

Bull Run Filtration Projects

Land Use Applications

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Section 2.C: Pipelines

EFU Review Application Narrative

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Filtration Facility

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Applicable Appendices

The following appendices are particularly relevant to and support the findings and conclusions in this section:

- Appendix A.2 Pipeline Drawing Set (Site Plans A.2a)
- Appendix B Public Engagement
- Appendix D Agricultural and Forestry Studies
- Appendix I.2 Geotechnical Analysis of Raw Water Pipeline Alternatives
- Appendix L Service Provider Letters

Relation to Other Narrative Sections

Section 2.C provides background information, findings, and analysis demonstrating that the pipelines meet applicable Exclusive Farm Use (EFU) criteria found in MCC 39.4225. This section builds on information provided in the **Introduction**, **Section 2 Overview**, and **Section 2.A** Pipelines Conditional Use Narrative. The findings in **Section 2.C** complement the findings in **Section 2.A**.

Introduction to EFU Review

As explained in the **Section 2 Overview**, the proposed project crosses beneath one property zoned EFU, where the use is classified as a “utility facilities necessary for public service” Review Use under MCC 39.4225. The applicable EFU Review Use standards are reviewed in this section. The EFU base zone standards that apply to the pipelines are reviewed in the **Section 2 Overview**. Standards related to design review and signs are reviewed in **Section 2.B**. Defined terms used in this **Section 2.C** are provided in the overall application **Introduction**.

MCC 39.4225 Review Uses

- A. *Utility facilities necessary for public service, including wetland waste treatment systems but not including commercial facilities for the purpose of generating power for public use by sale or transmission towers over 200 feet in height provided:*

[...]

3. *All other utilities facilities and/or transmission towers 200 feet and under in height subject to the following*
 - a. *The facility satisfies the requirements of ORS 215.275, “Utility facilities necessary for public service; criteria; mitigating impact of facility”; and*
 - b. *The facility satisfies the requirements of MCC 39.6500 through 39.6600; 39.7525(A); 39.8000 through 39.8050; and 39.6745.*

Response: The requirements of ORS 215.275 are reviewed below.¹ The requirements of MCC 39.6500 through 39.6600 (parking, setback, and landscape standards) and 39.7525(A) (yard requirements) are reviewed in **Section 2 Overview**. The requirements of MCC 39.8000 through 39.8050 (design review) and 39.6745 (signs) are reviewed in **Section 2.B**.²

¹ An administrative rule, in OAR 660-033-0130(16), was reviewed and provides similar language.

² Note that the County cannot impose “additional local criteria” above and beyond state law in ORS 215.275. Therefore, although these narratives show compliance with the criteria, the Water Bureau objects to them being imposed on the EFU sections of the project. *See, e.g., Save Our Rural Or. v. Energy Facility Siting Council*, 339 Or 353, 383, 121 P3d 1141 (2005) (in enacting ORS 215.283, “the legislature intended that the uses delineated in ORS 215.283(1) be uses 'as of right,' which may not be subjected to additional local criteria.”).

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For the project as a whole, EFU land has been avoided by 1) locating the filtration facility on non-resource land (MUA-20), and by routing the vast majority of the approximately four miles (21,700 lf) of pipeline corridor through non-resource lands (MUA-20 and RR). The single exception is one EFU property that the RW pipelines must tunnel beneath to connect to the filtration facility site.

The subject EFU property, tax lot 2200 (1S4E23C), is located east of the filtration facility site and west of Dodge Park Boulevard (Figure 1). The proposed utility facility is a pair of water pipelines, enclosed in a tunnel, that cross approximately 150-200 feet beneath the south edge of the property (Figure 2), to connect the existing raw water conduits with the proposed filtration facility. The underground pipelines extend 620 feet to cross under the property (Figure 2).

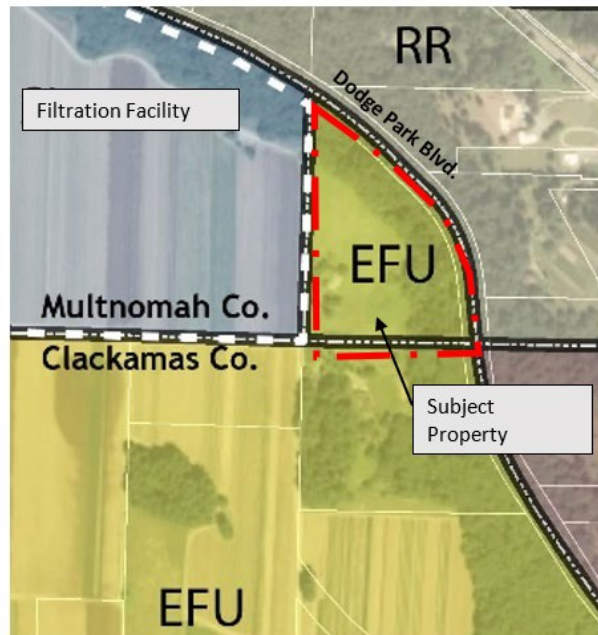


Figure 1. Subject Property Zoned EFU

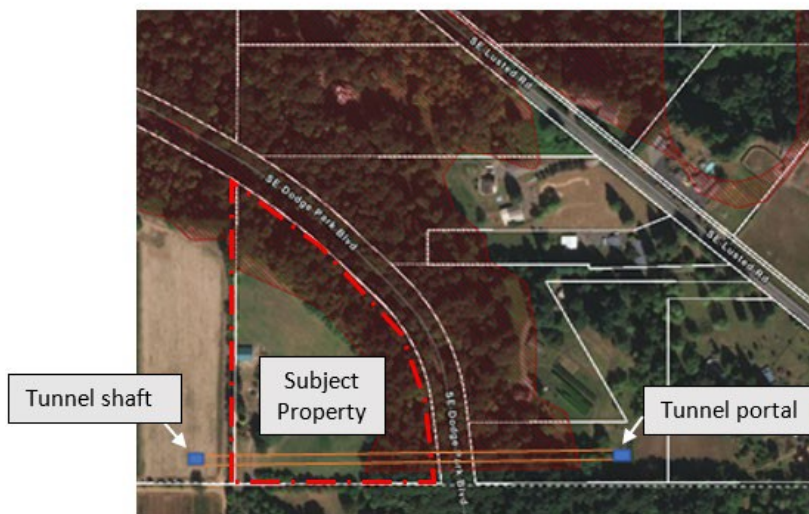


Figure 2. Pipeline Crossing under the EFU Property

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As shown in Figure 3, the RW pipelines will be bored below the entire property, entering at a depth of 147 feet on the east side and leaving at a depth of 217 feet on the west before connecting to the tunnel shaft on the filtration facility site (Figure 4). At a minimum depth of 147 feet, the proposed utility facility will result in no surface disturbance to EFU resource land.

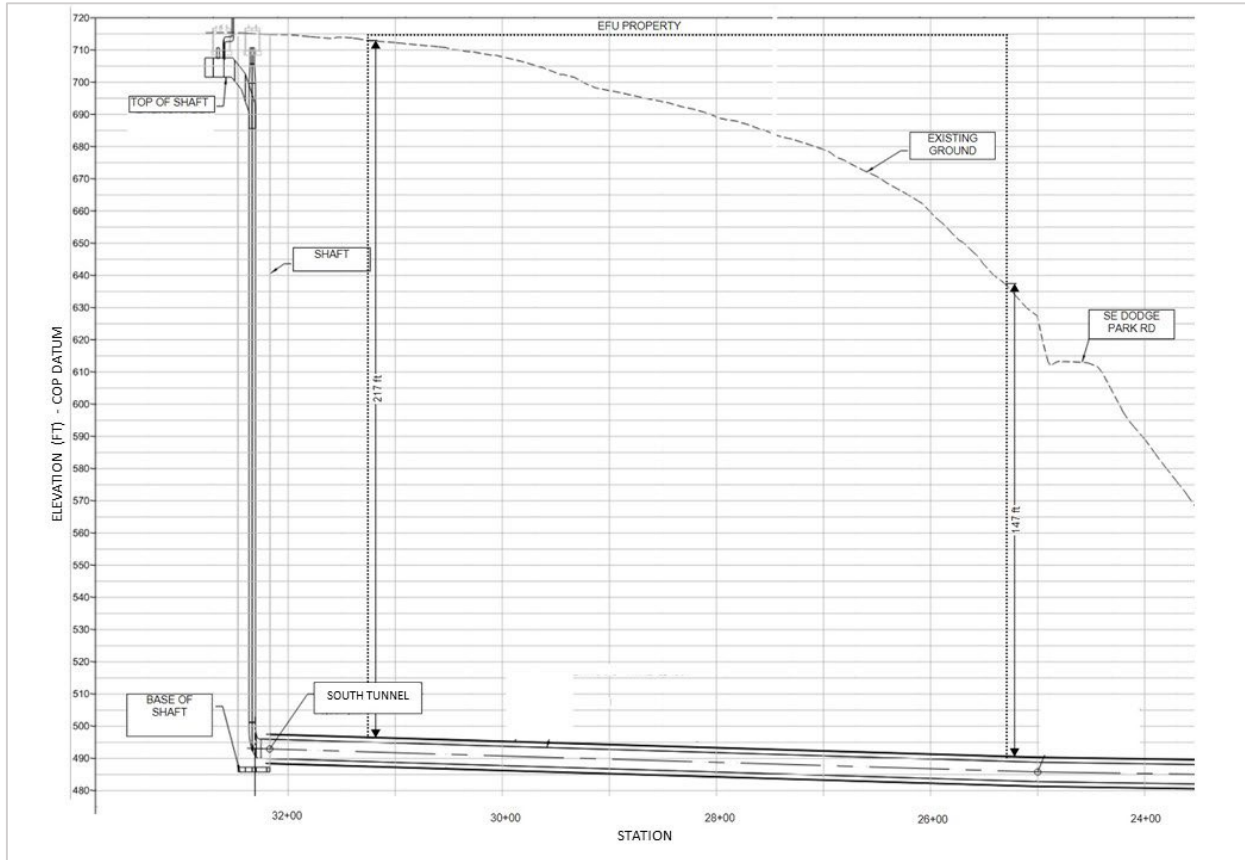


Figure 3. Section Showing FWP Tunnel Below EFU Property

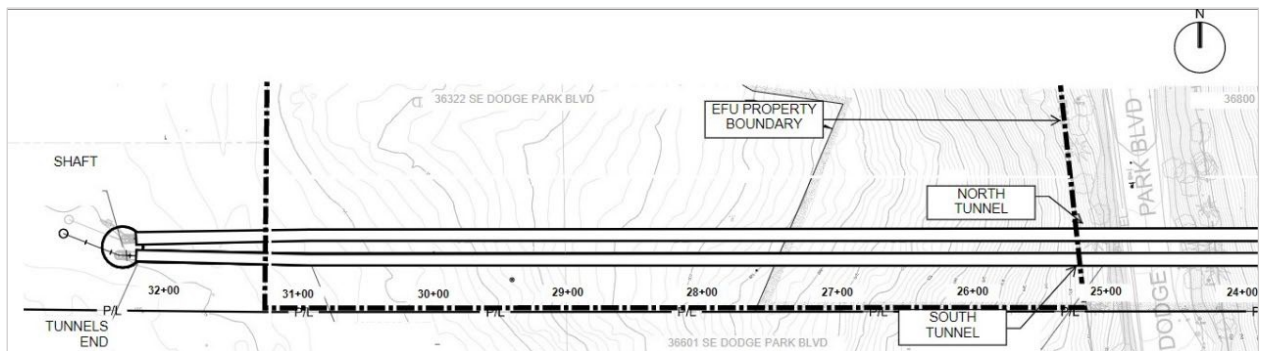


Figure 4. Plan View of FWP Tunnel Below EFU Property

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The Water Bureau completed an analysis of EFU review factors, as documented in the following pages.

ORS 215.275, "Utility facilities necessary for public service; criteria; rules; mitigating impact of facility"

(1) A utility facility established under ORS 215.213 (1)(c)(A) or 215.283 (1)(c)(A) is necessary for public service if the facility must be sited in an exclusive farm use zone in order to provide the service.

(2) To demonstrate that a utility facility is necessary, an applicant for approval under ORS 215.213 (1)(c)(A) or 215.283 (1)(c)(A) must show that reasonable alternatives have been considered and that the facility must be sited in an exclusive farm use zone due to one or more of the following factors:

Response: The proposed utility facility is necessary for public service because it must be sited in an EFU zone to connect the existing Bull Run conduit system to the proposed filtration facility. As demonstrated below, reasonable alternatives have been considered and the facility must be sited in an EFU zone due to the following factor:

(a) Technical and engineering feasibility.

Response: The proposed water pipelines are utility facilities permitted in EFU under ORS 215.283(1)(c)(A) (non-marginal lands county). As described in the **Introduction**, the utility's defined objectives to advance the goal of providing the utility service include:

- Provide reliable, safe drinking water to nearly one million people;
- Provide a seismically resilient water transmission and filtration system;
- Protect public health in compliance with federal and state drinking water regulations; and
- Preserve gravity flow from the Bull Run Watershed to Water Bureau customers.

The raw water tunnel under EFU land provides the necessary connection between the existing water utility service, located in Lusted Road, and the planned filtration facility served by Carpenter Lane. To serve the utility's objectives, this connection must pass below land zoned EFU for technical and engineering feasibility reasons.

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For the review of technical and engineering feasibility factors, the geography and zoning context in the area is relevant. Geographically, the filtration facility site is surrounded on two sides by EFU zoned lands: to the east by EFU land along Dodge Park Boulevard in Multnomah County, and to the south by EFU lands in Clackamas County (Figure 5). The wide swath of EFU land south of the facility precludes non-EFU pipeline alignment alternatives from the south, and from the west via a southern route.

To avoid EFU lands, pipeline alignment alternatives connecting existing conduits (at Hudson Intertie or in Lusted Road) to the filtration facility site would need to connect from the north or northeast. Such alternatives were carefully studied in the early phases of the project. As documented by Rhino One Geotechnical Engineering in Appendix I.2, all of the non-EFU alignment alternatives did not meet project objectives for seismic resiliency and could not be supported for technical and engineering reasons.

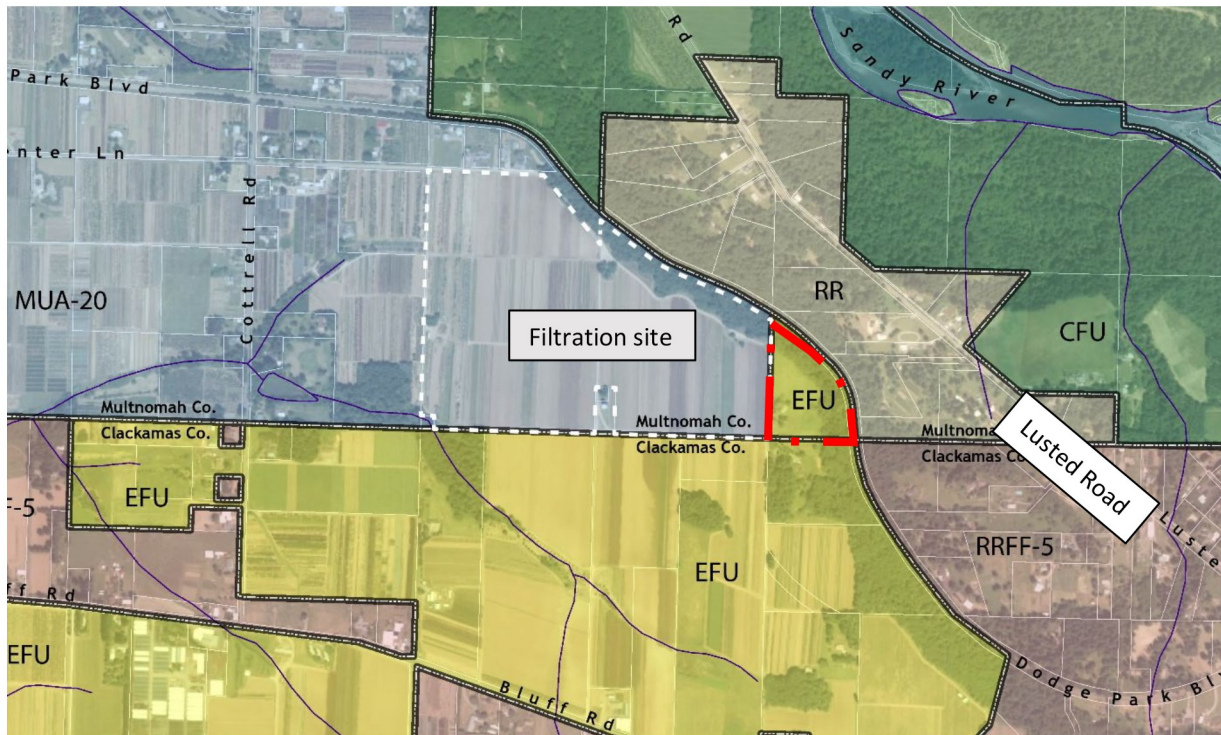


Figure 5. Geographical and Zoning Context

As described in Appendix I.2, Rhino One Geotechnical assembled and led a Geotechnical Technical Advisory Committee (GTAC) to provide geotechnical and seismic guidance for the Bull Run Filtration Project. The GTAC consisted of regional subject matter experts that included geologists and geotechnical engineers. The GTAC members included:

- Rajiv Ali, PhD, PE, GE, Lead Geotechnical Engineer for the Water Bureau’s program management team
- Dr. Scott Burns, Professor, Portland State University
- Stephen Dickenson, PhD, PE, D. PE, New Albion Geotechnical
- Dr. Sunil Sharma, PhD, PE, M. ASCE, Professor of Civil Engineering, University of Idaho
- Mr. Bill Perkins, PE, LEG, Earthquake Engineering Services Group Leader, Shannon & Wilson

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The GTAC met on several occasions to review results of geotechnical investigations and provide guidance on how to avoid and/or mitigate project hazards and risks, including for pipeline alternatives. Pipeline alignment and construction alternatives were evaluated and refined over the course of a year. Six raw water pipeline alternatives were studied including alignments within and outside of EFU lands (Figure 6).³ The RW Alternative 4 (yellow) was a non-EFU alignment connecting to the site from the northeast. Another alignment, RW Alternative 2 (red), followed the right of way at the edge of the EFU zone, also connecting to the site from the northeast. All other alternatives required crossing of EFU lands.

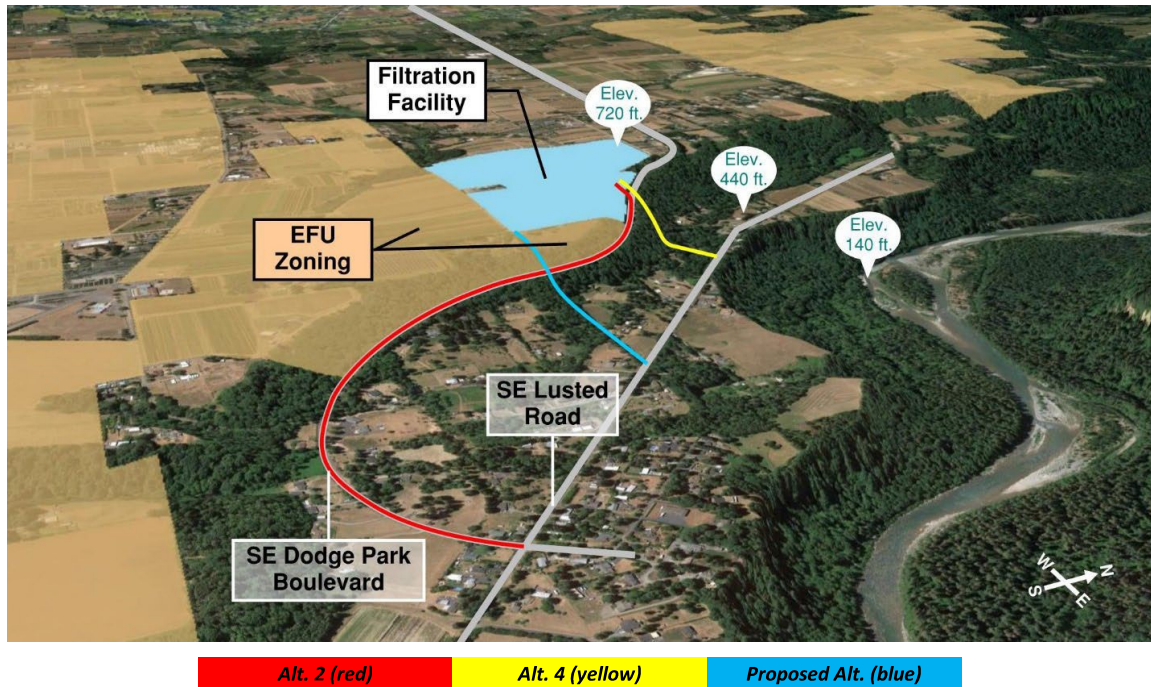


Figure 6. Aerial View of Sandy River Bluffs (scarps) Showing Alts. 2 and 4 and the Proposed Alt.

As documented in Appendix I.2, RW Alternative 2 (red) is located within the narrow roadway of Dodge Park Boulevard. The GTAC recommended that this alternative not be considered further due to geologic and seismic hazards and major constructability issues. RW Alternative 4 (yellow) is a non-EFU alignment connecting to the site from the northeast from Lusted Road. A fatal flaw screening analysis was conducted using recommendations provided by the GTAC. Based on field explorations and historical knowledge of the region, the GTAC concluded that RW Alternative 4 was fatally flawed, because of “very high” seismic hazard risks where Lusted Road approaches the steep scarp above the Sandy River.

The proposed, selected alternative (RW Alternative 1, blue) avoids the steep scarp along Lusted Road and hazards associated with the Dodge Park alignment. It provides a direct route between the existing conduits in Lusted Road and the filtration facility. For purposes of seismic resiliency and technical feasibility, the GTAC determined that tunneling under the upper slope at the proposed depths (147 feet to 217 feet below ground surface) provides the greatest protection of the pipeline in the event of an earthquake or landslide. This alignment meets the seismic resiliency goals in accordance with the *Oregon Resiliency Plan*.

³ Note that the ORS 215.275 analysis only requires an applicant to look at reasonable alternatives that do not utilize EFU-zoned land, rather than examination of multiple EFU-zoned alternatives. Nevertheless, the Water Bureau evaluated all alternatives that could potentially meet the objectives set forth above.

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As demonstrated in this narrative, based on technical and engineering feasibility factors described in Appendix I.2, reasonable alternatives have been considered and the utility facility must be sited in an EFU zone in order to meet water utility service objectives.

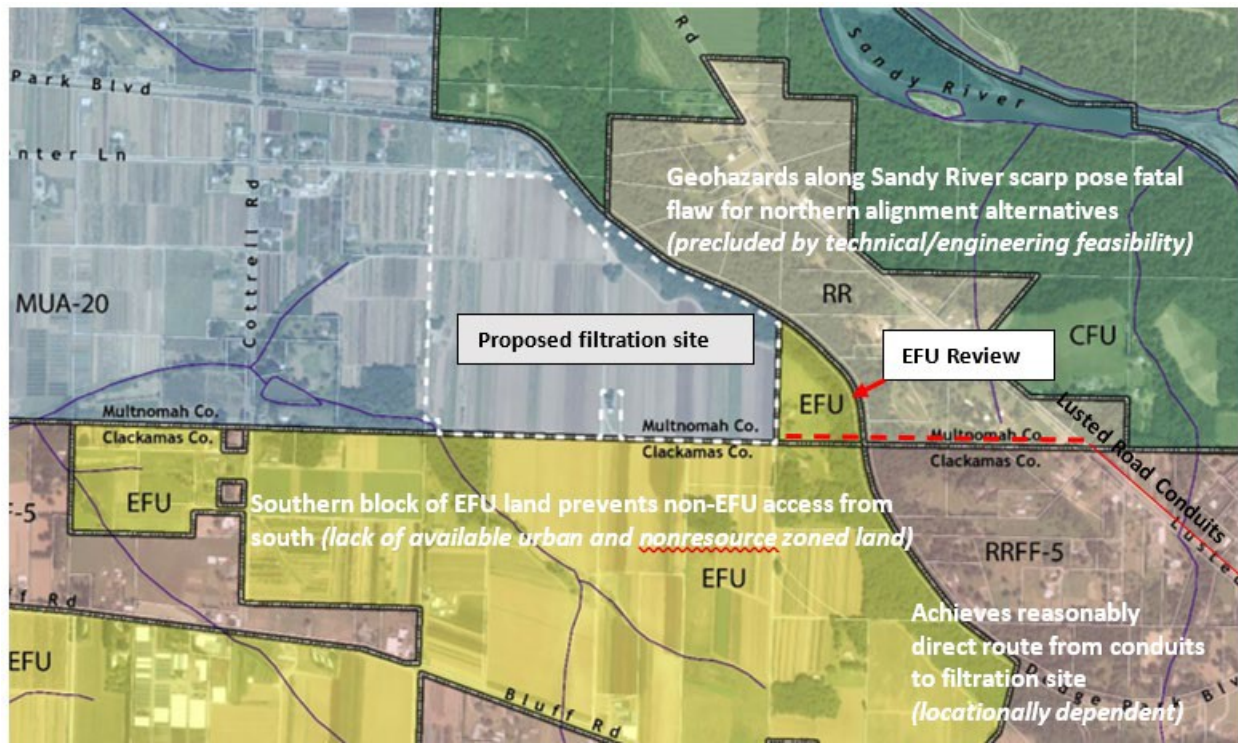


Figure 7. Raw Water Alignment with Summary of Factors

The proposed facility is locationally dependent. A utility facility is locationally dependent if it must cross land in one or more areas zoned for exclusive farm use in order to achieve a reasonably direct route or to meet unique geographical needs that cannot be satisfied on other lands;

- (b) Lack of available urban and nonresource lands;*
- (c) Availability of existing rights of way;*
- (d) Public health and safety; and*
- (e) Other requirements of state or federal agencies.*

Response: The response to Factor (a) demonstrates that the utility facility must be sited in an EFU zone in order to provide the service and therefore is necessary for public service. Additional factors also support this conclusion, some of which are noted on Figure 7 above, but only one factor is needed to demonstrate that the standard is met. ORS 215.275(2)(“due to one or more ... factors”).

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3. *Costs associated with any of the factors listed in subsection (2) of this section may be considered, but cost alone may not be the only consideration in determining that a utility facility is necessary for public service. Land costs shall not be included when considering alternative locations for substantially similar utility facilities. The Land Conservation and Development Commission shall determine by rule how land costs may be considered when evaluating the siting of utility facilities that are not substantially similar.*

Response: As mentioned above, the driving factor for the proposed water service utility (RW pipelines) under EFU land is seismic resiliency. Cost was considered in the evaluation of alternatives but was not a decision factor in choosing the pipeline alignment location.

4. *The owner of a utility facility approved under ORS 215.213 (1)(c)(A) or 215.283 (1)(c)(A) shall be responsible for restoring, as nearly as possible, to its former condition any agricultural land and associated improvements that are damaged or otherwise disturbed by the siting, maintenance, repair or reconstruction of the facility. Nothing in this section shall prevent the owner of the utility facility from requiring a bond or other security from a contractor or otherwise imposing on a contractor the responsibility for restoration.*
5. *The governing body of the county or its designee shall impose clear and objective conditions on an application for utility facility siting under ORS 215.213 (1)(C)(A) or 215.283 (1)(c)(A) to mitigate and minimize the impacts of the proposed facility, if any, on surrounding lands devoted to farm use in order to prevent a significant change in accepted farm practices or a significant increase in the cost of farm practices on the surrounding farmlands.*

Response: The proposed utility facility will entirely avoid ground surface disturbance within the EFU zone. The RW pipelines will be constructed by tunneling deep (147 to 217 feet) below the EFU property. No agricultural land or associated improvements will be damaged or otherwise disturbed by the siting, maintenance, repair or reconstruction of the utility facility under the EFU land. Therefore, no restoration will be necessary under subsection (4).

Additionally, the applicant acknowledges the County's ability to impose clear and objective conditions of approval to protect lands devoted to farm use under Subsection (5). However, as discussed, the pipeline proposed in this EFU Review Use application will be over 140 feet beneath the ground and will have no impact on accepted farm practices on surrounding farmland.

6. *The provisions of subsections (2) to (5) of this section do not apply to interstate natural gas pipelines and associated facilities authorized by and subject to regulation by the Federal Energy Regulatory Commission.*

Response: This project is not an interstate natural gas pipeline. This standard does not apply.