



RE: Docket # CL17-494-000 and Docket # CL17-495-000

June 30, 2019

Dear Members of the Federal Energy Regulatory Commission:

Thank you for this opportunity to submit comments regarding the Jordan Cove Energy Project and the Pacific Connector Gas Pipeline on behalf of Oregon Physicians for Social Responsibility (Oregon PSR). Guided by the values and expertise of medicine and public health, Oregon PSR works to protect human life from the gravest threats to health and survival. We represent over 2,000 health professionals and public health advocates. We work with community partners to educate and advocate for societal and policy change that protects human health at the local, state, national and international level. We seek a healthy, just, and peaceful world for present and future generations.

We request that you deny the request for an Authorization and Certificate of Public Convenience and Necessity for Jordan Cove LNG / Pacific Connector Gas Pipeline because 1) there is no public need for the project and 2) the project would result in many significant, negative and unmitigable impacts to public health, safety, clean air, clean water, healthy forests, and a stable climate. This comment is focused on the direct and indirect threats to clean and affordable drinking water posed by this project. We will submit additional comments pertaining to a multitude of other severe threats posed by this project.

Interfering with Public Health and Safety of Oregon Drinking Water Sources and Systems

Oregon PSR agrees with Oregon DEQ and the 2018 Oregon Public Water Systems Resource Guide for Drinking Water Source Protection V1:

“Oregon faces many challenges with water quantity, water quality, and ecosystem needs. Oregon’s people rely upon water to drink, to irrigate and grow food, to supply livestock, to build products, to move goods, to recreate, to produce energy. Clean water is essential

to Oregon’s environmental health—for the trees, native plants, wetlands, aquatic life, and human health. Oregon’s economy is also highly dependent upon a healthy environment and clean, reliable sources of water.

As Oregon’s population grows, the importance of high quality drinking water sources to meet the demands of that population will increase. Ensuring high quality sources of water is essential for providing clean drinking water to agricultural growers/ranchers, rural homeowners, businesses, and urban communities of all sizes...”

We also concur with the following statements from the same document:

“Pollution prevention is fundamentally different from pollutant removal or treatment. Many studies have shown that **it is more cost-effective to prevent pollution in the environment than to remove it through treatment or implement restoration.** Reducing or eliminating off-site releases of pollutants through protection and prevention activities can effectively lower treatment and maintenance costs for public water providers, and improve long-term viability of groundwater drinking water sources (Freeman et al 2008). Reducing pollutant loading to source water can reduce the need for equipment replacement or upgrades, as well as reduce risks associated with many contaminants (including ones known to be toxic, persistent, and/or bio-accumulative) where regulatory standards and/or monitoring requirements may be lacking. Long-term assurances of a safe and adequate drinking water supply also helps to protect property values and preserve the local and regional economic growth potential for the area...

Pollution prevention can help protect public health, enhance public confidence in their drinking water, and reduce the need for expensive treatment in both surface water and groundwater.”

Oregon PSR has strong concerns about the severe, negative, unmitigable impacts to water and water resources of the State of Oregon and the U.S. which will result from the proposed Pacific Connector Gas Pipeline (PCGP) and the Jordan Cove Energy Project (JCEP). We therefore oppose the project and request that FERC deny the Certificate of Need for Jordan Cove LNG / Pacific Connector Gas Pipeline. Our reasons include, but are not limited to, the following concerns:

The proposed JCEP and PCGP have vast potential to degrade water quality and water quantity on public land, private land and tribal land for drinking water and other beneficial uses. The proposed project will have short term and long term, direct and indirect, and cumulative adverse impacts on clean, safe water. The project will adversely affect equitable access to clean water and the resources that depend on water for their existence including human communities, businesses, aquatic species, wildlife, livestock and agriculture.

We believe that construction, operation and maintenance of the project will lead to

degraded source waters, decreased integrity of water treatment systems, disruption of water supplies, temporary loss of drinking water, and increased costs of water treatment and/or delivery. At worst, some sources of safe and clean drinking could be permanently lost.

As you know, assuring safe drinking water depends on public water suppliers implementing multiple successful practices. “First, protect the drinking water source...Source water protection is an important first step because starting with the best possible quality source water helps assure that water treatment can be effective at all times.” (Multiple Source Water Assessments, Oregon DEQ /Oregon Health Authority)

Many public drinking water sources are located in watersheds near the project and along the route of the proposed pipeline. They include sensitive areas with high soil permeability, high soil erosion potential, high runoff potential and areas within 1000' from the river/streams. The sensitive areas are those where the potential contamination sources, if present, have a greater potential to impact the water supply. The PCGP, if built, would be a massive source of contamination threatening a large number of these municipal watersheds.

Oregon DEQ and the Oregon Health Authority, in describing water contamination, state, “Whether or not a particular drinking water source becomes contaminated depends on three major factors: 1) the occurrence of a land use/activity that releases contamination, 2) the location of the release, and 3) the hydrologic, ecological, and/or soil characteristics in the source area that allow the transport of the contaminants to the waterbody and thereby the intake. (DEQ and OHA: Oregon Public Water Systems Surface Water Resource Guide for Drinking Water Source Protection, February 2018, V1 p. 20)

The susceptibility of the public drinking water source depends on both the natural conditions in the watershed as well as the anthropogenic activities in the watershed.

According to the Guide, human factors affecting water quality include:

- Human activities and facilities within riparian areas
- Road locations and conditions, especially stream crossings, roads near streams, roads on steep slopes, and roads with drainage systems connected to the stream network
- Stormwater runoff from vulnerable areas (areas with high phosphorus or nitrogen content, for example)
- Recently managed forestland which has been harvested, replanted, treated with herbicides

- Quarries and associated infrastructure
- Construction sites
- Hazardous material sites
- Industrial sites
- Solid waste landfill sites

Each of these activities will be part of this proposed project.

According to the Guide (p.18), some locations on the landscape are more sensitive to disturbances. They include:

- Riparian areas
- Springs, seeps and wetlands
- Steep slopes (>70-85%)
- Floodplains
- Areas with highly-erodible soil
- Any areas with disturbed or bare soil
- High water table areas

The proposed massive pipeline, with its 229 mile path, would blast rock and hillsides, clearcut, and destroy vegetation in each of these sensitive areas in many municipal watersheds further described in this comment letter.

Potential high-risk impacts of proposed PCGP and JCEP activities on the waters of the Oregon and the US include, but are not limited to:

- increased water temperature from loss of forest cover and riparian area buffers
- increased erosion from loss of forest cover and riparian areas leading to increased sediment and turbidity
- increased use of chlorine due to higher turbidity levels, leading to increased disinfection by-products that carry their own health risks
- contamination of water and contamination of soil that leaches into water by oil, lubricants, fracking chemicals
- “frac-out” contamination of water by drilling fluids, methane, volatile organic compounds
- movement of non-native species into watersheds on tires of vehicles and on boats

- fires due to construction and blasting accidents
- massive fires due to rupture or failure of the pipeline
- wildfire leading to pipeline explosion leading to larger wildfire
- water contamination through accidental application of fire suppressants/retardants
- post-fire slope failures, debris flows, landslides, increased turbidity, loss of drinking water, increased cost for replacement of drinking water, increased costs for water treatment
- disruption of surface water connection with ground water (from blasting and water diversions)
- disruption of ground water connection with wells and surface water (from blasting and water diversions)
- contamination of water by herbicides like picloram (to maintain right-of-way free of vegetation on and near the pipeline route)
- contamination of water by intensive use of fertilizers to seed cleared area around pipeline
- increased incidence of Harmful Algal Blooms

Chemical Applications

Applications of picloram and other herbicides to clear vegetation increase risks to clean water. Picloram is quite persistent in the environment. According to the EPA:

- Picloram has a high potential to contaminate surface water by runoff from use areas. (pg 6).
- Picloram is highly soluble in water, resistant to biotic and abiotic degradation processes, and mobile under both laboratory and field conditions. It is stable to hydrolysis and anaerobic degradation, and degrades very slowly with half-lives ranging from 167 to 513 days. (pg. 5)
- EPA is concerned about degradation of water quality in picloram use areas. Eventual contamination of ground water is virtually certain in areas where picloram residues persist in the overlying soil. Once in ground water, picloram is unlikely to degrade, even over a period of several years." (pg. 5)

(See: https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/fs_PC-005101_1-Aug-95.pdf)

The Jordan Cove Energy Project and Pacific Connector Gas Pipeline, if built, will degrade water *quality and quantity*.

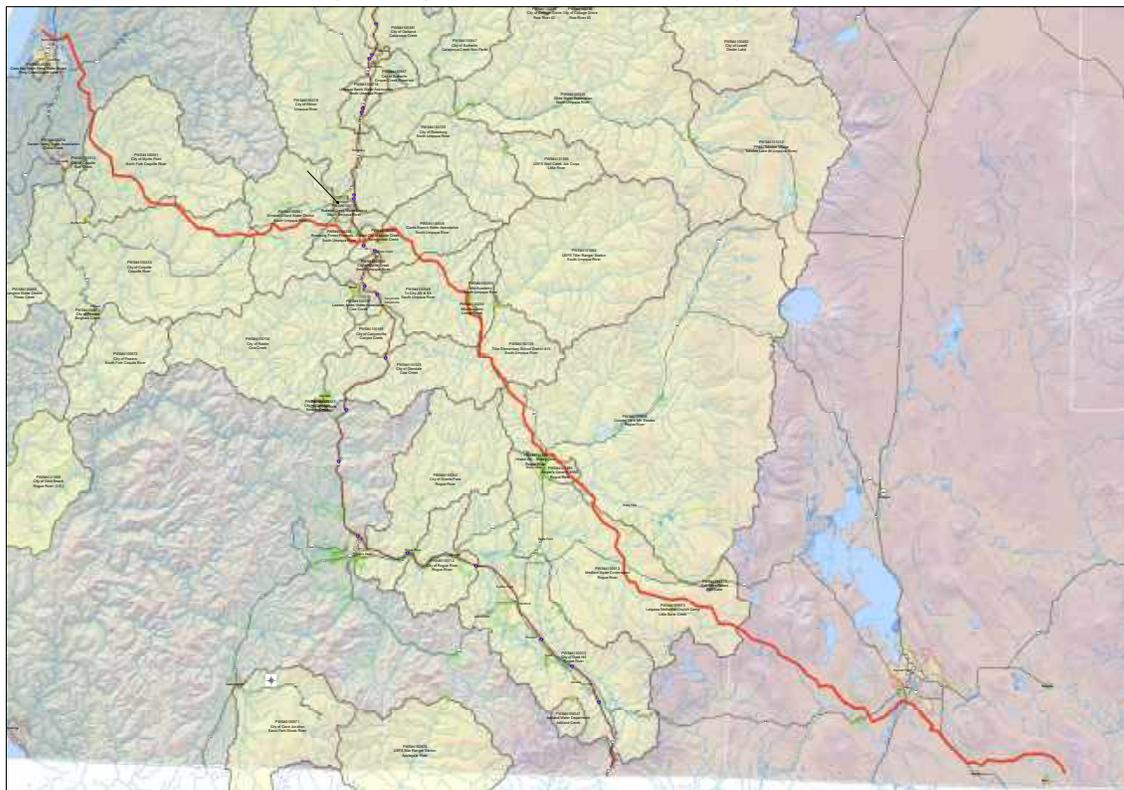
An examination of the multiple municipal drinking water systems reveals existing sensitivities and serious risks this project brings to these watersheds and those residents and businesses that rely on clean drinking water. Many are already sensitive to contaminants of concern, including microbiological contamination, nutrients and harmful algal blooms, erosion and turbidity. Many have already invested in expensive technology to clean and disinfect water.

Watersheds that could be degraded by this project include, but are not limited, to those that provide water to the City of Coquille, Myrtle Point, Myrtle Creek, Medford, Eagle Point, Central Point, Jacksonville, Phoenix, Talent, Shady Cove, Anglers Cove, Tri-City JW and SA, Clarks Branch Water Association, Country View MH Estates, Lawson Acres Water Association, Glendale, Roseburg Forest Products – Dillard, Winston Dillard Water District, Tiller Elementary School, Latgawa Methodist Church Camp, Milo Academy, and Lake Creek Learning Center. Over 156,750 Oregonians rely on safe drinking water from these systems.

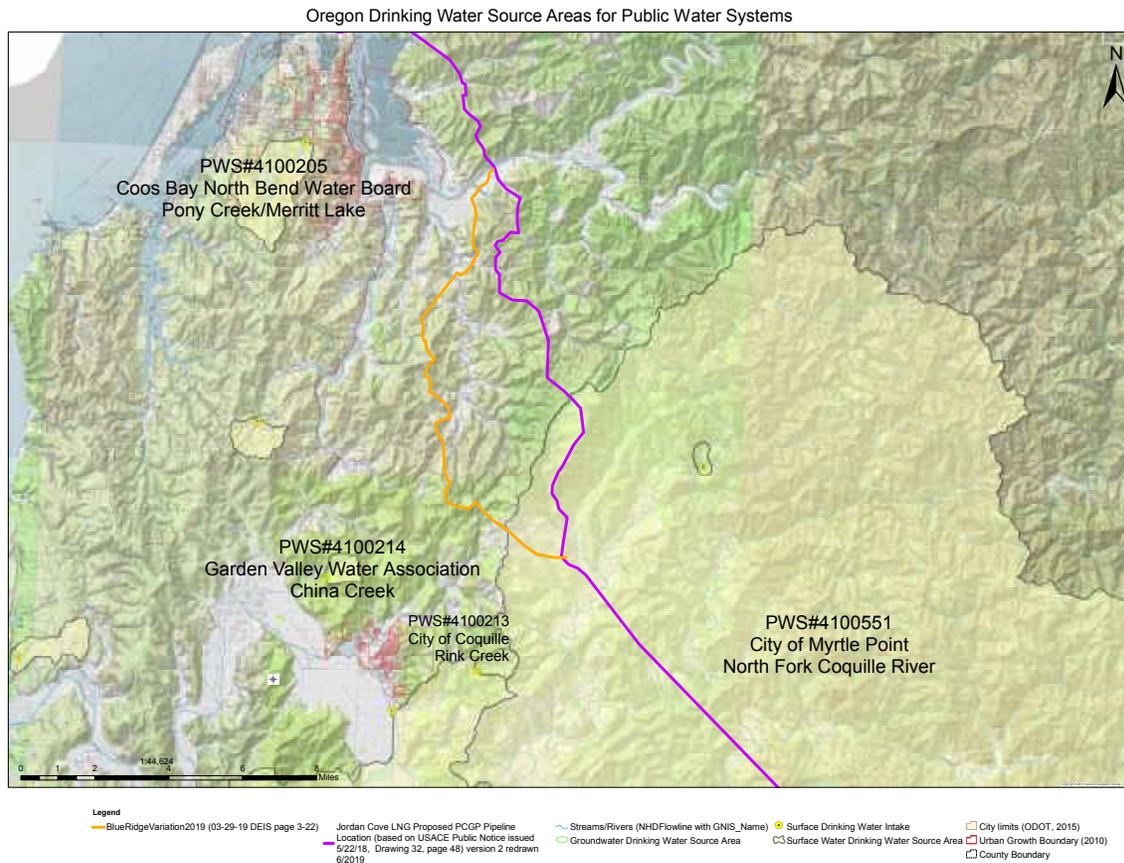
Many more drinking water sources could be damaged if a fire associated with construction and/or operation of the Pacific Connector Gas Pipeline were to start in fifth field watershed, jump a ridge and burn out of control within the larger Rogue, Umpqua, Coquille, Klamath and/or Coos watersheds.

The following map illustrates the course of the proposed pipeline and the many drinking watersheds that will be directly disturbed and degraded by this massive project even in the absence of such a fire.

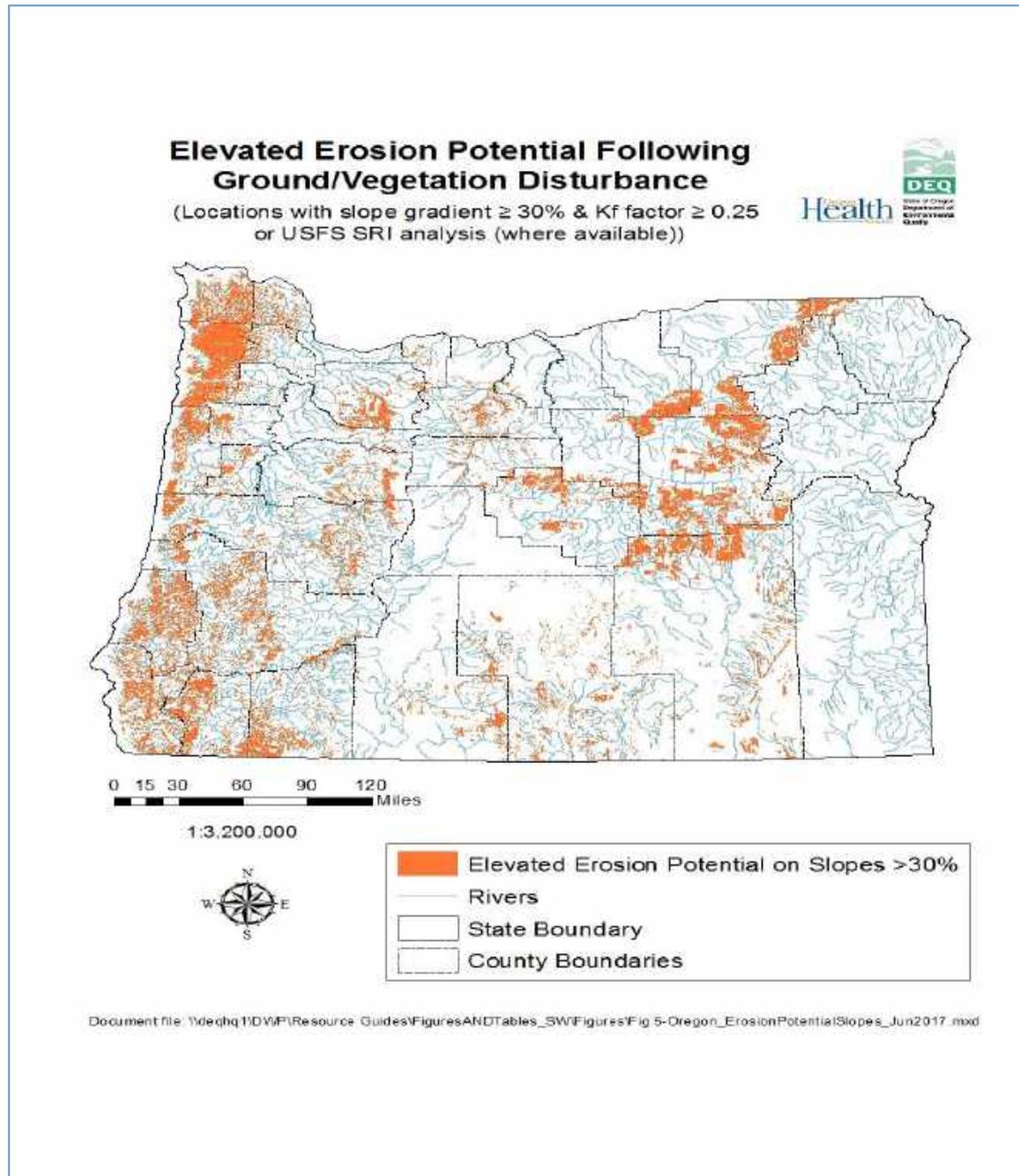
Oregon Drinking Water Source Areas for Public Water Systems



- Legend**
- Jordan Cove LNG Proposed PCGP Pipeline Location (based on USACE Public Notice issued 5/22/16, Drawing 32, page 48)
 - Surface Drinking Water Intake
 - Surface Water Drinking Water Source Area
 - Groundwater Drinking Water Source Area
 - Streams/Rivers (NHDFlowline with GNIS_Name)
 - Lake/Reservoir (NHDWaterbody)
 - City limits (ODOT, 2015)
 - Urban Growth Boundary (2010)
 - County Boundary
 - Interstate
 - U.S. Routes
 - Oregon Routes



This map demonstrates the route recommended by FERC (in yellow) and that proposed by the applicant (in purple). FERC's proposed alternative will damage more private property and disrupt more private wells/drinking water sources than the route proposed by Pembina. FERC's proposed alternative would spare old-growth forests on public land, the sources of highest quality water for fish and for humans. We do not accept a "Sophie's Choice". FERC must deny the Certificate of Public Convenience and Necessity.



This map demonstrates (at a large scale) the many areas in SW Oregon that are susceptible to elevated erosion potential from ground disturbance and vegetation removal. Maps at a finer scale and for specific watersheds are available from Oregon DEQ. As you know, erosion leads to increased turbidity levels which can present costly challenges for human health, water treatment and water delivery. The PCGP will require blasting and clearing a 75 - 95 foot right-of-way to lay a 36 inch pipe for 229 miles, across steep terrain and through soils with high potential for erosion and landslides.

Pipelines can freeze, corrode, break, and leak. Low-pressure flow lines alone are responsible for more than 7,000 spills and leaks since 2009. (See Soraghan, M. (2017, May 16). Flow lines cited in more than 7K spills. E&E News. Retrieved from <https://www.eenews.net/stories/1060054568>)

Significant pipeline accidents happen roughly 300 times each year in the United States and, between 1998 and 2017, killed 299 people and injured 1,190 others, according to the Pipeline and Hazardous Materials Safety Administration (PHMSA). In May 2019, PHMSA sent a warning to pipeline operators about increased risks of leaks and explosions caused by more frequent flooding, sinkholes, and severe rainfall patterns in the eastern United States. (See: Pipeline Hazardous Materials Safety Administration. (2019, May 2). Pipeline safety: Potential for damage to pipeline facilities caused by earth movement and other geological hazards. Federal Register. Retrieved from <https://www.federalregister.gov/documents/2019/05/02/2019-08984/pipeline-safety-potential-for-damage-to-pipeline-facilities-caused-by-earth-movement-and-other>)

In September 2018, heavy rains and landslides triggered the explosion of a pipeline in Beaver County, Pennsylvania, destroying a house. (See: Phillips, S. (2019, May 21). Federal pipeline safety regulators issue warning on floods and subsidence. State Impact Pennsylvania. Retrieved from <https://stateimpact.npr.org/pennsylvania/2019/05/21/federal-pipeline-safety-regulators-issue-warning-on-floods-and-subsidence/>)

All together, landslides have caused six pipeline explosions in the Appalachian region since early 2018. (See: Soraghan, M. (2019, June 4). Landslides, explosions spark fear in pipeline country. E&E News. Retrieved from <https://www.eenews.net/stories/1060472727>)

Many Oregon forests that would be logged by the project are already subject to severe landslide risk that would be greatly exacerbated by construction and operation of this project.

Harmful Algae Blooms

According to the Centers for Disease Control and Prevention, harmful algal blooms (HABs) can produce toxins that cause illness in people, companion animals (dogs, cats), livestock (sheep, cattle), and wildlife (including birds and mammals).

Exposures to the toxins can occur when people or animals have direct contact with contaminated water by:

- Swimming
- Breathing in aerosols (tiny airborne droplets or mist that contain toxins) from recreational activities or wind-blown sea spray

- Swallowing toxins by **drinking contaminated water** or eating contaminated fish or shellfish

In freshwater, a harmful algal bloom (HAB) is most commonly caused by small organisms called phytoplankton. The phytoplankton that commonly cause HABs are cyanobacteria, which use sunlight to create food. Some cyanobacteria produce toxins called cyanotoxins. Depending on the specific chemical structure, cyanotoxins can be neurotoxins that affect the nervous system, hepatotoxins that affect the liver, dermatotoxins that affect the skin, or other toxins that affect the stomach or intestines. Some common cyanotoxins that are known to cause illnesses in humans and animals are microcystins, cylindrospermopsin, anatoxins, saxitoxins, nodularins, and lyngbyatoxins.

Human and animal illnesses and symptoms can vary depending on the how they were exposed, how long they were exposed, and the particular HAB toxin involved. No human deaths in the United States have been caused by cyanotoxins; however, companion animal, livestock, and wildlife deaths caused by cyanotoxins have been reported throughout the United States and the world.

Warm water, low flows and the addition of nutrients can lead to or exacerbate conditions for the development of HAB. In summer 2018, a state of emergency was declared by Oregon's Governor Brown when the drinking water supply for the City of Salem was tainted by HABs. Water was shipped into the city for weeks in trucks, tanks and bottles. This was a public health emergency that must not be repeated in our rural communities.

Several drinking watersheds in SW Oregon that would be transected by the PCGP are today at risk for HAB. (See detail below.) Risk factors will only increase with building of this massive pipeline and warming of water associated with loss of forest canopy, removal of riparian vegetation, decreased summer flows and addition of fertilizers/nutrients to encourage re-growth of vegetation on certain properties following installation of a 36 inch pipeline.

To protect Oregon's waters and the health and safety of its residents, FERC must deny the Certificate of Public Convenience and Necessity.

Public Water Systems

The following section describes the drinking watersheds that will be directly impacted by the proposed Pacific Connector Gas Pipeline. The descriptions are provided in part by excerpts from Oregon DEQ/Oregon Health Authority Source Water Assessments and/or information published by municipal water providers. Description of watersheds include sensitive areas and potential sources of contamination. In many cases they include potential pollutants from erosion and landslides, high soil permeability, stream miles in erodible soils, presence of high soil erosion potential, shallow landslide potential and landslide deposits. This information underscores the value of our precious watersheds and clean water.

It is staggering to contemplate the damage that can be done by this massive project, which in addition to degrading the larger watershed, would directly harm approximately 480 Oregon rivers and streams by clearcutting through riparian areas, building new roads to access these rivers, damming and diverting water, cutting trenches and laying a 36” pipeline directly through riverbanks and riverbeds. Horizontal drilling beneath the iconic Rogue, Umpqua, Coquille, Coos and Klamath Rivers brings an additional set of threats.

We include information from June 2018 developed by Oregon DEQ that demonstrate risk criteria/factors for potential Harmful Algae Blooms identified in each Drinking Water Source Area. (From Table 1. Public Water Systems susceptible to harmful algae blooms (HABs) and subject to OAR 333-061-0510 to 333-061-0580 (as of July 11, 2018, subject to change)

There are variable and high costs associated with degradation of precious drinking water. Water providers and ratepayers may avoid new costly monitoring and treatment if FERC prevents the harm that would come from this proposed project by denying the Certificate of Public Convenience and Necessity.

Medford Water Commission (PWS 4100513)

Provides water to Medford and provides wholesale water to cities of Eagle Point, Central Point, Jacksonville, Phoenix, Talent and the Lake Creek Learning Center

Source: Rogue River and Big Butte Springs

Jackson County

Serves 131,867 (includes those served by wholesale customers)

Treatment of Rogue River water: Rapid sand/ozonation
 Treatment of Big Butte Springs water: Chlorination

Medford Water Commission (MWC) website description (excerpts):

Big Butte Springs (BBS) have been the MWC's primary source of drinking water since 1927. Providing 26.4 million gallons of water per day (mgd), the springs are one of the community's most valuable and significant resources. The springs discharge water of exceptional quality. It is consistently cold and clear with natural chemical and physical characteristics, which place this source in a "pristine" classification. No man-made contaminants have ever been detected in the spring's water. The water is low in turbidity, has an average temperature of 43 degrees F. It requires no filtration or treatment other than disinfection, which is accomplished with chlorination on-site. The current treatment facility was completed in 1993. Spring flows are collected underground and never see the light of day until emerging from customers' taps.

During the peak-use summer months, water from the Rogue River is used to supplement the springs supply. The river water is also of high quality but additional treatment performed at the Robert A. Duff Water Treatment Plant (Duff WTP) is required to meet drinking water standards. Treatment of this surface water supply consists of coagulation, settling, and filtration, followed by disinfection. The addition of ozone in 2002 provided a reduction in musty taste and odors occasionally found in the river water. Ozonation also provides additional disinfection benefits. Duff WTP uses high rate multimedia filters and chlorine as primary disinfectants. The plant currently can purify up to 45 mgd. The intake facility is located on the Rogue River and consists of a concrete structure on the edge of the river that houses screens and pumping units.

When both sources are used, the water is blended within the distribution system, although some areas receive more water from one source or the other. The finished water from both supplies is very similar, with temperature being the most detectable difference. The blend can vary continuously depending on the demand for treated water from the Duff WTP.

Oregon DEQ/Oregon Health Authority (OHA) Updated Water Source Assessment demonstrates:

Potential Pollutants: 8 hr time of travel in Drinking Water Source Area with 203 stream miles

Stream miles in erodible soils: 156

High Soil Erosion Potential: 77%

Shallow Landslide Potential: *See DEQ*

Landslide Deposits: *limited areas throughout watershed* include earth and debris slides, flows, slumps, falls and complex landslide types. (Does not include rock material landslide deposits.)

Potential Pollutants: Full Surface Drinking Water Source Area with 6,909 stream miles

Stream miles in erodible soils: 5,244

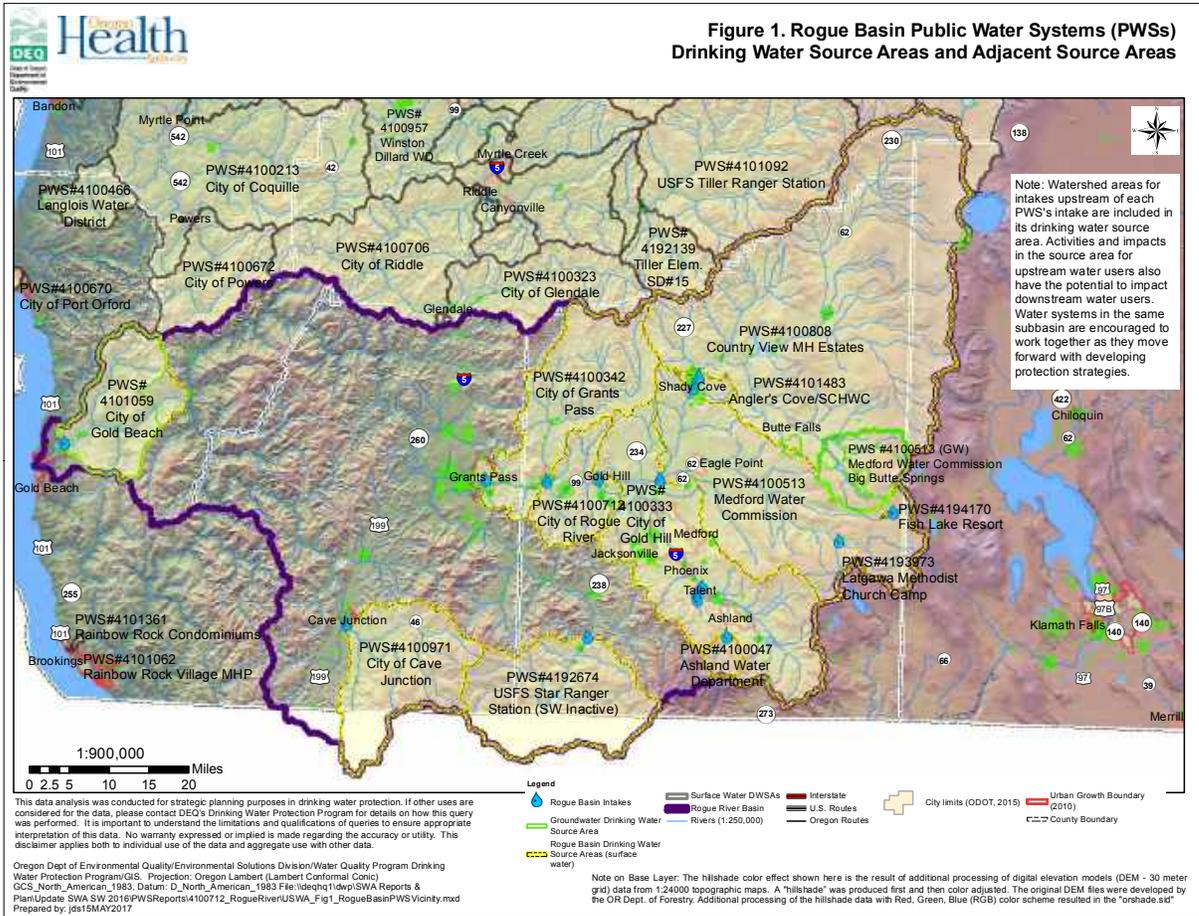
High Soil Erosion Potential: 76%

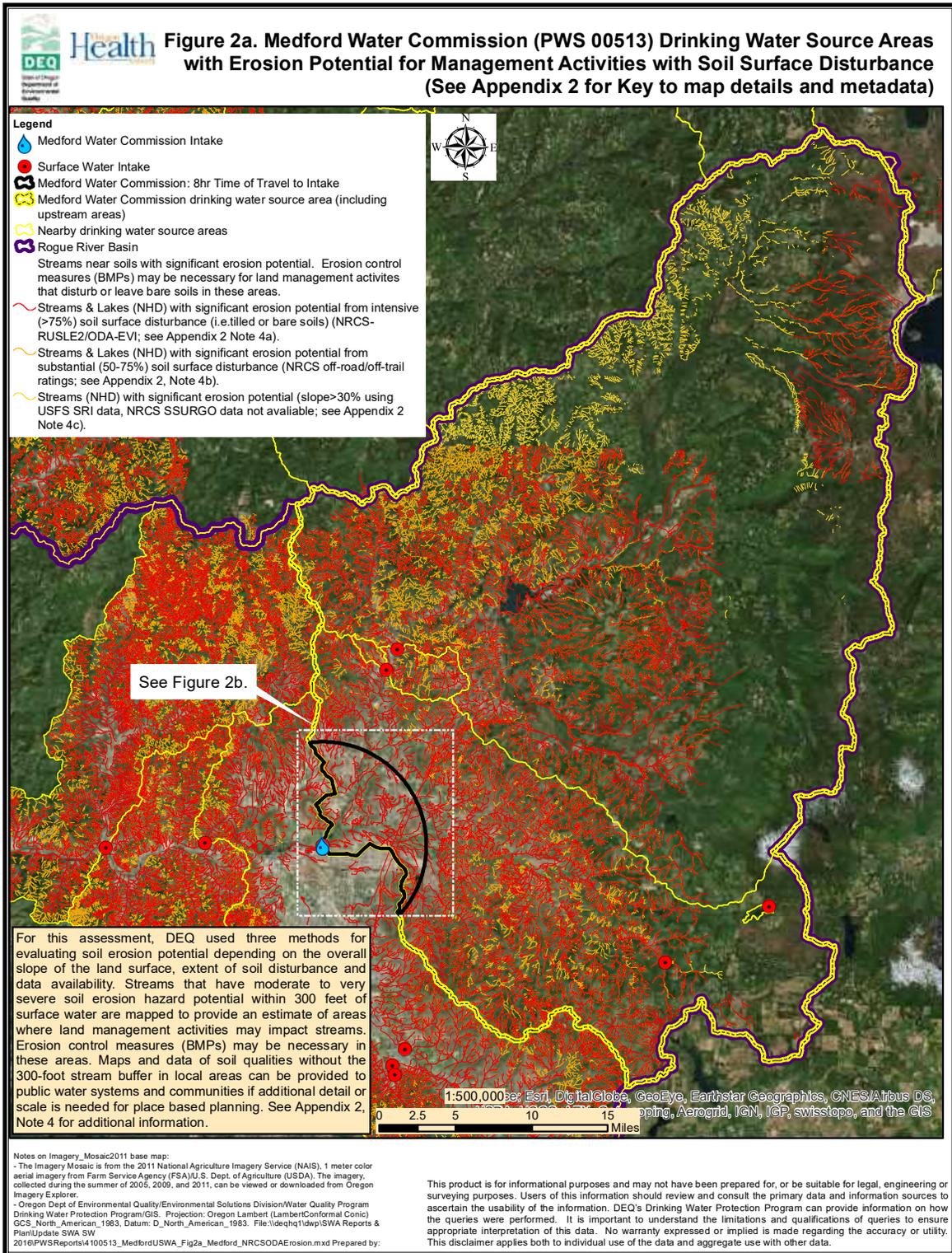
Shallow Landslide Potential: *See DEQ*

Landslide Deposits: *areas throughout watershed* include earth and debris slides, flows, slumps, falls and complex landslide types. (Does not include rock material landslide deposits.)

Groundwater wells: Drinking water source area 88.68 acres

Excellent maps shown below (and others) are available in DEQ's Updated Source Water Assessment.





Potential Harmful Algae Bloom (HAB) risk criteria/factors identified in Medford's Drinking Water Source Area by DEQ in June 2018:

- Previous HAB Advisory
- DEQ Water Quality Limited Listing indicating the waterbody needs TMDL for Algae and aquatic weeds, pH, dissolved oxygen
- OHA DWS sampling location for cyanobacteria toxin (2011-2017)
- Waters of potential concern for HAB

City of Coquille PWS 4100213

Source: Coquille River

Serves 3,866 people

Treatment: Rapid Sand

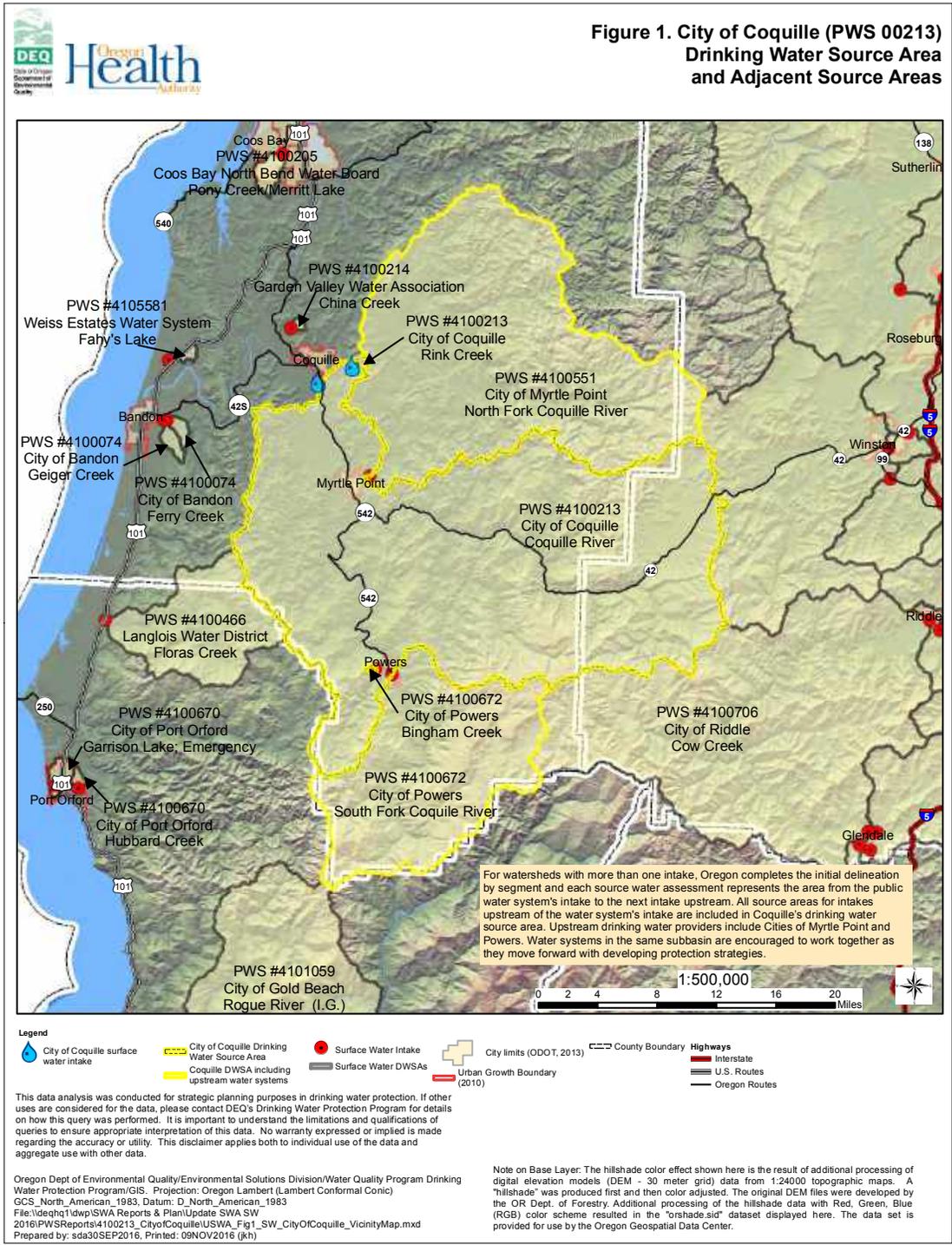
From the DEQ/ OHA Source Water Assessment (SWA) 2016 Cover Letter to Public Works Director of the City of Coquille: "As you know, assuring safe drinking water depends on public water suppliers implementing multiple successful practices. First, protect the drinking water source... Source water protection is an important first step because starting with the best possible quality source water helps assure that water

treatment can be effective at all times.”

SWA Appendix 1 states: “One of the best ways to ensure safe drinking water and minimize future treatment costs is to develop local strategies designed to protect against potential contamination.”

Potential pollutants from erosion and landslides (See Table 1: Drinking Water Source Area Land Use and Susceptibility Analysis Summary from DEQ 2016 Source Water Assessment):

- Stream miles in erodible soils: *1,488.69* (Coquille River) *4.74* (Rink Creek)
- High Soil Erosion Potential Present: *41.4%* (Coquille River) *99.6* (Rink Creek) (% stream miles with high erosion located within 300’ of stream)
- Shallow Landslide Potential: *Details at DEQ*
- Landslide Deposits: *Multiple landslide deposits are present* and points are mapped throughout the Coquille watershed; Limited landslide/deposit near Rink Creek intake



Potential Harmful Algae Blooms (HAB) risk criteria/factors identified in City of Coquille's Drinking Water Source Area by DEQ in June 2018:

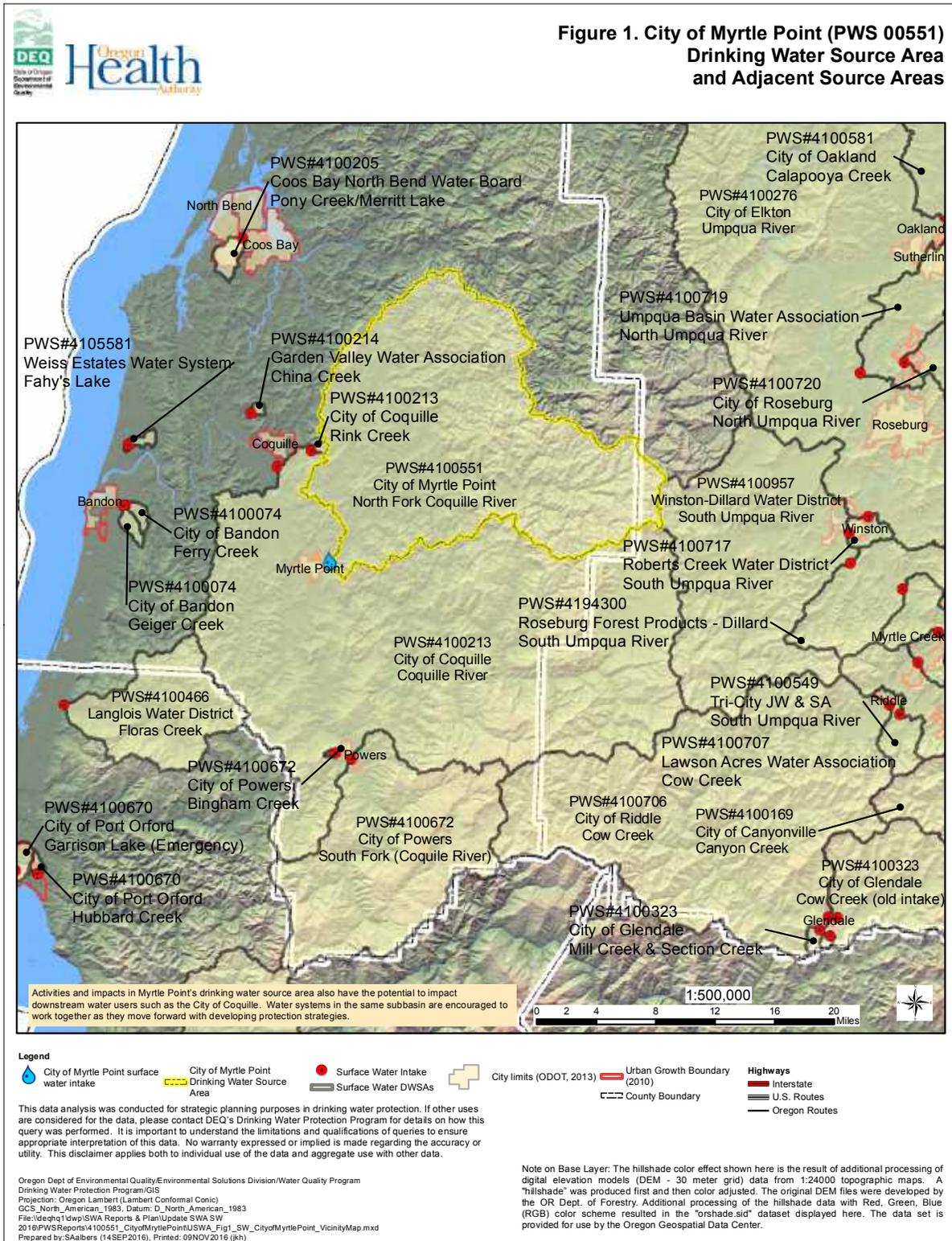
- DEQ Water Quality Limited Listing indicating the waterbody needs TMDL for Dissolved Oxygen, Chlorophyll-A
- Multiple Water Quality Listings
(Source: OR DEQ Water Quality Assessment (DEQ/WQ - 10/31/2014) and DEQ Source Water Assessment 2016)

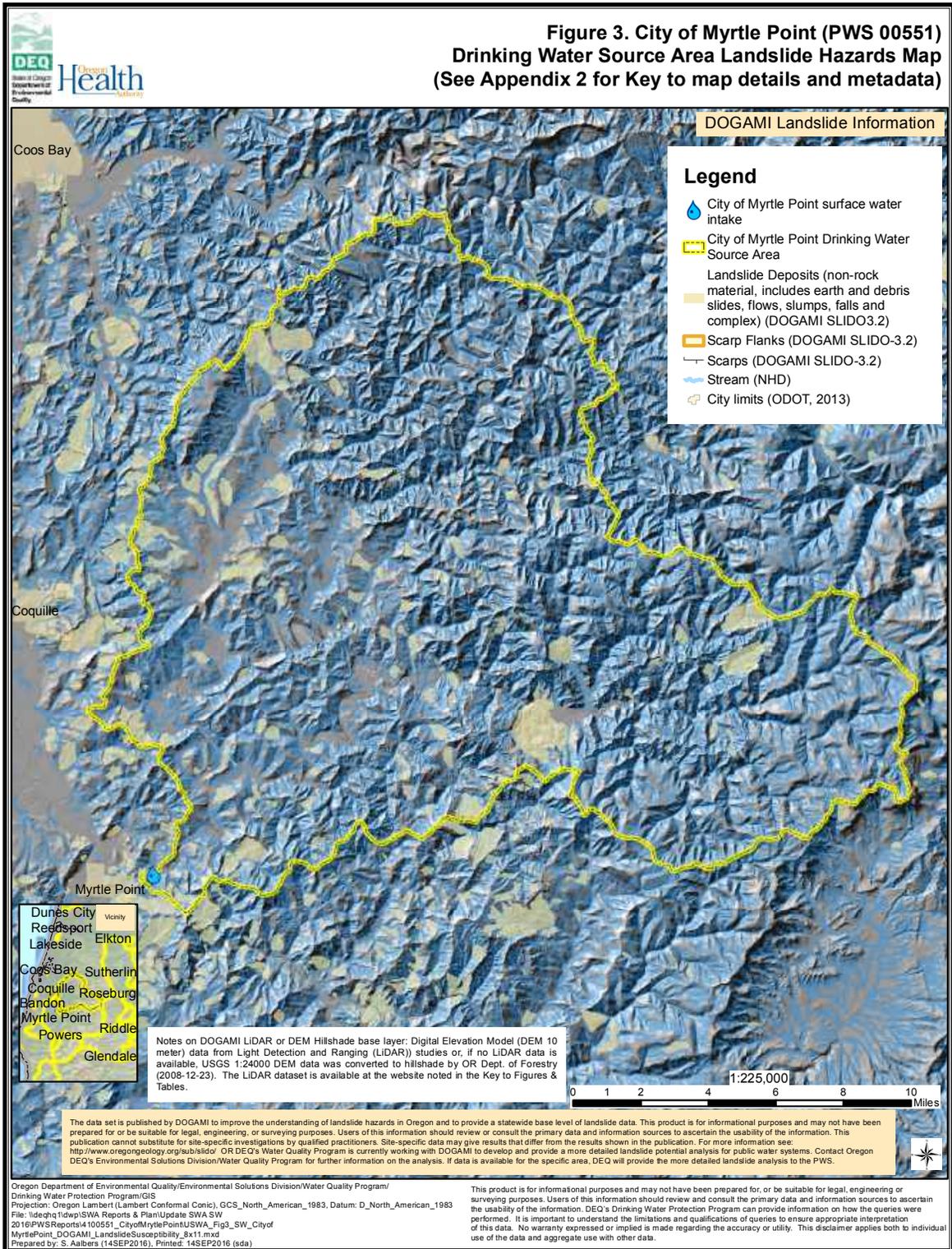
Myrtle Point PWS 4100551
Source: North Fork Coquille River
Serves 2,600 people

DEQ/OHA Source Water Assessment 2016 (excerpts):

Potential pollutants from erosion and landslides (See Table 1: Drinking Water Source Area Land Use and Susceptibility Analysis Summary from 2016 Source Water Assessment)

- Stream miles in erodible soils: *1,011.54*
- High Soil Erosion Potential Present: *47%*
(% stream miles with high erosion located within 300' of stream)
- Shallow Landslide Potential: *Details at DEQ*
- Landslide Deposits: *Multiple landslide deposits are present* and points are mapped throughout the watershed





Potential Harmful Algae Bloom (HAB) risk criteria/factors identified in Myrtle Point's Drinking Water Source Area by DEQ in June 2018:

- DEQ Water Quality Limited Listing indicating the waterbody needs TMDL for Dissolved Oxygen
- Sampling point for cyanobacteria toxin (2011-2017)

Multiple rivers and streams are already listed as Water Quality Limited

(See Water Quality Analysis 10.31.2014)

Winston Dillard Water District PWS 4100957

Source: South Umpqua River

Douglas County

Serves 8,000 people

Treatment: Membrane Filtration/UV/coagulation

DEQ Source Water Assessment 2003 (excerpts):

There are eleven other public water systems located upstream of the Winston-Dillard intake that obtain their drinking water from the South Umpqua River or its tributaries. This source water assessment addresses the geographic area providing water to Winston-Dillard's intake (Winston Dillard's portion of the drinking water protection area) between Winston-Dillard's intake and the next upstream intake for Roseburg Forest Products.

From Executive Summary: The geographic area providing water to Winston-Dillard's intake (Winston-Dillard's portion of the drinking water protection area) extends upstream approximately 182 miles (1,799 stream miles including the area upstream of the Roseburg Forest Products intake) in a southerly to westerly direction and encompasses a total area of 174 square miles (1,629 square miles including the area upstream of the Roseburg Forest Products intake). Included in this area are a number of tributaries, including Lookingglass Creek (and its numerous tributaries including Olalla, Berry, Tenmile, and Morgan Creeks), Brockway Creek, Squaw Creek, and Kent Creek.

The protection area within an 8-hour travel time from the intake extends approximately 16 miles upstream of the Winston-Dillard intake. It is recommended that the water systems and community consider increased protection within an 8-hour travel time from

the intake since eight hours should provide adequate response time to protect the integrity of the public water system intake should a spill or release occur at any crossing or discharge point to the stream.

The South Umpqua River intake is located at an approximate elevation of 520 feet and the upper edge of the watershed is located at an elevation of approximately 3,546 feet at Nickel Mountain...

An inventory of potential contamination sources was performed within Winston-Dillard's drinking water protection area... *The primary contaminants of concern for surface water intakes are sediments/turbidity, microbiological, and nutrients.*

Risks for the system, according to the Water Summary Brochure:

A total of 36 potential contaminant sources were identified in Winston-Dillard's drinking water protection area. Of these, 34 are located in the sensitive areas and 29 are high-to-moderate risk sources within "sensitive areas". *The sensitive areas within the Winston-Dillard drinking water protection area include areas with high soil permeability, high soil erosion potential, high runoff potential and areas within 1000' from the river/streams. The sensitive areas are those where the potential contamination sources, if present, have a greater potential to impact the water supply.*

Potential Harmful Algae Bloom (HAB) risk criteria/factors identified in Winston-Dillard's Drinking Water Source Area by DEQ in June 2018:

- Previous HAB Advisory
- DEQ Water Quality Limited Listing indicating the waterbody needs TMDL for Algae and aquatic weeds, Chlorophyll-A, pH, Dissolved Oxygen
- OHA DWS sampling location for cyanobacteria toxin (2011-2017)

Roseburg Forest Products-Dillard PWS 4194300 NTNC

Source: South Umpqua River

Douglas County

Serves 2,000 people

Treatment: Rapid sand/hypochlorination/floc/coag/sedimentaion

From 2003 Source Water Assessment Summary Brochure (excerpts):

The drinking water for Roseburg Forest Products is supplied by an intake on the South Umpqua River. This public water system serves approximately 2,000 citizens. The intake is located in the Middle South Umpqua River/Rice Creek Watershed in the South Umpqua Sub-Basin of the Southern Oregon Coastal Basin. There are ten other public water systems located upstream of Roseburg Forest Products that obtain their drinking water from the South Umpqua River or its tributaries. This source water assessment addresses the geographic area providing water to Roseburg Forest Products' intake (Roseburg Forest Products' portion of the drinking water protection area) between the Roseburg Forest Products' intake and the next upstream intake for Clarks Branch Water Association. The boundaries of this portion of the Drinking Water Protection Area are illustrated on the figure attached to this summary. Information on Roseburg Forest Products' protection area upstream of the Clarks Branch Water Association intake (including the area upstream of the other nine public water system intakes) is summarized in the Assessment Report...

The geographic area providing water to Roseburg Forest Products' intake (Roseburg Forest Products' portion of the drinking water protection area) extends upstream approximately 46 miles (1,617 total stream miles including the area upstream of the Clarks Branch Water Association intake) in a southeasterly direction and encompasses a total area of 45 square miles (1,455 total square miles including the area upstream of the Clarks Branch Water Association intake). Included in this area are a number of tributaries to the main stem, including Rice Creek, Willis Creek, and Clarks Branch. The protection area within an 8-hour travel time from the intake extends approximately 16 miles upstream of the Roseburg Forest Products intake. It is recommended that the water systems and community consider increased protection within an 8-hour travel time from the intake since eight hours should provide adequate response time to protect the integrity of the public water system intake should a spill or release occur at any crossing or discharge point to the stream.

RISKS FOR THE SYSTEM:

A total of 18 potential contaminant sources were identified in Roseburg Forest Products' drinking water protection area. Of these, 17 are located in the sensitive areas and 14 are high-to-moderate risk sources within "sensitive areas". *The sensitive areas within the Roseburg Forest Products drinking water protection area include areas with high soil permeability, high soil erosion potential, high runoff potential and areas within 1000'*

from the river/streams. The sensitive areas are those where the potential contamination sources, if present, have a greater potential to impact the water supply.

Clarks Branch Water Association PWS 4100548

Source: South Umpqua River

Douglas County

Serves 140 people

Treatment: Rapid sand filtration/hypochlorination/sedimentation/coagulation/flocculation

DEQ Water Source Assessment Summary Brochure 2003 (excerpts):

The drinking water for Clarks Branch is supplied by an intake on the South Umpqua River. This public water system serves approximately 140 citizens. The intake is located in the Middle South Umpqua River/Rice Creek/Myrtle Creek Watershed in the South Umpqua Sub-Basin of the Southern Oregon Coastal Basin. There are nine other public water systems with drinking water intakes located on the South Umpqua River or its tributaries upstream of the Clarks Branch intake. This source water assessment addresses the geographic area providing water to Clarks Branch's intake (Clarks Branch's portion of the drinking water protection area) between Clarks Branch's intake and the next upstream intake for City of Myrtle Creek. The boundaries of the Drinking Water Protection Area are illustrated on the figure attached to this summary. Information on Clarks Branch's protection area upstream of the Myrtle Creek intake (including the areas upstream of the other South Umpqua Sub-Basin intakes) is summarized in this report...

The geographic area providing water to Clarks Branch's intake (Clarks Branch's portion of the drinking water protection area) extends upstream approximately 142 miles (1,571 stream miles including the area upstream of the Myrtle Creek intakes) in an easterly direction and encompasses a total area of 131 square miles (1,410 square miles including the area upstream of the Myrtle Creek intakes). Included in this area are a number of tributaries to the main stem, including Van Dine Creek and Myrtle Creek (and its numerous tributaries).

The protection area within an 8-hour travel time from the intake extends approximately 16 miles upstream of the Clarks Branch intake. It is recommended that the water systems and community consider increased protection within an 8-hour travel time from the intake since eight hours should provide adequate response time to protect the integrity of the public water system intake should a spill or release occur at any crossing or discharge point to the stream.

RISKS FOR THE SYSTEM

A total of 36 potential contaminant sources were identified in Clarks Branch's drinking water protection area. Of these, 35 are located in the sensitive areas and 32 are high-to-moderate risk sources within "sensitive areas." (Maps are available from the 2003 Source Water Assessment.) *The sensitive areas within the Clarks Branch drinking water*

protection area include areas with high soil permeability, high soil erosion potential, high runoff potential and areas within 1000' from the river/streams. The sensitive areas are those where the potential contamination sources, if present, have a greater potential to impact the water supply.

Potential Harmful Algae Bloom (HAB) risk criteria/factors identified in Clarks Branch Drinking Water Source Area by DEQ in June 2018:

- Previous HAB Advisory
- DEQ Water Quality Limited Listing indicating the waterbody needs TMDL for Algae and aquatic weeds, Chlorophyll-A, pH, dissolved oxygen
- Waters of potential concern for HAB

Tri-City JW and SA PWS 4100549

Source: South Umpqua River

Douglas County

Serves 3,500

Number of connections: 1,500

DEQ Source Water Assessment 2003 (excerpts):

The drinking water for Tri-City Water District is supplied by an intake on the South Umpqua River. This public water system serves approximately 3,500 citizens. The drinking water intakes for seven other public water systems are also located on the South Umpqua River or its tributaries upstream of the Tri-City intake. This source water assessment addresses the geographic area providing water to Tri-City Water District's intake (Tri-City Water District's portion of the drinking water protection area) between the Tri-City intake and the next upstream intake for Canyonville (on Canyon Creek), Lawson Acres Water Association (on Cow Creek), and Milo Academy (on the South Umpqua River). Information on Tri-City's protection area upstream of these intakes is presented in the Source Water Assessment for those public water systems and is summarized in Tri-City's assessment. In addition, there are five drinking water intakes on the South Umpqua River downstream of Tri-City Water District's intake. Activities and impacts in the Tri-City Water District drinking water protection area have the potential to also impact downstream users.

The geographic area providing water to Tri-City's intake (Tri-City Water District's portion of the drinking water protection area) extends upstream approximately 177 miles in an easterly direction (approximately 1,421 miles including the area upstream of the Milo Academy, Canyonville, and Lawson Acres intakes) and encompasses a total area of 167 square miles (approximately 1,271 square miles including the area upstream of the Milo Academy, Canyonville, and Lawson Acres intakes). The protection area is located in the South Umpqua River/Middle South Umpqua River/Rice Creek Watershed in the

South Umpqua Sub-Basin of the Southern Oregon Coastal Basin. The boundaries of the Drinking Water Protection Area are illustrated on the figure attached to this summary. Included in this area are a number of tributaries to the main stem, including Lane, Judd, Shoestring, Jordan, Small, Morgan, O'Shea, Packard Gulch, Days, Beals, Shively, Poole, St. John, and Stouts Creeks.

The protection area within an 8-hour travel time from the intake extends approximately 16 miles upstream of the Tri-City Water District intake. It is recommended that the water systems and community consider increased protection within an 8-hour travel time from the intake since eight hours should provide adequate response time to protect the integrity of the public water system intake should a spill or release occur at any crossing or discharge point to the stream.

RISKS FOR SYSTEM

A total of 40 potential contaminant sources were identified in Tri-City Water District's drinking water protection area. Of these, 37 are located in the sensitive areas and 32 are high- to moderate- risk sources within "sensitive areas". *The sensitive areas within the Tri-City Water District drinking water protection area include areas with high soil permeability, high soil erosion potential, high runoff potential and areas within 1000' from the river/streams. The sensitive areas are those where the potential contamination sources, if present, have a greater potential to impact the water supply.*

Potential Harmful Algae Bloom (HAB) risk criteria/factors identified in Tri-City JW and SA Drinking Water Source Area by DEQ in June 2018:

- Previous HAB Advisory
- DEQ Water Quality Limited Listing indicating the waterbody needs TMDL for Algae and aquatic weeds, Chlorophyll-A, pH, dissolved oxygen
- OHA DWS sampling location for cyanobacteria toxin (2011-2017)
- Waters of potential concern for HAB

Hiland Water Co. Shady Cove PWS 4101520 serves 975 people

Anglers Cove/SCHWC PWS 01483 serves 80 people

Source: Rogue River

Jackson County

Treatment: Filtration/membrane/hypochlorination

DEQ/OHA Source Water Assessment April 24, 2018 (excerpts):

Due to the close proximity of intakes on the Rogue River, this assessment addresses Anglers Cove/SCHWC and Hiland Water Co. Shady Cove.

Country View Mobile Home Estates also has an intake on the Rogue River upstream of these intakes and there are a number of public water systems downstream that also depend on Rogue River for their drinking water. For watersheds with more than one intake such as the Rogue Subbasin, all protection areas for intakes upstream of the water system's intake are included in their drinking water source area. Activities and impacts in upstream drinking water protection area also have the potential to impact downstream water users.

As you know, assuring safe drinking water depends on public water suppliers implementing multiple successful practices. First, protect the drinking water source...Source water protection is an important first step because starting with the best possible quality source water helps assure that water treatment can be effective at all times.

The susceptibility of the public drinking water system source depends on both the natural conditions in the watershed as well as the anthropogenic activities in the watershed. This letter, with attached figures and technical information, constitutes ODEQ's Updated Source Water Assessment. It supplements the original Source Water Assessment (link here <http://www.deq.state.or.us/wq/dwp/swrpts.asp>). DEQ has developed "Resource Guides" with more extensive information to assist public water systems in protecting their source waters. The Groundwater and Surface Water Resource Guides are available at <http://www.oregon.gov/deq/wq/programs/Pages/dwp.aspx>.

8 hour Time of Travel for Drinking Water Source Sub-Basin of Rogue

Drinking Water Source Area: 219 sq. mi

Stream Miles in Drinking Water Source Area: 1,288

Stream Miles in Erodible Soils: 1,227

High Soil Erosion Potential Percent: 96%

(% stream mi with high erosion located w/in 300' of stream)

Shallow Landslide Potential: See DEQ

Landslide Deposits: *Limited areas throughout watershed* includes earth and debris slides, flows, slumps, falls and complex landslide types. (Does not include rock material landslide deposits.)

Full Source Water Source Area Rogue Basin upstream of intake

Drinking Water Source Area: 6,229 sq. mi

Stream Miles in Drinking Water Source Area: 4,717

Stream Miles in Erodible Soils: 3,558

High Soil Erosion Potential Percent: 75%

(% stream mi with high erosion located w/in 300' of stream):

Shallow Landslide Potential: See DEQ

Landslide Deposits: *Limited areas throughout watershed* includes earth and debris slides, flows, slumps, falls and complex landslide types. (Does not include rock material landslide deposits.)

Potential Harmful Algae Bloom (HAB) risk criteria/factors identified in Hiland Water Co. Shady Cove and Anglers Cove/SCHWC Drinking Water Source Area
by DEQ in June 2018:

- Previous HAB Advisory
- DEQ Water Quality Limited Listing indicating the waterbody needs TMDL for Algae and aquatic weeds, pH

Country View Mobile Home Estates

Source: Rogue River plus a well

Jackson County

Serves 132 people

Treatment: Rapid sand/hypochlorination

Oregon Source Water Assessment Report (excerpts):

The drinking water for Country View Mobile Home Estates is partially supplied by an intake on the Rogue River. In addition, Country View Mobile Home Estates uses groundwater wells for drinking water supply. This Source Water Assessment addresses only the surface water component of Country View Mobile Home Estates' drinking water supply and the groundwater supply will be addressed in a separate report. This public water system serves approximately 120 citizens. There are four drinking water intakes on the Rogue River downstream of Country View Mobile Home Estates' intake including the intake for the Medford Water Commission, Gold Hill, Rogue River, and Grants Pass. Activities and impacts in the Country View Mobile Home Estates drinking water protection area have the potential to also impact downstream users.

The geographic area providing water to Country View Mobile Home Estates' intake (the drinking water protection area) extends upstream approximately 1,270 miles in an easterly direction and encompasses a total area of 1,146 square miles. The protection area includes the Trail Creek, Elk Creek-Rogue River, Rogue River-Reese Creek, Rogue River-Lost Creek, Big Butte Creek, South Fork Rogue River and Upper Fork Rogue River Watershed in the Upper Rogue Sub-Basin of the Southern Oregon Coastal Basin. Included in this area are a number of tributaries to the main stem including Big Butte Creek, Elk Creek, South Fork Rogue River, Middle Fork Rogue River, Red Blanket Creek, Mill Creek, Union Creek, Castle Creek, Bybee Creek, Copeland Creek, Crater Creek and National Creek.

The protection area within an 8-hour travel time from the intake extends approximately 16 miles upstream of the Country View Mobile Home Estates intake.

The Rogue River intake is located at an approximate elevation of 1,450 feet and the upper edge of the watershed is located at an elevation of approximately 8,166 feet at Hillman Peak near Crater Lake. The primary contaminants of concern for surface water intakes are sediments/turbidity, microbiological, and nutrients.

The delineated drinking water protection area is primarily dominated by managed forestlands, recreation, and residential land uses.

In the Country View Mobile Home Estates watershed, the results of the susceptibility "analysis" include the distribution of 22 identified *high-to-moderate risk sources within the areas of highly permeable soils, high erosional soils, high runoff potential soils, and within the 1000' setback from the streams.*

Potential Pollutants: 8 hr time of travel in Drinking Water Source Area

Stream miles in Drinking Water Source Area: 1,334

Watershed Source Area: 227.86 sq mi

Stream miles in erodible soils: 1,272

High Soil Erosion Potential: 95%

Shallow Landslide Potential: *See DEQ*

Landslide Deposits: *limited areas throughout watershed* includes earth and debris slides, slumps, falls, and complex landslide types. Does not include rock material landslide deposits.

Potential Pollutants: Full Surface Drinking Water Source Area

Watershed Source Area: 1,146.6 sq mi

Stream miles in Drinking Water Source Area: 4,613

Stream miles in erodible soils: 3,156

High Soil Erosion Potential: 68%

Shallow Landslide Potential: *See DEQ*

Landslide Deposits: *limited areas throughout watershed* includes earth and debris slides, slumps, falls, and complex landslide types. Does not include rock material landslide deposits.

Well Protection Area: 0.51 sq mi

Excellent maps are available in DEQ's Updated Water Source Assessment (April 2018).

Potential Harmful Algae Bloom (HAB) risk criteria/factors identified in Country View MH Estates Drinking Water Source Area by DEQ in June 2018:

- Previous HAB Advisory
- DEQ Water Quality Limited Listing indicating the waterbody needs TMDL for Algae and aquatic weeds, pH, dissolved oxygen
- OHA DWS sampling location for cyanobacteria toxin (2011-2017)
- Waters of potential concern for HAB

Tiller Elementary, SD #15 PWS # 4192139

Source: South Umpqua River

Serves: 60 people

DEQ Source Water Assessment Summary 2003 (excerpts):

The drinking water for Tiller Elementary, SD #15 is supplied by an intake on the South Umpqua River. This public water system serves approximately 60 citizens. The intake is located in the Elk Creek/South Umpqua River Watershed in the South Umpqua Sub-Basin of the Southern Oregon Coastal Basin. The drinking water intake for the USFS Tiller Ranger Station public water system is also located on the South Umpqua River upstream of the Tiller Elementary intake. This source water assessment addresses the geographic area providing water to Tiller Elementary's intake (Tiller Elementary's portion of the drinking water protection area) between Tiller Elementary's intake and the upstream intake for Tiller Ranger Station.

Information on Tiller Elementary's protection area upstream of the Tiller Ranger Station is summarized in the assessment report. The boundaries of the Tiller Elementary's portion of the Drinking Water Protection Area are illustrated on the figure attached to this summary. In addition, there are seven drinking water intakes on the South Umpqua River downstream of Tiller Elementary's intake. Activities and impacts in the Tiller Elementary drinking water protection area have the potential to also impact downstream users.

The geographic area providing water to Tiller Elementary's intake (Tiller Elementary's portion of the drinking water protection area) extends upstream approximately 97 miles (598 stream miles including the area upstream of the Tiller Ranger Station intake) in a easterly and southerly direction and encompasses a total area of 86 square miles (537 square miles including the area upstream of the Tiller Ranger Station intake). Included in this area are a number of tributaries to the main stem, including Elk Creek and its tributaries.

The protection area within an 8-hour travel time from the intake extends approximately 16 miles upstream of the Tiller Elementary intake. It is recommended that the water systems and community consider increased protection within an 8-hour travel time from the intake since eight hours should provide adequate response time to protect the integrity of the public water system intake should a spill or release occur at any crossing or discharge point to the stream.

The South Umpqua River intake is located at an approximate elevation of 990 feet and the upper edge of the watershed is located at an elevation of approximately 4,900 feet at Devils Knob...

RISKS FOR THE SYSTEM

A total of eighteen potential contaminant sources were identified in Tiller Elementary's drinking water protection area. Sixteen of these are located in the sensitive areas and twelve are high-to-moderate risk sources within "sensitive areas". *The sensitive areas*

within the Tiller Elementary drinking water protection area include areas with high soil permeability, high soil erosion potential, high runoff potential and areas within 1000' from the river/streams. The sensitive areas are those where the potential contamination sources, if present, have a greater potential to impact the water supply.

City of Glendale PWS 4100323

Source: South Umpqua Subbasin: Cow Creek (permanent), Mill Creek (emergency), Section Creek (emergency)

Douglas County

Serves 872 people (recent numbers)

Treatment: Filtration/rapid sand

2003 Source Water Assessment (excerpts):

The drinking water for the City of Glendale is supplied by three intakes located on Cow Creek, Mill Creek and Section Creek.

The intakes are located in the Middle Cow Creek/Upper Cow Creek Watershed in the South Umpqua Sub-Basin of the Southern Oregon Coastal Basin. The streams that contribute to the Cow Creek, Mill Creek and Section Creeks intakes extend upstream a cumulative total of approximately 206 miles and encompass a total area of approximately 186 square miles. The combination of the geographic areas contributing to the Cow Creek, Mill Creek and Section Creeks intakes make-up Glendale's drinking water protection area. Included in this area are a number of tributaries to Cow Creek, including Windy, Tunnel, Swamp, Woodford, McCollum, Fortune Branch, Quines, Clear Branch, Starvout, Russel, Whitehorse, Snow, Dismal, Applegate and East Fork Creeks. The boundaries of the Drinking Water Protection Area are illustrated on the figure attached to this summary.

The protection area within an 8-hour travel time from the intake extends approximately 16 miles upstream of the Glendale intake. It is recommended that the water system and community consider increased protection within an 8-hour travel time from the intake since eight hours should provide adequate response time to protect the integrity of the public water system intake should a spill or release occur at any crossing or discharge point to the stream.

The drinking water intakes for the City of Riddle and Lawson Acres Water Association are located on Cow Creek downstream of Glendale's intake. In addition, there are six other water providers that have intakes on the South Umpqua River downstream of its' confluence with Cow Creek. Activities and impacts in the Glendale drinking water protection area have the potential to also impact these downstream users.

RISKS FOR THE SYSTEM

A total of 45 potential contaminant sources were identified in City of Glendale's drinking water protection area. All of these are located in the sensitive areas and 40 are high-to-moderate risk sources within "sensitive areas". *The sensitive areas within the City of Glendale drinking water protection area include areas with high soil permeability, high*

soil erosion potential, high runoff potential and areas within 1000' from the river/streams. The sensitive areas are those where the potential contamination sources, if present, have a greater potential to impact the water supply.

Potential Harmful Algae Bloom (HAB) risk criteria/factors identified in Glendale's Drinking Water Source Area by DEQ in June 2018:

- DEQ Water Quality Limited Listing indicating the waterbody needs TMDL for Dissolved Oxygen

Oregon PSR supports the August 15, 2018 comment letter submitted to Oregon DEQ and the US Army Corps of Engineers by the Oregon Nurses Association:

Oregon Nurses Association Supports Clean Drinking Water and Opposes JCEP and PCGP

“We must keep Oregon’s drinking water safe for all people. Constructing and operating a 229-mile pipeline would disrupt nearly 400 rivers and streams and degrade waterways which provide drinking sources for numerous public water systems. Bays, wetlands, rivers and streams will all be affected by dredging, blasting, road building and clearcutting, which could cause increased sedimentation, turbidity, increases in temperature, decreased dissolved oxygen concentration, and the release of chemicals and contaminants such as fuel and lubricants, raising the risk of human exposure.

“Loss of forest canopy could also raise the temperature of drinking water sources, increasing the risk of harmful algal blooms like cyanobacteria which can be toxic and – in certain cases – lethal to people, livestock, fish and wildlife. These activities, along with proposed use of herbicides to retard vegetation in permanent wide swaths, will increase risk to our groundwater supplies...

“Even in optimal circumstances, gas pipelines can leak and cause fires affecting forests, rivers, wildlife and local communities. Constructing a lengthy pipeline leading to an LNG terminal next to the Cascadia Subduction Zone only increases the potential dangers to Oregonians’ health and safety...

“In conclusion, this project will degrade Oregonians’ water quality, harm the health of communities throughout the region, contribute to climate change and irrevocably alter our landscape. This project is not in the best interests of the state of Oregon. ONA opposes this project and asks you to deny applicable permits for the Jordan Cove Energy Project and the Pacific Connector Gas Pipeline.”

Oregon PSR believes that the proposed JCEP/PCGP would:

- Violate Oregon’s water quality standard for temperature by removing forest canopy and riparian vegetation that shades streams, causing stream heating;
- Increase the risk of fire in drinking watersheds;
- Increase the risk, frequency and severity of Harmful Algae Blooms in drinking watersheds;
- Violate Oregon's water quality standard for turbidity by causing a more than 10% increase in natural turbidity levels in stream segments impacted by pipeline installation and operation;
- Violate Oregon’s anti-degradation policy by causing significant temperature increases in numerous stream segments, by causing significant decreases in dissolved oxygen levels, and by further degrading stream segments that are already water quality impaired for temperature, dissolved oxygen, pH, turbidity, and sedimentation;
- Violate Oregon’s toxics standard by disturbing and re-suspending contaminated material in and around waters of the state;
- Violate biocriteria and other statewide water quality standards; and
- Impair beneficial uses that must be protected.

During the summer of 2018, a state of emergency was declared by Governor Brown when the drinking water supply for the City of Salem was tainted by HABS. Eight

drinking watersheds in SW Oregon that would be transected by the PCGP are today at risk for HAB. (See Oregon Health Authority, 2019.) The construction and maintenance of the proposed Pacific Connector Gas Pipeline would greatly exacerbate that risk.

According to the Jordan Cove DEIS, “If a groundwater supply is affected by the Project, Pacific Connector would work with the landowner to provide a temporary supply of water; if determined necessary, Pacific Connector would provide a permanent water supply to replace affected groundwater supplies.” The same claim is made for mitigation for a temporary or permanent loss of surface water supplies. Replacement of a permanently contaminated aquifer or surface water drinking source would, however, require trucking in bottled water or piping it in from an alternative source. This would be costly, difficult, and in some cases impossible. It would represent a permanent erosion of quality of life as well as significant reduction in land value. Lack of an affordable and reliable source of clean water renders a landscape uninhabitable over the long term.

Oregon PSR requests that FERC:

- 1) Identify, map, describe and analyze potential threats to all sources of public and private drinking water, to include non-transient non-community surface water sources that could be degraded by the JCEP and the PCGP;
- 2) Map, identify and describe potential threats to wells and groundwater sources of water for families and for livestock that could be degraded by construction and/or operation of the JCEP and the PCGP; and
- 3) Deny the request for an Authorization and Certificate of Public Convenience and Necessity for Jordan Cove LNG and Pacific Connector Gas Pipeline because these projects will degrade clean and affordable drinking water sources and damage the health and safety of Oregonians.

Finally, please incorporate by reference coalition and individual comments submitted by Western Environmental Law Center, Sierra Club, Oregon Nurses Association, Rogue Riverkeeper, Rogue Climate, League of Women Voters, Waterkeeper Alliance, Sierra Club, Sierra Club-Oregon Chapter, CRAG, Cascadia Wildlands, Oregon Wild, Center for Sustainable Economy, 350-Eugene, 350-Pdx, StopFrackedGas Pdx, Francis Eatherington, Jody McCaffree, Deb Evans, Bill Walsh and Shirley Weathers, Dr. Theodora Tsongas, Dr. Diana Rempe, Dr. Patrick O’Herron, Dr. Ann Turner, Dr. Patricia Kullberg, Dr. Kelly O’Hanley, and Dr. Melanie Plaut.

Thank you for consideration of our comments.

Patrick O'Herron, MD
President, Oregon Physicians for Social Responsibility

Regna Merritt, PA
Healthy Climate Program Director, Oregon Physicians for Social Responsibility

Theodora Tsongas, PhD, MS
Healthy Climate Action Team, Oregon Physicians for Social Responsibility

Damon Motz-Storey
Healthy Climate Program, Oregon Physicians for Social Responsibility