

# Bull Run Filtration Projects

## Land Use Applications

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### Section 1.A: Filtration Facility

### Conditional Use Application Narrative

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**Proposed Filtration Facility Site Plan in Context**



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## Applicable Appendices

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

- Appendix A.1 Filtration Facility Drawing Set
  - A.1a Filtration Facility Site Plans
  - A.1b Filtration Facility Architectural Plans
  - A.1c Filtration Facility Civil Engineering Plans
- Appendix B Public Engagement
- Appendix C Transportation Impact Study
  - C.1 Transportation Impact Analysis (TIA)
- Appendix D Agricultural and Forest Land Impact Studies
  - D.1 Agricultural Compatibility Study
  - D.3 Forestry Compatibility Study
  - D.4 Pesticide Report
  - D.5 Potential Impacts of Pesticide Use on Finished Water Quality
  - D.6 Lusted Hill Farm and Forest Deed Restrictions
- Appendix E Filtration Facility Impact Studies
  - E.1 Oregon Water Treatment Plant Operations
  - E.2 Lighting Study
  - E.3 Exterior Noise Analysis
  - E.4 Air Quality, Dust, Noise, and Vibration Memo
  - E.5 Odor Considerations Memo
  - E.6 Hazardous Material Management Plan (HMMP)
  - E.7 Johnson Creek Discharge Memo
  - E.8 ODFW Winter Habitat Information
- Appendix H Stormwater Reports
  - H.1 Filtration Facility Stormwater Report
- Appendix I Geotechnical Reports
  - I.1a Filtration Facility Preliminary Geotechnical Engineering Summary
- Appendix K Lot of Record Documentation
- Appendix L Service Provider Letters
- Appendix N Expert Resumes
- Appendices O Additional Information
  - O.1 Study Area Images
  - O.2 Pre-application Conference Notes
  - O.3 Land Use Decisions

## Relation to Other Narrative Sections

This section:

- Includes background information, findings, and analysis demonstrating that the filtration facility meets the applicable CUP review criteria found in MCC 39.7515;
- Demonstrates compliance with other applicable CU permit requirements, or provides references where such findings can be found in the application narrative; and
- Builds on information provided in the Introduction and the Section 1 Filtration Facility Site Overview.

The findings in this section complement the findings in **Section 1.B Filtration Facility Design Review** and **Section 1.C Communications Tower Conditional Use Permit and Design Review**.

## Filtration Facility Site Buildings and Description

The filtration facility site abuts the Clackamas County line to the south, Dodge Park Boulevard, and the Sandy River bluff to the east, small lot residential development to the north, and agricultural land used primarily to grow nursery crops to the west and south. Twin PHWD tanks border the site to the south and the required emergency and maintenance access road will connect Bluff Road in Clackamas County to the filtration facility site in Multnomah County.

As explained in the **Introduction**, the overall purpose of the filtration facility is to provide safe drinking water for nearly one million people. As explained in the **Section 1 Overview**, the proposed filtration facility is a community service use that is allowed through the CU process in the MUA-20 zone.

Figure 1 shows the locations of proposed filtration facility occupiable buildings<sup>1</sup> (green) and utilitarian processing structures (blue) on the filtration facility site. Appendix B.1 (LU-GEN-A-012) includes a larger and more legible version of this drawing.

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<sup>1</sup> As used in this narrative, an “occupiable building” is defined as an enclosed structure with walls and a roof, whereas a utilitarian processing structure is partially outdoors and may be covered by a canopy but is not designed for human occupancy. Silos are also included in the utilitarian structure definition.

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**Figure 1. Proposed Occupiable Buildings and Utilitarian Processing Structures**

The following filtration facility buildings are intended for human occupancy (“occupiable buildings”):

- Administration Building (offices and meeting rooms)
- Administrative Building – Lockers (locker rooms and storage)
- Maintenance Building (locker rooms and storage)
- Pilot Plant Trailers (trailer storage)
- Maintenance Building (storage of maintenance equipment and recycling)
- Chemical Building (storage of chemicals used in water treatment process)
- Main and North Electrical Building Complexes (storage of electrical equipment)
- Pump Stations (buildings housing PHWD, fire, and filtration facility pumps)
- Storage and Recycling Buildings (buildings for general storage and recycling)
- Ozone and Dewatering Buildings (buildings housing these process functions)
- Finished Water Stair and Electric (enclosures for these functions)
- Fire and PHWD Pump Buildings (enclosures for these pumping functions)
- Filter Building (building for water filtration process functions)

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The following water filtration structures have a utilitarian design consistent with their functions (“utilitarian processing structures”):

- Filtration facilities (flocculation, sedimentation, filtration)
- Finished water basins
- Wash-water clarifiers
- Gravity thickeners
- Chemical silos

As documented extensively in the remainder of this Section 1.A narrative, as well as the **Section 1.B Filtration Facility Design Review** narrative, occupiable buildings and utilitarian process structures will be located in the western, lower portion of the site to minimize off-site view impacts. Proposed building setbacks far exceed base zone standards and buildings will be screened from public views by berms and plantings.

## Compliance with Community Service Standards

Applicable community service (CS) use standards are quoted below in *italics* followed by an explanation of why the proposed filtration facility meets applicable MUA-20 zoning requirements.

### MCC 39.7500—Purpose

*This subpart of MCC Chapter 39 provides for the review and approval of the location and development of special uses which, by reason of their public convenience, necessity, unusual character or effect on the neighborhood, may be appropriate as specified in each base zone.*

**Response:** Although this purpose statement is not an approval criterion, the **Introduction** explains why the filtration facility, which will provide reliable, high-quality drinking water for nearly one million people, is needed at the proposed location. This CS use is permitted through the CU review process. The **Introduction** also describes the character of the study area surrounding the project.

### MCC 39.7505 General Provisions

*(A) Community Service approval shall be for the specific use or uses approved together with the limitations or conditions as determined by the approval authority.*

**Response:** As explained in the **Introduction**, the project spans two counties and includes the filtration facility, the communications tower, the intertie, and related pipelines and appurtenances in Multnomah County and an emergency access road in Clackamas County. This Section 1.A focuses on CS approval for the filtration facility.

*(B) Uses authorized pursuant to this section shall be subject to Design Review approval under MCC 39.8000 through 39.8050.*

**Response:** **Section 1.B** addresses applicable design review (DR) criteria and development standards for the filtration facility, and **Section 1.C** addresses communications tower CU and DR criteria. **Section 2** addresses CU and DR criteria as applied to the intertie and pipelines.



## Bull Run Filtration Projects Land Use Applications

*(C) A Community Service approval shall not be construed as an amendment of the Zoning Map, although the same may be depicted thereon by appropriate color designation, symbol or short title identification.*

**Response:** The applicant understands the nature of the approval.

### MCC 39.7510 Conditions And Restrictions

*The approval authority may attach conditions and restrictions to any community service use approved. Conditions and restrictions may include a definite time limit, a specific limitation of use, landscaping requirements, parking, loading, circulation, access, performance standards, performance bonds, and any other reasonable conditions, restrictions or safeguards that would uphold the purpose and intent of this Chapter and mitigate any adverse effect upon the adjoining properties which may result by reason of the conditional use allowed.*

**Response:** Figure 2 shows the proposed filtration facility layout viewed from the Carpenter Lane entrance. The Water Bureau has designed the filtration facility to minimize impacts on the surrounding area based on public outreach and applicable technical appendices listed in the **Introduction** and in the Section 1.A discussion above. The Water Bureau has implemented the recommendations of these studies as part of the project design and understands that the approval authority may attach conditions related to mitigation of adverse effects on adjoining properties.



**Figure 2. Water Filtration Facility Rendering Looking Southwest (Carpenter Lane at bottom of image)**

## MCC 39.7520 Uses

- A. *[T]he following Community Service Uses and those of a similar nature, may be permitted in any base zone when approved at a public hearing by the approval authority. [...]*

*(6) Utility facilities, including power substation or other public utility buildings or uses, subject to the approval criteria in MCC 39.7515(A) through (H).*

**Response:** Compliance with MCC 39.7517(A) through (H) is demonstrated in the MCC 39.7515 narrative below.

- B. *Approval of a Community Service Use shall be deemed to authorize associated public utilities to serve the site, including energy and communication facilities.*

**Response:** Please see Appendix L for service provider letters and **Section 1.C Communications Tower Conditional Use Permit and Design Review** for findings demonstrating compliance with communications tower CU and DR criteria.

## MCC 39.7525 Restrictions

*A building or use approved under MCC 39.7520 through 39.7650 shall meet the following requirements:*

- A. *Minimum yards in EFU, CFU, MUA20, RR, BRC, OCI, OR and PH-RC, UF-20, LR10, Base zones: (1) Front yards shall be 30 feet. (2) Side yards for one-story buildings shall be 20 feet; for two-story buildings, 25 feet. (3) Rear yards shall be as required in the base zone.*

**Response:** Figure 3 shows the filtration facility functions and site layout. As documented in the **Section 1 Overview and Section 1.B**, proposed building and parking area setbacks far exceed these minimum yard requirements. Proposed yards are landscaped and graded to obscure and soften off-site views of facility structures.

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Figure 3. Conceptual Landscape Plan Showing Structures and Yards

C. N/A.

D. Off-street parking and loading shall be provided as required in MCC 39.6500 through 39.6600.

**Response:** Figure 3 generally shows the proposed location of off-street parking and loading areas—both of which are screened by trees, shrubs, and berms. Please see **Section 1.B Filtration Facility Design Review** for detailed information demonstrating compliance with applicable provisions of MCC 39.6500 through 39.6600.

E. Signs for Community Service Uses pursuant to the provisions of MCC 39.6700 through 39.6820.

**Response:** **Section 1.B Filtration Facility Design Review** describes the small entrance and directional signage plan and includes findings demonstrating compliance with applicable provisions of MCC 39.6700 through 39.6820.

F. N/A.

G. [...] Other restrictions or limitations of use or development not required under this subsection shall be provided in the base zone.

**Response:** The proposed filtration facility meets all applicable MUA-20 base zone standards, as documented in **Section 1 Filtration Facility Site Overview**.

## MCC 39.7515 Approval Criteria

*In approving a Community Service use, the approval authority shall find that the proposal meets the following approval criteria, except for transmission towers, which shall meet the approval criteria of MCC 39.7550 through 39.7575, wireless communications facilities, subject to the provisions of MCC 39.7705, and except for regional sanitary landfills, which shall comply with MCC 39.7600 through 39.7625.*

**Response:** The information and analysis in approval criteria Sections A through H below demonstrate compliance with MCC 39.7515 CU approval criteria applicable to the filtration facility CS use. Note that the ninth criterion in MCC 39.7515 (Criterion I) does not apply to proposed utility facilities such as the filtration facility. MCC 39.7520(A)(6). Each criterion is quoted below, followed by references to supporting studies and detailed explanations as to why each criterion is met. The information and analysis in **Section 1.C** demonstrates compliance with MCC 29.7550-75 approval criteria applicable to the proposed communications tower.

### *A. Is Consistent with the Character of the Area;*

Prior Multnomah County decisions applying this approval criterion have considered two types of consistency:

- First, those decisions considered the characteristics of the area and the proposed project's consistency with those characteristics. This type of consistency is addressed primarily in subsection A.0 Project Study Area Characteristics and Consistency and A.4 Visual Consistency, Impacts, and Mitigation Measures.
- Second, those decisions considered proposed uses that created substantial impacts on surrounding users (noise, light, glare, air quality, etc.) to not be consistent with the character of the area. This second type of consistency is addressed primarily in subsections A.1-A.3 below, related to impact-specific core analysis areas, and A.4 (Visual Consistency, Impacts, and Mitigation Measures) as to potential visual impacts.

As documented below, the filtration facility is consistent with the character of the area in part because it is a use type—a water utility community service use—commonly found in the area. The proposed filtration facility is consistent with the character of the area in terms of its design, footprint, employment, traffic, and other characteristics. Moreover, filtration facility design mitigates potential impacts on surrounding land uses from light, sound, traffic, and other potential externalities.



## A.0 Project Study Area Characteristics and Consistency

The **Introduction** describes the general character and rationale for selection of the project study area. Figure 4 shows the project study area boundaries and underlying zoning districts. The study area is “the area” the Water Bureau evaluated under this CU approval Criterion A.



Figure 4. Project Study Area with Generalized Zoning

As noted in the **Introduction**, the project spans two counties. In Multnomah County, the project includes the filtration facility, a communications tower, the intertie, and about four miles (21,700 lf) of pipeline corridor and appurtenances. In Clackamas County, the project includes an emergency access from Bluff Road to the filtration facility site. The project study area is large enough to address potential impacts from all project components on the surrounding area. The project study area is comprised of land zoned:

- Exclusive Farm Use (EFU – 44 percent)
- Residential Exception Areas (MUA-20, RR, and RRFF-5 – 36 percent)
- Commercial Forest (CFU and TBR – 20 percent)



Farm and forest uses are allowed in all of the above zoning districts. Potential farm and forest impacts on the filtration facility are considered in CU review Criterion C below.

As described in the **Section 1 Overview**, to ensure that all potential impacts from the filtration facility are considered and mitigated, the Water Bureau considered the “reasonable worst-case development scenario” that could potentially result from either the establishment of (a) a large-scale nursery operations center<sup>2</sup> (a permitted or review use on the filtration facility site) that are commonly found in the study area; or the establishment of (b) a hypothetical filtration facility with a utilitarian design that did not mitigate potential visual, noise, air quality, light, olfactory, and hazardous materials impacts.

### A.0.1 Agricultural Processing and Nursery Uses Characteristics and Consistency

As documented in Appendix D.1 and in the **Introduction**, mid- to large-scale agricultural operations (nurseries and agricultural processing) are the predominant agricultural type and land use in the project study area. Appendix D.1 Agricultural Compatibility Study documents accepted farming practices in the study area.

Agricultural and nursery fields and traditional barns contribute to the visual character of the study area; the appeal of living in an area with this character helps to explain the large number of rural homesites found in the study area, as discussed further below.

Nursery uses are found in the rolling hills west of the Sandy River bench in the Multnomah County EFU and MUA-20 zones, and the Clackamas County EFU and RRFF-5 zones. In addition to growing nursery crops, mid- to large-scale nurseries typically export nursery products outside the area, have spacious office headquarters, warehouses, greenhouses, and expansive outdoor storage areas. On-site and off-site parking and loading areas accommodate employee and visitor parking as well as diesel trailer trucks.

Agricultural uses typically are not sensitive to potential impacts from public facilities or from other agricultural operations (in the reasonable worst case development scenario). As detailed in Approval Criterion C below, the project has been designed to ensure that no significant impacts on farm uses will occur from the filtration facility.

### Size and Employment of Nurseries and Agricultural Processing Operations

The **Introduction** and Table 1 below show that the proposed filtration facility is comparable to existing mid- and large-scale nursery and agricultural processing operations in the study area in terms of building coverage and employment. The reasonable worst-case development scenario on the filtration facility site—that is, a hypothetical filtration facility with a utilitarian design with no mitigating design features—would be comparable to the impacts of these existing mid- and large-scale nursery and agricultural processing operations. However, as explained further below, impacts from nursery operations on sensitive residential and school uses (e.g., transportation, noise, lighting, chemical drift, dust, groundwater pollution, and appearance) are greater than any potential impacts from the proposed filtration facility with mitigation features included.

The filtration facility will have fewer adverse impacts than nurseries because the Water Bureau has implemented mitigation recommendations from:

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<sup>2</sup> Appendix 0.1 Study Area Images includes photographs, Google images, and descriptions of large-scale nursery operations in the study area.

## Bull Run Filtration Projects Land Use Applications

1. People and organizations involved in the community outreach process (Appendix B Public Engagement);
2. Project architects, planners, engineers, and landscape architects (Appendix A Drawing Sets); and
3. Impact studies prepared by professionals in their respective fields (Appendices C-O).

Table 1 shows 2020 employee estimates in seven of the eight mid- to large-scale agricultural processing operations in the study area.<sup>3</sup> In 2020, the seven operations ranged from six to 245 employees. The filtration facility will have 26 employees, which is similar to the mid-scale nurseries and agricultural processing operations in the study area, and significantly fewer than large-scale nurseries and agricultural processing operations in the study area. Table 1 also includes estimates of nursery building and greenhouse footprints for each of the eight mid- to large-scale agricultural operations in the study area. The average building footprint for agricultural operations in the study area is about 84,000 sf.<sup>4</sup> In comparison, the filtration facility has a building footprint of about 89,000 sf. With a footprint of 89,600 sf (not including greenhouses) and 35 employees, Surface Nursery is most similar to the filtration facility.

Overall, Table 1 shows that the size and employee numbers of the filtration facility are consistent with the character of the area as the study area includes large operational facilities with comparable or even larger footprints and employee numbers.

**Table 1. Study Area Nursery and Fruit Processing Employment, and Estimated Building Coverage**

Business Name	Employees	Estimated Building Footprints (sf)
R&H Nursery	8	14,950
Scenic Fruit	200	54,200
Sester Farms	85	143,650
Surface Nursery	35	89,700
Glendale Farms	6	24,900
J. Frank Schmidt	245	245,550
Belcher Nursery	19	21,150
Stargazer Farm <sup>5</sup>	N/A	80,850
Total	598	674,950
Average	86	84,369

<sup>3</sup> Buzzfile data was not available for Stargazer Farm.

Per <https://stargazerfarmsblog.wordpress.com>: "We are a small-scale, diversified vegetable farm located in Sandy, OR. We grow using natural and biological methods and do not use any pesticides, fungicides, herbicides, or chemicals of any sort. We sell directly to restaurants in the greater Portland area." Stargazer farms also grows marijuana products.

<sup>4</sup> R&H, Sester, Surface, and J. Frank Schmidt nurseries have greenhouses that cover a total of 680,600 sf. Greenhouse footprints at these nurseries range from an estimated 11,950 sf at R&H Nursery to 439,250 sf at J. Frank Schmidt Nursery. For those nurseries with greenhouses, the average greenhouse footprint comes to 170,150 sf. In comparison, the filtration facility's utilitarian processing structures cover 245,735 sf; however, water processing and storage basins cover most of this area (227,356 sf).

<sup>5</sup> Buzzfile data was not available for Stargazer Farm.

Per <https://stargazerfarmsblog.wordpress.com>: "We are a small-scale, diversified vegetable farm located in Sandy, OR. We grow using natural and biological methods and do not use any pesticides, fungicides, herbicides, or chemicals of any sort. We sell directly to restaurants in the greater Portland area." Stargazer farms also grows marijuana products.

## Bull Run Filtration Projects Land Use Applications

Source: Buzzfile<sup>6</sup> (2020) and Winterbrook (2022) data.

### Visual Character and Operational Impacts of Nurseries and Agricultural Processing Operations

The **Introduction** depicts and discusses two Lusted Road examples of nursery operations centers that are similar to the proposed filtration facility in terms of employment and building square footage:

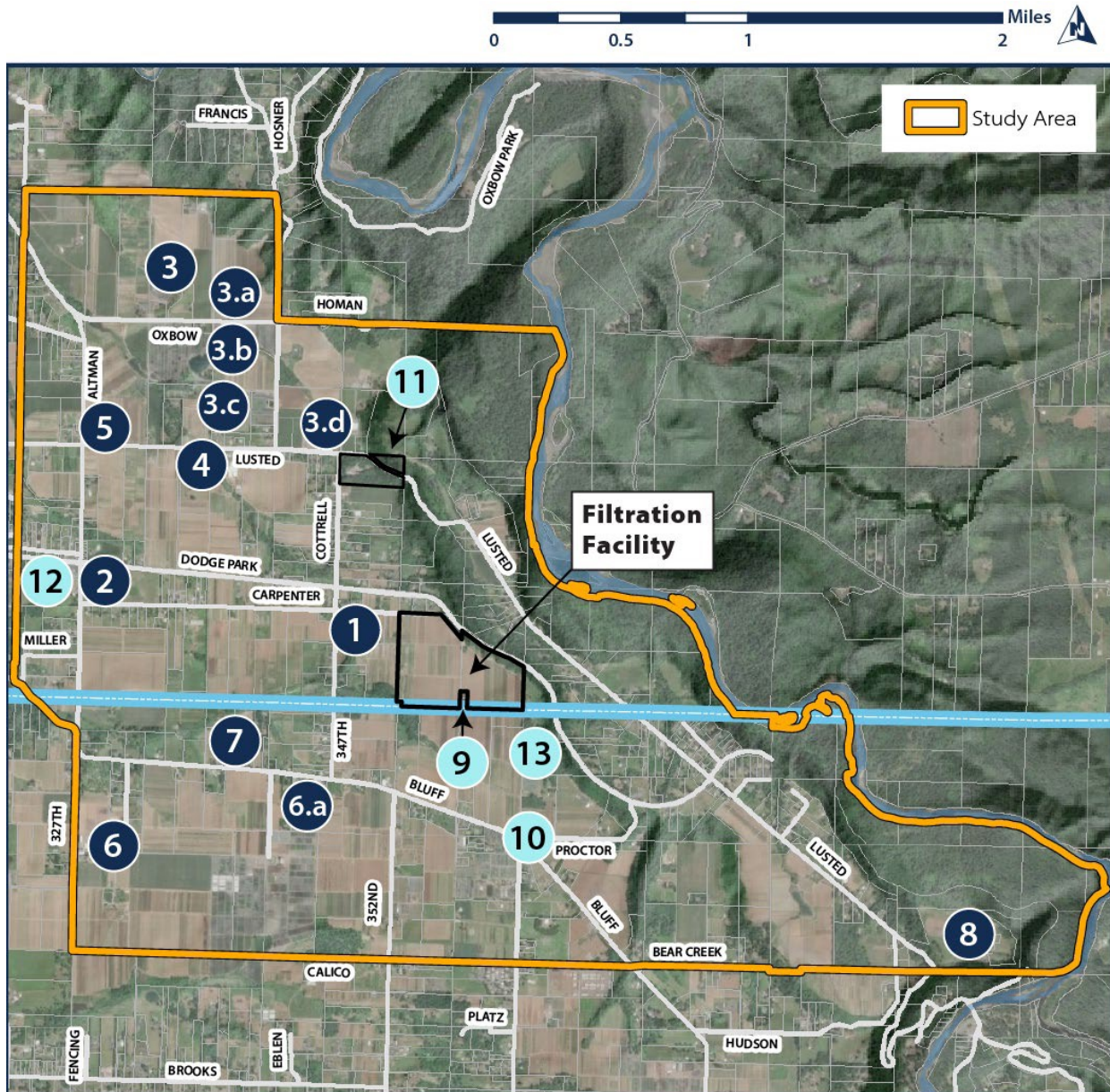
- Sester Farms primary operations center (3.d near the intersection of Lusted and Cottrell roads)
- Surface Nursery's headquarters and primary operations center (4 on Lusted Road near the proposed intertie)

Figure 5 shows these and other mid- to large-scale nursery and agricultural processing centers (dark blue circles), and public facilities (light blue circles) in the study area. The project team has identified eight mid- to large-scale nursery operations in the study area. Appendix O.1 includes images and descriptions of each of the agricultural processing, nursery operational centers, and public (including solar) facilities identified in Figure 5.

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<sup>6</sup> Winterbrook could not independently corroborate the data presented in Table 1. If any of the businesses listed above believe that this table is in error, Winterbrook would support amending the table based on a more reliable data source.

## Bull Run Filtration Projects Land Use Applications



**Figure 5. Mid- and Large-Scale Nursery and Agricultural Processing Centers and Public Facilities**

Figures 6-10 focus on the appearance and operational characteristics of six other mid- to large-scale nurseries that help define the visual character of the area. The discussion below each figure describes operational impacts from nursery operations (e.g., noise, glare, and chemical use) that provide a baseline for evaluation of potential filtration facility operational impacts. The number in the caption below each set of images refers to the Figure 6 locational key.



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**Figure 6. R&H Nursery (Carpenter Lane #1)**

Figure 7 shows images of the R&H Nursery operational center which abuts the filtration facility site to the west. There are five farm outbuildings and four temporary greenhouses that share access from Carpenter Lane. Most of these outbuildings are painted white and have gable or shed roofs. The classic, gambrel-roof barn is roughly 27 feet tall. The nursery employs an estimated eight people and has no formal parking areas. The area between the farm buildings and the public ROW (roughly 65 feet) is used for truck and trailer parking and outdoor maneuvering between three loading docks. Semi-trailer trucks and buildings are visible from Carpenter Lane and nearby rural residences. Like other nurseries in the study area (as discussed in more detail below), R&H Nursery's accepting farming practices include the use of noisy farm equipment, unshielded outdoor lighting, and prudent application of chemicals according to label instructions.



## Bull Run Filtration Projects Land Use Applications



**Figure 7. Sester Farms (33943 Oxbow Drive #3.a)**

The Sester Farms satellite operation is shown on Figure 8. The site has two farm buildings, nine greenhouses, and two residences. The two farm buildings cover 3,800 sf and have white metal siding. The second farm building is sided with beige metal. Both farm buildings are behind existing residences, with the nearest building roughly 160 feet from Oxbow Drive. There are no formal parking areas, loading docks, or outdoor storage areas. When traveling from either direction along Oxbow or Hosner roads, farm buildings, greenhouses, and outdoor operations are clearly visible. Like other nurseries in the study area, Sester Farms uses noisy farm equipment, has unshielded outdoor lighting, and applies chemicals to nursery crop fields according to label instructions.



**Figure 8. Sester Farms (33840 Oxbow Drive #3.b)**

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The Sester Farms operation center shown on Figure 9 has less building coverage (at about 20,000 square feet) than the Sester Farms main facility on Lusted Road (at over 90,000 sf). The warehouse is about 28 feet tall and roughly 32 feet from Oxbow Drive. The utilitarian building has white metal siding with transparent plastic near the roofline for natural light. The eastern side of the building has six trailer loading docks and 12 formal striped spaces between the building and Oxbow Drive that appear to be used for outdoor storage and vehicle maneuvering. There is no screening between Lusted Road and the nursery structures. A chain-link fence topped with barbed wire defines the street frontage and does not screen a bare cinderblock wall. There is an unshielded pole light in the upper-left portion of the lower left-hand image and an unshielded wall light near the center of the image.



**Figure 9.T.H. Belcher Nursery, Inc. (33755 Bluff Road #7)**

Figure 9 above shows Belcher Nursery which has six nursery buildings at this location with a combined footprint of 21,000 sf. The tallest building is about 30-feet high. The buildings typically have painted metal siding and gabled metal roofs. Semi-trailer trucks regularly access the site to transport nursery products. There are 15 to 20 informal parking spaces, at least three loading bays, and outdoor storage on the site. The farm buildings and unshielded outdoor lighting are partially screened from Bluff Road by homes and dense landscaping. The use of plantings and copious setbacks in this secluded and relatively low-impact nursery operation are similar to the extensive plantings and deep setbacks incorporated into the filtration facility layout and design.

Overall, Figures 7-10 and the accompanying text show that the mid- to large-scale nursery operational centers and agricultural processing centers typically have unscreened buildings, often with unpaved and screened outdoor storage and parking areas. Because most nursery operational centers use noisy outdoor equipment and diesel trucks, and have unshielded light fixtures, they typically have off-site noise, lighting, and air quality impacts, which help define the character of the area. As explained further below, the filtration facility has been designed to screen buildings, pave or landscape all portions of the site to reduce the risk of dust, and to mitigate noise, light, and air quality impacts that could result from a hypothetical unmitigated project. For these reasons, the filtration facility is consistent with the character of the study area, as the study area includes large operational facilities with significantly higher external impacts, such as those from unscreened buildings, noise, light, and air quality.

### **A.0.2 Large-Scale Nursery as a Reasonable Worst Case Development Scenario**

As a farm use, nurseries are allowed outright in the MUA-20 zone. As discussed above, a mid- to large-scale nursery operational center at the filtration facility site would be consistent with the character of the area, as they are common in the study area. For this reason, an unscreened, unmitigated nursery operational center can be considered a “reasonable worst-case scenario” that serves as a baseline for evaluating potential impacts for development of the filtration facility site in relation to “the character of the area.”

### **A.0.3 Forest Visual and Operational Characteristics and Consistency**

As documented in Appendix D.3, small-scale forested areas (woodlots) tend to be located in the MUA-20 and in county CFU and TBR (forest) zones west of the Sandy River, whereas large-scale commercial forest operations tend to be located outside of the study area, east of the Sandy River. Large-scale commercial forest operations typically have major externalities associated with chemical applications, road and bridge construction, and harvesting.

Small woodlots are common in the MUA-20 zone and study area and contribute to the visual appeal of the study area. Most forested areas within the study area are not managed for large-scale commercial forestry purposes; however, Appendix D.3 identifies several NOAPs (permit notifications) for small-scale thinning and timber harvests within the study area. These small-scale forest operations are regulated by the Forest Practices Act (FPA) and will not be impacted by the filtration facility. Small-scale commercial forestry operations have relatively minor external impacts, except during occasional thinning or harvesting operations.

Woodlots and small-scale forest operations help to define the character of the area and are allowed outright in the MUA-20 zone, subject to compliance FPA provisions.

Forestry uses typically are not sensitive to potential impacts from public facilities or from agricultural operations (in the reasonable worst case development scenario). As detailed in Approval Criterion C below, the project has been designed to ensure that no significant impacts on forest uses will occur from the filtration facility.

The Water Bureau does not manage forested areas for commercial forestry purposes. The small, forested area on the filtration facility site will be retained and many additional trees will be planted in buffer areas to provide screening and impact mitigation. Therefore, the proposed filtration facility is consistent with the woodlots and small-scale forest operations in the study area.

### **A.0.4 Public Facilities Visual and Operational Characteristics and Consistency**

In Oregon, water treatment facilities are part of the character of rural areas. Of the 16 Oregon water treatment facilities that provide drinking water to populations greater than 40,000, the majority (10 facilities, or 62.5 percent) are located in rural areas, and only 6 are in urban areas.<sup>7</sup> These include many facilities located on or abutting Exclusive Farm Use, Forest Resource, and similarly zoned lands, such as the Joint Water Commission (JWC), providing water for approximately 450,000 customers in Washington County. This common practice of locating water treatment facilities in rural areas is driven, at least in

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<sup>7</sup> The Oregon Water Treatment Plant Operations study in Appendix E.1 focused on water treatment facilities, similar to the proposed project, that serve larger populations. Water treatment facilities that serve smaller populations often are found in rural areas near water supply sources or because they serve smaller rural communities.



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part, by an engineering need to locate these facilities near surface water sources in order to allow for gravity flow of that water to the communities they serve.

In addition to being consistent with the character of rural areas because in Oregon they are most commonly sited there, these existing water facilities in rural areas across the state have proven to be consistent with that rural character in terms of being low impact facilities that do not conflict with surrounding rural residential, farm, forest, and public uses. As documented in Appendix E.1, interviews with representatives from these water treatment facilities revealed that odors, noise, light, traffic, and chemical safety have not been issues at other water treatment facilities across the state located in rural areas—even though they are near schools, residences, and other potentially sensitive uses. Best practices learned from these interviews have been incorporated into the Water Bureau filtration facility design.

Consistent with that experience elsewhere in Oregon, public facility uses are scattered throughout the study area, including significant existing water facilities. The filtration facility will directly support the LHTF and facilities owned and operated by the Pleasant Home and Lusted water districts in the study area.

Public facilities typically are not sensitive to potential impacts from other public facilities or from agricultural operations (in the reasonable worst case development scenario), with the exception of schools. This potential is addressed in detail in sub-section A.3 below to ensure that no impacts will occur from the filtration facility.

Four examples of nearby public (including solar) facilities are shown below. Figure 6 (above) provides a locational key to some of the public facilities within the study area. There are no parks in the study area. Additional images of public facilities within the study area are provided and described in the **Introduction** and in Appendix O.1.



**Figure 10 PHWD Water Tanks (35524 Carpenter Lane #9)**

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As shown on Figure 11, PHWD has two 80- to 90-foot-tall water storage tanks on a separate parcel abutting the filtration facility site. The first tank was conditionally approved in 1975; the second larger tank was conditionally approved in 2013 (Appendix 0.3, Case File #T3-2013-2935) and was found to be consistent with the character of the area.

A chain link fence topped with barbed wire encloses the base of the tanks. The site is accessed from the east end of Carpenter Lane through the filtration facility site. A small gravel parking area is provided for maintenance vehicles. Both storage tanks were painted teal after construction of the second tank. The unscreened tanks are visible beyond the rural development core analysis area. The tanks do not appear to have significant noise, light, or air quality impacts.

As shown on Figure 12 below, the Oregon Trail Academy is located more than 2,000 feet south of the filtration facility on Bluff Road and serves students from within and outside the study area. The K-8 school has roughly 350 students, 17 full-time teachers, and supporting administrative staff. There are ten buildings with a combined footprint of roughly 46,000 square feet. The school has two parking lots with 70 marked spaces. The school and parking areas have little or no landscape screening.

The Oregon Trail Academy—with its gable roofs, wood siding, and neutral color scheme—has made an effort to blend in with existing rural dwellings in the area, but the buildings and parking areas are not screened from public view. Outdoor pole lighting is not shielded. Noise impacts from outdoor activities and buses are audible beyond site boundaries.



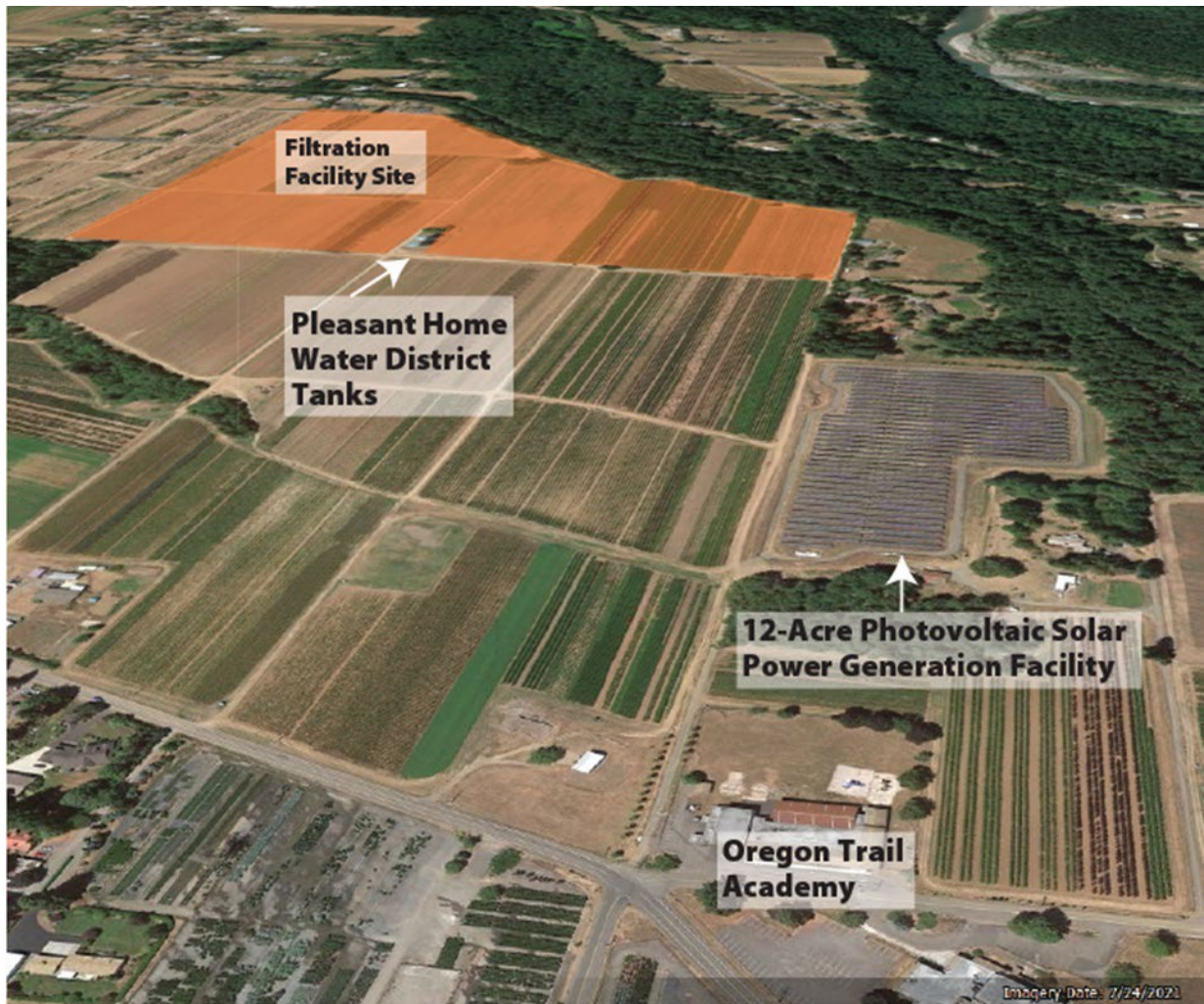
**Figure 11. Oregon Trail Academy (36225 Proctor Road #10)**



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As shown on Figure 13 below, a solar facility (technically a “photovoltaic solar power generation facility”) is located southeast of the filtration facility site and the PHWD water tanks, just north of the Oregon Trail Academy. The solar facility includes passive solar panel modules that occupy approximately 12 acres on the larger, 34-acre EFU property. The solar facility abuts two residential parcels.

Clackamas County approved this solar facility in 2018 (Appendix O.3, Case File #Z0384-18-C) as a “commercial utility facility for the purpose of generating power for public use” per OAR 660-033-0130(38). The solar facility is visible from several homesites in the area. In approving this solar facility use, the Clackamas County hearings officer did not require screening from adjacent homesites, or from adjacent farm or forest land.



**Figure 12. Photovoltaic Solar Power Generation Facility (36461 SE Proctor Road)**

The solar modules are similar in height and scale to nursery greenhouse complexes found throughout the study area. Figure 13 compares the 12-acre solar facility with a nearby rotating greenhouses site served by Bluff Road within the study area.



Figure 13. Comparison of Solar Facility and Nursery site with Rotating Greenhouses

#### A.0.4 Conclusion

In Oregon, water treatment facilities are part of the character of rural areas. Consistent with that experience elsewhere in Oregon, public facility uses are scattered throughout the study area, including significant existing water facilities. These facilities were subject to CU or similar reviews and were found to be consistent with the character of the area. Therefore, the filtration facility is consistent with the character of the area because it includes many existing public and water facilities.

With the exception of the LHTF, public and solar facilities in the study area are unscreened (the PHWD water tanks and the solar facility south of the filtration facility site) or partially screened (the school and the power substation) and are visible from surrounding properties and public roads. The Oregon Trail Academy includes unshielded lighting.

As explained further below and in **Section 1.B Filtration Facility Design Review**, the filtration facility has been designed with extensive screening and will sit on the lowest portion of the site in order to reduce any potential visual impacts. Additionally, the filtration facility includes only fully shielded lighting compliant with County dark sky standards. Therefore, the filtration facility is consistent with the character of the study area, as the study area includes public facilities with higher external impacts, such as those from unscreened buildings and light trespass.

For these same reasons, as noted above, the reasonable worst-case scenario includes a hypothetical unscreened public facility on the filtration facility site.

#### A.0.5 Existing Residential Operational and Visual Characteristics and Consistency

Based on an analysis of tax assessor records, Winterbrook estimates that the study area has approximately 370 dwelling units. Residential farm and forest dwellings are found in the EFU and commercial forest zones in both counties. The **Introduction** shows that residential uses in the study area are found primarily in the Multnomah County MUA-20 and RR zones and the Clackamas County RRFF-5 zone.

Residential development is the predominant rural development land use in the study area. Rural residential development is found on the bench below and east of the filtration facility site (served primarily by Lusted Road and Dodge Park Boulevard). Clusters of residential development are found in the rolling hills west of that area, primarily along roadways, and often adjacent to mid- to large-scale



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nursery operations. Rural residences are located across Carpenter Lane from the filtration facility, and along both sides of Cottrell Road.<sup>8</sup>

Unlike farm, forest, and public uses, residential development can be sensitive to potential impacts from public facilities or from agricultural operations (in the reasonable worst case development scenario). This potential is addressed in detail in subsection A.3 below to ensure that no impacts will occur from the filtration facility.

As shown on Figures 15-20, rural residences in the study area come in a wide variety of sizes, ages, and designs. In the aggregate, residential uses generate substantial traffic and have external impacts related to noise, outdoor lighting, and appearance. Residences also generate transportation impacts, can have adverse visual impacts, and contribute to ambient noise and light levels, as discussed under noise and lighting impacts below.



**Figure 14. Homesite at 34116 Carpenter Lane**

As shown on Figure 14 above, this 5,483-sf home has an attached garage and utility space. The home was built in 2004 and is surrounded by nursery fields. The two-story building has a series of hip-roofs and is painted a stone-gray color that blends in with the surrounding fields. The Multnomah County homesite is zoned MUA-20.

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<sup>8</sup> The MUA-20 zone is unusual in that it accommodates both mid- to large-scale nursery operations and small- to large-site (one to 20-acre) developed residential lots.



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**Figure 15. Homesite at 6849 Cottrell Road**

The 1,452-sf bungalow in Figure 15 above was built in 1921. This home has gabled and shed roofs and is painted a teal color. The property includes an attached garage and an outbuilding in the rear. The Multnomah County homesite is zoned MUA-20.



**Figure 16. Homesite at 6715 Cottrell Road**

The 2,081 sf ranch-style home in Figure 16 was built in 1961. This home has an attached garage and is painted a beige color that blends in with surrounding residential area. A large, ecru metal outbuilding faces Cottrell Road and screens some of the stored vehicles and equipment from public view. The Multnomah County homesite is zoned MUA-20.



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**Figure 17. Homesite at 8545 347th Avenue**

The 2,376 sf home in Figure 17 has an attached garage and detached accessory structures and was built in 1970. The home has primarily gabled roofs and is painted a tan color. The outbuildings have a wood exterior and gable and shed roofs reminiscent of historic, northwest farm buildings. This Clackamas County homesite is zoned RRFF-5.



**Figure 18. Homesite at 36800 Proctor Road**

The 864 sf home in Figure 18 was built in 1940 and has several outbuildings. The home has a gable roof with a shed roof extension and is painted a fawn color that blends with the farm and forest landscape. Vehicles and equipment are stored outdoors and are visible from Proctor Road. The Clackamas County homesite is zoned RRFF-5.



**Figure 19. Homesite at 35321 Carpenter Lane**

Figure 19 shows a two-story, 1,512 sf home with a gable roof and is painted gray or beige. The 2.57-acre parcel includes a construction business, a manufactured home, and a large, detached shop building. Outdoor storage areas for vehicles and construction materials are visible from the street. This homesite is located across Carpenter Lane near the proposed filtration facility entrance. Residential uses are sensitive to impacts from agricultural and forest operations in the study area in terms of noise, dust, odors, and traffic impacts from farm and forest activities.

### **A.0.5 Conclusion**

Rural residences contribute to the character of the area and are permitted outright in the MUA-20 zone. They come in a wide variety of sizes, ages, and designs. In the aggregate, residential uses generate substantial traffic and have external impacts related to noise, outdoor lighting, and appearance. As explained further below and in **Section 1.B Filtration Facility Design Review**, the filtration facility has been designed to be consistent with the styles of rural residences (along with other rural uses), and to mitigate any noise, lighting, or visual impacts. Therefore, the filtration facility is consistent with the character of the study area as it related to rural residences.



## A.1 Introduction to Filtration Facility Core (Impact-Specific) Analysis Areas

This Section A.1 explains the rationale for the size and location of core (impact-specific) analysis areas that potentially could be impacted by filtration facility operations. In prior decisions in Multnomah County related to this approval criterion, proposed uses which created substantial impacts on surrounding users were not considered consistent with the character of the area. The project team identified three core analysis areas<sup>9</sup> for the filtration facility based on the three types of impacts or types of impacted users being considered:

1. **Transportation Core Analysis Area:** The same as the study area shown on Figures 5 and 22. Transportation impacts are considered under subsection A.2 below.
2. **Rural Development Core Analysis Area:** The area shown on Figure 24 that could be adversely affected under the reasonable worst-case development scenario (either a large-scale nursery operation or the filtration facility without mitigating design features). Rural development impacts are considered under sub-Section A.3 below.
3. **Farm and Forest Core Analysis Area:** A third farm and forest practices core analysis area is described and analyzed under CU Criterion C below. That analysis is incorporated into this CU Criterion A by this reference but is not further discussed here. As explained further below, the size and boundaries of each core analysis area are based on the type of impacts being considered and the location of sensitive land uses that could be impacted.

As explained in the **Section 1 Overview** and relevant studies in the appendices, the core analysis areas are representative of and similar to the larger study area in terms of appearance, operational characteristics, and susceptibility to potential impacts from the filtration facility. For this reason, the core analysis areas (where smaller than the study area) allowed the project team to ensure that there would be no adverse impacts in the parts of the study area further away from the potential source of impacts.

## A.2 Transportation Impacts

The potential for transportation impacts from the filtration facility is analyzed in Appendix C.1 Transportation Impact Analysis (TIA) and summarized below. The TIA also evaluates parking and circulation needs and design and recommends Carpenter Lane improvements. All of the recommendations of the TIA have been included in the project design.

### A.2.1 Transportation Impacts Core Analysis Area

The project study area is based, in large part, on the transportation routes and intersections studied in the TIA because they could be impacted by filtration facility operations. Because study area roads and intersections serve agricultural, forest, residential, and public facility uses in the study area, the core transportation analysis area is the same as the project study area. The potential for transportation impacts from filtration facility operations on existing agricultural, forest, residential, and public facility uses in the study area are addressed in the TIA and summarized below.

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<sup>9</sup> A third farm and forest practices core analysis area is described under CU Criterion C related to potential impacts on accepted farm and forest practices.



### A.2.3 Filtration Facility Transportation Impact Analysis (TIA)

As stated in the TIA, the filtration facility anticipates 26 full-time employees, with no more than 10 on the largest shift. There will be occasional public tours arriving by bus during off-peak hours. The filtration facility will see a maximum of 16 chemical delivery trucks and nine solids haul trucks entering and exiting the site during a 5-day work week. Combined, this amounts to 25 truck trips per week, with an average of five trucks per working day.

The TIA evaluated the intersections and connecting roadways shown on Figure 22. Note that these intersections provided a primary basis for defining the project study area—which is also the transportation core analysis area. The reasons for selecting these intersections are provided in the TIA and include engineering judgement and identification of intersections of operational significance along arterials connecting neighboring urban centers and cities that are sources for project staffing and materials. The TIA demonstrates that there will be no significant impacts on county and state transportation facilities from the filtration facility.

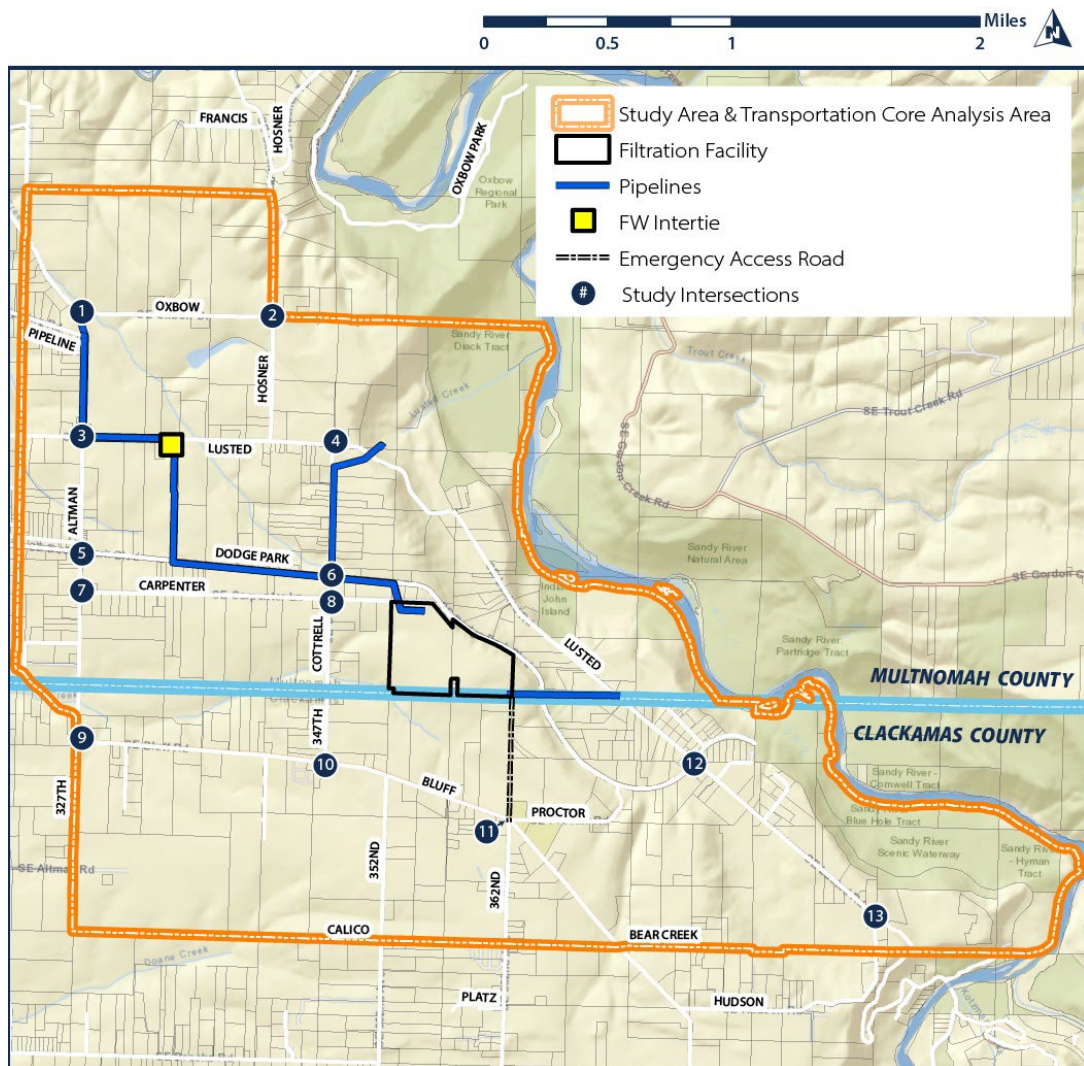


Figure 21. Intersections Evaluated in the Transportation Impact Study



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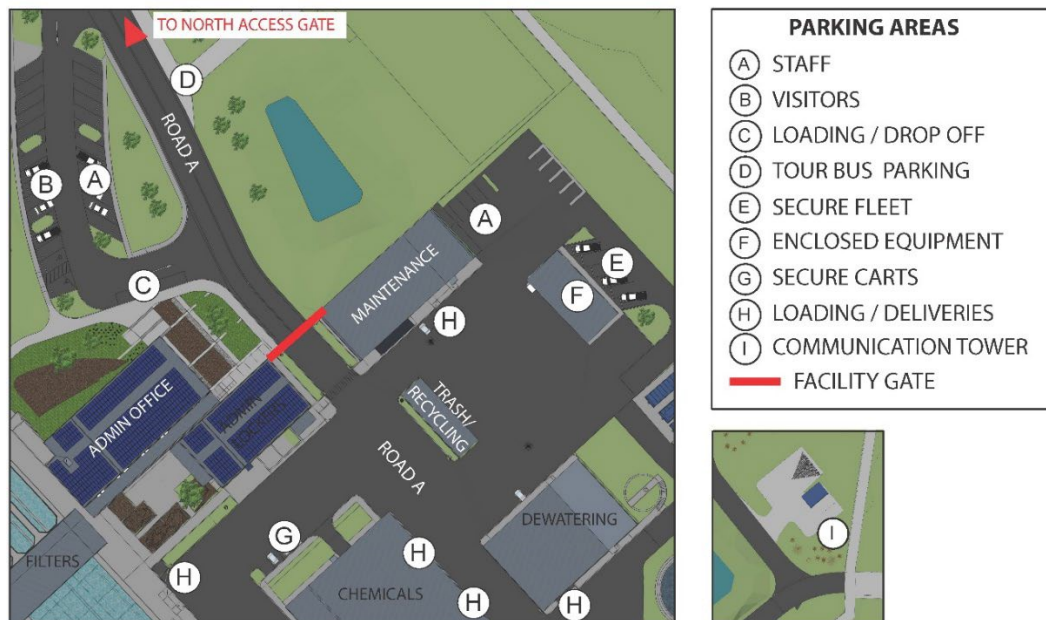
The TIA projects that the filtration facility will generate 32 morning peak hour trips and 32 evening peak hour trips. As documented in Table 6 of the TIS, all 13 intersections will continue to operate at acceptable levels per county standards during the 20-year planning period, after accounting for increases in background traffic and traffic generated from the filtration facility. As stated in the TIA (page 22):

*“... all study intersections as well as the SE Carpenter Lane site access will operate within the performance standards established by Multnomah County and Clackamas County under 2040 total traffic conditions during both AM and PM peak periods.”*

### A.2.4 Onsite Parking Need and Proposed Supply

As described in the TIA (Appendix C.1, pages 18-20) prepared by Global Engineering and in **Section 1.B, Filtration Facility Design Review**, 32 vehicle parking spaces and six loading spaces are provided in the site plan to serve the filtration facility.<sup>12</sup> To determine parking need, Global Engineering prepared parking and loading need counts in collaboration with Water Bureau staff and operators, and considered staff shift counts, the typical number of visitors expected, and operator fleet requirements. Based on that analysis, Global Engineering determined that 32 parking spaces and six loading spaces will more than meet all the filtration facility’s on-site parking needs. Figure 22 shows the location of the 36 parking spaces and six loading spaces at the filtration facility. **Section 1.B, Filtration Facility Design Review** provides detailed information demonstrating compliance with applicable code sections.

Section 1.B and the TIA demonstrate that there will be no impacts on area parking facilities from overflow parking from the filtration facility.



**Figure 22. Filtration Facility Parking and Loading Plan**

<sup>12</sup> This figure does not include the two spaces required to serve the communications tower. As documented in Section 1.C, two parking spaces are provided at the base of the communications tower.

## A.2.5 Proposed Carpenter Lane Improvements

Based on Global Transportation Engineering's site access evaluation (TIA, pages 22-23), the following improvements were identified for the potential site access roads:

*Each of these improvements will be provided as part of the Project:*

- *Access on SE Carpenter Lane (primary)*
  - *Under existing conditions, this roadway has a low speed limit with residences present. Suggest Multnomah County post the speed limit to encourage retention of slower speeds.*
  - *Minimal pavement markings are present. Pavement marking improvements should be applied at the proposed access point and the intersections of SE Carpenter Lane / Cottrell Road and SE Dodge Park Boulevard / Cottrell Road to better define intersection geometry.*
  - *Structural upgrades are necessary to both SE Carpenter Lane and SE Cottrell Road to accommodate an increase in truck trips associated with the ongoing filtration facility operations.*
  - *Turn radii have been evaluated and intersection improvements included at the site access, SE Carpenter Lane / SE Cottrell Road, and SE Dodge Park Boulevard / SE Cottrell Road, to ensure trucks can be safely accommodated.*

The emergency access to Bluff Road does not require any improvements, other than creating the access itself in compliance with Clackamas County standards. The Carpenter Lane access improvements recommended by the TIA are included as part of the project, and shown in Appendix A.1c. The TIA concludes that those improvements will serve to mitigate any potential impacts related to traffic entering and exiting the immediate area of the filtration facility.

## A.2.6 Transportation Impact Conclusion

Traffic generated by the filtration facility will have no significant impacts on the transportation system, as demonstrated by the TIA. The parking and circulation plan is adequate to accommodate planned filtration facility vehicles and meets applicable county parking and circulation standards. (See also **Section 1.B Filtration Facility Design Review**.) Proposed Carpenter Lane improvements address potential impacts related to trucks and visitors entering and exiting the filtration facility. Therefore, the filtration facility will not create impacts that would make it inconsistent with the character of the area.

## A.3 Rural Development Impacts

### Rural Development Impact Categories

Based on comments received from public outreach efforts and the project team's technical experience, there are five categories of potential filtration facility impacts on rural development uses (i.e., rural residences and schools that may be sensitive to filtration facility site development). Thus, the reasonable worst-case development scenario could adversely impact rural development due to the potential for:

1. Noise and Vibration Impacts (Section A.3.1),
2. Light and Glare Impacts (Section A.3.2),
3. Air Quality Impacts including odors, dust, diesel engine exhaust (Section A.3.3),
4. Water Quality Impacts (Section A.3.4), and
5. Hazardous Conditions Impacts (CU Criterion F below)<sup>13</sup>

### Rural Development Core Analysis Area

The rural development core analysis area includes all areas where sensitive residential and school uses could be adversely impacted under the reasonable worst-case development scenario, considering topography, vegetative screening, and distance from the impact generator. Figure 23 shows the boundaries of the rural development core analysis area. This area includes 48 homesites and the Oregon Trail Academy; these land uses potentially are sensitive to impacts from the reasonable worst-case development scenario on the filtration facility site.<sup>14</sup>

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<sup>13</sup> Geological and fire hazards and hazardous materials transport and storage issues are addressed under CU Criterion F. That analysis is incorporated into this CU Criterion A by this reference, and is not discussed further under this criterion.

<sup>14</sup> R&H Nursery and a portion of J. Frank Schmidt Nursery are within the rural development core analysis area; however, these uses are unlikely to be sensitive to worst-case development scenario identified above because the worst-case scenario includes large-scale nursery operations and these nursery uses have co-existed with unscreened public facilities in the rural development core analysis area for many years with no documented conflicts. Additionally, as documented in Appendix D.1, the filtration facility will have no significant impacts on the accepted farm practices at these nurseries.

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Figure 23. Rural Development Core Analysis Area

For each of the five rural development impact categories, the narrative in this subsection considers:

- Existing study area characteristics related to each specific impact category.
- Potential impacts from the reasonable worst-case development scenario (i.e., a large-scale nursery operational center without mitigating design features) on rural development uses.
- Actual filtration facility impacts on rural development uses after considering mitigating design measures.



### A.3.1 Noise and Vibration Impacts and Included Mitigation Measures

Under the reasonable worst-case development scenario, noise generated from a new nursery operational center<sup>15</sup> could adversely impact residential and school uses. Appendix E.3 includes the Noise Report (Stantec Consulting Services, 2022) prepared for the filtration facility. The report demonstrates that noise generated by the filtration facility will be mitigated and will comply with the Multnomah County and the Clackamas County noise ordinances.

#### A.3.1.1 Existing Noise Levels

As documented in the **Introduction**, the study area and the rural development core analysis area are characterized by farming (primarily nursery crops), residential, limited forestry, and public facility land uses. The rural development core analysis area is characterized primarily by nursery crop land with two operations centers, followed by residential and public facilities (school and water tanks) land uses, with limited non-commercial forestry activities.

As documented below, most of these existing uses generate noise that is occasionally audible beyond their site boundaries. When considering the incremental effect that the proposed filtration facility will have on the auditory character of the area, it is useful to establish a baseline. Table 2 summarizes project team research<sup>16</sup> on noise generators found in the study area and in the rural development core analysis area. As described in Appendix E.3 and E.4, the level of noise generated by the filtration facility will not exceed the code-allowable levels of 60 dBA during the daytime and 50 dBA at night. For reference, 60-70 dBA is normal speech.<sup>17</sup>

**Table 2. Existing Noise Sources and Levels**

Existing Land Use	Noise Source	Decibel Levels at Source
Agriculture	Gas Powered Nursery Farm Equipment	100-105 dBA
Forestry, Agriculture, Residential	Gas Powered Chain Saw	115 dBA
Residential	Gas Powered Lawn Equipment	95-105 dBA
Forestry, Agriculture, Residential	Barking Dogs	80-120 dBA
All Land Uses	Delivery Trucks	75-80 dBA
Agriculture	Semi-Trailer Diesel Trucks	100-120 dBA
Agriculture	Tractors, Excavators, Trucks	80-100 dBA
Agriculture and Residential	Irrigation Pumps	100 dBA
Agriculture and Residential	Diesel Powered Generators	100-105 dBA

Source: Appendix D.1 Agricultural Compatibility Study

<sup>15</sup> The Multnomah County Sound Control Law, MCC 15.270(F) exempts “Sounds caused by industrial, agricultural, and construction normal operations...” from county sound control regulations.

<sup>16</sup> See Appendices D.1 (Agricultural Compatibility Study) and E.3 (Exterior Noise Analysis).

<sup>17</sup> Appendix E.3, Table 2-1.



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Table 2 shows that noise levels in the study area and the rural development core analysis area can be substantial. However, unlike public facilities, farm and forestry operations are exempt from county noise standards. Residential uses and noncommercial forest operations often use noisy chain saws and garden equipment that contribute to higher ambient noise levels in the rural development core analysis area.

### A.3.1.2 Filtration Facility External Noise Analysis

As documented in Appendix E.3, the filtration facility is designed to minimize potential noise levels that could otherwise be experienced by rural development uses in the area:

- The filtration facility is located near the center of the site to maximize distance between the filtration facility and noise-sensitive uses.
- Proposed noise-attenuating measures minimize noise escaping from noise-generating equipment (including air handling units, centrifugal blowers, flocculators, air source heat pumps, sediment pumps, water pumps, condensing units, generators, and transformers).
- Landscape berms and vegetation installed around noise-generating buildings and structures will further mitigate noise impacts on sensitive uses.

Multnomah and Clackamas County have adopted noise standards. Compliance with relevant sections of MCC Chapter 15.269 (Multnomah County Noise Code) and CCC 6.05 (Clackamas County Noise Code) is demonstrated in Appendix E.3. Both codes require that:

1. Decibel levels do not exceed 50 dBA at the property line of noise sensitive uses (for example, residences and schools) at night (from 10:00 p.m. to 7:00 a.m.).
2. Decibel levels do not exceed 60 dBA at the property line of noise sensitive uses (for example, residences and schools) during the day (from 7:00 a.m. to 10:00 p.m.).

Figure 24 shows that noise levels from normal filtration facility operations will be less than 50 dBA at the property line at all times. The numbers shown at the site perimeter indicate testing locations.

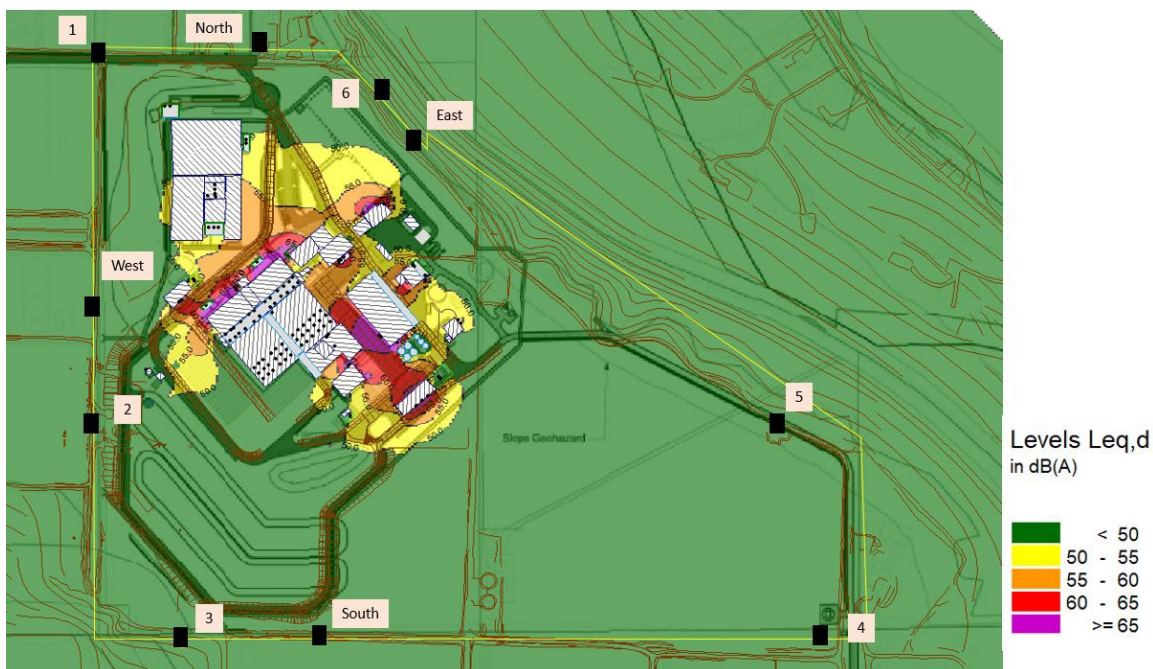


Figure 24. Noise Levels from Normal Filtration Facility Operations

Appendix D.3, Table 2 and Figure 3 show the location of 10 measurement points to the north, east, south, and west of the filtration facility site and provides the expected sound levels at these points. At all times, the sound level at each of these points will be below the nighttime sound level of 50 dBA—that is, the sound generated by the normal operation of the filtration facility will be below the sound level of normal speech.

Unlike many of the noise-generating activities that characterize the study area and the rural development core analysis area, filtration facility operational noise will not produce sound exceeding the level of normal speech at the property line.

### **A.3.1.3 Emergency Generators and Fire Pumps**

Both county noise codes exempt emergency generating equipment from meeting these standards. Nevertheless, the filtration facility has been designed to ensure that the testing of emergency equipment during daylight hours will not exceed the daytime standard of 60 dBA at the property line. To minimize noise trespass and to meet this standard, the Water Bureau will implement noise mitigations for emergency generators. Although the emergency generators and fire pumps will not operate continuously, they will have a maintenance schedule where the operation of the units will be tested. This testing will be conducted during the day-time hours between 7:00 am and 10:00 pm. As shown in Appendix E.3 (Table 3 and Figure 5) emergency generators and fire pumps and will comply with daytime noise codes limits.

### **A.3.1.4 Vibration Analysis**

Appendix E.4 considers potential vibration impacts from the filtration facility. As noted in Section 5 of the analysis:

*To prolong service life and reduce maintenance, equipment will be mounted with appropriate mass and base isolation to limit vibration. These efforts will also limit the areas where equipment vibration can be perceived to those areas immediately adjacent (within the same room or closer than 10 feet away outdoor) to the equipment within the property boundary.*

Thus, vibrations from equipment used at the filtration facility will have no off-site impacts.

### **A.3.1.5 Noise and Vibration Impact Conclusion**

As documented in Appendix A.4 Exterior Noise Analysis, the filtration facility will include noise mitigation measures that ensure compliance with county noise standards. In most cases, noise levels at property lines will be considerably below noise levels allowable by county code (MCC Chapter 15.269). Generally, filtration facility processes that emit noise will be located within buildings that incorporate mitigation measures to reduce exterior sound levels. In addition, the filtration facility structures will have exterior noise buffering measures such as landforms and vegetated setbacks from property lines.

As a corollary to potential noise impacts, the Water Bureau ensured its design would not create vibration impacts, as documented as Appendix A.4 Air Quality, Dust, Noise, and Vibration Memo. Therefore, the filtration facility is consistent with the auditory character of the area.

### A.3.2 Light Impacts and Included Mitigation Measures

Multnomah County Dark Sky Lighting Standards (MCC Section 39.6850) apply to new development—including residences, public utilities, and new agricultural or forest structures constructed after October 22, 2016.<sup>18</sup> Potential impacts on rural development uses from the reasonable worst-case development scenario on the filtration facility site include unscreened light that could emanate from nighttime nursery field or outdoor processing or loading operations.

Appendix E.2 Exterior Lighting Analysis (Elcon Associates, 2022) prepared for the filtration facility demonstrates that all proposed lighting is designed not to trespass beyond the filtration facility site boundary, as required by Multnomah County’s Dark Sky Lighting Standards Ordinance (MCC 39.6850).

#### A.3.2.1 Existing Light Impacts

As documented in the **Introduction**, the study area is characterized by farming (primarily nursery crops and production), residential, forestry, public facility, solar facility, and utility land uses. The rural development core analysis area is characterized primarily by nursery crop land and production facilities, residential, and public and solar facilities (school, PHWD water tanks, and solar facilities), with limited non-commercial forestry activities.

As documented below, most of these uses generate light and are not subject to MCC 39.6850 Dark Sky Lighting Standard. The Dark Sky Lighting Standard applies to the filtration facility but does not apply to lighting fixtures lawfully installed before the effective date of the ordinance (October 2016) or to lighting associated with most farm and farming practices if they occur for less than 60 nights in a year.

When considering the incremental effect that the proposed filtration facility will have on the night sky within the study area, it is useful to establish a baseline. Based on Winterbrook observations,<sup>19</sup> residential homesites frequently have outdoor security or safety lighting fixtures that are not shielded and, therefore, do not meet current Dark Sky Ordinance lighting standards. Residential homesites with multiple unshielded outdoor lighting fixtures were observed along every main road surveyed within the study area, with over a third of all residential homesites having at least one unshielded outdoor light *on and in use* during the hour survey.

Figure 25 (below) is copied from county’s Dark Sky Ordinance staff report and shows “unacceptable or discouraged” outdoor light fixtures—the majority of which were commonly found in the study area. As shown in Figures 26-35 below, examples of unacceptable light fixtures are found around many homes, nurseries, and public facilities in the study area. In contrast, Figure 37 (several images below) shows acceptable lighting fixtures such as those proposed at the filtration facility.

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<sup>18</sup> MCC 39.6850(B) exempts agricultural and forest operations from county lighting standards but does not exempt new agricultural or forest buildings: “...permanent lighting on buildings, structures or poles associated with farm practices and agriculture use is subject to the requirements of this section.” A comparable provision exempts forest operations.

<sup>19</sup> Winterbrook conducted a windshield survey of unshielded outdoor lighting near the filtration facility site and within the study area on Thursday, May 19, 2022, between 8:45pm and 9:45pm. The survey assessed outdoor lighting fixtures along Bluff, Hudson, Lusted, Altman, and Cottrell roads, Dodge Park Boulevard, and Carpenter Lane, in both Multnomah and Clackamas counties. Winterbrook does not provide in this narrative specific home addresses to avoid intruding into the privacy of residential property owners. Winterbrook recorded the general types and locations of unshielded outdoor lighting for residential homesites, as well as agricultural and public facilities operations. Note that only lights in use at the time of the windshield survey contribute to the observations described below, which likely resulted in an undercount of the total unshielded outdoor lighting in the windshield survey area.

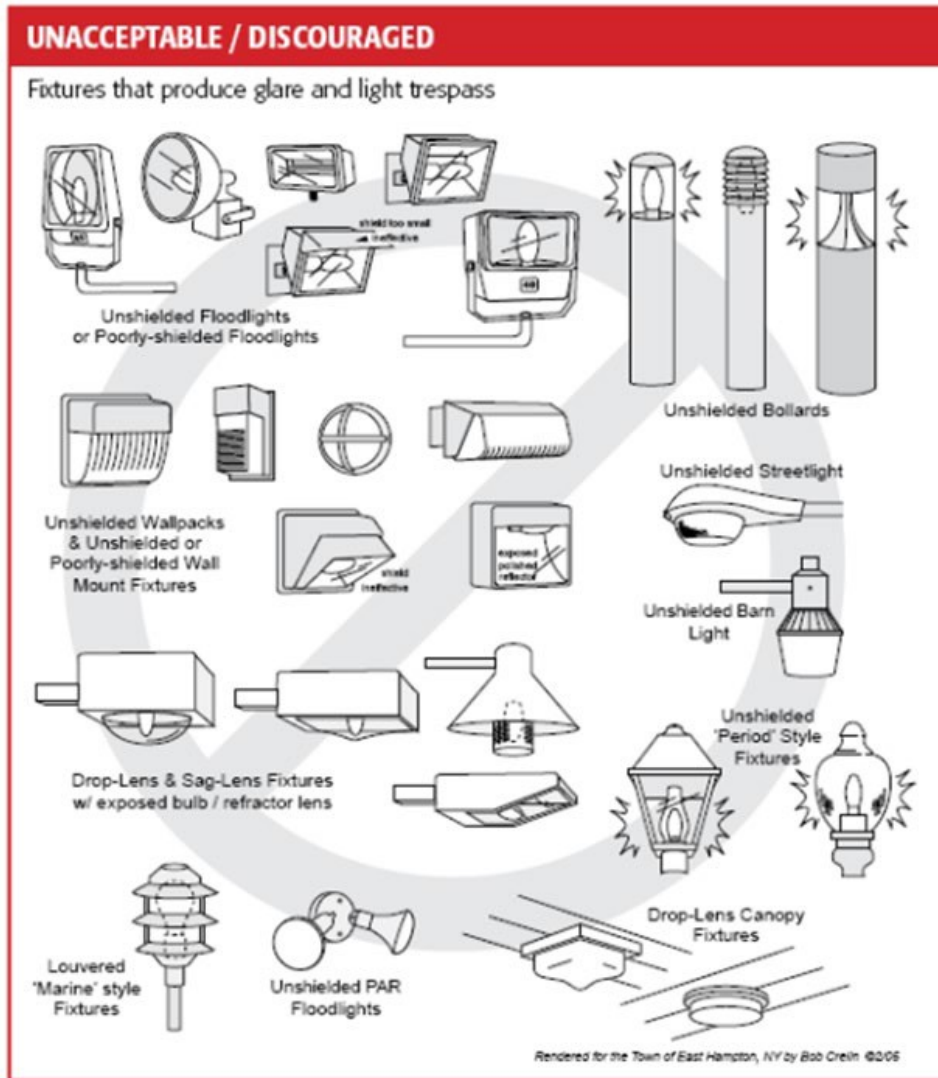


Figure 25. Fixtures that Produce Glare and Light Trespass



### **Unshielded Residential Light Fixtures**

As shown on the images below, older homes (pre 1990) often have unshielded or poorly shielded wall mount fixtures, “period” pole fixtures, and/or driveway entrance lights. Newer or recently remodeled homes often have more and larger unshielded light fixtures, including decorative entrance bollards, landscape lights, multiple wall sconces, “period” fixtures, ground path and driveway lights, security lights with exposed bulbs/transparent fixtures, and tall pole lights near outdoor building entrances, storage areas, and/or parking areas. Because the Dark Sky Ordinance did not become effective until 2016, it is likely that most of the fixtures shown below met county standards at the time of installation, but they nevertheless comprise the current character of the area.

Figures 26-30 show several representative examples of unshielded residential light fixtures observed in the windshield survey. Images are taken from Google Earth. All homesite images are within the study area. Home addresses are not included.



**Figure 26. Residential Small Entry Pole Light Illuminates Driveway and Parking Area**



**Figure 27. Tall Unshielded Pole Lights Illuminate Accessory Structure and Storage Area**



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**Figure 28. Residential Tall Unshielded Pole Lights Illuminate Driveway and Parking Area**

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Figure 29. Unshielded Wall Lights Illuminating Garage and Accessory Structure Parking Areas



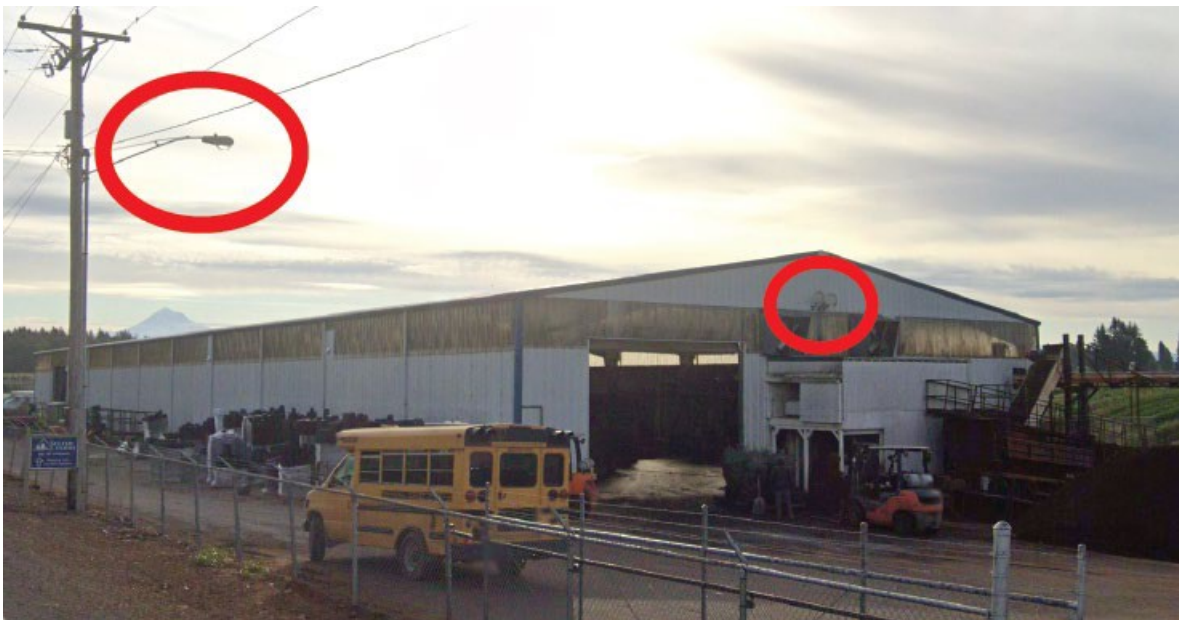


Figure 30. Residential Unshielded Entry Lights Illuminating Driveway and Entrances

### **Agricultural Light Fixtures**

The light fixtures observed in agricultural operations centers were similar to residential homesites with multiple outbuildings. However, the concentration of unshielded lights for agriculture operations far exceeds any residential use. The glows from several agricultural operations centers are visible from a half-mile away or more. For example, agricultural operations centers along Lusted Road were visible driving along Dodge Park Boulevard, and agricultural operations centers along Oxbow Drive were visible driving along Lusted Road.

Agricultural warehouses and processing centers typically have unshielded security floodlights above their entrances, pole lights over their vehicle maneuvering and outdoor storage areas, and arena lighting over some fields. Light is sometimes visible from greenhouses. Figure 31 through Figure 34 show examples of unshielded outdoor lighting fixtures but do not show the cumulative night sky effects of the industrial lighting found in large-scale nursery or agricultural processing operations.



**Figure 31. Sester Farms (Oxbow Drive) - Unshielded Pole and Wall Lights for Parking and Storage Area**



**Figure 32. Unshielded Wall Lighting at Surface Nursery (Lusted Road)**





Figure 33. J. Frank Schmidt Company Unshielded Wall Lighting (327<sup>th</sup> Avenue)



Figure 34. Glendale Nursery Classic Barn with Unshielded Pole Light and Shed with Unshielded Wall Light (Altman and Lusted Roads)



### **Public Facilities Light Fixtures**

Public facilities (including the PGE substation, the LHTF, and the Oregon Trail Academy) also have unshielded security lighting that pre-dates the Night Sky Ordinance. Figure 35 shows unshielded pole and wall lights at the Oregon Trail Academy.



**Figure 35. Oregon Trail Academy (Proctor Road)—Unshielded Pole Lights for Building and Parking Area**

#### **A.3.2.2 Cumulative Effects of Unshielded Lighting in the Study Area**

As shown on Figure 36, existing lighting in the study area is visible from Google satellite images. The unshielded lighting associated with large-scale nurseries, agricultural processing centers, homesites, and a few public facilities contribute to the relatively bright sky conditions in the study area.

As shown, night sky impacts from urban lighting are clearly visible in the Gresham portion of the regional urban growth boundary west of 282nd Avenue and in the Sandy urban growth boundary. The bright night sky above the unincorporated community of Boring also stands out. The Sandy River canyon and commercial forest land to the east are in dark contrast to the relatively bright farming and residential land that characterizes most of the study area.

## Bull Run Filtration Projects Land Use Applications

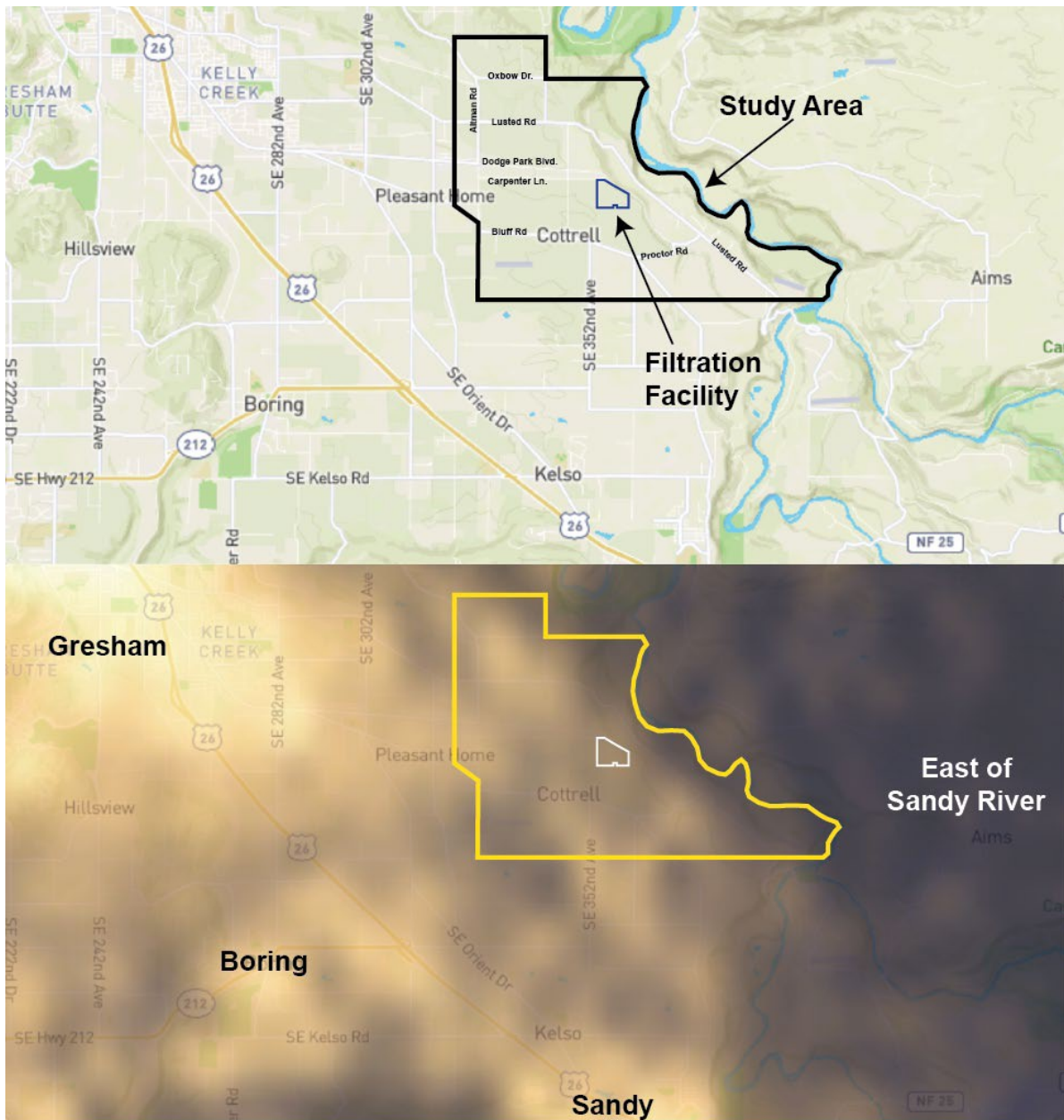


Figure 36. Night Sky Conditions in and around the Study Area

### A.3.2.3 Filtration Facility Light Impacts

The MCC 39.6850(C) Dark Sky Lighting Standards apply to the filtration facility site and require that:

1. The light source (bulbs, lamps, etc.) must be fully shielded with opaque materials and directed downwards. "Fully shielded" means no light is emitted above the horizontal plane located at the lowest point of the fixture's shielding. Shielding must be permanently attached.
2. The lighting must be contained within the boundaries of the Lot of Record on which it is located. To satisfy this standard, shielding in addition to the shielding required in paragraph (C)(1) of this section may be required.

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**Response:** The March 7, 2015 Staff Report to the Planning Commission (March 7, 2015) regarding Proposed Dark Sky Lighting Requirements includes the following diagram showing acceptable light fixtures that minimize glare and light trespass and facilitate better night vision.



Figure 37 Acceptable Light Fixtures

As shown in the Exterior Light Plan (Appendix A.1a, Sheets E-322 through E-333 and GEN-E-140 through GEN-E-143), the project architects considered this diagram when considering light fixtures appropriate for the filtration facility. As documented in Appendix E.2, and **Section 1.B Filtration Facility Design Review**, all proposed filtration facility lighting will meet these standards.

- Fully shielded, full cut-off fixtures will be used for all on-site lighting.<sup>20</sup>
- Appendix E.2, Attachment B: Site Illumination Plan—Full Output shows that the proposed lighting scheme will not result in light spillover (trespass) beyond the property line—even at full output (which rarely occurs). All lighting will be contained within the boundaries of the filtration facility site.

#### **A.3.2.4 Proposed Light Mitigation Measures**

By using only fully shielded, full cut-off lighting fixtures that direct light away from neighboring property lines and the Carpenter Lane ROW, all applicable Dark Sky Lighting Standards will be met and all light will be contained within the boundaries of the filtration facility site.

#### **A.3.2.5 Light Impacts Conclusion**

The filtration facility is designed so that lighting is contained entirely within the boundaries of the filtration facility site, as shown in the Site Lighting Study (Appendix E.2). The lighting plan, which incorporates effective mitigation measures, complies with Multnomah County’s Dark Sky Lighting Standards Ordinance. Therefore, the filtration facility is consistent with the lighting character of the area.

### **A.3.3 Air Quality Impacts (Dust, Odor, and Emissions) and Included Mitigation Measures**

Potential adverse impacts on rural development uses from the reasonable worst-case scenario of a large-scale nursery operation include dust, odors, and operational air emissions. Appendices E.4-E.6 address these potential impacts and demonstrate that the filtration facility, with proposed mitigation measures, will not have dust, odor, or emission impacts that adversely affect air quality in the area. The dust and odor impacts are addressed in this section, and potential air quality impacts from hazardous materials on rural development uses are addressed under CU Criterion F, below.

#### **A.3.3.1 Existing Air Quality Impacts**

Residential development typically does not have significant adverse air quality impacts on sensitive uses related to dust or odors. However, as documented in Appendix D.1 (Agricultural Land Impact Study), D.4, and D.5, accepted farm practices and residential uses can potentially adversely impact sensitive residential and school uses in the following ways:

- Dust from farm planting, soil preparation, and harvesting;
- Farm, forest, and residential uses often use vehicles and equipment with diesel or gasoline engines; and

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<sup>20</sup> Submerged lights needed for process monitoring of the filtration facility are exempt from this standard (MCC 39.6850(B)(13)) and have a different design. Despite being exempt, the underwater lighting is designed to ensure that the filtration facility lighting will be contained within the boundaries of the filtration facility site, as shown in Appendix E.2.

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- Odors from farm fertilizers and food processing.

The proposed community service use and other public facilities—in part because they are subject to CU review – must ensure that air quality impacts (dust, odor, and emissions) are effectively mitigated.

### A.3.3.2 Filtration Facility Dust Impacts

The filtration facility site will be covered by landscaping, pavement, or buildings, so dust from filtration facility operations will not have a significant impact on surrounding land uses. As confirmed in Appendix E.4,

*During operation of the Filtration Facility, there will not be any activities that will generate significant amounts of dust. All frequently-travelled roadways and parking lots will be paved, so vehicle traffic is not anticipated to generate dust. Infrequently-travelled roads (those typically used less than once per week), including the perimeter road outside of the security fence and the emergency access driveway on the southeastern portion of the property will be gravel, and will be properly maintained to minimize generation of dust during use. The dust raised by infrequent travel along maintained gravel roads is considerably less than historical conditions from farming the site, as well as ongoing farming activities on neighboring properties, and is consistent with the rural character of the area.*

*Residual solids will be dewatered and stored and off-hauled as a moist cake, with a solids content of 10% to 30% - no dust is generated during normal operations of these facilities. Solids handling facilities and the areas around loading and off-haul locations will be washed down regularly and kept neat and clean, further minimizing the generation of dust.*

*Areas not actively used for the filtration facility operation will be landscaped and maintained to minimize dust generation.*

As a result of these measures, no significant dust emissions will result from the filtration facility.

### A.3.3.3 Filtration Facility Odor Impacts

Appendix E.5 Filtration Facility Odor Considerations Memo begins its analysis by stating that (Section 1, p. 1):

*In general, water treatment processes do not generate significant odors and no areas or processes of the Filtration Facility are expected to produce more than minor odors on Facility property or to emit any odors into off-site surrounding areas.*

The lack of odor production in water treatment facilities is reinforced in Appendix E.1, which evaluated water treatment plant operations and impacts around the state and determined that “odors at water treatment facilities are not an issue”.

Section 2 of the Appendix E.5 memo systematically describes the filtration facility main process train and explains why each step in these processes will have no external odor impacts.

Section 3 of the memo describes the filtration facility residual process train and states that:

*The odors generated from the water treatment facility residual solids are generally an earthy, organic smell, similar in character to common smells from forested or earthen areas in the Facility surrounding area. The residual solids at the Filtration Facility are simply the concentrated sediments and organics that were previously in the Bull Run source water. This*



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*is distinctly different from the typical odors at a wastewater treatment plant, which can generate more foul odors containing ammonia, hydrogen sulfides, and other unpleasant compounds associated with material from sanitary sewers.*

Section 4 of the Appendix E.5 memo focuses on odors from overflow basins and chemical injections. Regarding odors from overflow basins, the report determined that:

*Two large overflow basins (totaling 13.5 million gallons) serve both the main treatment process and residuals handling processes and will be an active component of the treatment process during normal operations. [...] in addition to receiving emergency overflows, filtered water from the filter-to-waste line will be routed to the overflow basin, providing a constant inflow of waste washwater to the basin. [...] By design, this constant fill-and-drain cycle results in relatively low detention times within the overflow basin, preventing algae growth and consequentially preventing the creation of odiferous compounds during normal operations.*

Chemical storage and pumping take place within the chemical building. The report states that:

*All chemical handling and storage facilities include secondary containment, with provisions to safely remove spilled chemicals by pumping them into a truck for off-site disposal. Chemical storage tanks feature vents that are routed through the roof of the chemical building to prevent any tank pressurization. Only two chemicals used (sodium bisulfite and sodium hypochlorite) have the potential to off-gas or generate odors at low levels. [...] These tanks vent to the roof, so there may be a slight odor at the roof of the chemical building. However, this odor is expected to be minimal and would disperse quickly. As a result, it is unlikely that any odor would be noticeable except on the roof of the chemical building.*

The report concludes as follows:

*By their nature, drinking water treatment plants generally do not emit more than minor odors. Nonetheless, the Filtration Facility design minimizes possible odor generation from all possible minor odor sources. As a result, the Filtration Facility is not expected to generate any off-site odors under normal or emergency operation. In addition to the presence of minimal odors and effective mitigation measures, the large setbacks from any potential odor sources to the property line mean that no odors would be detectable off-site.*

### A.3.3.4 Filtration Facility Air Emissions Impacts

Appendix E.4 Section 4.0<sup>21</sup> addresses potential emissions from vehicle operations, chemical delivery and storage, and standby diesel generators as follows:

*Activities that have potential to impact air quality include vehicle operation, chemical delivery and storage, and operation of the standby diesel generators.*

*Operation of internal combustion engine vehicles by staff and site visitors will have a minor air quality impact. PWB is in the process of converting their vehicle fleet to electric vehicles*

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<sup>21</sup> See also discussion under CU Criterion F of this narrative related to the transport, storage, and handling of chemicals at the filtration facility site.

## **Bull Run Filtration Projects Land Use Applications**

*(EVs), and the Facility will include EV charging stations to support this transition, and minimize air quality impacts.*

*Chemicals delivered to and used on the site may be released in small quantities during delivery and storage, but none of the chemicals proposed for the facility trigger air quality permit requirements or safety concerns. Chemical selection considered potential environmental hazards and, with the exception of ozone, chemicals which could create toxic air quality conditions (such as chlorine gas) will not be used at the Facility. Ozone generation will be closely monitored for air quality impacts; any leaks will result in the shutting down the generators until the issue is resolved. A Hazardous Materials and Management Plan (HMMP) has been prepared which includes details on the rules and safety measures associated with these facilities.*

*Diesel engines will be used to power standby generators and emergency fire pumps. These engines will meet current air quality regulations and will be operated primarily for periodic, short-term test cycles.*

As a result of these air quality measures, no significant air emissions will result from the filtration facility.

### **A.3.3.5 Air Quality Impacts Conclusion**

The filtration facility will not produce dust, odors, or emissions discernable from outside the site boundaries or that adversely affect air quality in the area. Driveways and circulation areas will be paved. Non-developed portions of the site will be landscaped with vegetative cover to prevent dust from blowing off site. Therefore, the filtration facility is consistent with the air quality character of the area.

### **A.3.4 Water Quality Impacts**

Appendix E.7 Johnson Creek Discharge Memo addresses potential water quality impacts including stormwater management, accidents and emergency operations, and structure failure of basins or storage tanks. Appendix H.1 Filtration Facility Stormwater Report ensures that stormwater runoff from the site will be detained and filtered prior to entering Johnson Creek.

#### **A.3.4.1 Johnson Creek Discharge Memo**

As explained in the Introduction to the “Potential Discharges to Johnson Creek” memorandum prepared by Stantec and Carollo engineers (Appendix E.7):

*The Filtration Facility being developed as part of the Bull Run Treatment Project will be located in eastern Multnomah County, near the headwaters of Johnson Creek. The treatment process is designed to be “zero liquid discharge” (ZLD) – all waste streams are treated so that concentrated solids are trucked off site, and liquid streams are recycled to the head of the plant. Two overflow/recycle basins are provided so that plant overflows or water drained from basins during maintenance operations is captured and returned to the head of the plant. Therefore, the only discharge to Johnson Creek will be stormwater, which will not exceed pre-development flows of stormwater from the site.*

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*The overall stormwater management plan consists of facilities designed to collect, detain, and treat stormwater at the proposed project site, in accordance with applicable codes and regulations. A Stormwater Drainage Report has been prepared documenting details of the design storm and the proposed stormwater collection, conveyance and storage facilities.*

*The design has also considered potential impacts to Johnson Creek due to:*

- *Accidents and emergency operations*
- *Structural failure of basins or storage tanks*

*As described below, the Water Bureau and the design team have made significant efforts to avoid or mitigate any potential risks to Johnson Creek water quality and habitat.*

### Accidents and Emergency Operations

Appendix E.7 includes the following measures to address potential accidents and explains how filtration facility is designed to respond to potential equipment failure:<sup>22</sup>

*The design of the Filtration Facility includes measures to prevent such any potential impacts on Johnson Creek from operation and maintenance activities at the Filtration Facility.*

- *All chemical handling and storage facilities include secondary containment, with provisions to safely remove spilled chemicals by pumping them into a truck for off-site disposal. Secondary containment areas are designed to hold, at a minimum, the full volume of the largest storage tank within the area plus additional volume for fire sprinklers.*
- *Chemical loading bays include collection and monitoring features allowing any chemicals spilled during delivery to be contained so they can be removed and disposed off-site.*
- *The drinking water treatment process has been designed as a closed system, with all waste streams recycled – there are no flows from the treatment process discharged to the environment. Solids removed from the water by sedimentation and filtration are dewatered to produce a dry, solid cake that is trucked off-site.*

*Equipment failure or other adverse events could cause overflows of untreated, partially treated, or fully treated drinking water. All overflows will be directed to two large overflow basins with a combined capacity of 13.5 million gallons. This capacity is sufficient to contain over two hours of the maximum potential inflow (135 MGD) to the Filtration Facility, allowing sufficient time to detect and correct the cause of the overflow under scenarios identified as reasonably possible by design and operations staff. The largest potential overflow volume would occur if the Water Bureau was unable to fully close a valve at the Bull Run Headworks. In this case, untreated water would be diverted to the overflow basins at the head of the plant, prior to any chemical addition.*

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<sup>22</sup> See also discussion under CU Criterion F related to hazardous conditions and Appendix E.6, both of which includes the filtration facility HMMP.

## Structural Failure

Appendix E.7 includes the following measures to address potential structural failures in water basins and chemical storage tanks.

*Structural failure of water-retaining basins or chemical storage tanks pose potential environmental risks, which have been mitigated by the design of the Filtration Facility. To provide reliable and resilient water service to Bureau customers, all structures will exceed current seismic codes, and be designed for immediate occupation following a seismic event. While minor leaks at joints are probable following a major seismic event, the robust design will minimize the risk of a catastrophic failure of basins or tanks. Furthermore, all basins on the main process are buried, so even significant leaks would not release water directly into the environment — in particular, the finished water storage facilities, which contain chlorinated water, are completely below-grade. Soil composition on the site is primarily low-permeability clay, so transport of water leaking from basins to Johnson Creek would be very limited even following a major seismic event.*

*Chemical storage tank specifications require designs and anchorage that consider anticipated seismic forces, reducing the risk of chemical release. If a tank does leak, all chemical storage facilities have secondary containment areas as described above.*

### A.3.4.2 Appendix H.1 Filtration Facility Stormwater Report

Appendix H.1 Filtration Facility Stormwater Report (Emerio and Stantec engineering) explains that stormwater management on the filtration facility has been designed to meet Multnomah County Design and Construction Manual standards, which in turn are based on the Portland 2020 Stormwater Management Manual (SWMM) (p. 2). As explained in the Section 6.0 Summary,

*The flow control implemented in this project exceeds what is required by the SWMM, which requires the post-development runoff rates to be less than or equal to the pre-development runoff rates for the 2-year through 25-year storm events. This project is providing flow control to the extent that the 2-year storm event is being detained while releasing one-half the total flow from the pre-developed 2-year storm event.*

*The site's post-construction improvements meet local and state stormwater quality treatment and flow control requirements, minimizing hydromodification in accordance with Portland SWMM Section 1.3.5.*

By complying with Multnomah County stormwater flow control and water quality standards, the stormwater management plan will ensure that there are no significant stormwater runoff impacts from the filtration facility on Johnson Creek.

### A.3.4.3 Water Quality Impacts Conclusion

Appendices E.7 Johnson Creek Discharge Memo concludes that there will be no significant impacts on water quality resulting from filtration facility operations:

*The Filtration Facility has been designed to prevent off-site discharges, including discharges that reach Johnson Creek. These design features include a ZLD treatment process, large overflow/recycle basins to address accidents and emergency operations, and a highly seismic-resistant design. The resulting Filtration Facility design, along with the stormwater*



*management system described in the Stormwater Drainage Report, therefore maintains the current stormwater quality and quantity leaving the project site and will protect Johnson Creek's water quality and habitat.*

### **A.3.5 Rural Development Impact Conclusions**

This Section A.3 defines the rural development analysis area and systematically reviews potential impact categories (noise and vibration, light and glare, air quality, and water quality) on sensitive rural residential and school uses within this area. This analysis and conclusions found in this narrative are supported by a series of expert studies found in Appendices E.1-E.7 and H.1. Additionally, as documented in Appendix E.1, Oregon water treatment facilities generally do not present concerns about externalities such as noise and light.

Based on this Section A.3 narrative and these expert studies, the filtration facility will have no significant noise and vibration, light and glare, air or water quality impacts on residential or school uses within the rural development core analysis area or study area more broadly. Therefore, the filtration facility does not create impacts which would cause it to be inconsistent with the character of the area.

Moreover, the minimal potential impacts of the filtration facility are significantly less than the impacts caused by the existing users that make up the character of the area, including large-scale nursery operations—a reasonable worst-case development scenario for the filtration facility site. As described in the **Introduction** and Section A.0 of this narrative, large-scale nursery operations have industrial use characteristics that are not subject to CU review criteria, and typically have significant off-site noise, light impacts, air quality, and visual<sup>23</sup> impacts.

In contrast, due to the Water Bureau's commitment to identifying and mitigating potential significant impacts on rural development, the proposed filtration facility will ensure that any potential off-site impacts are mitigated:

- Potential filtration facility off-site noise and vibration impacts are mitigated through structural noise control measures—combined with extensive landscaped setback areas—and therefore will meet Multnomah County noise control standards and will have no significant off-site noise impacts.
- Potential off-site filtration facility lighting and glare impacts are mitigated through by the careful placement and shielding of light fixtures—combined with extensive landscape setback areas—and therefore will meet Multnomah County dark sky standards that prohibit light trespass and will have no significant off-site impacts.
- Potential off-site filtration facility air quality (dust, odor, and air emissions) impacts are mitigated through structural design standards—combined with extensive landscape setback areas—and therefore will have no significant off-site air quality impacts.
- Potential filtration facility water quality impacts to Johnson Creek are mitigated through structural design standards and emergency management measures—and by compliance with Multnomah County stormwater flow and quality management standards—and therefore will have no significant water quality impacts on Johnson Creek.

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<sup>23</sup> Visual impacts are addressed in Section A.4 below.

## A.4 Visual Consistency, Impacts, and Mitigation Measures

This section complements and incorporates the **Section 1.B Filtration Facility Design Review** text and figures, which together demonstrate that the proposed filtration facility design will “relate harmoniously to the natural environment and existing buildings and structures having a visual relationship with the site.”

To demonstrate that the appearance of the filtration facility will be “consistent with the character of the area,” this section (a) reviews the mid- to large-scale nursery operations, residential uses, and existing public facilities which define the character of the area, and (b) describes the filtration facility design’s consistency with that visual character and steps taken to mitigate potential view impacts on properties (particularly homesites and schools) that would be able to see (and therefore could be visually impacted by) development on the filtration facility site.

As discussed above, as a basis for comparison, the reasonable worst-case development scenario for the filtration facility site would be a large nursery operation or public facility similar to those already existing in the study area. These uses often have unscreened, utilitarian buildings and outdoor storage and parking areas.<sup>24</sup>

This subsection A.4 describes filtration facility design mitigation measures that ensure that the proposed filtration facility will have no significant adverse view impacts on properties within the potential area of visibility, particularly when compared with the adverse view impacts that could result from that reasonable worst-case development scenario.

### A.4.1 Filtration Facility Potential Area of Visibility (PAV)

In the reasonable worst-case development scenario, an unscreened nursery operations center or a public utility with unscreened utilitarian structures and outdoor storage and parking areas, could be visible from sensitive homesites and the school in the PAV shown in Figure 36 below.<sup>25</sup>

As applied in subsection A.4.1, below, the PAV is the area from which the filtration facility site can be seen and therefore a view impact is possible. The PAV considers topography, vegetation, and other factors that block views of the filtration facility site. Thus, the PAV recognizes that intervening forests and slopes block views of the filtration facility site from properties to the north, east, and southwest.<sup>26</sup>

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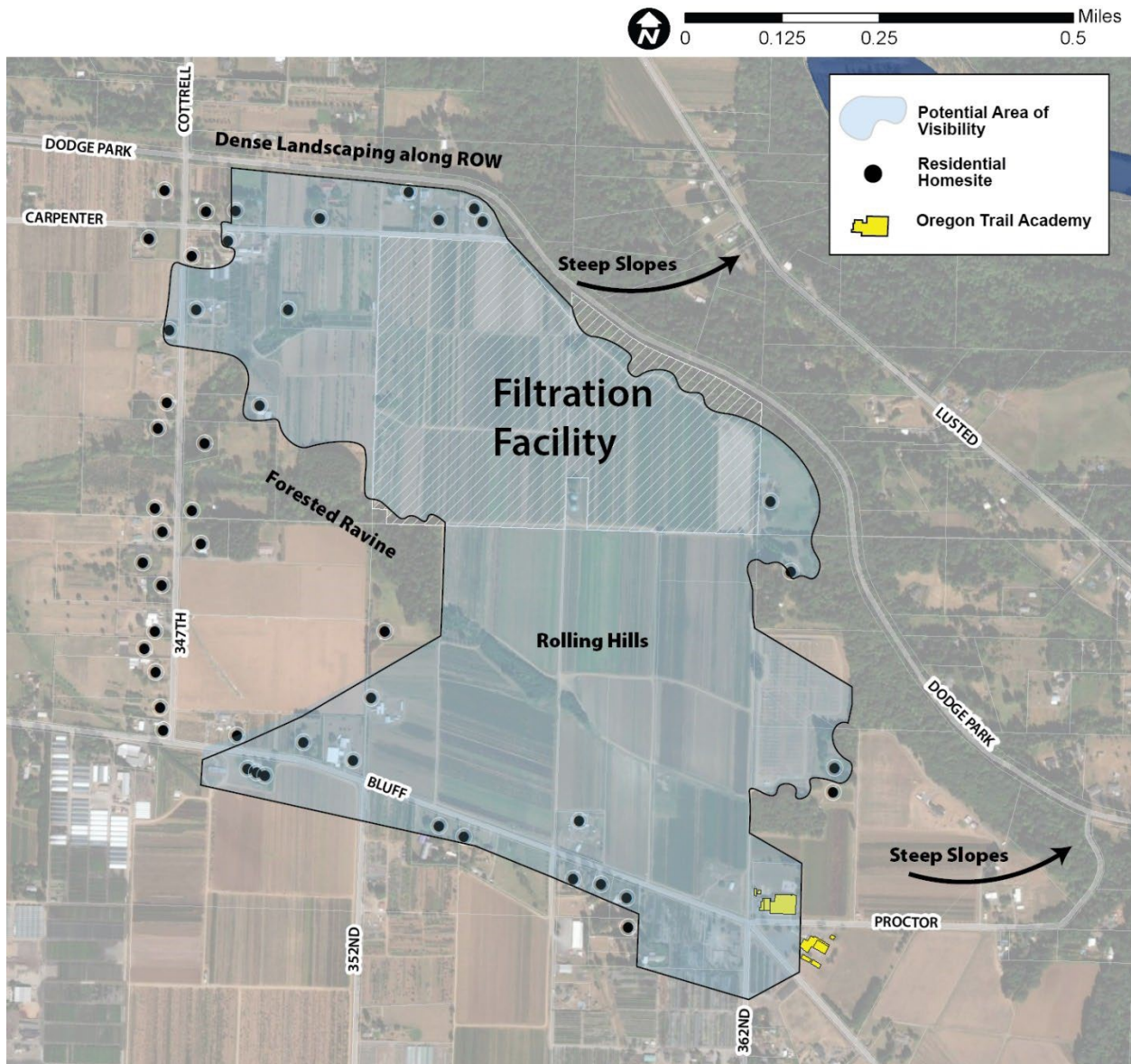
<sup>24</sup> Appendix O.1 Study Area Images includes photographs and descriptions of nursery and agricultural processing operations, forested areas, residential homesites, and public facilities that collectively characterize the visual character of the area. The visual character of the area is also described in the **Introduction, Section 1 Overview**, and this document. In addition to fields and woodlots, traditional barns and well-maintained homes, the visual character of the area is also defined by unscreened, industrial-scale nursery and food processing operations, semi-trailer truck and heavy farm equipment storage and loading facilities, and unscreened utilitarian residential storage structures and outdoor storage areas.

<sup>25</sup> The PAV is the same area defined in **Section 1.B Filtration Facility Design Review** as the area will have a “visual relationship” with the filtration facility once it is constructed. Winterbrook Planning determined this area based on a combination of GIS digital elevation mapping and observations during 2022 field visits.

<sup>26</sup> Views from properties north and east of Dodge Park Boulevard are completely blocked by topography and tree cover. Views of the filtration facility site from several homes served by Carpenter Lane and Cottrell Road are blocked by vegetation.

## Bull Run Filtration Projects Land Use Applications

Figure 38 shows 23 homesites and the Oregon Trail Academy from which unscreened development on the filtration facility site could be seen.<sup>27</sup> The PAV is a subset (smaller area within) the rural development core analysis area. The PAV is similar to the broader study area because it includes mid- and large-scale nursery operations, several public facilities approved through the CP process, and a variety of residential design types and color schemes.



**Figure 38. Filtration Facility Potential Area of Visibility (PAV)**

<sup>27</sup> The Water Bureau owns two of the homesites located directly across Carpenter Lane from the filtration facility site and a third home is located on the R&H Nursery site. The approximately 90-foot-tall PHWD water tanks are visible from a much larger area, which includes more homesites and businesses. Many of the homesites in the filtration facility PAV also can see R&H Schmidt nursery structures, and outdoor storage and parking areas, as well as the unscreened solar array southeast of the filtration facility site.



## A.4.2 Visual Characteristics by Land Use Type

The following conclusions can be drawn from the visual character analysis found in the **Introduction, Section 1**, Appendix O.1 and the discussion above.

### Residential Visual Characteristics

As shown in Appendix O.1 and in Section A.0 above, a wide variety of homes are found in the study area. Nevertheless, a few basic design themes characterize the study area:

- Residential ages, designs, colors, and sizes are varied throughout the study area.
- Newer homes tend to be larger with more extensive outdoor lighting than older homes.
- Rural homes typically have gable or shed roofs and are painted a variety of neutral or earth-toned colors – as opposed to bright colors.
- Rural homesites often include accessory structures (outbuildings and dwelling units) with utilitarian metal siding and gable or shed roofs. These structures often are visible from public roads or neighboring properties. As noted below, this utilitarian style is typical of warehouse and processing structures found in mid- to large-scale nurseries. County regulations limit the size (2,500 sf maximum) but not the design of new accessory structures. Many utilitarian structures are non-conforming because they exceed the 2,500 sf size maximum.
- Some homesites also have outdoor vehicle and equipment storage areas that are visible from public roads or neighboring properties.

For example, Figure 39 shows a more traditional farmhouse located just south of the intersection of Cottrell Road and Carpenter Lane, down the street from the filtration facility site. The blue residential color scheme, combination of gable and shed roofs, inviting front entrance, and copious yard landscaping served as a model for the filtration facility building design and color scheme.



Figure 39. Homesite at 7800 SE Cottrell Road.



## **Bull Run Filtration Projects Land Use Applications**

This original farmhouse was constructed circa 1900 and features a combination of steeply gabled and shed roofs and an inviting front entrance. The garage was added later. The home is painted dark blue with white trim that blends well with surrounding farm and forest land, the blue sky and white clouds. The gray roof complements the blue and white color scheme. This traditional home is located on Cottrell Road near Carpenter Lane, next to R&H Nursery, and within the rural development core analysis area.

As documented in the subsection A.4.3 Proposed Filtration Facility Design discussion below, the filtration facility design incorporates design features and a color scheme that are consistent with residential design and color schemes found in homes in the study area, including the home in Figure 40. However, as shown in Section A.0 above, many homesites include unscreened utilitarian outbuildings, outdoor storage areas, and parking areas. In contrast, filtration facility utilitarian structures are obscured from off-site views by extensive landscaped berms and evergreen plantings.

### **Nursery and Agricultural Processing Visual Characteristics**

Nurseries and agricultural processing operations typically have warehouses and processing structures as well as farm and nursery fields. As described elsewhere, this narrative identifies an unscreened nursery operations center as a “reasonable worst-case development scenario” that could be sited on the filtration facility site, as nursery and agricultural operations (including unscreened operational centers) are found throughout the study area and are permitted in the MUA-20 zone, as well as rural residential, farm, and forest zones in the study area. In terms of visual characteristics:

- Nursery and farm processing structures typically have a utilitarian design, with metal gable or shed roofs, and white or tan metal siding. A few classic gambrel roofed barns remain and a few older homes have been converted to nursery offices. Many agricultural structures have gabled roofs with lean-tos.
- Nurseries typically have large outdoor storage and loading areas, with on- or off-site parking for visitors and employees. In most cases (but not all) outdoor storage, loading areas, and parking are visible from public roads and neighboring properties because they typically are not screened from public view. (See Appendix O.1).
- Nursery and public facility parking and loading areas are often not landscaped or striped and are not screened. In several instances, parking and loading and storage of equipment occurs within the street ROW. Parking and outdoor working and storage areas are typically not screened from public view, including some dwellings and most nursery operations and public facilities (see Appendix O.1).
- As documented in the subsection A.4.3 Proposed Filtration Facility Design discussion below, filtration facility buildings will be designed and painted to blend in with surrounding forest, farm, and residential areas. Utilitarian buildings, outdoor storage areas, and parking areas will be screened from public road and neighboring property views by extensive landscaped berms and evergreen plantings.

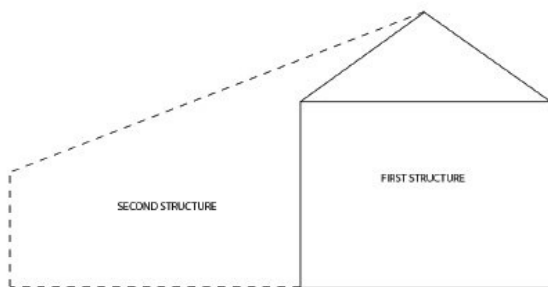
Figure 40 shows a nursery structure with an offset gabled roof design as proposed for the taller and more potentially visible filtration facility buildings. To maintain consistency with the character of the study area, this offset gabled roof design was adapted for most occupiable buildings at the proposed filtration facility. This farm structure is located within the rural development core analysis area, on Bluff Road.



**Figure 40. J. Frank Schmidt Nursery Structure—34800 Bluff Road**

Figure 41 shows an older offset (asymmetrical) gable-roofed farm structure in the rural development core analysis area that provided an additional local inspiration for the offset gable roof design of filtration facility design.

The dark blue farmhouse shown on Figure 40 (above) features a gable roof with a lean-to. Homes and sheds with gable roofs and lean-tos are found throughout the study area. The drawing and image shown on Figure 41 below shows how this gable roof and lean-to vernacular design themes provides a basis for (and is a variation of) the asymmetrical gable-roof design featured on filtration facility buildings.



**Figure 41. Farm Structure within Study Area with Gable Roof and Lean-to**

## Public Facilities Visual Characteristics

Multnomah and Clackamas County have determined that the four existing public (including solar) facilities discussed below are consistent with the character of the area through their respective CU review processes.<sup>28</sup>

- The PGE substation, PHWD water tanks, and the LHTF in Multnomah County, and
- The Oregon Trail Academy and a solar facility in Clackamas County.

Most of the existing public facilities have a utilitarian design, have been painted a color that blends with the surrounding landscape, and are unscreened.

- The PGE substation has a completely utilitarian design and is partially screened by trees and shrubs.
- The utilitarian PHWD water tanks are painted teal green, presumably to blend in with surrounding agricultural land, but are completely unscreened.
- The LHTF building (which is barely visible through the trees) is painted beige and dark gray to blend in with the surrounding forest. Although the LHTF has a largely utilitarian design, the LHTF is obscured from public view by an evergreen forest.
- The school is painted tan and has a roofline and siding similar to homes in the area, but buildings and parking areas are almost completely visible from adjacent properties and two public roads.
- The solar facility has a completely utilitarian design, is visible from nearby homes, and has no screening.

Each of these facilities help define the character of the area. Three of these facilities are within the PAV shown on Figure 39. For comparison purposes, a reasonable worst-case scenario for the filtration facility site includes the possibility of an unscreened public facility. As documented below, the proposed filtration facility is designed to meet a much higher visual compatibility standard than other public facilities in the PAV.

### A.4.3 Proposed Filtration Facility Design and Mitigation Measures

In contrast to most existing public facilities in the study area, proposed filtration facility buildings are designed to be consistent with existing homes and agricultural structures and are painted to blend in with the surrounding forests, farmland, and homes. Buildings and utilitarian structures have setbacks that far exceed MUA-20 minimums and are screened by extensive landscaped berms and evergreen plantings. As documented below, the filtration facility will have minimal adverse visual impacts when compared with other public and solar facilities in the study area.

Detailed building plans are shown in **Section 1.B Design Review** and Appendix A.1a Filtration Facility Architectural Set. Filtration facility buildings are designed to blend in with existing farm and forest land and incorporate design themes based on the observed visual characteristics of residential, nursery and agricultural, and public facilities in the study area. The agrarian, rolling hills design theme is exemplified in the building façades and materials found in above-ground habitable buildings.

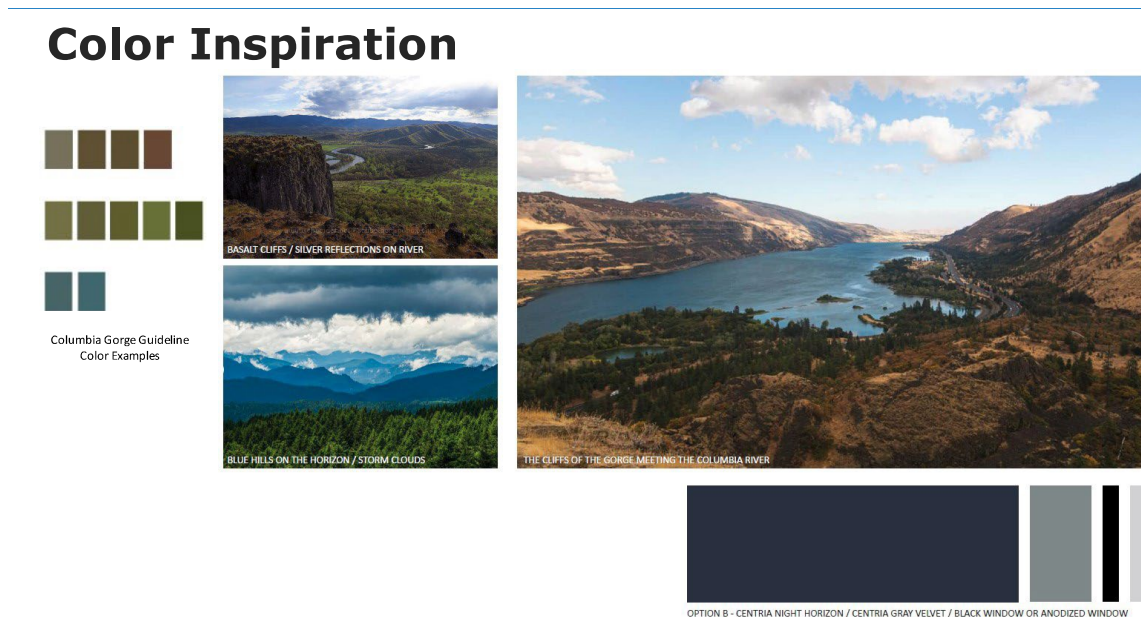
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<sup>28</sup> Relevant Multnomah County CU decisions are found in Appendix O.3.

## Bull Run Filtration Projects Land Use Applications

- Buildings designed for human occupancy are designed to incorporate both residential and farm building design themes. The buildings look like large, modern homes that incorporate an agrarian design theme with offset gable roofs (a combination of gable and shed rooflines) found in residential buildings, accessory residential buildings, and agricultural (primarily nursery) structures in the study area.
- Above-ground buildings are painted a dark blue, earth-toned color that meets Columbia River Gorge Scenic Resources Implementation Handbook and complements colors schemes found in most homes, public facilities, and some nursery structures in the study area.
- As documented in Section 1.A and Appendix A.1b (all drawings following the Architectural Site Plan), above-ground buildings will not exceed the 35-foot height limit required in the MUA-20 zone, and have heights that are typical of two-story dwellings, the school, and most farm buildings in the study area.
- Building facades incorporate both painted metal (typical of farm and exterior storage structures) and natural wood (typical of many dwellings) in the study area. The proposed dark blue, earth-toned color scheme will blend in with surrounding forested and agricultural areas and complements most homes and some agricultural structures in the study area.
- Filtration facility buildings designed for human occupancy have large windows, typical of most dwellings in the study area.

Figure 42 shows the proposed color palette. As discussed in **Section 1.B Design Review**, the color palette has been accepted by the Columbia River Gorge Commission as being “visually subordinate to” the surrounding farm and forest landscape.



**Figure 42. Proposed Color Scheme Taken from Columbia River Gorge Commission Design Standards**



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Figure 43 shows an oblique aerial rendering of proposed filtration facility buildings and utilitarian structures (looking south from Carpenter Lane). As shown below, the blue and gray colors complement the rich green colors of surrounding agricultural land. Silos are painted a beige green to blend with surrounding farmland and trees. The blue color scheme also represents the primary purpose of the water filtration facility—to provide a clean, safe, clear, and drinkable water supply for nearly 1 million people. Note the much taller and more visible PHWD water tanks in the background.



**Figure 43. Oblique View of Proposed Filtration Facility Buildings and Utilitarian Structures viewed from the North**

Figures 44-46 below show closer views of proposed administration, chemical, and maintenance buildings, each of which serve specific filtration facility functions but share an integrated vernacular residential and agricultural building design, common color scheme that blends in with the forested and agricultural environment, and with a common asymmetrical gable-roof design theme.



**Figure 44. Proposed Administration Building**

## Bull Run Filtration Projects Land Use Applications



Figure 45. Proposed Chemical Building



Figure 46. Proposed Maintenance Building

#### A.4.3.1 Utilitarian Structures

Utilitarian and processing structures generally lack roofs and are visible from above (but not from most of the surrounding area) as shown on Figure 48 below.

- Storage buildings that are not designed for human occupancy maintain a low profile and are screened from off-site views by berms and plantings.
- Like most nurseries, residential accessory structures, and public facilities in the study area, (*e.g.*, greenhouses, farm buildings and storage sheds, structures accessory to dwellings, PHWD water tanks), the filtration facility will include utilitarian structures that reflect their function.
- However, unlike most other utilitarian structures in the study area, almost all filtration facility utilitarian structures are built at near ground level and are screened by landscaping and landforms from public view.
- As shown on Figure 45, the four 50-foot-tall silos are tucked behind the chemical building; these silos are small in comparison to the existing, unscreened 90- to 100-foot PHWD water tanks to the south. These four silos are painted beige-green to blend in with adjacent farm and forest land.
- Low-profile utilitarian structures will be screened from off-site views by vegetation and berms. As shown on Figure 47, these structures are dwarfed by existing 90- to 100-foot teal green PHWD water tanks in the background.

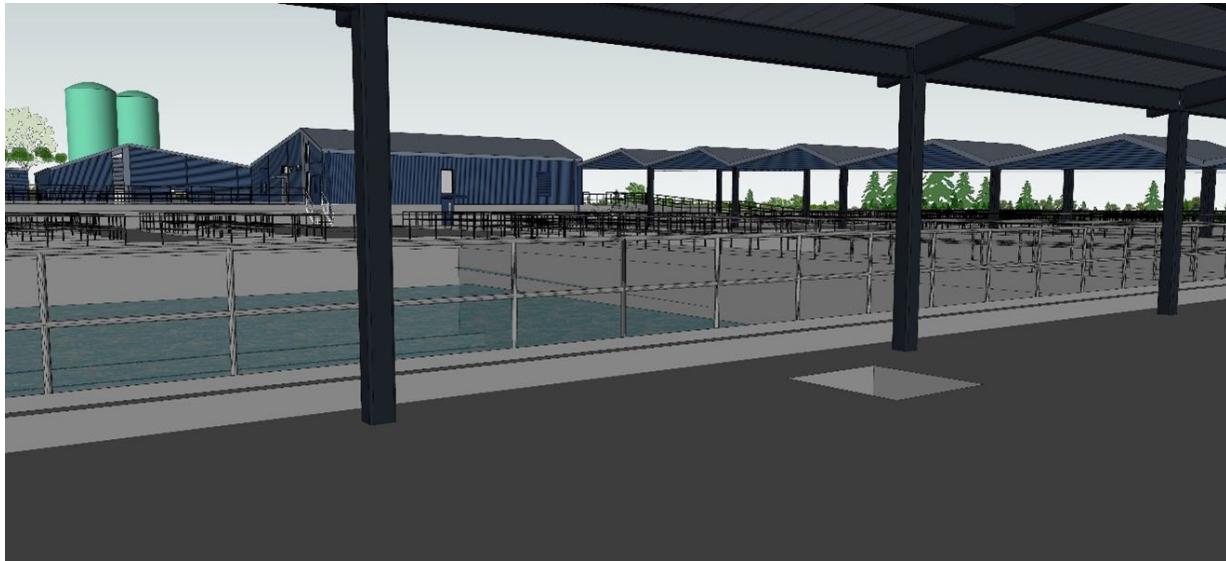


Figure 47. Low-profile Clearwells, Basins, and Other Utilitarian Structures at or Below Grade



#### A.4.3.2 Landscaping and Screening

- Farm fields and woodlots are found throughout the study area and help to create the bucolic environment that many residents appreciate. The filtration facility has incorporated extensive landscaping around the developed portion of the site, using native trees and plants, as well as locally sourced ornamentals. About a third of the site will be undeveloped and is anticipated to be used for open space or farming in the future.
- Riparian corridors and forested areas also help define the character of the study area and are protected by County SEC-h and SEC-wr overlays. The filtration facility completely avoids impacts to the SEC-h and SEC-wr overlays on the northeast and southwest borders of the site, respectively. Plantings include mostly native vegetation to augment the wildlife habitat and beauty of these natural areas.
- The design uses building materials and finishes that have beige, dark blue, and gray earth tones to integrate the filtration facility with the landscape and neighboring residences.
- Note the contrast with the 90-100-foot tall PHWD water tanks in the upper-left corner of Figure 48. Proposed landscaping on the filtration facility site will provide the additional benefit of partially screening these off-site towers when viewed from the west.

Figures 48-50 below include views of the filtration facility from several directions. Figure 48 shows that existing filtration facility buildings will be mostly screened by intervening vegetation. Note the extensive setbacks and the extensive use of berms and plantings to screen filtration facility buildings and utilitarian structures. Note also the PHWD water tanks that dominate the skyline above filtration facility buildings.

Figure 49 shows the view from the southwest—from which filtration facility buildings are almost completely obscured by intervening vegetation near the Johnson Creek headwaters. Note that the filtration facility communication tower is barely visible in the left portion of the image.

Figure 50 shows the filtration facility looking north from Bluff Road. Due to building colors, landscaping, and placement of structures in a lower area of the site, the filtration facility buildings are almost indiscernible. However, the PHWD towers stand out against the darker evergreen forest.



**Figure 48. View of Filtration Facility Entrance from Carpenter Lane Looking South**





Figure 49. View of the Filtration Facility from the Southwest Looking to the Northeast

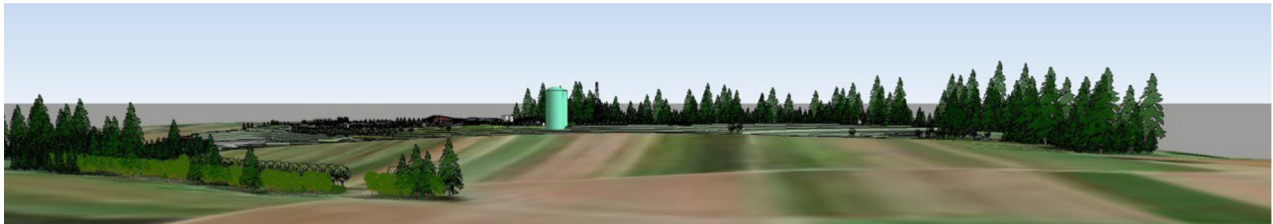


Figure 50. View of filtration facility from Bluff Road looking the north

#### A.4.3.3 Locational and Siting Considerations

Screening design was influenced by ongoing feedback from the Site Advisory Group and other community members. See Appendix B. The proposed filtration facility has a relatively low profile, with buildings clustered in a natural depression on the site, stepping down with the natural site contours. Vegetative screening, landforms, and building setbacks exceeding 130 feet help to screen views from off-site.<sup>29</sup>

The overflow basin, clear well, and parking and circulation areas will be constructed at or below grade adjacent to above-ground structures, and generally will not be visible from off-site. All structures will be buffered from nearby residential uses by berms and landscaping.

The “rolling hills” design theme is influenced by Pacific Northwest and agrarian architectural styles to be consistent with the character of the surrounding area. The design uses building materials and finishes that have muted, earth tones to integrate the filtration facility with the landscape.

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<sup>29</sup> As documented in **Section 1.C**, the project’s communications tower is placed in the northeast portion of the site, behind an established grove of trees helping to screen it from off-site views. Screening design was influenced by ongoing feedback from the Site Advisory Group and other community members.

#### **A.4.3.4 Summary of Effective Visual Impact Mitigation Measures**

The discussion and images above demonstrate the filtration facility design is consistent with the character of buildings and landscapes in the study area. As indicated above, the Water Bureau has implemented the following visual mitigation measures to effectively screen and soften views of the developed portion of the site:

- Clustering facilities on a lower portion of the site, combined with landscape forms and plantings, obscure views of the site from adjacent homes.
- Designing the driveway access with entrance landscaping to limit views of interior parking areas and buildings from Carpenter Lane.
- Extensive use of berms, trees, and shrubs to screen and soften the appearance of filtration facility buildings from all directions.
- Maintaining forested vegetation to screen views of the filtration facility from Dodge Park Blvd.
- Using muted, earth tones so that above-ground structures blend in with the farm and forest landscape and most existing homes.
- Incorporate agricultural and residential design themes that are typical of structures found in the study area.
- Maintaining large, vegetated setbacks. In most cases, the filtration facility has a 200-foot plus vegetated setback from abutting properties to maximize visual separation between existing dwellings and nursery operations and the filtration facility.

#### **A.4.3.5 Visual Consistency, Impacts, and Mitigation Measures Conclusion**

Based on the analysis in subsection A.3, the filtration facility will have minimal adverse visual impacts, particularly when compared with the reasonable worst-case scenario (i.e., an unscreened large-scale nursery operational center or public facility). As explained in detail above, the filtration facility design incorporates design and color schemes that characterize the study area and blend in with its farm, forest, and residential land uses in the PAV. Moreover, the filtration facility layout and design include deep setbacks and extensive landscape screening to minimize visual impacts to nearby residences.

## A.5 CU Criterion A: Consistent with the Character of the Area Conclusion

Overall, the filtration facility is consistent with the character of the study area, as detailed in the above analysis and comparison of transportation, noise, light, air quality, water quality, and visual characteristics of the study area and the proposed filtration facility. Importantly, as documented below, existing nursery uses—which are an integral part of the character of the area and also the potential worst-case development scenario for the filtration facility site—have equal or greater impacts than will the proposed filtration facility.

Table 3 summarizes the character of the study area in terms of impacts from existing uses compared to potential impacts from filtration facility operations—as mitigated by the filtration facility design.

Overall, the filtration facility is consistent with the character of the area because it is a use type—a water utility use—already commonly found in the area, it is consistent in design, footprint, employment and other characteristics with the existing uses in the area, and the design has mitigated potential impacts on surrounding users from light, sound, traffic, and other potential externalities. This approval criterion is met.

**Table 3. Characteristics and Effects: Existing Land Uses Compared to Proposed Filtration Facility**

Impact Type	Land Use	Characteristics and Effects
<b>Transportation</b>	Farm, Forest, Residential, Public Facilities	Existing uses contribute to county road and intersection impacts in the study area. Diesel semi-trailer trucks typically are used for mid- to large-scale farm and forest operations.
	Proposed Filtration Facility (with mitigation measures)	The filtration facility also uses diesel, semi-trailer trucks for deliveries. The TIA examined 13 study area intersections and determined that filtration facility operations will have no significant impact on the county or state road systems.
<b>Noise</b>	Existing Farm, Forest (Woodlot), School, and Residential Uses	Existing farm and nursery operations typically use equipment that is audible off-site; however, farm and forest uses are not subject to county noise regulations. Nurseries and agricultural processing operations use diesel, semi-trailer trucks and may use emergency diesel generators. <sup>30</sup> Residential uses typically use lawn and gasoline-powered garden equipment that is audible off-site.
	Proposed Filtration Facility (with mitigation measures)	Operational noise will be limited to the level of normal speech at the property line (60 dba) consistent with county noise ordinances. Diesel semi-trailer trucks are used for deliveries. Noise impacts from emergency generator and fire pump testing (as mitigated) also meet county noise standards, although exempt.
<b>Light</b>	Existing Farm, Public Facilities, and Residential Uses	Existing farm and nursery operations typically have unshielded outdoor wall and pole lights to illuminate parking, loading, storage, working areas. Residential uses often use a variety of unshielded outdoor light fixtures to illuminate entrances, parking areas, and outdoor storage areas. Farm uses are exempt from meeting county Dark Sky regulations, and lighting from most existing residential uses was installed prior to the effective date of the Dark Sky ordinance. Public facilities often have unshielded outdoor pole and wall lighting fixtures.

<sup>30</sup> Noise from diesel trucks and emergency generators is not subject to county noise regulations.

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Impact Type	Land Use	Characteristics and Effects
	Proposed Filtration Facility (with mitigation measures)	The filtration facility will comply with the Dark Sky ordinance. All regulated light fixtures at the filtration facility will be fully shielded, full cut-off fixtures. Off-site light trespass will not occur.
<b>Air Quality</b>	Existing Farm and Residential Uses	Existing farm uses have air quality impacts on nearby residential uses, due to dust and odors. Nurseries and some farming operations use hazardous chemicals and must follow label instructions to reduce the likelihood of chemical drift. Farm, forest, and residential uses often use vehicles and equipment with diesel or gasoline engines.
	Proposed Filtration Facility (with mitigation measures)	The filtration facility will be covered with building, paving, or landscaping, so there will be no dust impacts. Odor and airborne chemical impacts will be contained on-site and meet state and federal regulations. Like other uses in the study area, air emissions will result from filtration facility vehicles.
<b>Water Quality</b>	Existing farm and residential uses	Existing farm and residential uses typically have not been required to prepare stormwater management plans or to fully address water quality impacts. The cumulative impact from impervious surfaces at nursery operations and homesites in the study is substantial.
	Proposed filtration facility (with mitigation measures)	The required stormwater plan will ensure that stormwater runoff is contained on-site and filtered before entering the Johnson Creek basin. Design and procedures are in place to effectively address the effects of accidents or geological events.
<b>Appearance</b>	Existing Nurseries and Agricultural Processing	Farm fields and traditional barns are viewed as attractive by passersby and residential uses. Operational centers usually have unscreened utilitarian (metal) buildings with gable or shed roofs, and unscreened outdoor storage, parking and loading areas.
	Existing Residential	Residences typically have gable or shed roofs and a wide range of colors, most of which are subdued or blend in with the surrounding landscape. Homesites often have unscreened utilitarian (white metal) accessory structures, and some unscreened outdoor vehicle storage areas.
	Existing Public Facilities	The relatively low-profile Oregon Trails School has gable roofs and a beige color scheme that blends with agricultural fields and homes in the study area, but parking and loading areas are unscreened. The LHTF is screened by existing trees and painted green to blend in with surrounding trees. The PHWD tanks are 80-90 feet tall, painted teal, and are highly visible. The electric substation is mostly unscreened.
<b>Appearance</b>	Proposed Filtration Facility (with mitigation measures)	The filtration facility will be located on a low portion of the site and will be screened by berms, trees and shrubs. The buildings will be less than 35 feet tall with heights typical of existing two-story homes and nursery buildings in the study area. The occupied and most visible buildings will have an off-set gable design, painted a dark blue color (recommended by the Columbia Gorge Commission regulations) to blend in with surrounding homes, farms, and forested areas in the study area and viewshed. Low-profile utilitarian structures will be screened by landforms, trees, and shrubs. Four chemical silos will be painted beige green to blend in with the surrounding forested and agricultural landscape.



## *A. Will not adversely affect natural resources;*

**Response:** As noted above, the vast majority of the filtration facility site has been cleared of trees and is not in a natural resource state. The eastern, steeply sloped forested area adjacent to Dodge Park Boulevard has an SEC-h (wildlife habitat) overlay and the southwestern corner of the site protects the headwaters of the Johnson Creek riparian corridor and has a SEC-wr (water resource) overlay.

- The SEC-h area protects the forested habitat along the steep slope that drops down to Dodge Park Boulevard along the northeast edge of the site.
- The SEC-wr area in the southwest corner of the site provides a 200-foot buffer along Johnson Creek which flows northwest, on an adjacent property.

Appendix 1.A includes the site plan, tree removal plan, and grading plan, which collectively show that the proposed filtration facility will not disturb land within either SEC overlay. Since planned development completely avoids identified SEC overlays, and because no other natural resources exist on the site, the proposal will not adversely affect natural resources on the site.

Appendix E.7 Potential Discharges to Johnson Creek explains why the filtration facility will have no adverse impacts on Johnson Creek. The treatment process is designed to be “zero liquid discharge” (ZLD)—all waste streams are treated so that concentrated solids are trucked off site, and liquid streams are recycled to the head of the plant. Therefore, under normal operations, the only discharge to Johnson Creek will be stormwater. Appendix H.1 Filtration Facility Stormwater Report explains that the stormwater from the filtration facility will not exceed the pre-development quantity and quality.

For the above reasons, natural resources on and around the filtration facility site will not be adversely affected and therefore this criterion is met.

**B. The use will not: (1) Force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use; nor (2) Significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use.**

**Response:** This county approval criterion is identical to ORS 215.296(1), which provides standards of approval for “certain uses in exclusive farm use [“EFU”] zones.” ORS 215.296(1) does not apply directly to the filtration facility site, which is in the MUA-20, and not EFU, zone. However, the Water Bureau has designed the filtration facility to meet the higher standard for EFU zones under state law. Broadly, that EFU state law standard requires:<sup>31</sup>

*“(1) the applicant to properly identify the surrounding lands, the farms on those lands, the accepted farm practices on each farm, and the impacts of the proposed nonfarm use on each farm practice; (2) the local government to determine whether the proposed nonfarm use will force a ‘significant’ change to, or cost increase in, an accepted farm practice, as that term is ordinarily used; and (3) if there is a significant change, the local government to determine whether the applicant has demonstrated that, with conditions of approval [...], the nonfarm use meets the test.”*

The discussion below (1) describes and maps accepted farm and forest practices in the study area (i.e., on surrounding lands devoted to farm or forest use); (2) describes potential impacts from the filtration facility that could force a significant change in accepted farm or forest practices or could significantly increase the cost of such practices on surrounding lands; and (3) illustrates how potential impacts have been avoided or mitigated through the design of the filtration facility.

## **Surrounding Lands: The Study Area**

The study area shown on Figure 52 below is the “surrounding lands” for this approval criterion. The study area is designed to be large enough to include the entire project as well as all areas where the externalities or sensitivities of the proposed use could potentially have impacts, with the potential transportation and agricultural impact categories driving the study area boundaries. In addition to the filtration facility site, the study area shown on Figure 51 includes the pipeline and core analysis areas for the pipeline.

As explained in the **Introduction** and as shown on Figure 51, two-thirds of the study area is designated for resource (farm and forest) use and zoned CFU, TBR, or EFU. Forest land within the study area is concentrated in steeply sloped areas west of the Sandy River and comprises 20 percent of the study area. Zoning in the western portion of the study area has predominantly EFU zoning (over 2,000 acres) with large concentrations of rural residential zoning (over 1,500 acres).

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<sup>31</sup> Stop the Dump Coal. v. Yamhill Cty., 364 Or 432, 444-45 (2019)

## Bull Run Filtration Projects Land Use Applications

Two reports in Appendices D.1 (Agricultural Compatibility Study) and D.3 (Forestry Compatibility Study) provide studies from farm and forest experts who describe and identify farm and forest practices in the study area. Each expert analyses the potential for the filtration facility to cause significant impacts on, or significantly increase the costs of, the identified accepted farm and forest practices in these surrounding lands and concludes that there is no such potential for the filtration facility to cause these impacts—similar to the compatibility analysis provided in Criterion A above.

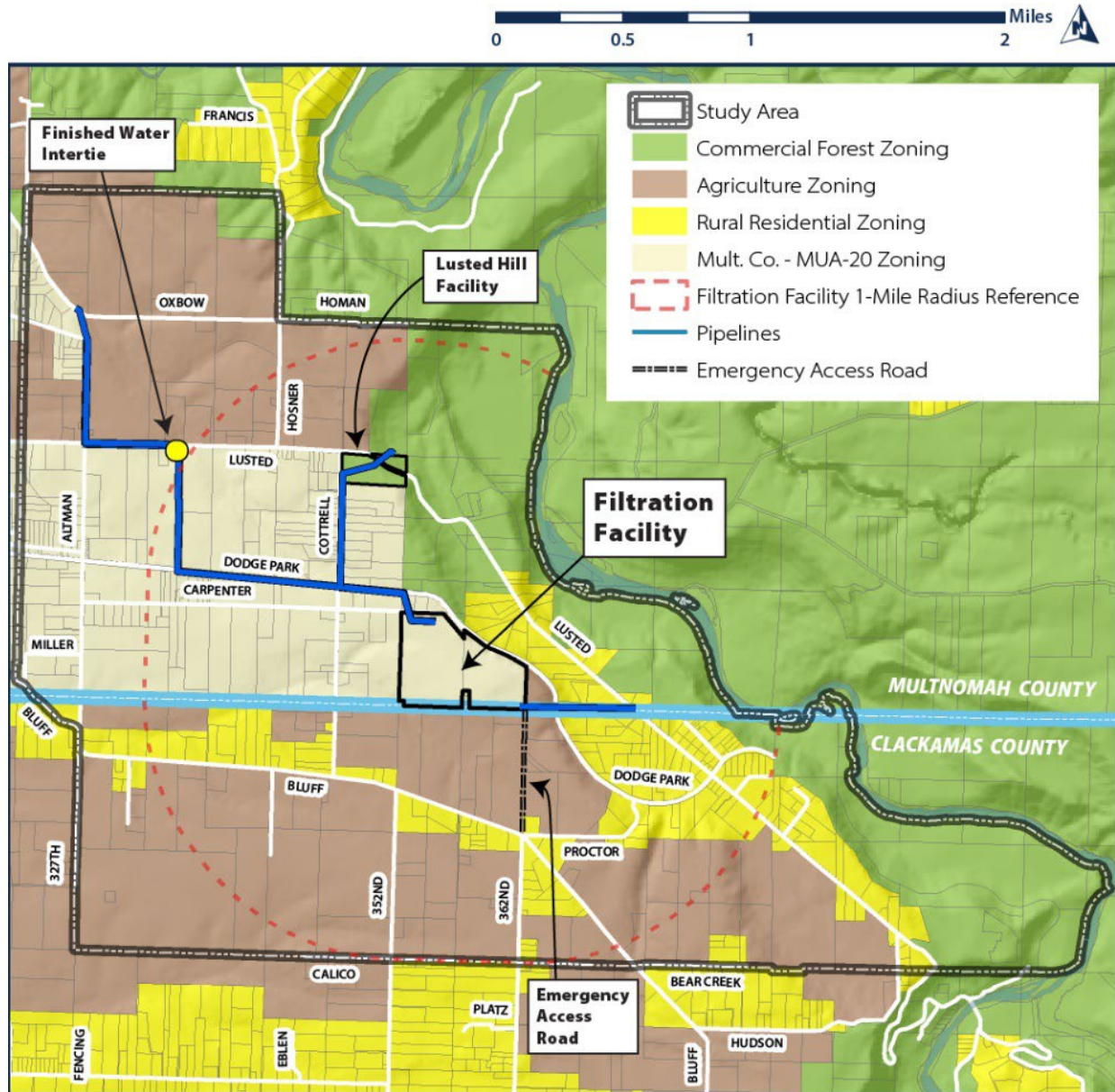


Figure 51. Generalized Zoning on Surrounding Lands (the Study Area)



## Bull Run Filtration Projects Land Use Applications

Figure 52 shows the farm and forest core analysis areas in the context of the larger study area. As explained in Appendices D.1 and D.3, these core analysis areas allowed for a more focused view of potential impacts from the filtration facility on farm and forest practices. The core analysis areas are large enough to identify and evaluate mutual impacts and operational relationships between the proposed filtration facility and accepted farm and forest practices and are representative of the larger study area.

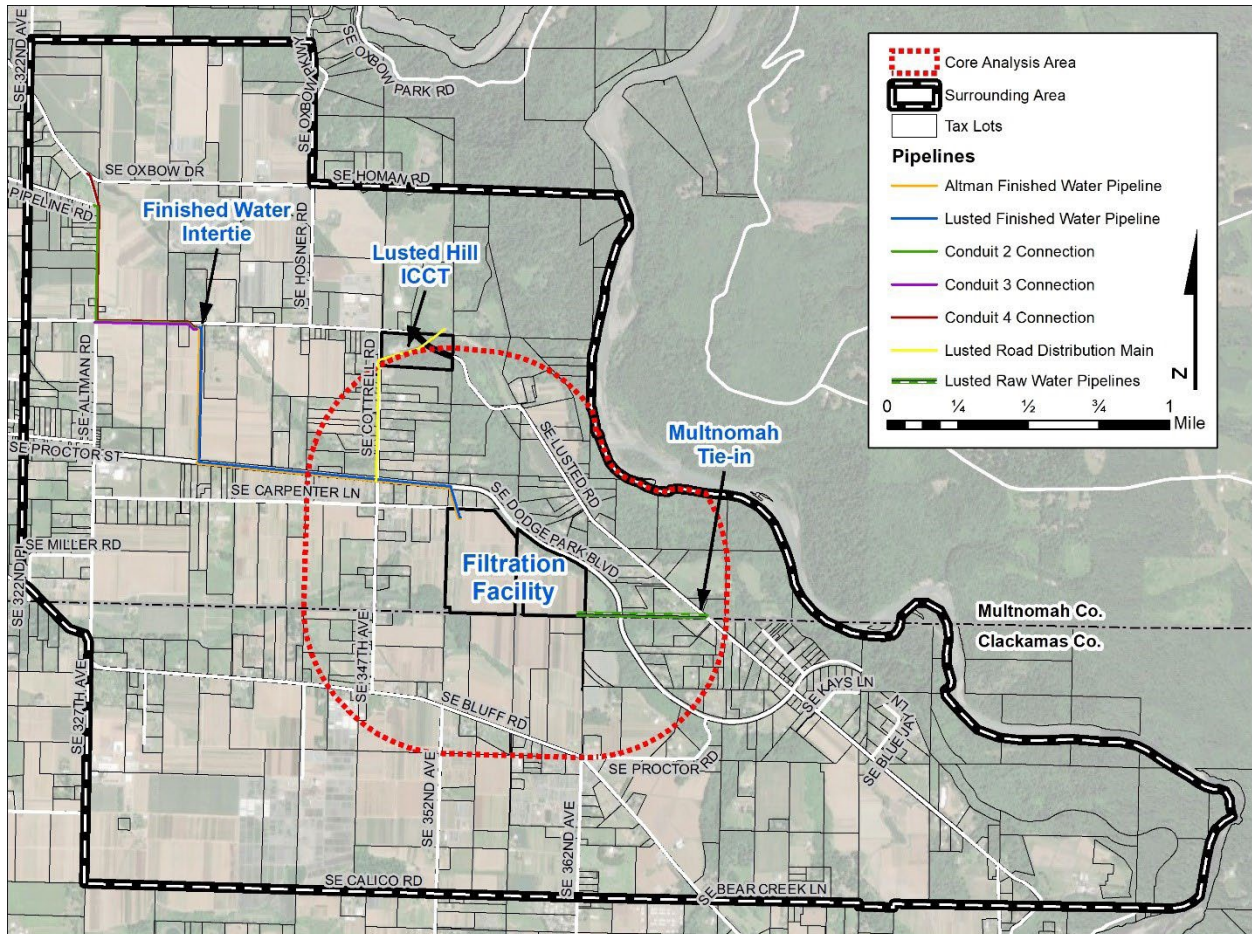


Figure 52. Farm and Forest Core Analysis Areas

Since the land use pattern within the core analysis areas is homogenous with the land use pattern in the larger study area, and accepted farm and forest practices in the core analysis areas are also homogenous with the larger study area in terms of farm and forest practices, each expert concludes that the detailed analysis of the more focused core analysis also applies to the areas of the larger study area further away from the filtration facility. Overall, each expert concludes that the filtration facility will not cause a significant impact on, or significantly increase the cost of accepted farm or forest practices in the study area (i.e., surrounding lands).



## Industrial Use Characteristics

The filtration facility (a public facilities use) and mid- to large-scale nurseries (a farm use) both have “industrial use” characteristics because both are involved in complex processing, storage, and wholesale product distribution practices.

- The filtration facility will process and filter raw water piped in from the Bull Run Reservoirs using chemicals delivered by truck, and store and distribute finished water via low-impact pipelines and strategically located reservoirs to over a quarter of Oregon’s population.
- Study area nurseries grow nursery crops locally using chemicals delivered by truck, and then process and store bareroot, ball and burlap, or container nursery stock. A variety of transportation modes (but primarily trucks) are used to distribute finished nursery products to regional and national customers.
- Both the filtration facility and nurseries use chemicals subject to state and federal regulations, and both use diesel tractor-trailer trucks for transporting processing chemicals and materials to operational facilities.

Large-scale commercial forest operations are often described as “industrial operations” because they typically are owned by large corporations, occupy large tracts of land, require road construction and/or maintenance to access forested properties, use heavy equipment in harvesting operations and to transport logs, and systematically apply chemicals to remove competing vegetation and to control disease and pest control.

Although the Forestry Compatibility Study identified no large-scale commercial forestry operations in the study area, Appendix D.3 looked outside the study area to identify several “industrial” forestry operations on large tracts of forest land east of the Sandy River.

### C.1 Accepted Farming Practices on Surrounding Lands (the Study Area)

Appendix D.1 Agricultural Compatibility Study describes in detail accepted farm practices within the agricultural core analysis area and found that the conclusions reached with respect to the core analysis area apply to the larger study area. Globalwise, an expert in farm uses and accepted farming practices,<sup>32</sup> conducted this study.

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<sup>32</sup> See Appendix N Expert Resumes for Bruce Prenguber’s farm practices qualifications.

### C.1.1 Analysis of Accepted Farming Practices

Appendix D.1 (Section 10) provides detailed descriptions of farming uses and accepted farm practices in the core analysis area and the larger study area.<sup>33</sup> Figure 53 (Figure 5 in Appendix D.1) shows broad categories of farmland use within the core analysis area. Appendix D.1 identified 62 tax lots in farm use in this area. Nurseries (including cropland, processing, and distribution) are the predominant farm use (72 percent). Food crops, grass seed, hay and pasture, and livestock farm uses are also found in the agricultural core analysis area. The remainder of the core analysis area is devoted primarily to residential uses.<sup>34</sup>

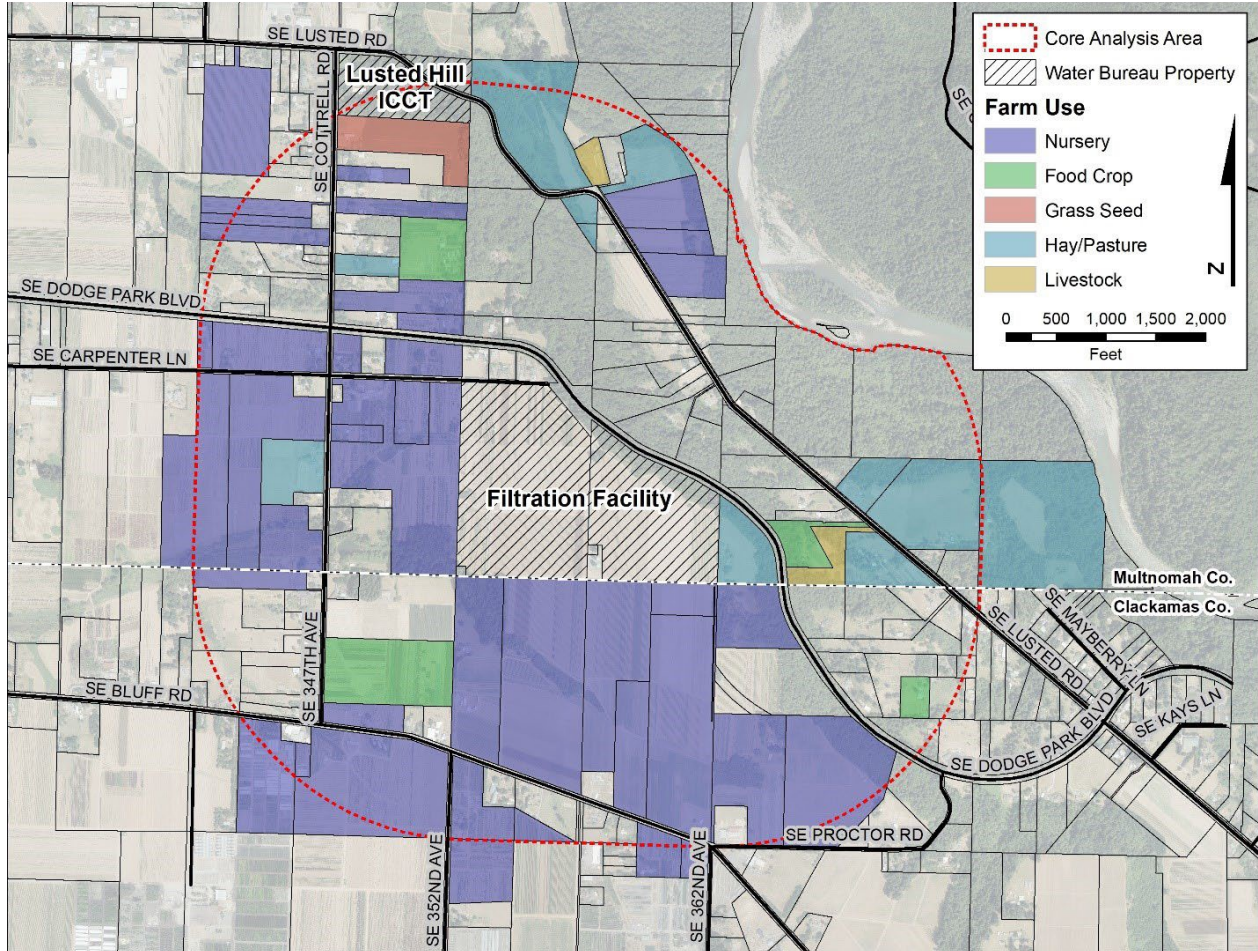


Figure 53. Types of Farm Uses in or touching the Agricultural Core Analysis Area

<sup>33</sup> ORS 215.203(2)(c) defines “Accepted farm practice” to mean (under the EFU standard): “a mode of operation that is common to farms of a similar nature, necessary for the operation of such farms to obtain a profit in money, and customarily utilized in conjunction with farm use.” “Farm use” has the meaning given to it in ORS 215.203(2).

<sup>34</sup> As documented in Appendix D.3, woodlots often are found on land with farm or residential land uses.

## Bull Run Filtration Projects Land Use Applications

Nurseries are the primary farm use in the study area and the core analysis area nearer to the filtration facility site. As described in Section 10.1 of the Agricultural Compatibility Study:

*Commercial nurseries – the bulk of the site’s neighboring farm uses in the Surrounding Lands – have year-round operations and keep employees busy throughout the year. The numbers of employees depend on the size and type of nursery. For the operations closest to the filtration facility, employment ranges from about five to forty employees. Every season throughout the year requires both field-grown and container plant nurseries to manage tasks as plants progress from cuttings, grafting and young seedlings to transplanting, protecting from disease and insects, pruning, fertilizing, and other tasks before readiness for customer delivery. The least active time of year is October through mid-November. The sections below cover accepted farm practices in the Surrounding Lands and detail the on-going, crop-specific farm activities of nurseries and the relevant timing.*

*Most medium to large scale nurseries here farm separate fields that require moving employees and equipment over the roads. Employees are moved in buses and equipment is moved by driving trucks or tractors that pull equipment. When large equipment such as forklifts, disks, or diggers are moved, they are sometimes transported on trailers or flatbed trucks. Plants dug in the fields are moved to the headquarters for grading, sorting, and short-term storage before shipping. Semi-trailer trucks are loaded at the nursery headquarters to transport the loads to wholesale customers.*

Although all farm uses and accepted farm practices in the surrounding lands are analyzed in Appendix D.1, this narrative focuses on nursery uses, both because they are the predominant farm use in the surrounding lands, and because that is the farm use closest to the filtration facility site, where filtration facility development (buildings, utilitarian structures, parking and loading areas, landscaping, etc.) is proposed.

### C.1.2 Compatibility between Nursery Uses and the Proposed Filtration Facility

Historically, Water Bureau facilities (i.e., the LHTF, pipelines, and appurtenances) and other public facilities (i.e., the Oregon Trail Academy, PWHF water tanks and pipelines, and the PGE electrical substation) have coexisted in the study area for many years without significant conflict.

As noted above, nursery uses and the proposed filtration facility have similar operational characteristics. For this reason, nursery operations are not sensitive to filtration facilities operations, and the filtration facility (unlike, for example, residential or school uses) is not sensitive to most impacts from nursery operations. Based on historical precedent and similar operational characteristics, there is no reason to believe that agricultural uses in general, and nursery uses in particular, will conflict with the filtration facility use, and vice versa.

Appendix D.1 Agricultural Compatibility Study supports the conclusion that the filtration facility will have no significant impact on nursery or other agricultural operations in the study area. Specifically, the Agricultural Compatibility Study determined that the proposed filtration facility as designed will not force a significant change to, or cost increase in, any accepted farm practice.

To ensure that there were no exceptions to this determination, the Water Bureau studied all potential externalities or sensitivities of the proposed use (Appendix D.1, Section 12). In particular, the Water Bureau studied two potential exceptions in depth:

- **The first potential exception relates to transportation impacts**, which are thoroughly addressed in the TIA (Appendix C.1). The TIA concludes that the filtration facility will have no significant impact to study area roadways or intersections. Globalwise reviewed the TIA and concluded that "the slight increase in traffic generated by the filtration facility will not force any change in accepted farm practices and there will not be any significant increase in the cost of accepted farm practices in the Surrounding Lands." Section 12.13.
- **The second potential exception relates to the use of pesticides<sup>35</sup> on nursery fields** that could affect people working outdoors or open water storage basins at the filtration facility. Like the filtration facility's use of chemicals, nurseries must follow the instruction labels on pesticides to meet state and federal regulations. If a nursery (or other farm or forest operation) is unable to use land devoted to farm or forest use because a sensitive adjacent use would limit pesticide application areas, then the sensitive use would significantly affect accepted farm or forest practices. The Water Bureau has designed the filtration facility to ensure that this potential conflict with use of pesticides in the surrounding lands will not occur.
- This potential conflict is considered below and thoroughly analyzed in Appendices D.1 and D.3 and is supported by Appendices D.4 Pesticide Report and D.5 Potential Impacts of Pesticide Use on Finished Water Quality.<sup>36</sup>

### C.1.3 Accepted Farming Practices—Pesticide Use

Pesticides use according to label instructions is an accepted farming practice in the study area, as documented in Appendix D.1 Agricultural Compatibility Study.<sup>37</sup> As shown on Tables 3 through 5 of the Agricultural Compatibility Study, pesticides (herbicides, insecticides, and fungicides) are applied to open nursery fields and in greenhouses throughout the year. In addition to scheduled applications that occur in all four seasons, fields typically are scouted regularly throughout the year to identify and treat incidences of infections from insects, rodents, weeds, and diseases.

The Agricultural Compatibility Study explains why chemical drift (overspray on to adjacent properties as a result of operator error) is not an accepted farm or forest practice.<sup>38</sup> Nevertheless, the Water Bureau

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<sup>35</sup> References to pesticides are intended to broadly reference agricultural and forestry chemicals (herbicides, insecticides, and fungicides), consistent with the use of that term in the expert studies in the appendices.

<sup>36</sup> Appendix N Expert Resumes includes resumes for Dr. Allan Felsot, Ph.D. and Mark Graham, P.E., PMP.

<sup>37</sup> Quoting from Section 10.7 of the Agricultural Compatibility Study:

*When treatment is required, it is accepted farm practice to select the correct pesticide and apply it as specified on the product label and by following all Federal and State regulations regarding its use. Certified pesticide applicators are required for many pesticides. Certified applicators may be farmers, hired workers, or third-party hired commercial applicators. Regular training and testing improve skills and prove qualification for this certification. Except for minimum risk pesticides, commercial pesticides for crop production in the Surrounding Lands must be registered with both the U.S. Environmental Protection Agency (EPA) and the Oregon Department of Agriculture (ODA). Before registering a pesticide, EPA extensively evaluates each for its public health and environmental safety and appropriate use. Approved pesticides are labeled with all the information EPA determines farmers and applicators need to know to effectively apply the pesticides while safeguarding human health and safety and protecting the surrounding environment. It is accepted farm practice to carefully follow all requirements specified on the pesticide labels. Warnings about when, how, and where the pesticides can be used are prominently displayed on labels. ODA assists with monitoring pesticide use with inspectors that regularly check farms.*

<sup>38</sup> As further described in the Agricultural Compatibility Study (p. 91):



## Bull Run Filtration Projects Land Use Applications

has assumed that chemical drift from adjacent nursery operations could occur and designed the filtration facility to ensure that any drift would not impact farm or forest users or filtration facility finished water quality.

As analyzed in depth in Appendices D.4 and D.5, even using the most conservative assumptions for pesticide application and filtration facility operations, no conflict exists between pesticides used in accepted farm and forest practices and the filtration facility.

- First, the levels of chemicals that could be introduced into the water sent into the distribution system are far below the levels which could exceed regulatory requirements, advisory levels, or benchmarks, or otherwise pose a human health risk. Production of drinking water at the filtration facility, therefore, does not conflict with—or pose a risk of significantly impacting or increasing the cost of—continuation of accepted agricultural and forestry practices in the surrounding lands of the filtration facility, nor pose a risk to drinking water quality.<sup>39</sup>
- Second, because the filtration facility bystander areas (inside the perimeter fence) are at least 100 feet from the closest possible spraying operations, and that 100-foot distance exceeds the relevant chemical “Equivalent Safe Distances”<sup>40</sup> and chemical label exclusion zone mandates, no chemical used in the surrounding lands would drift sufficiently to result in potential pesticide exposures exceeding EPA’s levels of concerns for human health or pose a risk of significantly impacting or increasing the cost of farm and forest chemical use practices.

Fundamentally, these conclusions are based on the risk analyses presented in Appendixes D.4 and D.5 showing that the designed distances between any pesticide use in the surrounding lands and the bystander and open water areas of the filtration facility are sufficiently wide to exceed the distances needed to ensure compliance with label mandates, to exceed the “Equivalent Safe Distances” modeled by using Agdrift,<sup>41</sup> and to exceed distances modeled to ensure any drift deposited on open water basins

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*Spraying from ground equipment is the most common method of applying pesticides. Aerial (e.g., via airplane or helicopter) spraying is not practiced and is not an accepted farm practice in the Surrounding Lands. It is accepted farm practice to only apply pesticides when weather conditions meet specific benchmarks. These include temperature, wind, humidity, and rain. It is accepted farm practice to immediately stop spraying if conditions change and chemical drift could occur. This is because drift or overspray\* to a non-target area such as adjoining property are not allowed under label warnings and are not accepted farm practices. Drift also can cause economic loss for a farmer – drift can injure crops on nearby farms or fields, and the crops can become unsellable if the drifting pesticide is not registered for use on the crop. Additionally, when pesticide drift occurs, some amount of the pesticide is not reaching its intended target, so the potential benefit from the application is reduced and the cost of using the pesticide is increased, as more is needed. For all these reasons, overspray and drift of pesticides and other agricultural chemicals are not accepted farm practices.*

*\* Overspray is the application of chemicals beyond the targeted site as a result of operator error.*

<sup>39</sup> See Appendix D.5 Potential Impacts of Pesticide Use on Finished Water Quality.

<sup>40</sup> The concept of an equivalent safe distance (ESD) was developed to determine at what distance from a sprayed crop row drift to bystanders would violate EPA’s assessment for safe exposures, i.e., exposures that conform to the legal mandate of “reasonable certainty of no harm.”

<sup>41</sup> The inherently conservative nature of AgDrift for overestimating drift deposition downwind from a spray swath also ensured any exposures are not unintentionally underestimated. The analysis in Appendix D.4 was performed assuming terrain that is flat, level, and open (i.e., without landscaping or structures) between the pesticide application and filtration facility. In reality, these features will intercept airborne pesticides and the intervening berms, landscaping, topography, and structures will further reduce the likelihood of chemical drift reaching bystander areas or open water basins at the filtration facility. For these reasons, the AgDrift results used in the analyses are extremely conservative and the actual potential for deposition of chemicals is much lower than modeled.

results in finished water concentrations significantly lower than clean drinking water standards and guidelines.

Additionally, the Water Bureau has agreed not to complain or remonstrate against any accepted farm or forest practices and is willing to sign a non-remonstrance agreement to this effect.<sup>42</sup> For all of these reasons, the filtration facility will not force a significant change in, nor significantly increase the cost of accepted farm and forest chemical use practices in the surrounding lands.

To provide greater assurance that pesticide applications will not be harmful to the health of Water Bureau staff or visitors, nor impact water quality or require changes in agricultural or forestry practices, the site landscape plan (Appendix A.1a) shows berms, topographical changes, and trees and shrubs planted between the filtration facility and potential pesticide application areas, to screen and intercept airborne chemicals before they reach potentially sensitive water basins.

### C.1.4 Agricultural Impact Conclusion

Based on the analysis above, and supported by Appendices D.1 Agricultural Compatibility Study, D.4 Pesticide Report, and D.5 Potential Impacts of Pesticide Use on Finished Water Quality, the filtration facility will not force any significant change in accepted farm practices or significantly increase the cost of accepted farm practices on surrounding lands devoted to farm use.

## C.2 Accepted Forest Practices on Surrounding Lands

Forestry experts Mason, Bruce & Gerard<sup>43</sup> prepared Appendix D.3 Forest Compatibility Study. Figure 53 above shows the farm and forest core analysis area in the context of the study area.<sup>44</sup>

### C.2.1 Analysis of Accepted Forest Practices

The Forestry Compatibility Study (pp. 8-9) describes accepted forest practices in terms of forest practices that are regulated by the Forest Practices Act (FPA). Forest practices include site preparation, timber harvest, slash disposal, road construction and maintenance, tree planting, precommercial thinning, release (removal of non-commercial tree species), fertilization, and insect or disease control.

The Forestry Compatibility Study (pp. 11-12) then applies five criteria to ensure that all forested parcels in the study area are considered in the forest impacts analysis:

- Properties zoned for forest use with a forest land comprehensive plan designation.
- Properties with active commercial forestry operations.
- Properties that have filed a Notification of Operations (NOAP) with the Oregon Department of Forestry in the last five years. (An NOAP is a document required to be filed with the ODF 15-days prior to starting a forest operation.)
- Properties whose owners are utilizing the tax-deferral for land retained in forest use.
- Properties with commercial timber species.

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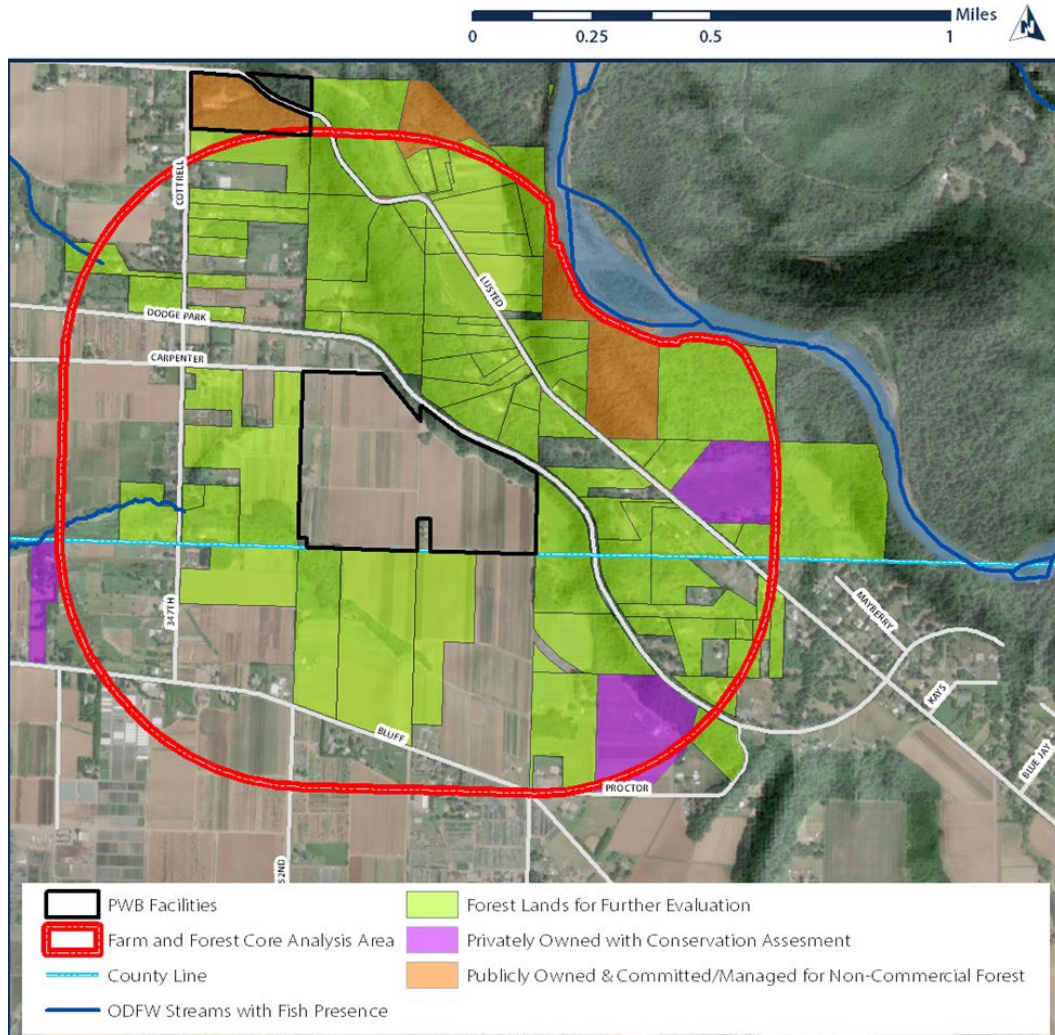
<sup>42</sup> See Appendix D.7 Lusted Hill Farm and Forest Deed Restriction for a copy of the recorded restrictive covenant applicable to the LHTF site.

<sup>43</sup> See Appendix N Expert Resumes for Brent Keller's forest practices qualifications.

<sup>44</sup> Appendix D.1 and D.3 use the term "surrounding lands" which has the same meaning as the "study area" used in this application narrative.

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Ninety-six tax lots were initially identified as having forest land characteristics. With respect to these 96 tax lots, the Forest Compatibility Study distinguishes between (1) forested parcels that are not managed for commercial forest purposes (pp. 12-13) and (2) those that potentially could employ commercial forest practices. Figure 54 shows these two forest parcel categories as indicated below.



**Figure 54. Forested Parcels with Potential or No Commercial Forest Operations**

- **Orange tax lots.** The Bureau of Land Management (BLM) and Metro have large ownerships that are managed for forest conservation purposes. The Water Bureau does not manage the LHFT site for commercial forestry purposes. Figure 55 shows these tax lots in orange.
- **Purple tax lots.** Three other private parcels in the core analysis area have conservation easements. Figure 55 shows these tax lots in purple.

- **Light Green tax lots.** The remaining tax lots (shown in light green) require further analysis because they are private woodlots of 20 acres or less<sup>45</sup> in the RR, MUA-20, EFU, or RRRFF-5 zones that allow farm and forest practices outright.

## C.2.2 Evaluation of Remaining Potential Forest Parcels

The Forestry Compatibility Study (pages 14-19) documents a the four-step evaluation process that Mason, Bruce & Gerard used in evaluating remaining forested parcels:

1. **Site Visits.** Each tax lot was visited in person where possible (some portions of tax lots were not visible from a public road). No forest operations were identified that would be impacted by the filtration facility.
2. **Property Owner Surveys.** Each property owner was contacted and asked to respond to a questionnaire regarding potential impacts from the Filtration Facility on potential forest operations. While some of the forest landowners surveyed expressed personal concerns about the proposed Filtration Facility, none identified any specific conflicts with accepted forest practices. No respondent stated any intention of harvesting timber or practicing significant forestry operations soon, but all said they would like to maintain the option of a future timber harvest. No respondent expressed concern that their potential future forest activities would be affected by the proposed Filtration Facility.
3. **Notice of Forest Operations.** Table 4 and Figure 55 below identify NOAP that have been issued for commercial forest operations in the study area over the last five years.

**Table 4. NOAPs Filed with Oregon Department of Forestry Since January 2027**

Map ID	NOAP	Acres of Activity	Volume (MBF)	Activity	Miles from FF Site
<b>Core Analysis Area</b>					
1	2021-581-06469	1.5	1	Commercial Thinning	-
2	2020-581-01691	2.9	35	Commercial Thinning	0.25
<b>Surrounding Lands</b>					
3	2022-581-01812	2.3	20	Clearcut	0.7
4	2018-581-10639C	3.0	20	Clearcut	0.8
5	2021-581-00282	13.3	40	Clearcut	0.9
<b>Larger Study Area East of Sandy River</b>					
6	2022-581--01204	60.4	N/A	Precommercial Thinning + Herbicide Application	1.0
7	2017-581-01657C	13.9	N/A	Precommercial Thinning	1.3

<sup>45</sup> OAR 215.203 Zoning ordinances establishing exclusive farm use zones states in relevant part that “Farm use” generally does not include the use of land subject to the provisions of ORS chapter 321 Timber and Forestland Taxation. However, farm use can include “woodlots” as defined in subsection (H): “(H) Any land constituting a woodlot, not to exceed 20 acres, contiguous to and owned by the owner of land specially valued for farm use even if the land constituting the woodlot is not utilized in conjunction with farm use;”



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	2019-581-10901C	12.9	10	Clearcut	
	2019-581-10900	N/A	N/A	Stream Crossing	
<b>8+9</b>	2021-581--06655C	40	20	Commercial Thinning	1.1
	2018-581-04006	40	100		
<b>All Areas Above</b>					
<b>X</b>	2021-581-01204	N/A	N/A	Utility Line Maintenance	0 to 2

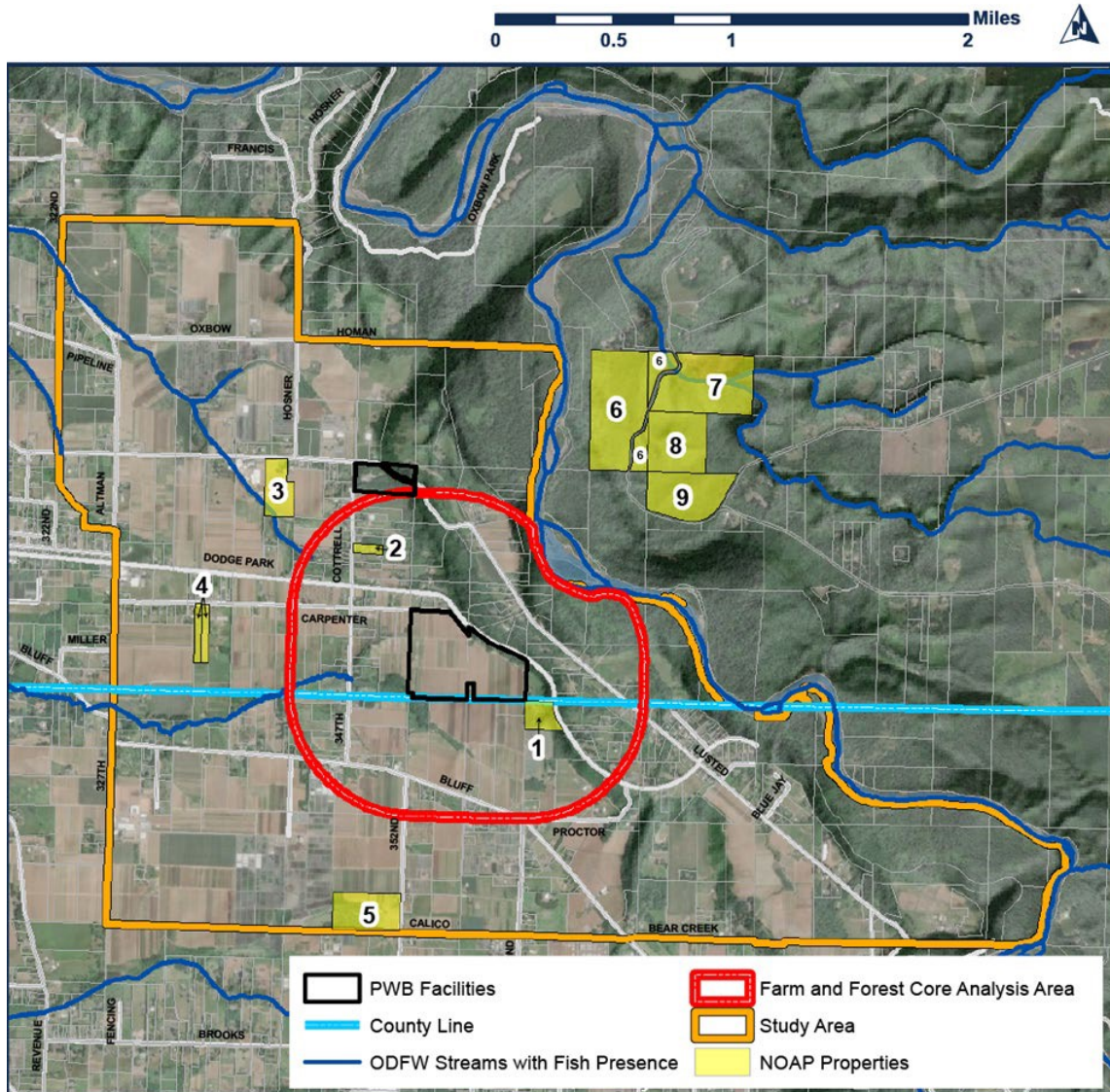


Figure 55. NOAP Filed in the Last Five Years

- Figure 55 shows that two NOAP were filed in the core analysis area, both of which involved small-scale (1.5 acres and 2.9 acres) commercial thinning operations. Neither operation used pesticides. Mason, Bruce & Gerard found that neither operation nor any other accepted forest practices on these sites would be impacted by or increased in cost by the filtration facility.

- Figure 55 also shows three NOAP related to the small private woodlots in the larger study area outside the core analysis area. These three NOAP involved a total of 18.6 acres of small-scale commercial timber harvest. None of these operations used pesticides. Mason, Bruce & Gerard found that none of these three clear-cut operations nor any other accepted forest practices on these sites would be impacted by or increased in cost by the filtration facility.
  - Based in on an evaluation of NOAP issued over the last five years in the study area, Mason, Bruce & Gerard determined that these forest operations will not significantly affect filtration facility operations, and that the filtration facility will not significantly impact accepted forest practices or increase the cost of accepted forest practices on surrounding lands devoted to forest use in the study area.
  - Four NOAPs related to forest operations on large-scale commercial forest lands **outside the study area** (east of the Sandy River). These NOAPs were for commercial thinning, a stream crossing, and a clearcut. Only one NOAP included application of herbicides in association with commercial thinning. As documented in the Forestry Compatibility Study (Large Study Area discussion), these forest operations are too far from the Filtration Facility to have any significant impact.
4. **Chemical Use.** Potential chemical use (herbicide applications) in forest operations was examined—with a focus on the possibility of chemical drift impact on the filtration facility. This possibility is addressed in more detail below.

### C.2.3 Accepted Forest Practices—Herbicide Applications

The Forestry Compatibility Study (pp. 21-22) recognizes that the only way in which the filtration facility could conceivably impact accepted forest practices would be related to the use of herbicides. While there is no reported (based on NOAP) or observed use of herbicides in commercial forest operations in the core analysis area or surrounding lands (the study area),<sup>46</sup> the Forestry Compatibility Report noted that any forested parcel could potentially use herbicides in the course of their forest operation. To evaluate this unlikely potential impact, the Pesticide Report (Appendix D.4) modeled scenarios of herbicide drift and exposure using EPA’s publicly available AgDrift program, which showed that any drift beyond a spray swath would not exceed safe levels defined for human health and drinking water quality.

Herbicides are routinely applied to large-scale commercial forestry operations such as those that occur east of the Sandy River (outside the study area) but are less likely to be applied in small woodlot operations. All herbicide applications must adhere to the following ODF buffer width requirements per OAR 629-620-0400 (4) and SB 1602:

- **Ground-based spraying:** Minimum 10 feet in all circumstances (aquatic areas, wetlands, and dwellings, wetlands).
- **Aerial spraying:** 50 to 75 feet for streams, wetlands, and lakes.

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<sup>46</sup> Only one notification (NOAP 2022-581-01204) was for herbicide use. The NOAP applied to a forested natural area owned by Metro that is not managed for commercial forestry purposes. The Metro property is located 0.9 miles from the filtration facility site. The method of application was “ground-manual spot application.” The herbicide being applied was Vastlan, which is listed as an approved chemical in Metro’s Integrated Pest Management Plan for natural areas. In total, most of the acreage represented by these operations is east of the Sandy River, and none of the operations would be affected by, or have an effect on, the filtration facility.

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- **Aerial spraying:** 300 feet for water intakes, schools, inhabited dwellings.

Aerial spraying is not feasible or practiced on areas smaller than 10 acres due to economy of scale and logistical challenges (e.g., proximity of residences and aquatic areas). The closest parcel with more than 10 forested acres is 900 feet from the filtration facility site. The required 300-foot buffer from dwellings further limits the potential for aerial application in forestland in the study area.

In terms of herbicides, the proposed Filtration Facility will not force a significant change in, nor significantly increase the cost of, accepted forest practices in the surrounding lands. This conclusion is supported by the following observations:

- The significant forestry spraying practices are too distant (i.e., greater than 2.5 miles) from the Filtration Facility to be of concern for Filtration Facility personnel or visitors, or for exposure of water basins.
- For those potential herbicide applications in the surrounding lands and closer to the Filtration Facility, modeled scenarios of herbicide drift and exposure using EPA's publicly available model AgDrift showed that any drift beyond a spray swath would not exceed safe levels defined for human health and drinking water quality.

Because there is no risk of health or water quality impacts at the filtration facility, accepted forest practices in the study area can continue without any significant change or increased cost, and finished water will not contain herbicide residues that exceed safe drinking water quality standards or guidelines.

### C.2.4 Evaluation of Commercial Forest Operations Outside the Study Area (East of the Sandy River)

Since there were no large-scale commercial forest operations in the core analysis area and to ensure that the filtration facility operations will not significantly affect accepted forest practices, Mason, Bruce & Gerard evaluated commercial forest land within a five-mile radius area for the purpose of confirming that conclusions about the surrounding lands were accurate when applied to larger-scale commercial forestry. Five large-scale forest owners (over 200 acres) were identified within the Large Study Area. Two of those larger forest ownerships are in commercial production.

These operations typically employ accepted forest practices at an industrial scale, including aerial spraying. Because the filtration facility is separated from these large-scale commercial operations by at least one mile and the Sandy River Gorge, there will be no adverse impacts on filtration facility operations, and the filtration facility will not limit accepted forest practices in this area.

Mason, Bruce & Gerard also considered potential transportation impacts on large-scale commercial forest operations. Both Weyerhaeuser and Frank Timber harvest timber and ship logs to market by truck. The transportation route of log trucks from the Weyerhaeuser and Frank Timber timberlands depends on the destination. Log trucks headed to I-84 reach the highway at Corbett without crossing the Sandy River. Trucks headed to US-26 reach the highway via Ten Eyck Road, crossing the Sandy River at Revenue Bridge just northeast of the City of Sandy. Neither route crosses the filtration facility study area. Therefore, the filtration facility will not have any impact on or increase the cost of accepted forest practices related to commercial timber harvest and transport even outside of the surrounding lands.

### C.2.5 Forestry Impact Conclusion

Based on the analysis above, and supported by Appendices D.3 Forest Compatibility Study, D.4 Pesticide Report, and D.5 Potential Impacts of Pesticide Use on Finished Water Quality, the filtration facility will

not force any significant change in accepted forest practices nor significantly increase the cost of accepted forest practices on surrounding lands devoted to forest use.

### **C.3 Other Potential Filtration Facility Impacts on Farm and Forest Practices**

Sections C.1 and C.2 above determined that there will be no significant impacts on accepted farm and forest practices, or the cost of such practices, resulting from the filtration facility.

This Section C.3 considers whether other potential externalities from the filtration facility could force a significant change in accepted farm or forest practices, or increase the costs thereof, in the study area. These potential filtration facility externalities include:

- Noise and vibration
- Odor
- Light and glare
- Dust and mud
- Litter
- Vector control (or lack thereof)
- Air quality
- Water quality and quantity
- Radio transmissions
- Security (or lack thereof)
- Traffic

In an abundance of caution, Appendix D.1 Agricultural Compatibility Study (Sections 12.1 through 12.14) and Appendix D.3 Forestry Compatibility Study (pp. 23-26) examine each of these other potential externalities from the filtration facility on farm and forest practices, respectively.

The expert authors of the Agricultural and Forest Compatibility Studies (Appendices D.1 and D.2) conclude that these potential externalities will not force a significant change in accepted farm or forest practices in surrounding lands, nor significantly increase the costs of accepted farm or forest practices on land devoted to farm or forest uses. Generally, these studies conclude that (a) farm and forest uses are not sensitive to the potential externality, (b) that the externality will be contained on site and therefore there is no externality with the potential for an adverse impact on farm and forest practices, (c) the externality is insufficient to force a significant change in accepted farm and forest practices or the cost thereof, and/or (d) the externality has been mitigated so as not to force a significant change in accepted farm and forest practices or the cost thereof.

### **C.4 CU Criterion C (Accepted Farm or Forest Practices) Conclusion**

Based on the analysis above, and the detailed reports found in Appendices D.1, D.2, D.3, D.4, and D.5, the proposed filtration facility will not force a significant change in nor significantly increase the cost of accepted farm or forest practices in the surrounding lands (i.e., the study area).



*C. Will not require public services other than those existing or programmed for the area;*

**Response:** Appendix L includes service provider letters from the following entities:

- **Water Service (Appendix L.9):** The Water Bureau will self-provide water service with flows adequate for filtration facility operations.
- **On-Site Wastewater Service (Appendix L.8):** The Portland Bureau of Development Services (BDS) has approved the Water Bureau's proposed septic system for the filtration facility on-site septic tank and drainfield system.
- **Stormwater (Appendix H.1):** Because stormwater will be managed on site, no public services for stormwater are required for the filtration facility.
- **Fire Protection (Appendix L.10.a):** Gresham Fire and Emergency Services ("Gresham Fire") and Rural Fire Protection District 10 (the "District") provided the Fire Service Agency Review form in Appendix L.10a along with a cover letter from the District and a January 25, 2022 "Fire Service Agency Review" letter from Gresham Fire. The Fire Service Agency Review form confirms that the property is inside service boundaries. The January 2022 Gresham Fire letter describes, among other things, fire access, fire flow, and fire hydrant installation standards necessary to comply with the Fire Code requirements. The Water Bureau has incorporated these requirements from the January 2022 letter into the plans for the filtration facility proposed with this application. Therefore, adequate fire protection public services are existing in the area.
- **Police / Sheriff (Appendix L.1):** The Multnomah County Sheriff's Office has confirmed that police/sheriff services are available to serve the site.
- **Other Service Agencies (Appendices L.5a, L.6, L.7):** Although not "public" as part of this approval criterion, note that Portland General Electric, MVS Recycling Services, and Ziply Fiber have agreed to provide electrical, garbage and recycling, and fiber optical services to the filtration facility site.

The above services are existing or programmed for the area, as shown in the relevant appendices. Therefore, this criterion is met.

*D. Will be located outside a big game winter habitat area as defined by the Oregon Department of Fish and Wildlife or that agency has certified that the impacts will be acceptable;*

**Response:** As shown on Figure 57, the Multnomah County Comprehensive Plan identifies Oregon Department of Fish and Wildlife (ODFW) elk and deer winter range areas on the East Multnomah County Wildlife Habitat map. These winter range areas are in the northern portion of the County near the Columbia and Sandy rivers, north of Oxbow Park, and outside the study area. Therefore, the project (including the filtration facility site and related pipelines) will be located entirely outside big game winter range habitat areas.

At the pre-application conference, the project team asked for county staff confirmation of this finding. In the County's pre-application conference notes (PA 2022-15566), staff recommended contacting ODFW to "verify that the subject site is outside of the Big Game Winter Habitat Area. Submit any maps or documents that you use to support your finding for MCC 39.7515(E)." The Water Bureau contacted Steve Niemela, ODFW's Watershed Manager for the North Willamette Watershed District. As documented in Appendix E.8a, Mr. Niemela verified that the subject site is "in Impacted Habitat, not in winter range or even year-round range." The ODFW mapping of the project site area is shown on Figure 58 (Appendix E.8b) and ODFW communications are documented in Appendix E.8a. The ODFW map in Appendix E.8b confirms, as Mr. Niemela states, that the entire project is located within Impacted Habitat, not in winter range or year-round range.

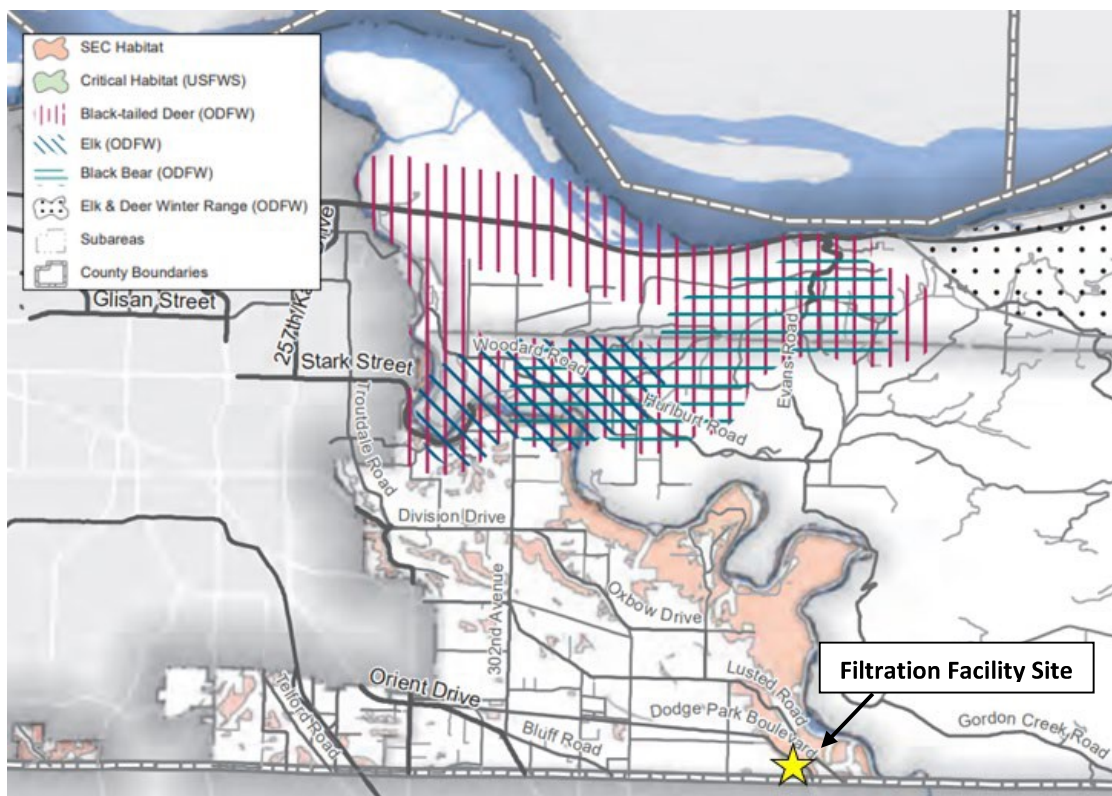


Figure 56. Clip of County Comprehensive Plan Figure 5-6 Wildlife Habitat, with Project Site Identified

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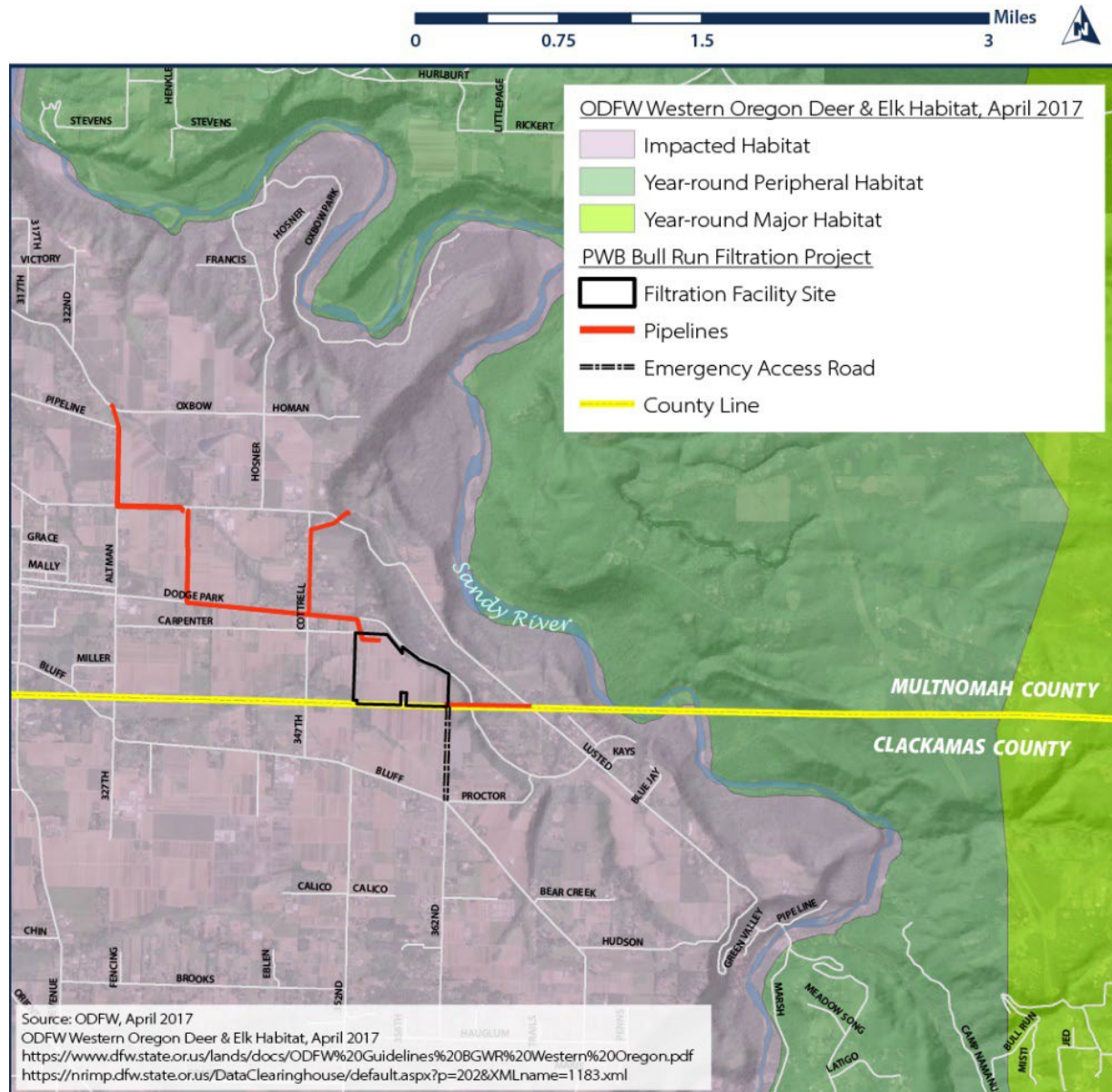


Figure 57. ODFW Western Oregon Deer & Elk Habitat showing project within Impacted Habitat

For these reasons, the proposed project will be located outside big game winter range habitat areas as defined by ODFW. Therefore, this criterion is met.

### E. Will not create hazardous conditions;

**Response:** This Section F narrative addresses the ways in which the Water Bureau has mitigated risks in order to ensure the filtration facility will not create hazardous conditions, particularly related to the use of hazardous materials and geologic hazards. The proposed filtration facility will filter raw water from the Bull Run Reservoir to remove sediment and micro-organisms. Residue from the filtering process will enter coagulation basins to solidify waste materials. Chemicals are used to assist the filtration and coagulation processes and the water is chlorinated to ensure clean, safe water is delivered to the end users.



Broadly, the filtration facility is being designed to ensure that it meets all local, state, and federal requirements, and therefore will not create hazardous conditions. For example, as documented in Appendix E.6, hazardous materials must be transported and stored in accordance with IFC (International Fire Code), IBC (International Building Code), and DEQ (Department of Environmental Quality) standards. The filtration facility purifies and recycles water on site. All water is returned to the head of the facility; no off-site discharges to local water bodies such as Johnson Creek or the Sandy River are proposed. See Appendix E.7. The project does not present any risk of flood hazards, as the entirety of the project is located outside of the floodplain or flood hazard areas.

### F.1 Hazardous Materials Management Plan (HMMP)

Appendix E.6 HMMP, Section 2.1 (page 3) includes a list of chemicals used on the filtration facility site on-site:

*Hazardous materials used on-site generally consists of above ground liquid oxygen (LOX), ozone, carbon dioxide, sodium bisulfite, liquid ammonium sulfate, polymer, aluminum sulfate, polyaluminum chloride, soda ash, sodium hypochlorite, and diesel fuel. Hazardous wastes that will likely be generated at the filtration facility are waste solvent, mixed waste oil, and waste paint thinner.*

Table 1 of the HMMP provides a complete list of hazardous materials at the filtration facility and their storage locations, the American Chemical Society's Chemical Abstract Service (CAS) number, fire code hazard class, and maximum quantity stored.

Section 4 of the HMMP describes the hazardous materials operations plan, including how hazardous materials are delivered, stored, contained, monitored, and disposed of to minimize their risk of spills and/or contamination. The Water Bureau has policies and procedures in place to ensure compliance with federal and state requirements regarding the transport, handling, and use of hazardous chemicals.

Table 2 of the HMMP summarizes typical operations and maintenance measures for each chemical necessary to minimize potential emergencies.

Key findings include:

**Section 4.1 Separation, Secondary Containment, and Waste Disposal.** *The Facility's hazardous material storage areas will be separated according to the stored chemicals compatibilities and reactivity. As required by the International Fire Code, secondary containment is provided for these materials to further mitigate the risk of a potential spill or contamination. (HMMP, page 6)*

**Section 4.2 Chemical Deliveries.** *The chemical building is centrally located within the Facility. Most chemicals will be delivered, in bulk, by tanker trucks that are pressurized to fill the on-site storage tanks at the Chemical Building. The nonionic and anionic polymers will be delivered in 330-gallon totes. Chemical delivery truck drivers are well trained and follow strict industry standards to ensure safe and effective transfer of chemicals. All chemical loading areas and connections will be locked. During chemical delivery, plant staff will unlock the connections for chemical delivery drivers. (HMMP, page 7)*

**Section 4.3 Chemical Storage Area.** *Containment areas are designed to hold the contents of the largest tank plus 10 percent and 20 minutes of fire flow from the fire-suppression sprinklers. Each containment area has a sump with a portable sump pump to pump any chemical spill to a licensed waste hauler tasked with safe transport to an appropriate*



*disposal facility. Chemical feed pumping facilities, as well as ancillary equipment related to chemical feed, are also located in this same containment area, mitigating the risk of minor leaks associated with pumps or pump piping connections. (HMMP, page 8)*

**Section 4.4 Chemical Piping.** *All buried chemical piping on-site is double contained, either as flexible tubing pulled through a pipe sleeve or as a pre-engineered double-wall pipe. (HMMP, page 8)*

**Section 4.5 LOX and Ozone Considerations.** *The Facility's ozone system [...] is accompanied by control and monitoring equipment designed to provide a safe and secure operation environment. The system can automatically detect issues and initiate immediate solutions. (HMMP, page 9)*

HMMP Sections 4.5.2 through 4.5.4 detail safety, storage, and conveyance considerations that must be made for liquid oxygen, gaseous oxygen, and ozone, and the equipment units and areas dedicated to their handling.

In summary, the Water Bureau is committed to best management practices for chemicals. The chemicals used in the filtration process are stored in a secure structure that ensures the safe handling and delivery of chemicals. Chlorine to be used is delivered and stored in the form of salt.

**Section 5 Hazardous Materials Emergency Response Plan.** *The Facility will be operated and maintained to minimize the risk of hazardous materials spills, fires and explosions, and other emergencies. Still, this HMMP includes a hazardous material emergency response plan (HMERP) that establishes best practices and reporting protocols in the event of a hazardous materials spill or emergency. While PWB has a stand-alone emergency response plan for the entire water system, this HMERP provides the procedures specific to the Facility and its hazardous materials. (HMMP, page 1)*

As explained on page 12, a designated and highly trained emergency coordinator is responsible for implementation of this plan, recordkeeping, coordinating all emergency response actions at the filtration facility, and emergency follow-up procedures. The HMMP also addresses diesel fuel storage. Two fuel storage areas are located on site. Above-ground, double-walled storage tanks will have emergency shut-off valves.

Additionally, as documented in Appendix E.1, in general water treatment facilities in Oregon do not present concerns about chemical safety. Based on the Hazardous Materials Management Plan—and the fact that the Water Bureau must meet state and federal regulations applicable to the transport, storage, and use of hazardous materials—the filtration facility will not create hazardous conditions related to hazardous materials.

## F.2 Geologic Hazards

The Geotechnical Engineering Report (Appendix I.1) was prepared by a licensed Oregon geotechnical engineer to ensure the filtration facility does not pose geologic hazards. The filtration facility is located entirely outside of the Geologic Hazards Overlay zone and the Geotechnical Engineering Report confirms that the “site is suitable for the intended development and the risks from geologic and seismic hazard are low and can be mitigated with appropriate foundations and site developments.” Pg. 1. Therefore, the filtration facility does not present geologic hazards.

## F.3 Hazardous Conditions Conclusion

Hazardous materials stored on site include chemicals used for the filtration process that are typical in water treatment and diesel fuel used for fleet vehicles and emergency generators. The filtration facility

design carefully considered the volume, concentration, and weight of chemicals to be stored, how they are stored, and how they will be delivered to their point of use throughout the site. Fuel will be stored in above-ground, double-walled tanks with emergency shut-off valves. The design of the filtration facility also has considered and minimized geologic hazard risks. The project design and operation meet all applicable state and federal safety standards. Therefore, the filtration facility will not create hazardous conditions and this approval criterion is met.

## F. Will satisfy the applicable policies of the Comprehensive Plan;

**Response:** Appendix O.3 (page 20) Pre-application Conference Notes includes the following Water Bureau question and Planning Division answer regarding applicable Comprehensive Plan policies per CU Criterion G above:

*Please confirm that the applicable policies of the Comprehensive Plan for the same use classification at Lusted Hill (T3-2019-11784) will be applicable to the filtration project components.*

*Response: At a minimum, staff recommends that the applicant address the following comprehensive plan policies and strategies: 3.1-3.5, 3.13-3.16 (Farmland), 7.1-7.4 (Natural Hazards), and 11.1-11.11 (Public Facilities) in order to demonstrate consistency with MCC 39.7015 (A)(7) Conditional Use Approval Criteria.<sup>[47]</sup>*

## G.1 Case Law Regarding Which Policies are “Applicable”

The Multnomah County Comprehensive Plan has over 200 pages of policy for guiding growth and development in Multnomah County. To determine which policies are potentially “applicable” (i.e., apply directly as approval criteria) under this CU approval criterion G, the project team reviewed the Comprehensive Plan text and context, guided by *Friends of the Hood River Waterfront v. City of Hood River*, 68 Or LUBA 459, slip op. pg. 12 (2013):

*[...]the text and context of potentially applicable comprehensive plan requirements must be examined to determine if the plan requirement is one that must be applied directly as an approval standard.*

In examining that text and context, for a comprehensive plan policy to be “applicable,” LUBA has explained that both of the following must be true:

*(1) that the plan requirement is mandatory (rather than hortatory or aspirational) and*

*(2) that the mandate must be applied directly as a permit approval standard.*

*The second qualification is necessary, because a mandatory comprehensive plan policy may have been incorporated into implementing land use regulations, thereby fully implementing the plan policy and making direct application of the policy duplicative and unnecessary.*

*Friends of the Hood River Waterfront*, 68 Or LUBA 459, slip op. pg. 9 (formatting added); *reversed on other grounds*, 263 Or App 80, 326 P3d 1229 (2014).

LUBA further has explained that a policy that directs the county “to undertake planning efforts” is not an “applicable” comprehensive plan decisional standard to be applied directly “on a case-by-case basis

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<sup>47</sup> Note that the reference to MCC 39.7015(A)(7) should have been a reference to the identical approval criterion in MCC 39.7515(G) applicable to community service uses.

when approving individual development proposals.” *Northgreen Property LLC v. City of Eugene*, 65 Or LUBA 83, 87 (2012).

In summary, three criteria apply when determining whether a comprehensive plan policy is “applicable” and therefore functions as an approval criterion:

- (1) The policy must be mandatory (as opposed to aspirational).
- (2) The policy must not be implemented by an adopted county land use regulation.
- (3) The policy does not direct the county to undertake a planning effort (e.g., to adopt land use regulations).

Put another way: If (1) the policy is mandatory, and either (2) the policy is not incorporated into MCC Chapter 39 as a land use regulation, or (3) the policy does not direct the county to undertake a planning effort, then the policy is applicable under CU Criterion G and functions as an approval criterion. Otherwise, it is not applicable.

## **G.2 LHTF CU Review—Potentially Applicable Comprehensive Plan Policies**

As documented in Appendix O.3 (Case File #T3-2019-11784), county staff and the hearings officer found the following policies applicable to approval of the Water Bureau LHTF, which is located about a mile from the proposed filtration facility site.

*11.12 A water supply system for new development shall be by either of the following methods: 1. Connection to a public water system having adequate capacity to serve the development and all other system customers. 2. A private water system that produces safe drinking water with sufficient volume and pressure to meet applicable Building Code and Fire Protection Code.*

**Response:** This policy is mandatory (“shall”) and appears to apply directly to this CU review, as it did to LHTF. As documented in Appendix L.9 and discussed in Section D above, the Water Bureau will self-provide public water service with flows adequate for filtration facility operations, including fire protection, as well as the nearly one million people the Water Bureau serves. Therefore, this Comprehensive Plan policy is satisfied.

*11.13 Wastewater disposal for new development shall be by any of the following methods: 1. Connection to a public sewer system having adequate capacity to serve the development and all other system customers. 2. A private system that meets Oregon Department of Environmental Quality regulations.*

**Response:** This policy is mandatory (“shall”) and appears to apply directly to this CU review, as it did to LHTF. As documented in Appendix L.8 and discussed in Section D above, BDS has approved the site for a septic tank and drainfield system meeting all Oregon Department of Environmental Quality (DEQ) requirements. Therefore, this Comprehensive Plan policy is satisfied.

*11.17 As appropriate, include school districts, police, fire protection, and emergency response service providers in the land use process by requiring review of land use applications from these agencies regarding the agency’s ability to provide the acceptable level of service with respect to the land use proposal.*

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**Response:** This policy is implemented by CU Approval Criterion D, which requires that the filtration facility will not require public services other than those existing or programmed for the area. To demonstrate compliance with this criterion, the County requires the applicant to request service provider letters.

In any case, Appendix L provides the required service provider letters in compliance with CU Approval Criterion D. As documented in Appendix L:

- Gresham Fire and Emergency Services (“Gresham Fire”) and Rural Fire Protection District 10 (the “District”) provided the Fire Service Agency Review form in Appendix L.10a along with a cover letter from the District and a January 25, 2022 “Fire Service Agency Review” letter from Gresham Fire. The Fire Service Agency Review form confirms that the property is inside service boundaries. The January 2022 Gresham Fire letter describes, among other things, fire access, fire flow, and fire hydrant installation standards necessary to comply with the Fire Code requirements. The Water Bureau has incorporated these requirements from the January 2022 letter into the plans for the filtration facility proposed with this application. Gresham Fire expressed no concerns about its ability to provide the acceptable level of service for the filtration facility. (Appendix L.10a)
- The Multnomah County Sheriff’s Office provides police and emergency response services to the site. The Multnomah County Sheriff’s Office has confirmed that police/sheriff services are available to serve the site. (Appendix L.1.)

The site is within the Oregon Trails School District boundary. However, the filtration facility will not increase demand for school facilities. Accordingly, service provider forms for schools were not required by County staff in the pre-application conference.

Based on the above, the relevant service providers in Comprehensive Plan policy 11.17 have been included in the land use process, reviewed the proposed filtration facility, and determined each can “provide the acceptable level of service” to the filtration facility. Therefore, to the extent that this policy applies, it is satisfied.

### G.3 Pre-Application Conference—Additional Comprehensive Plan Policies to Evaluate

In the pre-application conference (Appendix O.3) County staff recommended that the Water Bureau also evaluate the following Comprehensive Plan policies to determine if they are applicable, and, if applicable, provide a response as to how the filtration facility satisfies the applicable policy. As noted in Section G.1 above, policies which are not in mandatory terms (“shall”), which direct staff to undertake planning efforts, or which have been incorporated into the MCC land use regulations are not “applicable” Comprehensive Plan policies.

As documented below, most of these policies appear to be implemented by MCC Chapter 39 provisions or to direct the county to undertake a planning effort, and therefore are not applicable to the filtration facility CU review.



### G.3.1 Chapter 3: Farm Land

#### *General Policies for Agricultural Zones*

*These policies pertain to land either in the County's EFU zone or in the MUA-20 zone.*

*3.1 Prohibit creation of new lots or parcels, except as authorized by code, which detracts from agricultural practices and from protection of open space and rural community values.*

**Response:** This mandatory policy does not appear to be applicable because it is implemented by MCC 39.4325(A) which establishes minimum lots sizes within the MUA-20 zone and MCC 39.9020 which states that “No land may be divided in the area of unincorporated Multnomah County except in accordance with this Ordinance.”

In any case, both parcels that comprise the filtration facility site exceed the applicable 20-acre minimum lot size and no new lots or parcels are proposed to be created on the filtration facility site. Therefore, to the extent that this policy applies, it is satisfied.

*3.2 Re-designating land from Agricultural land use to another land use classification should be in accord with the standards set forth by the Statewide Planning Goals, OARs, and in this Plan.*

**Response:** This non-mandatory policy (“should”) has been incorporated into MCC 39.1205 Type IV Quasi-Judicial Zone Change Approval Criteria. Moreover, the filtration facility site is designated as MUA-20 and is not in any way proposed to be redesignated to another land use classification through this application or otherwise as part of the filtration facility project. Therefore, this policy does not appear to be applicable to the filtration facility CU application.

In any case, the filtration facility is allowed under current zoning as a CS use through the CU review process. The MUA-20 zone is similar to other rural zones around the state where water treatment facilities are allowed under that zoning and do not conflict with the surrounding agricultural and uses, as discussed in Appendix E.1. Therefore, to the extent that this Comprehensive Plan policy applies, it is satisfied.

*3.3 Require lot and parcel aggregation standards to reduce parcelization, maintain larger lot and parcel sizes in farm and forest zones, and help minimize impacts of non-farm and forest uses on surrounding farm and forest production. [...]*

**Response:** This portion of policy 3.3 is mandatory and appears to direct planning efforts for the County to adopt lot and parcel aggregation standards in farm and forest zones. The county has undertaken those planning efforts and implemented this policy by MCC Part 3 Lot of Record standards as applied in EFU (MCC 39.3070 Lot of Record – Exclusive Farm Use) Lot of Record Standards in Commercial Forest Use Zones) both of which include aggregation standards. In those planning efforts, parcels within the MUA-20 zone were specifically exempted from aggregation standards in the EFU and CFU zones. MCC 39.3070(A)(2)(b)(4). Accordingly, MCC 39.3150 Lot of Record – Multiple Use Agriculture does not have any aggregation standards.

Because this policy directs planning efforts, and though those efforts this policy has been implemented into the land use regulations, and because the implemented standards do not apply to parcels in the MUA-20 zone, this portion of Comprehensive Plan Policy 3.3 is not applicable to this CU review process.

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*3.3 [continued] In order to minimize confusion over the development potential of a property, a condition of approval for land use and development permits shall require deed restrictions be recorded that identify the properties that constitute a lot of record along with the development restrictions that go with the lot of record.*

**Response:** This portion of policy 3.3 directs planning efforts for the county to require deed restrictions be recorded where lot of record requirements apply to create development restrictions.

The County has undertaken those planning efforts and implemented this policy by requiring all uses to occur “on a Lot of Record.” MCC 39.4305 (MUA-20); MCC 39.4215 (EFU). By requiring all uses to occur “on a Lot of Record”, no deed restriction need be recorded to identify development restrictions. Therefore, because this policy directs planning efforts and though those efforts this policy has been implemented into the land use regulations, this policy is not applicable.

In any case, as analyzed in Section 1 Overview, the filtration facility site is comprised of lots-of-record and there are no development restrictions created by that lot of record status. However, the Water Bureau would not object to a condition of approval to record something on title (a “deed restriction”) documenting the lot of record status of the filtration facility site. Therefore, to the extent it applies, this policy of the Comprehensive Plan is satisfied.

*3.4 Ensure that transportation policies and policies related to the regulation of activities and events in agricultural zones minimize the difficulties conflicting uses impose on farming practices.*

**Response:** This mandatory policy directs planning efforts to adopt policies or regulations that minimize transportation impacts from conflicting uses in agricultural zones, as evidenced by fact that it asks for the development of “policies” that must consider a balancing to “minimize” difficulties for these allowed activities and events. Therefore, this policy is not applicable.

In any case, this policy is satisfied for the following reasons:

- First, as demonstrated in subsection A.2 of this narrative, and supported by the TIA in Appendix C.1, the filtration facility will not have any significant impacts on county or state transportation facilities, including farming practices related traffic using those facilities.
- Second, the Agricultural Compatibility Study (Appendix D.1, Section 12.13) considered whether traffic from the filtration facility could impact farming practices and concluded that “the negligible amount of filtration facility generated traffic will not affect accepted farm practices in the Surrounding Lands.”

Therefore, to the extent this Comprehensive Plan policy applies, it is satisfied.

*3.5 Develop and adopt a unified permitting process for review of mass gatherings and other gatherings. Establish more restrictive permitting thresholds for the number of visitors and the frequency or duration of events than the maximums authorized by state law.*

**Response:** This mandatory policy does not appear to be applicable because it directs the county to undertake planning efforts to “develop and adopt ... a process” and “establish ... permitting thresholds[.]” Moreover, the filtration facility will not be the site of any mass gatherings or other events. Therefore, this Comprehensive Plan policy does not apply.

## Multiple Use Agricultural Land

*County policies for these areas promote agricultural activities and minimize conflicts between farm and non-farm uses but are less stringent than policies in Exclusive Farm Use zones.*

*3.13 Designate and maintain as multiple use agriculture land, those areas which are: 1. Generally agricultural in nature, with soils, slope, and other physical factors indicative of past or present farm use, and 2. Parcelized to a degree where the average lot size, separate ownerships, and non-farm uses are not conducive to commercial agricultural use, and 3. Provided with a higher level of services than a commercial agricultural area has, or 4. Located in micro-climates, which reduce the growing season or affect plant growth in a detrimental manner (flooding, frost, etc.)*

**Response:** This policy is not applicable, as it directs planning efforts to “designate ... as multiple use agriculture land” and “maintain as multiple use agriculture land” certain areas, and has been incorporated into the implementing land use regulations in the MUA-20 Zone and mapping itself (MCC Part 4.B.1) and the county zone change process which requires compliance with the Comprehensive Plan (MCC 39.1205(B)(3)).

In any case, the filtration facility site is designated as multiple use agriculture land (MUA-20) and is not in any way proposed to be redesignated through this application or otherwise as part of the filtration facility project. The filtration facility is allowed under current zoning as a CS use through the CU process. Moreover, the MUA-20 zoning is similar to other rural zoning around the state where water treatment facilities are allowed under that zoning and do not conflict with the surrounding agricultural and uses, as discussed in Appendix E.1. Therefore, to the extent that this policy applies, it is satisfied.

*3.14 Restrict uses of agricultural land to those that are compatible with exclusive farm use areas in recognition.*

**Response:** This mandatory policy does not appear to be applicable because it directs planning efforts (to restrict the allowed uses in the MUA-20 zone) and because, through those planning efforts, it has been implemented in the zoning code, in the detailed restrictions on uses (MCC.4310-4320) and in requirements for land use permits for some uses to show “compatibility”, such as approval criterion A above.

In any case, the proposed use at the filtration facility site is compatible with exclusive farm use (EFU) areas in the study area, as demonstrated in Appendix D.1, the Agricultural Compatibility Study and approval criterion A above. Therefore, to the extent this policy applies, it is satisfied.

*3.15 Protect farm land from adverse impacts of residential and other non-farm uses.  
Strategy 3.15-1: Ensure that new, replacement, or expanding uses on MUA zoned lands minimize impacts to farm land and forest land by requiring recordation of a covenant that recognizes the rights of adjacent farm managers and foresters to farm and practice forestry on their land.*

**Response:** This mandatory policy is to be implemented through Comprehensive Plan Strategy 3.15-1:

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*Ensure that new, replacement, or expanding uses on MUA zoned lands minimize impacts to farm land and forest land by requiring recordation of a covenant that recognizes the rights of adjacent farm managers and foresters to farm and practice forestry on their land.*

Although the EFU and MUA-20 zones each require such restrictive covenants for dwellings,<sup>48</sup> there does not appear to be a comparable requirement for CS uses (such as the filtration facility) approved through the CU review process. (See MCC 39.4320 Conditional Uses and MC 39.4345 Dimensional Requirements and Development Standards.)

For CS uses, it therefore appears that staff implemented Comprehensive Plan Policy 3.15 and Strategy 3.15 through MCC 39.7515(C), which requires that:

*The use will not: (1) Force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use; nor (2) Significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use.*

In any case, as demonstrated in Appendix D.1 Agricultural Compatibility Study and the narrative under CU Criterion C above, the filtration facility will have no adverse impacts on farm and practices on surrounding farmland.

Moreover, the Water Bureau has recorded such a restrictive covenant at the LHFT site (see Appendix D.7) and would accept a condition of approval to record the same form of document on title at the filtration facility site. With such a recorded “right to farm” covenant, if this policy is applicable, it can be satisfied.

*3.16 New non-agricultural businesses should be limited in scale and type to serve the needs of the local rural area.*

**Response:** In addition to being non-mandatory, Policy 3.16 is to be implemented by the sole accompanying Comprehensive Plan Strategy 3.15-1, which reads:

*Strategy 3.16-1: Review the appropriateness of review uses, conditional uses and community service uses in the MUA-20 zone through a public process that involves community stakeholders prior to amending the Zoning Code.*

Policy 3.16 is not applicable for three additional reasons:

- It directs County planning efforts (“review” the code “through a public process” “prior to amending”).
- It is implemented by the MUA-20 Zone and notification requirements found in MCC 39.
- The Water Bureau is not a “business” to which this policy could potentially apply, which explains why the zoning code – adopted through the strategy’s public planning process – provides that the approval criterion that implements this policy does not apply to the proposed use. See MCC 7520(A)(6); MCC 39.7515(I).

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<sup>48</sup> Dwellings are called out specifically in Strategy 3.15-2 of the comprehensive plan, and it is clear that has been directly incorporated into the zoning code. See, for example, MCC 39.4325(H): “New, replacement, or expansion of existing dwellings [in the MUA-20 Zone] shall minimize impacts to existing farm uses on adjacent land (contiguous or across the street) by: (1) Recording a covenant that implements the provisions of the Oregon Right to Farm Law in ORS 30.936 where the farm use is on land in the EFU zone; or (2) Where the farm use does not occur on land in the EFU zone, the owner shall record a covenant that recognizes and accepts that farm activities including tilling, spraying, harvesting, and farm management activities during irregular times, occur on adjacent property and in the general area.”



## G.3.2 Chapter 7: Natural Hazards

### *Areas Susceptible to Landslide*

*7.1 Direct development and landform alterations away from areas with development limitations related to potential hazards associated with steep slopes (over 25%) and other areas shown to be potentially susceptible to landslides or their impacts based on available County and state data associated with these hazards. Allow for exceptions based upon a showing that design and construction techniques can prevent or mitigate public harm or associated public cost and prevent or mitigate adverse effects to nearby properties.*

*7.2 Protect lands having slopes greater than 25% and lesser slopes shown to be potentially susceptible to landslides from inappropriate development or slope alteration. Consider possible adverse effects on nearby homes and public and private infrastructure.*

### *Earthquake Hazards*

*7.3 Direct development away from areas with hazards associated with potential liquefaction resulting from major earthquakes.*

*7.4 Protect against seismic hazards to structures and ground are susceptible to earthquake damage.*

**Response:** These mandatory policies do not appear to be applicable because each directs planning efforts—particularly mapping efforts—and because those planning efforts are implemented by the Geologic Hazards Overlay Zone (MCC 39.5070 *et. seq.*). That overlay zone directs development and ground disturbing activities away from steep slope areas (25 percent and greater) and areas susceptible to landslides, which were mapped in the process of creating the overlay zone area.

In any case, the filtration facility is located entirely outside of the Geologic Hazards Overlay Zone. Additionally, a geotechnical engineer (Appendix I.1) has reviewed the planned development to ensure the filtration facility will not be susceptible to or pose geologic hazards. Therefore, to the extent this policy applies, it is satisfied.

## G.2.1 Chapter 11: Public Facilities

*11.1 Taking the following factors into consideration, plan and ensure a timely and efficient arrangement of public facilities and services to serve as a framework for appropriate levels of development of land within the County's jurisdiction.*

- 1. The health, safety, and general welfare of County residents;*
- 2. The level of services required, based upon the needs and uses permitted in urban, rural, and natural resource areas;*
- 3. Environmental, social, and economic impacts.*

*11.2 Develop and implement public services and facilities plans and capital improvements programs that will result in the following:*

- 1. Coordination of land use planning and provision of appropriate types and levels of public facilities.*

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- 2. Coordination of a full range of public facilities and services among all agencies responsible for providing them.*
- 3. Provision of adequate facilities and services for existing uses.*
- 4. Protection of natural resource and rural areas.*

**Response:** These policies do not appear to be applicable because each directs county planning efforts to “plan”, create a “framework”, and “develop and implement ... plans [and] programs[.]”

*11.3 Support the siting and development of public facilities and services appropriate to the needs of rural areas while avoiding adverse impacts on farm and forest practices, wildlife, and natural and environmental resources including views of important natural landscape features.*

**Response:** This policy does not appear to be not applicable because it directs planning efforts that would “support” certain public facilities “while” creating zoning code provisions to “avoid adverse impacts” on other rural uses and environmental resources. This is a policy level balancing effort (“while”) that needed to be considered by county staff and the Board of Commissioners in implementing this policy. After considering that balancing of policy goals, the county has implemented this policy into the zoning code, by creating in the code the CS use category and delineating specifically which public facilities in which zones require (or do not require) additional land use permits with approval criteria relating to avoiding the adverse impacts identified in this Comprehensive Plan policy.<sup>49</sup>

In the MUA-20 Zone, this policy is implemented by MCC 39.7515 Approval Criteria. MCC 39.7515 identifies nine review criteria that generally apply to CS uses (Criteria (A)-(I)). The ninth criterion implements this policy with respect to “appropriate to the needs of the rural areas” in the West of Sandy River Rural Planning Area – where the filtration facility site is proposed.

*(I) In the West of Sandy River Rural Planning Area, the use is limited in type and scale to primarily serve the needs of the rural area.*

However, in implementing this policy into the zoning code, the county included MCC 29.7520(A)(6), which specifically limits the application of this policy with respect to utility facilities (including the proposed water filtration facility) by limiting applicable review criteria to Criteria (A) through (H), and not applying Criterion (I) to the proposed filtration facility or similar uses.<sup>50</sup>

*(6) Utility facilities, including power substation or other public utility buildings or uses, subject to the approval criteria in MCC 39.7515(A) through (H).*

Moreover, as documented in Section 1 of this narrative, the proposed filtration facility meets MCC 39.7515 approval criteria, including those related to farm and forest practices (Criterion C), wildlife and

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<sup>49</sup> For example, in the MUA-20 zone, “Transportation facilities and improvements that serve local needs or are part of the adopted Multnomah County Functional Classification of Trafficways plan” is a use allowed outright, but “transit stations and park and ride lots [are] subject to the provisions of Community Service Uses” and required to show how they will avoid impacts on farm and forest practices and not adversely affect natural resources. MCC 39.4310(J).

<sup>50</sup> MCC 39.7520 USES. (A) Except as otherwise limited in the EFU, all CFU and OR base zones, the following Community Service Uses and those of a similar nature, may be permitted in any base zone when approved at a public hearing by the approval authority. [...] (6) Utility facilities, including power substation or other public utility buildings or uses, subject to the approval criteria in MCC 39.7515(A) through (H).

natural and environmental resources (Criteria B and E). Finally, Section A.3 of this narrative and **Section 1.B Design Review** explain how potential visual impacts from the filtration facility will be mitigated effectively—especially when compared with unscreened large-scale nurseries and existing public facilities in the surrounding area.

Notably, the only identified “scenic areas” in Multnomah County are found in the Columbia Gorge National Scenic Area and in the West Hills and Sauvie Island/Multnomah Channel planning subareas (Multnomah County Comprehensive Plan, Scenic Views, p. 5-11) and not in the West Hills planning area. This is why there are no SEC-v overlay zones in the study area and why the SEC-v overlay does not apply to the filtration facility site.

For the above reasons, to the extent that Policy 11.3 applies to the filtration facility site, this policy is satisfied.

*11.4 Reduce Multnomah County’s long-term public works costs by eliminating marginal facilities and extending the life of others through timely maintenance and functional upgrading.*

*11.5 Set and schedule capital improvements project expenditures based on an evaluation which includes the consideration of the following:*

- 1. Public health, safety, and general welfare.*
- 2. County liabilities, assets, and resources.*
- 3. Existing service system maintenance and update costs.*
- 4. Minimization of costs due to coordination of scheduled public works projects.*
- 5. Private and public resources availability for financing and maintaining service system improvements.*
- 6. Conformance with the Comprehensive Plan.*
- 7. Time required to provide service and reliability of service.*
- 8. Equity in meeting the needs of low-income and minority populations.*

*11.6 Use capital improvements programming and budgeting to achieve levels of public facilities and services appropriate to rural areas.*

*11.7 Coordinate plans for public services and facilities with plans for designation of urban boundaries, urbanizable land within the UGB, rural uses outside the UGB, and for the transition of rural to urban uses within UGB expansion areas.*

*11.8 Identify needs and priorities for public works capital improvements in conjunction with the Comprehensive Plan.*

*11.9 To achieve desired types and levels of public facilities and services, consider existing and new, creative methods and devices such as, but not limited to, the following:*

- 1. Tax incentives and disincentives*
- 2. Public and private grants*
- 3. Land use controls and ordinances*

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4. *Multiple use and joint development practices*
5. *Fee and less-than-fee acquisition techniques*
6. *User fees*
7. *Public/private partnerships*

**Response:** These policies are not applicable because each directs planning efforts related to Multnomah County's own public facilities and public works, rather than those of other entities, such as the Water Bureau. This is clear in the direction to engage in policy work to balance considerations and evaluate the "costs", "expenditures", and "budgeting" for Multnomah County to achieve those policy goals, both now and considering the future urbanization of lands outside the UGB.

*11.10 Except as otherwise provided by law, new electrical substations and water system storage tanks or reservoirs intended to solely serve uses within the urban growth boundary shall not be located outside the urban growth boundary unless it can be demonstrated that there is no practical alternative site within the urban growth boundary that can reasonably accommodate the use.*

**Response:** This policy is not applicable because the filtration facility does not consist of "storage tanks or reservoirs intended to solely serve uses within the urban growth boundary." All water-retaining structures at the filtration facility support treatment and conveyance purposes, without providing additional distribution system storage.

In any case, as explained in the **Introduction** and shown on Figure 58 below, the filtration facility is a regional water treatment facility that serves both cities and rural water districts, including extensive areas outside of the urban growth boundary (e.g., the PHWD and the Lusted Water District within the study area). Therefore, to the extent that this policy is applicable, it is satisfied.



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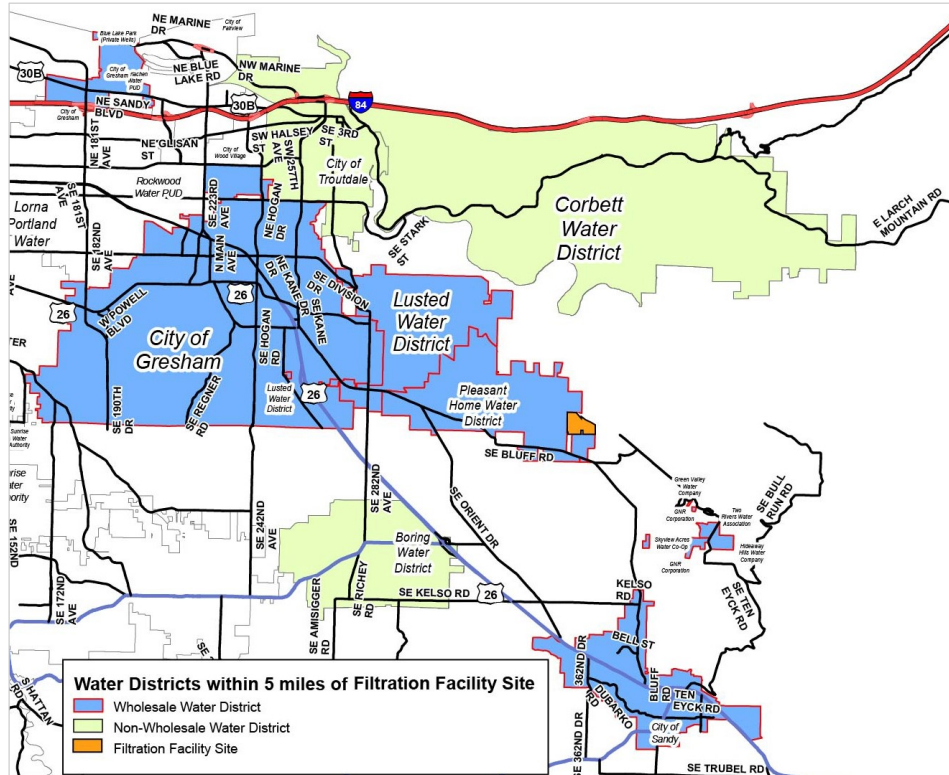


Figure 58. Rural Water Districts Served by the Filtration Facility

11.11 For development that will be served by a power utility company, the utility company must be willing and able to provide the power needs of the development.

**Response:** This policy is mandatory and appears to apply directly to this CU review. As documented in Appendix L.5.a, Portland General Electric has reviewed the proposed development and confirmed it can meet the power needs of the filtration facility. Therefore, this policy is satisfied.

### G. Will satisfy such other applicable approval criteria as are stated in this Section;

**Response:** Compliance with other applicable approval criteria and standards is demonstrated in the following sections of this narrative:

- **Section 1 Filtration Facility Overview** addresses applicable MUA-20 base zone standards.
- **Section 1.B Design Review** addresses all other development standards applicable to the filtration facility.
- **Section 1.C Communication Tower** addresses applicable CU and DR criteria for communication towers.

This approval criterion is met.

*H. In the West of Sandy River Rural Planning Area, the use is limited in type and scale to primarily serve the needs of the rural area.*

**Response:** This criterion does not apply per MCC 39.7520(A)(6) because the proposed filtration facility is a “utility facility” subject only to CU criteria A through H.

## Overall Conditional Use Conclusion

This Section 1.A demonstrates compliance with applicable Community Service provisions (MCC 39.7500) and with MCC 39.7515 CU Approval Criteria. This analysis is supported by a series of technical appendices prepared by experts in the fields of farm and forest practices; pesticide impacts and management; natural (water and wildlife habitat) resources; air and water quality; transportation, geotechnical, civil, and hydrological engineering; and hazardous materials management.

Subsections A.0 through A.4 define and describe the character of the area in terms of its farm and forest, natural resource, rural residential, and public facilities characteristics.

- The study area is large enough to address all potential project impacts from the filtration facility and related pipelines and appurtenances.
- The study area includes land that is suitable for farm and forest uses and extensive rural residential development, both of which are supported by electrical, water, education, and solar generation facilities in the study area.
- The study area includes mid- to large-scale nurseries and agricultural processing operations, an estimated 370 rural residential homesites, and several unscreened public facilities, that also define the character of the area—in terms of their often unmitigated transportation, light, noise, air and water quality, and visual impacts.

Subsections A.1 through A.4 explain how the filtration facility is designed to mitigate each of these potential adverse impacts, to create a campus-like development that blends in with the surrounding agricultural land and forested areas, and to complement existing residential home design features and colors, and is inspired by traditional agricultural buildings in the study area. Unlike most large-scale nurseries and public facilities in the study area, the filtration facility will be screened by extensive landscaped setback areas. For these and other reasons explained in detail under CU Criterion A, the filtration facility is consistent with the character of the area.

Sections B-F, supported by a series of technical appendices, explain why the filtration facility as designed will:

- Not adversely affect natural resources;
- Not force a significant change in farm or forest practices on surrounding lands nor significantly increase the costs of farm and forest practices on surrounding lands devoted to farm or forest use;
- Not require public facilities other than those existing or programmed for the area;
- Be located outside big game winter habitat as defined by the Department of Fish and Wildlife; and
- Not create hazardous conditions.

Section G evaluates potentially applicable comprehensive plan policies and further explains why most are not applicable because they are not mandatory, are implemented by MCC Chapter 39, and/or direct the county (rather than the applicant) to undertake planning or zoning efforts. To the extent that any specific Comprehensive Plan policies is determined to be applicable, Section G explains why each policy is satisfied by the Water Bureau's application narrative as supported by technical appendices.

For these reasons, the filtration facility community service, conditional use application meets all applicable County review criteria and development standards.