SNOQUALMIE PASS UTILITY DISTRICT

WATER AND WASTEWATER TREATMENT FACILITIES

ENVIRONMENTAL RECORD

March 2020

SNOQUALMIE PASS, WASHINGTON

ENVIRONMENTAL RECORD
FOR

WATER AND WASTEWATER TREATMENT FACILITIES

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Project Description

WASTEWATER

Snoqualmie Pass Utility District (District) recognizes the need to improve, upgrade and expand its wastewater treatment facility located at 370 Treatment Plant Road in Snoqualmie Pass, WA, to meet the regulatory requirements, eliminate the use of the spray field located on United States Forest Service (USFS) land, and to keep pace with projected growth in their service area.

The existing wastewater treatment plant facility has a peak month design capacity of 0.368 mgd. During recent years, the average flow during June through September was 0.080 mgd, the average flow during October through May was 0.237 mgd, and the peak day was measured at over 0.600 mgd. The influx of visitors to the ski resorts accounts for most of the higher flows during the winter months.

The ski resort plans to increase services through more amenities, like lodges, which will increase the flow to the Wastewater Treatment Plant (WWTP). Additionally, several developments are planned to be built over the next 20 years. These two factors are expected to cause the wastewater flows to double during this same period.

EXISTING TREATMENT PLANT DEFICIENCIES

The USFS informed the District they will not be renewing the lease for the spray field on which the wastewater is applied for final treatment and disposal. Although the USFS hasn't given the District a specific date when discharges will not be allowed, the USFS has been clear that future spray field use is uncertain and limited.

The treatment level of the existing lagoons is not sufficient to meet the discharge limits for a surface water discharge into Coal Creek, where an outfall used prior to 1983 exists. Therefore, a treatment process capable of achieving the discharge limits is required.

PLANNED IMPROVEMENTS

The planned improvements include a phased approach to construct a new membrane bioreactor (MBR) wastewater treatment plant which will discharge through the existing outfall pipe to Coal Creek. Phase 1 of the project is planned to be constructed in 2020 and will include:

- Construction of a new MBR WWTP Building that has a one-story office 40-feet wide x 80-feet long connected to a high bay process equipment area 64-feet wide by 40-feet long. The building will be of CMU construction with steel roof joists and a membrane type roof with a 1:12 pitch. The new WWTP building will be constructed east of Lagoon 1, and south of the existing joint County-District shop located at the end of Hyak Drive.

- A packaged MBR wastewater treatment process skid to treat 20,000 to 30,000 gpd will be installed in the process equipment bay. The influent to the MBR equipment will be pumped from the existing Lagoon 1 effluent through new fine screens, located in a new building located adjacent to Lagoon 1. The waste activated sludge from the new MBR process tank will be pumped back to Lagoon 1.

- A new 24-foot x 28-feet MBR Headworks Building to house 2-mm fine screens required for the new MBR WWTP process equipment will be constructed east of the existing District Control Building located between the two existing lagoons. One screen, sized for the future buildout flow requirements for the community, will be installed in the new MBR Headworks Building during Phase 1. A space for a second screen will be reserved for Phase 2. These new screens will be powered and controlled from the adjacent existing Control Building. The new MBR Headworks building will be constructed as a Class 1 Division 1 space since Phase 2 WWTP improvements will include bypass piping around Lagoon 1 to allow maintenance of the lagoon when necessary.

- Phase 2 will expand the MBR WWTP Building to allow additional membrane process treatment equipment to be installed to serve the community at full buildout. The overall size of the process area expansion is anticipated to be 180-feet long x 64-feet wide. About two-thirds of the anticipated process equipment will need to be installed as part of the Phase 2 project. But the necessary tank and floor space will be constructed to house the equipment anticipated to be needed in the future. The Phase 2 MBR WWTP Building expansion will include solids handling equipment, an aerobic diester tank, and covered biosolids storage south of the MBR WWTP Building.

- The area around the new MBR WWTP building will be paved for building access. A stormwater system will be installed to store and infiltrate the water accumulation from the building and paved areas during a 25-year design storm event using underground storm chambers adjacent to the paved area. This system will be designed to be expanded as part of Phase 2. An overflow pipe from the storm system will be installed to divert water, after the 25-year stormwater is collected, into the existing 18-inch wastewater treatment plant outfall pipe to Coal Creek. A separate stormwater collection system will be installed on the south end of the MBR WWTP Building around the aerobic digester and biosolids storage area. The stormwater collected from this area will be returned to the wastewater treatment process.

- An 8-inch water main will be extended from the existing main located northwest of the existing WWTP Control Building between the two lagoons, turn north along the east side of Lagoon 1 to a new fire hydrant just off the edge of the planned cul-de-sac at the end of Hyak Drive. The water service to the new MBR WWTP Building will be from this new 8-inch extension. It is anticipated that this 8-inch extension will be looped into the existing water main at some time in the future north along Hyak Drive. The water service for the joint County-District shop will be reconnected to this new 8-inch water extension.

- The sewer for the new MBR WWTP Building will routed to the north and connect by gravity to the south end of the existing sewer manhole located in the alley being the homes along the west side of Hyak Drive. The sewer from the existing County-District shop will be modified to be connected into this new gravity sewer main.

WATER SYSTEM

The District currently has three active groundwater well sources: S05 (Well 4), S06 (Well 5), and S08 (well field composed of Wells 2 and 3). Wells 4 and 5 are the District's primary sources of water supply; S08 is available for peak seasonal demand, but has not been used for supply since 1998.

The District water system currently includes three water storage reservoirs/tanks: Alpental, Summit 1, and Summit 2. Combined, these reservoirs provide a total storage volume of 565,000 gallons. Currently the Alpental pressure-reducing valve (PRV) located between the District's Alpental and Summit pressure zones operates fully open and does not provide pressure reduction between the zones. In November 2019, an intertie valve was installed between the Alpental and Summit zones, and the altitude valve in the supply line to the Summit Reservoirs was reactivated allow full use of storage in the Alpental tank.

The District water distribution system is made up of roughly 13.9 miles of pipe, more than half of which are 8- and 12-inch diameter ductile iron (DI) mains that form the skeleton of the system. The District water system operates with a total of five pressure zones and five PRVs. Wells 4 and 5 supply the highest zone, the Alpental zone. Water flows from this zone through PRVs to the progressively lower pressure zones: Summit, Conifer, Upper Hyak, and Lower Hyak. Each zone is served through one PRV station, except the lowest zone which is served by two PRV stations. Currently the Alpental PRV operates fully open and does not reduce pressure between the Alpental and Summit zones.

The distribution system operates entirely on a gravity basis, with higher elevation pressure zones supplying lower zones through a series of PRV stations. No booster pump stations are available to transfer water back to higher-pressure zones from the lower zones. The District PRVs are equipped with pressure-sustaining features to keep upstream zone pressures from drawing down significantly in the event of a downstream main break.

WATER SYSTEM STORAGE AND TREATMENT DEFICIENCIES

The District completed a Water System Plan in 2013 which was submitted to the Department of Health and an amendment in 2018 which was not submitted to Health. These plans identified the need for additional storage in the Alpental service area to provide adequate Fire Flow capacity to meet fire marshal requirements.

In addition, these reports identified that the Wells 2, 3 and 4 have arsenic and manganese levels above Department of Health acceptable limits. This prompted a blending strategy with Well 5 to stay under the annual limits. The elevated Arsenic and Manganese level limit the use of Well 4 independently of Well 5, causing redundancy concerns for the District, and Wells 2 and 3 to be used for standby and construction water need purposes only.

PLANNED IMPROVEMENTS

The planned improvements include the installation of a second 100,000-gallon storage tank adjacent to the Alpental storage tank to provide adequate Fire Flow capacity in the Alpental service area, and a treatment system for Well 4 which to treat for arsenic and manganese. This treatment system will provide system redundancy and reliability for the District since both Wells 4 and 5 will be available to meet the needs without blending.

Improvement Alternatives

WASTEWATER IMPROVEMENTS

The alternatives described below were considered for the new process treatment system to meet the following goals:

- Install a system that does not discharge treated effluent to the ground when the ground is covered with snow.
- Install a system to provide treatment levels meeting the required standards for discharging to the nearby surface water.

The following systems were considered as possible options to meet the stated goals above.

MBR System

A mechanical type Membrane Bio-Reactor (MBR) uses a physical barrier to filter the wastewater prior to discharge. Two types of membrane technologies were considered, ceramic and polymeric flat plates. To treat for ammonia and reduce nitrogen, anaerobic, anoxic, and aerobic selector zones need to be installed upstream of the membrane treatment tanks. As discussed above, low influent temperatures reduce the ability to remove total nitrogen to 10 mg/L, so treating total nitrogen to below 10 mg/l year-round is not considered reasonable. However, designing a system to meet 10 mg/l when influent temperatures are 12^{o}C or above is considered reasonable.

A MBR treatment plant is expected to have the highest installed and operational cost. However, this type of system will provide the highest level of treatment and provides a physical separation between the treatment process and plant effluent. Eliminating I&I and using lagoon capacity for equalization of the influent flow will allow a smaller, less expensive system to be installed, and/or free up capacity to accommodate growth. In addition, MBR treatment will optimize water-rights potential needed by the District to support the anticipated growth.

The following styles of MBRs were included in the evaluation:

- Site constructed tanks to hold membrane modules within a pre-engineered building
- Skid mounted packaged MBR units installed in pre-engineered building
- Modular MBR facility assembled in container-type structure

SAGR System

The Submerged Aerated Gravel-bed Reactor (SAGR) system is a sub-surface gravel bed through which wastewater is discharged that includes fine bubble aerators. These beds are covered with bark to keep the system from freezing and allows it to be capable of treating for ammonia, even during the winter months. A recycle stream will be required to treat to nitrogen limits of 10 mg/l. This type of system, along with new lagoon liners and ancillary equipment would provide a lower operational cost, compared to an MBR treatment plant. The SAGR system design will not allow effluent storage for a seasonal discharge, and/or stream augmentation, and must remain in operation year-round.

However, for both current and long-term flow rates, the size of the SAGR system to meet a nitrogen limit of 10 mg/l is larger than the property available, even if a conversion of Lagoon 2 (located mostly on leased USFS property) into the SAGR cells is considered. Therefore, this system was dismissed as not an unreasonable technology.

Spray Field Improvements

Installation of a drip irrigation at the spray field was investigated to reduce maintenance cost and provide a land application method to eliminate the potential of the effluent from running off the snow without treatment by the land. This option is considered to not be feasible due to trees. Retaining the spray field to be used during summer was also considered, as this will alleviate the concern expressed by Ecology that the winter spray field operation is not an effective treatment method. However, the USFS has notified the District that their policy is to not allow wastewater to be treated on National Forest land, requiring the need for other options.

WATER IMPROVEMENTS

Storage

The distribution system analysis performed as part of the 2018 WSP amendment indicated that a Fire Flow event in the Alpental pressure zone would have the potential to drain the Alpental tank and create a deficient Fire Flow situation for multifamily service connections in the northern portion of the Alpental zone. While extensive water main upgrades could allow this area to be adequately served with Fire Flow from the Summit tanks, locating new storage capacity at the site of the existing Alpental tank is a more cost-effective solution, given the established need for additional storage capacity. An Alpental location for the first new District storage tank addresses both a storage deficit and a Fire Flow deficiency.

An analysis was conducted to determine the District's storage capacity and Fire Flow limitations based on the addition storage tanks. Storage limitations would not be completely addressed with the addition of a single 100,000-gallon Alpental storage tank in Alpental, but a tank of this size would address the Fire Flow deficiency. Additional storage capacity to be gained from a second storage tank (232,500 gallons) installed at the Summit.

It is recommended that two tanks be added, one with a volume of 100,000 gallons in Alpental, and a second of 232,500 gallons added adjacent to the existing Summit tanks. Constructing these tanks in phase with projected growth will provide storage capacity to support future connections. Per the 2018 WSP amendment, the existing storage is anticipated to reach capacity at approximately 1,430 ERUs in about 2021. The addition of one 100,000-gallon storage tank would increase the system capacity by 355 ERUs to 1,786, providing sufficient storage capacity through 2026. Adding a third Summit reservoir with the total volume of 232,500 gallons will increase the Districts total storage volume to 897,500 gallons capable of supporting 2,723 ERU, equivalent to estimated 2034 demands.

Treatment

Wells 2, 3, and 4 currently produce source water that exceeds the MCLs for arsenic and manganese. As a result, the Wells 2 and 3 well field is currently maintained only for reserve supply, and Well 4 is operated using a blending strategy with Well 5 to keep the arsenic levels below the annual limits.

Treatment alternatives are summarized consistent with an EPA guidance manual, *Arsenic Treatment Technology Evaluation Handbook for Small Systems*. General comments on process suitability, design considerations, and treatment evaluation and implementation steps are included below. As indicated, the Pre-oxidation process appears to be the most suitable alternative to implement for Snoqualmie Pass. Therefore, the installation of a Pre-oxidation treatment process to treat Well 4 is recommended. Due to distribution piping limitations and reduces production from Wells 2 and 3, a system for treating Well 4 only, is recommended at this time.

Water Treatment Options for Arsenic and Manganese		
Process	Description	Appears suitable for Wells 2, 3 and 4?
Source blending	Blending involves mixing waters from two or more different sources prior to entering the distribution system, to produce a resulting combined water that meets the MCLs for arsenic and manganese.	No; combined well field samples are above the MCL for arsenic and manganese. No other nearby sources with significantly lower levels of arsenic and manganese are available for blending.
Pre-oxidation	Reduced inorganic As(III) should be converted to As(V) to facilitate removal, if applicable. This step precedes all of the unit processes described below. Typical oxidants include chlorine, permanganate, ozone, and certain proprietary oxidants.	Yes; an oxidation process will likely be required in conjunction with another unit process for implementation of treatment at the Well 2, 3 and 4.
Ion exchange	Ion exchange is a physical-chemical process in which ions are swapped between a solution phase and a solid resin phase. Arsenic removal is accomplished by continuously passing water under pressure through one or more columns packed with an exchange resin.	Possibly; measured sulfate concentrations reaching around 50 mg/L may be too high for an ion exchange process to be effective.
Activated alumina (AA)	Activated alumina is a porous, granular material with ion exchange properties. Removal of arsenic is accomplished by continuously passing water under pressure through beds packed with AA media.	No; manganese is not addressed by this technology.
Iron-based sorbents (IBS)	Adsorption on IBS media is an emerging treatment technique for arsenic. IBS is applied in fixed bed pressure columns similar to AA, but relatively little design information is available.	No; manganese is not addressed by this technology.
Reverse osmosis (RO)	Reverse osmosis is a pressure-driven membrane separation process. RO effectively removes several constituents from water, but requires high inlet feed pressures and produces a high volume waste stream (20%–40% of raw water lost to waste stream).	No; typically used for larger water systems. High cost, significant reject water generation are also drawbacks.
Enhanced lime softening (LS)	Lime softening is a chemical-physical treatment process used to remove calcium and magnesium ions. Generally not cost-effective just to remove arsenic, but can be enhanced for arsenic removal if done in conjunction with LS for hardness removal.	No; hardness reduction is not required, so lime softening is likely to be un-economical.
Enhanced or conventional coagulation filtration	Coagulation is the process of destabilizing the surface charges of colloidal and suspended matter to allow for the agglomeration of particles. The process forms large, dense floc that can be removed by clarification or filtration.	No; typically used for larger water systems. EPA decision tree suggests that Well 2,3 and 4 iron, manganese, and hydrogen sulfide concentrations are not high enough to support this technology.
Coagulation-assisted micro-filtration	Coagulation-assisted microfiltration uses the floc-forming process described above, followed by a semi-permeable membrane process instead of media filtration.	No; typically used for larger water systems. EPA decision tree suggests that Well 2,3 and 4 iron, manganese, and hydrogen sulfide concentrations are not high enough to support this technology.

No Action

From the review of the existing treatment process performance, the anticipated discharge limits, and the current operational agreements, the following deficiencies have been identified at the Snoqualmie Pass Wastewater Treatment Plant:

Adequacy of wastewater treatment by the use of the sprayfield:
The Department of Ecology questions the ability of the sprayfield to provide adequate treatment via land application of the lagoon effluent. Ecology's position is based on the fact that the majority of the system flows occur during the winter when the ground is covered with snow. Therefore, the effluent is primarily being diluted by the snow and eventually is discharged into Keechelus Lake without proper treatment by the vegetation as the sprayfield is intended to do.

In addition, the USFS has notified the district that their policy is to no longer allow forest lands to be used wastewater treatment, and therefore, will not renew the lease with the District. The USFS has not given the District a time frame to stop their current process, only that they will not renew the lease. Making the use of the spray field uncertain.

The district is required to meet more stringent treatment levels to be able to discharge to Coal Creek as they did prior to the early 1980s when the sprayfield was initially placed into service.

Inadequate Fire Flow capacity in Alpental service area:
The existing water storage system will not adequately provide the required Fire Flow capacity in parts of the Alpental service area. Additional storage is required to be installed to provide the flow and pressure duration requirements set by the Fire Marshal.

Reduced water supply system redundancy without the risk of exceeding arsenic and manganese limits:
A blending strategy of the water production from Well 4 and Well 5 is required to keep arsenic and manganese limits within the annual limits set by the Department of Health. This operational strategy limits the use of Well 4, and therefore, limits the redundancy and related reliability of the water system service Snoqualmie Pass. As the customer base grows, these limitations become more pronounced.

Limiting water rights to support the buildout of the service area
The District enacted a self-imposed water moratorium during most of 2019 because of limited water rights that were available to them. After consolidating their water rights and repairing system leaks, they were able to lift the moratorium and sell some additional connections in October 2019. However, they only have water rights available for a maximum of 150 single family residences currently. Kittitas County has approved a few developments that have not been started yet that include over 600 homes. These cannot be served with out additional water rights.

Impacts of No Action
Without the proposed improvements the existing deficiencies will continue to worsen, which will lead to an increase in environmental risks, potential health and safety hazards, and will halt further development in the area.

Cumulative, Direct and Indirect Effects

Proposed Project

To address regulatory requirements to eliminate the use of the sprayfield, the District is proposing to construct a new WWTP and install a Membrane Bioreactor (MBR) wastewater treatment process which will work in conjunction with the existing lagoon process to provide equalization ahead of the MBR process, and storage of the treated water for stream augmentation during strategic fish passage periods.

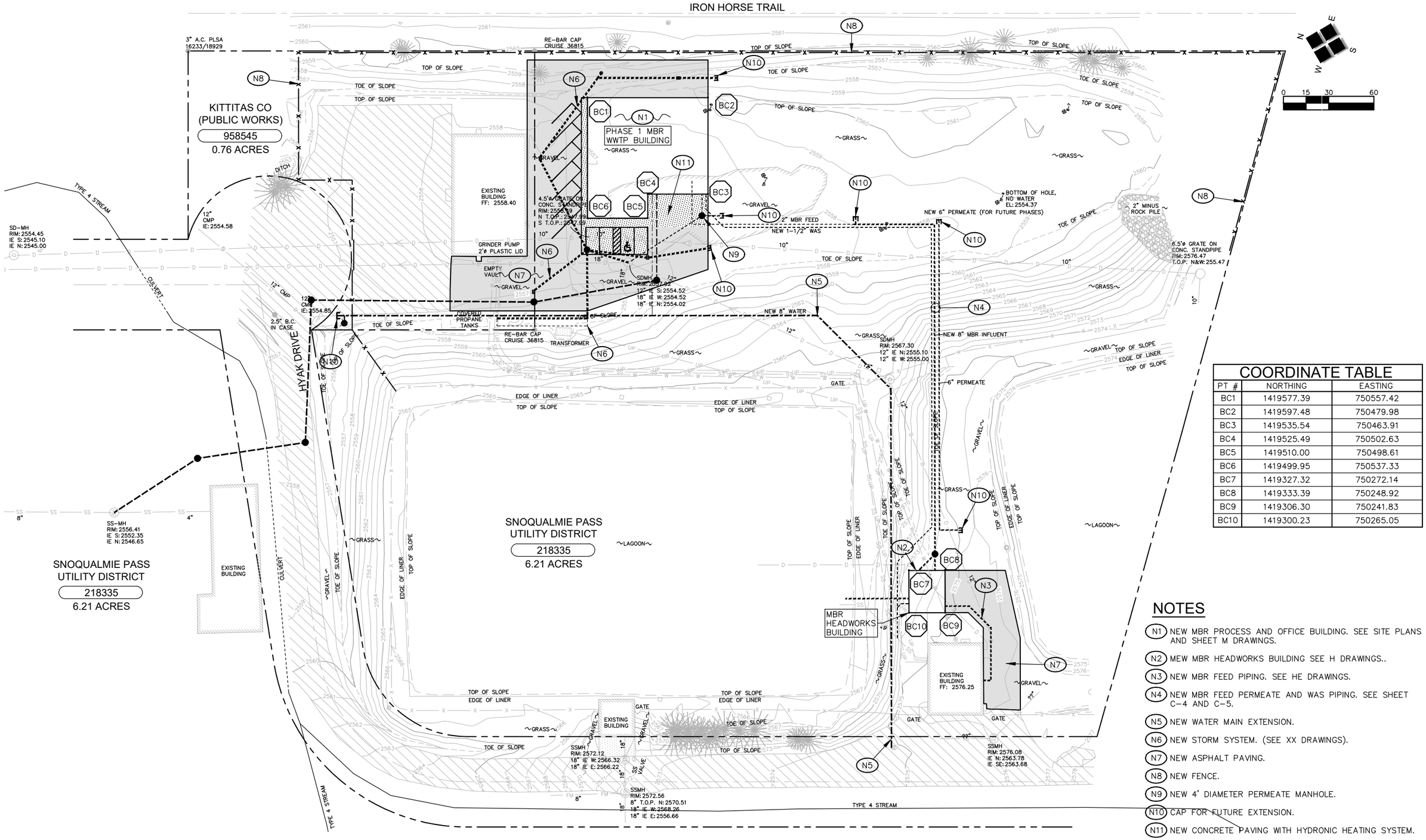
To address Fire Flow capacity limitations, the District proposes the addition of a second 100,000-gallon water storage reservoir located adjacent to the existing storage tank.

To address the elevated arsenic and manganese values in Well 4, the District proposes the construction of a pre-oxidation water treatment facility near Well 4 and 5 too eliminate the need to blend Well 4 with Well 5.

What Will Be the Cumulative, Direct and Indirect Effects of the Project

As a result of the proposed project there will be cumulative, direct, and indirect effects. Indirect effects include minor amounts of dust and exhaust from equipment activity. These effects will be limited by controlling dust during construction by watering the project site. Cumulative effects include continued environmental and safety protection, and facilities that will allow for future expansion.

Direct effects include but are not limited to: A decrease in environmental risks, health, and safety hazards through improved wastewater treatment, additional Fire Flow capacity, and satisfaction of a water right need to support buildout of the existing service area. An additional direct effect will be the ability to store treated water for timed release to augment the flow in portions of Coal Creek and Gold Creek which flow into Keechalus Lake.



COORDINATE TABLE		
PT #	NORTHING	EASTING
BC1	1419577.39	750557.42
BC2	1419597.48	750479.98
BC3	1419535.54	750463.91
BC4	1419525.49	750502.63
BC5	1419510.00	750498.61
BC6	1419499.95	750537.33
BC7	1419327.32	750272.14
BC8	1419333.39	750248.92
BC9	1419306.30	750241.83
BC10	1419300.23	750265.05

NOTES

- (N1) NEW MBR PROCESS AND OFFICE BUILDING. SEE SITE PLANS AND SHEET M DRAWINGS.
- (N2) MEW MBR HEADWORKS BUILDING SEE H DRAWINGS..
- (N3) NEW MBR FEED PIPING. SEE HE DRAWINGS.
- (N4) NEW MBR FEED PERMEATE AND WAS PIPING. SEE SHEET C-4 AND C-5.
- (N5) NEW WATER MAIN EXTENSION.
- (N6) NEW STORM SYSTEM. (SEE XX DRAWINGS).
- (N7) NEW ASPHALT PAVING.
- (N8) NEW FENCE.
- (N9) NEW 4' DIAMETER PERMEATE MANHOLE.
- (N10) CAP FOR FUTURE EXTENSION.
- (N11) NEW CONCRETE PAVING WITH HYDRONIC HEATING SYSTEM.

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PRELIMINARY
SUBJECT TO REVISION

REVISION	DATE

JOB NUMBER: 19216B	DATE: 03-24-20
FILE NAMES:	
DRAWING:	Civil Sheets.dwg
PLAN:	19216.dwg
PROFILE:	XXXX.dwg
DESIGNED BY:	DPS
ENTERED BY:	JWB

SNOQUALMIE PASS UTILITY DISTRICT
PHASE 1 MEMBRANE BIOREATOR WASTEWATER TREATMENT PLANT IMPROVEMENTS

OVERALL SITE PLAN

C-1

SHEET 7 OF 89

SNOQUALMIE PASS UTILITY DISTRICT

SEWER AND WATER SYSTEMS BASE MAP

WATER LEGEND

- SERVICE AREA
- WATER MAIN
- INTERTIE
- PRESSURE REDUCING VALVE
- RESERVOIR
- WELL SITE
- MASTER METER
- COLIFORM MONITORING SITE

SEWER LEGEND

- FORCE MAIN
- LIFT STATION
- SEWER MAIN
- CLEAN-OUTS
- MANHOLES
- SPRAY FIELDS
- TREATMENT LAGOONS

N

1" = 600'

ERSTE ST.
ALPENTAL
ERSTE ST.
SNOQUALMIE SUMMIT ZONE
KING COUNTY
KITTITAS COUNTY
465,000 GALLONS
DIV. 2
VILLAGE AT THE SUMMIT
DIV. 1
PRV
CONIFER ESTATES
YELLOWSTONE TRAIL
CONIFER ZONE
SR 906
SNOQUALMIE SUMMIT VILLAGE
UPPER HYAK ZONE
SKI ACRE ESTATES
SKI TUR VALLEY
VIKINGDAL DIVISION
GOLD CREEK ROAD
HYAK ESTATES NO. 2
LOWER HYAK ZONE
HYAK ESTATES
HYAK ESTATES NO. 3
HYAK ESTATES NO. 4
LAKE KEECHELUS

\DATA\SPD\194-074\CAD\SEW_MTR

Snoqualmie Pass Utility District
Snoqualmie Pass, Washington

SNOQUALMIE PASS UTILITY DISTRICT

WATER SYTEM IMPROVEMENTS

STATE ENVIRONMENTAL POLICY ACT

ENVIRONMENTAL CHECKLIST

Prepared by

HLA
Engineering and Land Surveying, Inc.

HLA Project No. 19216C

April 2020

STATE ENVIRONMENTAL POLICY ACT

ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. *Name of Project:* Water System Improvements

2. *Name of Proponent:* Snoqualmie Pass Utility District
   Phone Number: (425) 434-6600
   Address of Proponent: 370 Treatment Plant Road
   PO Box 131
   Snoqualmie Pass, WA 98068

2. *Person Completing Form:* Dean P. Smith, PE
   Phone Number: (509) 966-7000
   Address: HLA Engineering and Land Surveying, Inc.
   2803 River Road
   Yakima, WA 98902

3. *Date Checklist Submitted:* April 2020

4. *Agency Requiring Checklist:* King County

5. *Name of Proposal, if Applicable:* Snoqualmie Pass Utility District Water System Improvements

6. *Proposed timing or schedule (including phasing, if applicable):*
   Construction scheduled to begin in May 2020 with completion in November 2021

7. *Do you have any plans for future additions, expansions, or further activity related to or connected with this proposal? If yes, explain.*
   The Water System Plan presents the need for additional storage capacity and a water treatment system to treat wells for arsenic and manganese. Projects are planned to begin as early as May 2021, and be completed in 2022 as follows:

   - Alpental Reservoir 2 (100,000-gallon) - 2021
   - Water treatment plant to remove arsenic and manganese 2022

8. *List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.*
   None.

9. *Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.*
   No.

10. *List any governmental approvals or permits that will be needed for your proposal, if known.*
    Department of Health - Approval of planning and design documents.
    Snoqualmie Pass Utility District – Approval of design, authorization to advertise for bids, and award of construction contract.
    King County – Building and Grading Permits.

11. *Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page*.

Alpental Reservoir 2: The project includes the construction of a 100,000-gallon water storage reservoir approximately 26-feet in diameter and 25-feet in height adjacent to the Districts existing 100,000-gallon reservoir in the Alpental service area. The reservoir will be a concrete structure and is being constructed to eliminate Fire Flow capacity requirements in the area.

Water Treatment Facility: Includes construction of an oxidation/filtration type treatment system to reduce arsenic and manganese from the production wells serving the district. The project will include a water transmission main and treatment building east of Erste. The completed project will eliminate the need for a blending strategy of the Districts two operational production wells, and improve system redundancy.

12. *Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit application related to this checklist.*

The proposed water treatment system improvements are located on existing Snoqualmie Pass owned property, Parcel number 3323119029. The new reservoir will be constructed on leased property from USFS, Parcel number 2923119001.

B. ENVIRONMENTAL ELEMENTS

1. EARTH

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other.

b. What is the steepest slope on the site (approximate percent slope)?

The reservoir site sits on sloping ground adjacent to the existing tank with slopes that range from 15% to 30%. The water treatment facility area sits on slopes that range from 0% to 15%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

The soil type found within the project area is Chinkmin sandy loam. This soil is typically 20 to 40 inches deep and is moderately well drained with a low to moderately low capacity to transmit water of 0.01 to 0.06 in/hr. Depth to water is about 18 to 36 inches. The available water storage in profile is about 3.1 inches.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There has been no recent indications of unstable soils or earth movement at the Snoqualmie Pass areas designate for this project.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

The Alpental Reservoir and Water treatment facility building foundation will require excavation of materials of approximately 300 CY for the total project. Imported gravel fill used for structural foundation support and backfill is expected to be hauled in from pits located in Easton, North Bend, or Cle Elum.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion is not expected to occur as a result of clearing or construction. Construction of the improvements will not affect wind-borne soil erosion following project completion. After construction is completed, the development will be primarily covered with hard surfacing, and landscaping, preventing the likelihood of erosion.

g. *About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or building)?*

The Water treatment facility will cover approximately 10% of the site and will be impervious. The Alpental Reservoir is located on a portion of USFS land.

h. *Proposed measures to reduce or control erosion, or other impacts to the earth, if any:*

BMPs.

2. AIR

a. *What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.*

Typical emissions of dust and equipment exhaust will be generated during construction. Dust control procedures will be in place during construction to minimize emissions. Construction activities will be limited to an area immediately adjacent to the construction area. The completed project is not expected to produce emissions or effect air quality.

b. *Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.*

No.

c. *Proposed measures to reduce or control emissions or other impacts to air, if any:*

Dust suppression practices will be performed during excavation and backfill using water trucks.

3. WATER

a. *Surface:*

1. *Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.*

The south fork of the Snoqualmie River is adjacent to the current and future reservoir and water treatment facility.

2. *Will the project require any work over, in, or adjacent to (within 200 feet) of the described waters? If yes, please describe and attach available plans.*

Yes, a portion of the south fork of the Snoqualmie River passes through the property planned for the Alpental Reservoir. The new reservoir is planned to be located within 200 feet of the stream.

3. *Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.*

None.

4. *Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.*

No.

5. *Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.*

No.

6. *Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.*

No.

b. *Ground:*

1. *Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.*

   No.

2. *Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage, industrial, containing the following chemicals...; agricultural, etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.*

   None.

c. *Water Runoff (including storm water):*

1. *Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will the water flow? Will this water flow into other waters? If so, describe.*

   BMP will be initiated during construction of the facility. Stormwater swales with detention and infiltration basins will be constructed for the facility.

2. *Could waste materials enter ground or surface waters? If so, generally describe.*

   Construction debris will need to be managed to prevent materials from entering ground or surface waters.

3. *Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.*

   Natural drainage may be altered slightly to create flat building site for new treatment facility. Runoff passes through and around existing site. Need to install culvert for access to site.

d. *Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:*

   Stormwater system designed per the Eastern Washington Stormwater Manual will be installed as required.

4. PLANTS

a. *Check or underline type of vegetation found on the site (within the Snoqualmie Pass Utility District Service Area):*

__x__ deciduous tree: Alder, Maple, Aspen, other
__x__ evergreen tree: Fir, Cedar, Pine, other
__x__ shrubs
__x__ grass
____ pasture
____ crop or grain
____ wet soil plants; Cattail, Buttercup, Bullrush, Skunk Cabbage, other
____ water plants: Water Lily, Eelgrass, Milfoil, other
____ other types of vegetation

b. *What kind and amount of vegetation will be removed or altered?*

   The reservoir site has already been cleared and has minimal grasses and vegetation which will be affected from the project. The water treatment facility will require clearing of up to 1 acre.

c. *List threatened or endangered species known to be on or near the site (Snoqualmie Pass Utility District Service Area).*

   There are no know endangered species in or near the District service area

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

None.

5. ANIMALS

a. Underline any birds and animals which have been observed on or near the site or are known to be on or near the site (*Snoqualmie Pass Utility District Service Area):*

Bird: hawk, heron, eagle, songbird, other
Mammals: deer, bear, elk, beaver, other
Fish: bass, salmon, trout, herring, shellfish, other

b. List any threatened or endangered species known to be on or near the site (Snoqualmie Pass Utility District Service Area).

None.

c. Is this site part of a migration route? If so, explain.

The Snoqualmie Pass Utility District Service Area may be within a migratory route for some bird species.

d. Proposed measures to preserve or enhance wildlife, if any:

None.

e. List any invasive animal species known to be on or near the site.

None.

6. ENERGY AND NATURAL RESOURCES

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electric and/or propane will be used for heating and treatment equipment.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

High efficiency motors, lighting, and HVAC systems. Building insulation.

7. ENVIRONMENTAL HEALTH

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Water treatment chemicals will be used and filter backwash will discharged to the municipal sewer system.

1. Describe special emergency services that might be required.

None.

2. Proposed measures to reduce or control environmental health hazards, if any:

Containment with drains to municipal sewer system will be installed.

3. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

None.

4. *Describe special emergency services that might be required.*
   Emergency medical aid may be required should an injury occur during construction.

5. *Proposed measures to reduce or control environmental health hazards, if any:*
   None.

b. *Noise*

1. *What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?*
   None.

2. *What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.*
   Work hours are expected to be from 6:00 AM to 6:00 PM. Noise types will primarily be from the construction equipment motors and back-up alarms.

3. *Proposed measures to reduce or control noise impacts, if any:*
   Restrict construction activities from 6:00 AM to 7:00 PM.

8. LAND AND SHORELINE USE

a. *What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe*
   The current use of the reservoir site is an existing reservoir which the Snoqualmie Pass Utility District owns as part of the water distribution system. The adjacent property is for recreational uses. The water treatment facility site is currently vacant forest land and is across the street from a residential area.

b. *Has the project site been used as working farmlands or working forest land? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or non-forest use?*
   Historically, land within the Snoqualmie Pass Utility District Service Area has been used for recreational forest related purposes.

c. *Describe any structures on the site.*
   Existing concrete storage tank.

d. *Will any structures be demolished? If so, what?*
   No.

e. *What is the current zoning classification of the site?*
   The areas are zoned as forest.

f. *What is the current comprehensive plan designation of the site?*
   Forest.

g. *If applicable, what is the current shoreline master program designation of the site?*
   Not applicable.

h. *Has any part of the site been classified as an "environmentally sensitive" area?*
   No.

i. *Approximately how many people would reside or work in the completed project?*

2 people will operate the water treatment facility. However, they are not expected to be on-site the entire workday. Their time will be distributed between other District infrastructure facilities in the area.

j. Approximately how many people would the completed project displace?
None.

k. Proposed measures to avoid or reduce displacement impacts, if any:
Not applicable.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
None.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:
Not applicable.

9. HOUSING

a. Approximately how many units would be provided, if any? Indicate whether high-, middle-, or low-income housing.
None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high-, middle-, or low-income housing.
None.

c. Proposed measures to reduce or control housing impacts, if any:
Not applicable.

10. AESTHETICS

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?
25 feet for reservoir, 25 feet for water treatment facility.

b. What views in the immediate vicinity would be altered or obstructed?
None.

c. Proposed measures to reduce or control aesthetic impacts, if any:
None.

11. LIGHT AND GLARE

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
Perimeter security lighting will be provided for the new water treatment facility.

b. Could light or glare from the finished project be a safety hazard or interfere with views?
No.

c. What existing off-site sources of light or glare may affect your proposal?
None.

d. Proposed measures to reduce or control light and glare impacts, if any:
Lighting will be pointed down to minimize visibility from neighboring residences. Perimeter trees will be maintained as possible to provide shielding from the street and adjacent neighbors.

12. RECREATION

a. What designated and informal recreational opportunities are in the immediate vicinity?

The Snoqualmie Pass Utility District Service Area contains four ski areas and numerous summer-time hiking areas. Various informal recreational opportunities such as fishing, bird watching, walking, jogging, bicycling, etc., exist within the service area.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None.

13. HISTORIC AND CULTURAL PRESERVATION

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

No.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Is there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

EZ-1 Form and Area of Potential Effect correspondence will be submitted to DAHP and Confederated Tribes (Colville, Muckleshoot, Puyallup, Snoqualmie, Stillaguamish, Suquamish, Warm Springs, and Yakima) as necessary to initiate consultation.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

None anticipated.

14. TRANSPORTATION

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

The Snoqualmie Pass Utility District Service Area contains many county roads, and State Route 906 and Interstate 90. Public streets are shown on the attached maps.

b. Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No public transit service is provided within the Snoqualmie Pass Utility District Service Area.

c. How many parking spaces would the completed project have? How many would the project eliminate?

Not applicable.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

No.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

I-90 and State Route 906 traverses the Snoqualmie Pass Utility District Service Area.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

No change to vehicular traffic.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No effect.

h. Proposed measures to reduce or control transportation impacts, if any:

During construction, traffic signing and/or detouring may be necessary near the water treatment facility portion of the project.

15. PUBLIC SERVICES

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other?) If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.

None.

16. UTILITIES

a. *Underline the utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, irrigation, cable TV, drains, other.*

Available at numerous locations within the Snoqualmie Pass Utility District Service Area.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Dean P. Smith, PE Date
Project Engineer
HLA Engineering and Land Surveying, Inc.

DETERMINATION OF NONSIGNIFICANCE (DNS)

Description of Proposal:

Phase I Membrane Bioreactor Wastewater Treatment Plant

Proponent:

Snoqualmie Pass Utility District Service Area

Location of proposal, including street address, if any:

Snoqualmie Pass Utility District
370 Treatment Plant Road
PO Box 131
Snoqualmie Pass, WA 98068

Lead Agency:

King County

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

__ *There is no comment period for this DNS.*

X *This DNS is issued under 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by*

_____.

Responsible Official: _____

Position/title: Public Works Director; King County

Address: _____

Phone: _____

Date: _____ *Signature*: _____

Snoqualmie Pass Utility District
Kittitas County, Washington

SNOQUALMIE PASS UTILITY DISTRICT

PHASE 1 MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT

STATE ENVIRONMENTAL POLICY ACT

ENVIRONMENTAL CHECKLIST

Prepared by

HLA
Engineering and Land Surveying, Inc.

HLA Project No. 19216C

March 2020

STATE ENVIRONMENTAL POLICY ACT

ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1.	*Name of Project:*	Phase 1 Membrane Bioreactor Wastewater Treatment Plant
2.	*Name of Proponent:* *Phone Number:* *Address of Proponent:*	Snoqualmie Pass Utility District (425) 434-6600 370 Treatment Plant Road PO Box 131 Snoqualmie Pass, WA 98068
2.	*Person Completing Form:* *Phone Number:* *Address:*	Dean P. Smith, PE (509) 966-7000 HLA Engineering and Land Surveying, Inc. 2803 River Road Yakima, WA 98902
3.	*Date Checklist Submitted:*	March 2020
4.	*Agency Requiring Checklist:*	Kittitas County
5.	*Name of Proposal, if Applicable:*	Snoqualmie Pass Utility District Facility and General Sewer Plans

6. *Proposed timing or schedule (including phasing, if applicable):*
   Construction scheduled to begin in May 2020 with completion in November 2021

7. *Do you have any plans for future additions, expansions, or further activity related to or connected with this proposal? If yes, explain.*
   The Facility Plan identifies future plant construction phases to support growth which are anticipated to begin in May 2022, and to be completed in 2025 as follows:

   - Phase 2 – Process Plant Expansion to 350,000 gpd facility – 2022 through 2023
   - Phase 3 – Lagoon 1 Rehabilitation (new liner and aeration system) – 2025
   - Phase 4 – Lagoon 2 Rehabilitation (cleaning and aeration system) - 2025

8. *List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.*
   None.

9. *Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.*
   No.

10. *List any governmental approvals or permits that will be needed for your proposal, if known.*
    Department of Ecology - Approval of planning and design documents.
    Snoqualmie Pass Utility District – Approval of design, authorization to advertise for bids, and award of construction contract.
    Kittitas County Building and Grading Permits.

11. *Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page*.

Phase 1 of the project includes the construction of a building approximately 80-feet x 40-feet for Snoqualmie Pass Utility District offices and 64-feet x 40-feet process building for the Phase 1 Membrane Bioreactor WWTP equipment skid and ancillary equipment. Some portions of the project are sized for the future buildout of the WWTP scheduled to begin expansion in 2022. One of these components is a new 24-feet x 28-feet MBR Headworks Building located near the existing WWTP control building.

Phase 2 includes an expansion of the process building (180-feet x 64-feet addition), and 30-feet diameter aerobic digester, and a 120-feet x 40-feet covered drying bed area.

12. *Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit application related to this checklist.*

The proposed wastewater system improvements are located on the existing Snoqualmie Pass Refer to attached Phase 1 Membrane Bioreactor WWTP Improvement Drawings. Parcel Number 218335.

B. ENVIRONMENTAL ELEMENTS

1. EARTH

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other.

b. What is the steepest slope on the site (approximate percent slope)?

The wastewater treatment facility area sits on slopes that range from 0% to 5%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

Four soil types are found within the wastewater system service area, and these soil types are discussed below:

1. Chinkmin sandy loam: This soil is typically 20 to 40 inches deep and is moderately well drained with a low to moderately low capacity to transmit water of 0.01 to 0.06 in/hr. Depth to water is about 18 to 36 inches. The available water storage in profile is about 3.1 inches.

2. Index loamy sand: This soil is typically found on 30 to 65 percent slopes in the area. These areas are not where the collection system piping or wastewater treatment facilities will be located, and therefore, are not anticipated to be encountered. This soil is well drained with a capacity to transmit water of 5.95 to 19.98 in/hr. The depth of these soils are 40 to 70 inches deep and typically are on bedrock. The depth to water is more than 80 inches.

3. Jonas gravelly silt loam: This soil is found on 65 to 90 percent slopes in the area, are well drained and are more than 80 inches deep. The capacity to transmit water is from 0.57 to 1.98 in/hr. As with the Index loamy sand soils, the collection system piping and wastewater treatment facilities are not located in these areas and will be outside our project work areas.

4. Klapatche-rock outcrop complex: This soil is found on 45 to 90 percent slopes in the area, are well drained and are 30 to 40 inches deep. The capacity to transmit water is from 1.98 to 5.95 in/hr. As with the Index loamy sand soils, the collection system piping and

wastewater treatment facilities are not located in these areas and will be outside our project work areas.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There has been no recent indications of unstable soils or earth movement at the Snoqualmie Pass WWTP.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

The WWTP building foundation will require excavation of unsuitable materials and structural fill of approximately 3,000 CY for the total project. Phase one is estimated to be 1,000 CY. Fill is expected to be hauled in from pits located in Easton or Cle Elum.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion is not expected to occur as a result of clearing or construction. Construction of the improvements will not affect wind-borne soil erosion following project completion. After construction completed, the development will be primarily covered with hard surfacing, and landscaping, preventing the likelihood of erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or building)?

The WWTP will cover approximately 10% of the site and will be impervious.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

BMPs.

2. AIR

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Typical emissions of dust and automobile odors will be generated during construction. Dust control procedures will be in place during construction to limit the dust to the maximum extent practicable. Construction activity will be limited to area immediately adjacent to the construction area. Dust is not expected after construction as the site will be primarily be covered with hard surfaces or landscaping. After project completion, there will be no adverse effects on the air, the emission will be from automobiles of staff or local residences. Minimal emission for commercial heating devices may occur. The additional wastewater treatment processes will be moved indoors which are expected to be a reduction in potential odor generation compared to the existing wastewater treatment project.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Dust suppression practices will be performed during excavation and backfill using water trucks.

3. WATER

a. Surface:

1. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Coal Creek and adjacent drainages are adjacent to the current and future WWTP.

2. *Will the project require any work over, in, or adjacent to (within 200 feet) of the described waters? If yes, please describe and attach available plans.*

   Yes, an existing Type 4 stream is located to the north across the street from the project. It addition, the County GIS Compass 3.0 map shows a Type 4 stream passing through the project which was apparently relocated in the 1980's to flow around the west side of the WWTP to the north. See attached sketch showing the actual location of the Type 4 stream near the WWTP. The planned construction activities are planned to be a minimum of 140 feet from the stream, with exception of a sewer line extension. The planned extension of the sewer main crosses an area of this stream which is currently running in a culvert. The Overall Site Plan shows the location of this gravity sewer main.

3. *Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.*

   None.

4. *Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.*

   No.

5. *Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.*

   No.

6. *Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.*

   No. However, the treated wastewater will be discharged to the existing outfall to Coal Creek. Ecology is in the process of approving this treated water discharge to Coal Creek as a foreign water right credit for the District. In addition, after completion of Phase IV, Lagoon 2 will be able to be used to store treated water to be released to augment the stream flow during fish passage periods.

b. Ground:

1. *Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.*

   No.

2. *Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage, industrial, containing the following chemicals...; agricultural, etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.*

   None.

c. Water Runoff (including storm water):

1. *Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will the water flow? Will this water flow into other waters? If so, describe.*

   BMP will be initiated during construction of the facility. Stormwater swales with detention and infiltration basins will be constructed for the facility.

2. *Could waste materials enter ground or surface waters? If so, generally describe.*

   Construction debris will need to be managed to prevent materials from entering ground or surface waters.

3. *Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.*

No.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:
BMPs.

4. PLANTS

a. Check or underline type of vegetation found on the site (within the Snoqualmie Pass Utility District Service Area):

__x__ deciduous tree: Alder, Maple, Aspen, other
__x__ evergreen tree: Fir, Cedar, Pine, other
__x__ shrubs
__x__ grass
____ pasture
____ crop or grain
____ wet soil plants; Cattail, Buttercup, Bullrush, Skunk Cabbage, other
____ water plants: Water Lily, Eelgrass, Milfoil, other
____ other types of vegetation

b. What kind and amount of vegetation will be removed or altered?
The WWTP site has already been cleared and has minimal grasses and vegetation which will be affected from the project.

c. List threatened or endangered species known to be on or near the site (Snoqualmie Pass Utility District Service Area).
There are no know endangered species in or near the District service area

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:
None.

5. ANIMALS

a. Underline any birds and animals which have been observed on or near the site or are known to be on or near the site (*Snoqualmie Pass Utility District Service Area):*

Bird: hawk, heron, eagle, songbird, other
Mammals: deer, bear, elk, beaver, other
Fish: bass, salmon, trout, herring, shellfish, other

b. List any threatened or endangered species known to be on or near the site (Snoqualmie Pass Utility District Service Area).
None.

c. Is this site part of a migration route? If so, explain.
The Snoqualmie Pass Utility District Service Area may be within a migratory route for some bird species.

d. Proposed measures to preserve or enhance wildlife, if any:
None.

e. List any invasive animal species known to be on or near the site.
None.

6. ENERGY AND NATURAL RESOURCES

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electric. Used for heating and process equipment.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

High efficiency motors, lighting, and HVAC systems. Building insulation.

7. ENVIRONMENTAL HEALTH

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

No.

1. Describe special emergency services that might be required.

None.

2. Proposed measures to reduce or control environmental health hazards, if any:

None.

3. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

None.

4. Describe special emergency services that might be required.

Emergency medical aid may be required should an injury occur during construction.

5. Proposed measures to reduce or control environmental health hazards, if any:

None.

b. Noise

1. What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Equipment operation during construction.

2. What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Work hours are expected to be from 6:00 AM to 6:00 PM. Noise types will primarily be from the construction equipment motors and back-up alarms.

3. Proposed measures to reduce or control noise impacts, if any:

Restrict construction activities from 6:00 AM to 7:00 PM.

8. LAND AND SHORELINE USE

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe

The current use of the site is a lagoon type wastewater treatment plant and buildings which the Snoqualmie Pass Utility District staff store equipment and work from to perform the operation and maintenance activities associated with their water and wastewater service area. The adjacent properties is a combination of, residential, commercial, recreational, public, and school land uses.

b. *Has the project site been used as working farmlands or working forest land? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or non-forest use?*

Historically, land within the Snoqualmie Pass Utility District Service Area has been used for recreational forest related purposes. The existing site has been a wastewater treatment facility for over 50-years.

c. *Describe any structures on the site.*

Pre-engineered steel or cast concrete building.

d. *Will any structures be demolished? If so, what?*

No.

e. *What is the current zoning classification of the site?*

The Snoqualmie Pass Utility District WWTP site is light industrial.

f. *What is the current comprehensive plan designation of the site?*

Light Industrial.

g. *If applicable, what is the current shoreline master program designation of the site?*

Not applicable.

h. *Has any part of the site been classified as an "environmentally sensitive" area?*

No.

i. *Approximately how many people would reside or work in the completed project?*

6 to 8 people with work at the facility when completed.

j. *Approximately how many people would the completed project displace?*

None.

k. *Proposed measures to avoid or reduce displacement impacts, if any:*

Not applicable.

l. *Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:*

None.

m. *Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:*

Not applicable.

9. HOUSING

a. *Approximately how many units would be provided, if any? Indicate whether high-, middle-, or low-income housing.*

None.

b. *Approximately how many units, if any, would be eliminated? Indicate whether high-, middle-, or low-income housing.*

None.

c. *Proposed measures to reduce or control housing impacts, if any:*

Not applicable.

10. AESTHETICS

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

30 feet.

b. What views in the immediate vicinity would be altered or obstructed?

None.

c. Proposed measures to reduce or control aesthetic impacts, if any:

None.

11. LIGHT AND GLARE

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Perimeter security lighting will be provided for the new WWTP.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

Lighting will be pointed down to minimize visibility from neighboring residences.

12. RECREATION

a. What designated and informal recreational opportunities are in the immediate vicinity?

The Snoqualmie Pass Utility District Service Area contains four ski areas and numerous summer-time hiking areas. Numerous informal recreational opportunities such as fishing, bird watching, walking, jogging, bicycling, etc., exist within the service area.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None.

13. HISTORIC AND CULTURAL PRESERVATION

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

No.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Is there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

EZ-1 Form and Area of Potential Effect correspondence will be submitted to DAHP and Yakama Nation as necessary to initiate consultation.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

None anticipated.

14. TRANSPORTATION

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

The Snoqualmie Pass Utility District Service Area contains numerous county roads, and State Route 906 and Interstate 90. Public streets are shown on the attached maps.

b. Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No public transit service is provided within the Snoqualmie Pass Utility District Service Area.

c. How many parking spaces would the completed project have? How many would the project eliminate?

Not applicable.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

No.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

I-90 and State Route 906 traverses the Snoqualmie Pass Utility District Service Area.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

No change to vehicular traffic.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No effect.

h. Proposed measures to reduce or control transportation impacts, if any:

During construction, traffic signing and/or detouring will be necessary at the south end of the project.

15. PUBLIC SERVICES

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other?) If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.

None.

16. UTILITIES

a. *Underline the utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, irrigation, cable TV, drains, other.*

Available at numerous locations within the Snoqualmie Pass Utility District Service Area.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Dean P. Smith, PE Date
Project Engineer
HLA Engineering and Land Surveying, Inc.

DETERMINATION OF NONSIGNIFICANCE (DNS)

Description of Proposal:

Phase I Membrane Bioreactor Wastewater Treatment Plant

Proponent:

Snoqualmie Pass Utility District Service Area

Location of proposal, including street address, if any:

Snoqualmie Pass Utility District
370 Treatment Plant Road
PO Box 131
Snoqualmie Pass, WA 98068

Lead Agency:

Kittitas County

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

__ *There is no comment period for this DNS.*

X *This DNS is issued under 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by*

_____.

Responsible Official: Mark Cook

Position/title: Public Works Director; Kittitas County

Address: 411 N Ruby St, Suite 1
Ellensburg, WA 98926

Phone: (509) 962-7523

Date: _____ *Signature*: _____

Guide #3
Attachment 1
Applicant's Letter to Consulting Party

Supporting Documentation to be Submitted by Applicant to Agency

1. Provide the physical address of the proposed location and the Township, Section and Range of the proposed location. The addresses of the three proposed locations are: 370 Treatment Plant Road (GPS: 930 Hyak Drive East) for the Wastewater Treatment Plant in T22N R11E S15; for the Reservoir on USFS leased land just north of the parking lot at the end of Erste Strasse in T23N R11E S29; and for the Arsenic and Manganese Treatment Plant located on the west side of Erste Strasse near the intersection of Alpental Strasse in T23N R11E S33.

2. Detailed description of the proposed project, including related activities to be carried out in conjunction with the project, and the status of property acquisition, if required. The Snoqualmie Pass Utility District is applying for one USDA RD loan application covering two separate but related systems.

   The Wastewater Treatment Facility - Phase 1 project will design and construct a Membrane Bioreactor (MBR) capable of treating 20,000 to 30,000 gpd using a side stream of the existing Wastewater Treatment Plant (WWTP) process. One of the current WWTP lagoons will be repurposed to store the MBR treated water. The treated water will ultimately be released to Coal Creek. The MBR technology will be installed for a portion of the WWTP effluent at this time. Plans to convert and expand the entire WWTP into a MBR facility within 5 years is the mid-term goal.

   This MBR project will have multiple benefits:
   - eliminate the current practice of spraying the WWTP effluent on a spray field located on US Forest Service land,
   - create a foreign water right credit proportional to the quantity of water treated through the MBR process, and
   - augment water flow in Coal Creek to help fish migration.

   Implementation of Phase 1 involves construction of a new MBR WWTP building east of Lagoon 1 and south of the existing joint County-District shop located at the end of Hyak Drive. A new headworks building will be constructed east of the existing District Control building (between the two existing lagoons).

   Snoqualmie Pass Utility District's Drinking Water System also requires two drinking water improvements. Three water storage reservoirs are in the Utility District: Alpental, Summit 1, and Summit 2. An additional water reservoir is proposed in this funding application. This second reservoir at Alpental, inside the northern boundary of the Utility District's service area, will provide adequate

storage redundancy and increase fire flow volumes to satisfy the requirements of the Fire Marshal's office.

The new reservoir proposed in this project is proposed to be located in the same vicinity as the existing Alpental Reservoir and will be constructed on previously disturbed soil. New underground piping will need to be connected between the new reservoir and the existing distribution system. Pipe installation is not anticipated to disturb previously undisturbed soils.

The Snoqualmie Pass Utility District owns three groundwater well sources, Well No. 4, Well No. 5, and a well field consisting of Wells No. 2 and 3. Water from the well field also exceeds Department of Health standards for Arsenic and Manganese and has not been used since 1998. Wells No. 4 and 5 are the primary sources of water.

The source water from Well No. 4 exceeds acceptable limits in Arsenic and Manganese. The Utility District is mitigating the current exceedance by blending the water from Well No. 4 with water from Well No. 5 to achieve acceptable annual arsenic levels. The second Drinking Water project is the construction of an Arsenic and Manganese Treatment Plant for Well No. 4. The treatment of Well No. 4 source water allows the Utility District to discontinue operating both wells for blending purposes and introduces independent redundancy for the community's water supply.

Because Well No. 4 is in the midst of a fully developed residential area, the Arsenic and Manganese Treatment Plant building will be constructed on Snoqualmie Pass Utility District property west of the intersection of Erste Strasse and Alpental Strasse. The property already belongs to the Utility District, is in King County, and is zoned currently as Forest. The property soil has likely not been disturbed. In addition to the building, underground piping will be required between Well No. 4 and the Arsenic and Manganese Treatment Plant.

3. Describe all federal and state involvement in the project. Identify the specific Rural Development program from which you have requested financial assistance. If there are other federal agencies or a state agency involved, specify the agency and the type of assistance requested (for example: financial, permit, license).

There are no state or federal funds included in this project. The specific Rural Development program being applied to is USDA Rural Utilities Service.

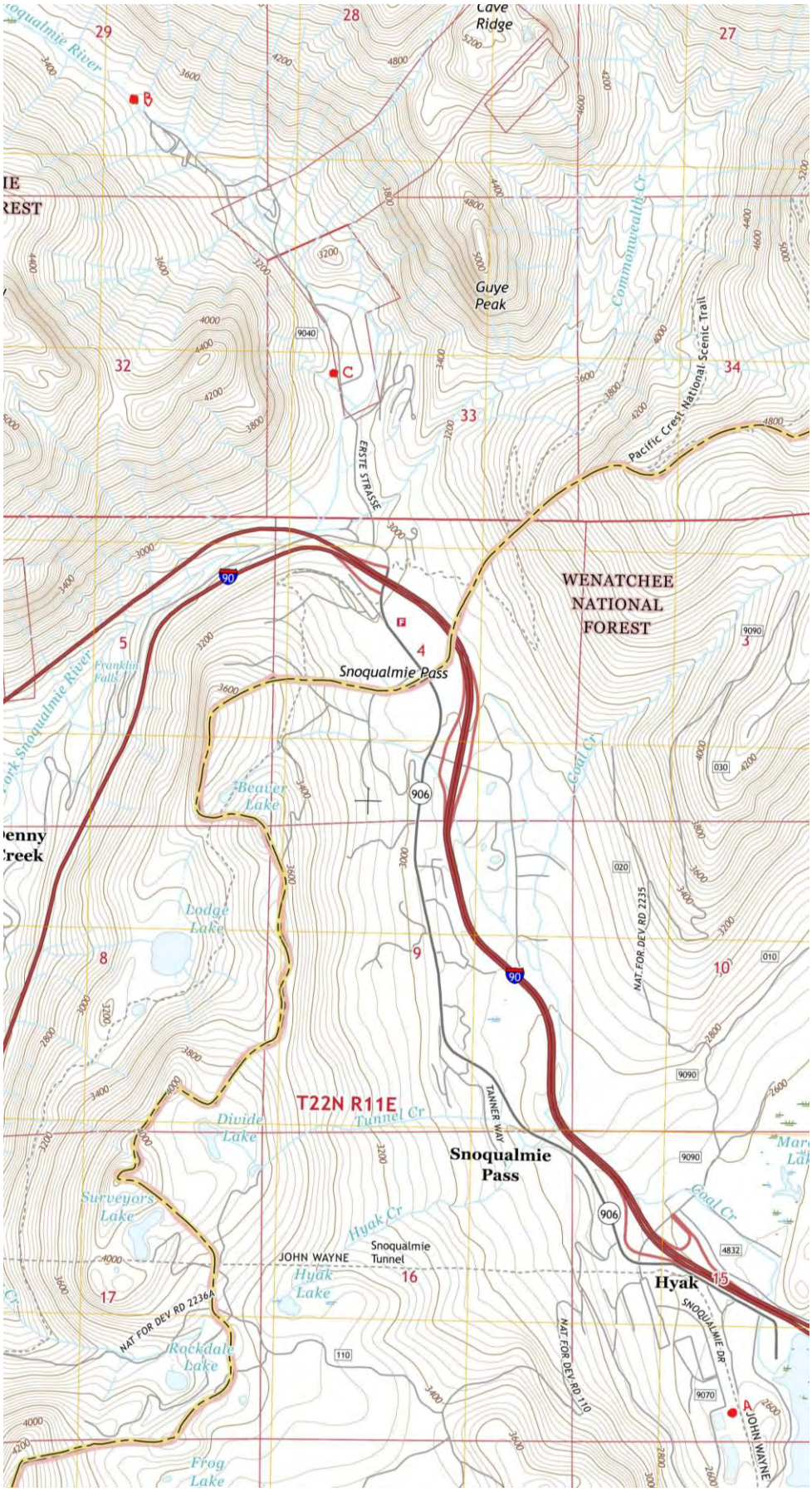
4. Provide the following information regarding the project site:

- Describe the size (acres), terrain, and present land uses of the project site;
    A. Wastewater Treatment Plant Phase 1 Improvements – MBR 6.21 acres.
    B. Drinking Water Additional Alpental Water Reservoir 0.5 acres.

C. Drinking Water Arsenic and Manganese Treatment Plant 36 acres.

- Describe the adjacent land uses;
  A. Wastewater Treatment Plant Phase 1 Improvements – MBR. The WWTP project occurs within the WWTP property all of which has the same land use and considered to be previously disturbed soils. The spray field is located in the Wenatchee National Forest. Phase 2, scheduled for construction by 2025 will eliminate the use of the spray field. The proposed outfall from the MBR treated Lagoon will feed Coal Creek and enter Lake Keechelus
  B. Drinking Water Additional Alpental Water Reservoir. The Reservoir will be co-located with the existing Alpental Reservoir. Alpental is a residential area.
  C. Drinking Water Arsenic and Manganese Treatment Plant. The Arsenic and Manganese Treatment Plant building will be constructed on Snoqualmie Pass Utility District property west of the intersection of Erste Strasse and Alpental Strasse. The property already belongs to the Utility District, is in King County, and is zoned currently as Forest.

- A map with the boundaries of the project site clearly marked, preferably a U.S. Geological Survey (USGS) 7.5 quadrangle map;
  A. Wastewater Treatment Plant Phase 1 Improvements – MBR
  B. Drinking Water Additional Alpental Water Reservoir
  C. Drinking Water Arsenic and Manganese Treatment Plant


Cave Ridge
Guye Peak
Commonwealth Cr
Pacific Crest National Scenic Trail
ERSTE STRASSE
WENATCHEE NATIONAL FOREST
Snoqualmie Pass
Franklin Falls
Beaver Lake
Lodge Lake
Divide Lake
Surveyors Lake
Rockdale Lake
Frog Lake
Hyak Lake
Tunnel Cr
Hyak Cr
Goat Cr
TANNER WAY
NAT FOR DEV RD 2235
NAT FOR DEV RD 2236A
NAT FOR DEV RD 110
SNOQUALMIE DR
JOHN WAYNE
Snoqualmie Tunnel
Snoqualmie Pass
Hyak
T22N R11E
B
C
A
JOHN WAYNE

HLA
Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

REVISION	DATE

JOB NUMBER: 19216A	DATE: 03-11-20
FILE NAMES: DRAWING: Sheets.dwg PLAN: 19216.dwg	
DESIGNED BY: DPS ENTERED BY: JWB	

GROUND IMPROVEMENTS

MBR PHASE 1 MBR WWTP APE EXHIBIT A

SHEET 1 OF 3

HLA
Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

REVISION	DATE

JOB NUMBER: 19146
DATE: 11-15-19

FILE NAMES:
DRAWING: Sheets.dwg
PLAN: 19146.dwg
PROFILE: 19146.dwg

DESIGNED BY: JLB
ENTERED BY: AJH

SNOQUALMIE PASS UTILITY DISTRICT
WATER SYSTEM IMPROVEMENTS

ALPENTAL RESERVOIR APE EXHIBIT B

HLA
Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

REVISION	DATE

JOB NUMBER: 19146 | DATE: 11-15-19

FILE NAMES:
DRAWING: Sheets.dwg
PLAN: 19146.dwg
PROFILE: 19146.dwg

DESIGNED BY: JLB
ENTERED BY: AJH

SNOQUALMIE PASS UTILITY DISTRICT
WATER SYSTEM IMPROVEMENTS

WATER TREATMENT SITE APE EXHIBIT C

SHEET 3 OF 3

- Photos of the site and of the adjacent properties.
    A. Wastewater Treatment Plant Phase 1 Improvements – MBR

WWTP Photo 1: Existing WWTP property (looking north)

WWTP Photo 2: Existing WWTP property (looking north)

WWTP Photo 3: Existing WWTP property (looking northwest)

WWTP Photo 4: Existing WWTP property (looking west)

WWTP Photo 5: Existing WWTP property (looking south)

B. Drinking Water Additional Alpental Water Reservoir

Reservoir Photo 1: Existing Reservoir northwest of the parking lot at the end of Erste Strasse (looking north)

Reservoir Photo 2: Existing Reservoir northwest of the parking lot at the end of Erste Strasse (looking south)

C. Drinking Water Arsenic and Manganese Treatment Plant

Arsenic & Manganese Treatment Plant Location Photo 1: Location is near the intersection of Alpental Strasse and Erste Strasse (looking south)

Arsenic & Manganese Treatment Plant Location Photo 2: Location is near the intersection of Alpental Strasse and Erste Strasse (looking south)

Arsenic & Manganese Treatment Plant Location Photo 3: Location is near the intersection of Alpental Strasse and Erste Strasse (looking west)

5. Provide a written description of the proposed boundaries of the project's Area of Potential Effects (APE) and clearly mark on the project site map.
    A. Wastewater Treatment Plant Phase 1 Improvements – MBR
    B. Drinking Water Additional Alpental Water Reservoir
    C. Drinking Water Arsenic and Manganese Treatment Plant

6. Describe any *efforts* (research, surveys, etc.) that have been made or are on-going to identify and evaluate properties (including structures and archaeological resources) within the proposed Area of Potential Effect that are listed or eligible for listing on the National Register of Historic Places.
    A. Wastewater Treatment Plant Phase 1 Improvements – MBR No historic properties have been identified in the National Register on the Department of Archaeology and Historic Preservation WISAARD portal.
    B. Drinking Water Additional Alpental Water Reservoir No historic properties have been identified in the National Register on the Department of Archaeology and Historic Preservation WISAARD portal.
    C. Drinking Water Arsenic and Manganese Treatment Plant No historic properties have been identified in the National Register on the Department of Archaeology and Historic Preservation WISAARD portal.

7. Describe any *results* from the efforts outlined in item 6. Such results may include:

- A description of historic properties found and a discussion of their current status (listed or eligible for listing or in need of further evaluation).
    A. Wastewater Treatment Plant Phase 1 Improvements – MBR N/A
    B. Drinking Water Additional Alpental Water Reservoir N/A
    C. Drinking Water Arsenic and Manganese Treatment Plant N/A

- A description of any property that may have historical significance from a State or local perspective, even if it is not National Register eligible.
    A. Wastewater Treatment Plant Phase 1 Improvements – MBR N/A
    B. Drinking Water Additional Alpental Water Reservoir N/A
    C. Drinking Water Arsenic and Manganese Treatment Plant N/A

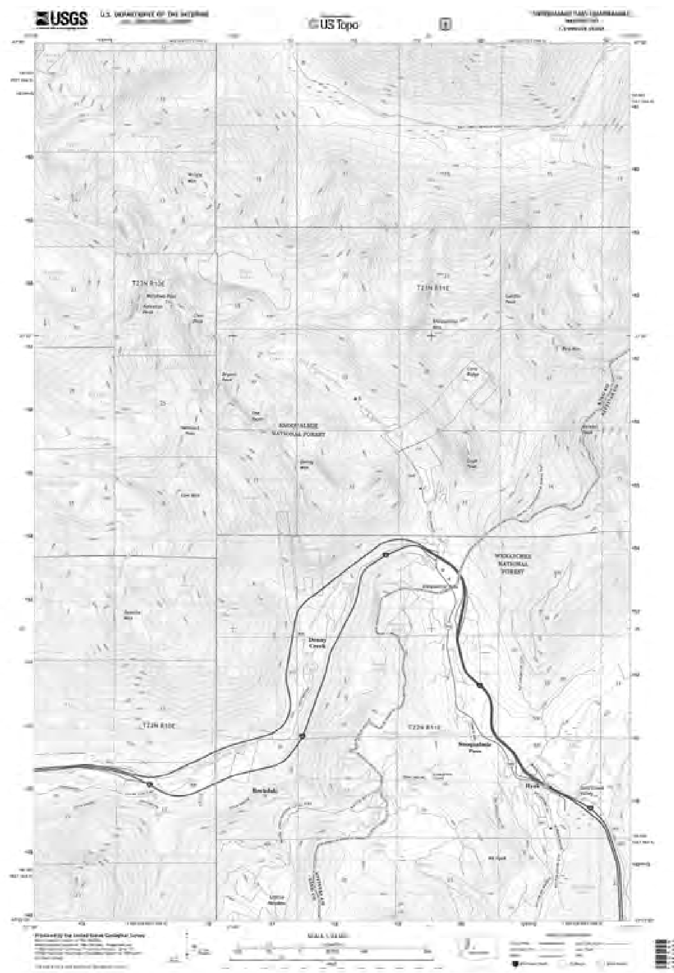
- A description of any property that may have historical significance from a religious or cultural perspective for an Indian Tribe or Native Hawaiian organization, even if it is not National Register eligible.
    A. Wastewater Treatment Plant Phase 1 Improvements – MBR N/A The WWTP project occurs within the WWTP property all of which has the same land use and considered to be previously disturbed soils.
    B. Drinking Water Additional Alpental Water Reservoir Mostly N/A with exception of the new pipe required between the Reservoir and the Arsenic and Manganese Treatment Plant.
    C. Drinking Water Arsenic and Manganese Treatment Plant Because the construction is happening on previously undisturbed property, a conservative approach in addition to this 106, is a heightened state of observation for culturally significant archaeological indicators in the new construction area such as: Lithic sites, culturally modified trees, quarries, camp and village sites, rock structures, huckleberry trenches, pictographs, petroglyphs, and artifacts.

8. <u>If appropriate, state your belief that no historic properties will be affected within the Area of Potential Effect and explain why.</u>
    It is my belief that no historic properties will be affected within any of the APEs identified for the wastewater or drinking water elements of the project. Searches through the Department of Archaeology and Historic Preservation have shown no historic properties to consider in the project areas.

9. <u>If appropriate, state your belief that historic properties (see item 7 above) will be affected within the Area of Potential Effect and describe the potential impacts (direct, indirect, and/or cumulative) that the project may have on such historic properties.</u> N/A

10. <u>List of parties currently being consulted on this issue.</u> N/A

11. <u>Any other information pertinent to this project which would be helpful in understanding the project and its potential for impacts to historic property.</u>


USGS
U.S. DEPARTMENT OF THE INTERIOR
US Topo
T23N R10E
T23N R11E
WENATCHEE NATIONAL FOREST

SNOQUALMIE PASS UTILITY DISTRICT

UNANTICIPATED DISCOVERY PLAN FOR WASTEWATER TREATMENT FACILITIES

Prepared by

HLA Engineering and Land Surveying, Inc.

HLA Project No. 19216E

March 2020

INTRODUCTION

The Snoqualmie Pass Utility District, located on the border of King and Kittitas County, is proposing improvements to their water system and wastewater treatment plant. The project consists of the following elements:

- New Membrane Bioreactor Wastewater Treatment Plant (WWTP). Including a new building to house an automatic, self-contained perforated screen with 2mm openings with integrated auger to remove and compact the screenings, sending them into a dumpster for disposal.
- Phase 1 of the WWTP includes a skid mounted MBR processing unit, and new office area for the district. Phase 2 includes the expansion of the MBR process area and the elimination of the use of the existing sprayfield on USDA property.
- New 100,000-gallon storage water tank in the Alpental Service Area.
- New water treatment facility to reduce arsenic and manganese below Department of Heath annual limits.

Location of the Snoqualmie Pass is shown on the attached figure. Location of the project on a USGS map is shown on the attached figure. Construction activities are expected to take place within existing District-owned right of way or District-owned property.

BACKGROUND

The Washington State Department of Archaeology and Historic Preservation (DAHP) and the Confederated Tribes and Bands of the Colville, Muckleshoot, Puyallup, Snoqualmie, Stillaguamish, Suquamish, Warm Springs, and Yakama (Confederated Tribes) were informed in writing of the proposed project, were asked to comment with regard to cultural and historic resources that might be present within the project area. To date, no response regarding the proposed project has been received.

As part of development of this *Unanticipated Discovery Plan*, Dean P. Smith, PE, (HLA Engineering and Land Surveying, Inc.) performed an informal site inspection of the project area. Most of the areas where excavation will occur have previously been excavated and otherwise disturbed. Although it is acknowledged the potential exists that buried cultural deposits could be disturbed during the project.

UNANTICIPATED DISCOVERY PLAN

Prior to the initiation of construction activities, all involved parties (the project engineer, project inspector, construction contractor, representatives from the Snoqualmie Pass Utility District, and representatives from each of the Confederated Tribes will be invited to attend a preconstruction conference. The conference will acquaint parties with aspects of the project, including proposed construction dates, safety concerns and procedures, and the procedures contained in this *Unanticipated Discovery Plan*.

A project inspector will be onsite during all ground disturbing activities. The project inspector will safely position himself near the excavation to observe the material being removed from the excavation. The excavation and material removed will be inspected for any signs of human remains, cultural features or other archaeological resources. Material from the excavation may be screened to help in the identification of cultural deposits at the project inspector's discretion. If the project inspector needs to closely inspect the excavated area to ascertain the nature of a deposit, work will be temporarily stopped, all appropriate safety procedures will be followed, and the equipment operator will be consulted before entry into the excavation. It is the responsibility of the project inspector to ensure that any necessary entry into the excavation is under safe

working conditions by properly sloping the sidewalls or by providing shoring. All entry into the excavation will not proceed without the knowledge of the project inspector and the equipment operator.

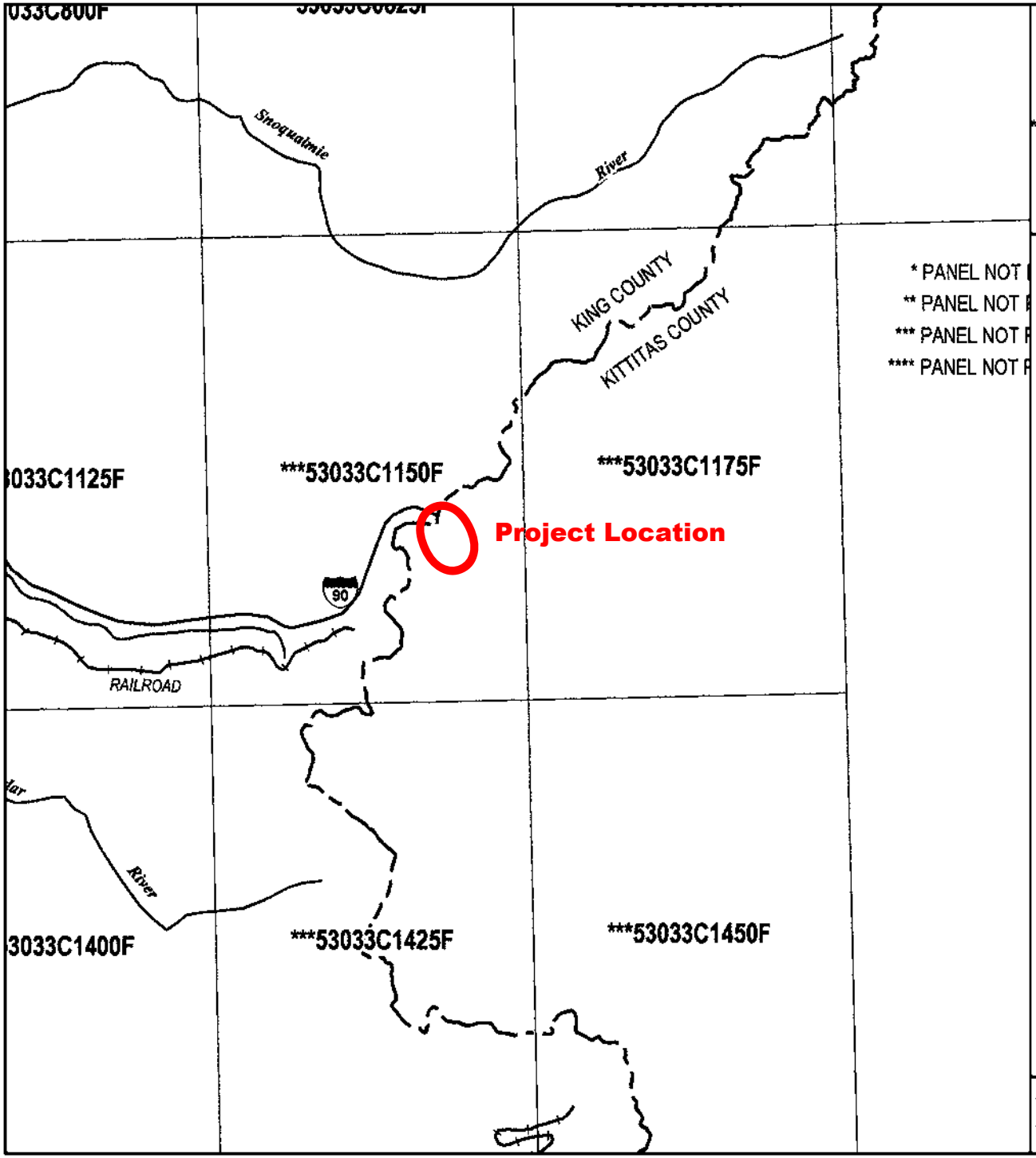
If cultural resources (i.e., historic and prehistoric artifacts) are encountered during excavation, work in the immediate area surrounding the discovery will be suspended pending a proper investigation and evaluation, and DAHP and the Yakama Nation will be contacted as soon as possible. Such a work stoppage does not necessarily preclude work in other areas of the project. Work in the area of the discovery will only be resumed after consultation with DAHP and the Yakama Nation. Any artifacts recovered during the monitoring of this project will be returned to the appropriate party following consultation with DAHP and each the Confederated Tribes.

If human remains are encountered in any area of the project, operations should cease immediately in accordance with the federal Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) and RCW 27.44. The area around the discovery should be secured and the Yakima County Coroner and DAHP should be notified at once. The Yakima County Coroner will be contacted and asked to make a determination as to whether the location is a crime scene. Unless the find is determined to be a crime scene, DAHP will contact the Confederated Tribes to determine the procedures to follow regarding the remains. Suspension of excavation upon the discovery of human remains is required by NAGPRA.

During construction, representatives of the Confederated Tribes will be invited to observe the ground-disturbing activities. An invitation to observe the activities does not imply or indicate that any compensation will be paid to persons observing the activities.

CONTACT INFORMATION

Yakima County Coroner's Office (509) 574-1610	Snoqualmie Pass Utility District Tom Hastings, General Manager (425) 434-6633
DAHP Rob Whitlam, State Historic Preservation Officer (360) 586-3066	HLA Engineering and Land Surveying, Inc. Dean P. Smith, PE, Project Engineer (509) 966-7000
Colville Tribe: (509) 634-2200 Mr. Boyd, Ms. Caputer Mr. Moura	Muckleshoot Tribe: (253)-939-3311 Ms. Cross
Puyallup tribe: (253) 573-7800 Mr, Sterud	Snoqualmie Tribe: (425) 888-6551 Ms. Lubenua,
Stillaguamish Tribe: (360) 562-7362 Kerry Lyst Shawn Yanity	Suquamish: (360) 598-3311 Mr. Lewarch Mr. Forsman
Warm Springs: (541) 533-3262 Mr. Brunoe Mr. Greene	Yakama Nation: (509) 865-5121 Mr. Goudy Ms. Valdez Mr. Johnson Meninick



* PANEL NOT PRINTED - OPEN WATER AREA ALL IN ZON
** PANEL NOT PRINTED - AREA IN ZONE X
*** PANEL NOT PRINTED - AREA IN ZONE D
**** PANEL NOT PRINTED - PANEL 53033C1490 IS SHOWN C

MAP INDEX

FIRM

FLOOD INSURANCE RATE MAP
KING COUNTY, WASHINGTON
AND INCORPORATED AREAS
(SEE LISTING OF COMMUNITIES TABLE)

MAP INDEX

PANELS PRINTED: 20, 40, 43, 44, 63, 64, 68, 69, 90, 93, 95, 115, 120, 194, 213, 214, 310, 320, 327, 329, 330, 331, 332, 333, 334, 340, 352, 354, 360, 365, 368, 369, 370, 377, 379, 381, 383, 385, 390, 395, 401, 405, 410, 415, 418, 419, 420, 436, 438, 450, 502, 506, 507, 509, 527, 528, 529, 533, 610, 615, 620, 630, 636, 638, 640, 645, 652, 654, 656, 657, 658, 659, 664, 666, 667, 668, 669, 680, 685, 687, 688, 689, 691, 692, 693, 694, 705, 709, 710, 715, 716, 717, 718, 719, 728, 736, 737, 739, 741, 742, 743, 744, 761, 783, 925, 935, 950, 953, 954, 955, 957, 959, 960, 961, 962, 963, 964, 967, 968, 969, 976, 977, 978, 979, 981, 982, 983, 984, 986, 987, 988, 991, 992, 993, 994, 1001, 1002, 1003, 1004, 1006, 1007, 1008, 1009, 1015, 1020, 1028, 1032, 1036, 1038, 1052, 1056, 1057, 1059, 1076, 1077, 1078, 1079, 1200, 1225, 1232, 1235, 1242, 1250, 1251, 1252, 1253, 1254, 1257, 1259, 1261, 1262, 1263, 1264, 1266, 1267, 1268, 1269, 1280, 1290, 1295, 1315, 1350, 1457, 1460, 1485, 1495, 1505, 1515, 1525, 1550

MAP NUMBER
53033CIND0A

MAP REVISED
APRIL 19, 2005

Federal Emergency Management Agency

FLOODPLAIN MANAGEMENT

According to FEMA's Flood Insurance Rate Map, the project area is not located within the floodplain. No map is available for Snoqualmie Pass.

According to Kittitas and King County's Floodplain and Floodway Map, the project area is located outside both the floodplain and floodway.

The proposed improvements will not have an effect on or be effected by the floodplain.

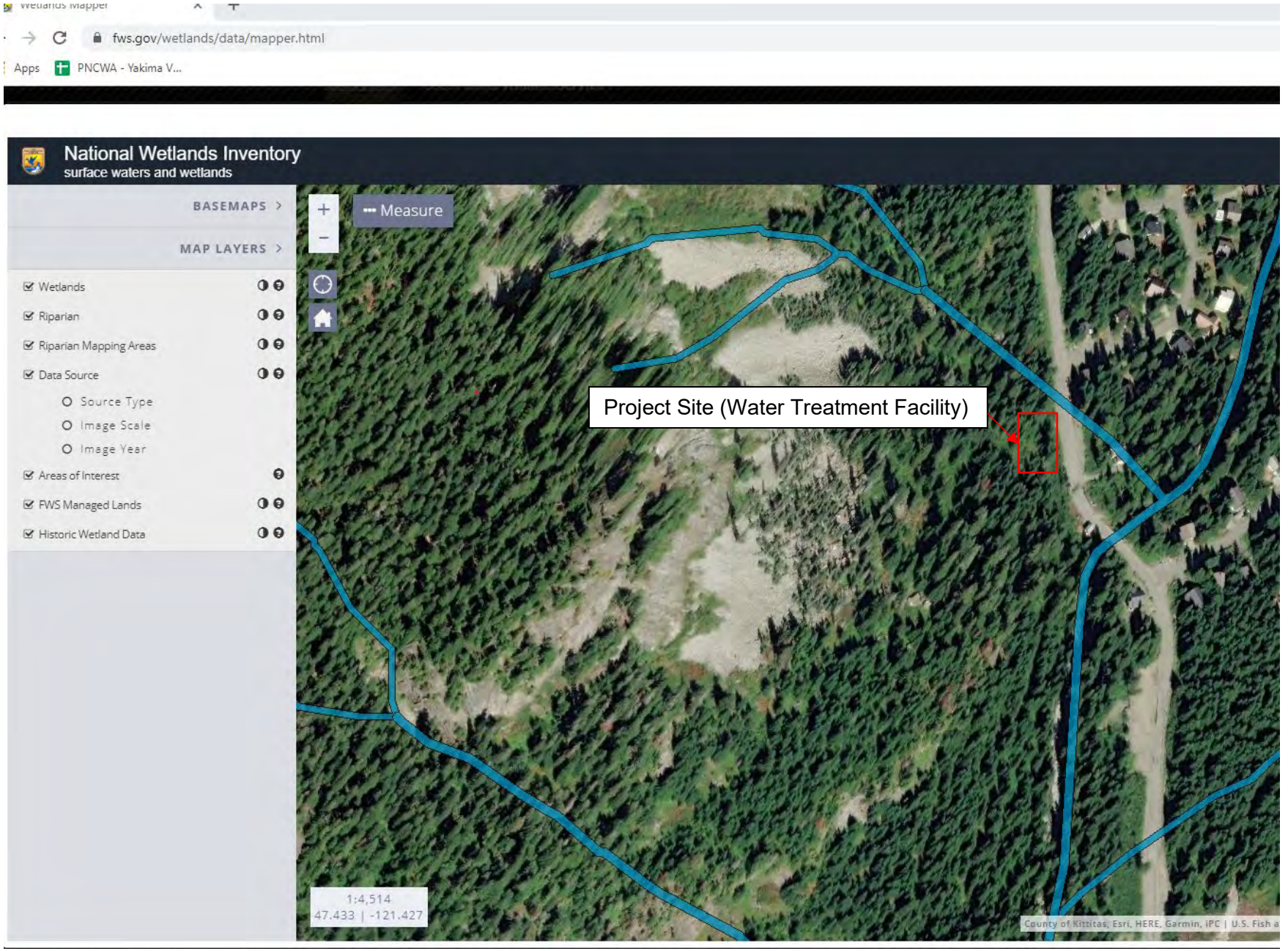
King and Kittitas County Floodplain and Floodway Maps are attached.

WETLAND PROTECTION

According to U.S. Fish and Wildlife Service Map, an King and Kittitas County Critical Area Maps, the project site is located in wetlands. The wastewater treatment plant is shown on the map and the indicated wetlands are the treatment lagoons, which cannot be classified as a wetland.

The proposed improvements at the wastewater treatment plant will not affect any wetlands.

The U.S. Fish and Wildlife Map and King and Kittitas County Critical Area Maps are attached.


fws.gov/wetlands/data/mapper.html
Apps
PNCWA - Yakima V...
National Wetlands Inventory
surface waters and wetlands
BASEMAPS
MAP LAYERS
Wetlands
Riparian
Riparian Mapping Areas
Data Source
Source Type
Image Scale
Image Year
Areas of Interest
FWS Managed Lands
Historic Wetland Data
Measure
Project Site (Water Treatment Facility)
1:4,514
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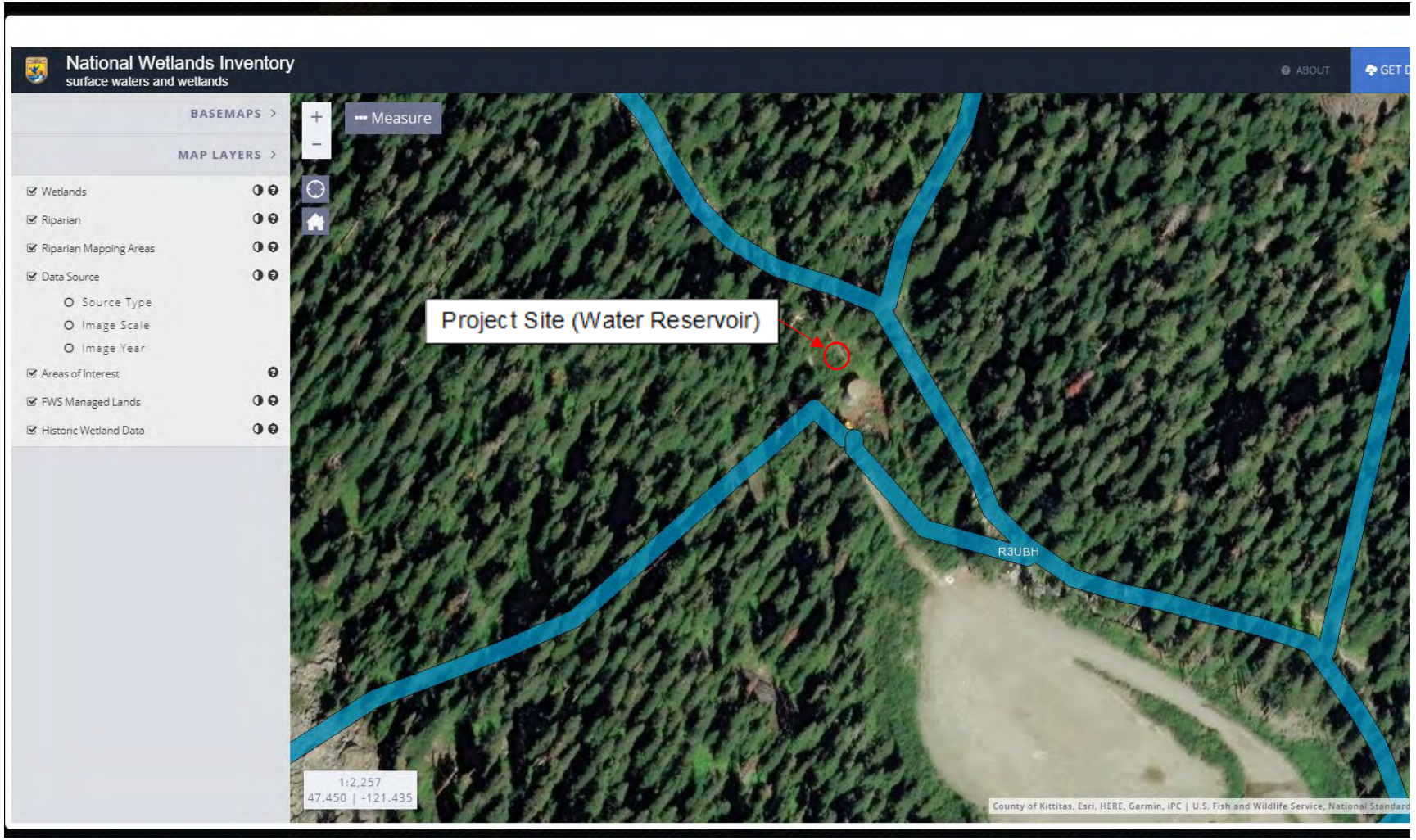
County of Kittitas, Esri, HERE, Garmin, iPC | U.S. Fish a


National Wetlands Inventory
surface waters and wetlands
ABOUT
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Areas of Interest
FWS Managed Lands
Historic Wetland Data
Measure
Project Site (Water Reservoir)
R3UBH
1:2,257
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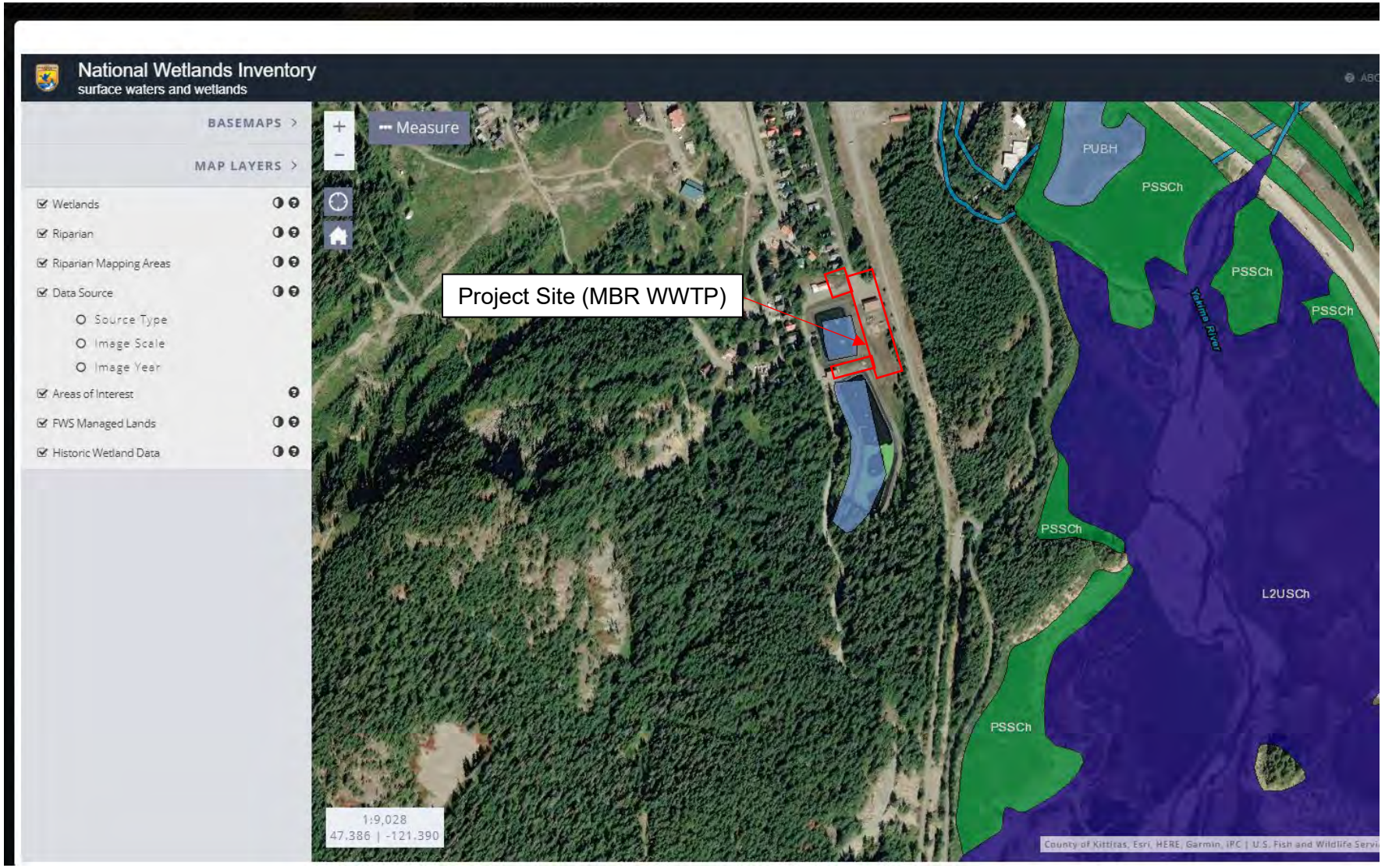
County of Kittitas, Esri, HERE, Garmin, iPC | U.S. Fish and Wildlife Service, National Standard


National Wetlands Inventory
surface waters and wetlands
BASEMAPS
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Riparian
Riparian Mapping Areas
Data Source
Source Type
Image Scale
Image Year
Areas of Interest
FWS Managed Lands
Historic Wetland Data
Measure
Project Site (MBR WWTP)
PUBH
PSSCh
PSSCh
PSSCh
Yakima River
PSSCh
L2USCh
PSSCh
1:9,028
47.386 | -121.390
County of Kittitas, Esri, HERE, Garmin, iPC | U.S. Fish and Wildlife Servi

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
		Snoqualmie Pass Utility District	

Form 2A NPDES

U.S. Environmental Protection Agency
Application for NPDES Permit to Discharge Wastewater
NEW AND EXISTING PUBLICLY OWNED TREATMENT WORKS

SECTION 1. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS (40 CFR 122.21(j)(1) and (9))

Facility Information

1.1 Facility name
Snoqualmie Pass Utility District Wastewater Treatment Plant

Mailing address (street or P.O. box)
370 Treatment Plant Road

City or town	State	ZIP code
Snoqualmie Pass	WA	98068

Contact name (first and last)	Title	Phone number	Email address
Tom Hastings	General Manager	(425) 434-6600	thastings@snopass.org

Location address (street, route number, or other specific identifier) ☑ Same as mailing address

City or town	State	ZIP code

1.2 Is this application for a facility that has yet to commence discharge?
☑ Yes ➔ See instructions on data submission requirements for new dischargers. ☐ No

Applicant Information

1.3 Is applicant different from entity listed under Item 1.1 above?
☐ Yes ☑ No ➔ SKIP to Item 1.4.

Applicant name

Applicant address (street or P.O. box)

City or town	State	ZIP code

Contact name (first and last)	Title	Phone number	Email address

1.4 Is the applicant the facility's owner, operator, or both? (Check only one response.)
☐ Owner ☐ Operator ☑ Both

1.5 To which entity should the NPDES permitting authority send correspondence? (Check only one response.)
☐ Facility ☐ Applicant ☑ Facility and applicant (they are one and the same)

Existing Environmental Permits

1.6 Indicate below any existing environmental permits. (Check all that apply and print or type the corresponding permit number for each.)

Existing Environmental Permits		
☐ NPDES (discharges to surface water)	☐ RCRA (hazardous waste)	☐ UIC (underground injection control)
☐ PSD (air emissions)	☐ Nonattainment program (CAA)	☐ NESHAPs (CAA)
☐ Ocean dumping (MPRSA)	☐ Dredge or fill (CWA Section 404)	☑ Other (specify) State Waste Discharge

Collection System and Population Served

1.7 Provide the collection system information requested below for the treatment works.

Municipality Served	Population Served	Collection System Type (indicate percentage)	Ownership Status	
Snoqualmie Pass	1200 (estimated)	100 % separate sanitary sewer	☑ Own	☑ Maintain
		____ % combined storm and sanitary sewer	☐ Own	☐ Maintain
		☐ Unknown	☐ Own	☐ Maintain
		____ % separate sanitary sewer	☐ Own	☐ Maintain
		____ % combined storm and sanitary sewer	☐ Own	☐ Maintain
		☐ Unknown	☐ Own	☐ Maintain
		____ % separate sanitary sewer	☐ Own	☐ Maintain
		____ % combined storm and sanitary sewer	☐ Own	☐ Maintain
		☐ Unknown	☐ Own	☐ Maintain
		____ % separate sanitary sewer	☐ Own	☐ Maintain
		____ % combined storm and sanitary sewer	☐ Own	☐ Maintain
		☐ Unknown	☐ Own	☐ Maintain
Total Population Served	1200			

	Separate Sanitary Sewer System	Combined Storm and Sanitary Sewer
Total percentage of each type of sewer line (in miles)	100 %	%

Indian Country

1.8 Is the treatment works located in Indian Country?

☐ Yes ☑ No

1.9 Does the facility discharge to a receiving water that flows through Indian Country?

☑ Yes ☐ No

Design and Actual Flow Rates

1.10 Provide design *and* actual flow rates in the designated spaces.

Design Flow Rate: 0.368 mgd

Annual Average Flow Rates (Actual)		
Two Years Ago	**Last Year**	**This Year**
2017: 0.144 mgd	2018: 0.159 mgd	2019: 0.172 mgd

Maximum Daily Flow Rates (Actual)		
Two Years Ago	**Last Year**	**This Year**
2017: 0.541 mgd	2018: 0.613 mgd	2019: 0.770 mgd

Discharge Points by Type

1.11 Provide the total number of effluent discharge points to waters of the United States by type.

Total Number of Effluent Discharge Points by Type				
Treated Effluent	**Untreated Effluent**	**Combined Sewer Overflows**	**Bypasses**	**Constructed Emergency Overflows**

Outfalls and Other Discharge or Disposal Methods

Outfalls Other Than to Waters of the United States

1.12 Does the POTW discharge wastewater to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the United States?

☐ Yes ☑ No ➔ SKIP to Item 1.14.

1.13 Provide the location of each surface impoundment and associated discharge information in the table below.

Surface Impoundment Location and Discharge Data

Location	Average Daily Volume Discharged to Surface Impoundment	Continuous or Intermittent (check one)
Coal Creek (47.391 Lat, -121.390 Long)	0.368 gpd	☑ Continuous ☐ Intermittent
	gpd	☐ Continuous ☐ Intermittent
	gpd	☐ Continuous ☐ Intermittent

1.14 Is wastewater applied to land?

☑ Yes ☐ No ➔ SKIP to Item 1.16.

1.15 Provide the land application site and discharge data requested below.

Land Application Site and Discharge Data

Location	Size	Average Daily Volume Applied	Continuous or Intermittent (check one)
Spray field (47.37754 lat, [illegible]	47.5 acres	0.368 gpd	☐ Continuous ☑ Intermittent
	acres	gpd	☐ Continuous ☐ Intermittent
	acres	gpd	☐ Continuous ☐ Intermittent

1.16 Is effluent transported to another facility for treatment prior to discharge?

☐ Yes ☑ No ➔ SKIP to Item 1.21.

1.17 Describe the means by which the effluent is transported (e.g., tank truck, pipe).

1.18 Is the effluent transported by a party other than the applicant?

☐ Yes ☐ No ➔ SKIP to Item 1.20.

1.19 Provide information on the transporter below.

Transporter Data

Entity name	Mailing address (street or P.O. box)	
City or town	State	ZIP code
Contact name (first and last)	Title	
Phone number	Email address	

Outfalls and Other Discharge or Disposal Methods Continued

1.20 In the table below, indicate the name, address, contact information, NPDES number, and average daily flow rate of the receiving facility.

Receiving Facility Data

Facility name	Mailing address (street or P.O. box)	
City or town	State	ZIP code
Contact name (first and last)	Title	
Phone number	Email address	
NPDES number of receiving facility (if any) ☐ None	Average daily flow rate mgd	

1.21 Is the wastewater disposed of in a manner other than those already mentioned in Items 1.14 through 1.21 that do not have outlets to waters of the United States (e.g., underground percolation, underground injection)?

☐ Yes ☑ No ➔ SKIP to Item 1.23.

1.22 Provide information in the table below on these other disposal methods.

Information on Other Disposal Methods

Disposal Method Description	Location of Disposal Site	Size of Disposal Site	Annual Average Daily Discharge Volume	Continuous or Intermittent (check one)
		acres	gpd	☐ Continuous ☐ Intermittent
		acres	gpd	☐ Continuous ☐ Intermittent
		acres	gpd	☐ Continuous ☐ Intermittent

Variance Requests

1.23 Do you intend to request or renew one or more of the variances authorized at 40 CFR 122.21(n)? (Check all that apply. Consult with your NPDES permitting authority to determine what information needs to be submitted and when.)

☐ Discharges into marine waters (CWA Section 301(h))

☐ Water quality related effluent limitation (CWA Section 302(b)(2))

☑ Not applicable

Contractor Information

1.24 Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor?

☐ Yes ☑ No ➔SKIP to Section 2.

1.25 Provide location and contact information for each contractor in addition to a description of the contractor's operational and maintenance responsibilities.

Contractor Information

	Contractor 1	Contractor 2	Contractor 3
Contractor name (company name)			
Mailing address (street or P.O. box)			
City, state, and ZIP code			
Contact name (first and last)			
Phone number			
Email address			
Operational and maintenance responsibilities of contractor			

SECTION 2. ADDITIONAL INFORMATION (40 CFR 122.21(j)(1) and (2))

Outfalls to Waters of the United States

Design Flow

2.1 Does the treatment works have a design flow greater than or equal to 0.1 mgd?

☑ Yes ☐ No ➔ SKIP to Section 3.

Inflow and Infiltration

2.2 Provide the treatment works' current average daily volume of inflow and infiltration.

Average Daily Volume of Inflow and Infiltration
0.100 gpd

Indicate the steps the facility is taking to minimize inflow and infiltration.

Began a program in 2019 to sealing manholes and piping when problem locations are identified.

Topographic Map

2.3 Have you attached a topographic map to this application that contains all the required information? (See instructions for specific requirements.)

☑ Yes ☐ No

Flow Diagram

2.4 Have you attached a process flow diagram or schematic to this application that contains all the required information? (See instructions for specific requirements.)

☑ Yes ☐ No

Scheduled Improvements and Schedules of Implementation

2.5 Are improvements to the facility scheduled?

☑ Yes ☐ No ➔ SKIP to Section 3.

Briefly list and describe the scheduled improvements.

1. Phase 1 Membrane Bio-Reactor WWTP rated at 25,000 gpd scheduled to start up in November 2020.
2. Phase 2 Membrane Bio-Reactor WWTP rated at 368,000 gpd to be installed and operational by 2024. Spray field use to
3. New liner and aeration system for Lagoon 1 which will be used as an equalization basin for the new MBR facility 2024.
4. New Aeration system for Lagoon 2 - 2024.

2.6 Provide scheduled or actual dates of completion for improvements.

Scheduled or Actual Dates of Completion for Improvements

Scheduled Improvement (from above)	Affected Outfalls (list outfall number)	Begin Construction (MM/DD/YYYY)	End Construction (MM/DD/YYYY)	Begin Discharge (MM/DD/YYYY)	Attainment of Operational Level (MM/DD/YYYY)
1.	001	05/01/2020	11/30/2020	10/15/2020	11/01/2020
2.	001	05/01/2022	11/15/2024	08/15/2024	09/01/2024
3.	001	05/01/2024	08/15/2024	08/15/2024	09/01/2024
4.	001	05/01/2025	11/01/2015	11/01/2015	11/01/2025

2.7 Have appropriate permits/clearances concerning other federal/state requirements been obtained? Briefly explain your response.

☑ Yes ☐ No ☐ None required or applicable

Explanation:

Submitted Facility Plan and General Sewer Plan to Washington Department of Ecology for review and approval.

SECTION 3. INFORMATION ON EFFLUENT DISCHARGES (40 CFR 122.21(j)(3) to (5))

Description of Outfalls

3.1 Provide the following information for each outfall. (Attach additional sheets if you have more than three outfalls.)

	Outfall Number 001	Outfall Number _____	Outfall Number _____
State	Washington		
County	Kittitas		
City or town	Snoqualmie Pass		
Distance from shore	0 ft.	ft.	ft.
Depth below surface	0 ft.	ft.	ft.
Average daily flow rate	0.368 mgd	mgd	mgd
Latitude	47° 23′ 26.4″ N	° ′ ″	° ′ ″
Longitude	121° 23′ 13.6″ W	° ′ ″	° ′ ″

Seasonal or Periodic Discharge Data

3.2 Do any of the outfalls described under Item 3.1 have seasonal or periodic discharges?

☐ Yes ☑ No ➔ SKIP to Item 3.4.

3.3 If so, provide the following information for each applicable outfall.

	Outfall Number _____	Outfall Number _____	Outfall Number _____
Number of times per year discharge occurs			
Average duration of each discharge (specify units)			
Average flow of each discharge	mgd	mgd	mgd
Months in which discharge occurs			

Diffuser Type

3.4 Are any of the outfalls listed under Item 3.1 equipped with a diffuser?

☐ Yes ☑ No ➔ SKIP to Item 3.6.

3.5 Briefly describe the diffuser type at each applicable outfall.

	Outfall Number _____	Outfall Number _____	Outfall Number _____

Waters of the U.S.

3.6 Does the treatment works discharge or plan to discharge wastewater to waters of the United States from one or more discharge points?

☑ Yes ☐ No ➔SKIP to Section 6.

Receiving Water Description

3.7 Provide the receiving water and related information (if known) for each outfall.

	Outfall Number 001	Outfall Number _____	Outfall Number _____
Receiving water name	Coal Creek		
Name of watershed, river, or stream system			
U.S. Soil Conservation Service 14-digit watershed code			
Name of state management/river basin			
U.S. Geological Survey 8-digit hydrologic cataloging unit code			
Critical low flow (acute)	2 cfs	cfs	cfs
Critical low flow (chronic)	cfs	cfs	cfs
Total hardness at critical low flow	mg/L of $CaCO_3$	mg/L of $CaCO_3$	mg/L of $CaCO_3$

Treatment Description

3.8 Provide the following information describing the treatment provided for discharges from each outfall.

	Outfall Number 001	Outfall Number _____	Outfall Number _____
Highest Level of Treatment (check all that apply per outfall)	☑ Primary ☐ Equivalent to secondary ☑ Secondary ☐ Advanced ☑ Other (specify) MBR	☐ Primary ☐ Equivalent to secondary ☐ Secondary ☐ Advanced ☐ Other (specify) _____	☐ Primary ☐ Equivalent to secondary ☐ Secondary ☐ Advanced ☐ Other (specify) _____
Design Removal Rates by Outfall			
BOD_5 or $CBOD_5$	95 %	%	%
TSS	95 %	%	%
Phosphorus	☑ Not applicable %	☐ Not applicable %	☐ Not applicable %
Nitrogen	☐ Not applicable 90 %	☐ Not applicable %	☐ Not applicable %
Other (specify) _____	☑ Not applicable %	☐ Not applicable %	☐ Not applicable %

Treatment Description Continued

3.9 Describe the type of disinfection used for the effluent from each outfall in the table below. If disinfection varies by season, describe below.

UV disinfection of MBR treated effluent prior to discharge into outfall pipe.

	Outfall Number 001	Outfall Number _____	Outfall Number _____
Disinfection type	UV		
Seasons used	Year-round		
Dechlorination used?	☑ Not applicable ☐ Yes ☐ No	☐ Not applicable ☐ Yes ☐ No	☐ Not applicable ☐ Yes ☐ No

Effluent Testing Data

3.10 Have you completed monitoring for all Table A parameters and attached the results to the application package?

☑ Yes ☐ No

3.11 Have you conducted any WET tests during the 4.5 years prior to the date of the application on any of the facility's discharges or on any receiving water near the discharge points?

☑ Yes ☐ No ➔ SKIP to Item 3.13.

3.12 Indicate the number of acute and chronic WET tests conducted since the last permit reissuance of the facility's discharges by outfall number or of the receiving water near the discharge points.

	Outfall Number 001		Outfall Number _____		Outfall Number _____	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Number of tests of discharge water	144	144				
Number of tests of receiving water	0	0				

3.13 Does the treatment works have a design flow greater than or equal to 0.1 mgd?

☑ Yes ☐ No ➔ SKIP to Item 3.16.

3.14 Does the POTW use chlorine for disinfection, use chlorine elsewhere in the treatment process, or otherwise have reasonable potential to discharge chlorine in its effluent?

☐ Yes ➔ Complete Table B, including chlorine. ☑ No ➔ Complete Table B, omitting chlorine.

3.15 Have you completed monitoring for all applicable Table B pollutants and attached the results to this application package?

☐ Yes ☑ No

3.16 Does one or more of the following conditions apply?

- The facility has a design flow greater than or equal to 1 mgd.
- The POTW has an approved pretreatment program or is required to develop such a program.
- The NPDES permitting authority has informed the POTW that it must sample for the parameters in Table C, must sample other additional parameters (Table D), or submit the results of WET tests for acute or chronic toxicity for each of its discharge outfalls (Table E).

☐ Yes ➔ Complete Tables C, D, and E as applicable. ☑ No ➔ SKIP to Section 4.

3.17 Have you completed monitoring for all applicable Table C pollutants and attached the results to this application package?

☐ Yes ☐ No

3.18 Have you completed monitoring for all applicable Table D pollutants required by your NPDES permitting authority and attached the results to this application package?

☐ Yes ☐ No additional sampling required by NPDES permitting authority.

Effluent Testing Data Continued

3.19	Has the POTW conducted either (1) minimum of four quarterly WET tests for one year preceding this permit application or (2) at least four annual WET tests in the past 4.5 years? ☐ Yes ☐ No ➔ Complete tests and Table E and SKIP to Item 3.26.
3.20	Have you previously submitted the results of the above tests to your NPDES permitting authority? ☐ Yes ☐ No ➔ Provide results in Table E and SKIP to Item 3.26.
3.21	Indicate the dates the data were submitted to your NPDES permitting authority and provide a summary of the results.

Date(s) Submitted (MM/DD/YYYY)	Summary of Results

3.22	Regardless of how you provided your WET testing data to the NPDES permitting authority, did any of the tests result in toxicity? ☐ Yes ☐ No ➔ SKIP to Item 3.26.
3.23	Describe the cause(s) of the toxicity:
3.24	Has the treatment works conducted a toxicity reduction evaluation? ☐ Yes ☐ No ➔ SKIP to Item 3.26.
3.25	Provide details of any toxicity reduction evaluations conducted.
3.26	Have you completed Table E for all applicable outfalls and attached the results to the application package? ☐ Yes ☐ Not applicable because previously submitted information to the NPDES permitting authority.

SECTION 4. INDUSTRIAL DISCHARGES AND HAZARDOUS WASTES (40 CFR 122.21(j)(6) and (7))

Industrial Discharges and Hazardous Wastes

4.1	Does the POTW receive discharges from SIUs or NSCIUs? ☐ Yes ☑ No ➔ SKIP to Item 4.7.
4.2	Indicate the number of SIUs and NSCIUs that discharge to the POTW.

Number of SIUs	Number of NSCIUs

4.3	Does the POTW have an approved pretreatment program? ☐ Yes ☐ No
4.4	Have you submitted either of the following to the NPDES permitting authority that contains information substantially identical to that required in Table F: (1) a pretreatment program annual report submitted within one year of the application or (2) a pretreatment program? ☐ Yes ☐ No ➔ SKIP to Item 4.6.
4.5	Identify the title and date of the annual report or pretreatment program referenced in Item 4.4. SKIP to Item 4.7.
4.6	Have you completed and attached Table F to this application package? ☐ Yes ☐ No

Industrial Discharges and Hazardous Wastes Continued

4.7 Does the POTW receive, or has it been notified that it will receive, by truck, rail, or dedicated pipe, any wastes that are regulated as RCRA hazardous wastes pursuant to 40 CFR 261?

☐ Yes ☑ No ➔ SKIP to Item 4.9.

4.8 If yes, provide the following information:

Hazardous Waste Number	Waste Transport Method (check all that apply)	Annual Amount of Waste Received	Units
	☐ Truck ☐ Rail ☐ Dedicated pipe ☐ Other (specify) _____		
	☐ Truck ☐ Rail ☐ Dedicated pipe ☐ Other (specify) _____		
	☐ Truck ☐ Rail ☐ Dedicated pipe ☐ Other (specify) _____		

4.9 Does the POTW receive, or has it been notified that it will receive, wastewaters that originate from remedial activities, including those undertaken pursuant to CERCLA and Sections 3004(7) or 3008(h) of RCRA?

☐ Yes ☑ No ➔ SKIP to Section 5.

4.10 Does the POTW receive (or expect to receive) less than 15 kilograms per month of non-acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e)?

☐ Yes ➔ SKIP to Section 5. ☐ No

4.11 Have you reported the following information in an attachment to this application: identification and description of the site(s) or facility(ies) at which the wastewater originates; the identities of the wastewater's hazardous constituents; and the extent of treatment, if any, the wastewater receives or will receive before entering the POTW?

☐ Yes ☐ No

SECTION 5. COMBINED SEWER OVERFLOWS (40 CFR 122.21(j)(8))

CSO Map and Diagram

5.1 Does the treatment works have a combined sewer system?

☐ Yes ☑ No ➔SKIP to Section 6.

5.2 Have you attached a CSO system map to this application? (See instructions for map requirements.)

☐ Yes ☐ No

5.3 Have you attached a CSO system diagram to this application? (See instructions for diagram requirements.)

☐ Yes ☐ No

CSO Outfall Description

5.4 For each CSO outfall, provide the following information. (Attach additional sheets as necessary.)

	CSO Outfall Number ____	CSO Outfall Number _____	CSO Outfall Number _____
City or town			
State and ZIP code			
County			
Latitude	° ' "	° ' "	° ' "
Longitude	° ' "	° ' "	° ' "
Distance from shore	ft.	ft.	ft.
Depth below surface	ft.	ft.	ft.

CSO Monitoring

5.5 Did the POTW monitor any of the following items in the past year for its CSO outfalls?

	CSO Outfall Number ____	CSO Outfall Number _____	CSO Outfall Number _____
Rainfall	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
CSO flow volume	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
CSO pollutant concentrations	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Receiving water quality	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
CSO frequency	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Number of storm events	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

CSO Events in Past Year

5.6 Provide the following information for each of your CSO outfalls.

	CSO Outfall Number ____	CSO Outfall Number ____	CSO Outfall Number ____
Number of CSO events in the past year	events	events	events
Average duration per event	hours ☐ Actual or ☐ Estimated	hours ☐ Actual or ☐ Estimated	hours ☐ Actual or ☐ Estimated
Average volume per event	million gallons ☐ Actual or ☐ Estimated	million gallons ☐ Actual or ☐ Estimated	million gallons ☐ Actual or ☐ Estimated
Minimum rainfall causing a CSO event in last year	inches of rainfall ☐ Actual or ☐ Estimated	inches of rainfall ☐ Actual or ☐ Estimated	inches of rainfall ☐ Actual or ☐ Estimated

EPA Identification Number	NPDES Permit Number	Facility Name Snoqualmie Pass Utility District	Form Approved 03/05/19 OMB No. 2040-0004

CSO Receiving Waters

5.7 Provide the information in the table below for each of your CSO outfalls.

	CSO Outfall Number ____	CSO Outfall Number ____	CSO Outfall Number ____
Receiving water name			
Name of watershed/ stream system			
U.S. Soil Conservation Service 14-digit watershed code (if known)	☐ Unknown	☐ Unknown	☐ Unknown
Name of state management/river basin			
U.S. Geological Survey 8-Digit Hydrologic Unit Code (if known)	☐ Unknown	☐ Unknown	☐ Unknown
Description of known water quality impacts on receiving stream by CSO (see instructions for examples)			

SECTION 6. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement

6.1 In Column 1 below, mark the sections of Form 2A that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.

Column 1	Column 2	
☑ Section 1: Basic Application Information for All Applicants	☐ w/ variance request(s)	☐ w/ additional attachments
☑ Section 2: Additional Information	☑ w/ topographic map ☐ w/ additional attachments	☑ w/ process flow diagram
☑ Section 3: Information on Effluent Discharges	☑ w/ Table A ☐ w/ Table B ☐ w/ Table C	☐ w/ Table D ☐ w/ Table E ☐ w/ additional attachments
☐ Section 4: Industrial Discharges and Hazardous Wastes	☐ w/ SIU and NSCIU attachments ☐ w/ additional attachments	☐ w/ Table F
☐ Section 5: Combined Sewer Overflows	☐ w/ CSO map ☐ w/ CSO system diagram	☐ w/ additional attachments
☑ Section 6: Checklist and Certification Statement	☐ w/ attachments	

6.2 **Certification Statement**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print or type first and last name)	Official title
Tom Hastings	General Manager
Signature	**Date signed**
T Hastings	3-3-2020

TABLE A. EFFLUENT PARAMETERS FOR ALL POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Biochemical oxygen demand ☑ BOD_5 or ☐ $CBOD_5$ (report one)	30.4	mg/L	17.9	mg/L	144		☐ ML ☐ MDL
Fecal coliform	44.9	#/100 mL	15.2	#/100 mL	144		☐ ML ☐ MDL
Design flow rate	0.368	mgd	0.190	mgd	1095		
pH (minimum)	6.98	s.u.					
pH (maximum)	7.57	s.u.					
Temperature (winter)	4	degrees C	3.5	degrees C	36		
Temperature (summer)	22.0	degrees C	18.5	degrees C	36		
Total suspended solids (TSS)	21.0	mg/L	8.4	mg/L	144		☐ ML ☐ MDL

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. EFFLUENT PARAMETERS FOR ALL POTWS WITH A FLOW EQUAL TO OR GREATER THAN 0.1 MGD

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Ammonia (as N)							☐ ML ☐ MDL
Chlorine (total residual, TRC)[2]							☐ ML ☐ MDL
Dissolved oxygen							☐ ML ☐ MDL
Nitrate/nitrite							☐ ML ☐ MDL
Kjeldahl nitrogen							☐ ML ☐ MDL
Oil and grease							☐ ML ☐ MDL
Phosphorus							☐ ML ☐ MDL
Total dissolved solids							☐ ML ☐ MDL

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

[2] Facilities that do not use chlorine for disinfection, do not use chlorine elsewhere in the treatment process, and have no reasonable potential to discharge chlorine in their effluent are not required to report data for chlorine.

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TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Metals, Cyanide, and Total Phenols							
Hardness (as $CaCO_3$)							☐ ML ☐ MDL
Antimony, total recoverable							☐ ML ☐ MDL
Arsenic, total recoverable							☐ ML ☐ MDL
Beryllium, total recoverable							☐ ML ☐ MDL
Cadmium, total recoverable							☐ ML ☐ MDL
Chromium, total recoverable							☐ ML ☐ MDL
Copper, total recoverable							☐ ML ☐ MDL
Lead, total recoverable							☐ ML ☐ MDL
Mercury, total recoverable							☐ ML ☐ MDL
Nickel, total recoverable							☐ ML ☐ MDL
Selenium, total recoverable							☐ ML ☐ MDL
Silver, total recoverable							☐ ML ☐ MDL
Thallium, total recoverable							☐ ML ☐ MDL
Zinc, total recoverable							☐ ML ☐ MDL
Cyanide							☐ ML ☐ MDL
Total phenolic compounds							☐ ML ☐ MDL
Volatile Organic Compounds							
Acrolein							☐ ML ☐ MDL
Acrylonitrile							☐ ML ☐ MDL
Benzene							☐ ML ☐ MDL
Bromoform							☐ ML ☐ MDL

TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Carbon tetrachloride							☐ ML ☐ MDL
Chlorobenzene							☐ ML ☐ MDL
Chlorodibromomethane							☐ ML ☐ MDL
Chloroethane							☐ ML ☐ MDL
2-chloroethylvinyl ether							☐ ML ☐ MDL
Chloroform							☐ ML ☐ MDL
Dichlorobromomethane							☐ ML ☐ MDL
1,1-dichloroethane							☐ ML ☐ MDL
1,2-dichloroethane							☐ ML ☐ MDL
trans-1,2-dichloroethylene							☐ ML ☐ MDL
1,1-dichloroethylene							☐ ML ☐ MDL
1,2-dichloropropane							☐ ML ☐ MDL
1,3-dichloropropylene							☐ ML ☐ MDL
Ethylbenzene							☐ ML ☐ MDL
Methyl bromide							☐ ML ☐ MDL
Methyl chloride							☐ ML ☐ MDL
Methylene chloride							☐ ML ☐ MDL
1,1,2,2-tetrachloroethane							☐ ML ☐ MDL
Tetrachloroethylene							☐ ML ☐ MDL
Toluene							☐ ML ☐ MDL
1,1,1-trichloroethane							☐ ML ☐ MDL
1,1,2-trichloroethane							☐ ML ☐ MDL

TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Trichloroethylene							☐ ML ☐ MDL
Vinyl chloride							☐ ML ☐ MDL
Acid-Extractable Compounds							
p-chloro-m-cresol							☐ ML ☐ MDL
2-chlorophenol							☐ ML ☐ MDL
2,4-dichlorophenol							☐ ML ☐ MDL
2,4-dimethylphenol							☐ ML ☐ MDL
4,6-dinitro-o-cresol							☐ ML ☐ MDL
2,4-dinitrophenol							☐ ML ☐ MDL
2-nitrophenol							☐ ML ☐ MDL
4-nitrophenol							☐ ML ☐ MDL
Pentachlorophenol							☐ ML ☐ MDL
Phenol							☐ ML ☐ MDL
2,4,6-trichlorophenol							☐ ML ☐ MDL
Base-Neutral Compounds							
Acenaphthene							☐ ML ☐ MDL
Acenaphthylene							☐ ML ☐ MDL
Anthracene							☐ ML ☐ MDL
Benzidine							☐ ML ☐ MDL
Benzo(a)anthracene							☐ ML ☐ MDL
Benzo(a)pyrene							☐ ML ☐ MDL
3,4-benzofluoranthene							☐ ML ☐ MDL

TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Benzo(ghi)perylene							☐ ML ☐ MDL
Benzo(k)fluoranthene							☐ ML ☐ MDL
Bis (2-chloroethoxy) methane							☐ ML ☐ MDL
Bis (2-chloroethyl) ether							☐ ML ☐ MDL
Bis (2-chloroisopropyl) ether							☐ ML ☐ MDL
Bis (2-ethylhexyl) phthalate							☐ ML ☐ MDL
4-bromophenyl phenyl ether							☐ ML ☐ MDL
Butyl benzyl phthalate							☐ ML ☐ MDL
2-chloronaphthalene							☐ ML ☐ MDL
4-chlorophenyl phenyl ether							☐ ML ☐ MDL
Chrysene							☐ ML ☐ MDL
di-n-butyl phthalate							☐ ML ☐ MDL
di-n-octyl phthalate							☐ ML ☐ MDL
Dibenzo(a,h)anthracene							☐ ML ☐ MDL
1,2-dichlorobenzene							☐ ML ☐ MDL
1,3-dichlorobenzene							☐ ML ☐ MDL
1,4-dichlorobenzene							☐ ML ☐ MDL
3,3-dichlorobenzidine							☐ ML ☐ MDL
Diethyl phthalate							☐ ML ☐ MDL
Dimethyl phthalate							☐ ML ☐ MDL
2,4-dinitrotoluene							☐ ML ☐ MDL
2,6-dinitrotoluene							☐ ML ☐ MDL

TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
1,2-diphenylhydrazine							☐ ML ☐ MDL
Fluoranthene							☐ ML ☐ MDL
Fluorene							☐ ML ☐ MDL
Hexachlorobenzene							☐ ML ☐ MDL
Hexachlorobutadiene							☐ ML ☐ MDL
Hexachlorocyclo-pentadiene							☐ ML ☐ MDL
Hexachloroethane							☐ ML ☐ MDL
Indeno(1,2,3-cd)pyrene							☐ ML ☐ MDL
Isophorone							☐ ML ☐ MDL
Naphthalene							☐ ML ☐ MDL
Nitrobenzene							☐ ML ☐ MDL
N-nitrosodi-n-propylamine							☐ ML ☐ MDL
N-nitrosodimethylamine							☐ ML ☐ MDL
N-nitrosodiphenylamine							☐ ML ☐ MDL
Phenanthrene							☐ ML ☐ MDL
Pyrene							☐ ML ☐ MDL
1,2,4-trichlorobenzene							☐ ML ☐ MDL

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR Chapter I, Subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE D. ADDITIONAL POLLUTANTS AS REQUIRED BY NPDES PERMITTING AUTHORITY

Pollutant (list)	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
☐ No additional sampling is required by NPDES permitting authority.							
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
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							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE E. EFFLUENT MONITORING FOR WHOLE EFFLUENT TOXICITY

The table provides response space for one whole effluent toxicity sample. Copy the table to report additional test results.

	Test Number _____	Test Number _____	Test Number _____
Test Information			
Test species			
Age at initiation of test			
Outfall number			
Date sample collected			
Date test started			
Duration			
Toxicity Test Methods			
Test method number			
Manual title			
Edition number and year of publication			
Page number(s)			
Sample Type			
Check one:	☐ Grab ☐ 24-hour composite	☐ Grab ☐ 24-hour composite	☐ Grab ☐ 24-hour composite
Sample Location			
Check one:	☐ Before Disinfection ☐ After Disinfection ☐ After Dechlorination	☐ Before Disinfection ☐ After Disinfection ☐ After Dechlorination	☐ Before disinfection ☐ After disinfection ☐ After dechlorination
Point in Treatment Process			
Describe the point in the treatment process at which the sample was collected for each test.			
Toxicity Type			
Indicate for each test whether the test was performed to asses acute or chronic toxicity, or both. (Check one response.)	☐ Acute ☐ Chronic ☐ Both	☐ Acute ☐ Chronic ☐ Both	☐ Acute ☐ Chronic ☐ Both

EPA Identification Number	NPDES Permit Number	Facility Name	Outfall Number	Form Approved 03/05/19 OMB No. 2040-0004
		Snoqualmie Pass Utility District		

TABLE E. EFFLUENT MONITORING FOR WHOLE EFFLUENT TOXICITY

The table provides response space for one whole effluent toxicity sample. Copy the table to report additional test results.

	Test Number _____	Test Number _____	Test Number _____
Test Type			
Indicate the type of test performed. (Check one response.)	☐ Static ☐ Static-renewal ☐ Flow-through	☐ Static ☐ Static-renewal ☐ Flow-through	☐ Static ☐ Static-renewal ☐ Flow-through
Source of Dilution Water			
Indicate the source of dilution water. (Check one response.)	☐ Laboratory water ☐ Receiving water	☐ Laboratory water ☐ Receiving water	☐ Laboratory water ☐ Receiving water
If laboratory water, specify type.			
If receiving water, specify source.			
Type of Dilution Water			
Indicate the type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.	☐ Fresh water ☐ Salt water (specify)	☐ Fresh water ☐ Salt water (specify)	☐ Fresh water ☐ Salt water (specify)
Percentage Effluent Used			
Specify the percentage effluent used for all concentrations in the test series.			

Parameters Tested						
Check the parameters tested.	☐ pH ☐ Salinity ☐ Temperature	☐ Ammonia ☐ Dissolved oxygen	☐ pH ☐ Salinity ☐ Temperature	☐ Ammonia ☐ Dissolved oxygen	☐ pH ☐ Salinity ☐ Temperature	☐ Ammonia ☐ Dissolved oxygen
Acute Test Results						
Percent survival in 100% effluent	%		%		%	
LC_{50}						
95% confidence interval	%		%		%	
Control percent survival	%		%		%	

TABLE E. EFFLUENT MONITORING FOR WHOLE EFFLUENT TOXICITY

The table provides response space for one whole effluent toxicity sample. Copy the table to report additional test results.

	Test Number _____		Test Number _____		Test Number _____	
Acute Test Results Continued						
Other (describe)						
Chronic Test Results						
NOEC	%		%		%	
IC_{25}	%		%		%	
Control percent survival	%		%		%	
Other (describe)						
Quality Control/Quality Assurance						
Is reference toxicant data available?	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No
Was reference toxicant test within acceptable bounds?	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No
What date was reference toxicant test run (MM/DD/YYYY)?						
Other (describe)						

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TABLE F. INDUSTRIAL DISCHARGE INFORMATION

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ____	SIU ____	SIU ____
Name of SIU			
Mailing address (street or P.O. box)			
City, state, and ZIP code			
Description of all industrial processes that affect or contribute to the discharge.			
List the principal products and raw materials that affect or contribute to the SIU's discharge.			
Indicate the average daily volume of wastewater discharged by the SIU.	gpd	gpd	gpd
How much of the average daily volume is attributable to process flow?	gpd	gpd	gpd
How much of the average daily volume is attributable to non-process flow?	gpd	gpd	gpd
Is the SIU subject to local limits?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Is the SIU subject to categorical standards?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

TABLE F. INDUSTRIAL DISCHARGE INFORMATION

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ____	SIU ____	SIU ____
Under what categories and subcategories is the SIU subject?			
Has the POTW experienced problems (e.g., upsets, pass-through interferences) in the past 4.5 years that are attributable to the SIU?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
If yes, describe.			

Click to go back to the beginning of Form

WATER BODIES AND STORM WATER

Water Bodies

Wastewater Treatment Plant – Located adjacent to the existing wastewater treatment plant lagoons will treat the lagoon effluent prior to discharging to Coal Creek. Coal Creek eventually drains into the Yakima River after flowing through Keechelus Lake.

Storm Water

The proposed improvements include catch basins which will capture the 25-year water quality storm and discharge into an infiltration system. Any excess flow will be routed to existing surface area drainage features on the site.

Supporting Documentation

See the attached NPDES Permit application which has been submitted to Ecology for approval.

COASTAL ZONE MANAGEMENT

The project area is partially located within a coastal county (King County). However, the improvements are on the eastern edge of the county and will not affect the coastal zone. See attached figure.

Washington Coastal Zone Management

We administer Washington's Coastal Zone Management (CZM) Program, which meets the broader national interests of protecting, restoring, and responsibly developing the state's marine shorelines in Puget Sound and Pacific Ocean coast.

I want to...

- See Coastal Zone Management Program Announcements
- Find Information on Federal Consistency & Enforceable Policies

The CZM program applies to the 15 coastal counties and extends from the shoreline seaward three nautical miles. Federal and tribal lands are excluded.

Management activities

We meet the goals of the federal law through a comprehensive approach to coastal resource management. This work requires us to balance the often competing — and occasionally conflicting — demands of coastal resources use, economic development, and conservation. We work with partners to achieve this mission and focus our efforts on these key priorities:

Protecting and restoring coastal wetlands
Preventing or reducing threats from coastal hazards
Attaining increased opportunities for public access
Collaborating to manage the impacts of growth and development
Planning for the use of ocean resources
Making sure federal activities comply with state coastal policies

Federal incentives

Program administration

Program evaluation & enhancement

Washington does not have a stand-alone program for coastal zone management. Instead, we fulfill our national Coastal Zone Management Act requirements through a network of state laws and regulations. The structure and policies of our program allow us to manage coastal resources in a more locally relevant and comprehensive way that fits our state priorities. In 1976, Washington became the first state in the nation to receive federal approval of a Coastal Zone Management Program.

Related links

Coastal Zone Management Act

NOAA Office for Coastal Management
NOAA National Coastal Zone Management Program

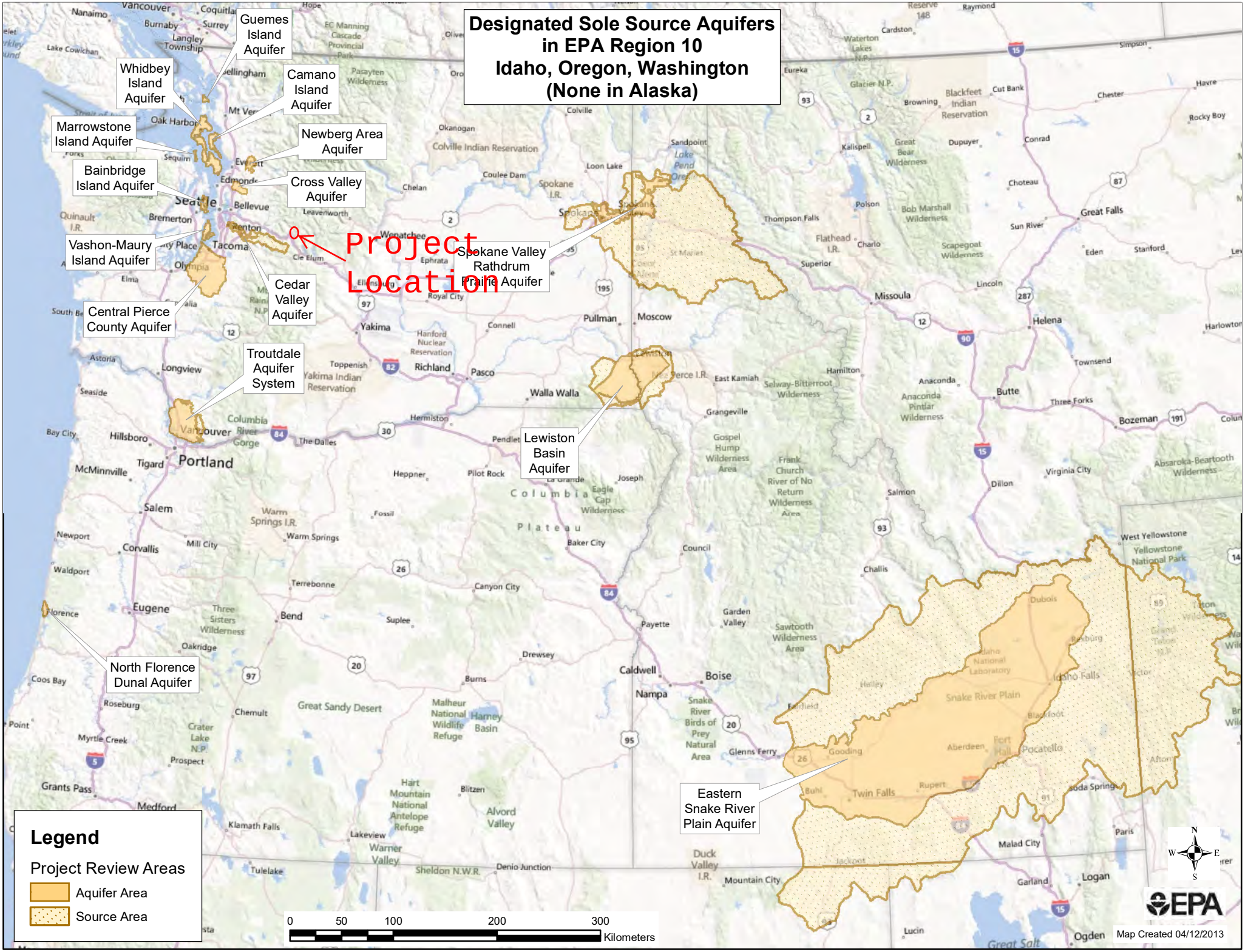
Contact information

Questions about federal consistency or CZM review
ecyrefedpermits@ecy.wa.gov
360-407-6076

Questions about Washington's CZM Program
Bobbak Talebi
Bobbak.Talebi@ecy.wa.gov
360-407-6529

SOLE SOURCE AQUIFERS

The project area is not located near any of the sole source aquifers within the Northwest. Therefore, the proposed improvements will not affect any of the sole source aquifers. See attached figure.


Designated Sole Source Aquifers
in EPA Region 10
Idaho, Oregon, Washington
(None in Alaska)
Guemes Island Aquifer
Whidbey Island Aquifer
Camano Island Aquifer
Marrowstone Island Aquifer
Newberg Area Aquifer
Bainbridge Island Aquifer
Cross Valley Aquifer
Vashon-Maury Island Aquifer
Project Location
Spokane Valley Rathdrum Prairie Aquifer
Cedar Valley Aquifer
Central Pierce County Aquifer
Troutdale Aquifer System
Lewiston Basin Aquifer
North Florence Dunal Aquifer
Eastern Snake River Plain Aquifer
Legend
Project Review Areas
Aquifer Area
Source Area
0 50 100 200 300
Kilometers
Map Created 04/12/2013

Endangered Species

Canada Lynx (*Lynx canadensis*); Threatened.

Gray wolf (*Canis lupus*); Endangered.
The gray wolf is a predator of open tundra and forests. Gray wolves prey primarily on large hoofed mammals including moose, caribou and deer, but will eat smaller mammals and will sometimes eat berries, birds, fish, and insects. The proposed project is located entirely within the Snoqualmie Pass community, an urban environment within a forest ecosystem in the Cascades of central Washington. No gray wolves have been observed in the project vicinity, nor is the project located within or near gray wolf habitat.

This project will have **no effect** on gray wolf (*Canis lupus*) or their essential prey or habitat.

Bull Trout (*Salvelinus confluentus*) – Columbia River distinct population segment; Threatened.
Bull trout were historically found throughout the Pacific Northwest from Northern California to the upper Yukon River and Mackenzie River drainages in Canada, as well as Siberia and Korea. Bull trout prefer deep pools of cold rivers, lakes and reservoirs, with areas of abundant cover (cut banks, root wads, and other woody debris) and clean gravel and cobble beds, and are most commonly associated with pristine or only slightly disturbed water bodies. Bull trout spawn from August through November in streams with clean gravel substrates and cold (below 9 Celsius) water temperatures.

There have been bull trout counted in Gold Creek, into which Coal Creek discharges. The project is located adjacent to Coal Creek, and the treated effluent will discharge into Coal Creek, and serve as a benefit by augmenting the stream flow. Phase 2 of the project includes repurposing a 13 million gallon lagoon which is planned to be used to store the treated effluent so it can be released during critical fish passage periods which will provide a beneficial effect on the Coal Creek and the lower portion of Gold Creek.

This project will have a **beneficial effect** on bull trout (Salvelinus confluentus) and their habitat or prey, and the project is expected to have any improve their habitat or food resources.

Grizzly Bear (*Ursus arctos horribilis*); Threatened.
Grizzly bears are omnivores that reside primarily in mountainous areas, and along coasts and rivers. Grizzly bears feed on a wide variety of plant material including roots, sprouts, leaves, berries, and fungi, as well as fish, insects, large and small animals, and carrion. The proposed project is located entirely within the Snoqualmie Pass community, an urban environment within a forest land in central Washington. No grizzly bears have been observed in the project vicinity, nor is the project located within or near grizzly bear habitat.

This project is expected to have **no effect** on grizzly bear (*Ursus arctos horribilis*) or their prey or habitat.

North American Woverine (*Gulo gulo luscus); Proposed Threatened*

Marbled Murrelet (*Brachyramphus marmoratus marmoratus*); Threatened.
Marbled murrelets are coastal birds of the Pacific Northwest and coastal regions of Siberia, and feed on fish. They nest high up in trees of the coast forests, up to several miles from the sea. No marbled murrelets have been observed in or near the project area.

This project is expected to have **no effect** on marbled murrelet (*Brachyramphus marmoratus marmoratus*) or their prey or habitat.

Northern Spotted Owl (*Strix occidentalis caurina*); Threatened.
The northern spotted owl is a bird of coniferous forests, and ranges from southern British Columbia to central California. The bird lives in dense stands of mature coniferous forests, and feeds on rodents. Northern spotted owls are not seen in the Snoqualmie Pass area..

This project is expected to have **no effect** on northern spotted owl (*Strix occidentalis caurina*) or their habitat.

Yellow-billed Cuckoo (*Coccyzus americanus);* Theatened
In the Pacific Northwest, the last confirmed breeding records were in the 1930s in Washington and in the 1940s in Oregon. There have been two sightings in Washington State in the last 10 years. One sighting was the discovery of a dead bird found in Moses Lake in 1999, and the second sighting was of a live bird in the Seattle area.

The species is most often associated with lowland deciduous woodlands, willow and alder thickets, second-growth woods, deserted farmlands, and orchards. It is also found in the Great Basin shrub-steppe in open to dense stands of shrubs and low trees, including *Artemisia tridentata* (big sagebrush). Riparian habitat is also suitable for this species.

This project is expected to have **no effect** on yellow-billed cuckoo (*Coccyzus americanus*) or their habitat.

Whitebark Pine (P*inus albicaulis);* Candidate
Whitebark pine is typically found in cold, windy, high elevation or high latitude sites in western North America and as a result, many stands are geographically isolated. It is a stress-tolerant pine and its hardiness allows it to grow where other conifer species cannot. The species is distributed in Coastal Mountain Ranges (from British Columbia, Washington, Oregon, down to east-central California) and Rocky Mountain Ranges (from northern British Columbia and Alberta to Idaho, Montana, Wyoming, and Nevada). No Whitebark pine have been observed in the project vicinity, nor is the project located within typical Whitebark pine growing areas.

This project is expected to have **no effect** on Whitebark Pine (*Pinus albicaulis*) or their habitat.

Critical Habitat for the Northern Spotted Owl (*Strix occidentalis caurina*); Designated.
The northern spotted owl lives in dense stands of mature coniferous forests. This project is expected to have **no effect** on northern spotted owl (*Strix occidentalis caurina*) habitat.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
Phone: (360) 753-9440 Fax: (360) 753-9405
http://www.fws.gov/wafwo/

In Reply Refer To: March 12, 2020
Consultation Code: 01EWFW00-2020-SLI-0718
Event Code: 01EWFW00-2020-E-01447
Project Name: SPUD - Phase 1 WWTP

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated and proposed critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. The species list is currently compiled at the county level. Additional information is available from the Washington Department of Fish and Wildlife, Priority Habitats and Species website: http://wdfw.wa.gov/mapping/phs/ or at our office website: http://www.fws.gov/wafwo/species_new.html. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether or not the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:
http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). You may visit our website at http://www.fws.gov/pacific/eagle/for information on disturbance or take of the species and information on how to get a permit and what current guidelines and regulations are. Some projects affecting these species may require development of an eagle conservation plan: (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Also be aware that all marine mammals are protected under the Marine Mammal Protection Act (MMPA). The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas. The importation of marine mammals and marine mammal products into the U.S. is also prohibited. More information can be found on the MMPA website: http://www.nmfs.noaa.gov/pr/laws/mmpa/.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Related website:
National Marine Fisheries Service: http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

Project Summary

Consultation Code: 01EWFW00-2020-SLI-0718

Event Code: 01EWFW00-2020-E-01447

Project Name: SPUD - Phase 1 WWTP

Project Type: WASTEWATER FACILITY

Project Description: Construction of new MBR WWTP, water reservoir, and water treatment plant.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/47.4159923494755N121.41205680233469W

Counties: King, WA | Kittitas, WA

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Canada Lynx *Lynx canadensis* Population: Wherever Found in Contiguous U.S. There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3652	Threatened
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered
Gray Wolf *Canis lupus* Population: Western Distinct Population Segment No critical habitat has been designated for this species.	Proposed Endangered
Grizzly Bear *Ursus arctos horribilis* Population: U.S.A., conterminous (lower 48) States, except where listed as an experimental population There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7642	Threatened
North American Wolverine *Gulo gulo luscus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5123	Proposed Threatened

Birds

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Bull Trout *Salvelinus confluentus* Population: U.S.A., conterminous, lower 48 states There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8212	Threatened

Conifers and Cycads

NAME	STATUS
Whitebark Pine *Pinus albicaulis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1748	Candidate

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Northern Spotted Owl *Strix occidentalis caurina* https://ecos.fws.gov/ecp/species/1123#crithab	Final

WILD AND SCENIC RIVERS, NATIONAL PARKS, & WILDLIFE REFUGES

Wild and Scenic Rivers

Within the State of Washington, three rivers have been designated as Wild and Scenic, these being:

- Skagit River;
- Klickitat River; and
- White Salmon River.

The Skagit River is located in northwestern Washington, approximately 65 miles north of the project area. The Klickitat River is located in southcentral Washington, approximately 90 miles south of the project area. The White Salmon River is located in southcentral Washington, approximately 110 miles south of the project area.

National Parks

Within the State of Washington, three major areas are under the jurisdiction of the National Parks System, these being:

- Mount Rainier National Park;
- North Cascades National Park; and
- Olympic National Park.

Mount Rainier National Park is located approximately 35 miles south of the project area. North Cascades National Park and Olympic National Park are both located more than 90 miles north of the project area.

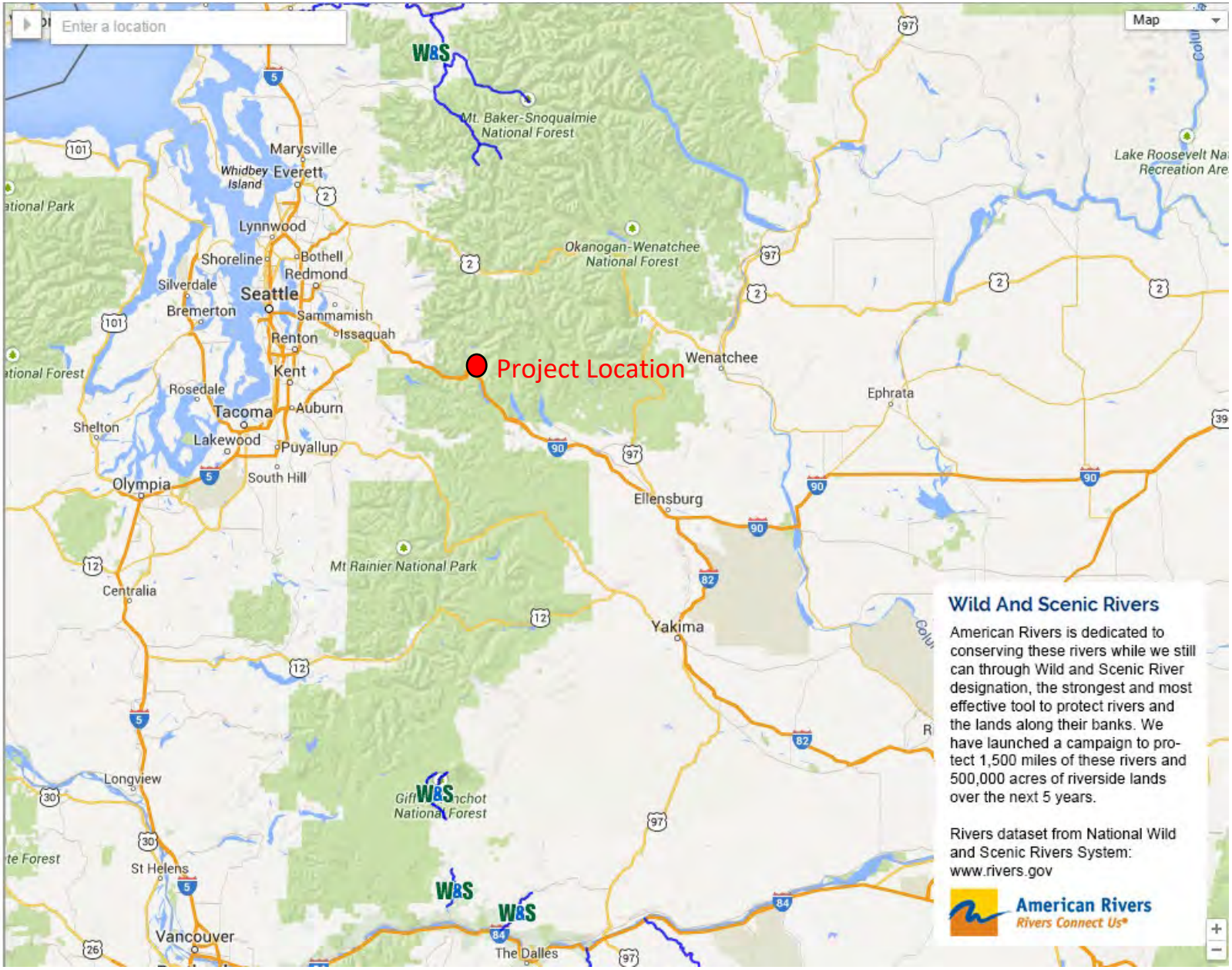
National Wildlife Refuges

Within the State of Washington, there are 23 National Wildlife Refuges. The two closest to the project area are:

- Toppenish National Wildlife Refuge; and
- Billy Frank Jr. Nisqually National Wildlife Refuge.

Toppenish National Wildlife Refuge is located approximately 93 miles southeast of the project area. Billy Frank Jr. National Wildlife Refuge is located approximately 62 miles southwest of the project area.


Bellingham
North Cascades
San Juan Island
Victoria
Lake Chelan
Ebey's Landing
Lake Roosevelt
Port Angeles
WASHINGTON
Everett
Olympic
Grace
Seattle
Spokane
Project Location
Tacoma
Olympia
Aberdeen
Mount Rainier
Yakima
Lewis and Clark
Whitman Mission
Fort Vancouver


Enter a location
Map
Project Location
Mt. Baker-Snoqualmie National Forest
Okanogan-Wenatchee National Forest
Lake Roosevelt Recreation Area
Marysville
Whidbey Island
Everett
Lynnwood
Shoreline
Bothell
Redmond
Silverdale
Seattle
Bremerton
Sammamish
Issaquah
Renton
Kent
Rosedale
Tacoma
Auburn
Shelton
Lakewood
Puyallup
South Hill
Olympia
Wenatchee
Ephrata
Ellensburg
Yakima
Mt Rainier National Park
Centralia
Longview
St Helens
Vancouver
The Dalles
W&S
Wild And Scenic Rivers
American Rivers is dedicated to conserving these rivers while we still can through Wild and Scenic River designation, the strongest and most effective tool to protect rivers and the lands along their banks. We have launched a campaign to protect 1,500 miles of these rivers and 500,000 acres of riverside lands over the next 5 years.
Rivers dataset from National Wild and Scenic Rivers System: www.rivers.gov
American Rivers
Rivers Connect Us®

CLEAN AIR

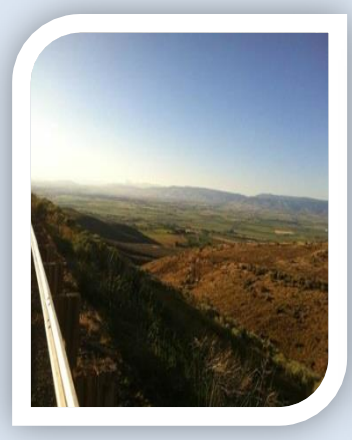
According to the attached Kittitas County PM Advance Program report dated March 2017, the area designated for PM2.5.

The areas of interest for the proposed improvements are located in the community at Snoqualmie Pass. During construction, minor amounts of dust and exhaust will occur from equipment activity. The construction contractor will be required to control dust during construction by watering the project site. The contractor will also be required to clean mud and dust from public roadways as necessary.

The completed project will not affect air quality. The aerated lagoon will remain as is and the new process will be located indoors and should not create any additional odors.

Kittitas County

PM Advance Program: Path Forward Plan



March, 2017

Kittitas County Public Health Department

FROM THE CASCADES...TO THE COLUMBIA

KITTITAS COUNTY

This report prepared for:

Kittitas County, Washington

By:

Kimberly Sarver

Kittitas County Public Health Department

507 N Nanum Street

Ellensburg, WA 98926

https://www.co.kittitas.wa.us/health

Contact:

Kittitas County Public Health Department

509-962-7515

Last Updated: March 29th, 2017

Acknowledgements

Months of planning went into this project and this would not have been possible without the help and support of the community of Kittitas County. Special thanks go to the Washington State Department of Ecology, particularly the Air Quality division in the Central Regional Office for providing funding and technical assistance for our air quality improvement projects. The Advisory Committee members also deserve recognition for the hours they've donated in service to their community. Lastly thanks to the United States Environmental Protection Agency for continuing to protect the nation's air quality and for sponsoring this program.

Kittitas County, Washington

Air Quality Advisory Committee

March 10, 2017

Advance Program
c/o Laura Bunte
U.S. Environmental Protection Agency

Dear Ms. Bunte,

We are writing in support of the Kittitas County PM Advance Program: Path Forward Plan.

As the Kittitas County Air Quality Advisory Committee, we are committed in improving air quality for all Kittitas County residents. The programs and measure outlined in the PM Advance plan are critical for improving Kittitas County's outdoor ambient air quality in regards to fine particulate matter. Continued sustainable fine particulate emission reduction efforts will assist Kittitas County in avoiding non-attainment and reduce the frequency of violations of the National Ambient Air Quality Standards established in the Clean Air Act.

The Kittitas County Path Forward Plan focuses on voluntary measures to expand knowledge of local air quality, clean and efficient wood stove use and local wood stove change-out programs. It is in the best interests of all our county residents to reduce the level of fine particulates to avoid significant health impacts.

In conclusion, we, the Kittitas County Air Quality Advisory Committee members strongly support this document and will assist with implementation programs and projects outline therein.

Thank you for allowing Kittitas County to join the PM Advance Program and for your continued efforts to improve air quality across the United States.

Sincerely,

Andrew Lyons
HopeSource

Anne Johansen, PhD
Central Washington University

Bill Hansen
Chamber of Commerce

Jordan Lowe
HopeSource

Holly Myers
Kittitas County Public Health

Kirstin Taggart
Washington Resource Conservation and Development

Mark Larson, MD
Kittitas Valley Healthcare

Josh Hink
Kittitas County Fire Marshals

Rose Shriner
Kittitas County Conservation District

Joe Seemiller
Kittitas Valley Fire and Rescue

Greg Armstrong
Armstrong's Stoves and Spa

Pamela McMullin-Messier, PhD
Central Washington University

Camille Bennett
Washington State Department of Ecology

Kittitas County, Washington

BOARD OF COUNTY COMMISSIONERS

District One	District Two	District Three
Paul Jewell	Laura Osiadacz	Obie O'Brien

March 27, 2017

Advance Program
c/o Laura Bunte
U.S. Environmental Protection Agency

Dear Ms. Bunte,

We are writing in support of the Kittitas County PM Advance Program: Path Forward Plan.

As the Kittitas County Board of County Commissioners, we are committed in improving air quality for all Kittitas County residents. The programs and measure outlined in the PM Advance plan are critical for improving Kittitas County's outdoor ambient air quality in regarding fine particulate matter. Continued sustainable fine particulate emission reduction efforts will assist Kittitas County in avoiding non-attainment and reduce the frequency of violations of the National Ambient Air Quality Standards established in the Clean Air Act.

The Kittitas County Path Forward Plan focuses on voluntary measures to expand knowledge of local air quality, clean and efficient wood stove use and local wood stove change-out programs. It is in the best interests of all our county residents to reduce the level of fine particulates to avoid health impacts.

In conclusion, we, the Kittitas County Board of County Commissioners members support this document and the plan for implementation of the programs and projects outlined therein.

Thank you for allowing Kittitas County to join the PM Advance Program and for your continued efforts to improve air quality across the United States.

Sincerely,

Paul Jewell, Chair

Laura Osiadacz, Vice Chair

Obie O'Brien, Commissioner

BOARD OF HEALTH

District One: Paul Jewell | District Two: Laura Osiadacz | District Three: Obie O'Brien | Rich Elliott | Dr. John Asriel

March 16, 2017

Advance Program
c/o Laura Bunte
U.S. Environmental Protection Agency

Dear Ms. Bunte,

We are writing in support of the Kittitas County PM Advance Program: Path Forward Plan.

As the Kittitas County Board of Health, we are committed in improving air quality for all Kittitas County residents. The programs and measure outlined in the PM Advance plan are critical for improving Kittitas County's outdoor ambient air quality in regarding fine particulate matter. Continued sustainable fine particulate emission reduction efforts will assist Kittitas County in avoiding non-attainment and reduce the frequency of violations of the National Ambient Air Quality Standards established in the Clean Air Act.

The Kittitas County Path Forward Plan focuses on voluntary measures to expand knowledge of local air quality, clean and efficient wood stove use and local wood stove change-out programs. It is in the best interests of all our county residents to reduce the level of fine particulates to avoid health impacts.

In conclusion, we, the Kittitas County Board of Health members support this document and the plan for implementation of the programs and projects outlined therein.

Thank you for allowing Kittitas County to join the PM Advance Program and for your continued efforts to improve air quality across the United States.

Sincerely,

Paul Jewell, Chair

Laura Osiadacz, member

ABSENT
Dr. John Asriel, member

Obie O'Brien, member

Rich Elliott, member

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Executive Summary

Kittitas County is a rural community in central Washington State that struggles with poor air quality. The geography of the county, along with a culture of indoor and outdoor burning, leads to unhealthy ambient air conditions during the winter months. Nestled along the eastern slopes of the Cascade Mountains, the air shed's stagnant weather conditions and air inversion events trap harmful pollutants in the lower atmosphere, often for multiple days at a time. During these times, the air monitors located in Kittitas County report some of the worst air quality in Washington State for fine particulate matter ($PM_{2.5}$). Unhealthy air quality can adversely impact the health of the community, especially among sensitive populations such as pregnant women, children and the elderly. $PM_{2.5}$ is especially harmful due to its small size as it easily enters lung tissue. Prolonged exposure to high levels of $PM_{2.5}$ can cause premature death and impaired lung development in infants and children and can increase the risk of heart attacks, stroke and respiratory illness in adults and the elderly.

In addition to detrimental health effects, declining air quality conditions have placed Kittitas County in danger of violating federal ambient air quality standards set by the United States Environmental Protection Agency (EPA). Continued violations could cause the EPA to issue a non-attainment designation to Kittitas County, imposing costly federal and state regulatory action which could negatively impact the economics of Kittitas County.

In an effort to avoid non-attainment and protect the health of Kittitas County's citizens, Kittitas County joined the EPA's PM Advance program. This program encourages communities at risk of non-attainment to take proactive efforts to improve air quality before a non-attainment designation is issued. This Path Forward Plan outlines the voluntary measures Kittitas County has adopted through the Kittitas County Public Health Department and the Kittitas County Air Quality Advisory Committee and how these efforts will educate and influence the public to limit harmful particulate emissions.

Sign Up Letter

Public Health

To Protect and Promote the Health and the Environment of the People of Kittitas County

August 30th, 2016

Advance Program
c/o Laura Bunte
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards, C304-01
Research Triangle Park, NC 27711

Dear Ms. Bunte:

The Kittitas County Public Health Department (KCPHD) intends to participate in the PM Advance program with respect to Kittitas County, Washington. We have partnered with the Washington State Department of Ecology's (Ecology) Air Quality Program and the Kittitas County Air Quality Advisory Committee consisting of representatives from Kittitas County Solid Waste, HopeSource (local non-profit), Ecology, Central Washington University Chemistry and Sociology Departments, Kittitas Valley Fire and Rescue as well as local businesses and realtors. In addition, we now wish to partner with the Environmental Protection Agency to improve air quality in Kittitas County, Washington. We meet program eligibility based on the following criteria:

1. Kittitas County is not currently designated a nonattainment area for fine particulate matter ($PM_{2.5}$) according to 2012 National Ambient Air Quality Standards (NAAQS).

2. The entire county of Kittitas is proposed for enrollment. Kittitas County has 43,269 residents in an area of 2,333 square miles. It includes the cities of Ellensburg (county seat with ~20,000 residents), Cle Elum, South Cle Elum, Roslyn, and Kittitas, as well as the unincorporated communities of Thorp, Easton, Ronald, Snoqualmie Pass, and Vantage. Ellensburg is also home to Central Washington University, with approximately 10,000 students. Geographically, it is located east of the Cascade Mountain range, centered by a NW-SE oriented valley where atmospheric inversion layers are common during cold winter months. This region is a semi-arid shrub-steppe ecosystem.

3. Kittitas County currently hosts two co-located $PM_{2.5}$ air monitors at the Hal Holmes Community Center in Ellensburg. A nephelometer, owned and maintained by Ecology, was supplemented in fall 2014 with a Federal Equivalent Monitor, also owned and maintained by Ecology, to start "official" data collection to establish attainment or non-attainment designation in the following three years. Two portable indoor air monitors, obtained through federal grant funding for the Public Health Emergency Preparedness and Response program, are available at the Kittitas County Public Health Department as needed for

emergency situations. In addition, one nephelometer and two personal black carbon (BC) monitors have been acquired by Central Washington University with funds from Ecology, for mobile monitoring studies. Besides $PM_{2.5}$ and sporadic BC measurements, no other air monitoring is underway.

4. Kittitas County has submitted all required reports for the National Emissions Inventory through Ecology. Documentation can be requested from the Air Quality Section Manager for Ecology's Central Regional Office, Susan Billings, (509) 575-2486, susan.billings@ecy.wa.gov or found at: http://www.ecy.wa.gov/programs/air/EmissionInventory/AirEmissionInventory.htm.

Efforts supported by the PM Advance program in Kittitas County would help to:

- Reduce the level of $PM_{2.5}$, including air pollutants
- Maintain air quality levels in accordance with NAAQS
- Avoid future violations of NAAQS that could lead to future nonattainment
- Increase public awareness about $PM_{2.5}$ as an air pollutant
- Promote public participation in preserving healthy air quality

Our goal is to implement new measures and programs, reduce particulate matter levels in Kittitas County, Washington and to continue existing messaging and outreach to community residents. It is in our best interest to work with our stakeholders and the public to achieve this goal.

Please contact me via email at kimberly.sarver@co.kittitas.wa.us or by phone at (509) 962-7680 if you have any questions.

Sincerely,

Kimberly Sarver
Environmental Health Specialist
Kittitas County Public Health Department

Holly Myers
Environmental Health Supervisor
Kittitas County Public Health Department

Obie O'Brien,
Chairman
Kittitas County Board of County Commissioners

CC: Christi Duboiski, EPA PM Advance Program

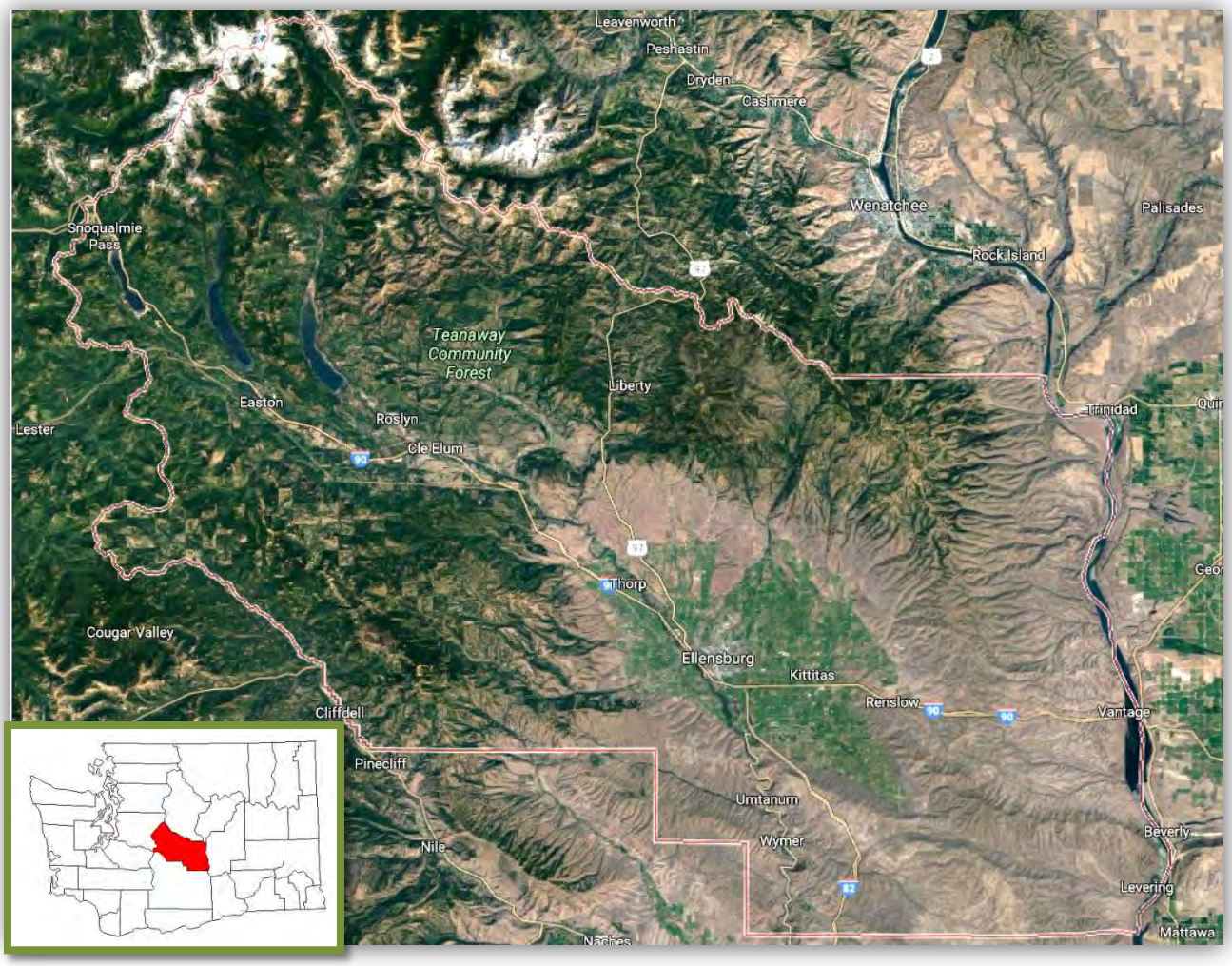
507 N. Nanum Street, St. 102 Ellensburg, WA 98926
T: 509.962.7515 F: 509.962.7581
www.co.kittitas.wa.us/health/

Background

Geography

Kittitas County is a rural area located in the center of Washington State along the eastern slopes of the Cascade Mountain Range. The county encompasses 2,333 square miles, stretching from the top of Snoqualmie Pass down to the Columbia River, and is home to approximately 41,000 people (US Census, 2010). Geographically, Kittitas County is one of the largest counties in Washington State. However, over two-thirds of the area is hilly and mountainous, leading to a sparse population of 17.8 persons per square mile in 2010, (Meseck, 2016). Convenient access to state and federal forest lands, with the purchase of a permit, provides residents with an inexpensive source of fuel for heating.

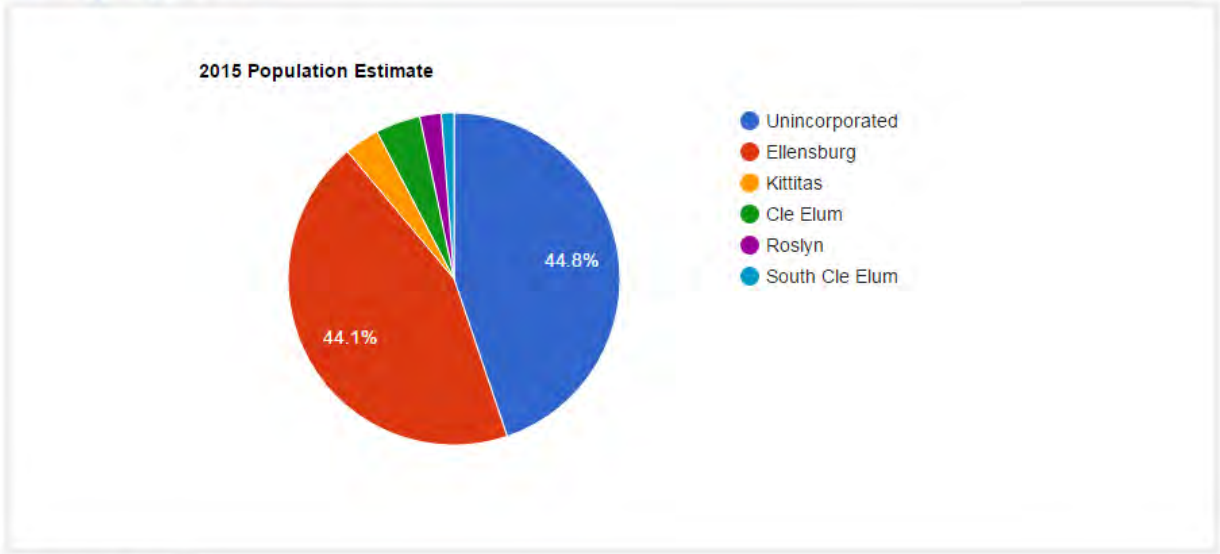
Figure 1: Kittitas County Topography



The county is commonly divided into two sectors for discussion purposes, upper and lower county. Upper county extends to the west from Thorp to Snoqualmie Pass. Lower county stretches east from Thorp to Vantage. Ellensburg is the County Seat and resides in lower county along with Kittitas, Vantage and Thorp. Upper county communities include Cle Elum, South Cle Elum, Roslyn, Easton, Ronald, Liberty and Snoqualmie Pass. The majority of the population lives in Ellensburg or unincorporated communities, (County 2015).

Figure 2: County Population Distribution

County Population



Source: US Census Bureau

Current Estimates

Municipality	Census	Estimates				
	2010	2011	2012	2013	2014	2015
Kittitas County	40,915	41,300	41,500	41,900	42,100	42,670
Unincorporated	18,063	18,315	18,440	18,785	18,890	19,120
Incorporated	22,852	22,985	23,060	23,115	23,210	23,550
Cle Elum	1,872	1,875	1,865	1,870	1,870	1,865
Ellensburg	18,174	18,250	18,320	18,370	18,440	18,810
Kittitas	1,381	1,430	1,450	1,450	1,475	1,455
Roslyn	893	895	895	895	895	890
South Cle Elum	532	535	530	530	530	530

Source: Office of Financial Management, State of Washington

Population by Decennial Census: 1900-2010

	United States	Washington State	Kittitas County
2010	308,745,538	6,724,540	40,915
2000	281,421,906	5,894,121	33,362
1990	248,709,873	4,866,692	26,725
1980	226,545,805	4,132,156	24,877
1970	203,211,926	3,409,169	25,039
1960	179,323,175	2,853,214	20,467
1950	151,325,798	2,378,963	20,230
1930	123,202,624	1,563,396	18,154
1920	106,021,537	1,356,621	17,737
1910	92,228,496	1,141,990	18,561
1900	76,212,168	518,103	9,704

Source: US Census Bureau

History

The Kittitas valley was a traditional gathering place for Native American tribes, who grazed their horses on the lush grass and dug for camas and kouse roots. White cattle ranchers settled the area in the early 1800's and the Treaty of 1855 resulted in tribes moving to the Yakama and Colville Reservations, (Kittitas County History, 2017).

White settlers engaged in agricultural activities, particularly raising herds of cattle and horses, (Meseck, 2016). Upper Kittitas County expanded through booming mining districts. Railroads promoted transportation of hay and cattle, and led to expansion of irrigation projects which further expanded the farming community. The Homestead Act of 1862 prompted heavy migration into the county, turning tiny mining and farming communities into bustling towns (Kittitas County History, 2017). In 1883 the Washington Territorial Legislature split the area and recognized the northern portion as Kittitas County, (Meseck, 2016).

Declining beef prices, severe winters and overgrazing took its toll on the range, prompting the federal government to regulate grazing in 1897, which pushed the community to the hay-production industry of today. Hay was sold to Seattle, Tacoma and other Puget Sound communities needing thousands of tons of hay to feed work-horses for the state's lumber and mining companies (Kittitas County History, 2017).

Demographics

Modern day Kittitas County remains dedicated to agriculture with a large farming community and continues to be known for lush hay and roaming cattle. Today, hay production nets more than $50 million annually for Kittitas County farmers. Almost 90% of the hay produced is exported overseas with Japan as the largest export customer, (Meseck, 2016).

Kittitas County is most famous for the Ellensburg Rodeo and Kittitas County Fair, which began in 1885. Competitors and rodeo enthusiasts travel from all corners of Washington State to watch the show (Kittitas County History, 2017).

Central Washington University (CWU) was founded in 1891 and is located in Ellensburg. The university is home to over 10,000 students and is rapidly expanding with a 15 to 20% increase in first year students each year. Kittitas County is a popular destination for outdoor enthusiasts needing a break from the hustle and bustle of the metropolitan Puget Sound area (History, 2006).

The residents of Kittitas County are primarily white with a small population of Hispanics and Latinos representing 7.6%. Almost a quarter of the population lives below the poverty line and the median household income is $41,232 (US Census, 2010). The rural, low income population of Kittitas County greatly affects the types of air pollutants emitted.

Air Quality

Weather Conditions

The unique geography of the Kittitas Valley creates optimal conditions for long periods of high pressure during the winter months, resulting in lengthy air inversions. When air inversion events occur during the home heating season, pollutants emitted into the lower atmosphere are trapped, exposing residents to unhealthy air, often for weeks at a time (Fuller et al, 2015). Fine particle air pollution in the Ellensburg area reaches unhealthy levels multiple times each winter and air conditions are often unhealthy for sensitive groups.

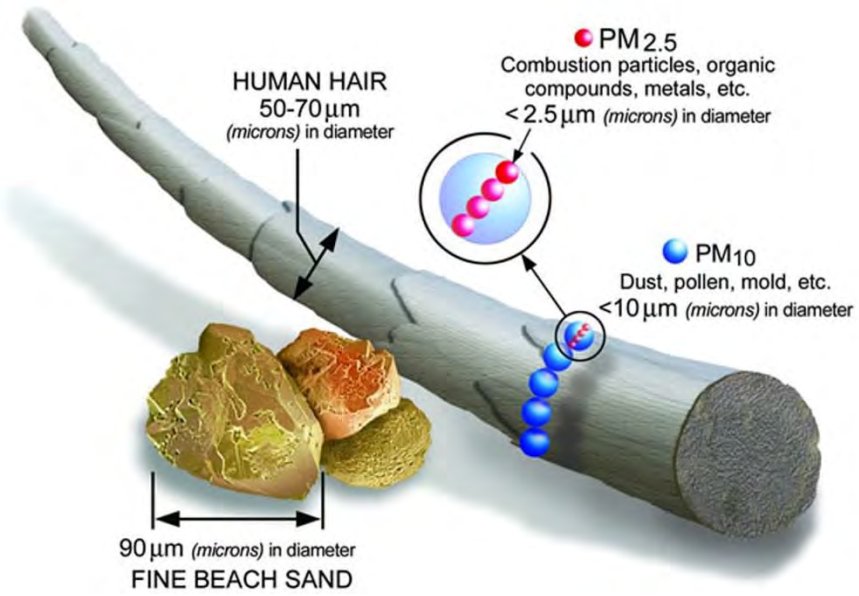
Figure 3: A View of Ellensburg - Winter versus Summer

An Overview of $PM_{2.5}$

Fine particulate matter ($PM_{2.5}$), is a mixture of solids and liquid droplets floating in the air that are 2.5 micrometers or less in diameter. $PM_{2.5}$ is smaller than the width of a human hair. Children, elderly adults and people with heart or lung diseases are most likely to be affected by particle pollution exposure, however even healthy adults may experience temporary negative symptoms when exposed to high levels. Health issues include irritation of the eyes, nose and throat, coughing, chest tightness, shortness of breath, reduced lung function, irregular heartbeat, asthma attacks, heart attacks and premature death in people with heart or lung disease (Fuller et al, 2015).

In the environment particle pollution can reduce visibility and create haze, stain and damage buildings and statues, increase acidity in water bodies or change the flow of nutrients and even deplete soil or damage forests and crops. $PM_{2.5}$ is produced from all types of combustion including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning and some industrial processes (Particle Pollution, 2017).

Figure 4: Particle Pollution Diagram



National Ambient Air Quality Standards

The Clean Air Act, ratified in 1970, requires the United States Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The act identifies two types of national ambient air quality standards. Primary standards provide public health protection while secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals,

crops, vegetation, and buildings. NAAQS are set for six principal pollutants, called "criteria" air pollutants. NAAQS are reviewed and revised periodically, (NAAQS, 2016). The current standards for particulate matter were revised in 2013 and are listed below.

Table 1: National Ambient Air Quality Standards for Particulate Matter

Pollutant [links to historical tables of NAAQS reviews]		Primary/ Secondary	Averaging Time	Level	Form
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	12.0 µg/m^3	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m^3	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years

Air Quality in Kittitas County

Between 2007 and 2013, the number of days with unhealthy fine particle pollution levels dramatically increased in Kittitas County, indicating a dangerous trend. During the winter home heating season, air quality readings from the monitoring station in Ellensburg reports one of the highest levels of $PM_{2.5}$ air pollution in the state. In addition, the number of large area wildfires increased between 2011 and 2015, adding to public health risks associated with ongoing $PM_{2.5}$ pollution. Even without the contributions from wildfires, the numbers continue to rise, inviting a closer look at what is contributing to this steady increase in $PM_{2.5}$.

Monitoring data between 2014 and 2016 showed a decrease in the number of poor air quality days. However, due to mild winters and monitoring equipment failures the resulting data may not be reliable or statistically significant. A future analysis of data from the winter of 2016 to 2017 should provide a better indication of the true air quality trends in Kittitas County.

Figure 5: Days Over 20ug/m³ $PM_{2.5}$

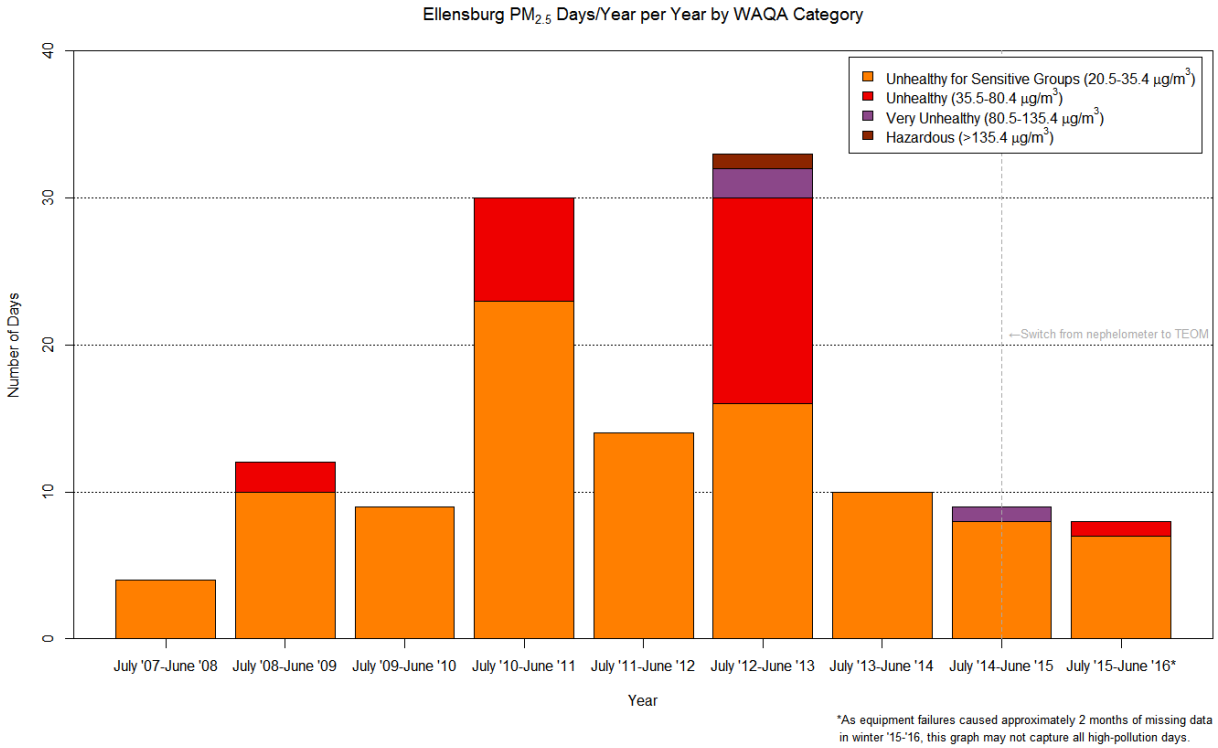
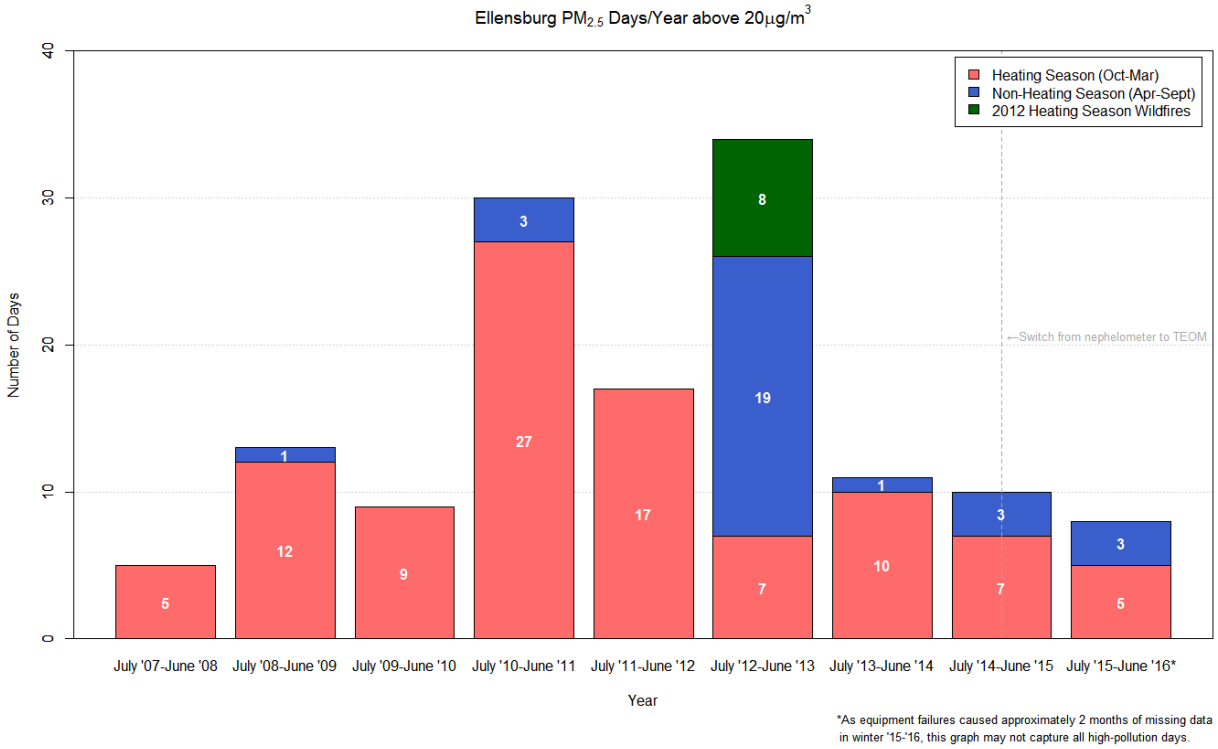


Figure 6: Days Over 20ug/m³ $PM_{2.5}$ by Heating Season



If poor air quality conditions continue or decline further, Kittitas County could be designated as a non-attainment area by the EPA, requiring costly regulatory measures and potentially causing economic hardship within the community. As it currently stands, the combined impact on health and the environment is already costing the community. In a 2009 report, Washington State Department of Ecology (ECY) created a model for estimating health and economic impacts of fine particle pollution in Washington, (Health Effects, 2009). ECY's model estimates that the direct and indirect costs associated with fine particle pollution in Kittitas County exceed $1 million each year.

The increase in poor air quality days raises concerns regarding respiratory impacts and potential health risks. Kittitas County consistently has higher mortality rates for influenza and pneumonia compared to the rest of the state, although in recent years, this difference is not statistically significant, (Death Certificate Data, 2006-2015) While we have yet to determine the cause of this, the statistic draws concern regarding respiratory impacts related to poor air quality.

In 2012, the Kittitas County Public Health Department (KCPHD) assessed the community for health impacts and identified that the number of poor air quality days in Kittitas County was 1.5% higher than for the rest of Washington State (Read, 2012). However, at the time funding was not available to further assess or remedy the issue.

Table 2: 2012 Community Health Assessment

Category		Health Indicator	Kittitas County	Washington State	United States	Target
Environmental Quality	Air	Percent of days with unhealthy air quality[23,24]	1.9%	0.4%	n/a	0.4%
	Water	Percent of stream sections with high levels of fecal coliforms and without a pollution control plan in place[25]	17.8%	52.7%	n/a	16.0%
	Food Safety	Percent of routine food establishment inspections with significant violations[26,27]	1.2%	5.0%	n/a	1.1%

ECY emissions inventory data from 2011, partially updated with 2014 data, estimate residential wood burning is the largest source of $PM_{2.5}$ emissions during the winter months at 32% of winter emissions. Summer $PM_{2.5}$ emissions are estimated to be primarily from road dust at 27%. Spring and Fall $PM_{2.5}$ emissions are dominated by residential wood combustion at 20% and 21% respectively. Residential wood combustion is estimated to be the second largest contributor to annual $PM_{2.5}$ emissions at 18% with road dust as the secondary contributor at 17%. An estimated 50.7 tons of $PM_{2.5}$ are produced in the winter months from residential wood combustion with over 120 tons emitted annually. Including all emission sources, Kittitas County produces over 654 tons of $PM_{2.5}$ annually (Summers, 2016). With emissions inventory data clearly implicating wood stoves as the primary $PM_{2.5}$ pollution source, KCPHD and ECY opted to target indoor and outdoor residential burning in future outreach efforts.

Figure 7: Emissions Inventory Data 2011 to 2014

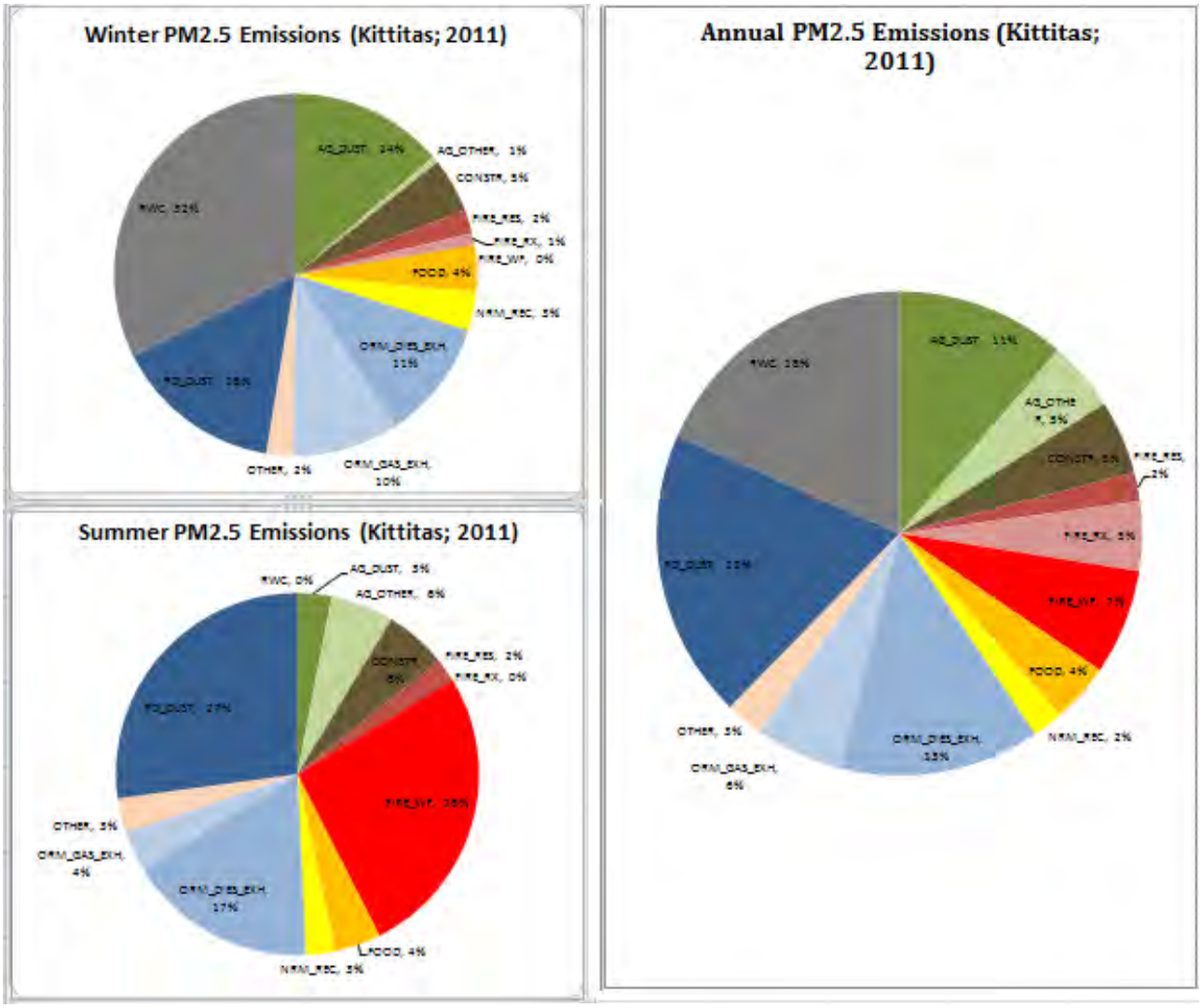


Figure 7 Legend

DUST_HARV	AG_DUST	Agricultural Harvesting	AIR	OTHER	Aircraft: military, commercial, general aviation
TILL	AG_DUST	Agricultural tilling	COMMC	OTHER	Commercial Combustion
OB_AGBURN	AG_OTHER	Agricultural Burning	FUEL	OTHER	Residential non-Wood Fuel
NRM_AG	AG_OTHER	Agricultural Equip	MISC	OTHER	Miscellaneous
CONST	CONSTR	Construction	NRM_AIR	OTHER	Airport Ground Support Equip
NRM_CONST	CONSTR	Construction and Mining Equip	NRM_BOAT	OTHER	Recreational Boats
OB_RES	FIRE_RES	Residential outdoor burning: yard waste, trash	NRM_COM	OTHER	Commercial Equip
OB_SILV	FIRE_RX	Silvicultural Burning	NRM_IND	OTHER	Industrial Equip
FIRE	FIRE_WF	Wildfires	NRM_LAWN	OTHER	Lawn and Garden Equip
FOOD	FOOD	Food and Kindred Products	NRM_LOG	OTHER	Logging Equip
NRM_REC	NRM_REC	Recreational Equip	NRM_RAIL	OTHER	Rail Maintenance Equip
ORM_DIES_EXH	ORM_DIES_EXH	Onroad Diesel Exhaust	RR	OTHER	Locomotives
ORM_GAS_EXH	ORM_GAS_EXH	Onroad Gas Exhaust	SHIP	OTHER	Commercial Marine Vessels
ORM_BRK_TIR	OTHER	Onroad Brake and Tire	DUST_PAV	RD_DUST	Paved Road Dust
ORM_CNG_EXH	OTHER	Onroad CNG Exhaust	DUST_UNPV	RD_DUST	Unpaved Road Dust
			RWC	RWC	Residential Wood Combustion

Community Partners

ECY partnered with KCPHD in early 2014 to investigate factors that could contribute to this steady increase in $PM_{2.5}$ and to explore behaviors that may be modifiable through public health education and outreach. An air quality advisory committee (AQAC) was formed to assist with projects and included representatives from Central Washington University (CWU), KCPHD, ECY, local non-profit organizations, Kittitas County Fire Marshals, local fire departments, Kittitas County Realtor's association, Kittitas County Chamber of Commerce, local wood stove retailers and others. The committee is still active today and has broadened its membership to include representatives from wildfire prevention organizations and local conservation groups.

Community Assessment and Outreach

In 2014, KPCHD and the AQAC conducted a community wide survey, with grant funds from ECY, to examine behaviors, beliefs and attitudes around air quality and burning behavior in Kittitas County. The findings of this study revealed Kittitas County residents engage in many types of burning behaviors that contribute to $PM_{2.5}$ air pollution. In addition, the lack of general knowledge regarding particulate matter pollution in Kittitas County pointed to a strong need for outreach and education in this area. While the survey was comprehensive, further research needed to be done to verify findings and to inform future clean air projects (Fuller, 2014).

The results of this survey were used to create an education and outreach campaign focused on increasing public knowledge of air quality issues and proper burning practices. In 2015, a second survey was conducted to validate initial findings and to analyze the impact of initial outreach and education attempts. Both of the surveys and the education and outreach campaign were funded through grants from ECY. The data from these surveys was later used to update ECY's emission inventory model for Kittitas County and provide more accurate analysis of $PM_{2.5}$ emission sources.

The 2015 survey revealed there are still many Kittitas County residents who do not agree that air quality is an important environmental issue or that wood stoves are a significant contributor to $PM_{2.5}$ pollution. However, even with the lack of agreement on the air quality issue, a significant amount of community support exists for engaging in activities that would attempt to reduce $PM_{2.5}$ pollution. Most respondents would support measures to reduce $PM_{2.5}$ pollution in Kittitas County through further education regarding efficient wood stove operation and programs to replace or upgrade current equipment. The amount of people who reported heating their homes solely with wood matched the most recent census report on households that heat with wood. The survey also distinguished primary and secondary heat source burners from sole sources, which decreased initial findings by almost half. The number of people who self-report having certified stoves aligns with the data on reported certified characteristics, meaning they are accurately identifying their equipment as certified. The 2015 survey findings validated the high numbers of certified stoves reported by Kittitas County in 2014. However, many people who use wood to heat their home report that they are not engaging in all of the behaviors that will result in the cleanest and most

efficient burn possible. Indoor burners are burning wood primarily in the fall and winter which corresponds with data from Ecology regarding $PM_{2.5}$ emissions data from previous home heating seasons (Fuller et al, 2015).

A quarter of our population engages in frequent small pile burning outdoors, most of which is used for disposing of brush and yard debris clearing. There are also a large number of outdoor burners who are still misidentifying paper, cardboard and lumber as being legal to burn (Fuller et al, 2015).

Response data from the 2015 survey was analyzed to determine if there were statistically significant changes in the areas that were covered by the education and outreach campaign. Community knowledge increased in target areas of air quality related items, including $PM_{2.5}$. With the most effective outreach methods being news articles series in local papers and radio ads. While it is difficult to determine if the change in public knowledge and perception is a direct impact from outreach and education, the amount of people reached by materials is encouraging (Fuller et al, 2015).

Increasing public knowledge about air quality issues and wood burning practices is important, however, the next step is helping people understand how their behaviors impact $PM_{2.5}$ pollution. People who do not see a direct and immediate impact of their behaviors may not be motivated to change burning habits or beliefs about air quality, which may have an effect on burning practices. Messaging to the public must show how certain practices can have a cumulative effect on $PM_{2.5}$. Certain avenues of the education and outreach campaign, such as newspaper articles and other media, appeared to be successful and may be a good avenue for future education and outreach campaigns. Conducting monitoring studies of $PM_{2.5}$ speciation, as well as sources of other particulate matter sizes, would also be an effective way to show the community where the $PM_{2.5}$ pollution is coming from and how it relates to overall particulate matter. It would be beneficial for KCPHD to continue educational programs in addition to gathering aggregate air quality data in order to monitor health impacts and risks (Fuller et al, 2015).

The PM Advance Program

As part of our commitment to continue $PM_{2.5}$ emission reduction efforts, the AQAC, KCPHD and Kittitas County Board of Health (BOH) have joined the EPA's PM Advance Program. This Path Forward Plan is the first step in supporting sustainable efforts to improve air quality in Kittitas County.

The PM Advance Program is run by the EPA and encourages states, tribes and local governments to take proactive steps to reduce $PM_{2.5}$. The EPA provides support to communities who want to pursue air pollution reduction within the PM Advance framework. Improvements in air quality from participation in the program could help:

- Protect the health of the community
- Provide a cushion against future violations or revisions of the $PM_{2.5}$ NAAQS
- Allow for flexibility to choose control measure and programs that fit the community and are cost effective
- Result in multi-pollutant benefits.

To be eligible for the program, the participating area must:

- Not be designated nonattainment for a $PM_{2.5}$ NAAQS
- Identify the area that wants to participate
- Identify the air monitors reflecting air quality in the area
- Meet national and state emission inventory reporting requirements prior to signing up for the program

Each participating area drafts a 5-Year Path Forward Plan as part of the PM Advance program. Each plan details the history of the area, the air quality issues and outlines voluntary and regulatory control measures and programs the community will pursue to reduce $PM_{2.5}$ emissions. Kittitas County joined the PM Advance program in August of 2016 and submitted the first Path Forward Plan in March of 2017.

Update Schedule

Kittitas County's Path Forward control measures and programs will be evaluated on an annual basis with a discussion of effectiveness presented to ECY and the EPA. The Path Forward Plan will be fully reassessed and updated if necessary every two years. The AQAC will be responsible for the update and program analyses if an air quality staff member is not available from KCPHD. The next update is scheduled to be completed by June 30th, 2019.

PM 2.5 Control Measures

Voluntary Measures

The following projects are voluntary measures and do not include new ordinances or regulations. Voluntary measures focus on education, outreach and programs to provide affordable options to reduce $PM_{2.5}$ emissions. The projects are divided into three tiers according to funding and staff time.

Tier 1 includes basic education and outreach efforts that are implementable without additional funding and in the absence of a dedicated air quality staff member at KCPHD. Examples include forwarding clean burning information to a neighborhood after receipt of a smoke complaint, distributing brochures and flyers at local businesses, and issuing public information during times of poor air quality.

Tier 2 projects require a dedicated air quality staff member at KCPHD or greater involvement of the AQAC members. Projects may require small amounts of funding to purchase materials. This section includes partnerships with other organizations for projects not funded by KCPHD or the AQAC. Examples include booths at local community events and educational workshops to provide facts about clean burning best practices and the benefits of certified woodstoves.

Tier 3 lists projects that are implementable only under specific grants and require substantial amounts of funding. The purpose of this section is to outline project rationale and methods to prepare for future grant applications. This section also includes existing programs and projects that are looking to expand through acquisition of additional grant funding.

Some projects cannot be implemented until the necessary funding is awarded. Projects marked "pending" are awaiting approval or funding. An "ongoing" status indicates a pre-existing project that was implemented before Kittitas County joined the PM Advance program. An "in-progress" designation indicates a project that was implemented as part of the PM Advance program.

Tier 1 – Volunteer Staff

Project title: Smoke Complaint Response
Lead Agency: Kittitas County Public Health Department
Partner Agencies: Local Fire Departments
Goal: Reduce the number of households with high opacity smoke emissions and improve burning related behaviors in response to complaints.
Description: When KCPHD receives a complaint about wood smoke, letters are sent to the entire neighborhood. This provides an educational opportunity to advertise the benefits of certified woodstoves, establish clean burning practices and distribute relevant information to wood-burning hotspots.
Project Methods:

1. Complaints received by phone or email at KCPHD are logged into an internal complaint tracking system, CAMAS, by the complaint recipient.
2. Complainants are asked whether they wish to remain anonymous and contact information for the complainant is recorded if appropriate. The name of the staff member who first received the complaint is recorded as well as the name of the staff member assigned to the response. The address and parcel map number, date the complaint was received, initial complaint description and actions taken are recorded within the tracking system.
3. Based on the nature of the complaint, the complaints are routed through CAMAS to the appropriate specialist for investigation.
4. The specialist consults a county parcel map and establishes a target area for response that encompasses the most houses in the immediate vicinity of the complainant.
5. Letters are sent to all residences in the specified area with clean burning information and suggestions to limit smoke emissions along with information about available wood stove change out programs.
6. Local fire department staff may become involved in the cases of repeat offenders and are able to issue fines for egregious outdoor and indoor burning violations.
7. Once a complaint has been closed, the closing date is recorded. A complaint is closed when the appropriate level of compliance has been achieved or the complaint has been passed on to the appropriate county or city code enforcement personnel. Currently the air quality program at the Kittitas County Public Health Department does not have regulatory authority to impose fines without working through city or county code enforcement. If the issue escalates, Washington State Department of Ecology is made aware of the situation through their AQ section.

Assessment: The number of air quality related complaints is tracked electronically through the CAMAS system as described above. The annual amount of complaints as well as the number of complaints received each month are recorded and reviewed periodically. Repeat offenders are flagged for additional education. Complaint response efforts are considered successful if no additional complaints are received for that residence or neighborhood for the remainder of the season.
Status: Ongoing

Project title: Spanish Translation of Existing Educational Materials
Lead Agency: KCPHD
Partner Agencies: Washington State Department of Ecology, HopeSource, Environmental Protection Agency
Goal: Broaden awareness of air quality issues in underserved populations.
Description: Many educational materials exist regarding clean burning, certified wood stoves and $PM_{2.5}$ health concerns. However, most of the materials possessed by KCPHD are only available in English. Since there is a significant Hispanic population in Kittitas County and neighboring counties, it benefits the community to translate existing materials into other languages.
Project Methods: Volunteer staff from KCPHD and HopeSource will translate existing educational materials into Spanish, along with other languages as needed.
Assessment: The number of Spanish brochures distributed at events and in the KCPHD office would be tracked. Requests would be logged internally for other language translation requests.
Status: Pending

Tier 2 – Dedicated Staff

Project title: Elementary/Middle School Education Program
Lead Agency: Kittitas County Public Health Department
Partner Agencies: Ellensburg School District, Thorp School District, Kittitas School District, Cle Elum Roslyn School District, Easton School District
Goal: Incorporate the importance of clean air and compliance with clean air laws into school science programs.
Funding Source: State and/or federal grants
Description: An air quality education program in schools would promote $PM_{2.5}$ measurement, awareness and monitoring, enhance environmental science curriculums and spread accurate information about air quality in our communities. These messages would also reach parents and raise awareness of air quality in the community.
Project Methods:

1. Select pilot school or district for the first round of the education program.
2. Identify target grade level with advice from local teachers and school officials.
3. Identify key messages such as "clean wood burning" or "dangers of poor air quality".
4. Design an education program focused on the key message from step 3.
5. Print and prepare education materials. An air quality tool box of education material would be provided to teachers along with technical assistance from KCPHD staff.
6. Schedule time to meet with the teacher prior to classroom visit to discuss the education program and messages.
7. Visit the classroom and implement the education program.
8. Interview parents in person or via a survey a week after program implementation to measure the spread of the message and its applicability. Other assessment methods are discussed below in "Assessment".
9. If successful, expand the program to other schools and districts.
10. Publish findings and materials on KCPHD's website for use in other regions.

Assessment: Personal interviews or survey materials would be conducted with the student's parents approximately a week after the classroom visit to assess how far the education message spread and how applicable the material was to the household. Another method would involve students taking home a brochure with a parent signature page. Students who return the signed page to their teacher would receive a reward.
Status: Pending

Project title: Air Quality Education Booth
Lead Agency: Kittitas County Public Health Department
Partner Agencies: None
Goal: Enhance community awareness of current air quality issues and promote $PM_{2.5}$ emission reduction tactics.
Description: Multiple events are hosted throughout the year that offer free or low cost registration for booths. KCPHD frequently attends these events to promote clean burning practices, emphasize the importance of using certified wood stoves and expand the community's awareness about local air quality issues.
Project Methods: A schedule of potential events that KCPHD and AQAC partners could attend on an annual basis is included in Appendix A. Future air quality staff will use this schedule to ensure

timely registration for each event. Factors for event selection include registration fees, expected number of visitors, target population and community perception of the educational message.
Assessment: Educational materials such as flyers, posters, and handouts are counted before and after the event to determine the number of materials distributed. Air quality staff will also attempt to quantify the total number of event participants along with the number of individuals who made direct contact.
Status: In Progress

Project title: Air Quality Advertising Campaign
Lead Agency: Kittitas County Public Health Department
Partner Agencies: Local news and radio outlets
Goal: Enhance community awareness of current air quality issues and impacts.
Funding Source: If little to no funding is available, organizers can take advantage of free public service announcements through the radio as well as press releases to local newspapers to spread air quality information. Additional funding would allow for more complex radio and print advertisements as well as television and cinema advertisements.
Description: Key messages would be distributed through print, radio and television media sources during the appropriate seasons to address air quality impacts. These messages would be include information on current or upcoming air quality concerns. For example, tips on cutting, stacking and covering wood when the United States Forest Service has open wood cutting.
Project Methods:

1. Identify a funding source and establish a budget.
2. Select local media outlets based on past survey data. Past surveys indicated which media sources were most viewed by the community.
3. Work within the budget to purchase advertising time and space with local media outlets.
4. Create and record advertisements.
5. Distribute to selected media outlets at the appropriate times.

Assessment: Past survey data indicated which media outlets the community uses most frequently and where air quality message distribution was effective. Future surveys could be distributed as a confirmation measure that key messages are reaching the community.
Status: Pending

Tier 3 – Grant Projects

Project title: Woodstove Change Out
Lead Agency: HopeSource - Ellensburg
Partner Agencies: Washington State Department of Ecology, Armstrong's Stove and Spa
Goal: Reduce $PM_{2.5}$ emissions and improve local air quality by replacing uncertified wood stoves with certified devices, or more efficient heating devices, at reduced cost.
Description: Using funds supplied by Washington State Department of Ecology, HopeSource provides a rebate to qualifying applicants to reduce the cost of purchasing a new certified woodstove or other low emission home heating device.
Funding Source: A Wood Smoke Reduction grant was awarded to HopeSource by the Washington State Department of Ecology. Previous grant amounts totaled $90,000 from 2011 to 2013 and $175,000 from 2013 to 2015. The funds awarded to each client were based on a sliding scale,

described below in the Project Methods. The current grant, running from 2015 to 2017, totals $85,000.

Project Methods:

1. The woodstove exchange program is advertised through referrals from local woodstove and heating device retailers along with radio and newspaper advertisements. These efforts are coordinated by HopeSource with technical assistance from Washington Department of Ecology.
2. Clients must reside within the designated area, shown on the map in APPENDIX B to qualify for a rebate. They must own an uncertified stove or a certified stove manufacturer prior to 1995 and must burn at least two cords of wood per winter to qualify.
3. Once an application has been approved, the customers take the rebate form to the device retailer, and purchase the device for the remainder of the cost not covered by the rebate.
4. Rebate incentives for the 2011-2013 and 2013-2015 grants were based on the total cost of the new device, the type of device installed and the income of the client.
    a. For clients with income of less than 125% of the Federal Poverty Level (FPL), the incentive amount matched the total replacement cost.
    b. For 125%-200% of the FPL, clients paid 10% of the cost of a wood stove or 5% of the cost of a ductless system, and the incentive matched the remaining cost.
    c. For greater than 200% of the FPL, clients paid for 20% of the cost of a wood stove or 10% of the cost of a ductless system, and the incentive matched the remaining cost.
    d. If costs exceeded $3,576 for a wood stove or $5,292 for a ductless system, clients with an income greater than 125% of the FPL paid the extra amount. This provided a simple and fair calculation to determine client contributions, which was especially important given the varying costs associated with chimney venting replacement.
    e. Some clients wished to install different stove models or to have a second ductless head installed, which increased the client's contribution while decreasing the incentive amount.
5. Rebate incentives for the 2015-2017 grant are set at $750 for wood stoves or inserts, $1000 for pellet stoves or inserts, $1,250 for gas stoves or inserts and $1,750 for ductless heat pumps. These amounts are set and do not factor in the clients income. A limited number of low income families may qualify for larger rebates.
6. First, a certified installer verifies that the current woodstove is an uncertified model according to EPA standards.
7. A certified installer then must install the device in order for the rebate to be valid. Once the device is installed, the installer verifies proper installation with HopeSource with pictures.
8. The old device is removed by the installer and taken to a designated facility for destruction. Destruction is verified with pictures and a certificate of destruction signed by the disposal facility. This ensures that the device has been destroyed and will not be resold or used.
9. The installer then submits the required documents to HopeSource.
10. HopeSource reviews the submitted documents and issues the rebate funds directly to the installer.

Assessment: The success of the project is determined by whether the device installation goals were reached. The 2011 to 2013 grant funds were used to install 23 devices with a goal of 24 devices, including one ductless heat pump. The 2013 to 2015 grant funds were used to install a total of 42 devices which exceeded the goal of 34 devices. 34 new certified wood stoves, 1 pellet stove, 1 natural gas stove and 6 ductless heat pumps were installed between 2013 and 2015. So far, 6 devices have been installed for the 2015-2017 grant. The 2015-2017 grant program implementation was delayed until April 2016. Washington State Department of Ecology calculated

a net reduction of 2077.97 lbs of $PM_{2.5}$ emissions between 2011 and 2013 and 3,653 lbs between 2013 and 2015.
Status: Ongoing

Project title: Woodstove Bounty
Lead Agency: Washington State Department of Ecology – Central Regional Office,
Partner Agencies: Kittitas County Solid Waste Department, Kittitas County Public Health Department, HopeSource, Kittitas Valley Fire and Rescue, WCC Ellensburg and Yakima Crews, Kittitas County Fire District #7, City of Cle Elum.
Goal: Reduce $PM_{2.5}$ emissions from wood smoke by collecting and destroying uncertified woodstoves, effectively removing them from future use.
Description: A $250 rebate was offered to Kittitas County residents who turned in their old woodstoves to be recycled. Kittitas County, Ecology and HopeSource staff are present for one day at the selected transfer station to inspect woodstoves and award rebates to qualifying participants. The stoves must be in working order and free from ash and debris to qualify.
Funding Source: Residential Wood Smoke Reduction funds from the Washington State legislature were awarded to Washington State Department of Ecology. Costs associated with the 2014 event are included in APPENDIX C.
Project Methods:
Event Advertising

1. Ecology drafts a budget for the event and secures the corresponding funding.
2. Ecology works with the appropriate partner agencies to select a date and location for the collection event to take place.
3. Once a date and location are selected, flyers are distributed to local businesses and bulletin boards approximately one month prior to the event. KCPHD, KCSW, HopeSource, Ecology and the local fire departments are responsible for distributing flyers. Previous flyers have been 8.5 by 11in in size and laminated to ensure durability.
4. Approximately three weeks prior to the event paid newspaper ads are run in the Ellensburg Daily Record and the Northern Kittitas News Tribune. Previous ads ran from one to two days in different weeks and were large with colored print.
5. A news release drafted by Ecology will be run concurrent to the ads in the newspapers.
6. Paid advertising through the KXLE radio station is run three times a day on Mondays, Wednesdays and Fridays for a full month prior to the event. Ecology CRO's smoke management team and KXLE contributed to the transcript in past years.

Event Procedure

1. Event staff arrive at the transfer station at least thirty minutes prior to the scheduled start time. All staff should check in at the main office or scale house prior to entering the facility. Typically staff arrive around 7:30am.
2. Staff and volunteers are briefed on event procedures and safety.
3. At 8:00am, inspectors begin evaluating stoves for rebate qualification as specified above.
4. Customers enter the transfer station via the scale house and are directed by the scale house attendants to the drop off zone. Customers are directed to remain in their vehicles at all time for safety.
5. Inspectors evaluate all woodstoves to determine if qualified for a rebate. If the wood stove does not qualify, a rebate is not issued and the customer is directed to leave the facility. If qualified the appropriate forms are completed and a 250 dollar rebate is issued to the customer.

6. While their woodstove is evaluated, customers are asked to complete a survey on wood smoke, wood burning and garbage burning. Completion of the survey enters participants in a raffle for a 50 dollar gift card. Two winners are chosen for the raffle.
7. Upon completion of the survey customers are provided a bag of outreach items including litter bags, pens, key chains, and flyers with education on efficient woodstove heating and the importance of drying wood before use.
8. Once customers complete the appropriate documents and received their rebates they are directed to leave the facility through the scale house.
9. Event staff begin packing up at 3:00pm, typically the bulk of participants have come and gone by noon.

Assessment: Bounty success is tracked through the number of uncertified woodstoves received and by the number of individuals reached. Since each vehicle may contain multiple people or stoves, these factors must be tracked individually. Three woodstove bounties have occurred in Kittitas County prior to 2016. The Ellensburg transfer station hosted two bounties, one in 2012 which collected 72 woodstoves and one in 2014 which collected 67 woodstoves. The Cle Elum transfer station hosted its first woodstove bounty in 2015 and collected 104 woodstoves. The 2014 and 2015 bounties reached over 137 individuals.
Status: Complete. Future events pending further funding

Project title: Electronic Air Quality Sign
Lead Agency: Kittitas County Public Health Department
Partner Agencies: To Be Determined
Goal: Increase community awareness of current burn bans and air quality conditions.
Description: An electronic sign would provide updates to the community on current ambient $PM_{2.5}$ concentrations and burn bans. A prominent location such as the County courthouse, on CWU campus University Way or a local fire department would be ideal to reach as many community members as possible. Ideally, the sign would be automatically updated with data from the monitoring equipment at Central Washington University to cut down on staff time.
Project Methods:

1. Funding is secured to purchase and install the sign. A potential source of funding is the Environmental Protection Agency.
2. A location is selected and approved by the Kittitas County Commissioners after a set amount of time to allow for community input via comments at public hearings.
3. Students at Central Washington University create an automatic update system to connect data from monitoring equipment to the sign.
4. The sign is installed in the approved location.

Assessment: Feedback would be gathered from the community approximately a year after installation to determine effectiveness of broadcasted material and sign location. Prior to installation, a temporary billboard containing similar information as the electronic sign could be installed, with a follow up survey to determine the number of individuals reached.
Status: Pending

Project title: School Flag Program
Lead Agency: Kittitas County Public Health Department
Partner Agencies: Local schools
Goal: Promote environmental education for students and educate parents about current air quality conditions.

Description: As funding becomes available, Kittitas County will assist the local school districts with purchasing air quality flags through the Environmental Protection Agency's school flag program. These flags correspond to the Washington Air Quality Advisory (WAQA) categories and are flown based on current air quality conditions. The program will promote environmental education for students, assist the county in building relationships with schools and reach members of the community who may not otherwise participate in air quality outreach efforts.

Project Methods:

1. Funding is secured through the EPA's school flag program to purchase flags for local schools.
2. Each school will designate a staff member or student to be responsible for checking current air quality conditions and flying the appropriate flag.
3. Training and education will be provided by KCPHD to the designated flag personnel.
4. If funding allows, this program will align with an elementary or middle school education program.

Assessment: The program will be considered a success if school personnel are diligent about raising the appropriate flags with current air quality conditions. Parents will be asked for feedback pertaining to the program.

Status: Pending

Project title: Community Clean-Up Day

Lead Agency: Kittitas County Public Health Department

Possible Partner Agencies: Kittitas County Solid Waste Department, Waste Management of Ellensburg

Goal: Provide an alternative to outdoor burning for the community to reduce $PM_{2.5}$ production from outdoor burning.

Description: With appropriate funding and coordination between KCPHD, KCSW and Waste Management of Ellensburg, the Kittitas County Compost Facility would accept yard waste from the community free of charge as an incentive to compost instead of burning outdoors. Ideally, this project would become an annual event that could be combined with other education and outreach efforts.

Project Methods:

1. Draft a project proposal and interagency agreements between KCPHD, KCSW and Waste Management of Ellensburg. City governments of Ellensburg and Cle Elum may also be included.
2. Locate and acquire funding to offset processing costs for KCSW.
3. Set an appropriate date for the clean-up event. The middle of fall or spring are ideal times to collect yard waste and are times that community members are likely to burn.
4. Advertise the event through local media sources such as radio and newspaper. Flyers and posters would be distributed to local businesses and neighborhoods. Advertising would ideally take place at least two months prior to the event, one month prior, and during the last three weeks before the event.
5. Host event at the Kittitas County Compost Facility.
6. Perform a follow-up assessment as necessary.

Assessment: Success of the project would be determined by the number of households in attendance as well as the volume of material acquired during the event.

Status: Pending

Implementation Schedule

Table 3: Implementation Schedule

Project Title	Tier	Status	Date
Woodstove Change Out	3	Ongoing	2007 - Present
Smoke Complaint Response	1	Ongoing	2010 - Present
Air Quality Education Booth	2	Ongoing	2010 - Present
Woodstove Bounty	3	Pending	2012 - Present
Spanish Education Materials	1	In-Progress	2017 - 2018
Advertising Campaign	2	Pending	Fall 2017
Elementary/Middle School Education Program	2	Pending	2018
Community Clean-Up Day	3	Pending	Spring/Fall 2018
Electronic Air Quality Sign	3	Pending	2019 - 2021
School Flag Program	3	Pending	2019 - 2021

Regulatory Measures

The following measures are regulatory in action and require enforcement efforts from designated agencies. At this time, regulatory measures consist of existing practices, and laws. No new ordinances or local laws are proposed at this time. This section also includes a selection from current state law outlined in the Washington Administrative Code (WAC). More information on WAC can be found at http://apps.leg.wa.gov/WAC/default.aspx?cite=173-433&full=true. Current Washington State Law regulates agricultural burning activities, air quality burn bans and sets emission standards for solid fuel burning devices. Since Kittitas County does not have a designated clean air agency, the Washington State Department of Ecology is responsible for enforcement of air quality related WAC sections.

WAC 173-430 Washington Clean Air Act

WAC 173-430-010 –Purpose of the regulation.

Chapter 70.94 RCW, the Washington Clean Air Act, declares it is the intent of the state to protect public health and it is the policy of the state that the responsibilities and costs of protecting the air resource and operating state and local air pollution control programs be shared as equitably as possible among all sources whose emissions cause air pollution. Some of the sources whose emissions contribute to air pollution in the state include industrial sources (large and small), mobile sources such as vehicles, and area sources such as woodstoves, general outdoor burning, and agricultural burning. A variety of strategies to control and reduce the impact of emissions are described throughout chapter 70.94 RCW, including controls on emissions created from agricultural burning. The act intends that public health be protected and also allows for agricultural burning that is reasonably necessary. The act also requires that burning be restricted and regulated to address the potentially competing goals of both limiting air pollution and allowing agricultural burning. Chapter 70.94 RCW authorizes the Washington state department of ecology (ecology) and local air authorities to implement the provisions of that act related to agricultural burning. This rule establishes control strategies for agricultural burning in the state to minimize adverse health and the environmental effects from agricultural burning in accord with the most reasonable procedures to follow in safeguarding life and property under all circumstances or is reasonably necessary to carry out the enterprise or both. These strategies include:

(1) Establishing a permit program with minimum statewide requirements and specific burn authorizations.

(2) Providing for implementation of a research program to explore and identify economical and practical alternatives to agricultural burning.

(3) Encouraging and developing economically feasible alternative methods to agricultural burning.

(4) Limiting the scope of the rule to agricultural burning and distinguishing between agricultural burning and other types of burning.

(5) Providing for local administration of the permitting program through delegation.

(6) Assessing air quality within a region and incorporating this data into an evaluation tailored to emissions from agricultural burning.

(7) Making use of metering as a component of the agricultural burning permit program. Metering is a technique of limiting emissions from agricultural burning at specific times and places

by taking into account potential emission rates, forecasted weather (dispersion), and current and projected air quality.

(8) Using improved and proven technology in evaluating the conditions under which burning is authorized, including those related to meteorology, emissions, and air pollution.

(9) Providing for education and communication.

[Statutory Authority: 2010 c 70, RCW 70.94.6528 and *Ted Rasmussen Farms, LLC v. State of Washington, Department of Ecology,* Docket # 22989-1-III. WSR 10-23-049 (Order 10-05), § 173-430-010, filed 11/10/10, effective 12/11/10. Statutory Authority: RCW 70.94.650, 70.94.743, and 70.94.745. WSR 06-16-052 (Order 04-10), § 173-430-010, filed 7/26/06, effective 8/26/06. Statutory Authority: RCW 70.94.650. WSR 95-03-083 (Order 94-17), § 173-430-010, filed 1/17/95, effective 2/17/95; WSR 93-14-022 (Order 92-58), § 173-430-010, filed 6/28/93, effective 7/29/93. Statutory Authority: RCW 70.94.331. WSR 90-19-062 (Order 90-10), § 173-430-010, filed 9/17/90, effective 10/18/90; Order DE 77-20, § 173-430-010, filed 11/9/77. Formerly WAC 18-16-010.]

WAC 173-430-020 - Agricultural Burning Activities

(1) This regulation applies to burning related to agricultural activities. It does not apply to silvicultural burning or outdoor burning. For these requirements refer to:

- Chapter 173-425 WAC for outdoor burning.
- Chapter 332-24 WAC for silvicultural burning.

(2) Burning of organic debris related to agricultural activities is allowed when it is reasonably necessary to carry out the enterprise. Agricultural burning is reasonably necessary to carry out the enterprise when it meets the criteria of the best management practices and no practical alternative is reasonably available.

(3) Anyone conducting burning related to agricultural activities must comply with local fire safety laws and rules, and burn when wind takes the smoke away from roads, homes, population centers, or other public areas.

(4) Burning related to agricultural activities must not occur during an air pollution episode or any stage of impaired air quality. Definitions of air pollution episode and impaired air quality are found in WAC 173-430-030.

(5) Burning of organic debris related to agricultural activities requires a permit and fee, except for agricultural burning that is incidental to commercial agricultural activities (RCW 70.94.6524). An agricultural operation burning under the incidental agricultural burning exception must still notify the local fire department within the area and not burn during an air pollution episode or any stage of impaired air quality. The specific types of burning that qualify as exceptions to the permit requirement are:

(a) Orchard prunings. An orchard pruning is a routine and periodic operation to remove overly vigorous or nonfruiting tree limbs or branches to improve fruit quality, assist with tree canopy training and improve the management of plant and disease, and pest infestations;

(b) Organic debris along fencelines. A fenceline or fencerow is the area bordering a commercial agricultural field that is or would be unworkable by equipment used to cultivate the adjacent field;

(c) Organic debris along or in irrigation or drainage ditches. An irrigation or drainage ditch is a waterway which predictably carries water (not necessarily continuously) and is unworkable by equipment used to cultivate the adjacent field;

(d) Organic debris blown by wind. The primary example is tumbleweeds.

[Statutory Authority: 2010 c 70, RCW 70.94.6528 and *Ted Rasmussen Farms, LLC v. State of Washington, Department of Ecology,* Docket # 22989-1-III. WSR 10-23-049 (Order 10-05), § 173-

430-020, filed 11/10/10, effective 12/11/10. Statutory Authority: RCW 70.94.650, 70.94.743, and 70.94.745. WSR 06-16-052 (Order 04-10), § 173-430-020, filed 7/26/06, effective 8/26/06. Statutory Authority: RCW 70.94.650. WSR 95-03-083 (Order 94-17), § 173-430-020, filed 1/17/95, effective 2/17/95; WSR 93-14-022 (Order 92-58), § 173-430-020, filed 6/28/93, effective 7/29/93. Statutory Authority: RCW 70.94.331. WSR 90-19-062 (Order 90-10), § 173-430-020, filed 9/17/90, effective 10/18/90; Order DE 77-20, § 173-430-020, filed 11/9/77. Formerly WAC 18-16-020.]

WAC 173-430-040 - Agricultural burning requirements.

(1) Agricultural burning is allowed when it is reasonably necessary to carry out the enterprise. A farmer can show it is reasonably necessary when it meets the criteria of the best management practices and no practical alternative is reasonably available. In certain circumstances, ecology may certify an alternative to burning. Where the certified alternative is reasonably available, burning is not allowed. Certified alternatives are described in WAC 173-430-045.

(2) For allowed agricultural burning, ecology or local air authorities with jurisdiction will make daily or specific fire burn calls (during times of anticipated burning) and use metering when necessary to minimize the potential for adverse air quality impacts. Metering is a technique of limiting emission from burning at specific times and places by taking into account potential emission rates, forecasted weather (dispersion), and current and projected air quality. The burn decision process will consider: The potential number of burns and their expected size(s) and duration(s); recent and current ambient concentrations of pollutants; other potential emissions sources; and evaluations and judgments about how foreseeable meteorological conditions will affect concentrations of pollutants in the air sheds.

(a) For the purposes of this section: The smoke management index is a set of conditions that guide the production of certain reports as described in (c) of this subsection and evaluations as described in (d) of this subsection. The smoke management index is not an air quality standard as defined in RCW 70.94.030(4) and further identified in RCW 70.94.331. The smoke management index is not an emission standard as defined in RCW 70.94.030(9) and further identified in RCW 70.94.331. The smoke management index is not an air pollution episode as described in RCW 70.94.710.

(b) Ecology and local air authorities making daily or specific fire burn calls in areas where PM2.5 concentrations are regularly monitored will follow the procedures in (c) of this subsection when making the burn decision whenever either of the following smoke management index conditions exist:

(i) A most recent daily average (twenty-four-hour) PM2.5 concentration was equal to or greater than 16 micrograms per cubic meter. This is based on the division between the "good" and "moderate" classifications of the 2009 U.S. Environmental Protection Agency's Air Quality Index (AQI) for (twenty-four hours average PM2.5) particulate matter.

(ii) A two-hour rolling average PM2.5 concentration, during the most recent twenty-four to thirty hours was equal to or greater than the regional seasonal average PM2.5 concentration plus 15 micrograms per cubic meter.

(c) In authorizing additional burning, a determination will be documented explaining that the decision to allow additional burning is not expected to result in a further significant deterioration of air quality. The determination will be entered on a standard form noting the date, time, the location of the additional burning, the size of the burn(s), and a brief explanation of the opinion as to why the additional burning is not expected to result in a further, significant reduction of air quality. The purpose of the determination and recordkeeping requirements of this section is to enhance agency

and public understanding of the effectiveness of the daily burn and metering decision-making process, and to improve its application over time. A notice of the determinations will be made by ecology or a local air authority with jurisdiction at the time the daily burn decision is communicated. Ecology or a local air authority with jurisdiction will also periodically make the determination forms conveniently available to the public.

(d) Following a determination described in (c) of this subsection and a deterioration of air quality to levels equal to or greater than a two-hour rolling average concentration of the regional seasonal average PM2.5 concentration plus 25 micrograms per cubic meter in the specific area during the twenty hours following such determination, ecology or the local air authority with jurisdiction will evaluate the deterioration and document any findings and opinions regarding why the deterioration occurred. Ecology or the local air authority with jurisdiction will make evaluations under this subsection conveniently available to the public.

(e) Ecology or a local air authority with jurisdiction may evaluate emission dispersion impacts in the regular course of business. In addition, ecology or the local air authority with jurisdiction will produce an annual report summarizing determinations and evaluations under the smoke management index.

(f) Under RCW **70.94.473** and **70.94.6512**, no burning is authorized when an air quality alert, warning, emergency or impaired air quality condition has been issued.

(g) For purposes of protecting public health (not eliminating agricultural burning), if an area exceeds or threatens to exceed unhealthy air pollution levels, the permitting authority may limit the number of acres, on a pro rata basis as provided by RCW **70.94.6532** or by 70.94.6528.

(3) Except as described in WAC **173-430-020**(5), all agricultural burning requires a permit.

(a) Ecology or local air authorities with jurisdiction will provide agricultural burning application forms for agricultural burning.

(b) To qualify for an agricultural burning permit the farmer must be an agricultural operation or government entity with specific agricultural burning needs, such as irrigation districts, drainage districts, and weed control boards.

(c) Application information. A farmer must fill out the information requested on a permit application, pay the permitting fee, and submit it to the permitting authority for review and approval before burning.

(i) The application must describe the reason for burning and include at least the following information: Name and address of the person or corporation responsible for the burn, the specific location (county; legal description: Section, township, range, block and unit number), the crop type, the type or size of the burn, driving directions to the burn, specific reason for the burn, the target date for burning, a map, signature of the responsible party, and any additional information required by the permitting authority. Each permitting authority may require additional information on the application.

(ii) All applications must comply with other state or local rules.

(d) The permitting authority must evaluate the application, and approve the permit before burning.

(e) Permit decisions including the issuance, denial, or conditioning must be based on consideration of air quality conditions in the area affected by the proposed burning, the time of year, meteorological conditions, the size and duration of the proposed burning activity, the type and amount of vegetative material to be burned, the applicant's need to carry out the burning, existence of extreme burning conditions, risk of escape onto property owned by another, and the public's interest in the environment.

(f) Ecology or its delegate, or a local air authority with jurisdiction, or its delegate must approve or deny the permit in part or in whole based on information in the application.

(g) Ecology and its delegate or a local air authority with jurisdiction or its delegate may issue permits for appropriate agricultural burning activities in nonattainment areas, maintenance areas, and urban growth areas as described in RCW 70.94.6514.

(4) All agricultural burning permits require a fee.

The applicant must include the fee when submitting the application. The permitting authority will charge fees as described under WAC173-430-041.

(5) All agricultural burning permits must include conditions intended to minimize air pollution.

(a) A farmer must comply with the conditions on the agricultural burning permit.

(b) Permits must be conditioned to minimize emissions and impacts insofar as practical, including denial of permission to burn during periods of adverse meteorological conditions. When necessary as determined by ecology or the local air authorities to ensure compliance with the act, permit conditions will include at least one of the following:

- The use of a daily burn decision.
- Permit specific decisions.
- Metering.

(c) The permitting authority must:

(i) Act on a complete application (as determined by the permitting authority) within seven days of receipt.

(ii) Evaluate the application and approve or deny all or part of it.

(iii) Evaluate the application to determine if the requested burning is within the general or crop-specific best management practices.

(iv) If the permitting authority denies the application, they must state the reason for the denial.

(6) Other laws. A farmer must obtain any local permits, licenses, or other approvals required by any other laws, rules, or ordinances. The farmer must also honor other agreements entered into with any federal, state, or local agency.

[Statutory Authority: 2010 c 70, RCW 70.94.6528 and *Ted Rasmussen Farms, LLC v. State of Washington, Department of Ecology,* Docket # 22989-1-III. WSR 10-23-049 (Order 10-05), § 173-430-040, filed 11/10/10, effective 12/11/10. Statutory Authority: RCW 70.94.650, 70.94.743, and 70.94.745. WSR 06-16-052 (Order 04-10), § 173-430-040, filed 7/26/06, effective 8/26/06. Statutory Authority: RCW 70.94.656. WSR 98-12-016 (Order 97-45), § 173-430-040, filed 5/26/98, effective 6/26/98. Statutory Authority: RCW 70.94.656(4). WSR 97-03-021 (Order 96-05), § 173-430-040, filed 1/7/97, effective 2/7/97. Statutory Authority: RCW 70.94.650. WSR 95-03-083 (Order 94-17), § 173-430-040, filed 1/17/95, effective 2/17/95; WSR 93-14-022 (Order 92-58), § 173-430-040, filed 6/28/93, effective 7/29/93. Statutory Authority: RCW 70.94.331. WSR 90-19-062 (Order 90-10), § 173-430-040, filed 9/17/90, effective 10/18/90; Order DE 77-20, § 173-430-040, filed 11/9/77. Formerly WAC 18-16-040.]

WAC 173-433 Solid Fuel Burning Device Standards, Procedures and Restrictions

WAC 173-433-010 - Purpose

This chapter, promulgated under chapters 43.21A and 70.94 RCW, establishes the following for solid fuel burning devices:

- Emission standards;
- Certification standards and procedures;
- Fuel restrictions;

• Operation restrictions during impaired air quality burn bans; and
• Criteria for prohibiting the use of solid fuel burning devices that are not certified.
[Statutory Authority: Chapter 70.94 RCW. WSR 14-04-013 (Order 12-04), § 173-433-010, filed 1/23/14, effective 2/23/14. Statutory Authority: Chapters 70.94 and 43.21A RCW. WSR 88-01-056 (Order 87-44), § 173-433-010, filed 12/16/87.]

WAC 173-433-020 - Applicability

The provisions of this chapter apply to solid fuel burning devices in all areas of the state of Washington.
[Statutory Authority: Chapters 70.94 and 43.21A RCW. WSR 88-01-056 (Order 87-44), § 173-433-020, filed 12/16/87.]

WAC 173-433-100 - Emission performance standards

(1) **Woodstoves.** Woodstove sales must comply with the requirements of subsection (3) of this section, Solid fuel burning devices.
(2) **Fireplaces.** A person must not advertise to sell, offer to sell, sell, bargain, exchange, or give away a factory built fireplace unless it meets the 1990 EPA standards for woodstoves or equivalent standard that may be established by the state building code council by rule. Subsection (3) of this section does not apply to fireplaces, including factory built fireplaces, and masonry fireplaces.
(3) **Solid fuel burning devices.** A person must not advertise to sell, offer to sell, sell, bargain, exchange, or give away a solid fuel burning device in Washington unless it has been certified and labeled in accordance with procedures and criteria specified in "40 C.F.R. 60 Subpart AAA - Standards of Performance for Residential Wood Heaters" as amended through July 1, 1990, and meets the following particulate air contaminant emission standards and the test methodology of the EPA in effect on January 1, 1991, or an equivalent standard under any test methodology adopted by the EPA subsequent to such date:
(a) Two and one-half grams per hour for catalytic woodstoves; and
(b) Four and one-half grams per hour for all other solid fuel burning devices.
(c) For purposes of this subsection, "equivalent" means the emissions limits specified in this subsection multiplied by a statistically reliable conversion factor determined by ecology that relates the emission test results from the methodology established by the EPA prior to May 15, 1991, to the test results from the methodology subsequently adopted by that agency.
[Statutory Authority: Chapter 70.94 RCW. WSR 14-04-013 (Order 12-04), § 173-433-100, filed 1/23/14, effective 2/23/14. Statutory Authority: Chapter 70.94 RCW and 501-506 ESHB 1028, 1991. WSR 93-04-105 (Order 91-55), § 173-433-100, filed 2/3/93, effective 3/6/93. Statutory Authority: Chapter 70.94 RCW. WSR 91-07-066 (Order 90-58), § 173-433-100, filed 3/20/91, effective 4/20/91. Statutory Authority: RCW 70.94.331. WSR 90-19-062 (Order 90-10), § 173-433-100, filed 9/17/90, effective 10/18/90. Statutory Authority: Chapters 70.94 and 43.21A RCW. WSR 89-02-054 (Order 88-38), § 173-433-100, filed 1/3/89; WSR 88-01-056 (Order 87-44), § 173-433-100, filed 12/16/87.]

WAC 173-433-110 - Opacity standards

(1) **Statewide opacity standard.**

(a) A person must not cause or allow emission of a smoke plume from any solid fuel burning device to exceed an average of twenty percent opacity for six consecutive minutes in any one-hour period.

(b) A local air authority must not adopt or enforce an opacity level for solid fuel burning devices that is more stringent than the statewide standard.

(2) **Test method and procedures.** Methods and procedures specified by the EPA in "40 C.F.R. 60 Appendix A reference method 9 - VISUAL DETERMINATION OF THE OPACITY OF EMISSIONS FROM STATIONARY SOURCES" as amended through July 1, 1990, must be used to determine compliance with subsection (1) of this section.

(3) **Enforcement.** Smoke visible from a chimney, flue or exhaust duct in excess of the opacity standard constitutes prima facie evidence of unlawful operation of an applicable solid fuel burning device. This presumption may be refuted by demonstration that the smoke was not caused by an applicable solid fuel burning device. The provisions of this requirement shall:

(a) Be enforceable on a complaint basis.

(b) Not apply during the starting of a new fire for a period not to exceed twenty minutes in any four-hour period.

(4) **Education.** Any person or retailer providing information on the operation of solid fuel burning devices, such as brochures, demonstrations, and public education programs, should include information that opacity levels of ten percent or less are attainable through proper operation.

[Statutory Authority: Chapter 70.94 RCW. WSR 14-04-013 (Order 12-04), § 173-433-110, filed 1/23/14, effective 2/23/14. Statutory Authority: Chapter 70.94 RCW and 501-506 ESHB 1028, 1991. WSR 93-04-105 (Order 91-55), § 173-433-110, filed 2/3/93, effective 3/6/93. Statutory Authority: Chapter 70.94 RCW. WSR 91-07-066 (Order 90-58), § 173-433-110, filed 3/20/91, effective 4/20/91. Statutory Authority: RCW 70.94.331. WSR 90-19-062 (Order 90-10), § 173-433-110, filed 9/17/90, effective 10/18/90. Statutory Authority: Chapters 70.94 and 43.21A RCW. WSR 88-01-056 (Order 87-44), § 173-433-110, filed 12/16/87.]

WAC 173-433-120 - Prohibited fuel types

A person must not cause or allow any of the following materials to be burned in a solid fuel burning device:

(1) Garbage;

(2) Treated wood;

(3) Plastic and plastic products;

(4) Rubber products;

(5) Animal carcasses;

(6) Asphaltic products;

(7) Waste petroleum products;

(8) Paints and chemicals; or

(9) Any substance which normally emits dense smoke or obnoxious odors other than paper to start the fire, properly seasoned fuel wood, or coal with sulfur content less than 1.0% by weight burned in a coal-only heater.

[Statutory Authority: Chapter 70.94 RCW. WSR 14-04-013 (Order 12-04), § 173-433-120, filed 1/23/14, effective 2/23/14; WSR 91-07-066 (Order 90-58), § 173-433-120, filed 3/20/91, effective 4/20/91. Statutory Authority: RCW 70.94.331. WSR 90-19-062 (Order 90-10), § 173-433-120, filed 9/17/90, effective 10/18/90. Statutory Authority: Chapters 70.94 and 43.21A RCW. WSR 89-

02-054 (Order 88-38), § 173-433-120, filed 1/3/89; WSR 88-01-056 (Order 87-44), § 173-433-120, filed 12/16/87.]

WAC 173-433-130 - General emission standards

In addition to the general applicability of chapter 173-400 WAC to all emission sources;

(1) Emissions detrimental to persons or property. No person shall cause or permit the emission of any air contaminant from an identifiable solid fuel burning device, including any air contaminant whose emission is not otherwise prohibited by this chapter, if the air contaminant emission causes detriment to the health, safety, or welfare of a person, plant or animal, or causes damage to property or business.

(2) Odors. Any person who shall cause or allow the generation of any odor from any solid fuel burning device which may interfere with any other property owner's use or enjoyment of his property must use recognized good practice and procedures to reduce these odors to a reasonable minimum.

[Statutory Authority: Chapter 70.94 RCW. WSR 91-07-066 (Order 90-58), § 173-433-130, filed 3/20/91, effective 4/20/91. Statutory Authority: RCW70.94.331. WSR 90-19-062 (Order 90-10), § 173-433-130, filed 9/17/90, effective 10/18/90. Statutory Authority:
Chapters 70.94 and 43.21A RCW. WSR 89-02-054 (Order 88-38), § 173-433-130, filed 1/3/89.]

WAC 173-433-140 - Criteria for impaired air quality burn bans

Ecology or a local air authority may call an impaired air quality burn ban as follows:

(1) **Stage 1 impaired air quality burn ban:**

(a) Ecology or the local air authority may call a stage 1 impaired air quality burn ban when they predict that the twenty-four hour average of PM-2.5 levels will reach or exceed thirty-five micrograms per cubic meter within forty-eight hours.

(b) Pierce, Snohomish, and Yakima counties each contain at least one area at risk for nonattainment. In these counties, the local air authority may call a stage 1 impaired air quality burn ban when they predict that the twenty-four hour average of PM-2.5 levels will reach or exceed thirty micrograms per cubic meter within seventy-two hours.

(2) **Stage 2 impaired air quality burn ban:**

(a) Ecology or the local air authority may call a stage 2 impaired air quality burn ban when all of the following conditions exist:

(i) A stage 1 impaired air quality burn ban is already in effect and has not reduced the trend of rising PM-2.5 levels adequately.

(ii) The twenty-four hour average of PM-2.5 levels have already reached or exceeded twenty-five micrograms per cubic meter.

(iii) Ecology or the local air authority expects that PM-2.5 levels will remain above twenty-five micrograms per cubic meter for twenty-four hours or more from the time PM-2.5 levels reached the trigger in (a)(ii) of this subsection.

(b) Ecology or the local air authority may call a stage 2 impaired air quality burn ban without calling a stage 1 impaired air quality burn ban when all of the following conditions exist:

(i) The twenty-four hour average of PM-2.5 levels have reached or exceeded twenty-five micrograms per cubic meter.

(ii) PM-2.5 levels have risen rapidly.

(iii) Ecology or the local air authority predicts that the twenty-four hour average of PM-2.5 levels will exceed thirty-five micrograms per cubic meter within twenty-four hours.

(iv) Weather conditions alone are highly unlikely to help decrease PM-2.5 levels sufficiently.

(c) Pierce, Snohomish, and Yakima counties each contain at least one area at risk for nonattainment. In these counties, the local air authority may call a stage 2 impaired air quality burn ban without calling a stage 1 impaired air quality burn ban when all of the following conditions exist:

(i) The twenty-four hour average of PM-2.5 levels have reached or exceeded twenty-five micrograms per cubic meter.

(ii) PM-2.5 levels have risen rapidly.

(iii) The local air authority predicts that the twenty-four hour average of PM-2.5 levels will reach or exceed thirty micrograms per cubic meter within twenty-four hours.

(iv) Weather conditions alone are highly unlikely to help decrease PM-2.5 levels sufficiently.

(3) Ecology or the local air authority may call an impaired air quality burn ban for areas smaller than a county, when and where feasible.

[Statutory Authority: Chapter 70.94 RCW. WSR 14-04-013 (Order 12-04), § 173-433-140, filed 1/23/14, effective 2/23/14; WSR 91-07-066 (Order 90-58), § 173-433-140, filed 3/20/91, effective 4/20/91.]

WAC 173-433-150 - Restrictions on operation of solid fuel burning devices

(1) **Stage 1 impaired air quality burn ban:**

(a) Except as described in (b) of this subsection, a person must not operate any solid fuel burning device during a stage 1 impaired air quality burn ban when all of the following apply:

- The solid fuel burning device is located in a residence or commercial establishment within the geographical area covered by the stage 1 impaired air quality burn ban.
- The residence or commercial establishment has an adequate source of heat other than a solid fuel burning device.

(b) A person meeting all of the conditions in (a) of this subsection must not operate any solid fuel burning device during a stage 1 impaired air quality burn ban unless the solid fuel burning device is one of the following:

(i) A nonaffected pellet stove; or

(ii) A woodstove certified and labeled by the EPA under "40 C.F.R. 60 Subpart AAA - Standards of Performance for Residential Wood Heaters" as amended through July 1, 1990; or

(iii) A woodstove meeting the "Oregon Department of Environmental Quality Phase 2" emissions standards contained in Subsections (2) and (3) of Section 340-21-115, and certified in accordance with "Oregon Administrative Rules, Chapter 340, Division 21 - Woodstove Certification" dated November 1984.

(c) Except as allowed by (b) of this subsection, a person already operating a solid fuel burning device when a stage 1 impaired air quality burn ban begins must withhold new solid fuel for the duration of the impaired air quality burn ban.

(2) **Stage 2 impaired air quality burn ban:**

(a) A person must not operate any solid fuel burning device during a stage 2 impaired air quality burn ban when all of the following apply:

• The solid fuel burning device is located in a residence or commercial establishment within the geographical area covered by the stage 2 impaired air quality burn ban.

• The residence or commercial establishment has an adequate source of heat other than a solid fuel burning device.

(b) A person already operating a solid fuel burning device when a stage 2 impaired air quality burn ban begins must withhold any new solid fuel for the duration of the stage 2 impaired air quality burn ban.

(3) **Air pollution episodes.** Ecology may declare air pollution episodes as defined in chapter 173-435 WAC.

(a) A person must not operate any solid fuel burning device during alert, warning, or emergency air pollution episodes when all of the following apply:

• The solid fuel burning device is located in a residence or commercial establishment within the geographical area covered by the air pollution episode.

• The residence or commercial establishment has an adequate source of heat other than a solid fuel burning device.

(b) A person already operating a solid fuel burning device when an alert, warning, or emergency air pollution episode begins must withhold new solid fuel for the duration of the alert, warning, or emergency air pollution episode.

(4) The following matrix graphically illustrates the applicability of different types of solid fuel burning devices to the provisions of subsections (1) through (3) of this section:

Type of Device	Impaired Air Quality Burn Ban		Episode			
	First Stage	Second Stage	Forecast	Alert	Warning	Emergency
Pellet Stove (nonaffected)	OK	NO	OK	NO	NO	NO
EPA Certified Woodstove	OK	NO	OK	NO	NO	NO
DEQ Phase 2 Woodstove	OK	NO	OK	NO	NO	NO
EPA Exempted Device	NO	NO	OK	NO	NO	NO
All Other Devices	NO	NO	OK	NO	NO	NO

NOTES: "OK" indicates that a person may operate the device
"NO" indicates that a person must withhold new fuel from the device

(5) Smoke visible from a chimney, flue or exhaust duct after three hours has elapsed from the declaration of the episode or impaired air quality burn ban constitutes prima facie evidence of unlawful operation of an applicable solid fuel burning device. A person may refute this presumption with a demonstration that the smoke was not caused by a solid fuel burning device.

(6) Ecology, local air authorities, health departments, fire departments, or local police forces having jurisdiction in the area may enforce compliance with the air pollution episode or impaired air quality burn ban after three hours has elapsed from the declaration of the air pollution episode or impaired air quality burn ban.

[Statutory Authority: Chapter 70.94 RCW. WSR 14-04-013 (Order 12-04), § 173-433-150, filed 1/23/14, effective 2/23/14; WSR 91-07-066 (Order 90-58), § 173-433-150, filed 3/20/91, effective 4/20/91. Statutory Authority: RCW 70.94.331. WSR 90-19-062 (Order 90-10), § 173-433-150,

filed 9/17/90, effective 10/18/90. Statutory Authority: Chapters 70.94 and 43.21A RCW. WSR 88-01-056 (Order 87-44), § 173-433-150, filed 12/16/87.]

WAC 173-433-155 - Criteria for prohibiting solid fuel burning devices that are not certified

(1) After January 1, 2015, and after meeting the requirements in subsection (3) of this section, ecology or the local air authority may prohibit the use of solid fuel burning devices in a nonattainment area or an area with an approved PM-2.5 maintenance plan.

(2) Except as provided in subsection (3) of this section, the prohibition will prohibit the use of solid fuel burning devices that are not certified, even in the absence of an air quality episode or impaired air quality burn ban.

(3) Before prohibiting the use of solid fuel burning devices as allowed in subsections (1) and (2) of this section, ecology or a local air authority must:

(a) Allow exemptions from this subsection as described in RCW 70.94.477(2) and 70.94.477(6).

(b) Seek input from any city, county, or jurisdictional health department affected by the proposal to prohibit the use of solid fuel burning devices.

(c) Make the following written findings:

(i) The EPA has designated the area nonattainment for PM-2.5 or has approved a PM-2.5 maintenance plan for the area.

(ii) Emissions from solid fuel burning devices in the area are a major contributing factor for violating the national ambient air quality standard for PM-2.5.

(iii) The area has an adequately funded program to assist low-income households to secure an adequate source of heat.

(4) When both of the following are true:

- The area is in ecology's jurisdiction.
- The legislative authority of a city or county for the area formally expresses concerns with the written findings required in subsection (3)(c) of this section.

Ecology will publish all of the following on the agency web site:

(a) The reasons for prohibiting the use of solid fuel burning devices.

(b) The agency's responses to the concerns expressed by the city or county legislative authority.

(5) The responsibility for enforcement of the prohibition of the use of solid fuel burning devices resides solely with ecology or the local air authority.

(6) A city, county, or jurisdictional health department serving the area may agree to assist with enforcement activities.

(7) On or after June 7, 2012, and before January 1, 2015, ecology or the local air authority must provide assistance to households using solid fuel burning devices to reduce the emissions from those devices or change out to a lower emission device.

(8) Before the effective date of any prohibition, ecology or the local air authority must provide public education in the area regarding all of the following:

(a) How households can reduce their emissions through cleaner burning practices.

(b) The importance of respecting impaired air quality burn bans.

(c) Opportunities for assistance in obtaining a cleaner device.

(9) In an area where the EPA has approved a PM-10 maintenance plan, ecology or the local air authority may prohibit the use of solid fuel burning devices when all of the following are true:

(a) The PM-10 maintenance plan contained a prohibition on the use of solid fuel burning devices as a contingency measure.

(b) The area has violated the PM-10 national ambient air quality standard.

(c) The emissions from solid fuel burning devices are a major contributing factor to the violation of the PM-10 national ambient air quality standard.
[Statutory Authority: Chapter 70.94 RCW. WSR 14-04-013 (Order 12-04), § 173-433-155, filed 1/23/14, effective 2/23/14.]

Appendices

Appendix A

Annual schedule of events for Air Quality Education booth

Event Name	Date(s)	Location	Description	Registration Fee
KEEN Winter Fair	January 28th, 2017	Hal Holmes Center 4th and Ruby Street, Ellensburg WA	Environmental and Community educational showcase	$35
Spirit of the West	February 17th-19th 2017	Kittitas County Fairgrounds and Downtown Ellensburg	A celebration of music, poetry and art. Attracts over 4,000 visitors.	Free
KXLE Home and Garden Show	March 3rd-5th, 2017	Kittitas County Fairgrounds 901 E. 7th Ave, Ellensburg, WA 98926	Home and Garden Show $2 admission Features vendors specializing in home improvement, décor, lawn and garden.	$599 (indoor booth) $1200 + (outdoor booth)
Ellensburg Farmer's Market	May-October Saturdays 9am-1pm	4th avenue between Pearl and Ruby	Farmer's Market	Unknown
Roslyn Farmer's Market	June-September Sundays 10am-2pm	Pennsylvania Ave, Roslyn WA	Farmer's Market	Unknown
Kittitas Valley Early Iron Club – Annual Threshing Bee and Antique Equipment Show	September	Olmstead Place State Park 921 Ferguson Road Ellensburg, WA 98926		Unknown

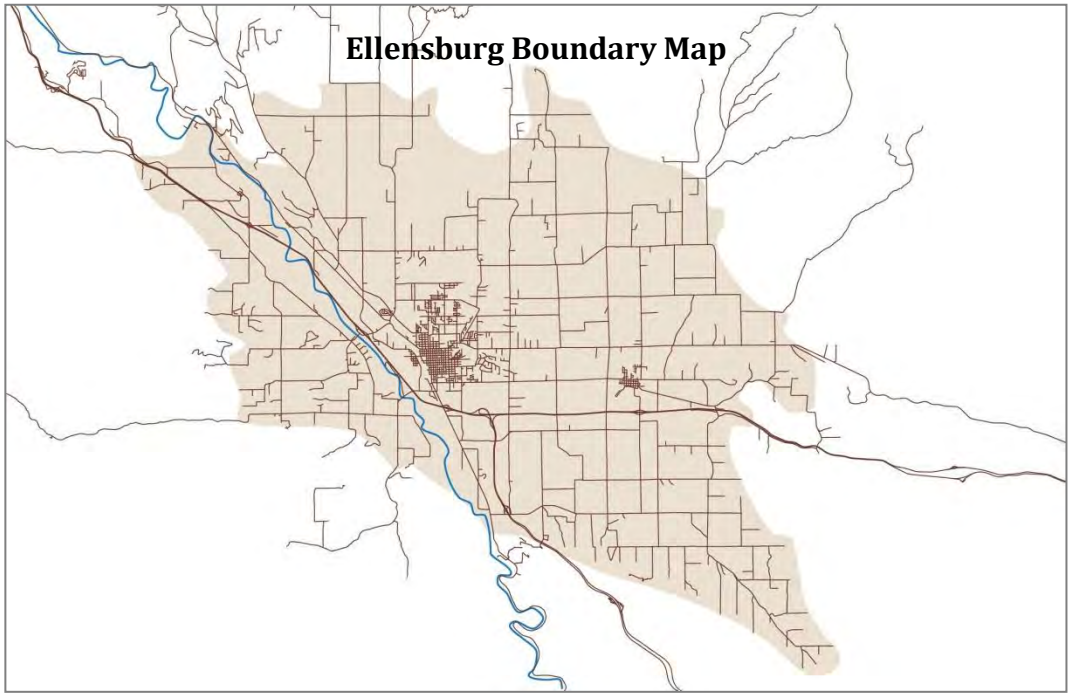
Annual schedule of events for Air Quality Education booth - Continued

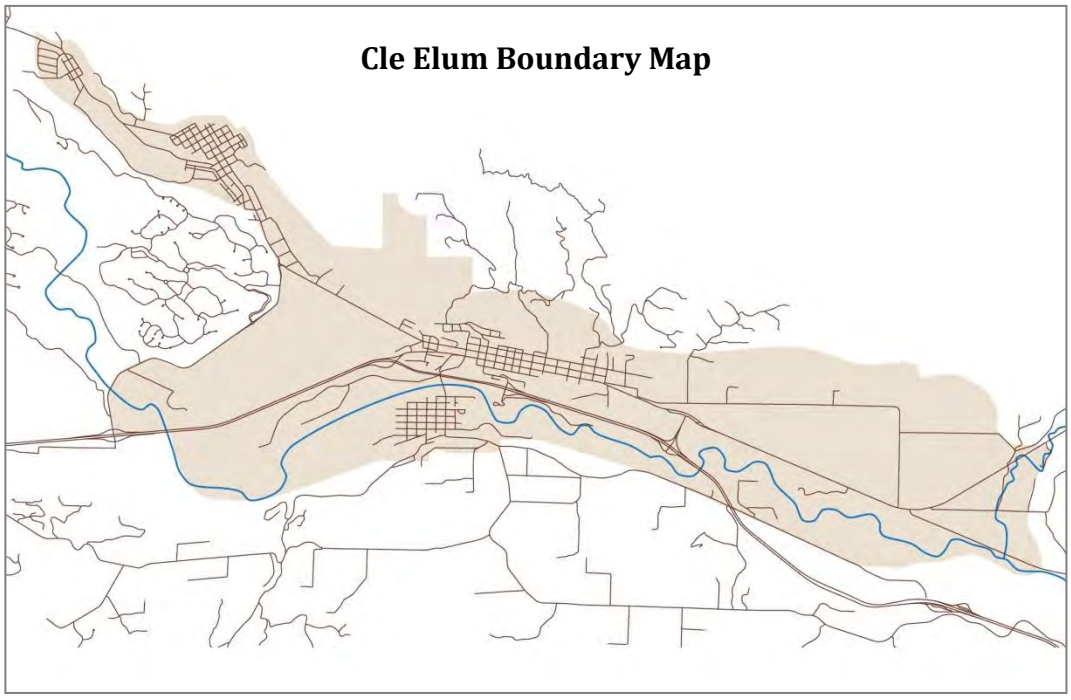
Thorp Community Days	Sept. 30th – October 1st	Thorp Fire Station 10700 N Thorp Hwy	Community Festival in Thorp Free Admission	Unknown
Junk-Tiquen in the Burg	Oct-17 Apr-17	Kittitas County Fairgrounds 901 E. 7th Ave, Ellensburg, WA 98926	Antiques show $5 admission Free Parking	Unknown
Ellensburg Fall Festival/	October	6181 Wilson Creek Road,	U-pick pumpkin patch, corn maze,	Unknown
Huffman Farms	Every Sat/Sun	Ellensburg, WA 98926	Free Admission	
Hunter's Breakfast	October	Swauk Teanaway Grange 1361 Ballard Hill Rd. Cle Elum, WA 98922	Paid breakfast, raffle items, live music to celebrate the opening of hunting season	Unknown
District 7 Fire Department Firewise Event	Unknown	Kittitas County Fire and Rescue 123 E 1st St, Cle Elum, WA 98922		Unknown
Local Fire Department "Open Houses"	Unknown			Unknown

Appendix B

HopeSource woodstove exchange program residential boundaries, 2015-2017 grant cycle

Source: HopeSource-Ellensburg, Accessed 01/05/2017





Appendix C

Wood Stove Bounty Event Costs 2014, Ellensburg Transfer Station

Source: 2014 Bounty Report Ellensburg, Provided by Washington State Department of Ecology, Central Regional Office, Smoke Management Team

Location	Partner with Kittitas County for this event	Free
CRO Personnel*	Day of event: 2 x 10 staff hours, + 1 x 6.5 staff hours =	$3580.00
WCC	Crew time – Approx. =	$577.50
Volunteers	2 – KCPH, 2 KCFR	Free
Lodging	None	None
Meals	Lunch – per diem for ECY staff plus WCC =	$76.52
Transportation	Motor pool – 72 miles RT x 2 vehicles (rough estimate)	$30.00
Advertising	Flyers/Posters – Minuteman Press Radio Announcements - KXLE Newspaper Ad - Ellensburg Daily Record	$53.07 $336.00 $779.44
Bounty Total	67 wood stoves at $200 each	$13,400.00
Survey Incentive	$50 to two participants determined by random number	$100.00
Approx. Cost		**$18,933.00**

* Personnel costs included in the table are only those worked the day of the event.

Sources

"County Population." Kittitas County Washington. Kittitas County, 2015. Web. 23 Feb. 2017.

Fuller, Amy. *Kittitas County Air Quality Survey.* Rep. Ellensburg: KCPHD, 2014. Print.

Fuller, Amy, and Daniel Hinz. *2015 Air Quality Survey Results Report*. Rep. Ellensburg: KCPHD, 2015. Print.

Hinz, Daniel. "Final Report: Kittitas County Public Health Department (KCPHD) Interagency Agreement Report for Air Quality Project # C1400161 Washington State Department of Ecology." May 2015, Print.

"History." Ellensburg, WA - History. City of Ellensburg, Washington, 2006-2017. Web. 11 Jan. 2017.

"Kittitas County History" Kittitas County Historical Museum, Ellensburg, WA. N.p., 2017. Web. 11 Jan. 2017. <http://www.kchm.org/kittitas-county-history.php>.

Meseck, Don. "Kittitas County Profile." Kittitas County Profile. Employment Security Department, Washington State, Sept. 2016. Web. 23 Feb. 2017.

"NAAQS Table." EPA. Environmental Protection Agency, 20 Dec. 2016. Web. 14 Feb. 2017.

"Particle Pollution (PM)." Particle Pollution (PM). Air Now, 31 Jan. 2017. Web. 14 Feb. 2017.

Summers, Stephanie. Emissions Inventory Kittitas County Updated 2014. Rep. Lacey, WA: Washington State Department of Ecology, 2016. Print.

Read, Robin. The Health of Kittitas County: A Profile of Health, Well-being, and Quality of Life in Our Community. Rep. Ellensburg: KCPHD, 2012. Print.

US Census. United States Census Bureau, 2010. Web. 07 Dec. 2016.

Washington State Department of Ecology: Air Quality Program. Health Effects and Economic Impacts of Fine Particle Pollution in Washington. Publication number:09-02-021. December 15,2009.

Washington State Department of Health, Center for Health Statistics, Death Certificate Data, 1990–2015, August 2016.

Figure Sources

Cover Page Images

Carmony, Jay. Washington State Department of Ecology, Central Regional Office. View of Ellensburg, Manastash Ridge Viewpoint. 2011. Ellensburg, WA. N.p.: n.p., n.d. N. pag. Print.

Air Monitoring Station, Grand Isle State Park Louisiana. 2016. EPA Web Archive, Grand Isle, Louisiana. Air Data from the Gulf Coastline. Web. 23 Feb. 2017.

Himmel, John. Taylor Bridge Fire. 2012. Ellensburg, WA.

Weather Striped Air Bag Wind Sock Sky. N.d. Max Pixel. Web. 23 Feb. 2017.

Figure 1

"Kittitas County, Washington." Google Maps. N.p., n.d. Web. 23 Feb. 2017.

Figure 2

"County Population." Kittitas County Washington. Kittitas County, 2015. Web. 23 Feb. 2017.

Figure 3

Carmony, Jay. Washington State Department of Ecology, Central Regional Office. View of Ellensburg, Manastash Ridge Viewpoint. 2011. Ellensburg, WA. N.p.: n.p., n.d. N. pag. Print.

Figure 4

"Particle Pollution (PM)." Particle Pollution (PM). Air Now, 31 Jan. 2017. Web. 14 Feb. 2017.

Figure 5

Washington State Department of Ecology. Air Monitoring Data, Kittitas County Updated 2014. Rep. Lacey, WA: Washington State Department of Ecology, 2016. Print.

Figure 6

Washington State Department of Ecology. Air Monitoring Data, Kittitas County Updated 2014. Rep. Lacey, WA: Washington State Department of Ecology, 2016. Print.

Figure 7

Summers, Stephanie. Emissions Inventory Kittitas County Updated 2014. Rep. Lacey, WA: Washington State Department of Ecology, 2016. Print.

Table Sources

Table 1

"NAAQS Table." EPA. Environmental Protection Agency, 20 Dec. 2016. Web. 14 Feb. 2017.

Table 2

Read, Robin. The Health of Kittitas County: A Profile of Health, Well-being, and Quality of Life in Our Community. Rep. Ellensburg: KCPHD, 2012. Print.

DUST AND EROSION CONTROL

Dust

Mitigating measures to control air-related impacts during construction include compliance with contract specifications, watering of construction areas to reduce dust and particulate matter, and compliance with federal, state, and local air quality requirements.

Erosion Control

During construction, the contractor will employ construction-related storm water best management practices such as silt fences, straw bales, check dams, or settling ponds to control erosion and to prevent construction-related storm water from leaving the site.

Noise Abatement and Control

Noise in the project area will not change as a result of the project. The improved wastewater treatment plant, water reservoir, and water treatment facility will not result in any increase or decrease in noise within the project area.

On a short-term basis, noise levels will increase as a result of construction activities. Construction noise is anticipated to be from 7:00 a.m. to 7:00 p.m.

Farmland Protection

According to the U.S. Department of Agriculture Natural Resource Conservation Service (USDA-NRCS),

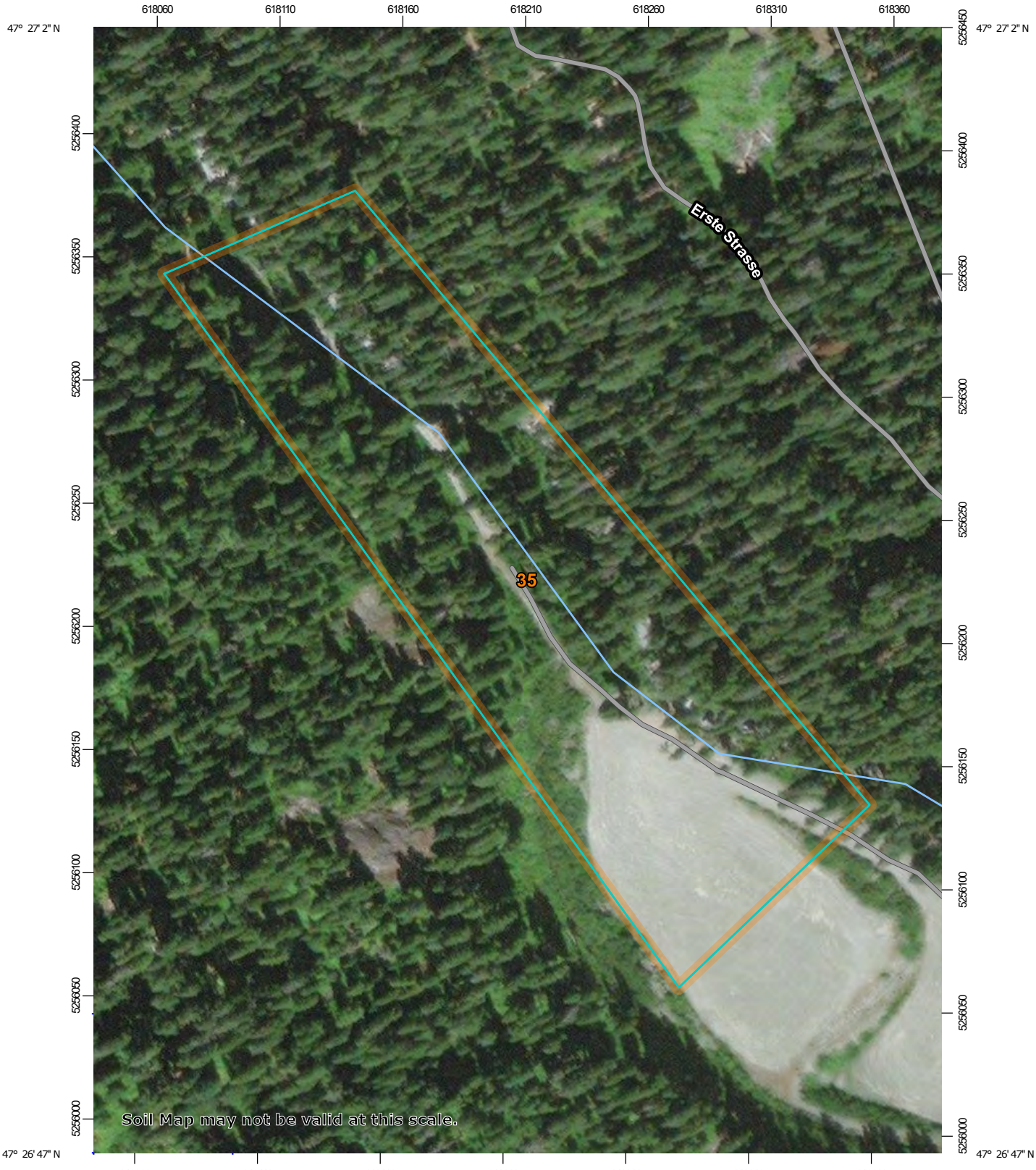
The soil type found within the project boundary is Chickmin ashy sandy loam:

> Chinkmin ashy sandy loam is a 20 to 40-inch deep to a dense cemented layer which limits water movement and root penetration. Steep slopes in many areas impact forest management. layer that is moderately drained located in cirques, valley, and on lateral moraines in elevations between 2,500 to 6,000 feet.
>
> Uses include timber production, wildlife habitat, and watershed (store water as snowpack in winter for summer use).
>
> Natural vegetation is Pacific Silver fir, noble fir, western hemlock, Douglas fir, Alaska cedar, mountain hemlock and subalpine fir. Understory includes huckleberry, snowberry, salmonberry, dogwood, white rhododendron, Cascades azalea, heather, and Sitka mountain ash

The project property is historically been a forest. No farmlands, prime or otherwise, are located within the project. The project elements involve replacement of existing urban infrastructure (water and wastewater treatment facilities). Completion of the project will not hasten or encourage conversion of any farmland to other uses.

Source of the soils information is *Washington Soil Atlas* (Karl W. Hipple).

Soil Map—Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties)
(SPUD Water Reservoir)



Map Scale: 1:2,230 if printed on A portrait (8.5" x 11") sheet.

N

Meters
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Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties)
Survey Area Data: Version 21, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

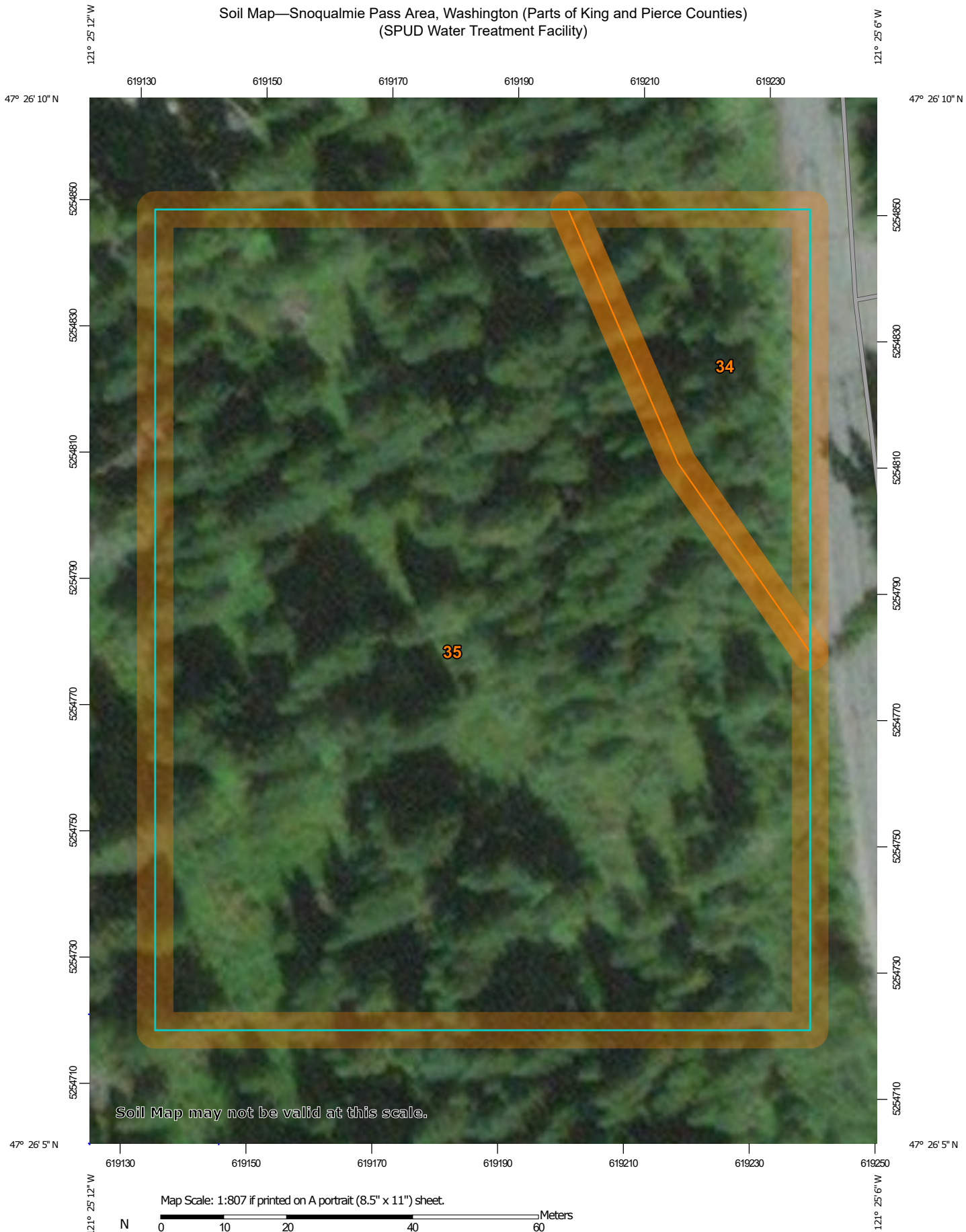
Date(s) aerial images were photographed: Sep 5, 2014—Aug 28, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
35	Chinkmin sandy loam, 15 to 30 percent slopes	8.0	100.0%
Totals for Area of Interest		**8.0**	**100.0%**

Soil Map—Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties)
(SPUD Water Treatment Facility)



Map Scale: 1:807 if printed on A portrait (8.5" x 11") sheet.

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Meters
0 10 20 40 60

Feet
0 35 70 140 210

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

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- Area of Interest (AOI)

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- Soil Map Unit Lines
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- Closed Depression
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- Sinkhole
- Slide or Slip
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Water Features
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- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties)
Survey Area Data: Version 21, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 5, 2014—Aug 28, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
34	Chinkmin sandy loam, 0 to 15 percent slopes	0.4	11.2%
35	Chinkmin sandy loam, 15 to 30 percent slopes	3.0	88.8%
Totals for Area of Interest		**3.4**	**100.0%**

Soil Map—Kittitas County Area, Washington
(SPUD WWTP)

Map Scale: 1:1,580 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

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The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kittitas County Area, Washington
Survey Area Data: Version 12, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 5, 2014—Aug 28, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
187	Chinkmin ashy sandy loam, 5 to 30 percent slopes	7.2	87.7%
241	Thetis ashy sandy loam, 25 to 45 percent slopes	1.0	12.3%
Totals for Area of Interest		**8.2**	**100.0%**

Environmental Justice

The project is intended to improve the District's wastewater treatment and water distribution facilities. This project will not cause the relocation of, or encourage the relocation of any minority persons, nor will it eliminate any housing units from the project area.

Explosive and Flammable Operations

Above ground propane tanks to serve homes and businesses are common within 1 mile of the project site and are considered to be a low risk. As part of the MBR WWTP, and new propane tank, sized for the building heating loads, is planned to be installed.

Toxic Chemicals and Radioactive Materials

Toxic Chemicals
There are no known toxic chemical facilities near the project site.

Radioactive Materials
There are no known radioactive materials near the project site.

SNOQUALMIE PASS UTILITY DISTRICT

SERVICE AREA ZONING MAP

N E S W

Feet
0 500 1,000 2,000

MBR WWTP

WATER TREATMENT FACILITY

NEW WATER TANK

LEGEND

- Service Area
- County Line
- Commercial
- Future Development 1
- Future Development 2
- Forest
- Light Industrial
- Residential
- Road
- Rural Recreation
- Water

Snoqualmie Pass Utility District

HLA Engineering and Land Surveying, Inc.
2803 River Road ♦ Yakima, Washington 98902 ♦ (509) 966-7000
www.hlacivil.com

11-25-2019
P:\Arcview\2019\19153\Fig1-3.mxd

Airport Clear Zones and Accident Potential

There are no civilian airports located within the Snoqualmie Pass service area. The nearest civilian airport is the Bandara State Airport located 6 miles to the west of the project location.

The nearest military air facility is located at the McChord Aireforce Base, approximately 54 miles southwest of the project location.

There will be no road impediment due to the proposed improvements. All improvements shall be on District land and not in District R-O-W with minimal impact to streets and traffic.