾	480	440	380	330	30,700	28,628	52,100	43,857
2014 ⁽⁴⁾	487	445	384	210	31,200	30,662	52,600	41,323
2015	495	455	387	261	31,600	30,662	53,000	35,621
2016	502	450	391	326	32,100	27,456	53,500	40,029
2017	510	455	394	407	32,600	30,407	54,000	55,730
2018	517	455	398	279	33,100	27,014	54,500	35,564
2019	525	450	401	279	33,600	29,745	55,000	34,189

- (1) Office of Financial Management population estimates.
- (2) NOTE: Revised, ERUs in 2013 WSP projections were based on total consumption rather than total productions (system ADD), WSP projected ERUs have been recalculated using the equation:

$$ERUs = ADD/ERU_{ADD}$$
- (3) Based on $ERU = ADD/ERU_{ADD}$ from the respective year in Table 3.
- (4) The Town began contracting with Water and Wastewater Systems Inc. midway through 2014, Production data fragmented for 2014 and unavailable for 2013. Values were extrapolated from State DSL report.
- (5) Calculated from Town’s water bill data.
- (6) For 2015-2019, calculated from Town’s well production Data; estimated based off Distribution System Leakage Reports for 2013 & 2014.

TABLE 6

Maximum Day Demand, Distribution System Leakage and Peak Hour Demand Comparisons for 2013 through 2019

Year	Maximum Day Demand (gpd)		Distribution System Leakage		PHD (gpm)	
	WSP Projection	Estimate Historical ⁽¹⁾	WSP Projection	Historical ⁽²⁾	WSP Projection ⁽³⁾	Historical ⁽⁴⁾
2013	104,200	87,714	41%	36.9%	177	154
2014	105,200	77,555	41%	25.8%	178	145
2015	106,000	92,401	40%	13.0%	190	165
2016	107,000	100,058	40%	26.0%	192	173
2017	108,000	131,290	40%	43.1%	194	217
2018	109,000	80,994	39%	20.4%	195	146
2019	110,000	88,855	39%	13.0%	197	158

- (1) From Table 2 estimates.
- (2) From the Town’s Distribution System Leakage Reports.
- (3) Revised using updates WSP Projection ERU values from Table 5.
- (4) From Table 4.

The yearly historical values for population, ERUs, average day consumption, average day demand, maximum day demand, distribution system leakage, and peak hour demand were all lower than the 2013 Plan’s projections with the exception of 2017.

Two major leaks occurred in January 2017, resulting in a loss of over 600,000 gallons of water. Despite accounting for these leaks, the yearly DSL for 2017 still rose to 43.1 percent, surpassing the projected 40 percent leakage, and peak hour demand of 217 gallons per minute, surpassing the projected 194 gallons. This suggests another leak or event also occurred and contributed to an increase in DSL and water production. This uptick however, was short-lived. The DSL and production values for 2018 returned to levels comparable to those observed in 2016.

The 2019 historical values for population, ERUs, average day consumption, average day demand, max day demand, distribution system leakage, and peak hour demand are all lower than those projected for 2019. In fact, the 2019 historical values are all below those projected for 2013, suggesting the majority of planning and capacity analysis assumptions from the previous WSP would still be applicable today. The overall decrease in water demand parameters is likely the result of two factors: (1) slower than anticipated population growth; and (2) an overall decrease in DSL.

Revised Planning Projections

Updated projections for population, ERUs, average day consumption, ADD, MDD, DSL, and PHD for 2020 through 2023 and 2033 are summarized in Table 7. These updated projections include demands for residents living in the expanded RSA area which will

begin being served in 2024 and 2026. More details about these areas can be found in the Retail Service Area section later in this WSP extension.

TABLE 7
Revised Planning Projections

Year	Population ⁽¹⁾	ERUs ⁽²⁾	Average Day Consumption (gpd) ⁽¹⁾	DSL Volume (gpd) ⁽³⁾	DSL %	Average Day Demand (gpd)	Max Day Demand (gpd) ⁽⁴⁾	PHD (gpm) ⁽⁵⁾
2019 (WSP Proj.)	525	401	33,600	13,100	38.9%	55,000	110,000	197
2020	456	284	30,600	10,500	25.5%	41,100	94,600	166
2021	463	284	31,000	10,600	25.5%	41,600	95,800	168
2022	470	286	31,400	10,700	25.5%	42,100	96,900	170
2023	476	286	31,900	10,900	25.5%	42,800	98,500	173
2033 ⁽⁶⁾	597	325	37,800	12,900	25.5%	50,700	116,700	205
2033 (WSP Proj.)	647	458	31,000	6,800	34.1%	62,800	125,600	225

- (1) 1.43 percent growth rate (established from Office of Financial Management Projections).
- (2) ERUs = ADD/ERU_{ADD}.
- (3) DSL held constant at 25.5%, the average DSL for 2013 through 2019.
- (4) MDD = 2.30*ADD.
- (5) PHD = 2.53*MDD/1440.
- (6) Includes the addition of two northern households in 2024 and six western households in 2026 from the expanded RSA.

At the end of 2023, the conclusion of the 4-year extension period, the Town of Lyman is projected to have a population of 476 people, 286 ERUs, an average day consumption of 31,900 gallons, 10,900 gallons of daily DSL (accounting for 25.5 percent of production), an average day demand of 42,800 gallons, a maximum day demand of 98,500, and a peak hour demand of 173 gallons per minute. All values are well below those values that were estimated for the 2019 planning horizon of the 2013 WSP which are shown in Table 6.

In 2033 (the conclusion of the planning horizon in the previous WSP), the Town is now projected to have a population of 597 people, 325 ERUs, an average day consumption of 37,800 gallons, an average day demand of 50,700 gallons, a maximum day demand of 117,000 gallons, 12,900 gallons of daily DSL (accounting for 25 percent of production), and a peak hour demand of 210 gpm. All values are well below those projected for 2033 in the previous water system plan. This further suggests the majority of the planning and capacity analysis assumptions made in the previous WSP would still be applicable today.

Water Production and Water Rights

The Town has adequate water rights to support water productions through the 10- and 20-year planning horizons. An updated water rights self-assessment can be found in Appendix A. The water rights self-assessment was performed for 2017, a year which saw

a temporary spike in water production due to a large, one year, increase in DSL. This spike in water production stemmed from the two large leaks that occurred in January and totaled over 600,000 gallons. The Town is projected to have a surplus of water rights through both 2027 and 2037. Details can be found in the Water Rights Self-Assessment in Appendix A.

Retail Service Area

The Town is expanding its Retail Service Area (RSA) to the north to contain six parcels. It is also expanding the RSA to the west to include seven parcels. This RSA expansion is the result of perspective customers requesting water service from the Town. These areas include both existing residences and residential developments. An updated RSA map, which includes these expansions, is shown in Figure 1.

At present, 2 of the of the 6 northern parcels are developed while six of the seven western parcels have been. The Town anticipates beginning to serve the existing northern parcels in 2024 via a 2-inch waterline while the existing western parcels will be served in 2026 with a larger watermain project. Assuming 2.6 persons per household, consistent with Chapter 8 of the 2016 Skagit County Comprehensive Plan, this expansion will result in a five person increase in the RSA population in 2024 and a 16 person increase in 2026. These population increases are reflected in the revised projections summarized in Table 7.

The new segments of the expanded RSA are located outside the Town limits. As a result, all development and water services must comply with Skagit County Zoning (shown in Figure 2), the Skagit County Coordinated Water System Plan, and the Skagit County Comprehensive plan.

The areas added to the RSA are zoned Rural Reserve and Agricultural Natural Resource. These have minimum lot sizes of 10 and 40 acres, respectively. No further subdivision of these lots would be possible. As previously mention, at present there are estimated to be 16 people living in six residences in the western expanded RSA area and five people in two existing residences to the north. The final buildout population for the western segment is estimated to be 18 with seven residences to the west and 16 persons in six residences to the north. The expanded RSA would increase the Town's buildout population by 24 people.

The Skagit County Coordination Water System Plan and Chapter 9 of the 2016 Skagit County Comprehensive Plan outline the water service requirements for services located within the county and outside the Urban Growth Area (UGA). The pressure requirements for rural services are minimum of 30 psi at the service meter while Table 4-3 in the Skagit County Coordinated WSP dictates that the fire flow is required in non-urban growth areas where density is greater than 1 dwelling unit per 2.5 acres. The fire flow requirements for this condition are 500 gpm for 30 minutes with a maximum hydrant spacing of 900 feet. Three of the seven expanded western parcels are smaller than

2.5 acres and two of which have already been developed. At present, there is only one undeveloped parcel in the northern expanded service area that is smaller than 2.5 acres. As the water system is expanded both northward and westward, fire flow will be supplied to the lots where it is required and minimum pressure shall be met.

WATER USE EFFICIENCY

Water Use Efficiency (WUE) is a key component to the Town of Lyman's WSP extension. It has been given particular importance due to the Town's historically elevated distribution system leakage and recent efforts to control and minimize these losses.

Actions Taken

After registering a 41 percent 3-year rolling average DSL in 2012, the previous WSP included an aggressive WUE plan. Since then, the Town has undertaken a number of measures to help decrease water loss via leaks and unauthorized uses as well as conservation measures to decrease overall consumption. These include contracting with a water services consultant, meter improvements, water main leak repairs, customer education, monthly water loss reports, and a meter monitoring program.

1. **Contracting with Water & Wastewater Services**

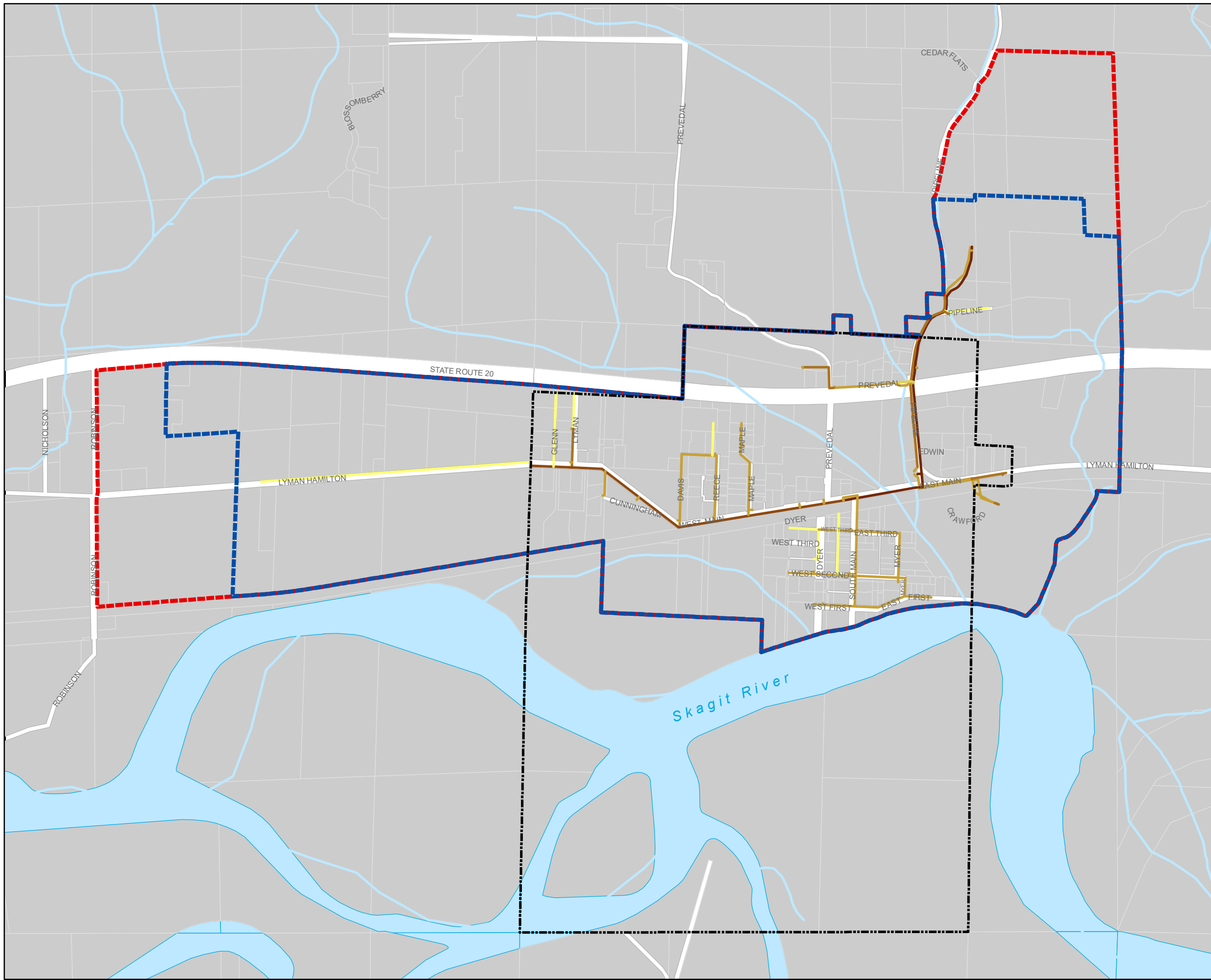
In 2014, the Town began contracting with Water & Wastewater Services (WWS). WWS quickly discovered metering inconsistencies in the Town's aging 2-inch meters. These had been calibrated for higher flows and, when used in residential applications, were registering as little as one tenth of the actual consumption volumes.

2. **Meter Improvements**




By the end of 2015, the Town had replaced all under-reading 2-inch meters. Around the same time, new development led to the discovery of a previously unmetered residential connection and a new meter was installed. Given the Town's size and number of connections, both of these actions resulted in noticeable decreases in DLS in the coming months.

3. **Water Main Leak Repair**







Water main leak repairs on Myer Avenue and Pipeline Lane were completed in 2013 which contributed to a greater than 10 percent decrease in DSL between 2013 and 2014 (37 percent to 26 percent).



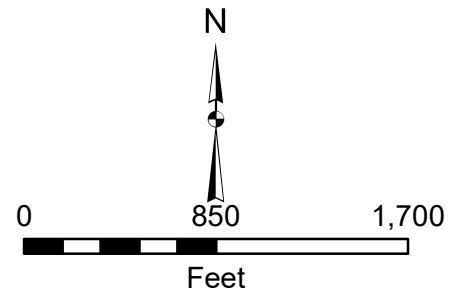
Legend

-  Lyman Town Limits
-  Existing Retail Service Area
-  Updated Retail Service Area

Waterlines:

-  2"
-  4"
-  6"
-  8"
-  10"
-  12"

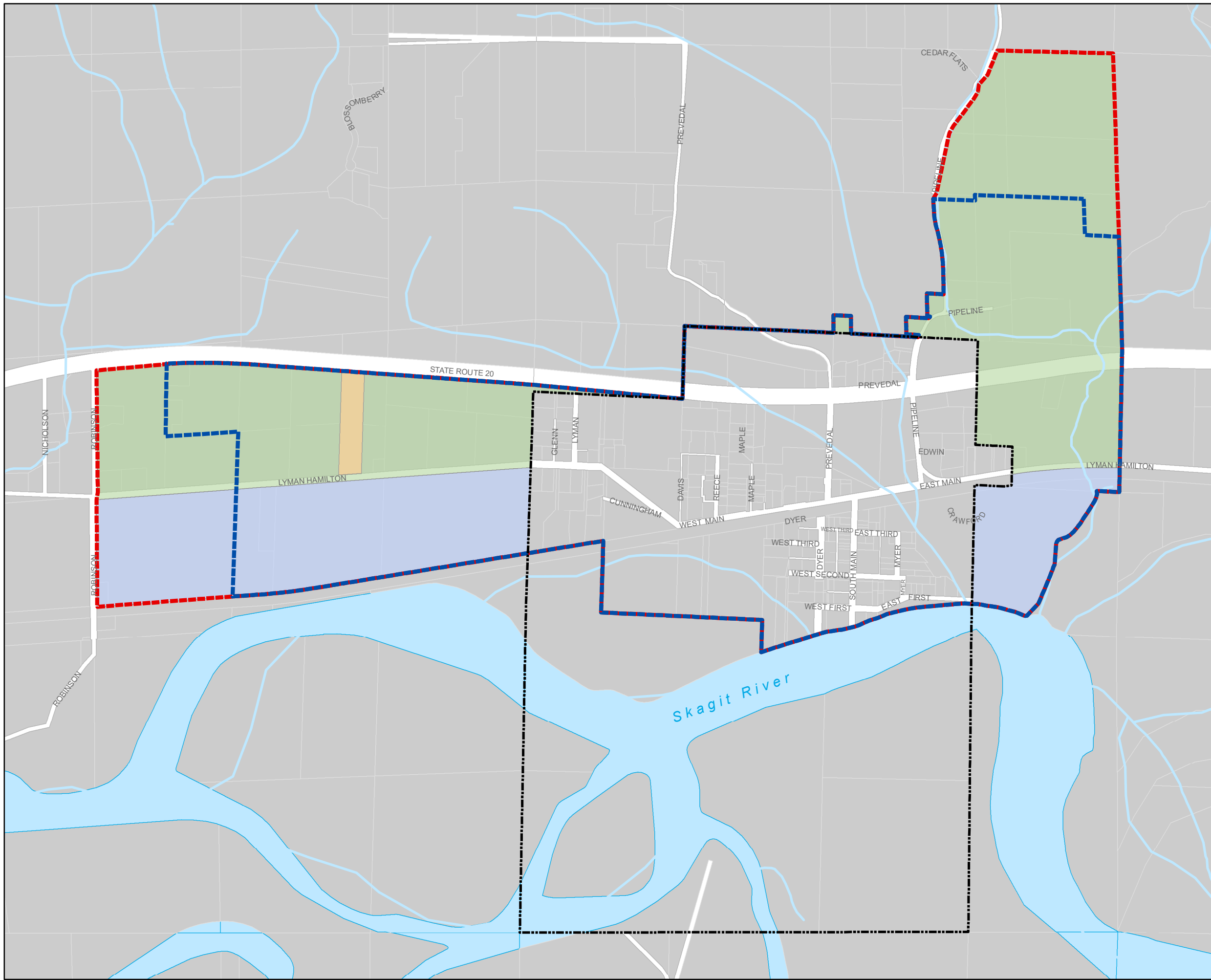
Source: Town of Lyman & Skagit County GIS Data; Aerial




TOWN OF LYMAN
WATER SYSTEM PLAN
FIGURE 1
UPDATED RETAIL SERVICE
AREA BOUNDARY



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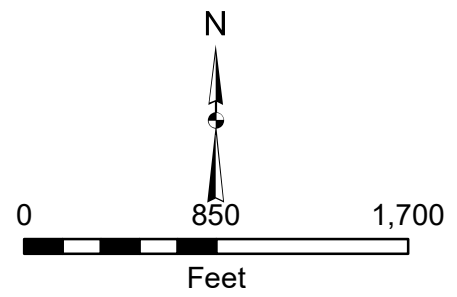
Legend

-  Lyman Town Limits
-  Existing Retail Service Area
-  Updated Retail Service Area

SKAGIT CO. ZONING


-  [Ag-NRL] Agricultural - NRL
-  [RB] Rural Business
-  [RRv] Rural Reserve

Source: Town of Lyman & Skagit County GIS Data; Aerial



TOWN OF LYMAN
WATER SYSTEM PLAN
FIGURE 2

SKAGIT COUNTY ZONING



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4. Educational newsletters and Customer Outreach

Educational newsletters with tips for household conservation went out in 2015. These newsletters gave information regarding efficient low-flow appliances, bathroom fixtures, and shower heads.

In 2018 and 2019, newsletters also included tips for identifying potential waterline leaks. This has already resulted in the detection of small leaks throughout the Town.

5. Monthly water loss report

Since 2016, the Town Council has been provided with monthly water loss reports. This has helped to educate policy makers about the Town's DSL.

6. Meter Monitoring and Replacement Program (Ongoing)

The existing Sensus PMM meters are approaching their 20-year installation mark. The water department is monitoring these meters as they near replacement, watching for abnormal read-outs. It is the Town's goal to replace these meters with new Sensus iPERL meters as needed in an effort to minimize water losses.

Previous WUE Goals

The 2013 WSP had two WUE goals that targeted production and consumption. These goals were:

1. To achieve a DSL of 10 percent or below by 2019.
2. To decrease residential water demand by 1 percent per year through 2019, measured by decreases in consumption per ERU.

The Town's DSL in 2019 was 13.0 percent with a 3-year rolling average of 25.5 percent. Though this falls short of the Town's 10 percent WUE goal, it is still a notable improvement over the 43 percent DSL for 2012 and 41 percent 3-year rolling average. The DSL from 2011 to 2019 is summarized in Table 8.

TABLE 8

2011 through 2019 DSL

Year	DSL %	3-Year Rolling Average
2011	39.0%	---
2012	43.0%	41.0%
2013	36.9%	39.6%
2014	25.8%	35.2%
2015	13.0%	25.2%
2016	26.0%	21.6%
2017	43.1%	27.4%
2018	20.4%	29.8%
2019	13.0%	25.50%

Residential water demand varied year-to-year but trended downward from 2013 through 2019. Water conservation, measured by percent change in daily consumption per ERU is summarized in Table 9.

TABLE 9

2013 through 2019 Changes in consumption per ERU

Year	Goal Consumption per ERU (gpd)	Historical Consumption per ERU (gpd)	Annual Percent Change
WSP Average		137	
2013	136	133	-3.0%
2014	134	136	2.6%
2015	133	136	0.0%
2016	132	123	-9.9%
2017	130	137	11.6%
2018	129	128	-6.9%
2019	128	123	-3.8%
Average		131	-1.3%

The average yearly change in consumption per ERU was a decrease of 1.3 percent. The conservation goal of the previous WSP (i.e., 1 percent) was met.

Updated WUE goals

The WUE goals for the Town of Lyman for 2020 through 2023 include:

1. Goal 1: Customers reduce water usage by 5 percent between 2018 and 2024, from an ERU_{ADD} of 128 gpd to 122 gpd.
2. Goal 2: Decrease DSL by 1 percent each year as summarized in Table 10.

TABLE 10

Goal 2: DSL Reduction Summary

Year	Projected DSL %	Goal DSL	3-Year Rolling Average
2020	25.5%	18%	17.1%
2021	25.5%	17%	16.0%
2022	25.5%	16%	17.0%
2023	25.5%	15%	16.0%

Water Loss Control Action Plan

When the 3-year rolling average DSL is above 10 percent, the Town must prepare a Water Loss Control Action Plan. This action plan requires control methods to achieve compliance, an implementation schedule, a budget that indicates how control methods are funded, any technical and economic concerns, and assessment of data accuracy and collection methods. Additionally, as the Town’s average DSL is above 20 percent, the action plan must also include a meter monitoring and replacement program.

1. Control Methods

In order to meet the Town’s WUE goals listed above and in order to comply with the requirements of WAC 246-290-820, the following control methods shall be undertaken:

- a. Continued customer outreach via newsletters to encourage and education customers about conservation and leak detection.
- b. Continue meter replacement program, monitoring for abnormal metering and replacing old and defective meters.
- c. Improve the accuracy of meter readings by purchasing a new Auto-Read handheld meter reader. This is outlined as CIP number G-2 and can be found in the CIP Schedule in Table 9 and Table 10.
- d. Water main replacement shall continue. Areas with old 2-inch water lines which are nearing the end of their useful life shall be replaced with new 8-inch PVC water mains. This will help

eliminate existing leaks and decrease distribution system losses overall. Three CIPs will replace water mains on Dyer Avenue, Pipeline Lane, and Lyman Hamilton Road. These can be found in the updated CIP schedule in Table 10 and 11 as CIP numbers D-3, D-4, and D-5, respectively.

2. Implementation Schedule and Budget

The schedule for the relevant CIPs can be found in Tables 11 and 12 while the financial summary and budgeting can be found in Tables 11 and 13. Leak detection shall be performed on an “as needed” basis when an uptick in monthly DSL is detected. This leak detection monitoring as well as continued educational outreach will be paid for out of the O&M budget.

TABLE 11

WUE Control Method Schedule and Budgeting

Control Method	CIP No. (If Applicable)	Year	Estimated Cost/ Funding Source
Educational Outreach (Conservation and Leak Detection)	---	2020-2023	In Existing O&M Budget/Town Funds
Leak Detection Program	---	2020-2023	As Necessary/ Town Funds
Update Auto-Read Handheld Meter Reader	G-2	2022	\$15,000/Grant/ Town Funds
Dyer Avenue Waterline Replacement	D-3	2027	\$115,000/Grant
Pipeline Lane Waterline Replacement	D-4	2028	\$136,000/Grant
Lyman Hamilton Road Waterline Replacement	D-5	2026	\$1,292,000/Grant
Meter Replacement	G-7	2030	\$31,000/Grant/ Town Funds

3. Technical and economic concerns

There are no technical and economic concerns in which the Town faces at this time.

4. Assessment of Data accuracy and collection methods

Continuing to contract the services of WWS will help maintain database upkeep while the purchase of the auto-read handheld meter and the meter

replacement program should help ensure accurate data and collection methods.

CAPITAL IMPROVEMENT PROJECTS

A number of CIPs from the 2013 plan have been completed. However, various new projects should be added to the schedule. A 2016 Sanitary Survey, whose recommendations are detailed below, helped inform some of the new CIPs.

2016 Sanitary Survey Update

The Washington Department of Health's 2016 Sanitary Survey for the Town of Lyman concluded that the water system generally met all current water quality standards. Four recommendations were listed for improvement. These are listed below in italics followed by responses and/or planned actions.

1. *Document the differing treatment objectives, performance, and chemical dosages for Wells 1 and 2 in order to simplify water treatment while transitioning between water sources. The town might also consider installing a day tank to prohibit overfeeding of chemical to the system.*

The Standard Operation Procedure (SOP) for switching from Well 1 to Well 2 has been written in the Updated Documents and Protocols section.

2. *Consider installing a chlorine analyzer at the reservoir inlet in order to fine-tune chlorine dosing during treatment. This should reduce the amount of chlorine required, ultimately cutting down chemical costs.*

At present, adding a chlorine analyzer at the reservoir is not easily feasible as there is no building or sheltered area where instrumentation could be installed.

3. *Provide a timeline for replacing the aging hypochlorite generation system.*

The hypochlorite generation system will be replaced in 2025.

4. *Provide a drain to daylight in the reservoir inlet/outlet vault and make sure the air release valve in the manhole is not flooded.*

A new CIP has been added (G-3) and will be implemented in 2024.

Capital Improvement Project Update

As of May 2020, five CIPs from the 2013 WSP have been completed. These projects include repairing leaks on Myer Avenue and Pipeline Lane (D-1 & D-2) in 2013,

cleaning the Town's reservoir (ST-1) in 2017, Well 2 electrical improvements (SO-1) in 2018, and Well 2 pump replacement (SO-2) in 2019.

Four additional CIPs are being added as part of the WSP extension, one of which shall occur in the 4-year planning horizon. These include:

- G-3: Chlorine Pump Replacement

The chlorine feed pumps at the Well 1 facility are nearing the end of their useful life and need to be replaced. The replacement project is anticipated to occur in 2021. Estimated Project Cost: \$10,900

- G-4: Drain Reservoir Vault to Daylight

The vault at the reservoir site sits at a local low point and is routinely flooded with water. Town personnel must pump before entering. This creates an unnecessary safety hazard and a barrier to access the vault. This was identified in the 2016 Sanitary Survey. The drain shall be added to the vault in 2024. Estimated Project Cost: \$5,000

- G-5: Replace Chlorine Analyzer

The chlorine analyzer in the Well 1 facility is nearing the end of its useful life and needs to be replaced. The project is anticipated to occur in 2025. Estimated Project Cost: \$6,000

- G-6: Replace Chlorination System

As noted in the 2016 Sanitary Survey, the sodium hypochlorite generation system at the Well 1 facility is nearing the end of its useful life and needs to be replaced. The replacement chlorine system shall either be a bulk hypochlorite feed or generation system, as deemed most appropriate by the Town. The replacement project is anticipated to take place in 2025. Estimated Project Cost: \$40,000

- G-7: iPERL Meters

As part of the Town's Meter Monitoring Program, aging Sensus PMM meters are replaced as they lose accuracy and reach the end of their useful life. At present, 30 new Sensus iPearl meters have been installed through the monitoring program. The approximately 200 remaining meters shall be replaced as required until 2030. In 2030, all remaining meters shall be replaced. Estimated Project Cost: \$31,000

- D-5: Lyman Hamilton Road Waterline Replacement

This CIP was in the 2013 WSP but will be amended to not only replace approximately 2,310 LF of 2-inch pipe on Lyman Hamilton Road with new 8-inch PVC pipe by also extend the line an additional 1,300 LF further west towards new customers in the expanded RSA. This project will be at least partially funded as a developer extension. Estimated Project Cost: \$1,292,000

- D-6: North Waterline Extension

New customers north of the Town have requested service and are part of the RSA expansion. A 1,200 LF 2-inch HDPE waterline will be constructed to serve these homes. This project will be at least partially funded as a developer extension. Estimated Project Cost: \$146,000

Two CIPs outlined in the 2013 Plan have been removed from the CIP and schedule. These include:

- G-1: Purchase Backup Equipment

With the replacement of the Well 1 pump and the existing chlorine pumps (i.e., the new G-3 CIP), all of the intended backup equipment will have been purchased and installed.

- ST-4: Storage Metering Improvements

This project has been removed from the CIP schedule for two reasons. First, the transmission lines that convey water from the Town's two well sources to the reservoir are relatively new. Second, the Town feels that it would be more effective to spend its financial resources on leak detection throughout the distribution system, rather than install a meter to calculate the water balance down a single transmission line.

An updated CIP schedule, including estimated construction dates, anticipated funding sources, and estimated costs, are summarized in Table 12. An updated CIP map can be found in Figure 3.

TABLE 12

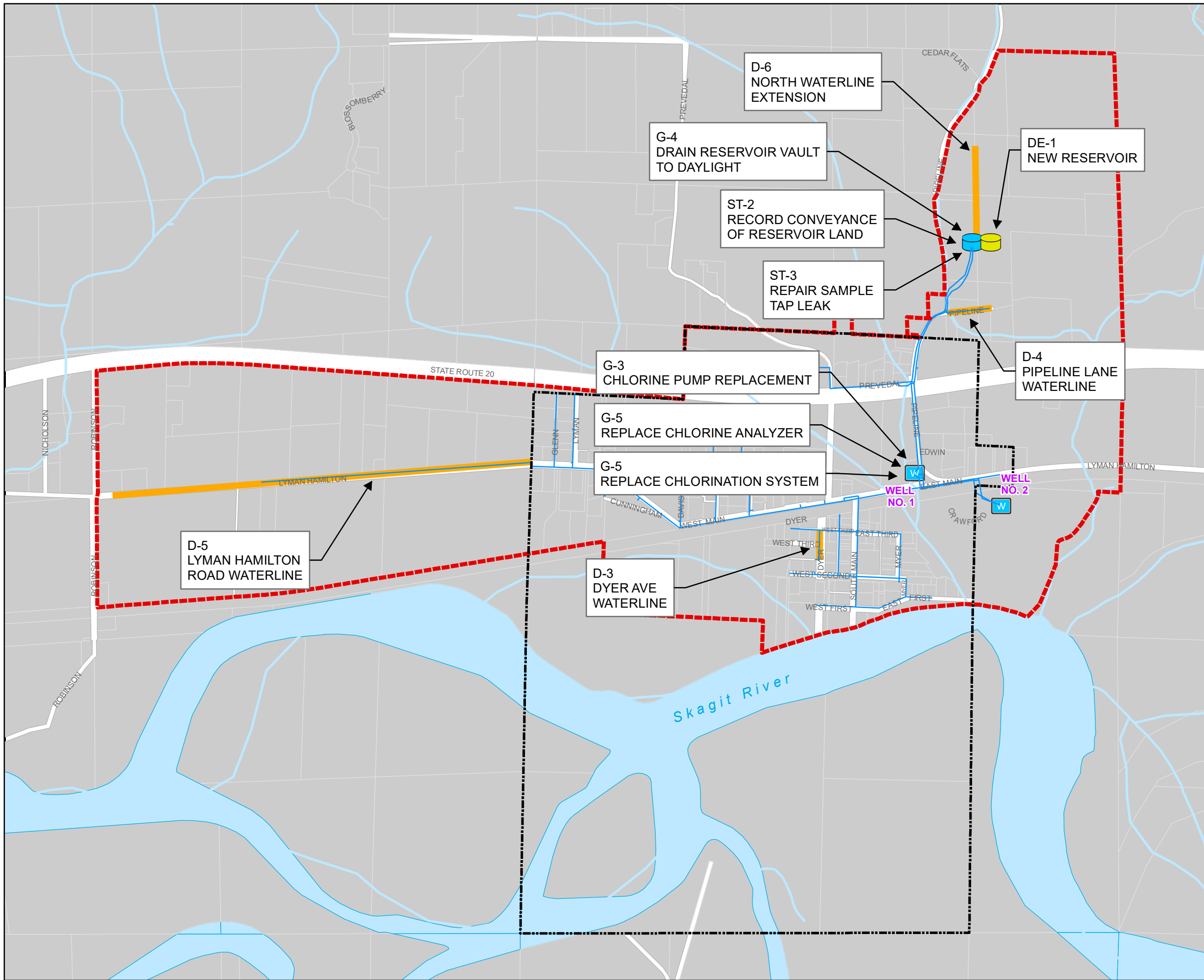
Updated CIP Schedule

No.	Project	Estimated Construction Date	Anticipated Funding Source	Estimated Cost⁽¹⁾
<i>G-3</i>	<i>Chlorine pumps</i>	<i>2021</i>	<i>Grant/Town Funds</i>	<i>\$10,900</i>
ST-3	Repair Leak from Reservoir Sample Tap	2021	Grant/Town Funds	\$1,800
G-2	Update Auto-Read Handheld Meter Reader	2022	Grant/Town Funds	\$15,000
<i>D-6</i>	<i>North Waterline Extension</i>	<i>2024</i>	<i>Grant/Town Funds/Developer Extension</i>	<i>\$146,000</i>
<i>G-4</i>	<i>Drain Reservoir Vault to Daylight</i>	<i>2024</i>	<i>Town Funds</i>	<i>\$5,000</i>
<i>G-5</i>	<i>Analyzer</i>	<i>2025</i>	<i>Grant/Town Funds</i>	<i>\$6,000</i>
<i>G-6</i>	<i>Chlorine Generator</i>	<i>2025</i>	<i>Grant/Town Funds</i>	<i>\$40,000</i>
<i>D-5</i>	<i>Lyman Hamilton Road Waterline Replacement</i>	<i>2026</i>	<i>Grant/Developer Extension</i>	<i>\$1,292,000</i>
D-3	Dyer Avenue Waterline Replacement	2027	Grant	\$115,000
ST-2	Record Conveyance of Reservoir Land	2028	Grant/Town Funds	\$4,800
D-4	Pipeline Lane Waterline Replacement	2028	Grant	\$136,000
ST-4	Storage Metering Improvement	2029	Grant	25,000
Total 4-Year CIP (2020-2023)				\$27,700
Total 5- to 10-Year CIP (2024-2029)				\$1,769,800

(1) CIPs in *italics* represent new or updated CIPs since the 2013 WSP.

FINANCIAL

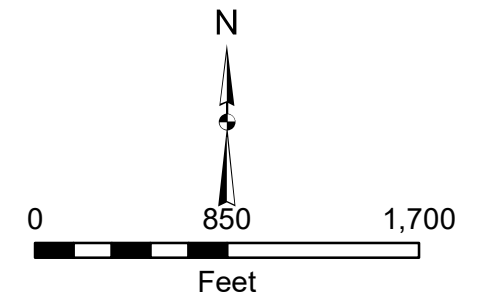
The 2013 through 2019 financial history for the Town’s water fund is summarized in Table 13.



Legend

- Lyman Town Limits
- Updated Retail Service Area
- WATERLINES:
- RESERVOIR
- RESERVOIR
- WELL

Source: Town of Lyman & Skagit County GIS Data; Aerial



TOWN OF LYMAN
WATER SYSTEM PLAN
FIGURE 3
UPDATED CAPITAL
IMPROVEMENT PLAN

Gray & Osborne, Inc.
 CONSULTING ENGINEERS

TABLE 13

Historical Water Fund

Description	2013	2014	2015	2016	2017	2018	2019
Start of Year Balance	\$563	\$13,212	\$12,706	\$8,935	\$2,417	\$234	\$9,729
Water Sales	\$98,876	\$101,656	\$106,220	\$103,255	\$106,030	\$101,330	\$114,355
Water Excise Tax	\$6,281	\$6,521	\$7,434	\$7,235	\$6,820	\$6,517	\$7,580
Other Revenue Sources	\$16,709	\$3,876	\$5,764	\$15,096	\$4,560	\$10,380	\$7,797
Grants	\$22,649	\$1,351	\$0	\$0	\$0	\$0	\$1,000
Total Revenue	\$145,078	\$126,615	\$132,123	\$134,522	\$119,827	\$118,461	\$140,461
General O&M	\$75,524	\$61,973	\$73,805	\$81,125	\$73,822	\$59,093	\$76,580
Interfund Loan ⁽¹⁾	\$9,610	\$3,435	\$0	\$0	\$0	\$0	\$0
DWSRF Debt Service	\$46,655	\$46,434	\$46,213	\$45,992	\$45,771	\$45,550	\$45,329
Total Expenses	\$131,789	\$111,842	\$120,018	\$127,117	\$119,593	\$104,643	\$121,909
Net Revenues	\$13,289	\$14,773	\$12,105	\$7,405	\$234	\$13,818	\$18,553
Non-Expenditures to Water Capital Fund⁽²⁾	\$77	\$2,067	\$3,170	\$4,988	\$0	\$4,089	\$6,089
End of Year Balance	\$13,212	\$12,706	\$8,935	\$2,417	\$234	\$9,729	\$12,464

(1) The Town finished paying an Intrafund loan in 2014.

(2) Used to fund CIP projects.

The water fund finished 2019 with a \$13,112 surplus and concluded with a positive year-end balance every year between 2013 and 2019.

The water fund’s revenue and expenses were projected for the 4-year planning horizon of the WSP extension and are summarized in Table 14.

TABLE 14

Projected Water Fund

Description	2020	2021	2022	2023
Start of Year Balance	\$12,464	\$16,992	\$10,097	\$2,228
Water Sales ⁽¹⁾	\$114,987	\$117,287	\$119,633	\$122,025
Water Excise Tax ⁽²⁾	\$8,049	\$8,210	\$8,374	\$8,542
Other Revenue Sources	\$6,500	\$6,500	\$6,500	\$6,500
Grants	\$0	\$0	\$0	\$0
Total Revenue	\$142,000	\$148,989	\$144,504	\$138,995
General O&M ⁽¹⁾	\$73,000	\$74,500	\$76,000	\$77,500
Interfund Loan	\$6,897	\$6,897	\$6,897	\$0
DWSRF Debt Service	\$45,111	\$44,895	\$44,679	\$44,465
Total Expenses	\$125,008	\$126,292	\$127,576	\$121,965
Net Revenues	\$16,992	\$22,697	\$16,928	\$17,030
Non-Expenditures to Water Capital Fund⁽³⁾⁽⁴⁾	\$0	\$12,700	\$15,000	\$0
End of Year Balance	\$16,992	\$9,997	\$1,928	\$17,030

- (1) Increases of 2 percent to match inflation.
- (2) Water Excise Tax is 7 percent of water sales.
- (3) Used to fund CIP projects.
- (4) Yearly total from Table 11.

The Town’s water fund is expected to have a positive end of year balance in each of the next 4 years, culminating in a \$17,030 surplus at the end of 2023. The Town is forecasted to be able to meet all of its debt service requirements and fund scheduled CIPs detailed in Table 11.

UPDATES, DOCUMENTS AND PROTOCOLS

PERSONNEL UPDATE

An updated list of personnel and their responsibilities during an emergency are summarized in Table 15. This table was taken directly from the Town’s 2019 Emergency Response Plan.

TABLE 15

Personnel and Emergency Chain of Command

Name and Title	Responsibilities During an Emergency	Contact numbers
<p>Edward Hills Mayor P.O. Box 813 Lyman, WA 98263</p> <p>Mike Couch, Mayor Pro-Tem P.O. Box 1371 Lyman, WA 98263</p>	<p>Responsible for overall management and decision making for the water system. The Water System Manager is the lead for managing the emergency, providing information to regulatory agencies, the public and news media. All communications to external parties are to be approved by the water system manager.</p>	<p>Phone: (360) 826-3033 Cell: (360) 708-3308</p> <p>Phone: 360-826-5105 Cell: 360-708-1400</p>
<p>Ryan Wynn Certified Operator 14263 Calhoun Road Mount Vernon, WA 98273</p>	<p>In charge of running system and water treatment plant, performing inspections, maintenance and sampling and relaying critical information, assessing facilities, and providing recommendations to the water system manager or Relief Operator.</p>	<p>Phone: 360-661-0931</p>
<p>WWS Certified Operator 14263 Calhoun Road Mount Vernon, WA 98273</p>	<p>In charge of relaying critical information, assessing facilities, and providing recommendations to Certified Operator and the water system manager.</p>	<p>Phone: 360-466-4443</p>
<p>Debbie Boyd Office Administrator P.O. Box 842 Lyman, WA 98263</p>	<p>Responsible for administrative functions in the office including receiving phone calls and keeping a log of events. This person will provide a standard carefully pre-scripted message to those who call with general questions. Additional information will be released through the water system manager. Co-Ordinates delivery and/or delivers door hangers.</p>	<p>Phone: 360-826-3033 Cell: 360-661-6411</p>

SWITCHING TO WELL 2 S.O.P.

- Drive up to Reservoir at top of Pipeline Lane to ensure there is enough room to run treatment plant in hand without overflowing Reservoir. You will need ample time to make any adjustments at treatment plant.
- Go to Main pumphouse and find “Lead Well Pump Select” on Control Panel.
- Switch from “Well 1” to “Well 2”
- Place “Well Pump 2” into hand to initiate pump to start and beginning pumping water in treatment plant.
- While Pump is starting to pump water, begin calibration of Hach pH meter. Calibrate to 4-7-10 buffers.
- Grab 500-ml bottle from treatment plant and head over to Well 2 pumphouse. Fill sample bottle full of raw water coming from Well 2 from ball valve assembly close to entrance of pumphouse.
- Drive Back to treatment plant to test raw water with already calibrated pH Meter. (Historically, Well 2 pH has always been higher than Well 1. We must take raw water pH to see what changes to make to the caustic pump in order to keep water in design parameters.)
- After about 15 minutes of Well 2 pumping water into treatment plant, our Depolox 3 analyzer should be maintain steady readings. Our design parameters are pH=7.6 and Chlorine Residual > 0.6.
- Make any adjustment to either Chlorine pump or Caustic pump to bring within these design parameters. Note that it takes 15 minutes to see any changes on the analyzer that are made. When turning up chlorine make sure to adjust Caustic pump as well. Chlorine will naturally make the pH decline so we must counteract this with turning the caustic pump up by 1 or 2 (never more than one or two points).
- Once Reading on analyzer are within or slightly above design parameters, Put Well 2 back into auto and ensure pump shuts down. Stick around and watch analyzer readings as they will continue to fluctuate once pump shuts down.
- Once it is stable you are safe to leave the pumphouse.

If you have any questions about S.O.P. instructions, feel free to call JP (360-899-8114) or Water & Wastewater Services (360-466-4443).

COLIFORM MONITORING PLAN

Coliform Monitoring Plan for: Lyman Water Department

A. System Information

Plan Date: 07/23/19

Water System Name Lyman Water Department	County Skagit	System I.D. Number 490500
Name of Plan Preparer Ryan Wynn	Position Water Supervisor	Daytime Phone 360-466-4443 X203
Sources: DOH Source Number, Source Name, Well Depth, Pumping Capacity	S01, AKF855, 35ft, 210gpm, S02, ABR314, 49ft, 190gpm	
Storage: List and Describe	158,000 gallons	
Treatment: Source Number & Process	Chlorination	
Pressure Zones: Number and name	1 Gravity	
Population by Pressure Zone	456	
Number of Routine Samples Required Monthly by Regulation:	1	
Number of Sample Sites Needed to Represent the Distribution System:	4	
*Request DOH Approval of Triggered Source Monitoring Plan?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

*If approval is requested a fee will be charged for the review.

B. Laboratory Information

Laboratory Name Edge Analytical	Office Phone 360-757-1400 After Hours Phone 360-770-0154
Address 1620 Walnut Street, Burlington, WA 98233	Cell Phone 360-770-0154 Email: edge.burlington@gmail.com
Hours of Operation 8:00 a.m. – 5:00 p.m., Monday thru Friday	
Contact Name Larry Henderson	
Emergency Laboratory Name Edge Analytical	Office Phone 360-757-1400 After Hours Phone 360-770-0154
Address 1620 Walnut Street, Burlington, WA 98233	Cell Phone 360-770-0154 Email edge.burlington@gmail.com
Hours of Operation 8:00 a.m. – 5:00 p.m., Monday thru Friday	
Contact Name Larry Henderson	

C. Wholesaling of Groundwater

	Yes	No
We are a consecutive system and purchase groundwater from another water system.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, Water System Name: Contact Name: Telephone Numbers Office - - After Hours - -		
We sell groundwater to other public water systems.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, Water System Name: Contact Name: Telephone Numbers Office - - After Hours - -		
If yes, Water System Name: Contact Name: Telephone Numbers Office - - After Hours - -		
If yes, Water System Name: Contact Name: Telephone Numbers Office - - After Hours - -		
If yes, Water System Name: Contact Name: Telephone Numbers Office - - After Hours - -		
If yes, Water System Name: Contact Name: Telephone Numbers Office - - After Hours - -		

Routine, Repeat, and Triggered Source Sample Locations*

Location/Address for Routine Sample Sites	Location/Address for Repeat Sample Sites		Groundwater Sources for Triggered Sample Sites**
X1. 8405 S. Main St	1R1	8405 S. Main St	S01
	1R2	8353 S. Main St	S02
	1R3	31550 West First St	
X2. 31441 W. Main St	2R1	31441 W. Main St	S01
	2R2	31459 W. Main St	S02
	2R3	31417 W. Main St	
	2R4		
X3. 8186 Glenn Ln	3R1	8186 Glenn Ln	S01
	3R2	31050 W. Main St	S02
	3R3	8168 Glenn Ln	
X3. 8048 Pipeline Rd	4R1	8048 Pipeline Ln	S01
	4R2	8038 Pipeline Rd	S02
	4R3	8060 Pipeline Rd	

*NOTE: If you need more than three routine samples to cover the distribution system, attach additional sheets as needed.

**** When you collect the repeats, you must sample every groundwater source that was in use when the original routine sample was collected.**

Important Notes for Sample Collector:

D. Reduced Triggered Source Monitoring Justification (add sheets as needed):

--

E. Routine Sample Rotation Schedule

Month	Routine Site(s)	Month	Routine Site(s)
January	1	July	3
February	2	August	4
March	3	September	1
April	4	October	2
May	1	November	3
June	2	December	4

F. Level 1 and Level 2 Assessment Contact Information

Name Ryan Wynn	Office Phone 360-466-4443 X203 After Hours Phone 360-661-0931
Address 14263 Calhoun Road, Mt. Vernon, WA 98273	Email: ryanw@wwsvc.com
Name Kelly Wynn	Office Phone 360-466-4443 X201 After Hours Phone 360-661-0930
Address 14263 Calhoun Road, Mt. Vernon, WA 98273	Email: kellyw@wwsvc.com

G. *E. coli*-Present Sample Response

Distribution System <i>E. coli</i> Response Checklist				
Background Information	Yes	No	N/A	To Do List
We inform staff members about activities within the distribution system that could affect water quality.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We document all water main breaks, construction & repair activities, and low pressure and outage incidents.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can easily access and review documentation on water main breaks, construction & repair activities, and low pressure and outage incidents.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our Cross-Connection Control Program is up-to-date.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We test all cross-connection control devices annually as required, with easy access to the proper documentation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We routinely inspect all treatment facilities for proper operation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We identified one or more qualified individuals who are able to conduct a Level 2 assessment of our water system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have procedures in place for disinfecting and flushing the water system if it becomes necessary.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can activate an emergency intertie with an adjacent water system in an emergency.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
We have a map of our service area boundaries.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have consumers who may not have access to bottled or boiled water.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is a sufficient supply of bottled water immediately available to our customers who are unable to boil their	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have identified the contact person at each day care, school, medical facility, food service, and other customers who may have difficulty responding to a Health Advisory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
We have messages prepared and translated into different languages to ensure our consumers will understand them.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have the capacity to print and distribute the required number of notices in a short time period.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy Direction	Yes	No	N/A	To Do List
We have discussed the issue of <i>E. coli</i> -present sample results with our policy makers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If we find <i>E. coli</i> in a routine distribution sample, the policy makers want to wait until repeat test results are available before issuing advice to water system customers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Cont.)

Distribution System <i>E. coli</i> Response Checklist				
Potential Public Notice Delivery Methods	Yes	No	N/A	To Do List
It is feasible to deliver a notice going door-to-door.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have a list of all of our customers' addresses.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have a list of customer telephone numbers or access to a Reverse 9-1-1 system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have a list of customer email addresses.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We encourage our customers to remain in contact with us using social media.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have an active website we can quickly update to include important messages.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our customers drive by a single location where we could post an advisory and expect everyone to see it.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We need a news release to supplement our public notification process.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Distribution System <i>E. coli</i> Response Plan
<p>If we have <i>E. coli</i> in our distribution system we will immediately:</p> <ol style="list-style-type: none"> 1. Call DOH. 2. Collect repeat and triggered source samples per Part D. Collect additional investigative samples as necessary. 3. Notify water users to boil water. 4. Chlorinate water system and flush. 5. Collect follow up bacti post chlorination. 6. Notify water users of lift boil notice. 7. Discuss with DOH whether to issue a Health Advisory based on the findings of steps 3-6.

<i>E. coli</i>-Present Triggered Source Sample Response Checklist – All Sources				
Background Information	Yes	No	N/A	To Do List
We review our sanitary survey results and respond to any recommendations affecting the microbial quality of our water supply.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We address any significant deficiencies identified during a sanitary survey.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are contaminant sources within our Wellhead Protection Area that could affect the microbial quality of our source water, and If yes, we can eliminate them.	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
We routinely inspect our well site(s).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have a good raw water sample tap installed at each source.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After we complete work on a source, we disinfect the source, flush, and collect an investigative sample.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public Notice	Yes	No	N/A	To Do List
We discussed the requirement for immediate public notice of an <i>E. coli</i> -present source sample result with our water system’s governing body (board of directors or commissioners) and received direction from them on our response plan.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We discussed the requirement for immediate public notice of an <i>E. coli</i> -present source sample result with our wholesale customers and encouraged them to develop a response plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
We have prepared templates and a communications plan that will help us quickly distribute our messages.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<u>E. coli</u>-Present Triggered Source Sample Response Checklist – Source <u>S01</u>*				
Alternate Sources	Yes	No	N/A	To Do List
We can stop using this source and still provide reliable water service to our customers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can provide bottled water to all or part of the distribution system for an indefinite period.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly replace our existing source of supply with a more protected new source.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temporary Treatment	Yes	No	N/A	To Do List
This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer. If yes, at what concentration? <u>0.2</u> mg/L	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (operational storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can alter the demand for drinking water (maximum day or peak hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*NOTE: If your system has multiple sources, you may want to complete a separate checklist for each source.

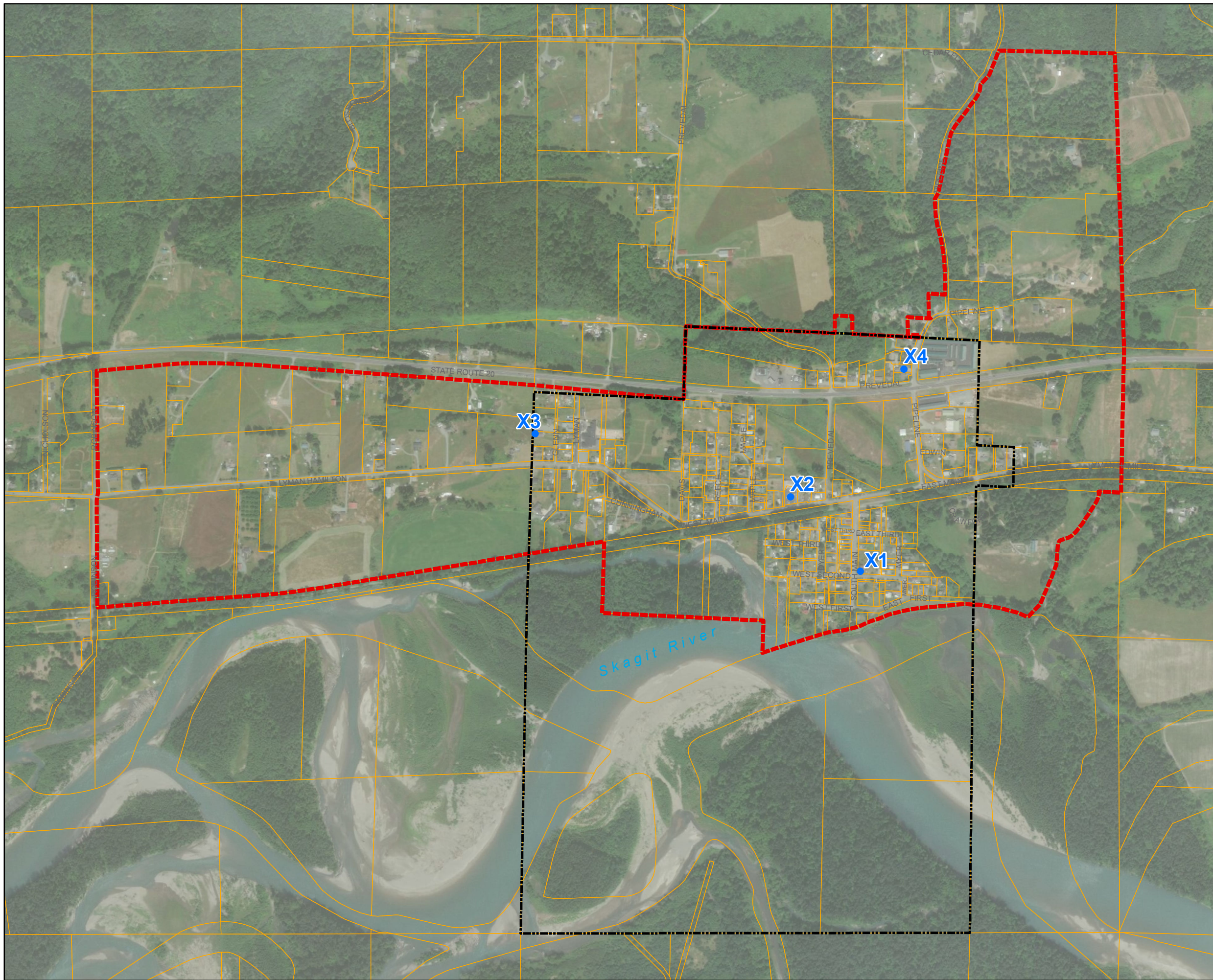
<u>E. coli</u>-Present Triggered Source Sample Response Plan – Source <u>S01</u>
If we have <i>E. coli</i> in Source <u>S01</u> water we will immediately:
<ol style="list-style-type: none"> 1. Call DOH. 2. Collect repeat samples. 3. Notify water users to boil water. 4. Chlorinate water system & flush. 5. Collect follow up bacti post chlorination. 6. Notify water users of lift boil notice.

<u>E. coli</u>-Present Triggered Source Sample Response Checklist – Source S02*				
Alternate Sources	Yes	No	N/A	To Do List
We can stop using this source and still provide reliable water service to our customers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can provide bottled water to all or part of the distribution system for an indefinite period.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly replace our existing source of supply with a more protected new source.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temporary Treatment	Yes	No	N/A	To Do List
This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer. If yes, at what concentration? <u>0.2</u> mg/L	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (operational storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can alter the demand for drinking water (maximum day or peak hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*NOTE: If your system has multiple sources, you may want to complete a separate checklist for each source.

<u>E. coli</u>-Present Triggered Source Sample Response Plan – Source S02
<p>If we have <i>E. coli</i> in Source S02 water we will immediately:</p> <ol style="list-style-type: none"> 1. Call DOH. 2. Collect repeat samples. 3. Notify water users to boil water. 4. Chlorinate water system & flush. 5. Collect follow up bacti post chlorination. 6. Notify water users of lift boil notice.

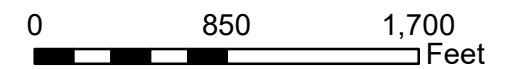
H. System Map



Legend

- Sample Site
- ⬜ Lyman Town Limits
- ⬜ Updated Retail Service Area

Source: Town of Lyman & Skagit County GIS Data; Aerial Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



TOWN OF LYMAN
WATER SYSTEM PLAN
FIGURE 1
COLIFORM MONITORING
SAMPLE SITES

Gray & Osborne, Inc.
CONSULTING ENGINEERS

APPENDIX A

WATER RIGHTS SELF ASSESSMENT

Water Right Self-Assessment Form for Water System Plan

Mouse-over any link for more information. Click on any link for more detailed instructions.

Water Right Permit, Certificate, or Claim # <small>*If water right is interruptible, identify limitation in yellow section below</small>	WFI Source # <small>If a source has multiple water rights, list each water right on separate line</small>	Existing Water Rights <small>Qi= Instantaneous Flow Rate Allowed (GPM or CFS) Qa= Annual Volume Allowed (Acre-Feet/Year) This includes wholesale water sold</small>				Current Source Production – Most Recent Calendar Year <small>Qi = Max Instantaneous Flow Rate Withdrawn (GPM or CFS) Qa = Annual Volume Withdrawn (Acre-Feet/Year) This includes wholesale water sold</small>				10-Year Forecasted Source Production (determined from WSP) <small>This includes wholesale water sold</small>				20-Year Forecasted Source Production (determined from WSP) <small>This includes wholesale water sold</small>			
		Primary Qi <small>Maximum Rate Allowed</small>	Non-Additive Qi <small>Maximum Rate Allowed</small>	Primary Qa <small>Maximum Volume Allowed</small>	Non-Additive Qa <small>Maximum Volume Allowed</small>	Total Qi <small>Maximum Instantaneous Flow Rate Withdrawn</small>	Current Excess or (Deficiency) Qi	Total Qa <small>Maximum Annual Volume Withdrawn</small>	Current Excess or (Deficiency) Qa	Total Qi <small>Maximum Instantaneous Flow Rate in 10 Years</small>	10-Year Forecasted Excess or (Deficiency) Qi	Total Qa <small>Maximum Annual Volume in 10 Years</small>	10-Year Forecasted Excess or (Deficiency) Qa	Total Qi <small>Maximum Instantaneous Flow Rate in 20 Years</small>	20-Year Forecasted Excess or (Deficiency) Qi	Total Qa <small>Maximum Annual Volume in 20 Years</small>	20-Year Forecasted Excess or (Deficiency) Qa
1. GWC 4041	Well # 1 / Well # 2	700 gpm		108		558 gpm	142 gpm	63.1 Acre-Feet/Year	44.9 Acre-Feet/Year	558 gpm	142 gpm	53.4 Acre-Feet/Year	54.6 Acre-Feet/Year	558 gpm	142 gpm	70.3 Acre-Feet/Year	37.7 Acre-Feet/Year
2																	
3																	
4																	
5																	
6																	
TOTALS =		700 gpm		108 Acre-Feet/Year		558 gpm	142 gpm	63.1	44.9 Acre-Feet/Year	558 gpm	142 gpm	39.0 Acre-Feet/Year	69.0 Acre-Feet/Year	558 gpm	142 gpm	43.9 Acre-Feet/Year	64.1 Acre-Feet/Year

Column Identifiers for Calculations: A B C =A-C D =B-D E = A-E F =B-F G =A-G H =B-H

PENDING WATER RIGHT APPLICATIONS: Identify any water right applications that have been submitted to Ecology.						
Application Number	New or Change Application?	Date Submitted	Quantities Requested			
			Primary Qi	Non-Additive Qi	Primary Qa	Non-Additive Qa

INTERTIES: Systems receiving wholesale water complete this section. Wholesaling systems must include water sold through intertie in the current and forecasted source production columns above.															
Name of Wholesaling System Providing Water	Quantities Allowed In Contract		Expiration Date of Contract	Currently Purchased <small>Current quantity purchased through intertie</small>				10-Year Forecasted Purchase <small>Forecasted quantity purchased through intertie</small>				20-Year Forecasted Purchase <small>Forecasted quantity purchased through intertie</small>			
	Maximum Qi <small>Instantaneous Flow Rate</small>	Maximum Qa <small>Annual Volume</small>		Maximum Qi <small>Instantaneous Flow Rate</small>	Current Excess or (Deficiency) Qi	Maximum Qa <small>Annual Volume</small>	Current Excess or (Deficiency) Qa	Maximum Qi <small>10-Year Forecast</small>	Future Excess or (Deficiency) Qi	Maximum Qa <small>10-Year Forecast</small>	Future Excess or (Deficiency) Qa	Maximum Qi <small>20-Year Forecast</small>	Future Excess or (Deficiency) Qi	Maximum Qa <small>20-Year Forecast</small>	Future Excess or (Deficiency) Qa
1															
2															
3															
TOTALS =															

Column Identifiers for Calculations: A B C =A-C D =B-D E =A-E F =B-F G =A-G H =B-H

APPENDIX B

LOCAL GOVERNMENT CONSISTENCY STATEMENTS

APPENDIX C

DOH SUBMITTAL DOCUMENTS



Water System Plan Submittal Form

This form must be completed and submitted along with the Water System Plan (WSP). It will expedite review and approval of your WSP. **All water systems should contact their regional planner before developing any planning document for submittal.**

Town of Lyman	<u>490500</u>	Town of Lyman
1. Water System Name	PWS ID# or Owner ID#	Water Systems Owner's Name
Ryan Wynn	360-661-0931	Water System Operator
Contact Name for Utility	Phone Number	Title
14263 Calhoun Road	Mount Vernon	WA 98273
Contact Address	City	State Zip
Russell Porter	206-284-0860	Professional Engineer
2. Project Engineer	Phone Number	Title
1130 Rainier Avenue South; Suite 300	Seattle	Washington 98144
Project Engineer Address	City	State Zip
3. Billing Contact Name (required if not the same as #1)	Billing Phone Number	Billing Fax Number
Billing Address	City	State Zip
4. How many services are presently connected to your system?		_____ 234 _____
5. Is your system expanding (<i>circle what applies</i> : seeking to extend service area or increase number of approved connections)?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6. If the number of services is expected to increase, how many <i>new</i> connections are proposed in the next six years?		15 (for the next 4 year)
7. If your system is private-for-profit, is it regulated by the State Utilities and Transportation Commission?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
8. Is the system located in a Critical Water Supply Service Area (i.e., have a Coordinated Water System Plan)?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
9. Is your system a customer of a wholesale water system?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
10. Will your system be pursuing additional water rights from the Department of Ecology in the next 20 years?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
11. Is your system proposing a new intertie?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
12. Do you have projects currently under review by us?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
13. Are you requesting distribution main project report and construction document submittal exception and if so, does the WSP contain standard construction specifications for distribution mains?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
14. The water system is responsible for sending a copy of the WSP to adjacent utilities for review or a letter notifying them that a copy of the WSP is available for their review and where the review copy is located. Has this been completed?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
15. The purveyor is responsible for sending a copy of the WSP to all local governments within the service area (county and city planning departments, etc.). Has this been completed?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
16. Are you proposing a change in the place of use of your water right?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
17. What is the last year of the plan approval period (the year the shortest WSP projection is made)?		_____ 2023 _____

If answer to questions 7,8, 11, 14 and/or 15 is "yes," list who you sent the WSP to:
Skagit County Planning & Development, Skagit County Public Utility District, Town of Hamilton

Is this plan: an Initial Submittal a Revised Submittal

Please enclose the following number of copies of the WSP:
3 copies for Northwest and Southwest Regional Offices **OR 2** copies for Eastern Regional Office (We will send one copy to Ecology)
1 additional copy if you answered "yes" to question 7. 3 Total copies attached

Please return completed form to the Office of Drinking Water regional office checked below.

- | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Northwest Drinking Water Operations
Department of Health
20425 72 nd Avenue South, Suite 310
Kent, WA 98032-2358
253-395-6750 | <input type="checkbox"/> Southwest Drinking Water Operations
Department of Health
PO Box 47823
Olympia, WA 98504-7823
360-236-3030 | <input type="checkbox"/> Eastern Drinking Water Operations
Department of Health
16201 East Indiana Avenue Suite 1500
Spokane Valley, WA 99216
509-329-2100 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

APPENDIX D

CORRESPONDENCE AND APPROVAL

Keenan Ferar

From: Peter Gill <pgill@co.skagit.wa.us>
Sent: Monday, August 10, 2020 4:35 PM
To: 'Keenan Ferar'
Cc: 'Stacey Clear'; 'Russ Porter'; Michael Cerbone
Subject: RE: Town of Lyman WSP Extension Consistency Statement

Great, I have no further requests regarding the plan consistency other than public notification.

Peter Gill, Long Range Planning Manager
Skagit County Planning & Development Services
1800 Continental Drive | Mount Vernon, WA 98273
Reception: 360-416-1320 | Direct: 360-416-1340
Sign up on our [Planning and Development email list](#) for legislative notifications.

From: Keenan Ferar <kferar@g-o.com>
Sent: Monday, August 10, 2020 4:30 PM
To: Peter Gill <pgill@co.skagit.wa.us>
Cc: 'Stacey Clear' <sclear@g-o.com>; 'Russ Porter' <rporter@g-o.com>; Michael Cerbone <mcerbone@co.skagit.wa.us>
Subject: RE: Town of Lyman WSP Extension Consistency Statement

CAUTION: This email originated from an external email address. Do not click links or open attachments unless you recognize the sender, you are expecting this email and attachments, and you know the content is safe.

Hi Peter,

Typically we address all of the County's concerns for the consistency statement before we open the Plan up to public comment and bring it before the local governing body in order to ensure the version that is being approved is the final one. We are aware DOH will not approve the plan until these steps have been taken. We can begin the process for public review and adoption provided the consistency statement is contingent on this as the final item.

Thanks,
Keenan

From: Peter Gill [<mailto:pgill@co.skagit.wa.us>]
Sent: Monday, August 10, 2020 4:06 PM
To: 'Keenan Ferar' <kferar@g-o.com>
Cc: 'Stacey Clear' <sclear@g-o.com>; 'Russ Porter' <rporter@g-o.com>; Michael Cerbone <mcerbone@co.skagit.wa.us>
Subject: RE: Town of Lyman WSP Extension Consistency Statement

Keenan,

We are still missing the first item from my June 18 email. Remember we are working off of the CWSP expansion criteria, Section 3.4.2. Public notice of affected members is required with any Comprehensive Plan amendment.

The best option is to advertise the proposed change and hold public comment period open for 15 days, consistent with County Comprehensive Plan noticing requirements, and a public meeting (virtual) where people can weigh in on the changes. Log any comments. DOH will also ask for a public meeting of consumers.

If you have already done this, please send a record of it.

Thank you,

Peter Gill, Long Range Planning Manager
Skagit County Planning & Development Services
1800 Continental Drive | Mount Vernon, WA 98273
Reception: 360-416-1320 | Direct: 360-416-1340
Sign up on our [Planning and Development email list](#) for legislative notifications.

From: Keenan Ferar <kferar@g-o.com>
Sent: Monday, August 10, 2020 10:57 AM
To: Peter Gill <pgill@co.skagit.wa.us>
Cc: 'Stacey Clear' <sclear@g-o.com>; 'Russ Porter' <rporter@g-o.com>; Michael Cerbone <mcerbone@co.skagit.wa.us>
Subject: RE: Town of Lyman WSP Extension Consistency Statement

CAUTION: This email originated from an external email address. Do not click links or open attachments unless you recognize the sender, you are expecting this email and attachments, and you know the content is safe.

Hello Peter,

Please find attached documentation regarding customer interest for the Town of Lyman's expanded RSA . At this point I believe we've submitted documents, edits, and responses addressing all of the County's comments and concerns. Please let us know if there is anything else we can provide.

Thanks,
Keenan

From: Peter Gill [<mailto:pgill@co.skagit.wa.us>]
Sent: Thursday, August 06, 2020 9:53 AM
To: 'Keenan Ferar' <kferar@g-o.com>
Cc: 'Stacey Clear' <sclear@g-o.com>; 'Russ Porter' <rporter@g-o.com>; Michael Cerbone <mcerbone@co.skagit.wa.us>; 'Rodriguez, Richard (DOH)' <richard.rodriquez@doh.wa.gov>; 'Kropack, Jennifer (DOH)' <jennifer.kropack@doh.wa.gov>
Subject: RE: Town of Lyman WSP Extension Consistency Statement

Hi Keenan,

We are ramping up our work on the Capital Facilities Plan and we would like to reference the updated Lyman water plan. Where are we at with the final three pieces that we are missing? Do you have an estimated timeline?

Thank you,

Peter Gill, Long Range Planning Manager
Skagit County Planning & Development Services
1800 Continental Drive | Mount Vernon, WA 98273

Reception: 360-416-1320 | Direct: 360-416-1340
Sign up on our [Planning and Development email list](#) for legislative notifications.

From: Peter Gill
Sent: Thursday, June 18, 2020 10:26 AM
To: 'Keenan Ferar' <kferar@g-o.com>
Cc: 'Stacey Clear' <sclear@g-o.com>; 'Russ Porter' <rporter@g-o.com>; Michael Cerbone <mcerbone@co.skagit.wa.us>; Rodriguez, Richard (DOH) <Richard.Rodriguez@DOH.WA.GOV>; 'Kropack, Jennifer (DOH)' <Jennifer.Kropack@DOH.WA.GOV>
Subject: RE: Town of Lyman WSP Extension Consistency Statement

Hi Keenan,
We are almost there. We have are proceeding with the Comprehensive Plan update through the incorporation of the Lyman Water System in our Capital Facilities Plan annual update. We will contact Lyman for their participation in this process.

The only remaining piece that I need from you in pursuit of the Comp Plan consistency requirement is: (1) the public notification information that you were working on, and (2) documentation that any adjacent water service providers were notified of the proposed expansion. This may only be the Skagit Public Utility District in this case. (3) A GIS file of the proposed boundaries, with proper metadata. This can be a geodatabase or a .shp file.

Kind regards,

Peter Gill, Long Range Planning Manager
Skagit County Planning & Development Services
1800 Continental Drive | Mount Vernon, WA 98273
Reception: 360-416-1320 | Direct: 360-416-1340
Sign up on our [Planning and Development email list](#) for legislative notifications.

From: Peter Gill
Sent: Thursday, June 4, 2020 10:45 AM
To: 'Keenan Ferar' <kferar@g-o.com>
Cc: 'Stacey Clear' <sclear@g-o.com>; 'Russ Porter' <rporter@g-o.com>
Subject: RE: Town of Lyman WSP Extension Consistency Statement

Thank you Keenan.

Peter Gill, Long Range Planning Manager
Skagit County Planning & Development Services
1800 Continental Drive | Mount Vernon, WA 98273
Reception: 360-416-1320 | Direct: 360-416-1340
Sign up on our [Planning and Development email list](#) for legislative notifications.

From: Keenan Ferar <kferar@g-o.com>
Sent: Thursday, May 21, 2020 9:24 AM
To: Peter Gill <pgill@co.skagit.wa.us>
Cc: 'Stacey Clear' <sclear@g-o.com>; 'Russ Porter' <rporter@g-o.com>
Subject: RE: Town of Lyman WSP Extension Consistency Statement

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Hello Peter,

You can download the Town of Lyman's 2013 WSP at the zip link below. I also tracked down and included the referenced Section 3.4 of the 2000/1999 Skagit County Coordinated WSP.

Please let us know if this addressed the extension/annexation policies comment.

Thanks,
Keenan

The Sender's name was entered as : **Keenan Ferar**

The Sender's email address was entered as : kferar@g-o.com

The file download link below has been sent to the following recipients: kferar@g-o.com

Message:

Link to download Zip file from Gray & Osborne Inc. :

[301189C7-155D-0008-1F5491E064FD6BED.ZIP](#)

Size: 48.30 MB

File will be available until: 05/28/2020

From: Peter Gill [<mailto:pgill@co.skagit.wa.us>]
Sent: Thursday, May 21, 2020 6:17 AM
To: 'Keenan Ferar' <kferar@g-o.com>
Cc: Stacey Clear <sclear@g-o.com>; Russ Porter <rporter@g-o.com>
Subject: RE: Town of Lyman WSP Extension Consistency Statement

Thanks Keenan,
This is good clarification. See my responses in-line below.

Peter Gill, Long Range Planning Manager
Skagit County Planning & Development Services
1800 Continental Drive | Mount Vernon, WA 98273
Reception: 360-416-1320 | Direct: 360-416-1340
Sign up on our [Planning and Development email list](#) for legislative notifications.

From: Keenan Ferar <kferar@g-o.com>
Sent: Wednesday, May 20, 2020 1:23 PM
To: Peter Gill <pgill@co.skagit.wa.us>
Cc: Stacey Clear <sclear@g-o.com>; Russ Porter <rporter@g-o.com>
Subject: RE: Town of Lyman WSP Extension Consistency Statement

CAUTION: This email originated from an external email address. Do not click links or open attachments unless you recognize the sender, you are expecting this email and attachments, and you know the content is safe.

Peter,

I have gone over your additional comments and have a few questions and quick responses...

- I can add a paragraph to the executive summary no problem and I've asked Debby to document the contact they've had with their potential new customers. Our understanding is at least some (if not all) of the customers are willing to contribute towards this extensions.

Great.

- Lyman does have language regarding annexation and extension policies in their 2013 WSP. As this document under review is an extension, meant to compliment and reference back to that 2013 document, the language was not included. The existing language from the 2013 document reads:

"ANNEXATION

The Town of Lyman does not have a formal annexation policy. In practice, if properties are annexed, the annexed property owners pay the costs of expanding water facilities. Connection fees are charged in addition to the cost of system expansion. Annexation of properties is limited to properties within the water service area boundary revised in this WSP and on file with Skagit County Planning Department."

"SYSTEM EXTENSION POLICY

The Town of Lyman serves water to all customers within its identified water service area. Beyond the current boundary, an extension of service must be in accordance with Section 3.4 of the 1999 Skagit County Coordinated Water System Plan."

What does Section 3.4 require? Please send the 2013 Lyman WSP that this is amending.

- In response to your comment regarding demand capacity analysis, I would point out that our projections are more conservative than the County's, lend a greater factor of safety, and may be more representative of the area in question. The WSP extension determined that the Town's average household uses 133 gpd on an average day and 266 gpd on max days, compared to the County's estimate of 90 gpd average use and 243 gpd max day. Our numbers come from characteristic data for the Town, which is likely to be representative of the water use for the 8 households in question. Should the projections for 2033 projections be revised downwards?

Each system is different with its own sets of efficiencies and uses. I don't think your estimates need to be revised, as long as the system is only sized for a rural level of service.

Please let me know your thoughts regarding the last two items.

Thanks,
Keenan

From: Peter Gill [<mailto:pgill@co.skagit.wa.us>]
Sent: Monday, May 18, 2020 12:42 PM
To: 'Keenan Ferar' <kferar@g-o.com>
Cc: 'Stacey Clear' <sclear@g-o.com>; 'Russ Porter' <rporter@g-o.com>; 'Mayor - Town of Lyman' <mayor@townoflyman.com>; Michael Cerbone <mcerbone@co.skagit.wa.us>; 'Clerk - Town of Lyman'

<clerk@townoflyman.com>; 'Kropack, Jennifer (DOH)' <jennifer.kropack@doh.wa.gov>

Subject: RE: Town of Lyman WSP Extension Consistency Statement

Hi Keenan, I have marked up the attached pdf, and summarized my comments below for your convenience.

- There is no mention of the system expansion in the executive summary. Consider adding a brief description.
- Does Lyman have any water extension requirements or ordinances? These designate provisions needed in order to expand service. If they exist, these should be contained or referenced in this WSP extension.
- What correspondence or agreements have been made with potential customers in the expanded service area? How many have been contacted? New development may be compelled to hook up with the system, but not existing development. This may negatively affect the proposed system and/or the existing land owner.
- Rural Level of Service from page 7-13 of the CWSP (2000) is 90 GPD. The County Capital Facilities Plan states:

"Level of Service (LOS) & Capacity Analysis The Skagit County Coordinated Water Supply Plan has adopted levels of service shown in the table below. The adopted 2000 standards represent a decrease from previous years due to public awareness and water conservation methods.

Table 6. Water demand standards Per Capita Consumption Per Day LOS 2000

- Urban 135
- Rural 90
- Urban Peak Day to Avg Day 2:1
- Rural Peak Day to Avg Day 2.6:1

Water demand projections for the years 2000, 2010, 2020, 2030, 2040, and 2050 have been made using the water demand standards along with the population, commercial, and industrial growth projections for the PUD No. 1 water service area. Year 2050 peak day demand for the District's service area is forecasted in the 2000 Skagit County Coordinated Water System Plan to be 70.2 MGD.

I have cc'd Jennifer Kropack here, so the State knows we are in the process.

Kind regards,

Peter Gill, Long Range Planning Manager
Skagit County Planning & Development Services
1800 Continental Drive | Mount Vernon, WA 98273
Reception: 360-416-1320 | Direct: 360-416-1340
Sign up on our [Planning and Development email list](#) for legislative notifications.

From: Peter Gill

Sent: Thursday, May 14, 2020 9:26 AM

To: 'Keenan Ferar' <kferar@g-o.com>

Cc: Stacey Clear <sclear@g-o.com>; Russ Porter <rporter@g-o.com>; 'Mayor - Town of Lyman' <mayor@townoflyman.com>; Michael Cerbone <mcerbone@co.skagit.wa.us>; Clerk - Town of Lyman <clerk@townoflyman.com>; Megan Cardenas <meganc@co.skagit.wa.us>

Subject: RE: Town of Lyman WSP Extension Consistency Statement

Hi Keenan,

Thank you for the responses and the updated documents. I will continue the consistency review and let you know if there are further questions early next week. Please include your permit number in future correspondence (PL20-0167).

Kind regards,

Peter Gill, Long Range Planning Manager
Skagit County Planning & Development Services
1800 Continental Drive | Mount Vernon, WA 98273
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Sign up on our [Planning and Development email list](#) for legislative notifications.

From: Keenan Ferar <kferar@g-o.com>
Sent: Tuesday, May 12, 2020 9:49 AM
To: Peter Gill <pgill@co.skagit.wa.us>
Cc: Stacey Clear <sclear@g-o.com>; Russ Porter <rporter@g-o.com>; 'Mayor - Town of Lyman' <mayor@townoflyman.com>; Clerk - Town of Lyman <clerk@townoflyman.com>
Subject: RE: Town of Lyman WSP Extension Consistency Statement

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Hello Peter,

Attached you will find an updated copy of the Lyman WSP as well as an updated consistency statement. In order to recap and document previous comment, questions, and responses in a single place, all items have been copied below. Your original comments are in black and our responses are in blue. Please let us know if there are any additional comments or questions that need addressing.

Thanks,

Keenan

*What is the zoning in the proposed service area extension?
Please include a narrative describing the zoning.*

Figure 2 (on PDF page 16) displays county zoning for the existing a proposed RSA outside of the Town's UGA.

A narrative has been added to page 9 of the WSP extension (PDF page 13) which reads, "The new segments of the expanded RSA are located outside the Town limits. As a result, all development and water services must comply with Skagit County Zoning (shown in Figure 2), the Skagit County Coordinated Water System Plan, and the Skagit County Comprehensive plan. The areas added to the RSA are zoned Rural Reserve and Agricultural Natural Resource. These have minimum lot sizes of 10 and 40 acres respectively. No further subdivision of these lots would be possible do to their existing size..."

What is the build out and planned number of connections in the newly serviced area?

A narrative has been added to page 9 of the WSP extension (PDF page 13) which reads, "At present, 2 of the of the 6 northern parcels are developed while six of the seven to the western parcels have been. The Town anticipates beginning to serve the existing northern parcels in 2022 via a 2-inch water line and the existing western parcels in 2026 with a larger watermain project. Assuming 2.6 persons per household, consistent with Chapter 8 of the 2016 Skagit County Comprehensive Plan, this expansion will result in a 5 person increase in the RSA population in 2022 and a 16 person increase in 2026. (...) The final buildout population for the western segment is estimated to be 18 persons living in 7 residences to the west and 16 persons in 6 residences to the north. The expanded RSA would increase the Town's buildout population by 24 people."

Does your population projection include the new service area?

The future projections in Table 7 on WSP extension page 8 (PDF page 12) have been updated to account for an additional 5 people and 2 western ERUs in 2024 and as well as a total of 16 people and 6 ERUs in 2026. These appear in the forecasts for the 2033 planning horizon.

Policy 9A-8.2. Water supply infrastructure expansion shall be designed to meet local needs and urban or rural levels of service standards, and comply with this Comprehensive Plan's land use densities.

(b) Rural Water Service shall mean water service provided by an individual well, a stand alone public water system, or extension of a water system from within an urban growth area that is designed to provide rural water service. The water service shall be designed to meet the rural water supply needs of the rural area users as defined by this Comprehensive Plan, the Coordinated Water System Plan, any designated water purveyor's Water System Plan (where applicable), and the criteria established for the water service in Section 4 and on Table 4-1 of the Coordinated Water System Plan and applicable state law.

Policy 9A-8.5. New capital facilities for water-system compliance with state and federal safedrinking-water rules, and water treatment standards shall be based on rural area densities and a level of service that is consistent with the existing character of the environment.

Details regarding LOS and fireflow requirements for the services in the expanded RSA and are documented and described on pages 9 and 10 of the WSP extension (pdf pages 13 and 14) as, "The Skagit County Coordination Water System Plan and Chapter 9 of the 2016 Skagit County Comprehensive Plan outline the water service requirements for services located within the county and outside the Urban Growth Area (UGA). The pressure requirements for rural services are minimum of 30 psi at the service meter while Table 4-3 in the Skagit County Coordinated WSP dictates that the fire flow is required in non-urban growth areas where density is greater than 1 dwelling unit per 2.5 acres. The fire flow requirements for this condition are 500 gpm for 30 minutes with a maximum hydrant spacing of 900 feet. Three of the seven expanded western parcels are smaller than 2.5 acres and two of which have already been developed. At present, there is only one undeveloped parcel in the northern expanded service area that is smaller than 2.5 acres. As the water system is expanded both northward and westward, fire flow will be supplied to the lots where it is required and minimum pressure shall be me"

These requirements are be reflected in the Town's two water extensions CIPs, the Lyman-Hamilton Road Replacement and Expansion (D-5) and the North Waterline Extensions (D-6) described on page 17 of the WSP extensions (PDF page 23).

Is the design of the extension consistent with a rural LOS? Please show pipe diameters on the Map (Figure 1).

As described above, the level of Service will be 30 PSI and fireflow will be provided for all residences on a lot that are smaller than 2.5 acres if required. Figure 1 (on PDF page 15) has been updated to include pipe sizes.

Finally what steps were taken to be sure the extension is done consistent with the [Coordinated Water System plan](#)? Please document accordingly.

All of the measure described above are documentation of steps taken to ensure the WSP extension's consistency with Skagit County zoning, compressive, and water planning. The WSP extension's in-text references to chapter, sections, and tables are also highlighted in the documents and in the responses above.

From: Peter Gill [<mailto:pgill@co.skagit.wa.us>]
Sent: Wednesday, March 11, 2020 12:17 PM
To: 'Keenan Ferar' <kferar@g-o.com>
Cc: 'Jennifer.Kropack@DOH.WA.GOV' <jennifer.kropack@doh.wa.gov>; Michael Cerbone <mcerbone@co.skagit.wa.us>
Subject: RE: Town of Lyman WSP Extension Consistency Statement

Hi Keenan,

Preliminary analysis of the submitted Lyman WSP extension brought up the following questions for me.

What is the zoning in the proposed service area extension? Please show zoning on Figure 1. Our zoning is available on [iMap](#).

Please include a narrative describing the zoning

What is the build out and planned number of connections in the newly serviced area?

Does your population projection include the new service area?

Your report should document how it complies with the [Skagit County Comprehensive Plan](#). Specifically the Water Goals and Policies in the Utilities Chapter.

Policy 9A-8.2. Water supply infrastructure expansion shall be designed to meet local needs and urban or rural levels of service standards, and comply with this Comprehensive Plan's land use densities.

(b) Rural Water Service shall mean water service provided by an individual well, a stand alone public water system, or extension of a water system from within an urban growth area that is designed to provide rural water service. The water service shall be designed to meet the rural water supply needs of the rural area users as defined by this Comprehensive Plan, the Coordinated Water System Plan, any designated water purveyor's Water System Plan (where applicable), and the criteria established for the water service in Section 4 and on Table 4-1 of the Coordinated Water System Plan and applicable state law.

Policy 9A-8.5. New capital facilities for water-system compliance with state and federal safedrinking-water rules, and water treatment standards shall be based on rural area densities and a level of service that is consistent with the existing character of the environment.

Is the design of the extension consistent with a rural LOS? Please show pipe diameters on the Map (Figure 1).

Finally what steps were taken to be sure the extension is done consistent with the [Coordinated Water System plan](#)? Please document accordingly.

Thank you,

Peter Gill
Skagit County Planning & Development Services

From: Keenan Ferar <kferar@g-o.com>
Sent: Wednesday, March 4, 2020 3:16 PM
To: Peter Gill <pgill@co.skagit.wa.us>
Subject: Town of Lyman WSP Extension Consistency Statement

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Hello Peter,

My apologies if this is a bit repetitive, but just so you have all the information in one place here goes: one more time: I've attached the Draft Lyman Water System Plan extension and the Department of Health Consistency Statement that we need to include for the submittal to DOH. As this is an extension of the Town's 2013 Water System Plan, the majority of the Plan remains unchanged. Population projections, capital improvement projects, and financial projections have been updated and the retail service area has been expanded by six parcels to the north and seven parcels to the West. However, there are no other major changes to the Town's original 2013 document. Feel free to call me at the number below if you have any questions.

Thanks for your help,

*Keenan Ferar, E.I.T. | 206.284.0860 p | 206.283.3206 f
Gray & Osborne, Inc. | 1130 Rainier Avenue South, Suite 300, Seattle, WA, 98144*



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APPENDIX E
CUSTOMER INTEREST

TOWN OF LYMAN

PO Box 1248

Lyman, WA. 98263 cell 360-770-3308

mayor@townoflyman.com

Ph (360) 826-3033

Fax (360) 826-6473

www.townoflyman.com

July 1, 2020

To: Washington State Department of Health
Office of Drinking Water

From: Edward E Hills, Mayor
Town of Lyman
360-826-3033

Re: Expanding current Water Service Area

To Whom it may concern,

The town of Lyman Water Department has received several requests for new water services from home and property owners that live just outside of the current water service area. One potential new customer is located to the north and is interested in 2 new services as soon as possible. He understands that "growth pays for growth" and is aware that new customers will have a buy in cost. I have included a letter he wrote to the Lyman Water Department stating his desire for a new service. To the west the requests for service have been coming in for several years, most call in and inquire but there have been several that have requested meetings with the Water System Manager. They too are aware that there will be a buy in cost that would be used towards the system extensions.

Sincerely,



Mayor, Town of Lyman

Office of the Mayor,

PO Box 1248, Lyman WA 98263 * Phone (360) 826-3033 * Fax (360) 826-6473 * mayor@townoflyman.com

Anker Anderson (360) 661-6124
P.O. Box 241
Lyman, Wa 98263

To Whom it may concern,

I, Anker Anderson wish to aquire city water from the town of Lyman. I currently own and reside on 20 acres (7533 pipeline Road) my wish is to split into 2-10 acre lots.

My house currently lies on one of the lots and has a well. I want to serve both my lot and the other lot with city water. I would obviously cut all ties to my well and use it for stock watering potentially down the road. Critical areas study has already been performed on this property. The only thing holding me up from proceeding is the availability of water since no new wells are able to be drilled and it does not look good in the near future at all. My father is who would be building a house on the other 10 acres. He is older and the sooner we can get water, the sooner he can build, and we can all be up here together. Two separate 10 acre lots with houses.

Thank you;
Anker Anderson