



# City of Sandy

## Agenda

### City Council Meeting

Meeting Date: Monday, December 5, 2022

Meeting Time: 6:00 PM

Page

#### 1. MEETING FORMAT NOTICE

This meeting will be conducted in a hybrid in-person / online format. The Council will be present in-person in the Council Chambers and members of the public are welcome to attend in-person as well. Members of the public also have the choice to view and participate in the meeting online via Zoom.

##### To attend the meeting in-person

Come to Sandy City Hall (lower parking lot entrance).  
39250 Pioneer Blvd., Sandy, OR 97055

##### To attend the meeting online via Zoom

Please use this link: <https://us02web.zoom.us/j/81257344106>

Or by phone: (253) 215-8782; Meeting ID: 81257344106

Please also note the public comment signup process below.

#### 2. CITY COUNCIL WORK SESSION - 6:00 PM

- 2.1. Water System Master Plan  
[Staff Report and Draft Plan](#)  
[10/5/22 Presentation Slides](#)

4 - 155

#### 3. CITY COUNCIL REGULAR MEETING - 7:00 PM

#### 4. PLEDGE OF ALLEGIANCE

#### 5. ROLL CALL

#### 6. CHANGES TO THE AGENDA

#### 7. PUBLIC COMMENT

Please note: the public hearing for Bull Run Terrace is closed. The Council welcomes your comments on other matters at this time.

If you are attending the meeting in-person

Please submit your comment signup form to the City Recorder before the regular meeting begins at 7:00 p.m. Forms are available on the table next to the Council Chambers door.

If you are attending the meeting via Zoom

Please complete the [online comment signup webform](#) by 3:00 p.m. on the day of the meeting.

The Mayor will call on each person when it is their turn to speak for up to three minutes.

## **8. RESPONSE TO PREVIOUS PUBLIC COMMENTS**

## **9. PRESENTATION**

- 9.1. **Opioid Settlement** 156 - 186  
Clackamas County Public Health  
[Presentation Slides](#)  
[List of Opioid Remediation Uses](#)

## **10. CONSENT AGENDA**

- 10.1. **City Council Minutes** 187 - 194  
[City Council - 21 Nov 2022 - Minutes - Pdf](#)

## **11. OLD BUSINESS**

- 11.1. **Bull Run Terrace Reconsideration** 195 - 704  
[Staff Report](#)  
[Staff Presentation Slides](#)  
[Ordinance 2022-27](#)  
[A - Cover Letter from Tracy Brown Planning Consultants, LLC](#)  
[B - Project Narrative](#)  
[C - Civil Plan Set](#)  
[D - Preliminary Storm Drainage Design and Calculations](#)  
[E -Traffic Impact Study](#)  
[F - Arborist Reports from Teragan and Associates](#)  
[G - Geotechnical and Slope Stability Investigation](#)  
[H - Wetland Determination Report](#)  
[I - Screening Concept Plan](#)  
[J - Public Need Analysis from Johnson Economics](#)  
[K - Figure 11 from the 2022 Parks and Trails Master Plan](#)

- [L - S - Agency Comments](#)
- [T - U - Public Comments](#)
- [V - Additional Public Comment \(11.14.22\)](#)
- [W - Memo for Bull Run Terrace Reconsideration with condition edits](#)
- [X - Ard Engineering - Response to City Traffic Eng DKS \(Nov 21, 2022\)](#)
- [Y - Letter from Attorney Garrett Stephenson \(Nov 21, 2022\)](#)
- [Z - Ruehrdanz email \(11.21.22\)](#)

**12. NEW BUSINESS**

- 12.1. **Government Relations Priorities**  
Nellie deVries; deVries Strategies, Inc
- 12.2. **SandyNet/CBX Residential IGA Amendment** 705 - 721  
[SandyNet CBX IGA Amendment - Pdf](#)  
[Presentation Slides](#)

**13. REPORT FROM THE CITY MANAGER**

**14. COMMITTEE / COUNCIL REPORTS**

**15. STAFF UPDATES**

- 15.1. [Monthly Reports](#)

**16. ADJOURN**

**17. CITY COUNCIL EXECUTIVE SESSION**

The City Council will meet in executive session pursuant to ORS 192.660(2)(i)



## Staff Report

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**Meeting Date:** December 5, 2022  
**From:** Jenny Coker, Public Works Director  
**SUBJECT:** Water Master Plan Council Work Session

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### **BACKGROUND / CONTEXT:**

Cities in Oregon are required to develop a Water System Master Plan on a 20-year basis to meet the requirements of Oregon Administrative Rule (OAR 333-061). Sandy's Water System Master Plan is currently being finalized to be submitted to the Oregon Health Authority, and staff would like to present findings of the Water Master Plan to Council for confirmation of direction and to solicit feedback. This document will be used for future planning regarding the City's water supply, treatment, storage and distribution systems and will develop the capital improvement program for water infrastructure projects to be completed over the next 20 years.

### **Water Sources**

The City has three sources of water: Alder Creek, Brownell Springs, and Bull Run unfiltered water purchased from the Portland Water Bureau (PWB). Brownell Springs and Alder Creek have a combined reliable supply capacity of 2.7 million gallons per day (MGD), based on water right priority. There are also junior water rights on Brownell Springs, however these are normally curtailed in the summer peak season. The City has water rights of 2.6 MGD on Alder Creek, however, reliability of the flows need to be confirmed via streamflow monitoring over the next few dry weather seasons. The City's current agreement with PWB allows for a purchase of up to 3 MGD with a minimum purchase of 0.5 MGD.

The agreement with Portland Water Bureau will expire in September 2027 when they will no longer be allowed to supply unfiltered water to the City of Sandy due to the bilateral compliance agreement regarding treatment of cryptosporidium. Currently a new 30 year wholesale water agreement is underway. The City has confirmed that Portland will supply unfiltered water to the City through September 30, 2027.

### *Alder Creek Water Treatment Plant*

The Alder Creek Water Treatment Plant currently treats an average of 0.9 MGD and can produce a peak of 1.5 MGD in the summer. The Alder Creek Water Treatment Plant is approaching the end of its useful life and has many condition repairs needed to restore functionality and redundancy. Currently only half of the plant is operational, and only half the plant has been operational for a decade. Water system redundancy has been provided by the Portland connection, which will no longer be allowed without

additional treatment after September 30, 2027. If fully upgraded, Alder Creek could produce up to 2.6 MGD depending upon stream flow verification.

#### Salmon River Water Rights

The City has an undeveloped water right permit on the Salmon River of 16.2 MGD. However, developing this water right faces significant permit conditions and regulatory challenges for developing on the Salmon or Sandy River. Two options for developing this water right have emerged for a future feasibility study, but the time for developing is too long and the outcome too uncertain to be used to meet the compliance deadline of 2027. The Salmon River water right does not expire until 2069, and having these rights, and exploring either a transmission main or a surface to groundwater transfer gives the City a plan for longterm water supply for development in the 2042-2052 timeframe

#### **Cryptosporidium | Bilateral Compliance Agreement**

The City entered into a bilateral compliance agreement with the State of Oregon in September 2018 to meet the treatment requirements for cryptosporidium (either connecting to Portland's new filtration plant or constructing our own treatment facility) by September 30, 2027. In June 2021 the City Council reviewed information and options regarding the City's water supply sources and the mandate to treat the Bull Run Water Source or purchase treated Bull Run Water from the City of Portland. On [June 6, 2022 the City Council reevaluated the decision](#) to treat raw water or purchase filtered water and directed staff to inform the Portland Water Bureau of the City's decision to purchase filtered water by building a transmission pipeline and pump station to the new Portland Filtration Plant.

#### **Sandy's Current and Forecasted Water Demand**

Historical system-wide water demand from 2016-2021 shows an Average Daily Demand (ADD) of 1.2 MGD. Maximum Daily Demand (MDD) occurs in the summer and from 2016-2021 averages is 2.5 MGD. The average per capita use was 65 gallons per capita day. In twenty years, ADD is forecasted to be 1.9 MGD with an MDD of 3.8 MGD. Future water demands were also projected to the year 2050, and show an ADD of 2.1 MGD and an MDD of 4.21 MGD.

If Alder Creek was upgraded to 2.1 MGD (which is less than the water right of 2.6 MGD), it could cover Sandy's average daily demands through 2050. However, additional supply is needed each year, starting in 2027 to help meet max day demands. MDD demands in the summer do occur over a duration and the City is not able to manage the peak demands with storage alone. The Portland Water Bureau/Bull Run source becomes a critical supply augmentation to Sandy supplies in 2027 (in other words, Alder Creek and Brownell cannot produce enough together to meet demands). The volume of additional supply is highly dependent on the reliable capacity of Alder Creek, especially in the low flow season (August, September and October) and the

reliable production capacity of the water treatment plant. Again, Alder Creek currently only reliably produces 0.9 MGD due to only half of the plant being operational.

### **Ground Water Supply Exploration Update**

Conсор (formerly Murraysmith) recently completed a draft ground water supply exploration update. The findings indicate that the aquifer characteristics are not likely to support groundwater capacities in the 4-5 MGD range in the shallow alluvial aquifer near the City, the range that would provide 100% backup supply. However, there is the possibility of a capacity of 0.5 MGD well, but the only real way to confirm is to do a test well.

Recommendations from our consultant is that if the City were to continue to explore development of a 0.5 MGD well, due to the uncertainty of sustainable production, the City would need to explore this option in parallel with upgrading Alder Creek Water Treatment Plant and completing the Bull Run water supply upgrades of either a new transmission pipeline and pump station or a second water treatment plant. Given the schedule the City is facing, and the uncertainty of reliable sufficient supply, additional groundwater supplies will not be pursued at this time.

### **Bull Run Water Supply Treatment Options Re-evaluation**

Conсор (formerly Murraysmith) conducted a screening analysis looking at a combination of increasing levels of investment at the Alder Creek Water Treatment Plant, coupled with purchase of filtered water or raw water from the City of Portland. In all cases, maximizing production of alder creek water, and minimizing the volume of water purchased from Portland results in the lowest lifecycle cost to the City.

### **KEY CONSIDERATIONS / ANALYSIS:**

#### **Schedule**

Due to delays of the COVID19 pandemic and workforce impacts, regulatory pressure on the wastewater system, and internal resource limits, the City is nearly two years behind schedule. The Bilateral Compliance Agreement with the State had a deadline for submitting the Water Master Plan by December 30, 2020. A draft Master Plan was submitted on November 23, 2022, and finalizing the Master Plan is a key step in meeting the compliance schedule. The most important deadline for the City is construction completion of improvements for treating water for cryptosporidium of September 30, 2027. It is imperative that the City complete the connection to the Portland Water Bureau filtration plant as quickly as possible to meet the compliance deadline. The Portland Water Bureau filtration plant not only meets the Bilateral Compliance Agreement, but provides critical redundant and supplemental water to the City of Sandy, including access to the Columbia South Shore Groundwater Well Field

which will provide critical backup water supply during times of fire, high turbidity, drought or power outages.

**Water System Vulnerabilities**

Currently both the Bull Run unfiltered water system that supplies the City and Alder Creek have similar vulnerabilities. Both systems lost power in an extended outage in the September 2022 Public Safety Power Shutoff's conducted by PGE. The large storm event in November 5, 2022 resulted in high turbidities that shut down the Bull Run supply for 17 days, and shut down the Alder Creek Water Treatment Plant for two days at the same time, leaving the City drawing down storage with a small augmentation of flow from Brownell Springs. Since June 2022, City Staff and Water Systems Operations Contractor Veolia have been working together to complete a series of RRM projects at Alder Creek, which we hope will restore additional redundancy. Until a new connection is established at the Portland Filtration Plant (and connection to the groundwater supplies available), the City can expect to run into similar situations where both primary water supplies may be shut down at similar times. Strategies for combating the fragility of the system include condition based improvements at Alder Creek, education on water conservation, and emergency preparedness.

**Financing**

Less funding is available for water projects than wastewater projects. A key to meeting the tight compliance schedule will be securing "bridge funding" for the next two years when the Drinking Water Program issues RFPs for engineering, surveying, land use, geotechnical investigations, environmental investigations, permitting, and easement acquisition that are critical for project completion but less expensive than construction costs. Staff applied for Drinking Water SRF loans in September of 2022, and are applying for funding from Business Loan Oregon. It is anticipated that the large cashflow demand will come in years 2025, 2026, and 2027 when construction occurs, and will be financed by WIFIA and or Bond funding which will take several years to get in place. Staff have been negotiating a program management task order for year 2023 with Stantec which includes a detailed Program financing plan including grant funding opportunities.

**RECOMMENDATION:**

Staff recommends Council provide feedback on direction of the Draft Water Master Plan.

**BUDGETARY IMPACT:**

**Capital Improvement Program**

The Draft Water Master Plan recommends a drinking water capital improvement program (CIP) of \$166,731,000 over the next twenty years.

The next five years (through 2027) require critical reinvestments in water supply and treatment for the City. The budget for the next five years CIP is estimated to be \$85,426,000 and includes:

- Storage Siting Study;
- Terra Fern Pump Station Upgrades;
- Vista Loop Pump Station (to get Portland Filtered Water to the upper area of the Sandy distribution system);
- Near Term Alder Creek Water Treatment Plant (WTP) Improvements;
- Short Term Alder Creek WTP Assessment;
- Alder Creek WTP Improvements (including land acquisition, rebuilding of the alder creek intake and raw water transmission line, as well as replacement of the treatment plant); and
- Portland Water Bureau Water Supply connection including land use, easement, pipeline and pump station, as well as SCADA Masterplan and Water Management and Conservation Plan.

#### **Rate Impacts**

Capital Construction will need to be debt financed with water rate revenue to provide debt service coverage. Similar to the wastewater program, the City applied for two Drinking Water State Revolving Fund loans in September 2022, and anticipate getting a small award in Spring of 2023. Drinking Water State Revolving Fund has a much smaller pool of money than the Wastewater Fund. As a result, we anticipate a mix of funding sources including Business Loan Oregon, Grants, and either WIFIA loan or Bond financing which will be determined in the coming year.

Preliminary cost estimates for an \$88 Million water program were modeled by our rate consultant in June of 2022 and indicated the City will require larger rate increases beginning in FY 2022-23. The total capital costs will change as the city progresses on planning and preliminary engineering work. The [rate model was presented in June 2022](#) and a 41% rate increase was adopted and implemented beginning July 1. The rate model will be updated regularly as the funding plan and capital costs become more clear which can drive down the projections for future rate increases to meet the debt service requirements.

#### **LIST OF ATTACHMENTS/EXHIBITS:**

- Draft of Water System Master Plan





# SANDY

CITY OF SANDY

## **WATER SYSTEM MASTER PLAN**

NOVEMBER 2022

OHA-DWS PRELIMINARY REVIEW DRAFT

**PREPARED BY:**

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Appendix A – Figures

Appendix B – Groundwater Supply Evaluation Technical Memorandum

Appendix C – City Council Presentation (May 2022)

# Chapter 1



## Section 1

# Existing Water System

## 1.1 Introduction

The purpose of the Water System Master Plan (WSMP) is to perform an analysis of the City of Sandy's (City's) water system and:

- Document the existing water system including improvements completed since the 1991 WSMP and 1999 WSMP Update,
- Develop and calibrate a new water system hydraulic model,
- Estimate future water requirements including potential water system expansion areas,
- Identify deficiencies and recommend water facility improvements that may correct system deficiencies and provide for growth,
- Recommend an updated water system capital improvement program (CIP) for the water system,
- Develop a document which will support future review of system development charges (SDCs) and water rates based on the updated CIP, and
- Document the City's supply strategy and potential change to the current wholesale water supply agreement with the City of Portland.

In order to identify system deficiencies, existing water infrastructure inventoried in this section will be assessed based on the existing and future water needs summarized in **Section 2** and water system performance criteria described in **Section 3**. The results of this analysis are presented in **Sections 4** and **5**. **Section 6** provides recommendations for system improvements and a 20-year capital improvement program. The planning and analysis efforts presented in the WSMP are intended to provide the City with the information needed to inform long-term water supply and distribution infrastructure decisions.

This plan complies with water system master planning requirements established under Oregon Administrative Rules (OAR) for Public Water Systems, Chapter 333, Division 61.

## 1.2 Service Area

The City of Sandy is located in Clackamas County, southeast of the City of Portland. The City provides potable water to approximately 13,000 customers within city limits and some

surrounding areas through about 4,100 single-family residential, multi-family, and commercial/industrial service connections. Future growth of the water service area will encompass the current urban growth boundary (UGB). The City also sells water to three wholesale customers: Section Corner Water District (WD), Alder Creek-Barlow WD, and Skyview Acres Water Company. The City is the sole source of water for the Section Corner and Alder Creek-Barlow WDs; Skyview Acres serves part of its system through a connection to Portland Water Bureau. An overview map of the water service area can be found in **Figure 1-1** in **Appendix A**.

## 1.3 Supply Sources

The City's supply sources and current operation are described in the following paragraphs. Future supply options, strategy, and limitations are discussed in more detail in **Section 5**. The locations of all supply connections are shown in **Figure 1-1 (Appendix A)**.

The City currently receives its water from three sources: Alder Creek (a tributary of the Sandy River), Brownell Springs (a tributary of Beaver Creek), and the Portland Water Bureau (PWB), which receives its water supply from the Bull Run Watershed. The City supplements its supply from Alder Creek and Brownell Springs with water purchased from the PWB, which is subject to minimum purchase requirements in accordance with the Water Supply Agreement with the PWB. During fall and winter, approximately two-thirds of the City's water supply is water purchased from the PWB (492,000 gallons), while Alder Creek and Brownell Springs supply the remaining one-third to meet the total demand of approximately 700,000-800,000 gallons. During the summer and fall, PWB continues to supply 492,000 gallons while more water is drawn from Alder Creek and Brownell Springs (Springs), fulfilling increased warm weather demands.

### 1.3.1 Alder Creek WTP

Since 1971 the City has held water rights on Alder Creek. In 1977, the City constructed the Alder Creek Water Treatment Plant (WTP) to treat 1.0 million gallons per day (MGD) of water from Alder Creek. In 1998, they expanded the WTP and its capacity to 2.0 MGD. Shortly thereafter, in 2001, a more efficient system replaced the old treatment unit, increasing the WTP's capacity to 2.6 MGD. While the sustainable capacity of the Alder Creek source is unknown as there are no stream gages located on Alder Creek, it is believed that at peak capacity the Alder Creek source is capable of supplying the 2.6 MGD flow rate allowed by the City's water right.

The Alder Creek raw water intake is located approximately 4,000 feet upstream of the WTP. An intake structure directs water into a 12-inch raw water main and is pumped to the plant via an 1,800 gallon per minute (gpm) duplex booster pump station (two 20 horsepower pumps with variable frequency drives). Based on anecdotal information from City and Veolia staff (contract operator of the water treatment plant), the firm capacity of the raw water pump station (capacity with the largest pump out of service) is approximately 1,800 gpm.

The WTP is a Trident MicroFloc package, direct-filtration plant. The filters are dual media (sand and anthracite) and backwash is accomplished by gravity flow from the Terra Fern Road Reservoir.

The WTP does not use sedimentation or coagulation; pretreatment consists only of flocculation by hydraulic mixing, with no rapid mixing.

The WTP consists of three packaged filtration units – Filters #1 and #2 each have a capacity of approximately 0.5 MGD but have not operated in more than a decade due to control panel issues and instrumentation failures. Filter #3 operates at an approximate capacity between 1.2 MGD and 1.6 MGD.

Finished water is pumped to the distribution system via pumps at the WTP, which send water to the Terra Fern Road Reservoir and Pump Station. Filters #1 and #2 have three submersible turbine pumps with an estimated capacity of 1,050 gpm. These pumps have not been operated since Filters #1 and #2 were in operation (over a decade). Filter #3 has one vertical turbine pump with an approximate capacity of 1,100 gpm (1.6 MGD). The Filter #3 pump has a spare motor, but there is no backup pump. Additionally, this pump is oversized and does not have a variable frequency drive (VFD).

The WTP site has a standby generator, though the current transfer switch is manual. There is an ongoing project that will convert this to an automatic transfer switch and prevent City staff from having to drive to the site to transfer the power source to the generator.

### 1.3.2 Brownell Springs

Approximately six miles east of Sandy, a series of eight springs (known as Brownell Springs) are located on 22 acres of City-owned land on Lenhart Butte. Water from the individual springs is collected in open-bottom concrete boxes and piped to a 1,000-gallon concrete holding tank where the spring water is disinfected with sodium hypochlorite. Turbidity, disinfectant residual monitoring, and SCADA communications equipment are housed in a nearby building with a separate room for sodium hypochlorite storage and pumping equipment.

The Springs consistently produce between 0.3 and 0.5 MGD year-round. While peak flows from the Springs occur during the early summer, by late summer, the City is typically regulated down to 90 gpm (0.13 MGD) due to impacts on senior water rights.

From the common holding tank, the chlorinated water blends with water traveling from the Terra Fern Road Reservoir and Pump Station to the Sandercock Lane Reservoir and Vista Loop Reservoirs.

There are three customers downstream of the holding tank who have grandfathered water rights to Brownell Springs water from the City. Their usage is metered, but they do not pay the City for water usage.



### 1.3.3 Portland Water Bureau

Since a wholesale water supply agreement was established in 2008, the City acquires 0.5 MGD to 3.0 MGD from the PWB. The City is required to pay for at least 0.5 MGD regardless of how much water is actually used, the Guaranteed Minimum Purchase amount stipulated in the current City's wholesale water supply agreement with PWB. This interconnection allows the City to supplement their Alder Creek and Brownell Springs sources, as well as providing redundancy to the system in case of emergency. The PWB receives water from the Bull Run Watershed, located approximately 3 miles northeast of the City of Sandy at the base of the Cascade Mountains. Water is supplied from Bull Run Lake and Bull Run Reservoirs No. 1 and No. 2, with a combined storage capacity of approximately 17 billion gallons. Water is delivered to the City of Portland and various wholesale customers in the Portland metro area through three large-diameter conduits. The City of Sandy receives water from the PWB at the Hudson Road Intertie and through a master meter that the City of Portland is responsible for maintaining and calibrating. The current contract with the City of Portland expires in 2028, and the PWB is currently in the process of developing a new long-term wholesale water supply agreement.

The Hudson Road Intertie is located between the headworks, where chlorine is added to the Bull Run surface water source, and the Lusted Hill Facility where ammonia is added to the water (to create a more stable disinfectant residual in the water, called chloramines) and the pH of the water is adjusted for corrosion control. As discussed further in Section 5, the Hudson Road Intertie is located upstream of the future PWB water treatment plant meaning that the water supplied to the City of Sandy at the Hudson Road Intertie will be unfiltered and untreated, and PWB will discontinue chlorination of the water at the Bull Run headworks.

The Hudson Road Intertie with the PWB was established in 2014 approximately 4 miles north of the City of Sandy. The City cannot convey water back to the PWB from this interconnection. Nearby, the Hudson Pump Station pumps water through approximately 27,000 feet of 18-inch and 24-inch diameter pipeline to the Revenue Avenue Reservoir, which is located within city limits. On the same site, the Transfer Pump Station pumps water from the reservoir into the distribution system in Zone 2 and up to the Vista Loop Reservoir. Customers east of Langensand Road, between the Vista Loop reservoirs and the Alder Creek WTP, cannot currently be served by the PWB source because the pump stations are not configured to pump up to these elevations.

### 1.3.4 Salmon River

The City holds Permit S-48451 for use of up to 25.0 cubic feet per second (cfs) from the Salmon River, which is currently undeveloped and has an extension of time to October 1, 2069. This water right is intended to provide a long-term water supply to accommodate the City's growth. In the *Agreement for Instream Conversion* (executed October 24, 2002) associated with Portland General Electric's decommissioning of Marmot Dam (Agreement), the City voluntarily agreed to reduce this permit from 25.0 cfs to 16.3 cfs when the flow available in the Sandy River near Brightwood, OR is 600 cfs or less, but can still divert up to 25.0 cfs when the flow available is more than 600

cfs. No gage is currently operating near Marmot, OR to provide a picture of the flow regime in the Sandy River at that location.

## 1.4 Distribution System

The City of Sandy's existing water distribution system consists of six pressure zones, five storage reservoirs, four pump stations, and 15 pressure-reducing valve (PRV) stations throughout the City's service area. These components and the supply sources are shown in the existing water system hydraulic schematic included as **Figure 1-2** in **Appendix A**. The City's distribution system and current operational strategy are described in further detail in Section 4.

### 1.4.1 Pressure Zones

Pressure zones are defined by ground topography and their hydraulic grade lines (HGLs) are determined by overflow elevations of water storage reservoirs, discharge pressure at pump stations, or outlet settings of PRVs. Pressure zone boundaries are defined in order to maintain an acceptable range of service pressures to all customers.

The City's water distribution system is divided into six pressure zones. They are identified simply as Zone X and Zones 1 through 5. The topography of the City's water service area generally slopes down from southeast to northwest, with Sandercock Lane Reservoir acting as the high point in the distribution system. Water from Alder Creek WTP is pumped up to the Sandercock Lane Reservoir while water from Brownell Springs flows by gravity to the reservoir. From here, water flows directly into Zone X, into Zone 1 via PRV, and into the Vista Loop Reservoirs through the Vista Loop Control Valve. From the PWB intertie, water is transmitted to the Revenue Avenue Reservoir where it is blended with Alder Creek and Brownell Springs source water to control disinfection byproduct formation. Water from the Revenue Reservoir is pumped into Zone 2 from the Transfer Pump Station. From Zone 2, water travels by gravity throughout the remaining pressure zones, passing through PRVs as necessary.

In addition to these six established and named pressure zones, the City supplies water to the three aforementioned wholesale customers, as well as 29 meters above the Sandercock Lane Reservoir, and three meters supplied by gravity between Brownell Springs and a partially-closed gate valve, located near Highway 26, that regulates the flow rate from the springs to the City's allowed water right capacity.

**Figure 1-1 (Appendix A)** shows the geographical locations of the pressure zones. **Table 1-1** summarizes approximate ground elevations served, HGLs, and service pressures, as well as facilities supplying each pressure zone. The information included in **Table 1-1** is depicted visually in **Figure 1-2 (Appendix A)**.

**Table 1-1**  
**Pressure Zone Summary**

Pressure Zone	Elevation Range Served (feet) <sup>1</sup>	Supply Source	Pressure Control (Reservoir/Pump Station/PRV)	Controlling HGL (feet)	Approximate Pressure Range (psi)
Zone X	1,060 to 1,300	Sandercock Lane Reservoir	Sandercock Lane Reservoir	1,385	37 to 141
Zone 1	1,040 to 1,090	Sandercock Lane Reservoir	Vista Loop & Hwy 26 PRV	1,206	50 to 72
Zone 2	900 to 1,130	Vista Loop Drive Reservoirs, Revenue Avenue Reservoir/Transfer Pump Station	Vista Loop Drive Reservoirs	1,228	42 to 142
Zone 3	790 to 980	Zone 2	Several PRVs	1,098	51 to 133
Zone 4	740 to 890	Zone 3	37151 HWY 26 PRV, Bluff Road PRV	980	39 to 104
Zone 5	720 to 840	Zone 3	Dubarko & Ruben PRV, 37000 HWY 26 PRV	987	37 to 141

<sup>1</sup> Individual services with pressures above 80 psi are assumed to have individual PRVs.

### 1.4.2 Storage Reservoirs

The City’s water system includes five active storage reservoirs with a total capacity of 4.75 million gallons (MG). Key information on these reservoirs can be found in **Table 1-2**. See **Figure 1-1 (Appendix A)** for the geographical locations of the reservoirs.

Located outside of city limits, the easternmost reservoir, Terra Fern Road Reservoir, is of welded steel construction and has a capacity of 0.25 MG. It is filled from the Alder Creek WTP finished water pumps. Water is then boosted by the adjacent Terra Fern Pump Station to the Sandercock Lane Reservoir.

Sandercock Lane Reservoir, another steel reservoir, is the highest reservoir in the City’s system and is the second reservoir located outside city limits. Access to the site is unreliable as it is steep and can be subject to downed trees and hazardous driving conditions during winter months. It has a capacity of 0.5 MG and is filled by the Terra Fern Pump Station as well as water from Brownell Springs. Sandercock Lane Reservoir serves Zone X, pressure regulated Zone 1, and supplies the Vista Loop Drive Reservoirs.

The Vista Loop Reservoirs are an older 1.0 MG capacity steel tank and a more recently constructed 2.0 MG prestressed concrete tank. The Vista Loop Reservoirs directly serve Zone 2 and provide the supply to pressure regulated Zones 3, 4 and 5 through Zone 2 distribution piping. Neither the

Sandercock Lane nor Vista Loop sites have generators, automatic transfer switches (ATSs), manual transfer switches (MTSs), or back-up power available onsite.

The fifth and final tank is the newest and the lowest in the system. The concrete Revenue Avenue Reservoir receives water from the Hudson Road Intertie with the PWB. Water is pumped directly to the tank from the Hudson Pump Station located more than five miles north. The Transfer Pump Station pumps water from the reservoir to Zone 2. From here, a series of PRVs supplies Zone 3, 4 and 5.

**Table 1-2**  
**Reservoir Summary**

Reservoir Name	Pressure Zone	Overflow Elevation (feet)	Volume (MG)	Diameter (feet)	Height to Overflow (feet)	Material	Year Constructed
Revenue Avenue	2	995	1.0	92	20	Concrete	2014
Vista Loop Road	2	1,142	1.0	86	24	Steel	1975
Vista Loop Road	2	1,142	2.0	122	24	Concrete	2001
Terra Fern Road	N/A	1,232	0.25	32	32	Steel	1978
Sandercock Lane	X	1,385	0.5	51	33	Steel	1966

### 1.4.3 Pump Stations

The City’s existing water system includes four distribution system pump stations and a raw water booster pump station. **Table 1-3** presents a summary of all existing pumping facilities. See **Figure 1-1 (Appendix A)** for the geographical locations of the pump stations (PS).

The first pump station is the raw water booster pump station which was constructed in 1996 to provide additional capacity to the Alder Creek WTP from the 12-inch diameter raw water intake pipeline. The pump station consists of two 20-horsepower (hp) pumps with VFDs. The pump station provides the WTP with approximately 1,800 gpm (2.6 MGD). Back-up power for the raw water booster PS is provided from the generator at the WTP.

From the WTP, finished water is pumped to the Terra Fern Road Reservoir. The WTP houses four finished water pumps. Three submersible turbine pumps operate with Filters #1 and #2. Filter #3 operates with one vertical turbine pump. If all three filter trains are operating, three of the finished water pumps can convey a total of approximately 1,800 gpm (2.6 MGD). The Filter #3 pump has a design capacity of 1,100 gpm (1.6 MGD). The Terra Fern Road Reservoir controls the WTP operation by pressure transducer level transmitters. There is a generator onsite at the WTP, but it does not have an automatic transfer switch (ATS) and requires manual override. There is an ongoing project that will install an ATS at the WTP.

The Terra Fern Pump Station shares a site with the reservoir and pumps water to the Sandercock Lane Reservoir, picking up water from Brownell Springs along the way. The pump station was constructed in 1977 and is home to five submersible turbine pumps. The pump station’s capacity is 1,750 gpm (2.5 MGD).

Wholesale water purchased from the PWB at the Hudson Road Intertie is pumped to the City’s water system by the Hudson Pump Station. From here, three pumps (two duty and one standby) can supply up to 3,300 gpm (4.8 MGD) of water through 27,000 feet of pipe to the Revenue Avenue Reservoir, located within city limits. There are also chemical (hydrated lime) feed facilities to adjust the pH of the supply from PWB at this pump station, though it has never been necessary to implement the chemical equipment.

The fifth and final pump station is the Transfer Pump Station, which can convey up to 2,100 gpm (3 MGD) via three pumps (two duty and one standby) into Zone 2. The Terra Fern, Hudson, and Transfer pump stations all have a generator and ATS onsite.

**Table 1-3  
Pump Station Summary**

Pump Station	Pumping To	Pumping From	Pump No.	Approximate Capacity (gpm)	Emergency Back-up Power	VFD or Constant Speed	Year Constructed
Raw Water Booster	Alder Creek WTP	Alder Creek Intake	2	3,600	Manual Transfer Switch / Control Switch <sup>1</sup>	VFD	2018 (upgraded)
Alder Creek WTP	Terra Fern Road Reservoir	Alder Creek WTP	4	1,800	Manual Transfer Switch / Control Switch <sup>1</sup>	Constant Speed	1977
Terra Fern	Sandercock Lane Reservoir	Terra Fern Road Reservoir	5	1,750	Automatic Transfer Switch / Control Switch	Constant Speed	1977
Hudson	Revenue Avenue Reservoir	PWB Intertie	3	3,300	Automatic Transfer Switch / Control Switch		2014
Transfer	Zone 2	Revenue Avenue Reservoir	3	2,100	Automatic Transfer Switch / Control Switch		2014

<sup>1</sup> There is an ongoing project at the WTP that will upgrade this to an automatic transfer switch.

### 1.4.4 Pressure-Reducing Valves

Fifteen pressure-reducing stations are installed throughout the distribution system to divide the system into pressure zones, providing customers with appropriate water pressures. Thirteen of these PRVs are used to reduce pressure from Zone 2, directly and indirectly supplying Zones 3, 4, and 5. One PRV reduces pressure from the Sandercock Lane Reservoir, supplying Zone X. One more PRV serves Zone 1 from Zone X. The pressure zones served and settings of the PRVs are shown in **Table 1-4**. The geographic location and hydraulic configuration of these PRVs are illustrated in **Figures 1-1** and **1-2 (Appendix A)**, respectively.

**Table 1-4**  
Pressure Reducing Valves Summary

PRV Name	Elevation (ft)	Main Valve			Bypass Valve			Pressure Zone
		Setting (psi)	Size (in)	Grade (ft)	Setting (psi)	Size (in)	Grade (ft)	
Sandercock (Tank Bypass)	1226	75	6	1399	80	2	1411	Zone X
Vista Loop and US 26	1089	55	8	1216	60	3	1228	Zone 1
Sandy Heights South of Beebee	958	53	6	1080	64	1.5	1106	Zone 3
Pleasant and Strauss	960	55	6	1087	-	-	-	Zone 3
Pioneer and Strauss	970	50	4	1086	-	-	-	Zone 3
Towle and Sunset	824	65	6	974	68	1.5	981	Zone 3
Strawbridge and Tupper	903	60	6	1042	60	1.5	1042	Zone 3
Hood and Strauss	954	55	6	1081	-	-	-	Zone 3
Dubarko and Tupper	896	70	8	1058	80	2.5	1081	Zone 3
Proctor and Bruns	960	55	8	1087	-	-	-	Zone 3
38871 Proctor	966	50	10	1082	55	3	1093	Zone 3
37151 Hwy 26	840	56	10	969	61	3	981	Zone 4
Bluff North of High School	870	50	6	986	50	2	986	Zone 4
Dubarko East of Ruben	793	60	10	932	65	3	943	Zone 5
37000 SE Hwy 26	832	57	10	964	65	4	982	Zone 5

### 1.4.5 Distribution Piping

The City of Sandy’s water transmission and distribution system contains approximately 67 miles of piping and is composed of various pipe materials ranging in size from 2-inches to 24-inches in diameter. The majority of the piping is 6-, 8-, 12- and 16-inches in diameter. Most of the pipes are ductile iron (75%) or cast iron (16%), in addition to other materials, including steel, polyvinyl chloride (PVC), and asbestos cement. The City has exclusively been installing ductile iron since 1979. **Table 1-5** presents an inventory of existing pipes by diameter.

**Table 1-5**  
**Distribution System Pipe Summary**

Diameter (inches)	Length (feet)	Percentage of All Pipe
2	1,616	0.5%
4	9,657	2.7%
6	88,126	24.9%
8	110,865	31.3%
10	4,810	1.4%
12	61,146	17.3%
16	47,787	13.5%
18	16,067	4.5%
24	14,124	4.0%
TOTAL	354,197	100%

# Chapter 2





## Section 2

# Water Requirements

This section characterizes current water demands and summarizes future growth scenarios, population projections, and projected future water demands for the City's water service area. Water demand forecasts presented in this section are used with performance criteria presented in **Section 3** to evaluate the existing water system's capacity to serve current customers and future growth. Demand forecasts are developed from historical water consumption and production records, regional planning data, current land use designations, and previous City water planning efforts.

## 2.1 Water Service Area

### 2.1.1 Existing Service Area

The existing City water service area includes approximately eighty percent of the land within the city limits. The City also provides service to three wholesale customers outside of the City's service area: Section Corner Water District (WD), Alder Creek-Barlow WD, and Skyview Acres Water Company. The service area is shown in **Figure 1-1 in Appendix A**.

### 2.1.2 Future Service Area

Based on existing development types in the area, some re-development and densification is expected within the existing water service area, particularly in the central portion of the city. The City expects growth and expansion within its urban growth boundary (UGB), which is expected to be mostly low density residential. Subdivisions in the east are actively being developed and will affect Zone X, in particular. The proposed future service area is illustrated in **Figure 1-1 in Appendix A**.

## 2.2 Planning Period

The planning period for this Water System Master Plan (WSMP) is 20 years, through the year 2043, which meets the requirements for WSMPs outlined in the Oregon Administrative Rule (OAR 333-061). Water supply capacity is evaluated through 2050, to accommodate long-range supply development planning.

## 2.3 Water Demand Description

Water demand refers to all potable water required by the system including residential, commercial, industrial, city, and public uses. Water demands are described using three water use metrics: average daily demand (ADD), maximum (peak) day demand (MDD), and peak hour demand (PHD). Each of these metrics is stated in million gallons per day (MGD).

- ADD is the total annual water volume used system-wide divided by 365 days per year.
- MDD is the largest 24-hour water volume for a given year. MDD typically occurs each year between July 1<sup>st</sup> and September 30<sup>th</sup>.
- PHD is estimated as the largest hour of demand on the peak water use day.

Water demand can be calculated using either water consumption or water production data. Water consumption data is taken from the City's Advanced Metering Infrastructure (AMI) data and includes all revenue metered uses. This data can be analyzed by geographical location and customer type, which is useful for quantifying typical water use for different pressure zones and land uses. However, consumption data does not capture any water loss or unmetered uses, making it less useful in determining system-wide peak demands.

Water production is calculated as the sum of water supplied from the Alder Creek Water Treatment Plant (WTP), Brownell Springs, and the Portland Water Bureau (PWB) connection. Water production includes unaccounted-for water such as water loss through minor leaks and unmetered, non-revenue uses such as hydrant flushing. Total water production is recorded daily, making it useful for analyzing seasonal water demand trends, supply, and storage capacity.

## 2.4 Historical Water Demand

For the purposes of this WSMP, daily water production data is used to calculate system-wide historical water demand in order to account for all water uses including those which are not metered by the City and to develop peaking factors. Customer consumption and water service location data are used to distribute water demands throughout the hydraulic model, to estimate demands by pressure zone, and to quantify average water use by customer type for future demand projections described later in this section.

### 2.4.1 System-Wide Water Production

System-wide historical water production is presented in **Table 2-1**. The historical ratio of MDD:ADD, or peaking factor, is used to estimate future MDD from ADD. In addition, to understand the effect of outdoor water usage during the summer, Peak Season Demand (PSD) is calculated as the average daily demand between July 1<sup>st</sup> and September 30<sup>th</sup>.

**Table 2–1**  
**Historical System-Wide Water Demand**

Year	ADD (MGD)	PSD (MGD)	MDD (MGD)	MDD:ADD Peaking Factor
2016	1.15	1.49	2.36	2.1
2017	1.16	1.54	2.33	2.0
2018	1.22	1.67	2.87	2.3
2019	1.09	1.42	2.49	2.3
2020	1.24	1.59	2.47	2.0
2021	1.38	1.81	2.57	1.9
Average	1.21	1.59	2.51	2.1

Notes:

1 – Based on City staff observations, actual demands may be less due to routine historical overflow of Revenue Reservoir when Hudson PS supplied the City system from the Portland Water Bureau that has since ceased occurring. Consor was unable to identify a clear quantification of the overflow volume. It is recommended that the City investigate the impact of the recurring overflow event on demand forecast at the end of the year 2022.

### 2.4.2 Water Consumption by Pressure Zone

As described in **Section 1**, water systems are divided into pressure zones to provide adequate service pressure to customers at different elevations. Each pressure zone is served by specific facilities such as reservoirs, pump stations, or pressure reducing valves (PRVs), which supply water to customers within an acceptable range of service pressure. To assess the adequacy of these facilities, it is necessary to estimate demand in each pressure zone. System-wide water consumption from 2020 was distributed uniformly within the City’s pressure zones and with respect to the number of meters in each pressure zone. The percentage of water consumption by pressure zone is summarized in **Table 2-2**. The maximum day peaking factor was applied to these demands to determine MDD.

**Table 2-2**  
**2020 Water Consumption by Pressure Zone**

Pressure Zone	Percent of Demand
Zone X	5.0%
Zone 1	2.7%
Zone 2	46.5%
Zone 3	25.3%
Zone 4	13.4%
Zone 5	7.1%

### 2.4.3 Water Consumption by Customer Type

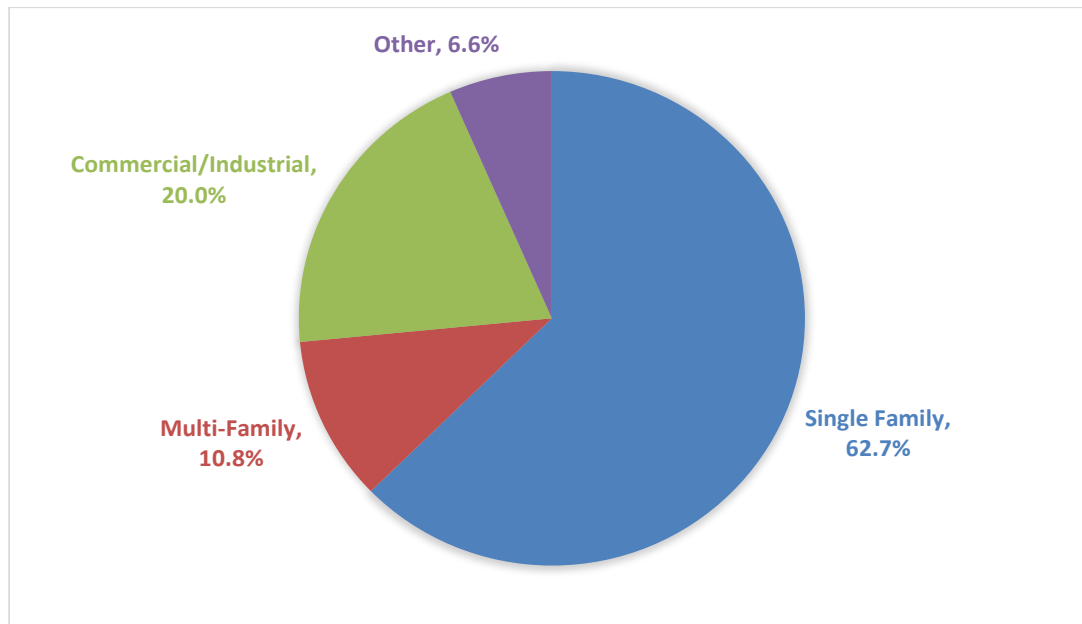
City AMI data provided historical average daily water consumption by customer type including single-family residential, multi-family residential, residential outside of city limits, commercial, industrial, and other (wholesale and public use). Historical use by customer type is presented in **Table 2-3**. The percentage of total 2020 average daily water consumption for each major customer type is presented in **Chart 2-1** (next page).

Residential customer use makes up the majority of demand in the City. This category is assumed to be predominantly comprised of single-family homes, duplexes, and triplexes. Multi-family residential and industrial/commercial customer use also contribute significantly to overall demand. Combined (Other) wholesale, outside city limits residential, public, and City use constitutes approx. 6.6% of the total customer use.

**Table 2-3**  
**Historical Water Consumption by Customer Type**

Year	Water Consumption by Customer Type (MGD)				
	Single-family	Multi-family	Commercial/Industrial	Other (Wholesale, Outside City Limits Res. Public, etc.)	Total
2017	0.62	0.10	0.22	0.06	1.00
2018	0.62	0.10	0.23	0.06	1.02
2019	0.56	0.09	0.22	0.05	0.92
2020	0.61	0.10	0.19	0.07	0.98

Chart 2-1  
2020 Water Consumption by Customer Type



#### 2.4.4 Equivalent Dwelling Units (EDUs)

Sandy’s public water system serves a significant number of single-family residential customers as well as multifamily housing developments and commercial customers. Single-family residential water services generally have a consistent daily and seasonal pattern of water use or demand. Water demands for multifamily residences, commercial, and industrial users may vary significantly from service to service depending on the number of multifamily units per service or the type of commercial enterprise. When projecting future water demands based on population change, the water needs of non-residential and multi-family residential customers are represented by comparing their water use volume to the average single-family residential unit. The number of single-family residential units that could be served by the water demand of these other types of customers is referred to as the number of “equivalent dwelling units” (EDUs). EDUs differ from actual metered service connections in that they relate all water services to an equivalent number of representative single-family residential services based on typical annual consumption.

In order to establish the average consumption per EDU, the total number of single-family residential service connections is compared to the total consumption by single-family residential customers. Residential ADD divided by the number of base size meters is the average demand per EDU (ADD/EDU in gpd/EDU). Average consumption per EDU (ADD/EDU) is anticipated to remain

constant through time and based on the calculations using 2017 to 2020 water consumption records, assumed to be 182 gpd/EDU.

## 2.5 Future Water Demand Forecast

Future water demands were projected based on historical data, population forecasts, and growth trends. Projections take into account anticipated growth in new development areas and estimated water loss. Specific criteria used to forecast future water demands are listed below.

Based on City staff observations, actual demands may be less due to routine historical overflow of Revenue Reservoir when Hudson PS supplied the City system from the Portland Water Bureau that has since ceased occurring. Consor was unable to identify a clear quantification of the overflow volume. It is recommended that the City investigate the impact of the recurring overflow event on demand forecast at the end of the year 2022.

### 2.5.1 Residential Water Demand

Population projections were the basis for estimated residential water demand. The Coordinated Population Forecast for Clackamas County published by the Portland State University (PSU) Population Research Center (PRC, June 2020) includes U.S. census population data from 2010 and estimated populations and growth rates for 2020 through 2070 for the City of Sandy. Historical and projected populations are summarized in Table 2-4. The population projections do not include areas served by the Alder Creek Barlow Water District or Skyview Acres Water Company.

**Table 2-4**  
**Historical and Projected Populations**

Year	Population	Source
2010	9,980	U.S. Census
2022	12,991	PSU-PRC Population Estimate
2023	13,415	Projected using 2.1% AAGR (PSU PRC)
2025	13,985	Projected using 2.1% AAGR (PSU PRC)
2030	15,516	Projected using 2.1% AAGR (PSU PRC)
2035	17,215	Projected using 2.1% AAGR (PSU PRC)
2040	19,100	Projected using 2.1% AAGR (PSU PRC)
2043	20,329	Projected using 2.1% AAGR (PSU PRC)
2045	21,192	Projected using 2.1% AAGR (PSU PRC)
2050	22,942	Projected using 1.6% AAGR (PSU PRC)

Using the 2020 city-wide population estimate and residential water consumption data provided by the City for 2017 through 2020, the average use per capita per day was calculated. Note that this is for single- and multi-family consumption combined. The average per capita use was 65

gallons per capita per day (gpcd) between 2017 and 2020. The same value (65 gpcd) is used to estimate future residential water demand.

### 2.5.2 Non-Residential Water Demand

Commercial, industrial, wholesale, outside city limit residential, public, and City water use projections are based on consumption data from 2017 through 2020. Average 2020 consumption data for Commercial/Industrial and Other were used as basis of demands for 2023. Commercial and industrial demands are expected to increase proportional to residential demand as described in Section 2.5.1.. Other (wholesale, outside city limit residential, and public and City water) usage is expected to remain constant through the planning period.

### 2.5.3 Non-Revenue Water Demand

Non-revenue water is the amount of water produced that is not billed to a customer. This generally includes water losses in the distribution system, unauthorized use, and authorized unbilled use such as hydrant flushing for water quality. This water must be accounted for in demand projections to ensure proper infrastructure sizing. Non-revenue water is estimated as the difference between billed consumption and production.

Non-revenue water is projected using historical data, based on the difference between billed consumption and production data from 2017 through 2020. Average annual non-revenue demand was estimated at 15% of system production volume. This is on the higher end of typical system-wide non-revenue water. It is expected that the City could decrease water loss as they continue to update and repair water system infrastructure. Additionally, water loss is expected to be less than existing in newly constructed water system infrastructure. For these reasons, non-revenue water demand is not expected to increase over the planning period proportional to growth. A constant, average non-revenue water demand was applied to the demand projections in Table 2-5. The demand is based on 15% of 2020 annual production (equivalent to 0.184 MGD).

### 2.5.4 Water Demand Projections

**Table 2-5** presents future demand projections by customer type, as well as total ADD and MDD through 2050. A peaking factor of 2.3 (maximum peaking factor from 2017-2020 historical data, Table 2-1) was used to estimate MDD from ADD projections.

**Table 2-5  
Future Water Demand Projections by Customer Type (MGD)**

	Single-family Residential	Multi-family Residential	Commercial/Industrial	Other (Wholesale, Outside City Limits Res., Public, etc.)	Total ADD	MDD
<b>2023</b>	0.74	0.12	0.22	0.07	1.33	2.59
<b>2025</b>	0.77	0.13	0.21	0.07	1.38	2.69
<b>2030</b>	0.86	0.14	0.24	0.07	1.50	2.95
<b>2035</b>	0.95	0.16	0.26	0.07	1.64	3.23
<b>2040</b>	1.06	0.18	0.29	0.07	1.79	3.55
<b>2043</b>	1.13	0.19	0.31	0.07	1.88	3.75
<b>2045</b>	1.17	0.20	0.33	0.07	1.95	3.90
<b>2050</b>	1.27	0.21	0.36	0.07	2.10	4.21

Notes:

- 1 – Accounts for 0.184 MGD constant, average non-revenue water demand through projections. Historical data shows average system non-revenue water demand as 15% of production volume. 2020 production volume used to estimate 0.184 MGD average non-revenue demand.
- 2 – Based on City staff observations, actual demands may be less due to routine historical overflow of Revenue Reservoir when Hudson PS supplied the City system from the Portland Water Bureau that has since ceased occurring. Consor was unable to identify a clear quantification of the overflow volume. It is recommended that the City investigate the impact of the recurring overflow event on demand forecast at the end of the year 2022.

## 2.6 Future Water Demand by Pressure Zone

Due to the limited available water consumption data, projected future water demand by pressure zone cannot be accurately forecasted without a reliable spatial allocation of current water usage. As presented in **Section 5**, future water demands by pressure zone will be estimated using an estimate of developable land by land use type (residential – single-family or multi-family, commercial/industrial, and other uses). While the Oregon House Bill 2001 Middle Housing implementation rules could result in increased residential housing density in some areas, the increase is anticipated to be minimal. The City should review housing density increases on a case-by-case basis during the plan development process. If a situation arises where increased housing density would be limited by available fire flow in the area, the City may require additional sprinkling requirements on structures to meet fire codes and allow for development. This methodology will provide a rough forecast by pressure zone to support capacity analyses and future water system facility sizing.

It is recommended that the City work with their AMI provider to extract detailed records of annual usage by customer, to support future refinement of hydraulic model demand distribution and pressure zone demand allocation.



# Chapter 3



## Section 3

# Planning and Analysis Criteria

### 3.1 Introduction

This section documents the performance criteria used for analyses of the City of Sandy's (City) water supply and distribution system presented in **Sections 4 and 5** of this Water System Master Plan (WSMP). Criteria are established for evaluating water supply, distribution system piping, service pressures, storage and pumping capacity, and fire flow availability. These criteria are used in conjunction with the water demand forecasts presented in **Section 2** to complete the water system analysis.

### 3.2 Performance Criteria

The water distribution system should be capable of operating within certain performance limits under varying customer demand and operational conditions. The recommendations of this plan are based on the performance criteria developed in this section and summarized in **Table 3-1** at the end of this section. These criteria have been developed through a review of City design standards, State of Oregon requirements, American Water Works Association (AWWA) acceptable practice guidelines, the *Ten States Standards*, the *State of Washington Water System Design Manual*, and practices of other water providers in the region.

#### 3.2.1 Supply

Supply adequacy is measured based on firm capacity. For a treatment plant, this is the total plant capacity with the largest single treatment train out of service. For wholesale supply, it is based on the wholesale supply agreement and the firm capacity of the City facilities (for a pump station, such as the Hudson Road Intertie, this is the capacity with the largest pump out of service) transmitting supply to the water system.

The City's total firm supply capacity must equal, or exceed, the maximum day demand (MDD) of the water system.

#### 3.2.2 Service Pressure

Water distribution systems must provide water to customers within a limited pressure range, generally 40 to 80 pounds per square inch (psi). To do this, systems are divided into pressure zones which provide water to customers within a band of ground elevations. Pressure zones are typically served by one or more reservoirs with the same overflow elevation. The ground elevation band is limited by the pressure available from the hydraulic grade line (HGL) within each level. The HGL in

each pressure zone is set by the water level in the reservoirs or settings of PRVs serving the level. Areas of the system can also be hydraulically connected to another pressure zone by a PRV or pump station.

The City's acceptable service pressure range under normal operating conditions, or average day demands (ADD), is 40 to 80 psi. However, due to ground elevations in some pressure zones, some customers receive service pressures outside this range. Where mainline pressures exceed 80 psi, services are equipped with individual PRVs to maintain their static pressures at no more than 80 psi in compliance with the Oregon Plumbing Specialty Code. During a fire flow event or emergency, the minimum service pressure is 20 psi as required by Oregon Health Authority, Drinking Water Program (OHA) regulations.

### *3.2.2.1 Distribution System Evaluation*

The distribution system is evaluated for adequacy under two key demand scenarios: MDD plus fire flow and peak hour demand (PHD). The distribution system should provide the required fire flow to a given location under MDD conditions while maintaining a minimum residual service pressure of 20 psi at any customer meter in the system as required by OHA regulations.

### *3.2.2.2 Main Size*

Typically, new water mains should be no smaller than 8 inches in diameter. However, 8-inch mains may cause water quality concerns in areas with small, non-emergency demands and minimal looping. 6-inch diameter pipe is allowed if it is directly connected to an 8-inch or larger loop and as long as no hydrants are connected to the 6-inch diameter pipe. For areas with commercial or industrial use or fire flows exceeding 1,000 gallons per minute (gpm), a minimum of 12-inch diameter pipe is recommended.

### *3.2.3 Storage Capacity*

Water storage reservoirs should provide capacity for four purposes: operational storage, equalization storage, fire storage, and standby or emergency storage. A brief discussion of each storage element is provided below. Adequate storage capacity must be provided for each set of hydraulically connected pressure zones. Storage volume for closed pressure zones served through PRVs or by constant pressure pumping is provided by the upstream pressure zone supplying the PRV or pump station. Sandy does not currently have any constant pressure pumped pressure zones but has four PRV-fed constant pressure zones.

#### *3.2.3.1 Operational Storage*

Operational storage is the storage in reservoirs between the on and off set points for the supply sources under normal operating conditions. It is calculated by actual reservoir geometries; a typical variation in reservoir level is 3 to 5 feet. An operational range of 5 feet is recommended.

### 3.2.3.2 Equalization Storage

Equalization storage is the volume of water dedicated to supplying demand fluctuations throughout the day. Per the *Washington Water System Design Manual*, water systems must provide equalization storage when source pumping capacity cannot meet the PHD. It is recommended that the City plan for equalization storage equal to approximately 25 percent of MDD. This is consistent with the practices of similar water utilities in the region.

### 3.2.3.3 Fire Storage

Water stored for fire suppression is typically provided to meet the single most severe fire flow demand within each pressure zone. Fire services in the City of Sandy water service area are provided by Sandy Fire District No. 72, which uses the Oregon Fire Code (OFC) as a standard for addressing general requirements by building construction and development type.

Required fire flows vary depending on the type of development and building construction. Zoning is used as an analog for development type when evaluating required fire flows for planning within the City's water service area as discussed in 3.2.5. According to the 2019 OFC, the largest required fire flow for buildings in areas with adequate and reliable water systems, like the City of Sandy, is 3,000 gpm for a recommended duration of 3 hours. The recommended fire storage volume is determined by multiplying the fire flow rate by the duration of that flow.

### 3.2.3.4 Emergency Storage

Emergency storage is provided to supply water during emergencies such as pipeline failures, equipment failures, power outages, or natural disasters. The amount of emergency storage provided can be highly variable depending upon an assessment of risk and the desired degree of system reliability. An emergency storage volume of twice the ADD is recommended and is consistent with practices of other utilities in the region.

## 3.2.4 Pump Stations

Pumping capacity requirements vary depending on the water demand, volume of available storage, and the number of pumping facilities serving a particular pressure zone.

### 3.2.4.1 Pumping to Storage

When pumping to storage reservoirs, a firm pumping capacity equal to the pressure zone's MDD is recommended. Firm pumping capacity is defined as a pump station's pumping capacity with the largest pump out of service.

### *3.2.4.2 Backup Power*

It is recommended that pump stations supplying gravity storage reservoirs include, at a minimum, manual transfer switches and connections for a portable back-up generator. The emergency storage volume in each reservoir will provide short term water service reliability in case of a power outage at the pump station. On-site back-up generators with automatic transfer switches are recommended for pump stations critical to the operation of the system.

### *3.2.5 Required Fire Flow*

The water distribution system provides water for domestic use and fire suppression. The amount of water required for fire suppression purposes at a specific location is associated with the local building size and construction type. Zoning and land use are used as analogs for building size when evaluating required fire flows for planning within the City's water service area.

Fire flow requirements are typically much greater in magnitude than the MDD in any local area. Therefore, fire flow must be considered when sizing pipes to ensure adequate hydraulic capacity is available for these potentially large demands. Sandy Fire District No. 72 has generally adopted the 2019 OFC as its own standard.

#### *3.2.5.1 Single-Family and Two-Family Dwellings*

The 2019 OFC guidelines specify a minimum fire flow of 1,000 gpm for single-family and two-family dwellings with square footage 3,600 square feet or less. For residential structures larger than 3,600 square feet, the minimum fire flow requirement is 1,500 gpm. The actual fire flow requirement is based on building construction and size and can be found in the Table B105.1(2) in Appendix B of the OFC.

For the purposes of this WSMP, distribution piping fire flow capacity will be tested in the water system hydraulic model with a minimum requirement of 1,500 gpm to accommodate the range of potential future residential development in the City. Where deficiencies are identified in the existing system based on this 1,500 gpm requirement, existing homes that are less than 3,600 square feet will be evaluated at a 1,000 gpm fire flow to confirm if a potential deficiency exists for current customers.

#### *3.2.5.2 Other Dwelling Types*

For buildings that are not single- and two-family residential dwellings, the fire flow requirement is based on building type and size and can be found in the Table B105.1(2) in Appendix B of the OFC. The fire flow rate and duration requirements are reduced if a building has an automatic sprinkler system. Section B106.1 of the OFC sets the maximum fire flow requirement at 3,000 gpm. This applies to any new, altered, moved, enlarged, or repaired building. Buildings that require more than 3,000 gpm need approval from the fire code official.

**Table 3-1**  
**Performance Criteria Summary**

Water System Component	Evaluation Criterion	Value	Design Standard/Guideline
<b>Water Supply</b>	Primary Source Capacities	Firm Capacity of all Sources $\geq$ MDD <sup>3</sup>	Ten States Standards, Washington Water System Design Manual, Consor Recommended
<b>Service Pressure</b>	Normal Range, during ADD <sup>1</sup>	40-80 psi	AWWA M32
	Maximum (without PRV)	80 psi	AWWA M32, Oregon Plumbing Specialty Code Section 608.2
	Minimum, PHD <sup>2</sup>	30 psi	Consor Recommended
	Minimum, during fire flow	20 psi	AWWA M32, OAR 333-061
<b>Distribution Mains</b>	Maximum Pipe Velocity	Not to exceed 12 fps	Consor Recommended
	Minimum Pipe Diameter	8-inch unless specific criteria is met	City Standard
<b>Storage</b>	Operational Storage	Tank level set points	
	Equalization Storage	25% of MDD <sup>3</sup>	Consor Recommended and Washington Water System Design Manual
	Fire Storage	Required fire flow x flow duration	
	Emergency Storage	2 x ADD	
<b>Pump Stations</b>	Firm Capacity Pump to Storage	MDD	
	Backup Power	Automatic transfer switch and on-site generator (if critical facility)	Consor recommended
<b>Required Fire Flow and Duration</b>	Single- or Two-Family Residential $\leq$ 3,600 square feet	1,000 gpm for 2 hours	
	Residential $>$ 3,600 square feet and other Buildings	Use OFC criteria for building size and type up to a maximum of 3,000 gpm for 3 hours	2019 Oregon Fire Code
	Commercial and Industrial	3 Use OFC criteria for building size and type up to a maximum of 3,000 gpm for 3 hours	

Notes:

1. ADD: Average daily demand, defined as the average volume of water delivered to the system or service area during a 24-hour period.
2. PHD: Peak hour demand, defined as the maximum volume of water delivered to the system or service area during any single hour of the MDD.
3. MDD: Maximum day demand, defined as the maximum volume of water delivered to the system or service area during any single day.

# Chapter 4



## Section 4

# Distribution System Analysis

## 4.1 Introduction

This section provides an evaluation of the City’s water service distribution system, including storage reservoirs, pump stations, control valves, and distribution system piping. As discussed in **Section 1**, the City’s distribution system consists of six pressure zones, five storage reservoirs, four pump stations, and 15 PRV stations. System facilities are analyzed for adequacy in both existing (2023) and near-term (2030) conditions within the 20-year planning horizon (2043), as well as build-out (2050) conditions beyond the planning period. These analyses inform the City’s recommended CIP, presented in **Section 6**.

This section documents the distribution system analysis according to the performance criteria outlined in **Section 3** and water demand forecasts summarized in **Section 2**. The analysis assesses overall system performance including service pressures, pipeline velocities, storage and pumping capacities, and emergency fire flow availability. An analysis of the City’s existing water supply system is presented in **Section 4**.

## 4.2 Pressure Zone Analysis

### 4.2.1 Existing Pressure Zones

As presented in Section 1, the City’s current water service area includes all properties within city limits and some surrounding areas, including three wholesale customers. The City’s distribution system is divided into six pressure zones. In addition to customers within zone boundaries, the City provides water to the three wholesale customers, 29 meters above Zone X and the Sandercock Lane Reservoir, and three meters supplied by gravity from Brownell Springs. Zones 1, 3, 4, and 5 are currently served by 14 PRVs. The Sandercock Lane and Vista Loop Reservoirs serve Zones X and 2, respectively.

### 4.2.2 Pressure Zone Findings

Under existing peak hour demand conditions, the City’s six pressures zones provide adequate minimum services pressures of at least 30 psi throughout the system. The maximum acceptable pressure at a water main within the system is 80 psi. Where water main pressure exceeds 80 psi, PRVs are required on individual service connections.



As discussed in **Section 2**, future development and densification is expected within the City’s urban growth boundary. It is anticipated that new customers will be served primarily by expansion of the existing six pressure zones. Future pressure zone boundaries are illustrated in **Figure 4-1**. Boundaries were developed based on contour and tax lot data.

## 4.3 Storage Capacity Analysis

### 4.3.1 Existing Storage Facilities

This section details the City’s existing and future storage capacity needs. Storage projects are identified to accommodate long-term demand projections and improve overall resiliency, reliability, and operational efficiency. As discussed in **Section 3**, required storage capacity is calculated as a sum of operational, equalization, fire, and emergency storage. **Table 4-1** summarizes current and projected storage capacity analyses performed for each of the City’s pressure zones.

For these analyses, the existing reservoir storage volumes were summed and associated with pressure zones accordingly. The Terra Fern Road and Sandercock Lane Reservoirs provide storage to Zone X, which supplies Zone 1 via a PRV. The two Vista Loop Reservoirs and the Revenue Avenue Reservoirs supply Zone 2. Zone 3 is served from Zone 2 by a system of eight PRVs, which serves Zones 4 and 5 via two PRVs per zone. In summary, the Terra Fern Road and Sandercock Lane Reservoirs were associated with Zones X and 1 while the Vista Loop and Revenue Avenue Reservoirs were associated with Zones 2, 3, 4, and 5.

The existing Sandercock Lane and Vista Loop Reservoirs serve customers in Zone X and Zone 2, respectively, by gravity. The City’s remaining pressure zones are supplied by PRVs. There must be adequate storage volume to meet customer demands in the zones served directly from reservoirs, as well as smaller zones served through PRVs from the higher level zones with reservoirs.

Table 4-1 | Storage Capacity Analysis

Scenario	Pressure Zone	Required Storage Volume (MG)					Existing Storage Available (MG)	Storage Deficit (MG)
		Operational	Equalization	Fire Flow	Emergency	Total		
2023	Zone X	0.05	0.03	0.54	0.13	0.76	0.75	0.69
	Zone 1	0.05	0.02	0.54	0.07	0.68		
	Zone 2	0.23	0.30	0.54	1.24	2.30	4	2.12
	Zone 3	0.23	0.16	0.54	0.67	1.60		
	Zone 4	0.23	0.09	0.54	0.36	1.21		
	Zone 5	0.23	0.05	0.54	0.19	1.00		
	<b>System</b>	<b>1.01</b>	<b>0.65</b>	<b>3.24</b>	<b>2.66</b>	<b>7.56</b>		
2030	Zone X	0.05	0.04	0.54	0.15	0.78	0.75	0.77
	Zone 1	0.05	0.03	0.54	0.12	0.75		
	Zone 2	0.23	0.31	0.54	1.29	2.37	4	2.46
	Zone 3	0.23	0.17	0.54	0.70	1.64		
	Zone 4	0.23	0.11	0.54	0.44	1.31		
	Zone 5	0.23	0.08	0.54	0.30	1.14		
	<b>System</b>	<b>1.01</b>	<b>0.74</b>	<b>3.24</b>	<b>3.00</b>	<b>7.99</b>		
2043	Zone X	0.05	0.05	0.54	0.18	0.82	0.75	0.96
	Zone 1	0.05	0.06	0.54	0.23	0.89		
	Zone 2	0.23	0.34	0.54	1.40	2.51	4	3.24
	Zone 3	0.23	0.19	0.54	0.76	1.71		
	Zone 4	0.23	0.16	0.54	0.62	1.55		
	Zone 5	0.23	0.14	0.54	0.56	1.47		
	<b>System</b>	<b>1.01</b>	<b>0.94</b>	<b>3.24</b>	<b>3.76</b>	<b>8.95</b>		
2050	Zone X	0.05	0.05	0.54	0.20	0.85	0.75	1.07
	Zone 1	0.05	0.08	0.54	0.30	0.97		
	Zone 2	0.23	0.36	0.54	1.47	2.59	4	3.69
	Zone 3	0.23	0.20	0.54	0.79	1.76		
	Zone 4	0.23	0.19	0.54	0.73	1.68		
	Zone 5	0.23	0.18	0.54	0.70	1.65		
	<b>System</b>	<b>1.01</b>	<b>1.05</b>	<b>3.24</b>	<b>4.20</b>	<b>9.50</b>		

### 4.3.2 Storage Capacity Findings

As shown in **Table 4-1**, the existing water distribution system is lacking in storage for the current 2023 scenario by approximately 2.81 million gallons, system wide. By the build-out scenario in 2050, the system has a storage deficit of about 4.75 million gallons.

The City identified three City-owned tax lots that could serve as potential reservoir sites: 24E13BD00101 (Site 2), 24E14DA00700 (Site 1A), and 24E14DB07300 (Site 1B). A summary of these sites and their potential uses is provided in **Table 4-2**.

Site 1A is located at a ground elevation of approximately 850 feet. On Site 1A, the City could construct a buried tank to serve Zone 5 at its current HGL. They also have the option of constructing a tank that would raise the HGL of Zone 5. For the purposes of this WSMP, a reservoir with a floor elevation of 802 feet and a volume of 1.7 million gallons was modeled at this site to serve Zone 5 at its current HGL. A reservoir at this site would require approximately 1,200 feet of supply piping and 2,000 feet of outlet piping.

With a ground elevation of approximately 900 feet, Site 1B is too high to serve Zone 5 and too low to serve Zone 3. This site could be utilized to provide storage for Zone 4. This would require approximately 3,000 feet of transmission main. Use of this site would be limited by its small size.

Site 2 is the largest by area and has the widest range of ground elevations. One potential use for this site is to construct an elevated storage tank to supply Zone 3. The site could also be used to supply storage to Zone 4 by raising the zone's HGL, which would allow it to be tied directly into the PWB transmission main. For this WSMP, a reservoir was modeled on this site to supply Zone 4, with a floor elevation of 882 feet and a volume of 1.7 million gallons. This reservoir would require about 300 feet of supply piping and 3,200 feet of transmission main.

In addition to the undeveloped potential reservoir sites, the Sandercock Lane site could be utilized to increase available storage for Zones X and 1. An additional reservoir could be constructed on the site or the existing reservoir removed and replaced with a larger reservoir.

Table 4-2 | Potential Reservoir Sites

Tax Lot ID	Site Name	Ground Elevation Range (feet)	Potential Uses for Site
24E13BD00101	Site 2	890 to 970	<ul style="list-style-type: none"> <li>Construct an elevated reservoir to provide storage for Zone 3</li> <li>Raise the HGL of Zone 4 by providing storage from this site; Zone 4 could then be directly tied in to the PWB transmission main</li> <li>Construct a ground-level reservoir and pump station to supply the system where needed</li> </ul>
24E14DA00700	Site 1A	840 to 860	<ul style="list-style-type: none"> <li>Construct a buried reservoir to serve Zone 5</li> <li>Raise the HGL of Zone 5 by providing storage from this site</li> <li>Construct a ground-level reservoir and pump station to supply the system where needed</li> </ul>
24E14DB07300	Site 1B	895 to 905	<ul style="list-style-type: none"> <li>Construct a reservoir to serve Zone 4</li> </ul>

## 4.4 Pumping Capacity Analysis

### 4.4.1 Existing Pumping Facilities

The existing distribution system includes four pump stations. The Alder Creek WTP, Terra Fern, and Hudson Pump Stations pump directly to the Terra Fern Road, Sandercock Lane, and Revenue Avenue Reservoirs, respectively. Aside from a handful of customers served above Zone X from the Terra Fern PS discharge piping, the Transfer PS is the only pump station that pumps directly into the distribution system piping.

Pressure zones with the benefit of gravity storage are also referred to as open zones. All six of the City’s pressure zones are open. Operational and fire storage supplied by open zone reservoirs make it unnecessary to plan for fire flow or peak hour capacity from pump stations or other supplies, assuming adequate storage is available. Open zone pump stations must have sufficient firm capacity to meet the MDD for all customers in the zone.

### 4.4.2 Pumping Capacity Findings

The pumping capacity analysis was completed for the entire system, rather than by pressure zone, and accounted the capacities of the Terra Fern and Transfer Pump Stations. **Table 4-3** summarizes the analysis of the City’s existing and future pumping requirements. The existing pump stations provide adequate capacity to supply existing and future demands.

Table 4-3 | Pumping Capacity Analysis

Scenario	Existing Total Capacity (MGD)	Required Capacity, MDD (MGD)	Pumping Deficit (MGD)
2023	4.68	2.59	-2.09
2030	4.68	2.95	-1.73
2043	4.68	3.75	-0.93
2050	4.68	4.21	-0.47

Though the system’s existing pumping capacity is sufficient to meet existing and future demands, adequate fire flow is not being provided for the system above the Sandercock Lane Reservoir. In order to meet MDD plus fire flow demands, it is recommended that upgrades be completed at the Terra Fern PS. A 1,000-gpm fire flow pump should be added to supply current and future demands.

In addition to upgrades at the Terra Fern PS, a pump station should be constructed at the Vista Loop site to provide redundancy to the system. Currently, if the Alder Creek WTP supply is unavailable, Brownell Springs may not supply sufficient capacity to customers above Zone 2 that the Transfer PS cannot serve. A Vista Loop PS will be able to supply Zones X and 1 and customers above Sandercock Lane Reservoir in case of an emergency. The Vista Loop PS should be sized to provide 400 gpm, which will meet Zone X plus Zone 1 demands. It should provide 310 feet of head so that it can pump up to Sandercock Lane Reservoir, which is the highest point in the system.

## 4.5 Distribution System Analysis

### 4.5.1 Hydraulic Model

A hydraulic model was developed using the City’s GIS data. This included utilizing shapefiles provided by the City. **Table 4-4** presents the shapefiles used to create the hydraulic model.

Table 4-4 | City GIS Data

File Name	Model Element	Notes
Water_Mainlines(1).shx	Pipes	Determined pipe length, diameter, material, and pressure zone from shapefile
PRV_Valves(1).shx	Valves	Determined PRV location and size from shapefile

In addition to the model build, the meter shapefile and tax lot shapefile were utilized to allocate Demands to the system. The Demand Allocation used the 2020 consumption data to allocate the demand based on meter type and meter size. **Table 4-5** below presents the demand allocation by meter type and meter size.

Table 4-5 | Demand Allocation

Land Use	Meter Size	Number of Meters	Total Demand (gpm)	Demand per Meter (gpm)
Single Family	¾ and 1-inch	3,623	435.37	0.12
Single Family	2-inch	4	2.17	0.54
Multi Family	¾, 1, 1½, 2, and 4-inch	47	72.85	1.55
Commercial/Industrial	¾, 1, 1½, and 2-inch	253	136.76	0.54

<sup>1</sup> Meter data was obtained from December 2020 billing data provided by the City.

Once the demand was spatially allocated per the known meter locations, the demand could be scaled to simulate average day demand, maximum day demand, and peak hour demand. **Table 4-6** below presents the demands within the system scaled to meet the required simulation conditions.

Table 4-6 | Demand Scenarios

Scenario	System-Wide Water Demand (MGD)		
	ADD	MDD	PHD
Existing (2023)	1.33	2.59	4.26
Near-Term (2030)	1.50	2.95	4.83
Build-Out (2050)	2.10	4.21	6.85

## 4.5.2 Model Calibration

### 4.5.2.1 Fire Flow Testing

Conсор provided the City with the proposed locations for hydrant testing to be conducted for the purpose of hydraulic model verification and calibration. Some of the test locations provided static pressure to verify the hydraulic grade line of specific areas of the system. At the majority of locations, fire hydrants were operated to stress the system to calibrate the model. The data obtained when the system is stressed can be used to determine required changes to the boundary conditions and pipe roughness factors within the hydraulic model. The City provided fire flow test results conducted over the course of three days. **Table 4-7** below presents an overview of the fire flow test location and purpose of the test. **Figure 4-2**, **Figure 4-3**, and **Figure 4-4** provide maps of the fire flow test locations.

Table 4-7 | Fire Flow Test Location Overview

Date of Test	Test #	Pressure Zone	Approximate Test Location	Time of Test	
01/20/2022	1	X	Mt Hood Hwy & SE Wagoneer Loop	10:25	
	2	X	Mt Hood Hwy & SE Rainbow Hill Rd	10:35	
	3	X	SE Vista Loop Dr & SE 412th Ave	10:51	
	4	1	Antler Ave & Dubarko Dr	11:00	
	5a	2	Langensand Rd & McCormick Dr	11:31	
	6a	2	Pacific Ave & Dubarko Dr	13:55	
	7a	2	Cork Ave & Cascadia Dr	14:13	
	8a	2	Revenue Ave & Idleman St	15:00	
	9	3	Sandy Heights St & Nettie Connett Dr	15:31	
	10a	3	37695 HWY 26	15:52	
	14	5	36535 Industrial Way	16:10	
	15	5	Skogan Rd & Aubin St	16:26	
	01/24/2022	11	4	Coralburst St & Jewelberry Ave	14:05
		12	4	Jefferson Ave & Olson St	14:21
13		5	Kelso Rd & Shalimar Dr	14:38	
16		PWB	SE Bluff Rd & SE Hauglum Rd	15:06	
17		PWB	SE Bluff Rd & SE Hudson Rd	15:23	
18		PWB	39175 SE Hudson Rd	15:32	
01/25/2022	5b	2	Langensand Rd & McCormick Dr	14:13	
	6b	2	Pacific Ave & Dubarko Dr	15:02	
	7b	2	Cork Ave & Cascadia Dr	15:37	
	8b	2	Revenue Ave & Idleman St	16:10	
	10b	3	37695 HWY 26	16:37	

#### 4.5.2.2 Calibration Results

In addition to providing the results of the hydrant tests, the City provided the boundary conditions of water system facilities at the time of each test. The boundary conditions were used to calculate the demand observed during each test. The boundary conditions were also input into the model for each hydrant test to accurately simulate the conditions of the hydrant test. **Table 4-8** presents the boundary conditions for each hydrant test.

Table 4-8 | Fire Flow Test Boundary Conditions

Date of Test	Test #	Reservoir Water Level (feet)				
		Terra Fern Road	Sandercoc Lane	Vista Loop	Revenue Avenue	
01/20/2022	1	8.8	19.6	19.9	12.49	
	2	8.8	19.7	20	12.07	
	3	8.7	19.7	20.1	11.64	
	4	8.6	19.7	20.3	11.2	
	5a	8.6	19.6	20.5	10.34	
	6a	14	20.1	21.5	6.56	
	7a	17.5	20.1	21.7	5.91	
	8a	22.7	20.4	22	4.5	
	9	26.1	20.5	21.8	4.5	
	10a	29.4	20.6	21.7	4.5	
	14	29.4	20.6	21.6	4.5	
	15	30.1	20.6	21.5	4.5	
	01/24/2022	11	28.4	27.7	21.6	5.58
		12	28.4	27.8	21.7	5.04
		13	28.3	27.9	21.8	4.61
16		28.2	29.9	22	3.85	
17		28.2	27.9	21.9	3.85	
18		28.2	28	21.8	3.85	
01/25/2022	5b	29.3	27.8	21.7	5.37	
	6b	29.2	28	21.6	3.85	
	7b	29.1	28.2	21.4	3.85	
	8b	29	28.2	21.1	3.85	
	10b	29	28.2	21.1	3.85	

A fire flow calibration scenario was set up within the model and each of the hydrant test locations was simulated. **Table 4-9** provides the field flow data compared to the flow data input into the model. **Table 4-10** provides a comparison of the static pressures and pressure drops observed at each hydrant test.



Table 4-9 | Fire Flow Test Flow Comparison

Date of Test	Test #	Flow Hydrant			Notes
		Flow (gpm)	Model Flow (gpm)	Difference (gpm)	
1/20/2022	1	---	---	---	
	2	---	---	---	
	3	---	---	---	
	4	740	740.68	0.68	Difference due to demand on Node
	5a	812.5	813.3	0.8	Difference due to demand on Node
	6a	700	701.02	1.02	Difference due to demand on Node
	7a	650	650.8	0.8	Difference due to demand on Node
	8a	937.5	937.5	0	
	9	962	962.34	0.34	Difference due to demand on Node
	10a	914	916.28	2.28	Difference due to demand on Node
	14	760	762.36	2.36	Difference due to demand on Node
15	990	990.46	0.46	Difference due to demand on Node	
1/24/2022	11	760	760	0	
	12	974	974.71	0.71	Difference due to demand on Node
	13	500	500	0	City indicated "Low Flow" for this hydrant test
	16	---	---	---	
	17	---	---	---	
	18	---	---	---	
1/25/2022	5b	1940	1940.77	0.77	Difference due to demand on Node
		740	740.66	0.66	Difference due to demand on Node
	6b	1680	1680.99	0.99	Difference due to demand on Node
		675	675.44	0.44	Difference due to demand on Node
	7b	1880	1880.77	0.77	Difference due to demand on Node
	8b	2380	2380	0	
	10b	2380	2382.21	2.21	Difference due to demand on Node

Table 4-10 | Fire Flow Test Pressure Comparison

Date of Test	Test #	Pressure Hydrant					
		Static Pressure (psi)	Model Static Pressure (psi)	Difference (psi)	Pressure Drop (psi)	Model Pressure Drop (psi)	Difference (psi)
1/20/2022	1	110	110.52	0.52	---	---	---
	2	52	53.81	1.81	---	---	---
	3	105	104.27	-0.73	---	---	---
	4	60	60.65	0.65	3	5.83	2.83
	5a	57	57.37	0.37	0	1.52	1.52
	6a	62	62.73	0.73	0	1.78	1.78
	7a	85	83.39	-1.61	5	7.12	2.12
	8a	88	89.01	1.01	2	1.39	-0.61
	9	93	88.48	-4.52	7	4.13	-2.87
	10a	88	90.83	2.83	4	1.2	-2.8
	14	77	75.58	-1.42	17	9.77	-7.23
	15	70	71.13	1.13	22	17.15	-4.85
1/24/2022	11	67	67.11	0.11	13	7.65	-5.35
	12	80	84.44	4.44	11	8.94	-2.06
	13	59	53.95	-5.05	39	41.35	2.35
	16	73	78.53	5.53	---	---	---
	17	93	97.56	4.56	---	---	---
	18	29	24.69	-4.31	---	---	---
1/25/2022	5b	56	57.9	1.9	8	11.37	3.37
	6b	59	61.96	2.96	5	12.58	7.58
	7b	81	82.45	1.45	22	40.27	18.27
	8b	83	84.59	1.59	7	6.64	-0.36
	10b	87	90.83	3.83	3	4.17	1.17

#### 4.5.2.2.1 Test 1

The purpose of this test was to confirm the HGL at a location in Zone X downstream of Brownell Springs. In order to satisfy the HGL of this test, the HGL of Brownell Springs was adjusted to        feet.

#### 4.5.2.2.2 Test 2

The purpose of this test was to confirm the HGL at a location in Zone X upstream of Sandercock Reservoir. In order to satisfy the HGL of this test, additional losses were required in the pipeline upstream of Sandercock Reservoir. It was determined that the pipeline into Sandercock Reservoir was incorrect. Based on field investigations, the diameter of the pipeline into Sandercock Reservoir was reduced to 8-inches. Even with this change, the losses observed in the field did not match the losses in the model. It was determined that C-factor adjustments and/or adding minor losses in the model would not provide the required losses in the pipeline to simulate the additional losses observed in the field. Therefore, a pressure sustaining valve was added to the model to set the appropriate HGL in the area upstream of Sandercock Reservoir.

#### 4.5.2.2.3 Test 3

The purpose of this test was to confirm the HGL at a location in Zone X upstream of Vista Loop Reservoir. In order to satisfy the HGL of this test, additional losses were required in the pipeline upstream of Vista Loop Reservoir. The losses observed in the field did not match the losses in the model. It was determined that C-factor adjustments and/or adding minor losses in the model would not provide the required losses in the pipeline to simulate the additional losses observed in the field. Therefore, a pressure sustaining valve was added to the model to set the appropriate HGL in the area upstream of Vista Loop Reservoir.

#### 4.5.2.2.4 Test 4

The purpose of this test was to stress the system in Zone 1. Based on the observed static pressure and the observed pressure drops, the following changes were made to the model:

- Vista Loop & HWY 26 PRV
  - Lowered the 3" PRV setpoint from 60 psi to 53 psi
  - Lowered the 8" PRV setpoint from 55 psi to 48 psi

#### 4.5.2.2.5 Tests 5 – 8

The purpose of these tests was to stress the system in Zone 2. Tests 5 through 8 had to be retested due to insufficient pressure drops observed in the field. Based on the observed static pressure and the observed pressure drops, the following changes were made to the model:

- Raised the concrete Vista Loop Reservoir floor elevation from 1,114 feet to 1,136 feet

- Raised the steel Vista Loop Reservoir floor elevation from 1,118 feet to 1,136 feet
- Adjusted elevation of pressure fire hydrants 5, 6, and 7 to match Digital Terrain Model

Even with these changes, there were still locations where the model could not simulate field conditions. Test 6B observed a higher pressure drop in the model than what was observed in the field at the second observation hydrant. As the pressure drop in the model was higher than what was observed in the field, the C-factor adjustment required would smooth the pipe (i.e. increase the C-factor) and would make the other tests and observation hydrants out of range. In addition, the C-factor for specific pipe types would be outside of acceptable ranges (i.e. too high). In addition, to test 6, the two observation hydrants for test 7B observed a higher pressure drop in the model than what was observed in the field. This area is feed by a single pipeline. The only plausible explanation for the pressure drop observed in the field is a second feed to this area (i.e. there is a unknown pipeline supplying water to this area that completes a loop). Further field investigations would be required to rectify this error.

#### 4.5.2.2.6 Tests 9 – 10

The purpose of these tests was to stress the system in Zone 3. Tests 10 had to be retested due to insufficient pressure drops observed in the field. Based on the observed static pressure and the observed pressure drops, the following changes were made to the model:

- Dubarko & Tupper PRV
  - Raised the 2.5" PRV setpoint from 80 psi to 81 psi
  - Lowered the 8" PRV setpoint from 80 psi to 76 psi
- Sandy Heights & Beebee PRV
  - Lowered the 1.5" PRV setpoint from 57 psi to 55 psi
  - Lowered the 6" PRV setpoint from 57 psi to 50 psi
- Strawbridge & Tupper PRV
  - Kept 1.5" PRV setpoint at 80 psi
  - Lowered the 6" PRV setpoint from 85 psi to 83 psi
- 38871 Proctor PRV
  - Lowered the 3" PRV setpoint from 55 psi to 53 psi
  - Lowered the 10" PRV setpoint from 55 psi to 50 psi
- Adjusted elevation of pressure fire hydrant to match Digital Terrain Model

#### 4.5.2.2.7 Tests 11 – 13

The purpose of these tests was to stress the system in Zone 4. Based on the observed static pressure and the observed pressure drops, the following changes were made to the model:

- 37151 HWY 26 PRV
  - Lowered the 4" PRV setpoint from 65 psi to 58 psi
  - Lowered the 10" PRV setpoint from 58 psi to 55 psi
- Bluff, north of high school, PRV
  - Lowered the 2" PRV setpoint from 55 psi to 43 psi
  - Lowered the 6" PRV setpoint from 55 psi to 37 psi
- Adjusted elevation of pressure fire hydrant to match Digital Terrain Model

Test 11 had more pressure drop observed in the field than what was simulated in the model. However, further C-factor adjustments would adversely effect other hydrant tests. Therefore the C-factors were not adjusted further to increase losses at this test. Test 13 had a static pressure that was different from the field, but further PRV Setpoint adjustments were not completed as then Test 12 static pressure would then be out of range.

#### 4.5.2.2.8 Tests 14 – 15

The purpose of these tests was to stress the system in Zone 5. Based on the observed static pressure and the observed pressure drops, the following changes were made to the model:

- Dubarko & Ruben PRV
  - Raised the 3" PRV setpoint from 65 psi to 75 psi
  - Raised the 10" PRV setpoint from 65 psi to 70 psi
- 37000 HWY 26 PRV
  - Kept 3" PRV setpoint at 61 psi
  - Raised the 10" PRV setpoint from 61 psi to 65 psi

Tests 14 and 15 had less pressure drop observed in the field than what was simulated in the model. However, further C-factor adjustments would adversely affect other hydrant tests. Therefore, the C-factors were not adjusted further to increase losses at these tests.

#### 4.5.2.2.9 Tests 16 – 18

The purpose of these test was to confirm the HGL along the Portland Water Bureau upstream of Revenue Avenue Reservoir. Test 16 and 17 had static pressures that were ~ 5 psi too high while Test 18 had a static pressure that was ~ 5 psi too low. No model changes were made due to these tests.

### 4.5.3 Distribution System Analysis

The distribution system was analyzed using the demands shown in **Table 4-6** above. Table 4-11 presents the scenarios created and boundary conditions:

**Table 4-11 | Distribution System Scenarios**

Scenario	Demand (MGD)	Facilities	Notes
Existing ADD	1.33	Existing system	Placeholder scenario
Existing MDD	2.59	Existing system	Placeholder scenario
Existing MDD+FF	2.59	Existing system	Analyzed available fire flow
Existing PHD	4.26	Existing system	Analyzed pressure and velocity
Nearterm ADD	1.5	Existing system with CIP improvements	Placeholder scenario
Nearterm MDD	2.95	Existing system with CIP improvements	Placeholder scenario
Nearterm MDD+FF	2.95	Existing system with CIP improvements	Analyzed available fire flow in 2030
Nearterm PHD	4.83	Existing system with CIP improvements	Analyzed pressure and velocity in 2030
Buildout ADD	2.1	Existing system with CIP improvements	Placeholder scenario
Buildout MDD	4.21	Existing system with CIP improvements	Placeholder scenario
Buildout MDD+FF	4.21	Existing system with CIP improvements	Analyzed available fire flow in 2050
Buildout PHD	6.85	Existing system with CIP improvements	Analyzed pressure and velocity in 2050

The following list of figures presents the results of distribution system analysis:

- **Figure 4-5** – Existing System Peak Hour Demand – Pressures and Velocities
- **Figure 4-6** – Existing System Maximum Day Demand – Available Fire Flow
- **Figure 4-7** – Nearterm System Peak Hour Demand – Pressures and Velocities
- **Figure 4-8** – Nearterm System Maximum Day Demand – Available Fire Flow
- **Figure 4-9** – Buildout System Peak Hour Demand – Pressures and Velocities

- **Figure 4-10** – Buildout System Maximum Day Demand – Available Fire Flow

#### *4.5.3.1 Peak Hour Demand*

The Peak Hour Demand was analyzed for Existing, Nearterm and Buildout Scenarios. Based on the analysis, there were no service connections that were below 30 psi for each of these scenarios. The Nearterm and Buildout scenarios were retested using floating storage at the sites identified by the City. With appropriate pipeline transmission from the floating storage sites, the service connections all maintained higher than 30 psi. There are some locations of low pressures observed in each of these scenarios, which occur on the Portland Water Bureau Transmission pipeline and near existing storage facilities. No improvements are recommended at this time to maintain 30 psi under peak hour conditions for each of the scenarios tested: Existing, Nearterm and Buildout.

#### *4.5.3.2 Fire Flow Availability*

The available fire flow was analyzed for Existing, Nearterm and Buildout Scenarios. The analysis focused on Demand Nodes, to simulate the conditions observed at service connections. Based on the analysis, there were multiple locations that failed Fire Flow under Existing Conditions. These locations also failed under Near Term and Buildout Conditions. Each of the failed locations were reviewed to determine if a hydrant was nearby. Where hydrants were not in the vicinity of the failed node, no improvements are recommended. Improvements were identified to provide adequate fire flow to locations where a hydrant was near the failure.

#### 4.5.3.2.1 Distribution Project 1

This project consists of improving the pipelines on Bluff Road, Burgs Land, Kelso Road, and SE Baumback Avenue. There is also a hydrant in the GIS on Marcy Street, which is being reviewed by the City to determine if improvements are required to serve. For costing purposes, it is assumed that Fire Flow service is required on Marcy Street. **Figure 4-11** shows the location of Project 1.

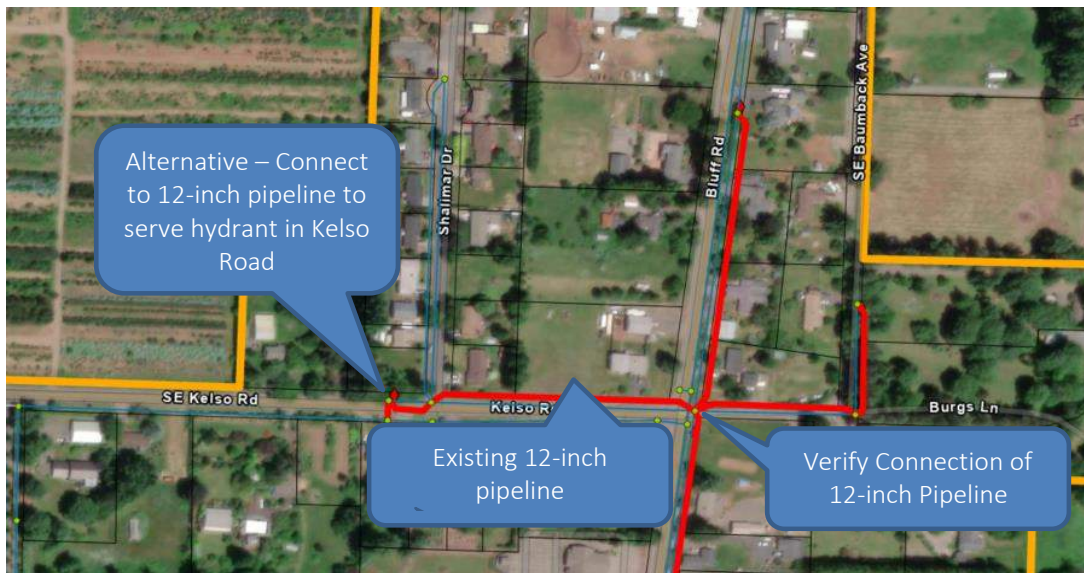
**Figure 4-11 | Distribution Project 1**





Based on comments from the City, there is already a 12-inch Pipeline in Kelso Road. There is a possibility that the hydrant in Kelso Road could be connected to this 12-inch line in lieu of a new pipeline in Kelso Road. However, as this pipeline is not in the GIS, it is unclear if it connects to the Portland Water Bureau Pipeline in Bluff Road or the 6-inch Zone 4 pipeline in Bluff Road. If it connects to the 24-inch Portland Water Bureau Pipeline, then it cannot be connected directly to Zone 4 Pipelines due to blending concerns. If the pipeline connects to the 6-inch pipeline in Bluff Road, then the services and hydrant on Kelso Road and the pipeline on Shalimar Drive can be connected directly to the 12-inch pipeline. For cost purposes, it is assumed that a new 8-inch pipeline will be required in Kelso Road. **Figure 4-12** shows the alternatives to Kelso Road Improvements.

**Figure 4-12 | Kelso Road**



#### 4.5.3.2.2 Distribution Project 2

This project consists of improving the pipelines on SE Ten Eyck Road and Hood Street to meet required fireflow requirements. A new 8-inch Pipeline is required to provide the required fire flow to the hydrant on Hood Street. See **Figure 4-13** for the location of Distribution Project 2.

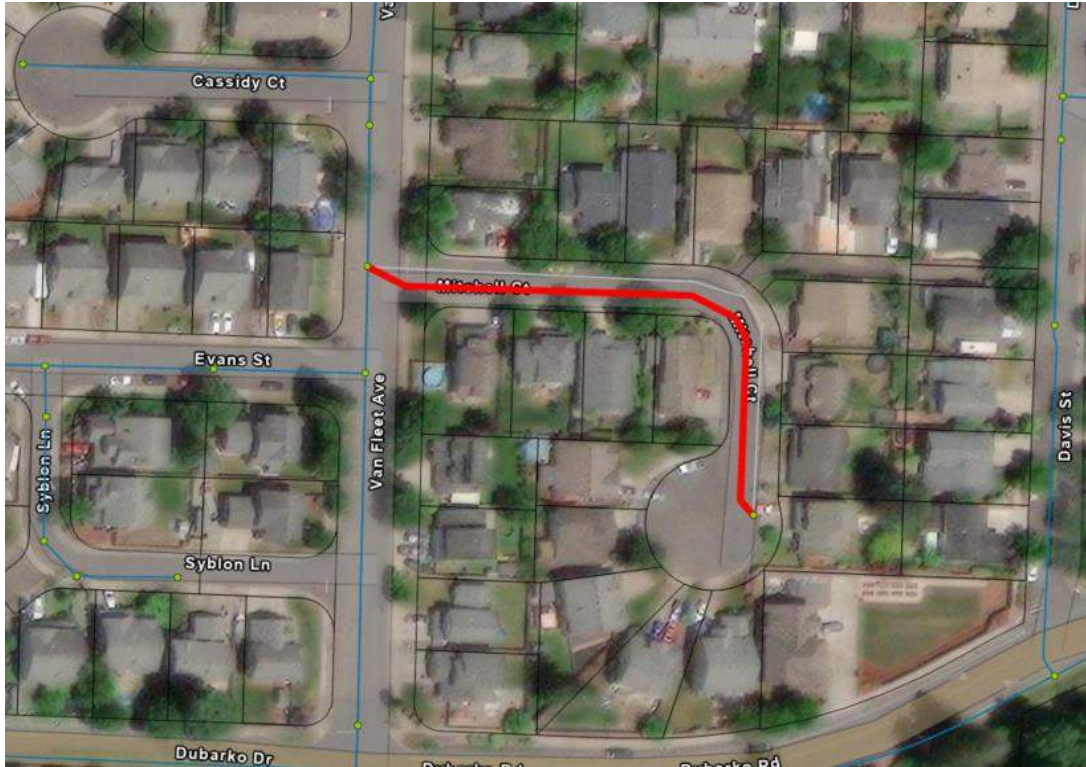
**Figure 4-13 | Distribution Project 2**



#### 4.5.3.2.3 Distribution Project 3

This project consists of improving the pipelines on Mitchell Court to meet required fireflow requirements. A new 8-inch Pipeline is required to provide the required fire flow to the hydrant on Mitchell Court. See **Figure 4-14** for the location of Distribution Project 3

**Figure 4-14 | Distribution Project 3**



#### 4.5.3.2.4 Distribution Project 4

This project consists of improving the pipelines on Seaman Avenue to meet required fireflow requirements. A new 12-inch Pipeline is required to provide the required fire flow to the hydrant on Hood Street. Alternatively, a new 8-inch pipeline may be installed in the walkway between Seaman Avenue and Miller Road. It is unknown if it is possible to install a pipeline at this location without a site investigation. See **Figure 4-15** for the location of Distribution Project 4.

**Figure 4-15 | Distribution Project 4**



#### 4.5.3.2.5 Area North of Mt Hood Highway near Vista Loop Drive

This Area north of Mt. Hood Highway near Vista Loop Drive has multiple hydrants and pipelines from both Zone X and Zone 2. It is unknown how these hydrants are connected to these pipelines. If the hydrants are connected to the Zone X pipeline, then the hydrants would not meet fireflow requirements. The 6-inch and 4-inch zone X pipelines would need to be upsized to 12-inches. It is suggested that flow testing be conducted in this area to determine the available fireflow at these hydrants. See **Figure 4-16** for the location of the hydrants in question.

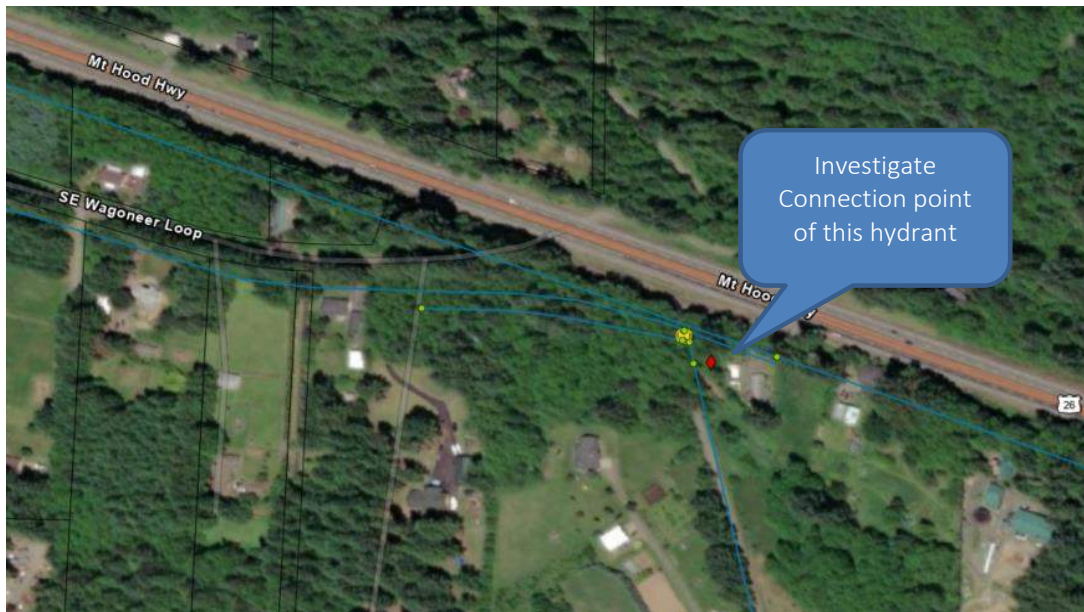
**Figure 4-16 | Area North of Mt Hood Highway near Vista Loop Drive**



#### 4.5.3.2.6 Area North of Mt Hood Highway near Wagoneer Loop

This near Mt Hood Highway and Wagoneer Loop has a hydrant where the connection is unknown. If the hydrant is connected to the pipeline to the West (which connects to Brownell Springs Source), it should be reconnected to the 16-inch pipeline located to the north (parallel to Mt. Hood Highway). A site investigation should be conducted to determine where the hydrant connects to the distribution system. See **Figure 4-17** for the location of the hydrant in question.

**Figure 4-17 | Area North of Mt Hood Highway near Wagoneer Loop**



## 4.6 Summary

The current boundaries of the City's six pressure zones allow the water system to provide water to customers within the acceptable range of 30 psi, during peak hour conditions, and 80 psi, with the use of individual PRVs, as needed. Adjustments of these boundaries are recommended to accommodate future growth within city limits and the UGB.

The storage capacity analysis concluded that the City currently has a storage deficit of 2.81 million gallons, which will increase to 4.75 million gallons at build-out conditions in 2050. It is recommended that the City construct an additional 5.0 million gallons of storage to overcome this deficiency.

The City's current pumping capacity was determined to be sufficient to meet current and future demands. Though the construction of an additional pump station is recommended, it is not necessary to meet pumping capacity requirements.

Four areas within the existing distribution system exhibit pressures below 20 psi under MDD plus fire flow conditions. Piping improvements are recommended to mitigate these deficiencies. Two additional areas require further investigation to determine if deficiencies exist.

- Distribution Project 1 – New Pipelines on Bluff Road, Burgs Land, Kelso Road, Marcy Street and SE Baumback Avenue.
  - Alternative to Kelso Road – Connect hydrant to the existing 12-inch pipeline in Kelso Road if 12-inch pipeline is a Zone 4 pipeline
  - Alternative to Marcy Road – Determine if the hydrant in Marcy Road is required to provide fireflow
- Distribution Project 2 – New Pipelines on SE Ten Eyck Road and Hood Street
- Distribution Project 3 – New Pipeline on Mitchell Court
- Distribution Project 4 – New Pipeline on Seaman Avenue
  - Alternative – New Pipeline in the walkway between Seaman Avenue and Miller Road
- Area north of Mt. Hood Highway near Vista Loop Drive – Conduct fireflow test for the hydrants in this area
- Area Near Mt Hood Highway and Wagoneer Loop – Investigate the connection of the hydrant to the distribution system

# Chapter 5





## Section 5

# Water Supply Analysis

## 5.1 Introduction

This section presents an assessment of the City of Sandy's (City) current water supply system, a summary of existing water rights and analysis of future supply development needs. Due to the age and condition of the City's surface water and springs supply source, and the City of Portland Water Bureau's (PWB) planned modifications to the Bull Run surface water supply, the City needs to make major supply improvement decisions to meet projected future water demands presented in **Section 2**.

## 5.2 Supply Source Evaluation

### 5.2.1 Water Rights

The City of Sandy holds water rights associated with three water supply sources: three certificated water rights for Brownell Springs, a certificated water right for Alder Creek, and an undeveloped permit for the Salmon River. **Table 5-1** summarizes these water rights.

**Table 5-1 City of Sandy Municipal Water Rights**

Source	Permit	Certificate	Priority Date	Authorized Rate (MGD)	Authorized Date of Completion	Notes
Brownell Springs	S-6597	5427	7/11/1924	0.13	--	Limited to 0.13 MGD during summer season
	S-21879	26132	11/10/1952	0.45	--	
	S-35394	91156	7/23/1970	1.19	--	
Alder Creek		93884	11/11/1971	2.6	--	
Salmon River		--	4/28/1983	16.1	10/1/2069	Limited to ~10.5 MGD during summer season

A further detailed discussion of the City's water rights is included in **Appendix B**, *Groundwater Supply Evaluation for City of Sandy Water Master Plan Update (GSI Water Solutions, July 2022)*.

## 5.2.2 Source of Supply – Capacity and Condition

### 5.2.2.1 Brownell Springs

The City's Brownell Springs source provides a reliable 0.3 million gallons per day (MGD) of supply year-round, but is limited by interference with senior water rights, resulting in frequent notification by the Water master to reduce flows to 0.13 MGD during the summer. As a result, the reliable peak season capacity of the springs source is 0.13 MGD.

Brownell Springs remains a low-cost, low-maintenance gravity source of supply feeding the system with the only treatment required being the addition of sodium hypochlorite (chlorine) to serve as residual disinfectant in the distribution system.

The primary deficiencies at the Brownell Springs site involve access and maintenance of equipment in a remote location. Improved vehicular access to the site and control of vegetation for operator access to the spring boxes and reservoir are the highest priority improvements.

### 5.2.2.2 Alder Creek

The City's Alder Creek source was the primary source of supply to the City until approximately 2014 when the City began purchasing wholesale water supply from the PWB due to anticipated capacity limits to meet peak summer demands. The existing constructed infrastructure provides a total supply capacity of 2.6 MGD, but the condition of several components of the supply and treatment system reduces the current operational capacity of the Alder Creek source to approximately 1.4 MGD. In addition, both scenarios lack redundancy to provide firm capacity as all available filter trains are needed to provide the capacities stated. For the purposes of this analysis, an existing capacity of 1.4 MGD is assumed, with the understanding that incremental operation and deferred maintenance improvements to existing facilities could increase this capacity back to 2.6 MGD, with further improvements to increase the reliability and redundancy of this source phased over time. A list of the major deficiencies limited the reliable capacity is presented below.

#### *Raw Water Intake and Pump Station*

Based on discussion with City staff, the intake structure, which is almost entirely unchanged from the original construction, is experiencing many of the access and age-related issues that are typical of this type of stream intake, including:

- Challenging access during high flow and wet weather season
- Both the screen frame and screens are showing signs of deterioration
- Diversion dam wooden beams are failing
- Aging control valve operators
- The site of the stream intake is silted in with deposits and debris

In addition, there is no stream gage on Alder Creek to track seasonal and annual variation in creek flows. Stream gage data would be beneficial in validating the reliable supply from Alder Creek, as the anticipated reliable capacity from the Alder Creek source is currently based on anecdotal information from operation of the Alder Creek WTP at full capacity over 15 years ago. A record of seasonal low flow rates over a longer period of time will also help inform the reliability of this supply under future conditions due to the impacts of climate change.

The Raw Water Pump Station, which is required to deliver the full water right capacity of 2.6 MGD to the Alder Creek WTP, lacks firm capacity to supply 2.6 MGD, as both of the pumps must operate to convey the full capacity. In addition, the pump station electrical and mechanical equipment is reaching the end of its service life. The site also needs to be redesigned to allow easier service of pumps.

### *Alder Creek WTP*

The Alder Creek WTP has fallen into disrepair over the past 15 years, as the City has focused on the investments necessary to transmit the wholesale water supply from the City of Portland to the City. As a result, the WTP is currently operating at a reduced capacity with only one train in operation and without prudent redundant equipment. Redundancy to the water system is currently provided by the Portland Water Bureau connection. However use of this connection for redundancy must include facilities to treat for cryptosporidium after September 30, 2027. In order to return the WTP to an operational capacity of 2.6 MGD, a number of deficiencies must be addressed. The initial list of upgrades to address existing deficiencies includes:

- Replace PLC controller to allow for operation of Filter #1 and #2. Once Filters #1 and #2 are operational, further upgrades, including replacement of control valving may be required.
- Repair Filter #3 pneumatic control valves. Currently, operation of the filter valving requires manual control by an on-site operator.
- Full filter media replacement and package treatment unit assessment for all three packaged filter units. The condition of the structure of the packaged water treatment units is unknown and requires a thorough investigation with the filter media removed. Once Filters #1 and #2 are operational and high priority improvements have addressed Filter #3 to allow for automatic operation, the City should proceed with a thorough assessment of the condition of each filter unit to determine if repair or replacement is the best course of action.
- Upgrade the chemical feed systems to include:
  - Automated control
  - Replacement of containment systems
  - Re-configuration of storage and feed pumps to fully utilize stored chemical volumes
- Upgrade standby power systems to include an automatic transfer switch

- Evaluation and replacement of supervisory control and data acquisition (SCADA) communication system to allow for reliable remote monitoring and operation of the Alder Creek WTP

The findings of the investigation of the filter units may result in a determination that rehabilitation and upgrade of the existing facilities is not cost effective. If this is the case, the City should complete the minimum improvement required to maintain effective operation at 2.6 MGD and begin planning for full replacement of the Alder Creek WTP.

### *PWB Wholesale Supply*

In 2008, the City signed a 20-year wholesale supply agreement with the PWB. Over the next several years, the City completed major infrastructure improvement projects to transmit this wholesale supply to the City distribution system. These improvements included 4 major components:

- *Hudson Road Intertie and Pump Station:* The intertie at Hudson Road provides a metered connection to the City of Portland’s water supply conduits which deliver chlorinated water from the Bull Run Watershed to terminal reservoirs at Powell Butte and Kelly Butte. The City’s Pump Station boosts water from the intertie into a dedicated transmission main that extends from Hudson Road to the Revenue Reservoir.
- *Transmission Main:* An 18/24-inch diameter transmission main transmits the boosted supply from the Hudson Road Intertie to the Revenue Reservoir.
- *Revenue Reservoir:* The 1.0 MG reservoir is the terminal reservoir for the City’s PWB wholesale supply and is where supply from PWB and the Alder Creek WTP is blended before being transmitted to customers in the distribution system to minimize the aesthetic impact of highly chlorinated PWB water.
- *Transfer Pump Station:* The Transfer Pump Station boosts the blended supply from the Revenue Reservoir into Pressure Zone 2 and the Vista Loop Road Reservoirs.
- *Service Area:* PWB supply cannot be transmitted to Zones 1 and X (above the Vista Loop Reservoirs).

The PWB is currently in the process of completing a major improvement to the Bull Run water supply, as required by the State of Oregon Health Authority – Drinking Water Services (OHA-DWS). In order to comply with the Long-Term 2 Enhanced Surface Water Treatment Rule, the PWB must begin filtration of the Bull Run supply by September 30, 2027, as documented in a Bilateral Compliance Agreement.

The result of these improvements is that the City’s Hudson Road Intertie will be located on a connection to the PWB conduits that is transmitting raw water (un-filtered and un-disinfected) to the new PWB filtration plant, currently under construction. The City of Sandy also has a bilateral compliance agreement with the OHA-DWS, requiring the City to address this deficiency by either relocating the point of wholesale supply to the PWB filtration plant or treating the wholesale water supply before transmitting it to the City’s distribution system.

The existing wholesale water supply contract expires in 2028. The City is currently negotiating a new wholesale water supply contract with PWB. The terms of this agreement and the anticipated cost of wholesale water supply should be considered as the City prioritizes investment in existing and future water supply sources.

The wholesale supply connection provides for a current capacity of approximately 3.1 MGD, limited by the firm capacity of the Hudson Road Pump Station. The intertie facilities and transmission main are sized to provide approximately 10 MGD of wholesale supply in the future.

### *Salmon River*

The City has not completed detailed investigations of the feasibility of developing the Salmon River as a water supply source. Several potential alternatives exist, including development of a surface water intake at the currently identified point of diversion near to Highway 26 at Brightwood, transfer of the water right to a new diversion location downstream on the Sandy River, or potential transfer of the right to a groundwater use to support local development of groundwater. The memorandum in **Appendix B**, *Groundwater Supply Evaluation for City of Sandy Water Master Plan Update (GSI Water Solutions, July 2022)* includes a more detailed discussion of these options.

While the Salmon River water right presents an opportunity for long-term water supply development to meet the City's needs, the actions required to develop this source cannot be feasibly completed prior to the City's deadlines outlined in the Bilateral Compliance Agreement. Therefore, it is recommended that the City further investigate this alternative water supply source as a long-term alternative to wholesale water supply from the City of Portland beyond the 20-year planning horizon. Investigations should include a detailed assessment of water diversion locations, water rights and environmental permitting constraints, treatment approaches and transmission alignments.

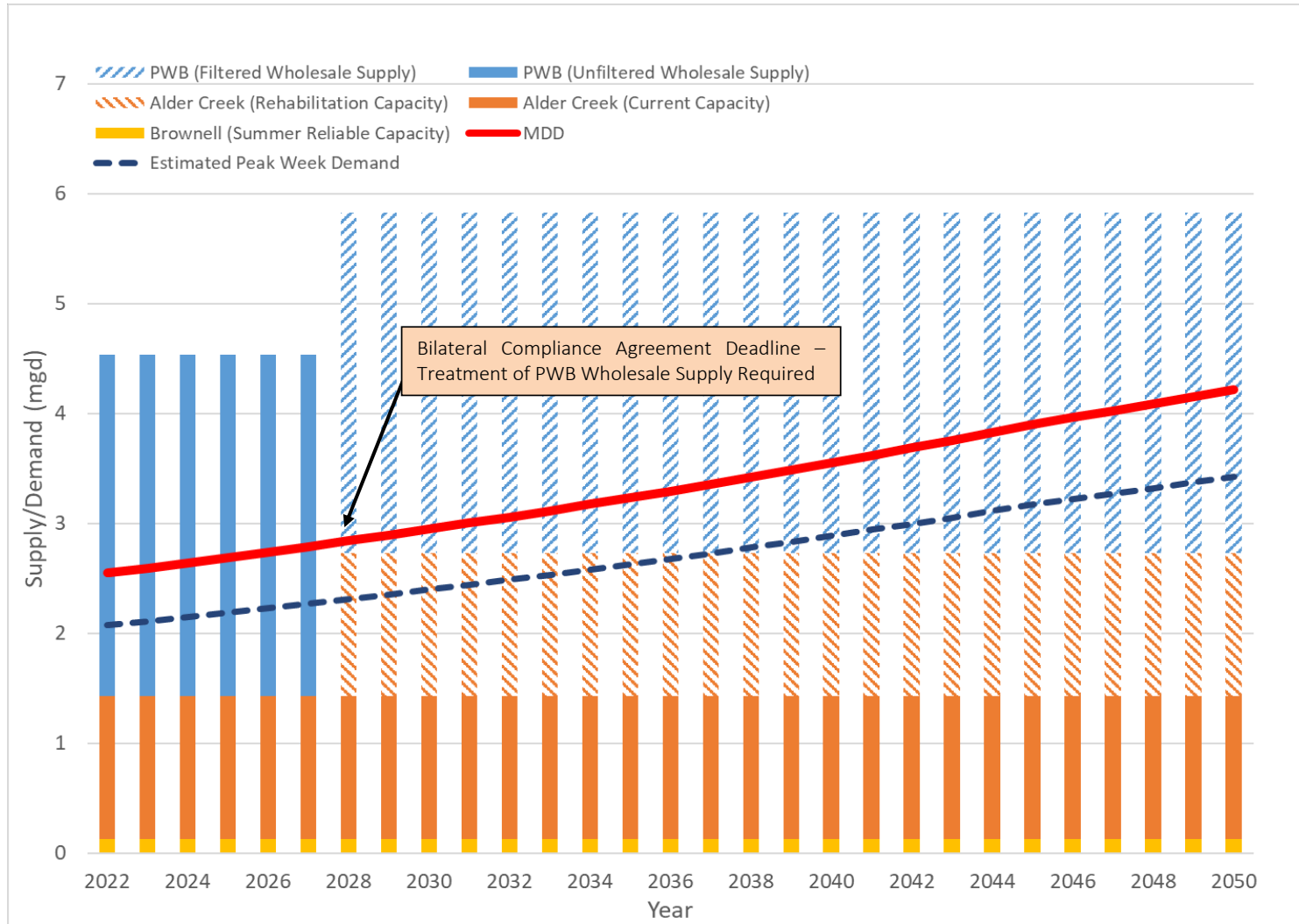
## **5.3 Water Supply Needs**

As described in **Section 3**, it is recommended that the City maintain a firm supply capacity that equals or exceeds the City's maximum day demand (MDD). While the City currently has adequate supply capacity to meet existing demands, there are three conditions that threaten the City's ability to meet its water supply requirements:

- Future development within the City's Urban Growth Boundary is expected to increase the MDD of the City's water system customers from 2.6 MGD to 4.2 MGD by 2050.
- Reliable operation of the Alder Creek supply at 2.6 MGD. Currently, the WTP is limited to approximately 1.3 MGD and has nearly no redundancy.
- Major infrastructure improvements are required to continue accessing the PWB wholesale supply.

**Chart 5-1** illustrates a comparison of existing supply capacities with the projected City water demands. This chart illustrates the three conditions listed above. As this comparison shows, it is critical that the City advance a water supply strategy that addresses the near-term water supply needs triggered by the changes to the PWB wholesale supply by 2028 and further develop a long-term water supply strategy that balances wholesale water supply with continued development of City-owned water supply sources and provides system redundancy.

Chart 5-1 - Water Supply and Water Demand Comparison



## 5.4 Water Supply Strategy

### 5.4.1 Initial Decision Regarding PWB Wholesale Supply (Spring 2021)

The City began developing a water supply strategy in 2021 to respond to the requirements of the Bilateral Compliance Agreement. An initial investigation was conducted to inform City policy makers of the terms of the Bilateral Compliance Agreement and to provide information to allow them to decide if the City would construct the infrastructure necessary to purchase treated wholesale water supply from PWB or purchase raw water and construct a separate facility to treat the unfiltered wholesale supply from the existing Hudson Road Intertie. This limited analysis was prepared to meet the PWB's identified deadline of July 2021. While the analysis demonstrated that the long-term total cost (capital investment, wholesale water purchase and O&M) was expected to be similar, based on the information provided the City Council directed staff to proceed with planning for the purchase of raw water supply from PWB and development of a new WTP for the City's supply.

### 5.4.2 Updated Analysis, Findings and Recommendations

In the Spring of 2022, as the Water Master Plan progressed and further information became available, City staff re-evaluated the decision to purchase unfiltered wholesale supply from PWB. The decision to re-evaluate was driven by a number of factors, including:

- Dramatic increases in the cost of public infrastructure construction
- Refined understanding of the alternatives available to deliver filtered wholesale supply from PWB
- Assessment of the development schedule for a City-owned WTP for the PWB unfiltered supply
- Updated analysis of life-cycle costs, considering capital investments required for the Alder Creek source and the significant benefit of maximizing use of City-owned sources

Based on this refined analysis, City Council was presented with the new findings on June 6, 2022 and, as a result, directed City staff to plan for and implement connection to the new PWB WTP for treated water purchase from PWB. In order to achieve this objective, the City must construct a new pump station at, or near to, the PWB WTP and a pipeline from the PWB WTP to the existing Hudson Road Intertie transmission main.

A summary of the analysis and presentation to the Sandy City Council is included in **Appendix C**.

### 5.4.3 Next Steps

In order to meet the requirements of the Bilateral Compliance Agreement and maintain adequate, and reliable, water supply, the City should proceed with the following immediate action items:



1. **Confirm that PWB wholesale supply of unfiltered water will remain uninterrupted through September 30, 2027.** As shown in Chart 5-1, the City is at risk of being unable to meet MDD in the summer of 2027 without the full developed capacity of the Alder Creek source and wholesale supply from PWB. The City should obtain written confirmation from PWB that unfiltered supply will remain available through the summer of 2027.
2. **Coordinate with PWB to secure property on the PWB WTP site for a new Booster Pump Station and Transmission Main alignment (and necessary easements) extending south to Bluff Road.** In preliminary discussions, PWB has indicated that siting of the new booster pump station on the PWB WTP site is feasible, and further indicated that access easements being obtained to the south of the PWB's property to SE Bluff Road could accommodate the City's new wholesale supply transmission main. The City should confirm the current status of these opportunities and take steps necessary to formalize this arrangement. If either becomes infeasible, then the City will need to identify both a booster pump station property and transmission main alignment and begin securing the necessary property and easements.
3. **Continue participation in regional wholesale contract negotiations before September 30, 2027.** With the expiration of the current PWB wholesale water supply contracts in the upcoming years (the City's contract expires in 2028), current efforts are underway to negotiate a new wholesale contract and rate structure. The City's wholesale water supply situation is unique and requires active participation in the negotiations to protect the City's interest in this process and ensure a fair and equitable wholesale contract for the City.
4. **Complete Near-Term Improvements to Address Alder Creek Supply Deficiencies before September 30, 2027.** As described earlier in this chapter, much of the Alder creek supply facilities are approaching the end of their useful life, have fallen into disrepair, or lack sufficient redundancy to provide reliable supply. It is recommended that the City begin a program of addressing the identified deficiencies and further assessment to ultimately achieve a reliable 2.6 MGD supply from Alder Creek. The initial actions include:
  - a. Control Panel upgrades to return Filters #1 and #2 to operation
  - b. Filter #3 maintenance (once Filters #1 and #2 are back on-line)
  - c. Upgrade of standby power systems with an automatic transfer switch

**These improvements restore the WTP to an operational capacity of 2.6 MGD**

  - d. Detailed assessment of the condition of all structural, mechanical and electrical systems at the Alder Creek WTP
  - e. Cost-benefit analysis of rehabilitation versus replacement of the Alder Creek WTP
  - f. Development of an Alder Creek Source Improvement Plan
5. **Design and Construction of the PWB Filtered Wholesale Supply Connection before September 30, 2027.**
6. **Long-Term Water Supply Study.** Investigation of the feasibility and cost of developing the Salmon River water supply source as a long-term alternative, or supplement, to the City's

existing supply sources should be completed. Development of the Salmon River as a source of supply for the City will take several years to advance from evaluation of feasibility through permitting, design and ultimately construction. As the new PWB wholesale contract is completed and the City develops a better understanding of the investments required in the Alder Creek source, the potential benefit of adding the Salmon River to the City's water supply portfolio can be better defined.

***7. Implement Long-Term Supply Study Recommendations.***

# Chapter 6



## Section 6

# Capital Improvement Program (CIP)

This section presents recommended improvements for the City's water system based on the analysis and findings presented in **Sections 4 and 5** and projects identified in the City's current water CIP projects list. These improvements include supply, storage reservoir, water main, and seismic resilience projects. The CIP presented in **Table 6-3** at the end of this section summarizes recommended improvements and provides an approximate timeframe for each project. **Appendix D** contains planning level cost estimate details for each project. Proposed improvements are illustrated in **Figure 6-1** in **Appendix A**.

## 6.1 Project Cost Estimates

An estimated project cost has been developed for each recommended improvement consistent with previously identified projects from the City's current CIP and current preliminary design work, as applicable. Cost estimates represent opinions of cost only, acknowledging that final costs of individual projects will vary depending on actual labor and material costs, market conditions for construction, regulatory factors, final project scope, project schedule, and other factors.

## 6.2 Timeframes

A summary of all improvement projects and estimated project costs is presented in **Table 6-3**. This CIP table provides for project sequencing by showing prioritized projects for the 5-year, 6 to 10-year and 11 to 20-year timeframes defined as follows.

- 5-year timeframe - recommended completion through 2027
- 6 to 10-year timeframe - recommended completion between 2028 and 2032
- 11 to 20-year timeframe - recommended completion beyond 2032

## 6.3 Storage Reservoirs

As presented in **Section 4, Tables 4-1**, the City currently has a deficit in storage capacity serving the water system. The existing Sandercock Lane reservoir site can accommodate construction of an additional or replacement with a larger storage facility to add 1.0 million gallons of storage above Zone X. As discussed in further detail in **Section 4.3.2**, the City identified three City-owned sites that could serve as potential reservoir sites. It is recommended that the City construct at least two reservoirs to add 4.0 million gallons of storage to the system, for a total of 5.0 million gallons, as identified in Project No. R.1. Further investigation is required before design and construction of these reservoirs can occur. A Storage Siting Study is presented as Project No. R.2. These reservoirs will all require altitude control valves, additional supply and transmission main piping, and it is recommended that they be of prestressed concrete tank construction.

In addition to constructing new storage, the City should conduct a Reservoir Seismic and Condition Assessment of their existing reservoirs, which is included in this CIP as Project No. R.3.

## 6.4 Pump Stations

As noted in **Section 4, Table 4-3**, the City has adequate distribution system pumping capacity through the build-out scenario (2050) and no additional capacity is required. However, as discussed in detail in **Section 4.4.2**, it is recommended that the City complete upgrades to the Terra Fern PS so that fire flow demands are met above the Sandercok Lane Reservoir, which is included as Project No. PS.1.

It is also recommended that the City construct a pump station at the Vista Loop site that can supply Zones X and 1 with PWB wholesale supply in the event that Alder Creek WTP and Brownell Springs sources are unable to supply sufficient flows. The Vista Loop Pump Station is included in this CIP as Project No. PS.2.

## 6.5 Distribution Mains

As presented in **Section 4**, hydraulic modeling of the City's water distribution system revealed few areas of low pressure. There were no service connections below 30 psi for the existing, nearterm, and buildout scenarios. Modeled low pressures were along the Portland Water Bureau transmission mains and near existing storage facilities. No improvements are recommended to raise low pressures.

Multiple areas failed fire flow conditions under existing conditions. Proposed distribution piping projects are presented as Project Nos. D.1, D.2, D.3, and D.4. These pipeline improvement projects will take place near Bluff Road, Hood Street, Mitchell Court, and Seaman Avenue to provide fire hydrants with sufficient fire flows.

## 6.6 Supply

As described in **Section 5**, the City is currently in the process of coordinating regional wholesale contract and source changes with the PWB as well as evaluating and updating the Alder Creek WTP before September 2027. In order to maintain an adequate and reliable water supply, the City should proceed with the steps detailed in **Section 5.4.3** and summarized below. The short-term improvements (first four bullets below) should be completed before September 30, 2027, the date the PWB is guaranteeing unfiltered wholesale water through.

- Coordinate with the PWB and participate in regional wholesale contract negotiations.
- Complete near-term Alder Creek WTP improvements to restore the WTP to an operational capacity of 2.6 MGD.
- Complete a detailed assessment of the Alder Creek WTP and its associated infrastructure, evaluate alternatives, and develop an Alder Creek Source Implementation Plan.
- Design and construct the PWB Filtered Wholesale Supply Connection.
- Refurbish or replace the raw water intake infrastructure.

- Complete a Long-Term Water Supply Study.

These improvements are included in **Table 6-3**. Implementation of recommendations from the Long-Term Supply Study should be evaluated in the study and included in an updated CIP as recommended. It is expected that some or many of the recommendations may extend beyond the planning period of the WSMP.

## 6.7 Other Projects

### 6.7.1 Water System Master Plan Update

It is recommended that the City continue to update this WSMP every ten years. An updated WSMP is required by the State of Oregon for a 20-year planning period. The Alder Creek WTP detailed assessment and/or the Long-Term Water Supply Study could prompt an update to the WSMP and CIP depending on the findings and recommendations. As the City grows or more information is collected, it is prudent for the City to continue to regularly evaluate capital investment, prioritize needs for the water system, and document this long-term water service strategy in the WSMP.

### 6.7.2 Water Management and Conservation Plan

The City was required to submit a WMCP by April 2016, with an update required in 10 years. The next update of the WMCP is due to the state of Oregon Water Resources Department in November 2025, and it is anticipated that a future update within this WSMP's 20-year planning horizon will be required in 2024.

### 6.7.3 SCADA Upgrades

The water utility SCADA system equipment is out of date and reaching the end of its useful life. Furthermore, the communication systems consists of numerous aging and unreliable leased lines that are prone to failure. It is recommended that the City proceed with a SCADA master Plan to identify the most effective approach to upgrade and replace aging equipment.

While the full scope and cost of a SCADA system upgrade will be defined by the SCADA Master Plan, a preliminary budget placeholder has been included in the CIP as Project M.5. This preliminary budget estimate should be refined and incorporated into the City's capital planning following completion of the SCADA Master Plan.

### 6.7.4 Water Meter Replacement

The City completed a water service meter replacement and Automated Metering Infrastructure (AMI) project between 2019 and 2021. Water meters typically have a service life of 15-20 years, at which point the meter accuracy may decrease and the batter operated meter registers that transmits data to the City's AMI system begin to fail. It is recommended that the City include a budget in the CIP for a meter replacement program. Based on the year of install of most current meters in the system, the meter replacement program should be completed in the 11-to-20-year

timeframe. The City has approximately 3,000 service meters, so it is assumed that the replacement program will be conducted over 5 years.

### 6.7.5 Replacement and Operations and Maintenance (O&M)

A systematic, planned replacement program will provide the following benefits.

- Reduced impacts to customers and the environment from unplanned pipe failures
- Reduced repair and replacement costs by performing the work proactively rather than on an emergency basis
- Reduced water loss that results from main breaks and leaks
- Reduction in claims for property damage and loss of revenues from commercial and industrial customers

It is recommended that the City aim to implement an aggressive pipe replacement program to avoid having to replace a disproportionate amount of pipe in the future as the pipes get older. For this reason, it is recommended that the City aim to replace 4,750 linear feet (LF) of pipe per year. This is a replacement rate of about 1% of pipe per year. Pipe replacement projects should be coordinated with other City programs such as the Pavement Management Program and other utility projects to save on cost and prevent redundant work and obstruction of roadways. Water mains were assumed to need replacement after 75 years. Total costs for the full time period were uniformly divided into annual costs for the respective timeframes. These costs represent a significant investment in the water system, and substantially more than the City's current annual water main replacement budget. However, continued investment in renewal and replacement of the water system is essential to ensuring reliable system operation and minimizing expensive emergency repairs associated with failing pipeline infrastructure.

The City has a decent amount of 4-inch diameter mains and asbestos concrete (AC) and cast iron (CI) mains in the existing system. The small pipes can cause flow restrictions, reducing system capacity. AC and CI material pipes are recommended for replacement for health and safety and reducing risk of breaks or failures. There is approx. 64,000 LF of 4-inch diameter, AC, or CI mains in the existing system. These pipes are recommended to be the highest priority in the City's Replacement Program. At the recommended replacement length described above (4,750 LF), it would take approximately 13.5 years to replace all of these mains.

Annual maintenance for pipes, tanks, pump stations, valves, and other facilities is not considered in the CIP list. It is assumed these maintenance items are addressed in the operations budget.

## 6.8 Cost Estimating Assumptions

All cost estimates for CIP projects presented in this Plan are planning level costs approximately equivalent to Association for the Advancement of Cost Engineering Class 5 estimates. Cost estimates of this type are classified as order-of-magnitude cost estimates, which assume a 0 to 2 percent level of project definition to reflect the significant number of unknowns in project scope and conditions. Correspondingly, Class 5 cost estimates have a wide accuracy range to reflect

these uncertainties at the master planning stage; actual costs may vary from these by minus 50 percent to plus 100 percent:

- **Low End Accuracy Range:** -20 to -50 percent (i.e. the low end of the accuracy range for a \$1 million cost estimate is \$0.5 to \$0.8 million).
- **High End Accuracy Range:** +30- to +100 percent (i.e. the high end of the accuracy range for a \$1 million cost estimate is \$1.3 to \$2.0 million).

All costs are in 2022 dollars, and the Engineering News-Record’s (ENR) Seattle, WA Construction Cost Index for November 2022 was 15202.68. The estimates are subject to change as the project designs mature. The cost of labor, materials, and equipment may also vary in the future.

### 6.8.1 Pipeline Unit Cost Assumptions

Table 6-1 presents general assumptions for unit costs of different-sized pipelines that may be used in a CIP project.

**Table 6-1**  
Pipeline Unit Costs

Pipe Diameter (Inches)	Pipeline Cost, Arterial Road, Including Cost Factors (\$/Linear Foot)
8	\$509
10	\$598
12	\$686
18	\$931

Pipeline costs are for ductile iron pipe and include general markups for earthwork and construction, erosion and traffic control, fittings and valves, mobilization, contingencies, contractor overhead, engineering design, and legal/admin coordination. Pipeline construction costs do not include property acquisition costs or easement or right-of-way costs. Roadway resurfacing unit costs assume open trench construction with trench patches and do not include full street resurfacing. Where open trench construction may not be possible, individual project cost estimates were modified, as needed, to reflect costs for boring or other construction methods.

### 6.8.2 Direct Construction Cost Development

Direct construction costs were developed using historical project data, vendor quotes, and general market trends. Direct construction cost estimates focused on major facilities and equipment and include allowances for additional civil, mechanical, electrical, and instrumentation requirements.



### 6.8.3 Cost Factors

To estimate total project costs for inclusion in the CIP, cost factors were added to the direct construction cost estimates. **Table 6-2** summarizes the cost factors and provides an example of how they were applied to determine a CIP project’s cost.

**Table 6-2**  
Cost Factors

Cost Element	Cost Factor	Cost
Direct Construction Cost		\$1.00M
Bonds and Insurance	2%	\$0.02M
Mobilization	10%	\$0.10M
Construction Cost		\$1.12M
Project Contingency	30%	\$0.33M
Total Construction Cost		\$1.45M
Oregon Corporate Activity Tax	1%	\$0.02M
Engineering Allowance	20%	\$0.29M
Permitting, Inspections, and Administration	5%	\$0.07M
Construction Contract Administration	10%	\$0.14M
<b>Total CIP Project Cost</b>		<b>\$1.97M</b>

### 6.9 CIP Funding

The City may fund the water system CIP from a variety of sources including governmental grant and loan programs, publicly issued debt, and cash resources and revenue. The City’s cash resources and revenue available for water system capital projects include water rate funding, cash reserves, and SDCs.

System development charges are sources of funding generated through development and system growth and are typically used by utilities to support capital funding needs. The charge is intended to recover a fair share of the costs of existing and planned facilities that provide capacity to serve new growth. Projects intended to serve only new growth would have 100 percent of the cost allocated to growth. Other projects that are intended to improve reliability and efficiency or address asset renewal are assumed to benefit existing and new customers. For these projects, the percent allocated to growth is the percentage of future demand projected to be generated from new customers. The percentage of project costs allocated to growth are shown in **Table 6-3** as the Preliminary SDC Eligibility.

Subsequent to the final review and approval of this WSMP, the City will conduct a financial analysis to review the current water rates and SDC methodology to support the recommended CIP described in this section.

Table 6-3  
Capital Improvement Program

Project No.	Project Description	CIP Schedule and Project Cost Summary (2022 Dollars)				Preliminary SDC Eligibility
		1-5 Years (2023-2027)	6-10 Years (2028-2032)	11-20 Years (2033-2042)	TOTAL	
R.1	5.0 MG Additional Storage		\$ 17,290,000	\$ 17,290,000	\$ 34,580,000	49%
R.2	Storage Siting Study	\$ 180,000			\$ 180,000	49%
R.3	Reservoir Seismic and Condition Assessment		\$ 375,000		\$ 375,000	49%
	<i>Storage Subtotal</i>	\$ 180,000	\$ 17,665,000	\$ 17,290,000	\$ 35,135,000	
PS.1	Terra Fern Pump Station Upgrades	\$ 780,000			\$ 780,000	45%
PS.2	Vista Loop Pump Station	\$ 1,420,000			\$ 1,420,000	45%
	<i>Pump Station Subtotal</i>	\$ 2,200,000	\$ -	\$ -	\$ 2,200,000	
D.1	Bluff Rd Fire Flow Improvements		\$ 5,870,000		\$ 5,870,000	45%
D.2	Hood St Fire Flow Improvements		\$ 540,000		\$ 540,000	45%
D.3	Mitchell Ct Fire Flow Improvements		\$ 260,000		\$ 260,000	45%
D.4	Seaman Ave Fire Flow Improvements		\$ 550,000		\$ 550,000	45%
	<i>Distribution Subtotal</i>	\$ -	\$ 7,220,000	\$ -	\$ 7,220,000	
S.1	Near-Term Alder Creek WTP Improvements	\$ 1,050,000			\$ 1,050,000	0%
S.2	Short-Term Alder Creek WTP Assessment	\$ 240,000			\$ 240,000	45%
S.3	Alder Creek WTP Improvements	\$ 42,080,000			\$ 42,080,000	45%
S.4	PWB Filtered Water Supply Connection	\$ 39,416,000			\$ 39,416,000	45%
S.5	Long-Term Supply Study		\$ 240,000		\$ 240,000	45%
	<i>Supply Subtotal</i>	\$ 82,786,000	\$ 240,000	\$ -	\$ 83,026,000	
M.1	Water System Master Plan Update		\$ 220,000		\$ 220,000	45%
M.2	Water Management and Conservation Plan	\$ 110,000			\$ 110,000	45%
M.3	Annual Replacement Budget	\$ -	\$ 6,000,000	\$ 24,000,000	\$ 30,000,000	45%
M.4	Water Service Meter Replacement			\$ 7,920,000		0%
M.5	SCADA Master Plan	\$ 150,000				45%
M.6	SCADA Upgrade (Preliminary Budget Placeholder)		\$ 750,000			45%
	<i>Other Subtotal</i>	\$ 260,000	\$ 6,970,000	\$ 31,920,000	\$ 39,150,000	
	<b>CIP Total</b>	<b>\$ 85,426,000</b>	<b>\$ 32,095,000</b>	<b>\$ 49,210,000</b>	<b>\$ 166,731,000</b>	

Notes:

1. All costs in 2022 dollars and include all soft costs including bonds and insurance, mobilization, contingency, engineering, permitting and admin, and construction contract admin
2. Engineering News-Record's (ENR) Seattle, WA Construction Cost Index for November 2022 was 15202.68 (for all costs)
3. Percentage based on MDD (or governing demand) from 2023 compared to MDD (governing demand) in 2043

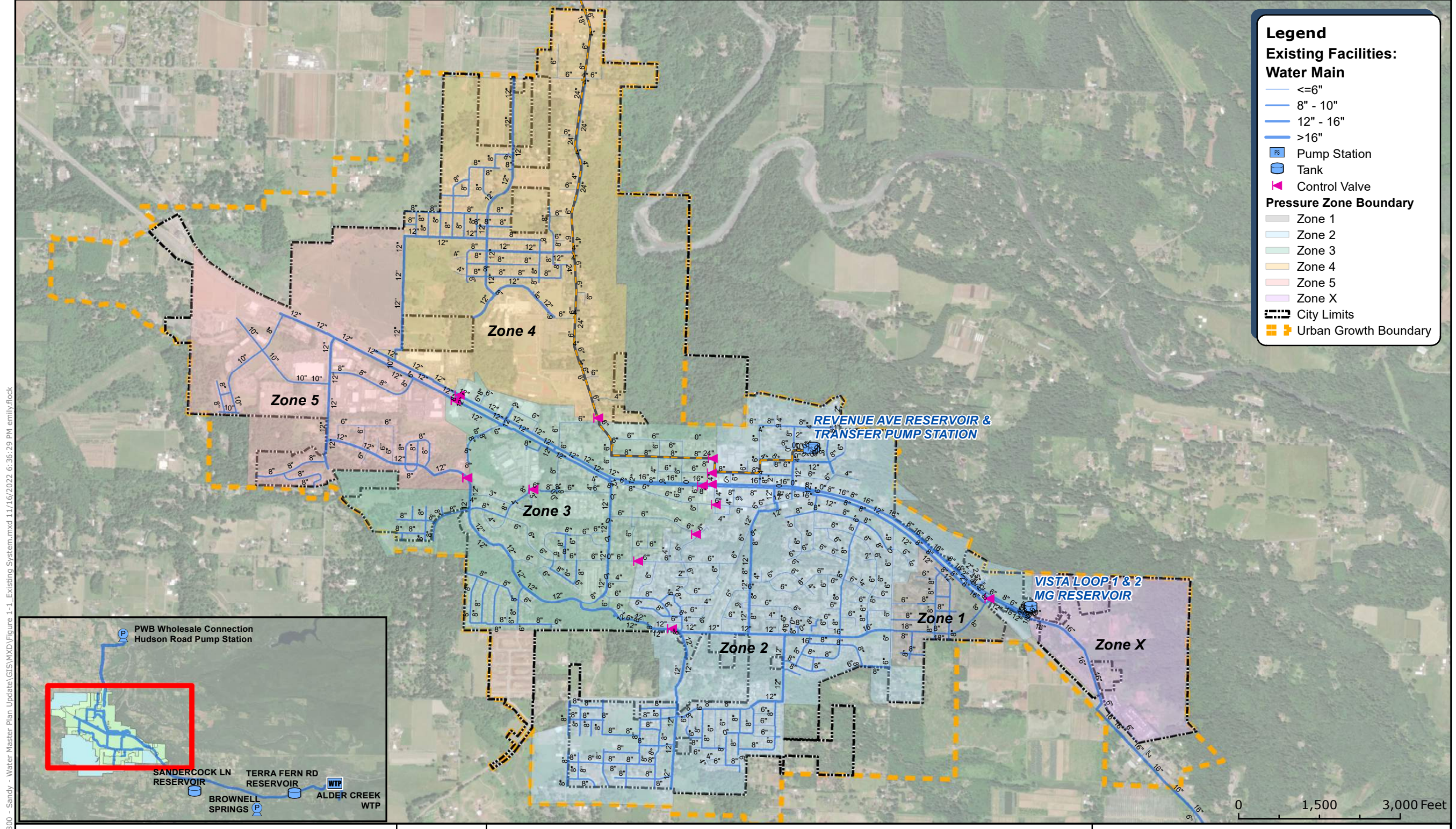
# Appendix



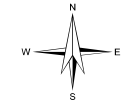
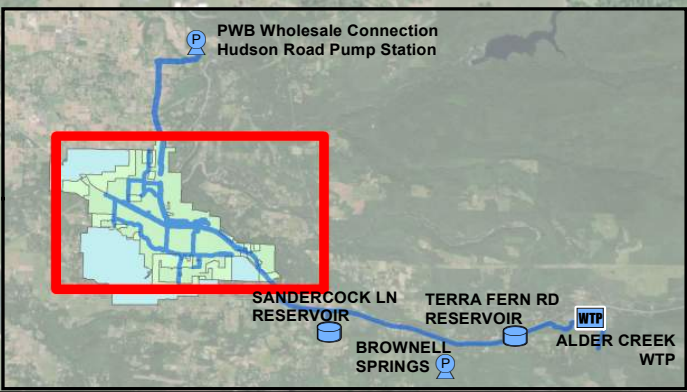


**APPENDIX A  
FIGURES**





G:\PDX\_Projects\20\2800 - Sandy - Water Master Plan Update\GIS\WMD\Figure 1-1-Existing System.mxd 11/16/2022 6:36:29 PM emily.flock



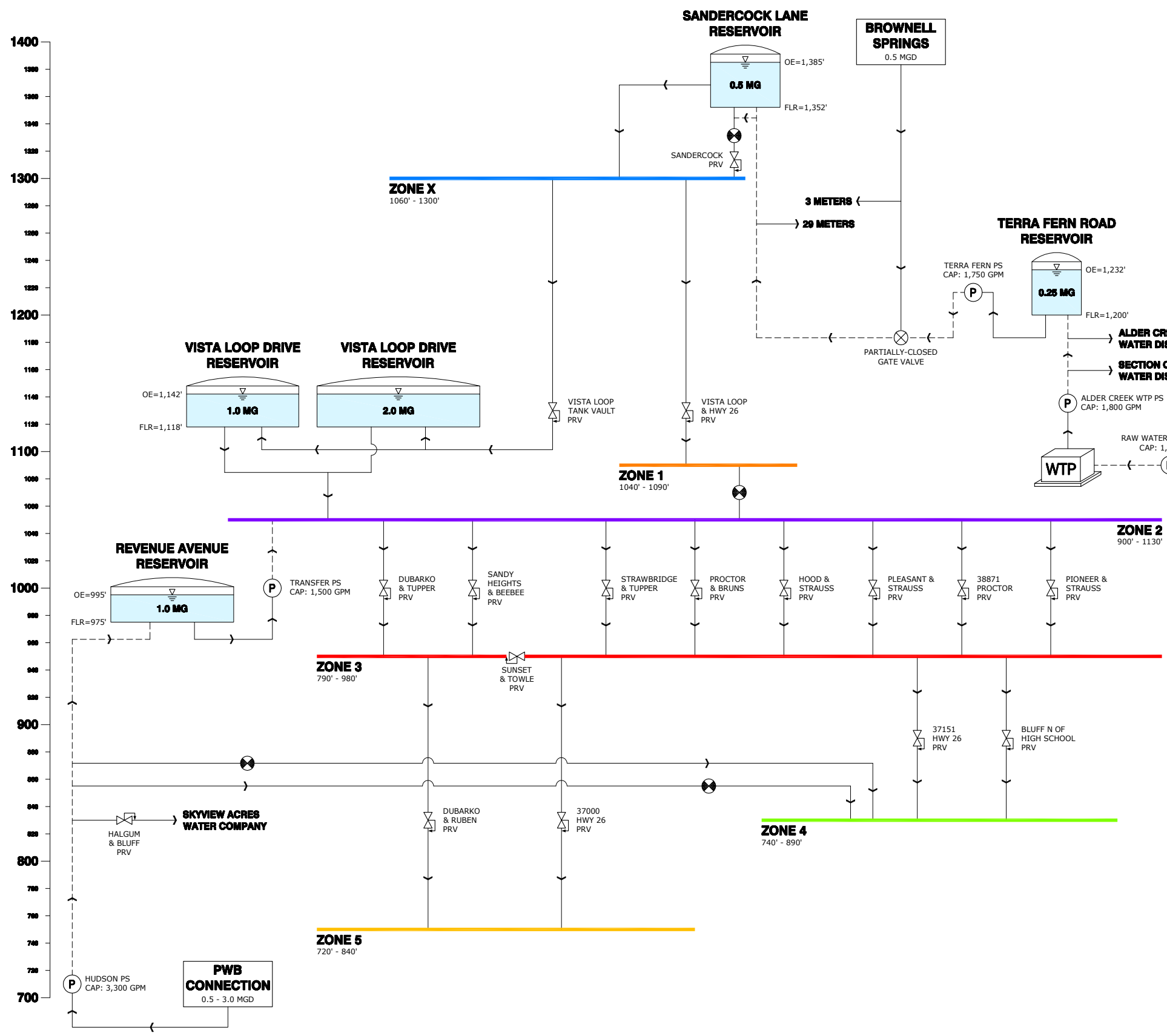
**City of Sandy  
Water System Master Plan**

**Figure 1 - 1  
Existing System**

November 2022

20-2800

G:\PDX\_Projects\20\2800 - Sandy - Water Master Plan Update\CAD\20-2800-OR Hydraulic Schematic.dwg FIG 1-2 11/17/2022 11:38 AM TAYLOR.SPENCER 23.05 (LMS Tech)



### LEGEND

- WATER MAIN
- HIGHEST GROUND ELEVATION SERVED BY SERVICE LEVEL
- RESERVOIR
- PRESSURE REDUCING VALVE
- PUMP STATION
- NORMALLY-OPEN ISOLATION VALVE
- NORMALLY-CLOSED ISOLATION VALVE

### ABBREVIATIONS

- CAP: CAPACITY
- EL: ELEVATION
- FLR: FLOOR
- FT: FEET
- GPM: GALLONS PER MINUTE
- HGL: HYDRAULIC GRADE LINE
- MGD: MILLION GALLONS PER DAY
- OE: OVERFLOW ELEVATION
- PRV: PRESSURE REDUCING VALVE
- PS: PUMP STATION
- PWB: PORTLAND WATER BUREAU
- WTP: WATER TREATMENT PLANT

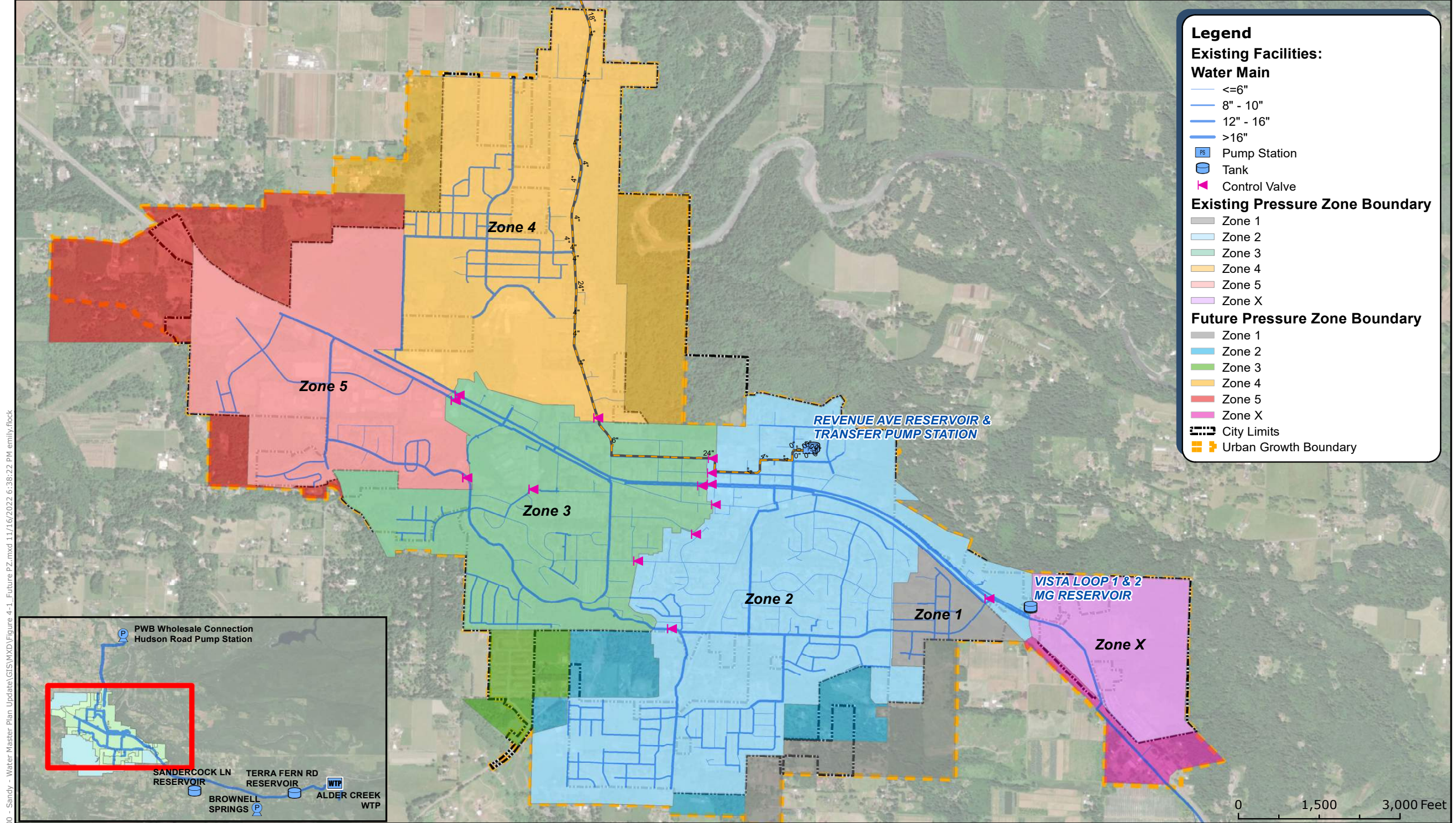
**SANDY** FIGURE 1-2

CITY OF SANDY  
Water System Master Plan  
Existing Water System Hydraulic Schematic

November 2022

**consor**

20-2800



**Legend**

**Existing Facilities:**

**Water Main**

- <=6"
- 8" - 10"
- 12" - 16"
- >16"

**PS** Pump Station  
**T** Tank  
**CV** Control Valve

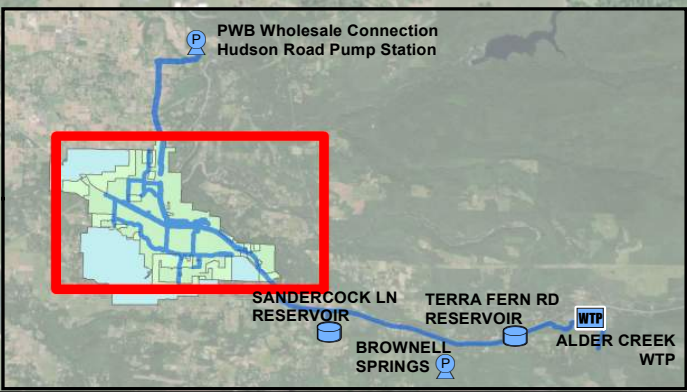
**Existing Pressure Zone Boundary**

- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Zone X

**Future Pressure Zone Boundary**

- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Zone X

**City Limits**   
**Urban Growth Boundary**



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November 2022



**City of Sandy  
Water System Master Plan**

**Figure 4 - 1  
Future Pressure Zone  
Boundary**

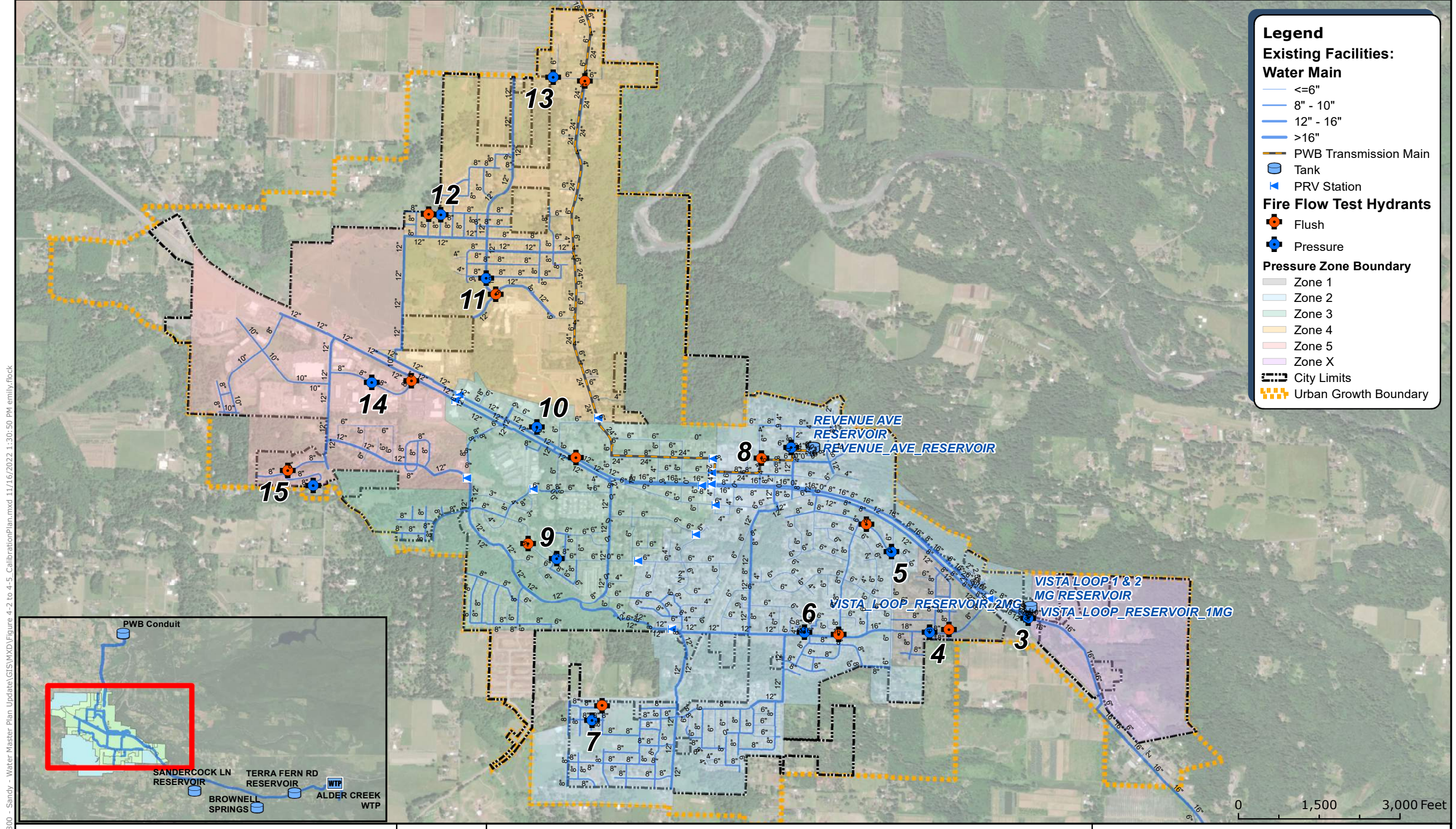
20-2800



G:\IPDX - Projects\20\2800 - Sandy - Water Master Plan Update\GIS\WXD\Figure 4-2 to 4-5\_CalibrationPlan.mxd 11/16/2022 1:30:50 PM emily.flock







**Legend**

**Existing Facilities:**

**Water Main**

- ≤6"
- 8" - 10"
- 12" - 16"
- >16"
- PWB Transmission Main

**Tank**

**PRV Station**

**Fire Flow Test Hydrants**

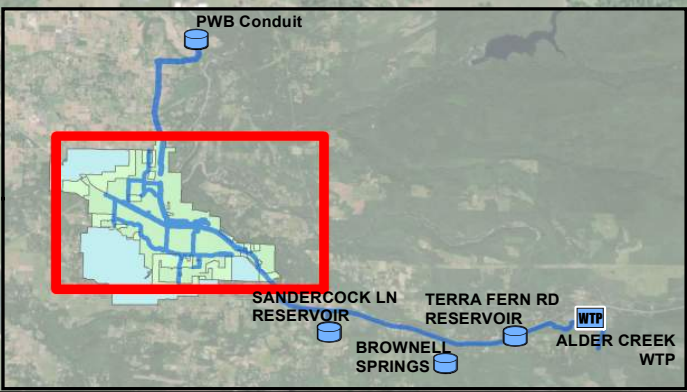
- Flush
- Pressure

**Pressure Zone Boundary**

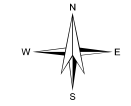
- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Zone X

**City Limits**

**Urban Growth Boundary**



0 1,500 3,000 Feet



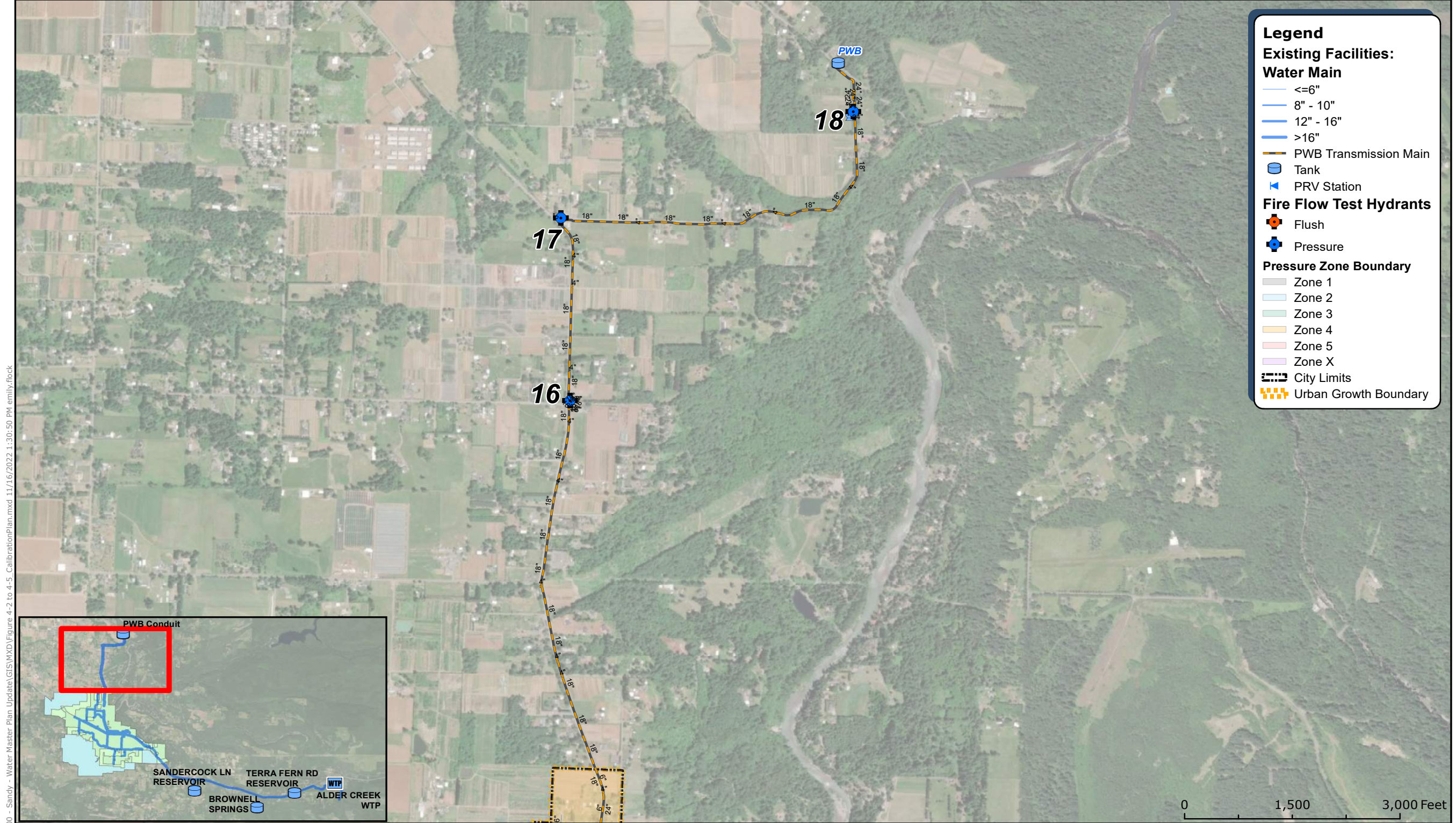
**City of Sandy  
Water System Master Plan Update**

**Figure 4-3  
Field Fire Pressure and Flow  
Test Locations 3-15**

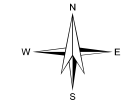
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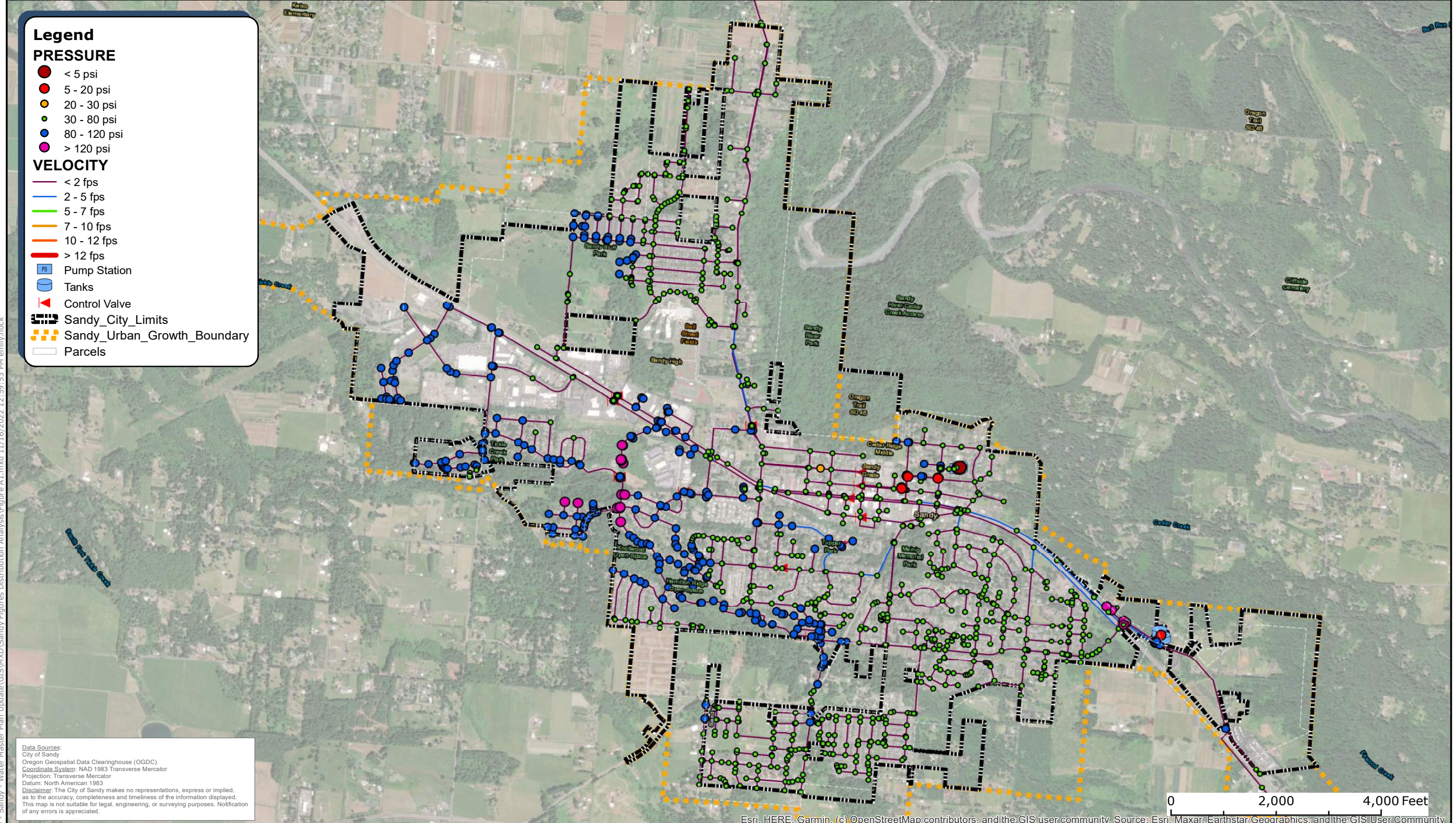


**City of Sandy  
Water System Master Plan Update**

**Figure 4-4  
Field Fire Pressure and Flow  
Test Locations 16-18**

November 2022

20-2800

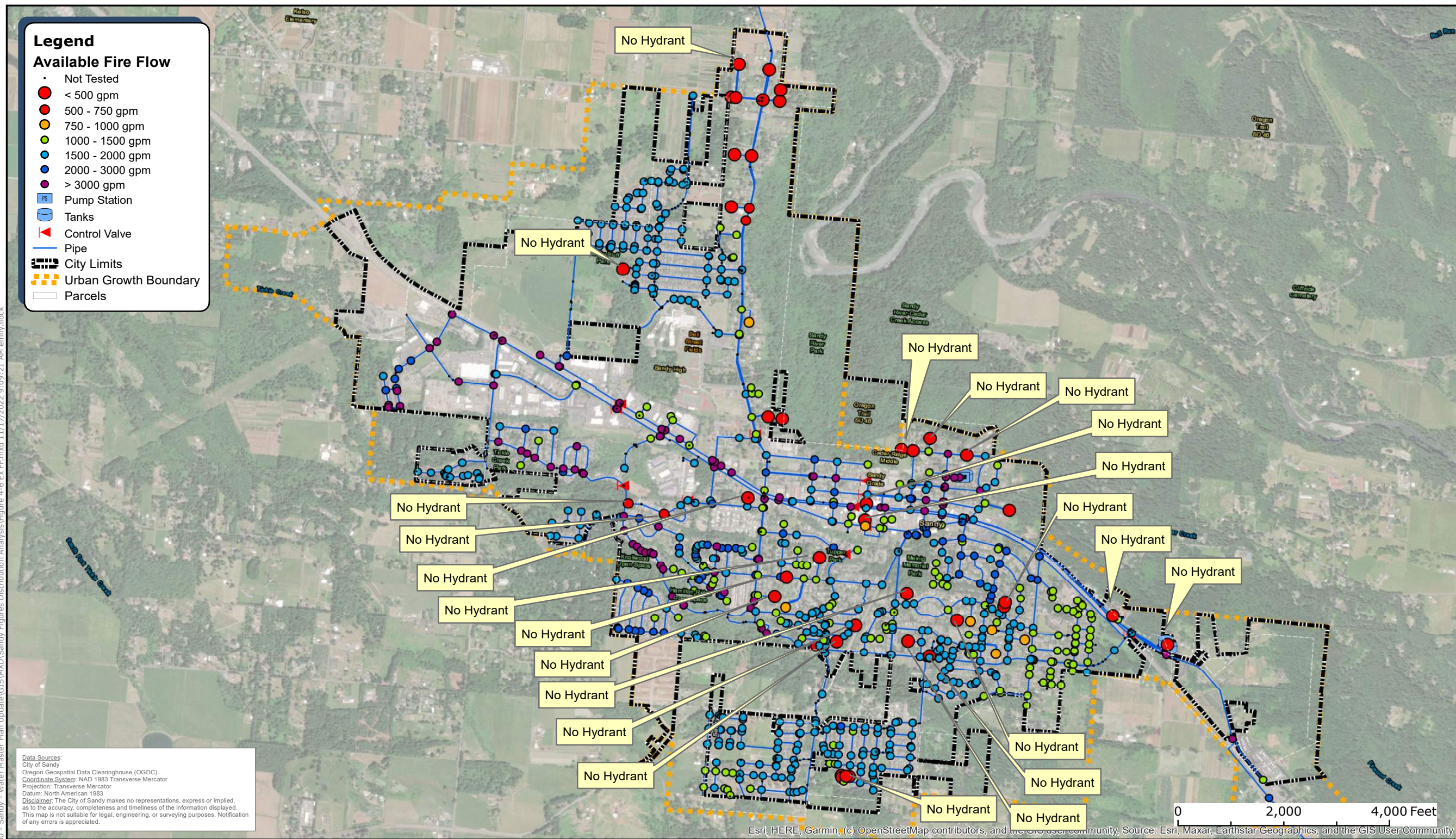


**City of Sandy  
Water Master Plan Update**

**Figure 4-5  
Existing PHD  
Pressure and Velocity**

November 2022

20-2800



- Legend**
- Available Fire Flow**
- Not Tested
  - < 500 gpm
  - 500 - 750 gpm
  - 750 - 1000 gpm
  - 1000 - 1500 gpm
  - 1500 - 2000 gpm
  - 2000 - 3000 gpm
  - > 3000 gpm
  - PS Pump Station
  - Tanks
  - Control Valve
  - Pipe
  - City Limits
  - Urban Growth Boundary
  - Parcels

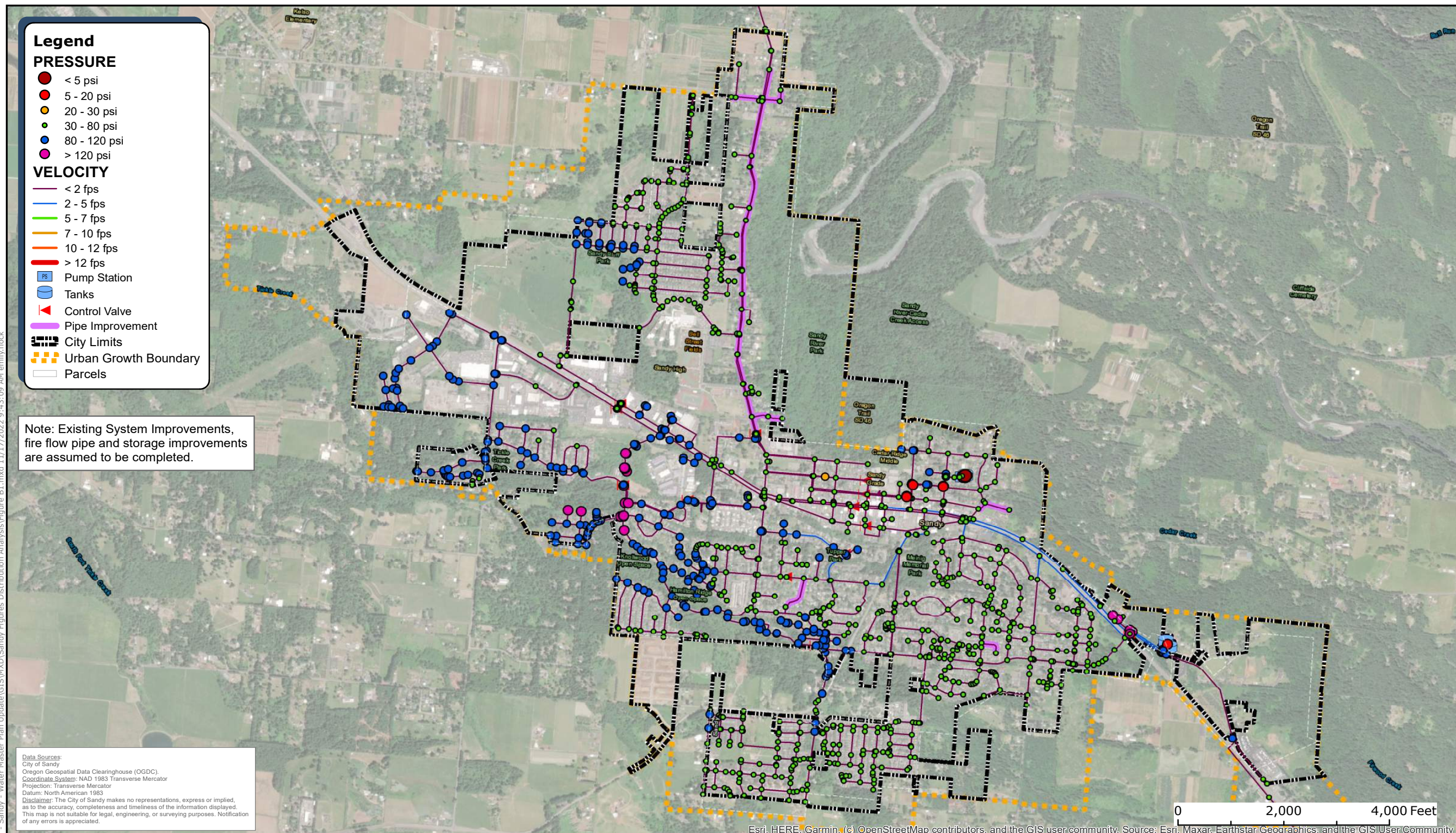
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 City of Sandy  
 Oregon Geospatial Data Clearinghouse (OGDC)  
 Coordinate System: NAD 1983 Transverse Mercator  
 Projection: Transverse Mercator  
 Datum: North American 1983  
 Disclaimer: The City of Sandy makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, or surveying purposes. Notification of any errors is appreciated.

0 2,000 4,000 Feet



**City of Sandy  
 Water Master Plan Update**

**Figure 4-6  
 Existing MDD  
 Available Fire Flow**



- Legend**
- PRESSURE**
- < 5 psi
  - 5 - 20 psi
  - 20 - 30 psi
  - 30 - 80 psi
  - 80 - 120 psi
  - > 120 psi
- VELOCITY**
- < 2 fps
  - 2 - 5 fps
  - 5 - 7 fps
  - 7 - 10 fps
  - 10 - 12 fps
  - > 12 fps
- PS Pump Station
  - Tanks
  - Control Valve
  - Pipe Improvement
  - City Limits
  - Urban Growth Boundary
  - Parcels

Note: Existing System Improvements, fire flow pipe and storage improvements are assumed to be completed.

**Data Sources:**  
 City of Sandy  
 Oregon Geospatial Data Clearinghouse (OGDC)  
 Coordinate System: NAD 1983 Transverse Mercator  
 Projection: Transverse Mercator  
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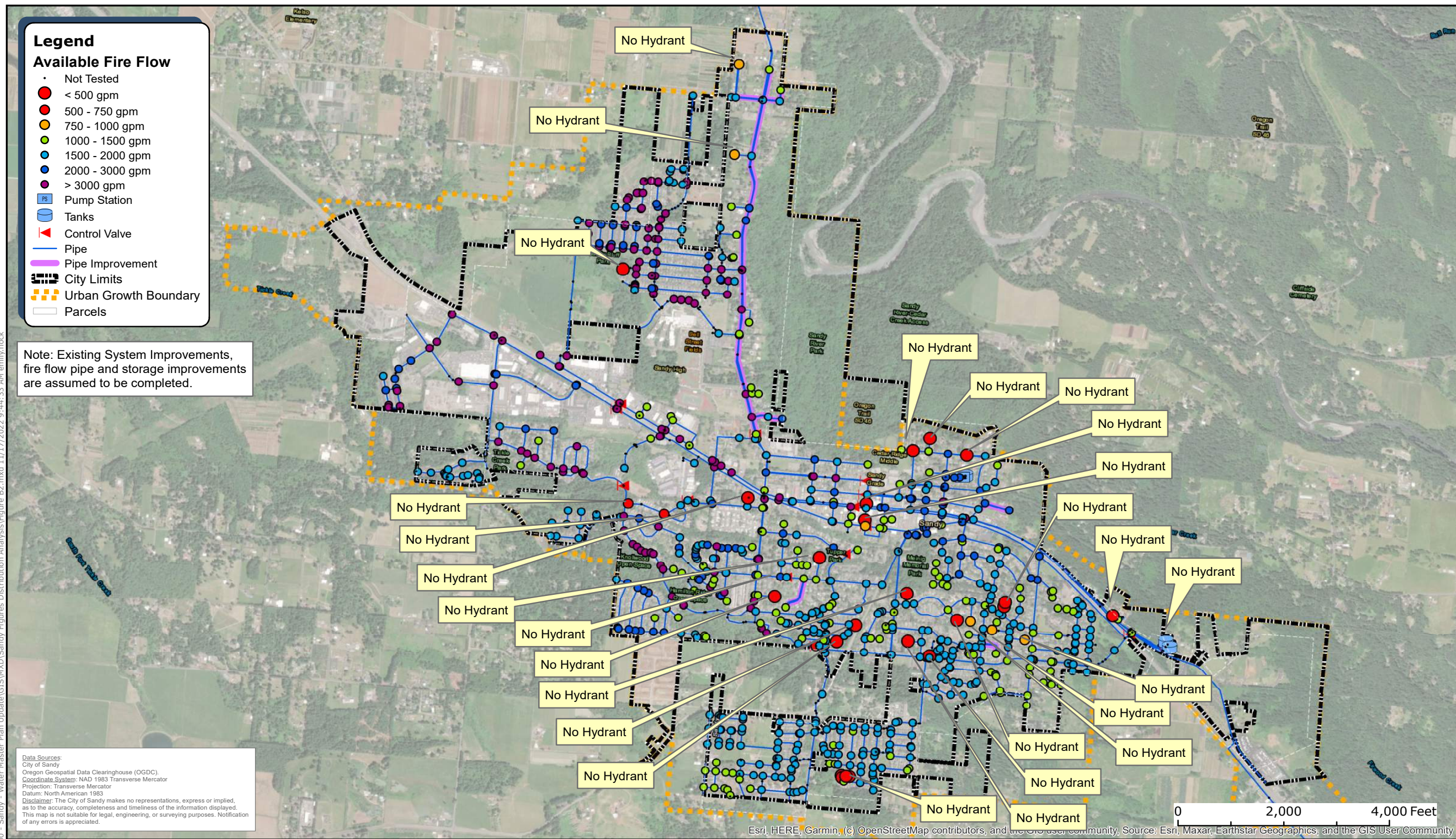


**City of Sandy  
 Water Master Plan Update**

**Figure 4-7  
 Nearterm PHD w/ Prop Improv  
 Pressure and Velocity**

November 2022

20-2800



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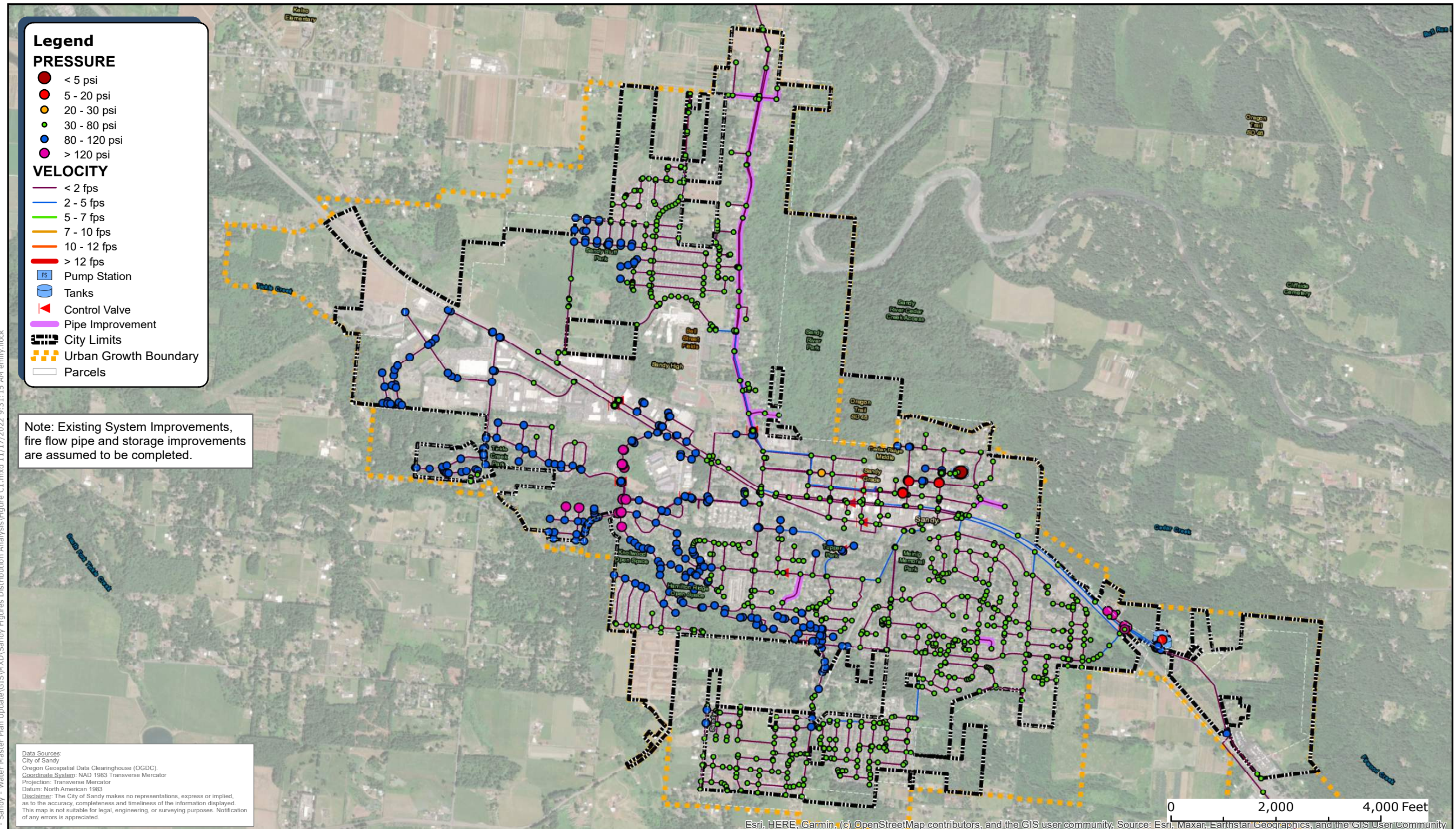
**Data Sources:**  
 City of Sandy  
 Oregon Geospatial Data Clearinghouse (OGDC)  
 Coordinate System: NAD 1983 Transverse Mercator  
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**City of Sandy  
 Water Master Plan Update**

**Figure 4-8  
 Nearterm MDD w/ Prop Improv  
 Available Fire Flow**



- Legend**
- PRESSURE**
- < 5 psi
  - 5 - 20 psi
  - 20 - 30 psi
  - 30 - 80 psi
  - 80 - 120 psi
  - > 120 psi
- VELOCITY**
- < 2 fps
  - 2 - 5 fps
  - 5 - 7 fps
  - 7 - 10 fps
  - 10 - 12 fps
  - > 12 fps
- PS Pump Station
  - Tanks
  - Control Valve
  - Pipe Improvement
  - City Limits
  - Urban Growth Boundary
  - Parcels

Note: Existing System Improvements, fire flow pipe and storage improvements are assumed to be completed.

**Data Sources:**  
 City of Sandy  
 Oregon Geospatial Data Clearinghouse (OGDC)  
 Coordinate System: NAD 1983 Transverse Mercator  
 Projection: Transverse Mercator  
 Datum: North American 1983  
 Disclaimer: The City of Sandy makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, or surveying purposes. Notification of any errors is appreciated.

0 2,000 4,000 Feet

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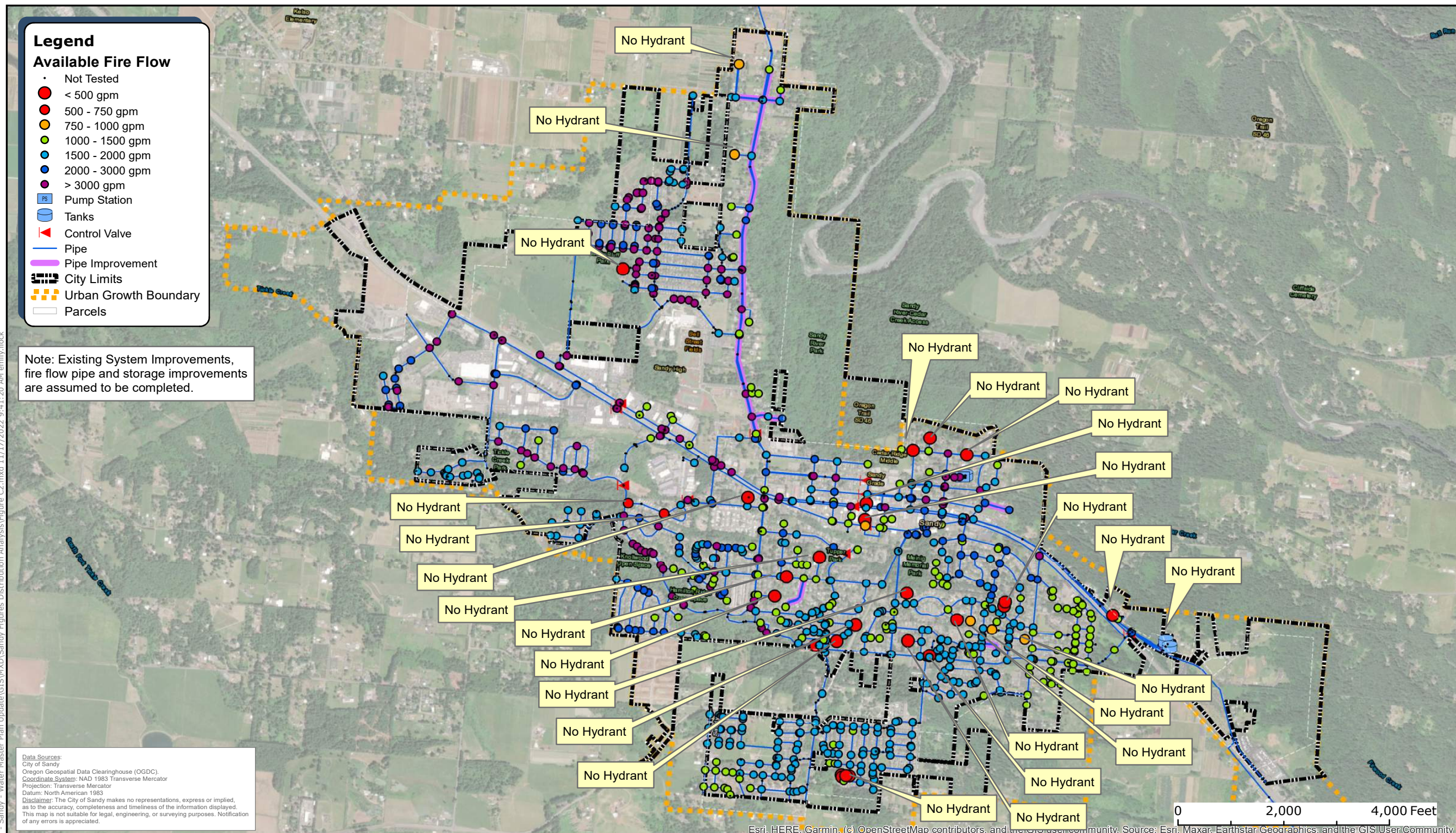


**City of Sandy  
 Water Master Plan Update**

**Figure 4-9  
 Buildout PHD w/ Prop Improv  
 Pressure and Velocity**

November 2022

20-2800



- Legend**
- Available Fire Flow**
- Not Tested
  - < 500 gpm
  - 500 - 750 gpm
  - 750 - 1000 gpm
  - 1000 - 1500 gpm
  - 1500 - 2000 gpm
  - 2000 - 3000 gpm
  - > 3000 gpm
  - PS Pump Station
  - Tanks
  - Control Valve
  - Pipe
  - Pipe Improvement
  - City Limits
  - Urban Growth Boundary
  - Parcels

Note: Existing System Improvements, fire flow pipe and storage improvements are assumed to be completed.

**Data Sources:**  
 City of Sandy  
 Oregon Geospatial Data Clearinghouse (OGDC)  
 Coordinate System: NAD 1983 Transverse Mercator  
 Projection: Transverse Mercator  
 Datum: North American 1983  
 Disclaimer: The City of Sandy makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, or surveying purposes. Notification of any errors is appreciated.

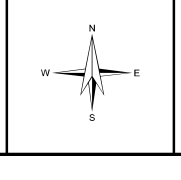
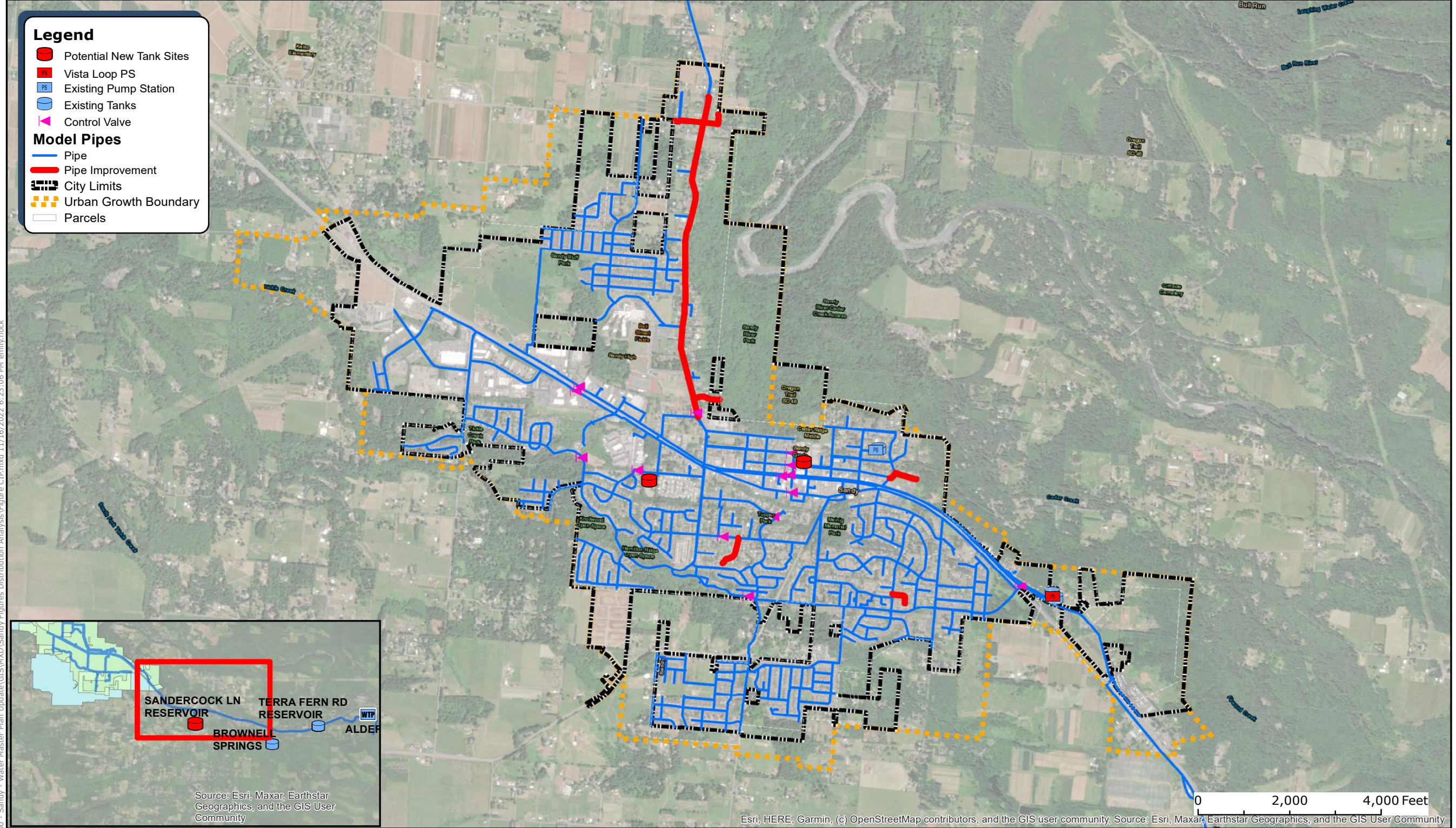
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



**City of Sandy  
 Water Master Plan Update**

**Figure 4-10  
 Buildout MDD w/ Prop Improv  
 Available Fire Flow**







**APPENDIX B**  
**GROUNDWATER SUPPLY EVALUATION FOR**  
**CITY OF SANDY WATER MASTER PLAN UPDATE**  
**(GSI WATER SOLUTIONS, JULY 2022)**

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## TECHNICAL MEMORANDUM-FINAL

### Groundwater Supply Evaluation for City of Sandy Water Master Plan Update

**To:** Brian Ginter, PE, - Murraysmith  
Jeff Fuchs, PE - Murraysmith

**From:** Owen McMurtrey, GSI Water Solutions, Inc.  
Andrew Wentworth, RG - GSI Water Solutions, Inc.  
Walt Burt, RG - GSI Water Solutions, Inc.  
Ronan Igloria, PE - GSI Water Solutions, Inc.

**Date:** July 7, 2022

#### 1. Introduction and Summary of Findings

At the request of Murraysmith and the City of Sandy (City), GSI Water Solutions, Inc. (GSI) developed the following summary of information pertinent to whether and how the City could meet its water demands using water supplied under its own water rights. This memorandum discusses the limitations of the City's water rights for Brownell Springs, Alder Creek, and the Salmon River, as well as the hydrogeology of the area around the City and its suitability for development as a water supply source.

The City's most senior water right for Brownell Springs, combined with an estimated maximum reliable supply from Alder Creek of 3.7 cubic feet per second (cfs) or 2.4 million gallons per day (mgd), provide a reliable supply of 2.72 mgd (4.2 cfs).<sup>1</sup> The City's undeveloped water use permit from the Salmon River, with permitted use of 16.2 mgd (25.0 cfs), has limitations on the maximum rate of diversion allowed, and development of a point of diversion (POD) anywhere on the Salmon River or Sandy River faces significant regulatory obstacles. The key limitations and challenges to the Salmon River permit include:

- With POD upstream of Boulder Creek confluence (river mile [RM] 0.8):
  - No water may be diverted from August 16 through October 31
  - No water may be diverted from November 1 through February 29 when target flows are not met upstream of Boulder Creek confluence.
- With POD downstream of Boulder Creek confluence (RM 0.8):
  - The City must provide the Oregon Water Resources Department (OWRD) with an executed agreement between the City and Oregon Department of Fish and Wildlife (ODFW) setting out specific fish passage requirements.

<sup>1</sup> This reliable supply estimate may be high and operations data from the City's water treatment plant (WTP) indicate there are periods when streamflows may not support the City's entire 4.0 cfs water right. This is discussed further in Section 2.2 of this tech memo.

With a POD upstream of Boulder Creek, aquifer storage and recovery (ASR) could provide an option to meet the peak summer demands; however, the restrictions on diversion from November through February makes the Salmon River an unreliable source of supply for ASR injection during winter. Furthermore, available data suggests that the aquifer characteristics in the vicinity of the City are not conducive for ASR. As a result, the most feasible pathway for the development of the City’s Salmon River surface water permit as a reliable, year-round source of supply is through a surface water to groundwater transfer to a hydraulically connected well on the Sandy River downstream of the confluence with the Salmon River. Approval of the permit amendment needed to transfer the surface water diversion to groundwater would be contingent on demonstrating that the withdrawals do not impact Cedar Creek.

Based on a review of the hydrogeologic conditions in areas near the City where an infiltration gallery or collector well could be constructed, the composition of the aquifer appears to be too thin and not laterally extensive enough for a 5 mgd facility. However, a 1 mgd facility may be feasible under favorable circumstances.

## 2. Water Rights Review

The City holds three water right certificates for municipal use authorizing diversions from Brownell Springs. Certificate 5427 authorizes the use of up to 0.13 mgd (0.2 cfs), Certificate 26132 authorizes the use of up to 0.7 cfs (0.45 mgd), and Certificate 91156 authorizes the use of up to 0.19 mgd (0.3 cfs). In addition, the City holds Certificate 93884 for the use of up to 2.59 mgd (4.0 cfs) from Alder Creek and Permit S-48451 for the use of up to 16.16 mgd (25.0 cfs) from the Salmon River. Table 1 summarizes these water rights.

**Table 1. City of Sandy Municipal Water Rights**

Source	Application	Permit	Certificate	Priority Date	Type of Beneficial Use	Authorized Rate (cfs/mgd)	Authorized Date for Completion
Brownell Springs (tributary of Beaver Creek)	S-9669	S-6597	5427	7/11/1924	Municipal	0.2/0.13	N/A
	S-27810	S-21879	26132	11/10/1952	Municipal	0.7/0.45	N/A
	S-47254	S-35394	91156	7/23/1970	Municipal	0.3/0.19	N/A
Alder Creek (tributary of Sandy River)	S-48840	S-36601	93884	11/11/1971	Municipal	4.0/2.59	N/A
Salmon River	S-65051	S-48451	N/A	4/28/1983	Municipal	25.0/16.16	10/1/2069

**Note**

cfs = cubic feet per second  
 mgd = million gallons per day  
 N/A = not applicable

Historically, the City has used a combination of its sources from Brownell Springs and Alder Creek to meet demands. As presented in the City’s 2015 water management and conservation plan, the City has relied on the springs to meet approximately one-third of demand and Alder Creek to meet approximately two-thirds of demand.

## 2.1 Brownell Springs

The City holds three water right certificates authorizing a total of 1.2 cfs from Brownell Springs. The priority date of Certificate 5427 (0.2 cfs) pre-dates all other water rights within the Beavercreek and Cedar Creek system. The City's other two certificates, Certificates 26132 and 91156, are junior in priority to the ODFW's 25.0 cfs water right for fish propagation (i.e., a hatchery); ODFW's water right has a priority date of 1949. In at least one instance, occurring in 2015, these two certificates held by the City were regulated off in favor of ODFW's water right. The City's records indicate that Brownell Springs reliably produces approximately 0.77 cfs, but due to the potential for regulation in favor of ODFW's senior fish hatchery water right on Cedar Creek, the City only has 0.2 cfs of reliable supply from Brownell Springs.

## 2.2 Alder Creek

The City's Alder Creek water right certificate has a priority date of November 11, 1971. The City's water rights on Alder Creek are senior to instream water rights on Alder Creek and the Sandy River. There is no history of regulation by priority on Alder Creek. There are no long-term streamflow records available for Alder Creek, but as part of the City's water supply investigation for the Alder Creek Basin, the City measured fairly consistent streamflows of approximately 5.1 cfs on Alder Creek approximately 0.5 miles above the Mt. Hood Loop Highway in August and September of 1971 and 1973. According to the City's WTP operators, however, there are periods when streamflows may not support the City's entire 4.0 cfs water right. The water use records available through OWRD's water use reporting database show that the City's average daily diversion during peak demand months of July and August does not exceed approximately 2.0 cfs. Murraysmith has assumed Alder Creek produces a reliable supply of 2.4 mgd (3.7 cfs) in the Water Master Plan. For purposes of this memo, Alder Creek is assumed to provide a reliable supply of 3.7 cfs. The City could further evaluate the reliable supply available from the Alder Creek source during periods of low flow.

## 2.3 Salmon River

The City holds Permit S-48451 for use of up to 16.2 mgd (25.0 cfs) from the Salmon River, which is currently undeveloped and has an extension of time to October 1, 2069. In the *Agreement for Instream Conversion* executed October 24, 2002 as part of the *Settlement Agreement Concerning the Removal of the Bull Run Hydroelectric Project (FERC Project No. 447)* (Settlement Agreement), the City voluntarily agreed to reduce the maximum rate of diversion under Permit S-48451 from 25.0 cfs to 16.3 cfs when the flow available in the Sandy River near Marmot, Oregon is 600 cfs or less, but can still divert up to 25.0 cfs when the flow available is more than 600 cfs. Based on data from a stream gage on the Sandy River near Marmot (U.S. Geological Survey Gage 14137000), a flow of 600 cfs is typically not exceeded from July through October, and for longer periods of time during years with low snowpack (e.g., 2015, 2018), when flows drop below 600 cfs prior to the beginning of June.

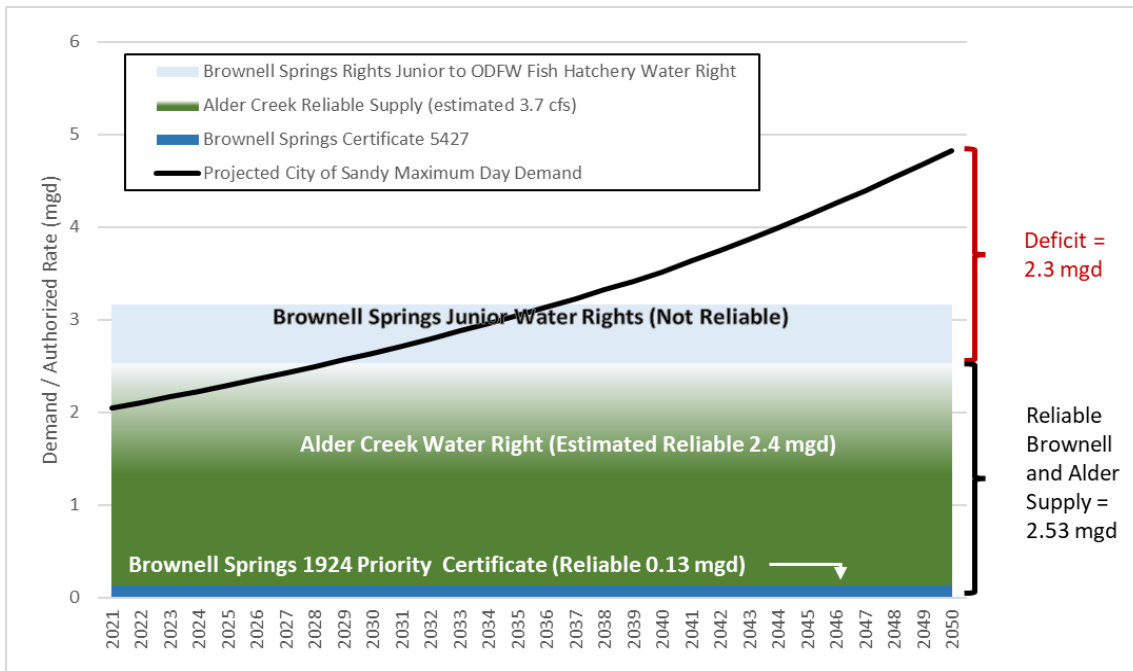
### 2.3.1 Fish Persistence Conditions Imposed by Extension Final Order

In addition to the restriction imposed by the Settlement Agreement, the order approving the City's extension of time for Permit S-48451 (extension order) imposes several conditions on the City's use of water under the permit, depending on where water is diverted. The City's currently authorized POD from the Salmon River is located at approximately RM 7.5. For diversion from the Salmon River at a location **upstream** from the confluence with Boulder Creek (RM 0.8), the extension order includes the following conditions:

1. Prior to using water under the permit, the City must install a means of measuring streamflow at a location between the confluence with Cheeney Creek (RM 7) and the mouth of the Salmon River. The City must receive OWRD's written concurrence with the location of measurement.
2. Prior to using water under the permit, the City must provide OWRD with an executed agreement between the City and ODFW, setting out specific fish passage requirements that ensure adequate upstream and downstream passage for fish.

3. No water may be diverted from August 16 to October 31.
4. From November 1 through February 29, the target flow for maintaining the persistence of listed fish species in the Salmon River is 129 cfs, or the average flow for the previous October, whichever is less. When the target flow is not met, no water can be diverted.

Given the restriction on any diversion of water from August 16 to October 31 for a diversion located above the confluence with Boulder Creek, the City would need to provide water from an alternate source from August 16 through October 31. The City's late August demands are likely similar to the maximum day demand. Alder Creek and Brownell Springs are not expected to be capable of meeting the City's projected maximum day demand. Figure 1 shows the City's projected demands compared to reliable supply under the City's Brownell Springs and Alder Creek water rights.



**Figure 1. City of Sandy Projected Demand and Reliable Water Supply from Alder Creek and Brownell Springs**

For diversion of water from a location **downstream** from the confluence with Boulder Creek at approximately RM 0.8, including a diversion from the Sandy River, the only condition included in the extension order, apart from repetition of conditions of the Settlement Agreement, is that prior to using water under the permit, the City must provide OWRD with an executed agreement between the City and ODFW setting out specific fish passage requirements that ensure adequate upstream and downstream passage for fish.

### 2.3.2 Surface Water to Groundwater Modification

The requirement for an agreement with ODFW regarding fish passage requirements, and the potential for additional federal conditions on any surface water diversion structure pose significant regulatory challenges to the development of a surface water diversion anywhere on the Salmon River or Sandy River. However, it may be possible for the City to minimize state and federal permitting associated with a new POD by

amending Permit S-48451 to change the surface water POD on the Salmon River to a hydraulically connected groundwater point of appropriation (POA) downstream on the Sandy River.

The City previously evaluated the potential to develop a groundwater source with a capacity of at least 5 mgd that meets OWRD requirements for transferring surface water rights to a hydraulically connected groundwater source (GSI, 2007). GSI's review and update of this evaluation is discussed in Section 4.

While there are no administrative rules governing permit amendments, OWRD reviews permit amendments using the same criteria as it does for water right transfers. OWRD would require the City's permit amendment application include a report prepared by a licensed geologist demonstrating that the use of the groundwater at the new POA downstream near the Sandy River would meet the following criteria:

1. The change would not result in injury or enlargement<sup>2</sup>.
2. The new POD appropriates groundwater from an aquifer that is hydraulically connected to the authorized surface source.
3. The proposed change in POD will affect the surface water source similarly to the authorized POD specified in the water use subject to transfer.

OWRD considers "similarly" to mean that the use of groundwater at the new POA will affect the surface water source specified in the permit and would result in stream depletion of at least 50 percent of the rate of appropriation within 10 days of continuous pumping.

Although the surface water source identified in the City's permit is the Salmon River, recent OWRD practice indicates that OWRD likely would not preclude a surface water to groundwater change to a downstream surface water body.

One potential obstacle to completing a surface water to groundwater permit amendment to a well hydraulically connected to the Sandy River is the proximity of Cedar Creek to the Sandy River in areas most suitable for development of a hydraulically connected groundwater POD. Near Sandy, Cedar Creek flows parallel to the Sandy River at a distance of 0.75 to 0.25 miles from the Sandy River. It is theoretically possible, although unlikely, that a well hydraulically connected to the Sandy River could also influence flows in Cedar Creek. Depending on the pumping rate, recharge from the Sandy River would probably limit the extent of the cone of depression. Regardless, if OWRD determines that a well hydraulically connected to the Sandy River also influence flows in Cedar Creek, then OWRD may find that such a change would not meet the criteria that use of the well impact surface water "similarly." Furthermore, any impact to Cedar Creek flows would likely result in a finding that the change would cause injury. ODFW holds a surface water right for the use of water from Cedar Creek for its fish hatchery at a location near the confluence with the Sandy River. This water right has previously been the basis for regulation of one the City's junior Brownell Springs water rights in 2015, so any impact to Cedar Creek flows identified through modelling of the proposed hydraulically connected well would have the potential to result in OWRD finding injury.

Therefore, although a surface water to groundwater permit amendment to a well hydraulically connected to the Sandy River appears to present the most feasible opportunity of navigating the conditions imposed by the Settlement Agreement and the final order approving the City's extension of time for Permit S-48451, some uncertainty remains as to the possibility of receiving approval of the permit amendment.

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<sup>2</sup> OWRD considers "injury" to mean a proposed water right action would result in another, existing water right not receiving previously available water to which it is legally entitled. OWRD considers "enlargement" to mean expansion of a water right and includes using a greater rate or duty of water per acre than currently allowed; increasing the acreage irrigated; failing to keep the original place of use from receiving water from the same source; or diverting more water at the new point of diversion or appropriation than is legally available to that right at the original point of diversion or appropriation.

It should be noted that the City has the option to include only a portion of its Salmon River permit in a downstream surface water to groundwater permit amendment. For example, the City’s projected groundwater supply need of 2.53 mgd (3.91 cfs), described in section 3, could be included in a surface water to groundwater modification to a downstream hydraulically connected well, while the remaining permitted rate remains associated with the currently authorized point of diversion on the Salmon River.

Furthermore, if the downstream surface water to groundwater permit amendment is approved, but for some reason, the City does not want to complete development of a hydraulically connected well, the City can return the rate moved to a downstream hydraulically connected well to the original point of diversion within five years of the approval of the permit amendment to move the point of diversion to a hydraulically connected well.

### 3. Groundwater Supply Needs

The City’s current water master planning effort projects demand through 2050. The water demand projection is predicated on assumption of steady, continual growth of Sandy over the next 30 years. Table 2 provides a summary of the results of the projection in the draft Water Master Plan at the time this tech memo was prepared.

**Table 2. City of Sandy Projected Demands through 2050 (in million gallons per day)<sup>3</sup>**

Year	Single-Family Residential	Multi-Family Residential	Commercial/Industrial	Other (Wholesale, Backwater, Bulk)	Total ADD <sup>1</sup>	EDUs	MDD
2021	0.65	0.11	0.21	0.05	1.20	6,613	2.05
2030	0.77	0.13	0.35	0.06	1.55	8,535	2.64
2040	0.89	0.15	0.64	0.07	2.07	11,362	3.52
2050	0.99	0.16	1.17	0.08	2.84	15,618	4.83

**Notes**

<sup>1</sup> Includes 18% water loss

ADD = average-day demand

EDU = Equivalent dwelling unit

MDD = maximum day demand

As described above, the City’s maximum reliable supply under its senior Brownell Springs water right and Alder Creek is 2.53 mgd. This is lower than the City’s projected maximum day demand of 4.83 mgd and average day demand of 2.84 mgd by 2050. If the City maintains its Brownell Springs and Alder Creek sources of supply, in order to meet the City’s maximum day demand using its own existing water rights, the City would need to develop a reliable supply of at least 2.3 mgd from a hydraulically connected well on the Sandy River downstream of the confluence with the Salmon River.

### 4. Future Groundwater Supply Alternatives

In 2007, GSI, under contract with Curran-McLeod, completed the *City of Sandy Groundwater/Riverbed Filtration Hydrogeologic Evaluation* (GSI, 2007). The objective of this evaluation was to determine if a groundwater source with a capacity of at least 5 mgd could be developed on the Sandy River that meets OWRD requirements for transferring surface water rights to a hydraulically connected groundwater source.

<sup>3</sup> Data in this table is from Draft City of Sandy Water Master Plan (2022) being prepared by Murraysmith at the time this tech memo was prepared.



The information presented below is based on a review of those findings to confirm if other/newer data warrant updates or refinements to those findings and recommendations.

Figure 2 is a map of the City's authorized surface water POD and areas evaluated as part of the 2007 hydrogeologic evaluation.

#### 4.1 Aquifer Storage and Recovery Feasibility near the City of Sandy

An ASR project would allow the City to inject water into the aquifer during the winter months for recovery during the high demand summer period. A successful ASR system requires an aquifer with several characteristics, including the ability to accept/yield water at a sufficient rate, sufficient storage volume, confined conditions that will not lose stored water to surface water bodies, and an acceptable depth from the surface (i.e., not so deep as to render drilling and operation of the well prohibitively expensive).

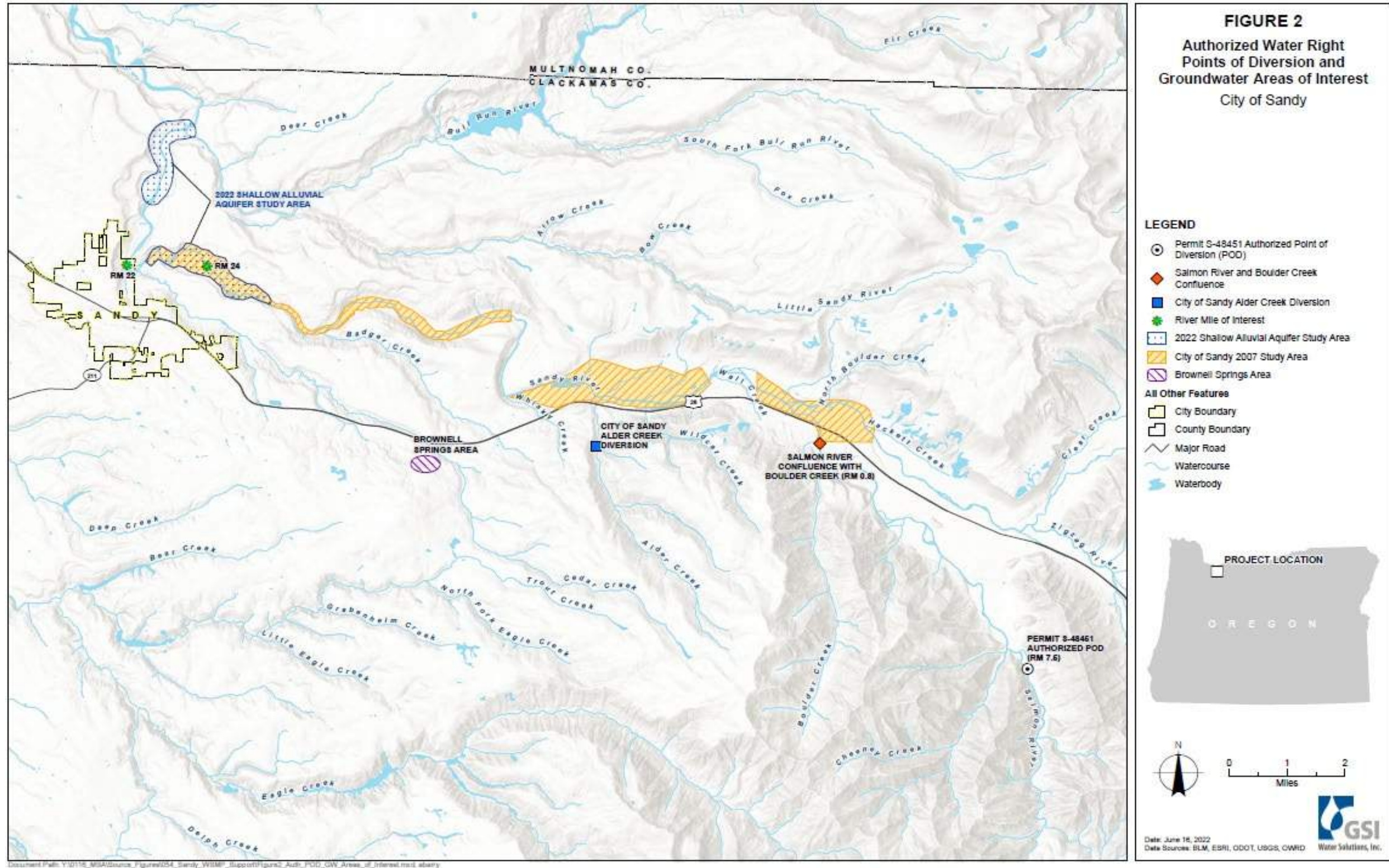
GSI evaluated the feasibility of ASR development for the following water-bearing formations in the vicinity of Sandy:

- **Columbia River Basalt Group (CRBG)** — The CRBG unit consists of a series of basalt sheetflows characterized by thin, often permeable, interflow zones separated by thick, low permeability flow interiors. Interflow zones include the top of one flow, the base of an overlying flow, and intervening sediments. Well yields are moderate to high, with most high-capacity wells open to multiple interflow zones. In the Sandy area, the CRBG is assumed to underlie the younger sedimentary units, but the depth to the top of the CRBG is uncertain, and likely greater than 1,000 feet below ground surface. A productive ASR well would likely need to extend at least several hundred feet into the basalt. Costs associated with drilling and operation of a high-capacity ASR well in the CRBG would be very high, and the presence and nature of suitable aquifer storage targets in the CRBG is not known in this area.
- **Rhododendron Formation** — The Rhododendron Formation consists of debris-flow breccias and andesite lava flows, with generally poor water-bearing characteristics (Swanson et al., 1993). Yields range from 10 to 60 gallons per minute (gpm), often with considerable drawdown (specific capacity 0.04 to 3 gpm per foot).<sup>4</sup>
- **Troutdale Formation** — The Troutdale Formation is an important aquifer for water supply in the area and consists of volcanic and quartzite-bearing conglomerate and vitric sandstone. The greater well yields in the Troutdale Formation near the City are 40 to 50 gpm, much less than the City's needs. The Troutdale Formation near Sandy is mostly unconfined and in hydraulic connection with surface water bodies. Both the unconfined condition and hydraulic connection with surface water are associated with considerable risk of losing stored water.
- **Boring Lava** — The Boring Lava consists of localized accumulations of basaltic lavas, vent plugs, and volcanic debris. The potential to encounter favorable conditions in the Boring Lava for an ASR system that can meet the City's needs is low because of the limited extent and locally variable nature of the unit.

The feasibility of developing ASR in the shallower water-bearing units is mostly limited by aquifer characteristics, whereas the development potential of a deeper aquifer is more affected by uncertainty regarding the presence of a suitable storage aquifer, and the drilling and construction depth that would be required to construct a high-capacity ASR well.

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<sup>4</sup> This information was obtained from the following reference well logs for the Rhododendron Formation near Sandy: CLAC 6699, CLAC 18898, CLAC 18519, CLAC 6688, and CLAC 51283/52951.



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In addition, restrictions on diversion of water from an upstream POD during November through February may make the Salmon River an unreliable source of supply for ASR injection during winter. GSI reviewed Salmon River flow data from 1925 through 1952. While water was typically available from November through February, during dry years from the 1925 through 1952 period of record, data indicate that water would have been available for less than 90 days in 3 out of 25 years in the period of record. There is no Salmon River flow data available for the winter of 1976 to 1977, but Sandy River flow data from 1976 to 1977 suggest the possibility that no water would have been available from November through February in that year. The City would need to have sufficient excess water supply available from Alder Creek and Brownell Springs to provide water for ASR injection.

## 4.2 Shallow Alluvial Aquifer near the City of Sandy

GSI evaluated the favorability of groundwater development from the shallow alluvial aquifer on the south side of the Sandy River between RM 22 and RM 24 (GSI, 2007) and between RM 19 and RM 22. Both reaches of the Sandy River are downstream from the confluence with Boulder Creek and would likely meet the criteria for a downstream transfer of the Salmon River water right. Although the composition of the aquifer indicates potential for high-yielding shallow groundwater production, the shallow alluvial aquifer appears not to be laterally extensive, and the limited saturated thickness may constrain yield potential from either riverbank filtration (RBF) or a vertical well. According to nearby wells logs (CLAC 6688, CLAC 6723, CLAC 18462, CLAC 1327, CLAC 74908, and CLAC 11163) the saturated thickness of the aquifer is approximately 20 to 25 feet. Two well logs from geotechnical borings (CLAC 51394 and CLAC 51395) located near where Lusted Road meets Dodge Park (approximately RM 19) reported gravels and cobbles to a depth of 35 feet. However, the majority of logs between RM 19 and RM 22 reported depths of coarse alluvial deposits between 11 and 27 feet. GSI affirms the findings from the 2007 study that it is unlikely that an infiltration gallery or collector well system constructed in the shallow alluvial aquifer near the City could produce the desired 5 mgd.

A vertical well that is hydraulically connected to the Sandy River may be able to produce yields in excess of 100 gpm, but there are considerable uncertainties that might limit actual yields, including seasonal water level fluctuations and the depth of the productive zone(s). For example, if only the uppermost layer of the aquifer is in connection with the river, it might be highly productive during the wet season, but lose some or all hydraulic connection during periods of low water levels in the river. Similarly, pumping from the well might cause the water level to drawdown below the top of a shallow screen interval and cause water to cascade into the well. Cascading water should be avoided because it increases the risks of corrosion and biofouling. A horizontal gallery or lateral well may be capable of higher rates. Similar settings with suitable hydrogeologic characteristics may yield more than 1 mgd to a horizontal facility under the right conditions. Completion of a test well would be the best recommended approach to estimate actual sustainable production rates from the shallow alluvial aquifer.

In summary, the current review confirms that the saturated thickness of the shallow alluvial aquifer in this area is likely insufficient to provide a 5 mgd groundwater supply source, but may be capable of yielding 1 mgd to a horizontal well at a site under favorable circumstances.

## 5. Additional Data Needs

A comprehensive field characterization program would be necessary should the City decide to investigate the feasibility of developing a lower capacity source (i.e., 1 mgd) in the alluvial aquifer through a surface to groundwater transfer. The objectives of the field characterization program include:

1. Determine potential yield of a groundwater source under low stage/flow (summer) conditions on the river

2. Evaluate the feasibility of a surface to groundwater transfer based on hydraulic connection with the river during the summer season, assessing the likelihood of interference with streamflow in Cedar Creek.

The characterization program should include the following elements to develop a sufficient confidence in the capacity of a given location to before investing in infrastructure to develop the source:

1. Identify a site(s) adjacent to the flood plain and with space within 100 feet of the river. The City may consider identifying more than one site to explore in the event that characteristics at the first site are unsuitable and/or the City should desire to develop an additional increment of supply.
2. Complete a field exploration and monitoring program including the following activities:
  - Generate an accurate topographic map of the site using either survey or LiDAR data, depending on availability
  - Conduct a geophysical survey to map the extent and thickness of shallow deposits
  - Drill 2–4 small boreholes using sonic drilling technique to identify geologic materials and assess initial suitability
  - Construct a test well and two piezometers to serve as observation wells
  - Perform a constant-rate aquifer test during the low flow season in the Sandy River, and monitor water level responses and field water quality parameters.
  - Collect samples for water quality analysis and conduct microscopic particulate analysis (MPA) during the constant-rate aquifer test
  - Monitor water levels in the test well and observation wells over periods of high- and low-stages in the Sandy River
3. Evaluate source capacity and stream depletion from testing and monitoring data, water quality data and analytical modeling.
4. Develop preliminary design of horizontal well or infiltration gallery.

We estimate that planning level costs for this assessment per site are approximately \$225,000. Including a 25 percent contingency, the total per site assessment cost would be \$281,000.

## 6. References

- GSI. 2007. *City of Sandy Groundwater/Riverbed Filtration Hydrogeologic Evaluation*. Draft report prepared for Curran-McLeod, Inc. and City of Sandy. May 2007.
- GSI. 2015. City of Sandy Water Management and Conservation Plan.
- PGE. 2002. Settlement Agreement Concerning the Removal of the Bull Run Hydroelectric Project (FERC Project No. 447
- Swanson, R.D., McFarland, W.D., Gonthier, J.B., and Wilkinson, J.M. 1993. A description of hydrogeologic units in the Portland Basin, Oregon and Washington: U.S. Geological Survey Water-Resources Investigations Report 90–4196, 56 p., 10 sheets, scale 1:100,000.



**APPENDIX C**  
**CITY COUNCIL PRESENTATION**  
**MAY 2022**

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# Bull Run Water Supply Decision Re-Evaluation

June 6, 2022

Presented by:

Jennifer Coker  
Public Works Director

Murraysmith



# Presentation Overview

- Background, Drivers
- Existing Water Supply Sources
- Water Demand
- Changes to Portland Supply
- Water Supply Alternatives
- Schedule
- Recommendation & Next Steps
- Q&A

# Existing Water Supply

## Today, water is supplied from three sources

### Portland Wholesale Supply

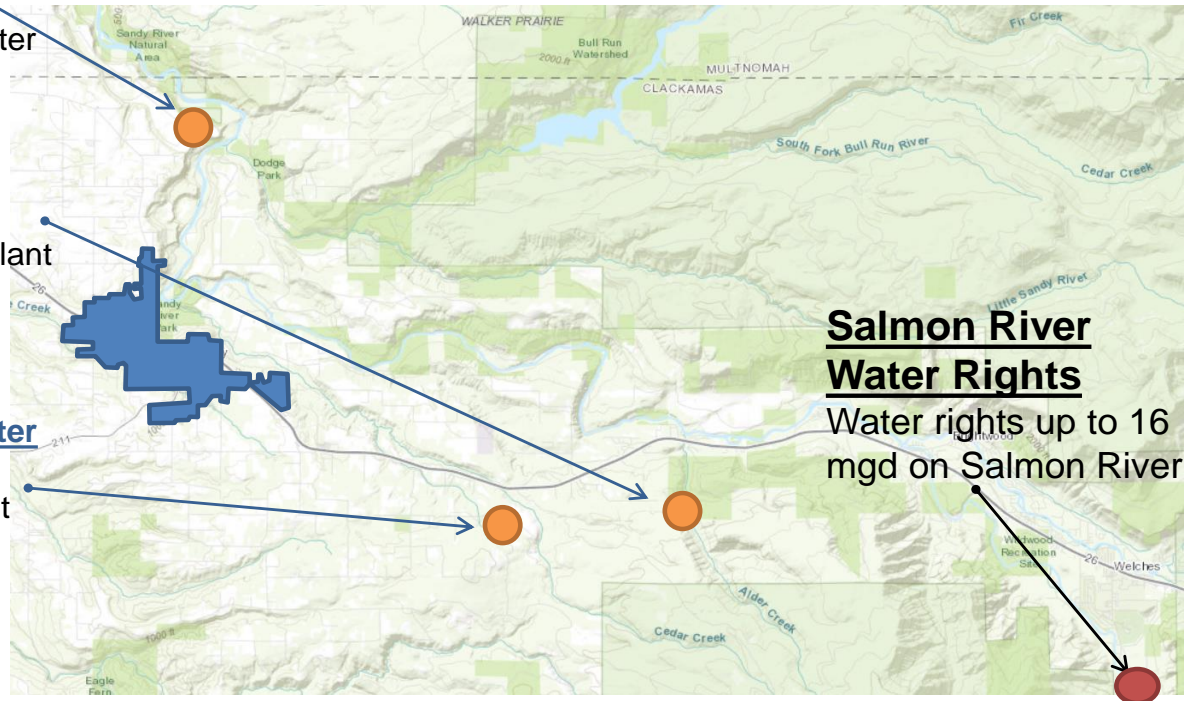
Purchase unfiltered treated water from Portland : 3 (mgd)

### Alder Creek Surface Water Source

City owned Water Treatment Plant on Alder Creek: 0.9 mgd

### Brownell Springs Groundwater Source

City owned groundwater well at Brownell Springs: 0.12 mgd



**Salmon River Water Rights**  
Water rights up to 16 mgd on Salmon River



# Groundwater

## ▪ **Water Rights Review**

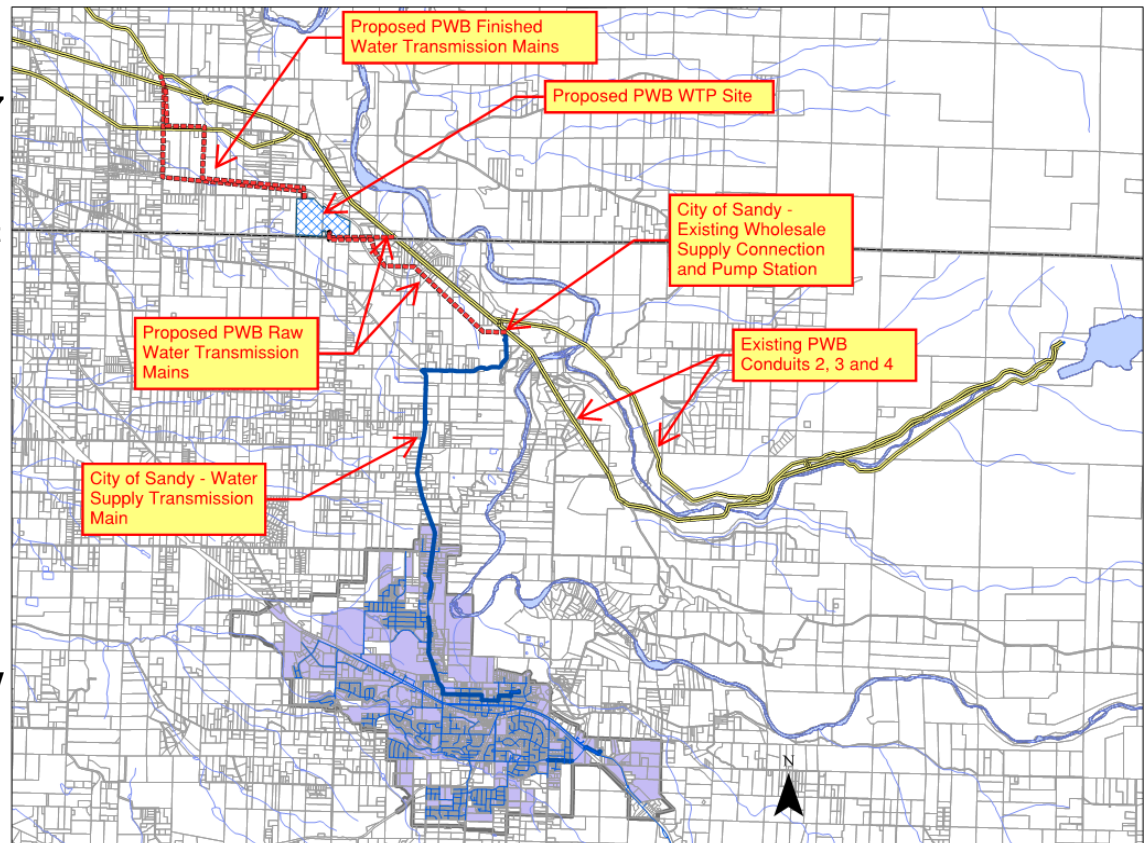
- Brownell Springs & Alder Creek @ 2.7 MGD water right priority
- Undeveloped Salmon River Permit – 16.2 MGD– significant regulatory hurdles.
  - Surface water to groundwater transfer of permit to a well on the Sandy River downstream of Salmon River confluence may be feasible.
  - Uncertain outcome, cannot happen by 2027

## ▪ **Groundwater Review**

- Unlikely a wellfield could produce 5 MGD

# Changes to Portland Supply

- Portland is building a new filtration plant to meet Surface Water Treatment Rules
  - Must be in service by fall 2027
  - Treated water will not be available to Sandy when plant goes in service without constructing improvements
  - Sandy can buy untreated water from Portland and build a treatment plant
- or
- Sandy can buy filtered water from Portland and build a new pipeline from Portland's WTP to existing connection at Lusted Road and Hudson Road



# Sandy Water Supply History

**2008** 20-year Water Supply Agreement w/ PWB

**2011** Sandy constructs infrastructure to connect to PWB

**2018** Sandy Agreement w/OHA treat Bull Run Water for Cryptosporidium by **September 2027**

**June 2021** Sandy chooses water treatment plant & purchase unfiltered water from PWB

**May 2022** Revisit Decision based on updated costs

# Compliance Status with OHA

Bilateral Compliance Agreement	Date Issued	Due Date	Closed Date
Submit Master Plan	Sept 2018	December 2020	<b>OVERDUE</b>
Begin Construction	Sept 2018	July 31, 2024	
Correct Water Quality Deficiencies	Sept 2018	September 30, 2027	

# Decision Drivers

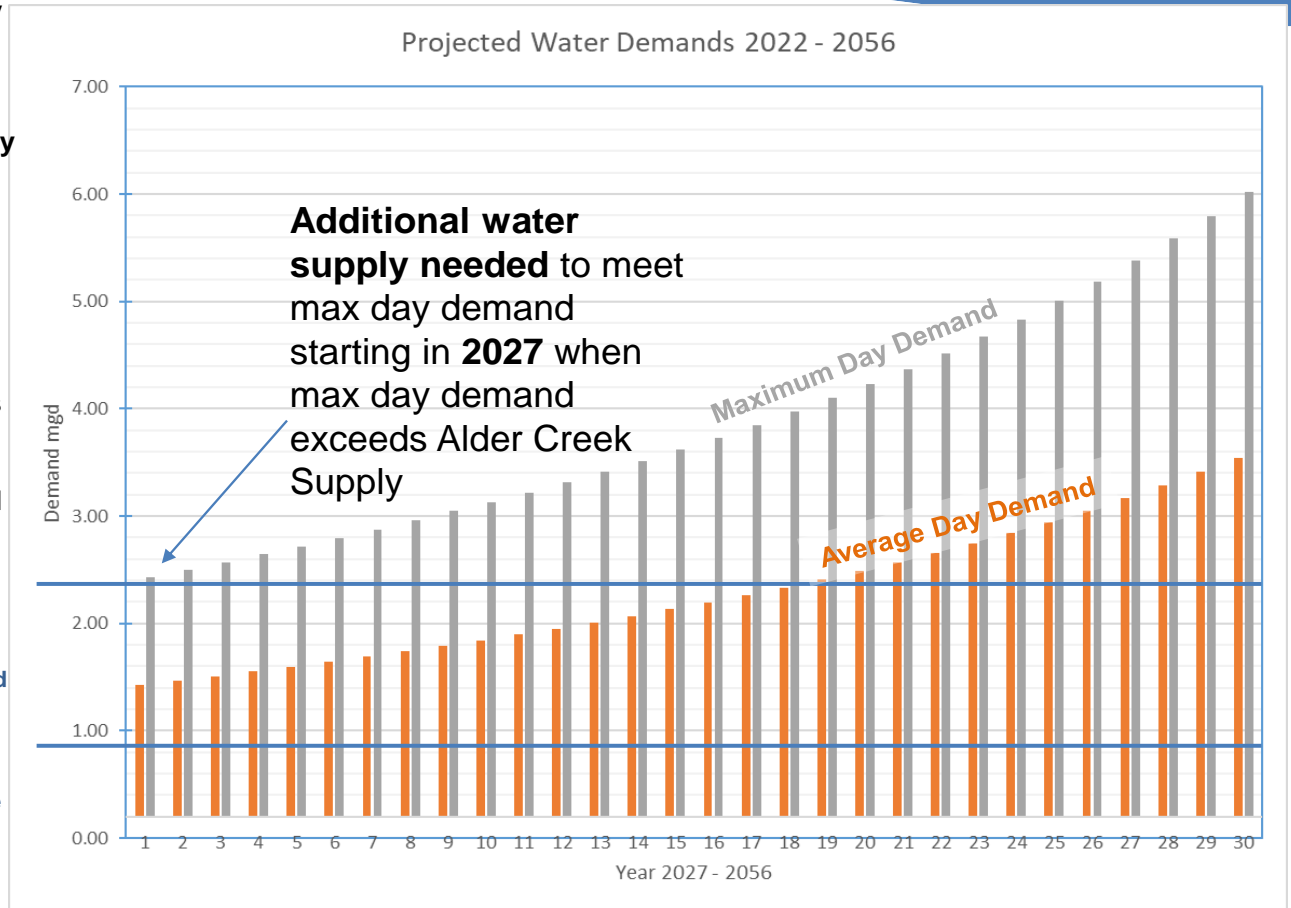


# Water Demand

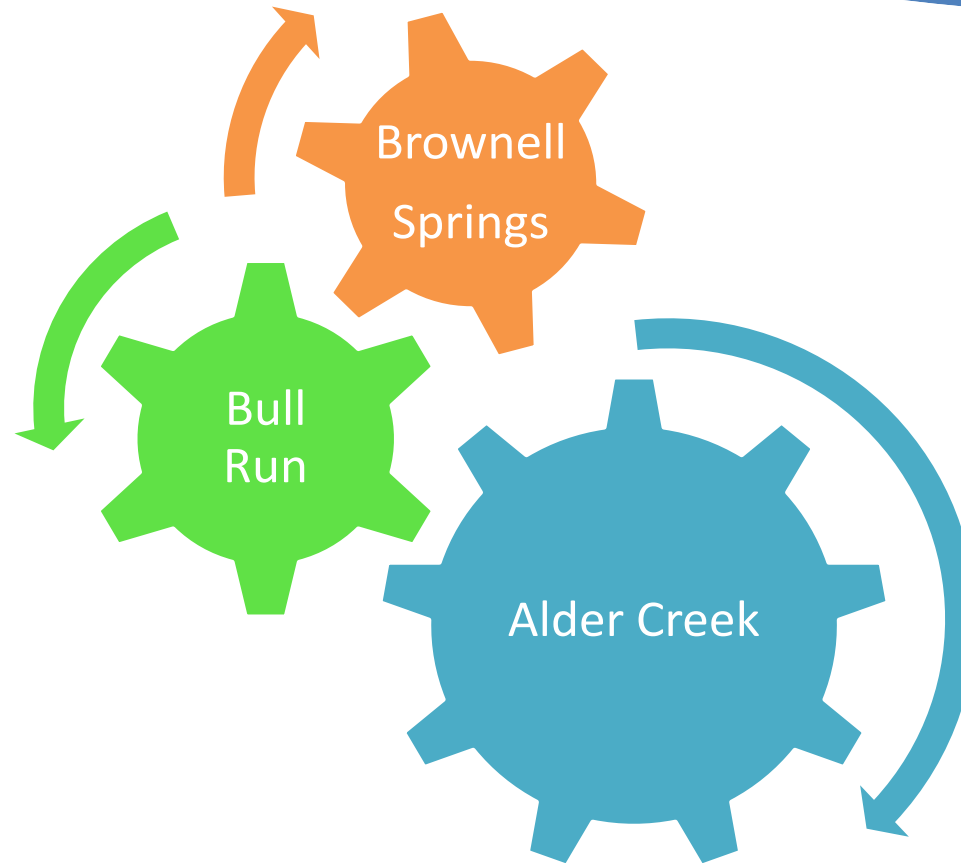
- **Additional water supply needed in 2027** to meet max day demand
- **Size of additional supply varies** depending on capacity of Alder Creek
- **Brownell Springs provides** additional 0.12 mgd in the winter
- **Max day demand** occurs in summer
- **Today max day demand** is 2.1 mgd (ADD is 1.2 mgd)

**ALDER CREEK**  
Maximum future capacity 2.4 mgd

**ALDER CREEK**  
Current reliable capacity 0.9 mgd



# Water Supply Alternatives Screening



# Water Supply Alternatives Screening

## Upgrade existing supply at Alder Creek,

- Maintain existing capacity of 0.9 mgd with minor maintenance
- Improve supply to 1.4 mgd with major maintenance
- Maximize supply to 2.4 mgd with upgrades

PLUS:

- A) Purchase raw water & build second treatment plant;**  
or  
**B) Purchase filtered water and build Pipeline**



# Pipeline Alignment for Finished Water

## Potential PWB Backfeed Pipeline

Would need to be oversized to feed Sandy

## Bluff Rd. Pipeline

New low-head pump station – 5 mgd

PWB obtaining easement

New pipeline 11,500 FT – 24" dia.

Exist. Connection and pumpstation

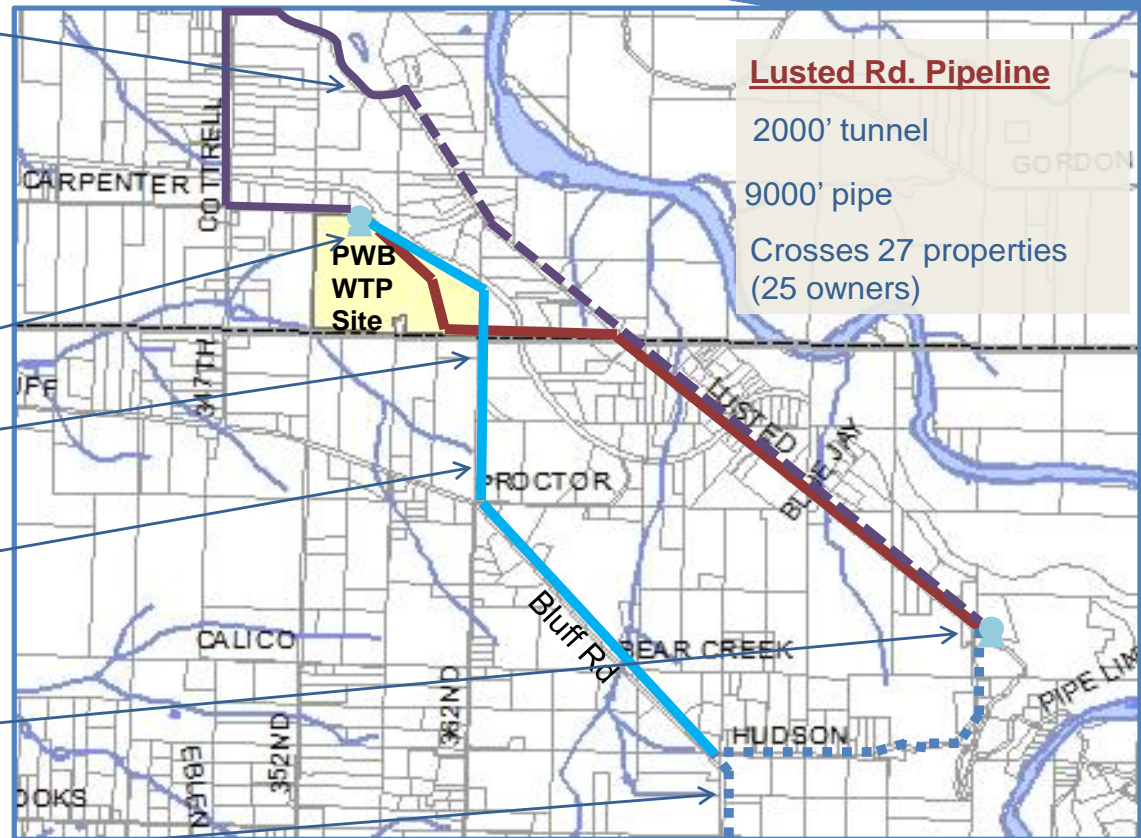
Exist. Sandy supply pipeline

## Lusted Rd. Pipeline

2000' tunnel

9000' pipe

Crosses 27 properties (25 owners)



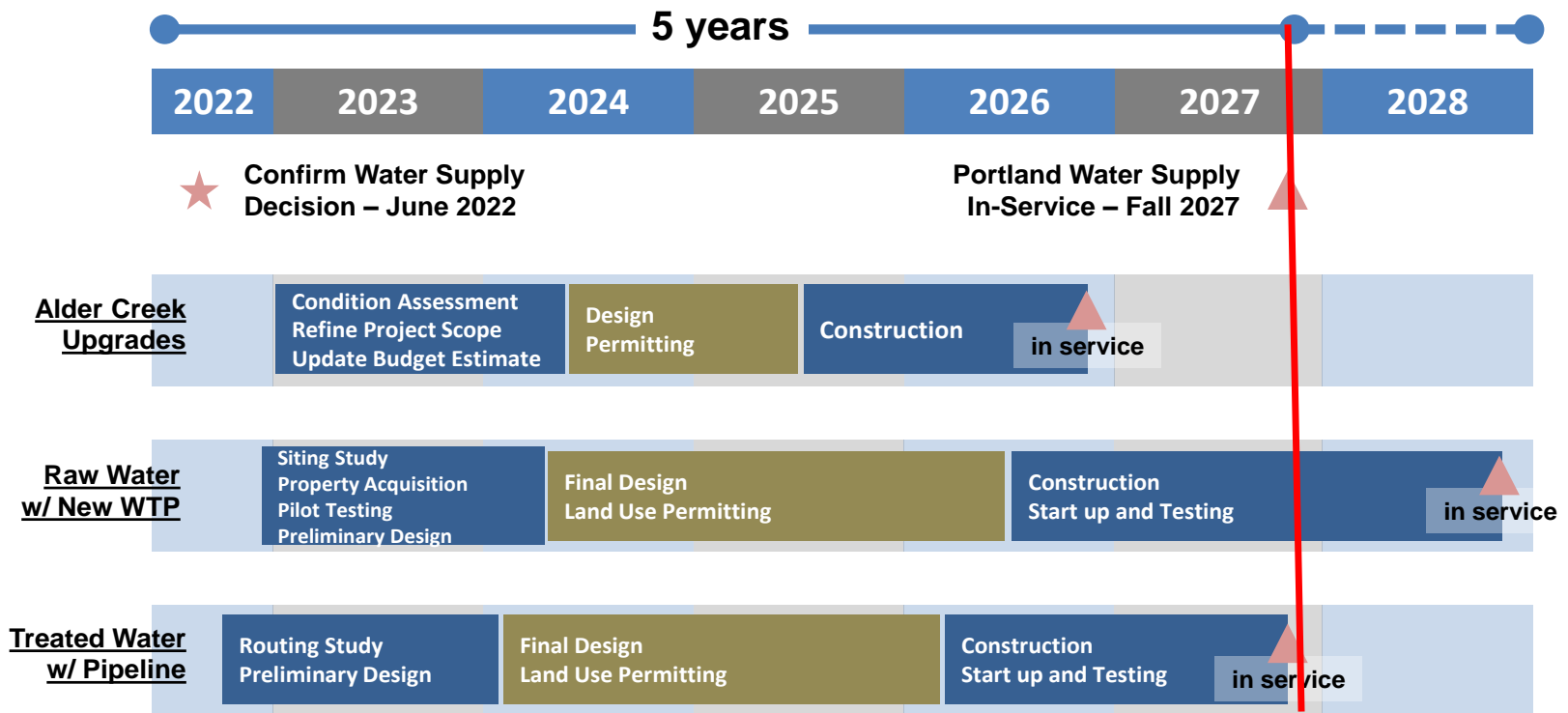
# Supply Alternatives Filtered vs. Unfiltered Water Purchase

CRITERIA	PURCHASE FILTERED WATER FROM PDX BUILD BLUFF ROAD PIPELINE			PURCHASE RAW WATER FROM PDX BUILD WATER TREATMENT PLANT			
Water Supply Cost (30-yr cost in 2026 \$)	LifeCycle Cost:	<b>\$85.6M</b>	<b>+</b>	LifeCycle Cost:	<b>\$143.4M</b>	<b>-</b>	
	Total Investment:	<b>\$47.2M</b>		Total Investment:	<b>\$ 58.4M</b>		
Cost of Portland Water (in 2026 \$)	30-yr Cost:	<b>\$10.7M</b>	<b>-</b>	30-yr Cost:	<b>\$ 6.1M</b>	<b>+</b>	
Implementation Risk	<ul style="list-style-type: none"> <li>* Entire pipeline must be built - <u>can't</u> be phased</li> <li>* Requires Carpenter Ln Easement</li> <li>* All construction is outside the City</li> <li>* Without pipeline, City can't meet summer demand in 2027</li> </ul>			<b>-</b>	<ul style="list-style-type: none"> <li>* WTP can be built in phases</li> <li>* Requires one (1) 3-to-5-acre property near existing pipeline</li> <li>* Land use permitting provides some uncertainty</li> </ul>		<b>+</b>

# Supply Alternatives including Alder Creek Upgrades

CRITERIA	PURCHASE FILTERED WATER FROM PDX BUILD BLUFF ROAD PIPELINE		PURCHASE RAW WATER FROM PDX BUILD WATER TREATMENT PLANT	
Water Filtration	<ul style="list-style-type: none"> <li>* Water Treatment Plant (WTP) built by Portland</li> <li>* WTP cost shared by wholesale purchasers &amp; Portland rate payers</li> </ul>	+	<ul style="list-style-type: none"> <li>* City builds and owns new WTP</li> <li>* WTP paid for by City Rate Payers</li> </ul>	-
Operational Complexity	<ul style="list-style-type: none"> <li>* Minimal O&amp;M cost for pipeline</li> <li>* Need To evaluate disinfection approach</li> <li>* City operates only upgraded Alder Creek WTP and new pumpstation</li> <li>* PWB responsible for compliance</li> </ul>	+	<ul style="list-style-type: none"> <li>* City operates two water treatment plants</li> <li>* Higher O&amp;M cost</li> <li>* City responsible for compliance</li> </ul>	-
Resilience / Reliability	Portland groundwater supply provides redundancy	+	Portland groundwater supply <b>not</b> available for raw water option	-

# Water Supply Program Schedule



# Recommendation

- Upgrade Alder Creek & Install Bluff Road Water Transmission Pipe, **purchase filtered water**
- Capital Cost **\$47.2 Million**
- 30-year Lifecycle cost **\$85.6 Million**
- Lowest Capital and Lifecycle Costs, Faster Schedule, and Resiliency/Groundwater access

# Next Steps

- **Council Formalize** purchase decision
- **Refine condition assessment** to maximize Alder Creek WTP and determine water system CIP
- **Complete Master Plan**
- **Evaluate land use and permitting** associated with building a pipeline
- **Develop funding** approach for program
- **Hire** program manager/design team

# Questions



# Portland Supply Alternatives

## **We also considered new pipeline in Lusted Road.**

- Included a 2,000 ft tunnel and 200' deep bore shaft – high risk
- Required property acquisition from 25 property owners along Lusted Road – high risk
- Cost was higher than Bluff Road option



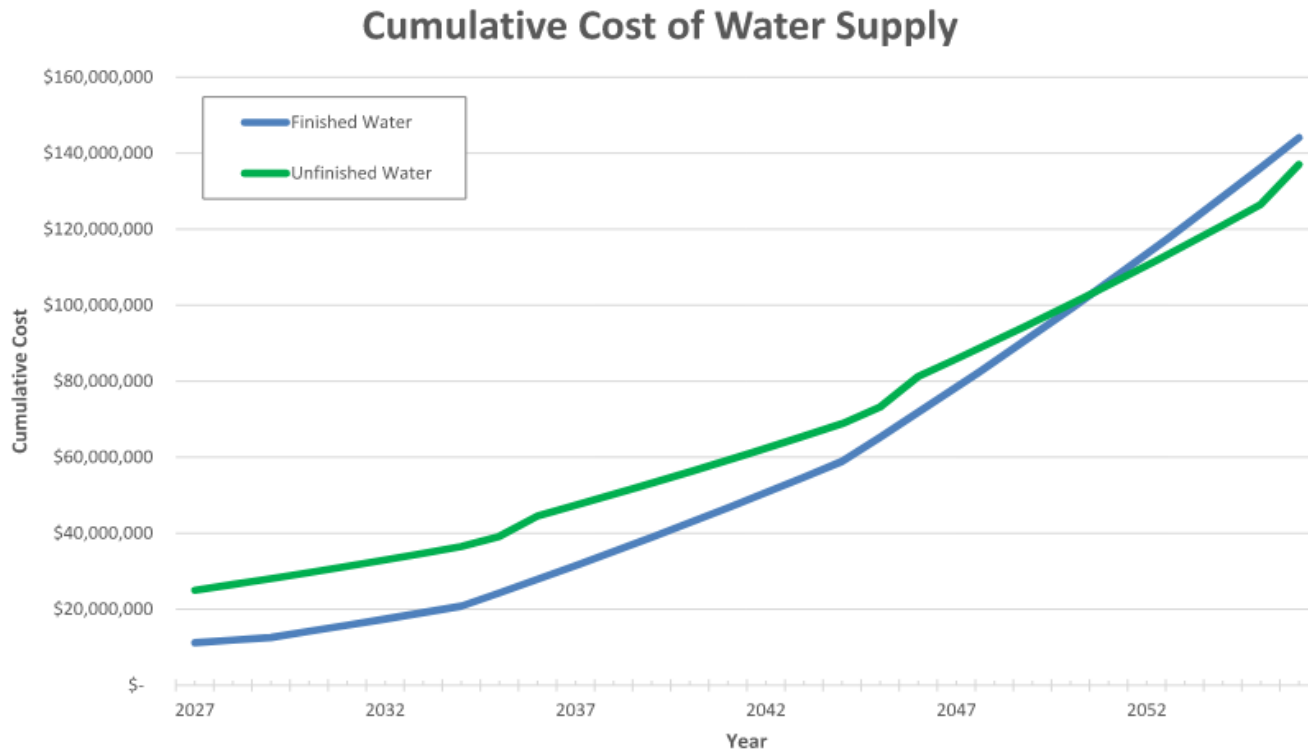
# Screening: Raw Water Alternatives

Raw Water Alternatives	Initial Investment (2026 Dollars)	Lifecycle Cost (30 years)	Water Purchase	O & M
(R1) New Plant + Alder minor	\$43,947,000 \$ 1,033,000	<b>\$176,607,000</b>	\$37,756,000	\$27,300,000
<b>TOTAL</b>	<b>\$44,900,000</b>	<i>Build a new WTP and perform minor maintenance at Alder Creek. Alder Creek contributes today's amount 0.9 MGD</i>		
(R2) New Plant + Alder major maintenance	\$43,947,000 \$ 4,164,000	<b>\$161,668,000</b>	\$17,835,000	\$36,270,000
<b>TOTAL</b>	<b>\$48,100,000</b>	<i>Major maintenance at Alder Creek includes new filters, control repair/upgrades. Alder Creek contributes 1.4 MGD.</i>		
(R3) New Plant + Upgrade Alder Creek	\$43,947,000 \$ 14,407,000	<b>\$143,356,000</b>	\$6,057,000	\$32,240,000
<b>TOTAL</b>	<b>\$58,400,000</b>	<i>Partial replacement of Alder Creek includes new filters, new control, new process piping and upgraded pump station. Alder Creek contributes 2.4 MGD</i>		

# Screening: Filtered Water Alternatives

Filtered Water Alternative	Initial Investment (2026 \$)	Lifecycle Cost (30 years)	Water Purchase	O & M
(FB1) New Bluff Rd Pipe Alder Creek minor maintenance	\$32,784,000	<b>\$177,700,000</b>	\$75,061,000	\$4,977,000
<b>TOTAL</b>	\$1,033,000 <b>\$33,817,000</b>	11,500 LF of 24" pipe including 5 mgd pump station. Alder Creek produces current rate for 10 years		
(FB2) New Bluff Rd Pipe Alder Creek major maintenance	\$32,784,000	<b>\$119,289,000</b>	\$31,146,000	\$14,208,000
<b>TOTAL</b>	\$4,164,000 <b>\$36,948,000</b>	11,500 LF of 24" pipe including 5 mgd pump station. Increase Alder Creek production to 1.4 MGD		
(FB3) New Bluff Rd Pipe Upgrade Alder Creek	\$32,784,000	<b>\$85,618,000</b>	\$10,682,000	\$10,177,000
<b>TOTAL</b>	\$14,407,000 <b>\$47,190,000</b>	11,500 LF of 24" pipe including 5 mgd pump station. Increase Alder Creek production to 2.4 MGD		

# Previous Analysis



# Future Water Supply Alternatives

## Evaluating Alder Creek Alternatives

All options assume Alder Creek improvements are completed before 2027

Note: Maximum capacity from Alder Creek requires additional source to meet max day demand

Alternative	Capacity	Cost	Benefits/Risk
Minor Maintenance	0.9 mgd	\$ 1M	<ul style="list-style-type: none"><li>• Requires most water from Portland</li><li>• Alder Creek has approx. 10-year life expectancy without significant upgrades</li><li>• Does not Maximize Alder Creek supply</li></ul>
Major Maintenance	1.4 mgd	\$ 4.2M	<ul style="list-style-type: none"><li>• Reduces water needed from Portland</li><li>• Restores reliable long-term water supply</li><li>• Does not Maximize Alder Creek supply</li></ul>
Partial Replacement	2.4 mgd	\$ 14.4M	<ul style="list-style-type: none"><li>• Maximizes Supply from Alder Creek</li><li>• Requires least water from Portland</li><li>• Restores reliable long-term water supply</li></ul>



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888 SW 5TH AVENUE, SUITE #1170

PORTLAND, OR 97204

[www.consoreng.com](http://www.consoreng.com)



# Water System Master Plan

City Council Work Session  
December 5, 2022

Jenny Coker, PE, *City of Sandy*  
Brian Ginter, PE, *Conсор*  
Jeff Fuchs, PE, *Conсор*



# AGENDA

**1 WSMP Purpose and Overview**

**2 Water System Description**

**3 Water Demand Forecast**

**4 Distribution System Analysis**

**5 Water Supply Analysis**

**6 Capital Improvements**

**7 Next Steps**



# WATER SYSTEM MASTER PLAN PURPOSE



Planning Resource for City Staff and Council



Document system components



Outline plan for system improvements



Show financial impact of Capital Improvement Program




Meet Regulatory Requirements



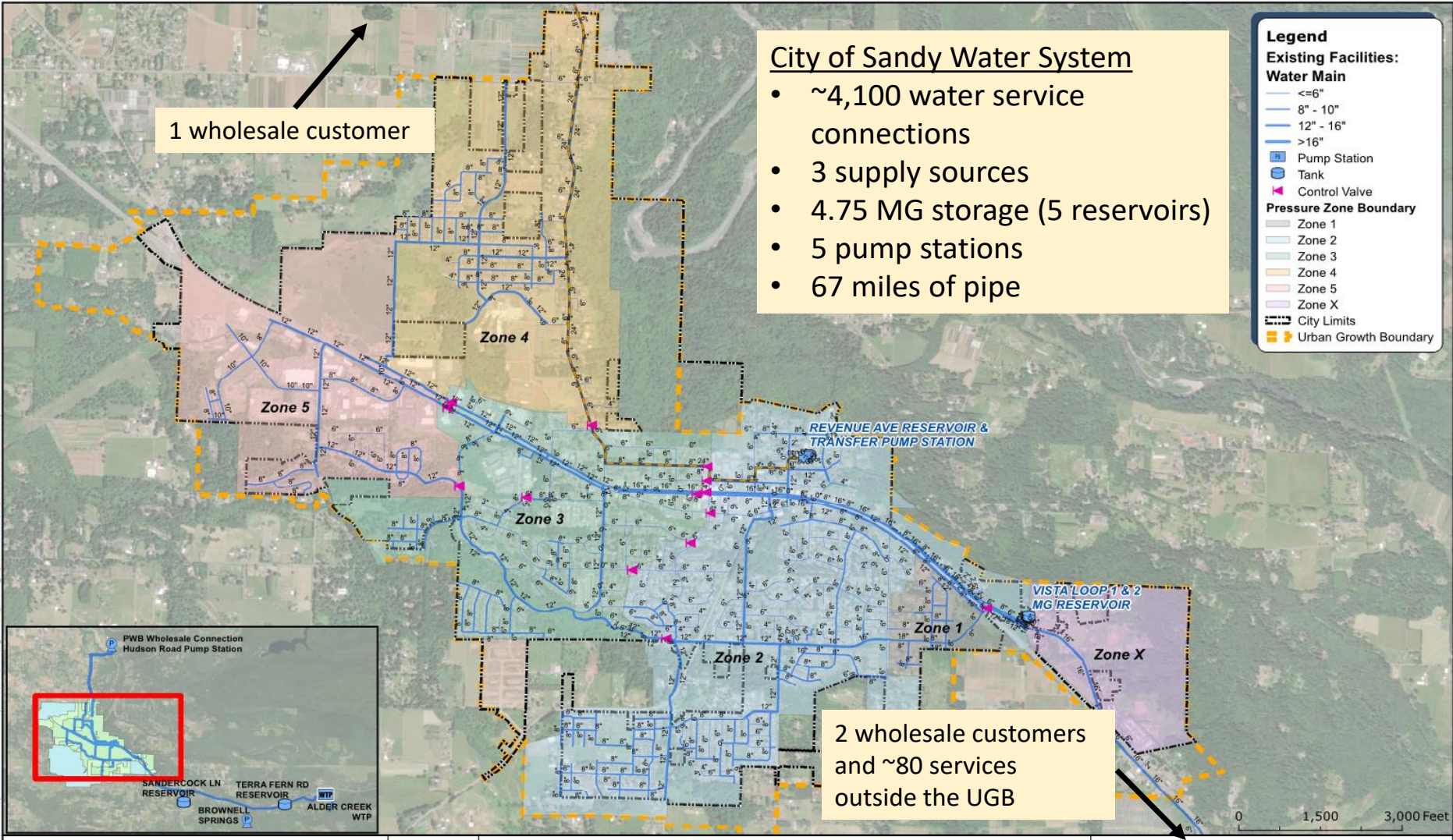


# WATER SYSTEM MASTER PLAN CONTENTS

- 1 Introduction and Existing Water System 
- 2 Water Requirements
- 3 Planning and Analysis Criteria
- 4 Distribution System Analysis
- 5 Water Supply Analysis
- 6 Capital Improvements Plan



# EXISTING WATER SYSTEM



- City of Sandy Water System**
- ~4,100 water service connections
  - 3 supply sources
  - 4.75 MG storage (5 reservoirs)
  - 5 pump stations
  - 67 miles of pipe

**Legend**

**Existing Facilities:**

**Water Main**

- <=6"
- 8" - 10"
- 12" - 16"
- >16"

- ⊠ Pump Station
- ⊙ Tank
- ⬠ Control Valve

**Pressure Zone Boundary**

- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Zone X

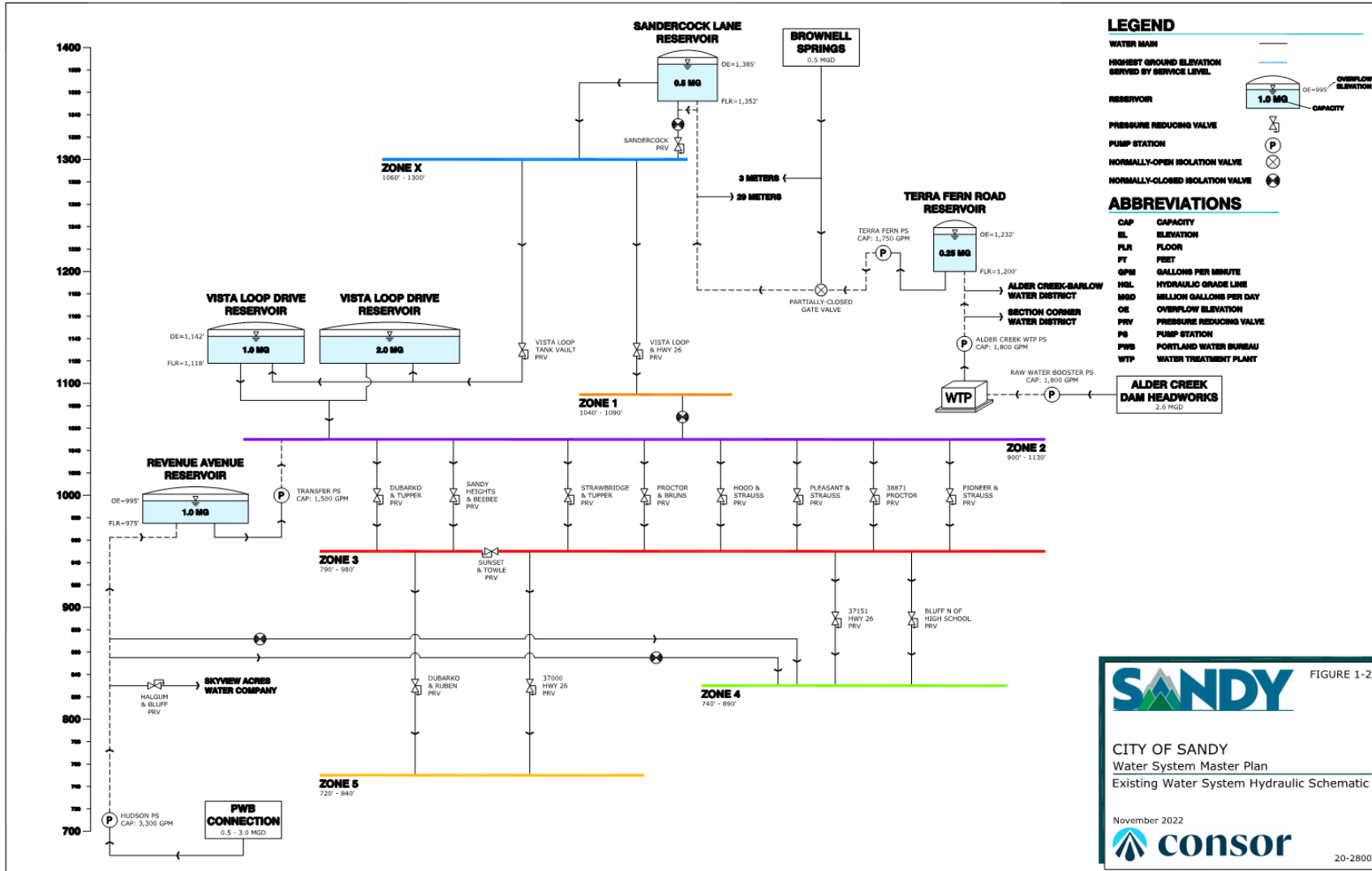
- ⬜ City Limits
- ⬜ Urban Growth Boundary

1 wholesale customer

2 wholesale customers and ~80 services outside the UGB



# EXISTING WATER SYSTEM



**LEGEND**

WATER MAIN ———

HIGHEST GROUND ELEVATION SERVED BY SERVICE LEVEL ———

RESERVOIR 1.0 MG, OE=995', CAPACITY

PRESSURE REDUCING VALVE

PUMP STATION

NORMALLY-OPEN ISOLATION VALVE

NORMALLY-CLOSED ISOLATION VALVE

**ABBREVIATIONS**

CAP	CAPACITY
EL	ELEVATION
FLR	FLOOR
FT	FEET
GPM	GALLONS PER MINUTE
HGL	HYDRAULIC GRADE LINE
MGD	MILLION GALLONS PER DAY
OE	OVERFLOW ELEVATION
PRV	PRESSURE REDUCING VALVE
PS	PUMP STATION
PWB	PORTLAND WATER BUREAU
WTP	WATER TREATMENT PLANT

**SANDY** FIGURE 1-2

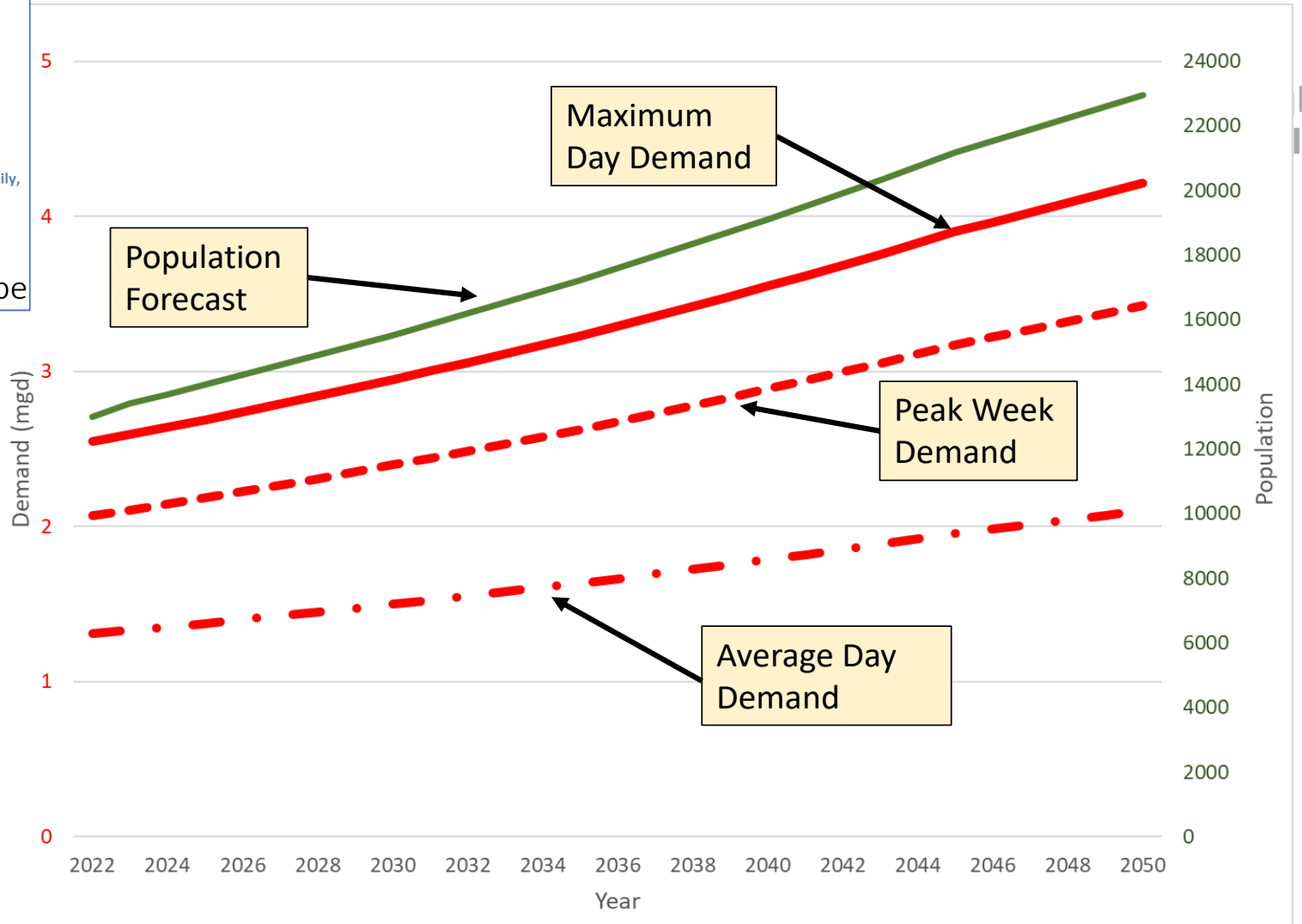
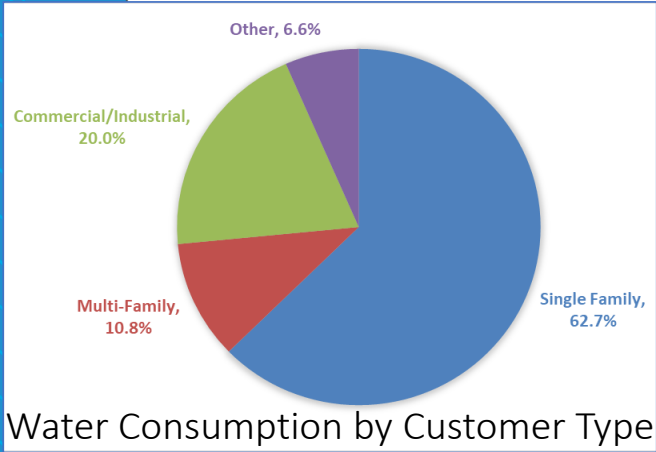
CITY OF SANDY  
Water System Master Plan  
Existing Water System Hydraulic Schematic

November 2022

**consor**

20-2800

# WATER DEMAND FORECAST



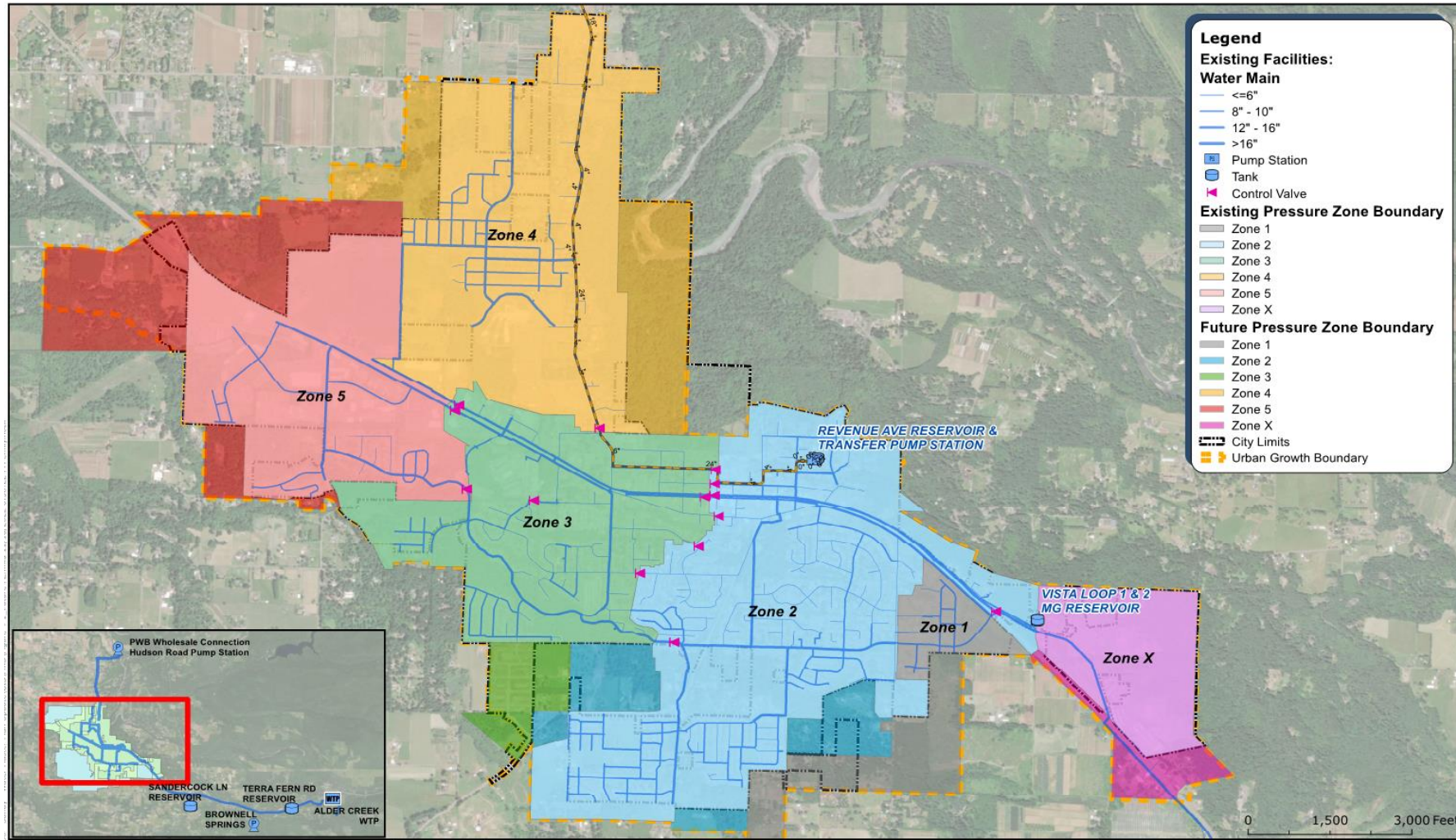
# DISTRIBUTION SYSTEM ANALYSIS



*Pressure Zones*  
*Storage*  
*Pumping*  
*Pipeline Capacity*  
*Renewal & Replacement*



# DISTRIBUTION SYSTEM ANALYSIS – PRESSURE ZONES



# DISTRIBUTION SYSTEM ANALYSIS – STORAGE

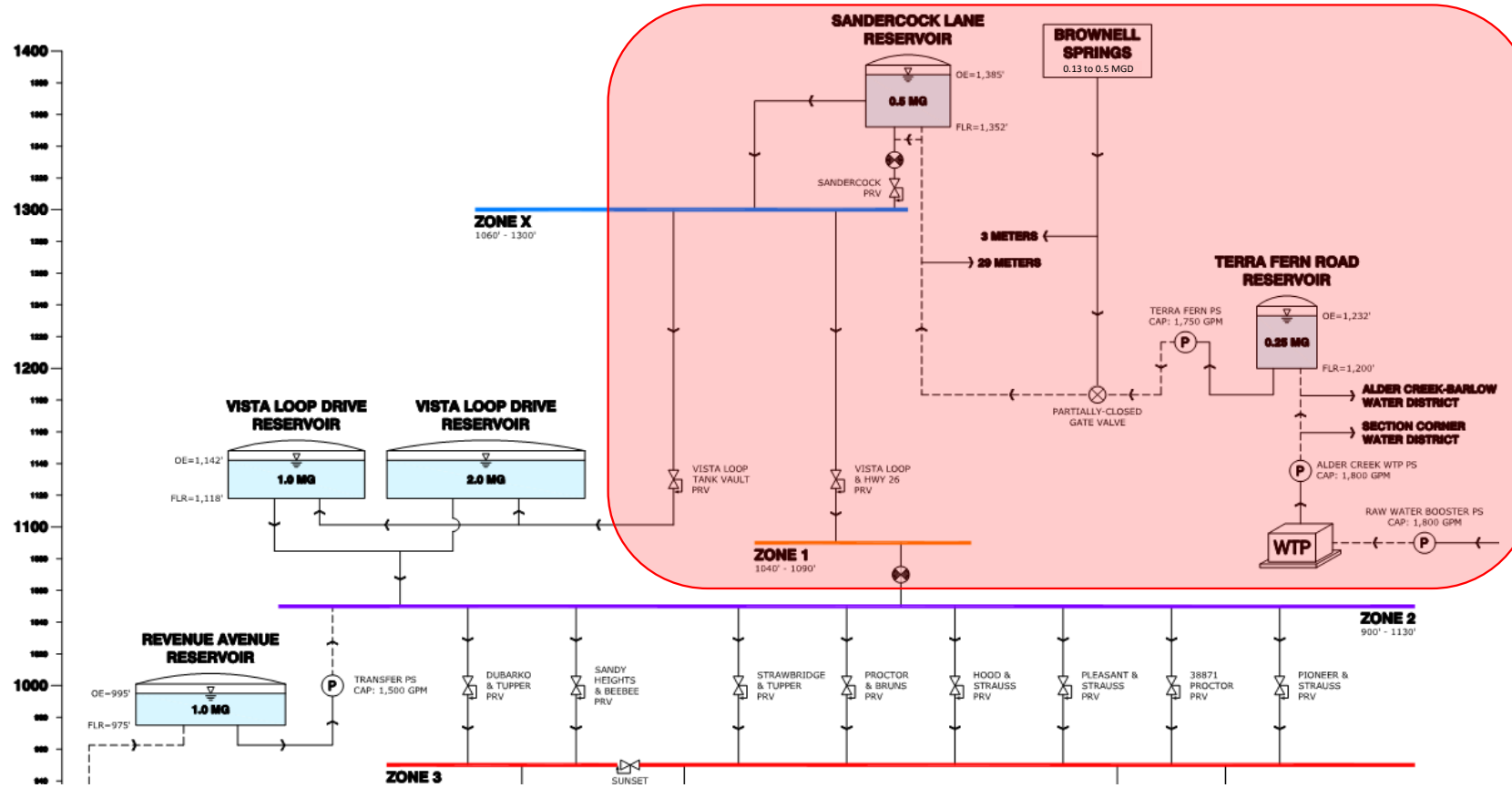
## Storage Capacity Analysis

Year	Required Storage Volume (MG)					Existing Storage (MG)	Storage Deficit (MG)
	Operation	Equalizing	Fire Flow	Emergency	Total		
2023	1.01	0.65	3.24	2.66	7.56	4.75	2.81
2030	1.01	0.74	3.24	3.00	7.99	4.75	3.24
2043	1.01	0.94	3.24	3.76	8.95	4.75	4.20
2050	1.01	1.05	3.24	4.20	9.50	4.75	4.75

*\* 5 MG of additional storage recommended to address long-term needs.*



# DISTRIBUTION SYSTEM ANALYSIS – PUMPING

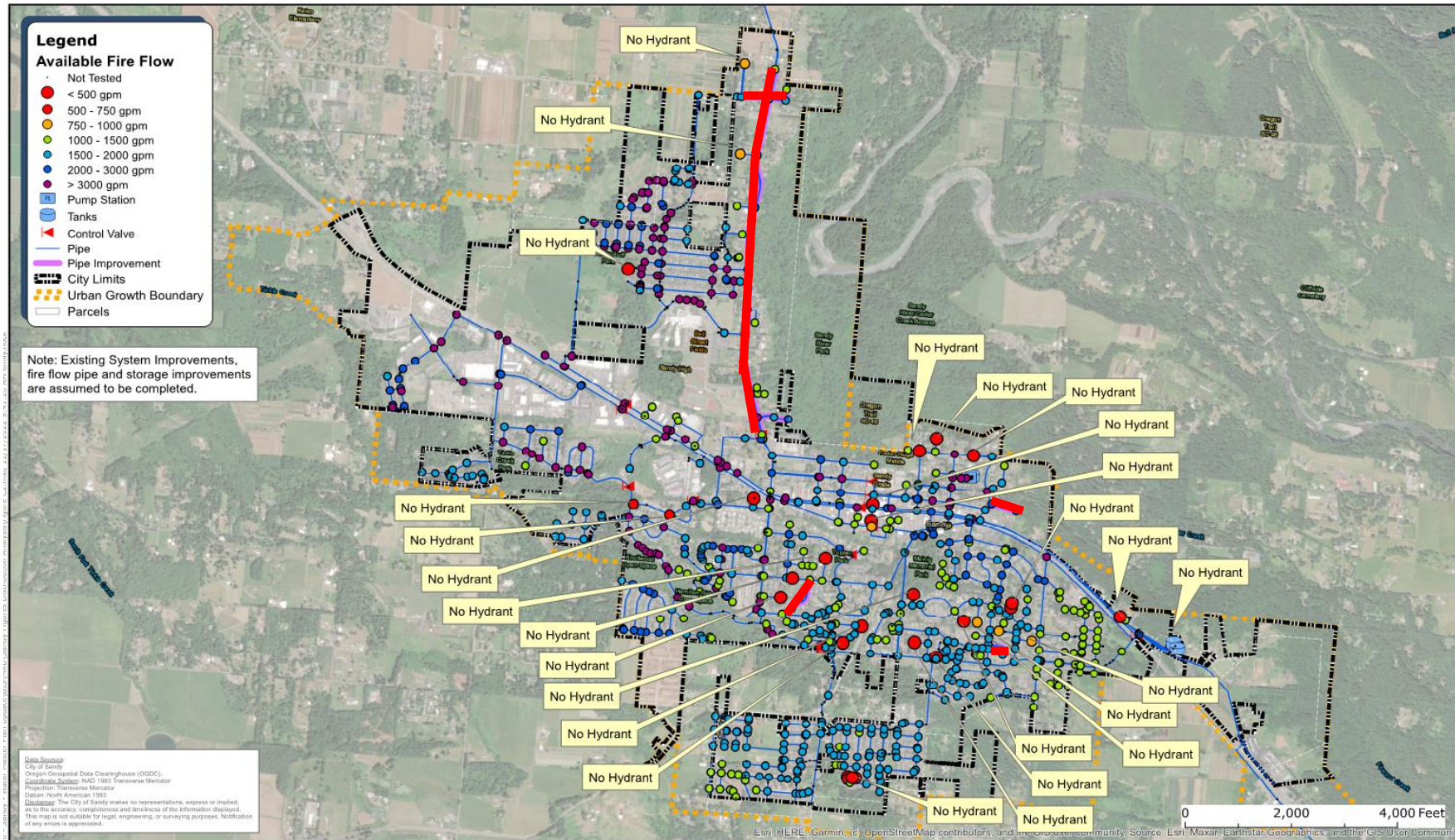


\* New Pump Station to serve Zone 1 and Zone X from PWB Supply recommended.





# DISTRIBUTION SYSTEM ANALYSIS – PIPELINE CAPACITY



## DISTRIBUTION SYSTEM ANALYSIS – RENEWAL & REPLACEMENT



**Goal:** 1.3% of system piping per year (4,750 LF)

- *Prioritize Asbestos Cement (AC), Cast Iron and 4-inch diameter mains*
- *64,000 LF (~18% of total pipe length)*
- *13.5 years*

### Benefits:

- Reduced impacts from unplanned pipe failures
- Reduced R&R costs with proactive improvements
- Reduced water loss
- Reduction in claims for property damage and loss of revenues

*Increased water system resilience*



# WATER SUPPLY ANALYSIS – EXISTING SUPPLY SOURCES



## Alder Creek and Brownell Springs

- *Historically reliable sources of supply with low O&M cost*
- *Aging infrastructure at the end of service life*
  - Alder Creek Intake and Raw Water Pump Station
  - Alder Creek WTP
  - Finished Water Transmission from WTP to City in Highway 26 ROW
- *Current maintenance projects and condition assessment required to define the extent of renewal versus replacement needed...*

*Significant investment will be required to maintain reliable supply from Alder Creek*



# WATER SUPPLY ANALYSIS – EXISTING SUPPLY SOURCES



## PWB Wholesale Supply

- *Portland is building a new filtration plant to meet Surface Water Treatment Rules*
- *Must be in service by fall 2027*
- *Treated water will not be available to Sandy when current wholesale contract expires in May 2028 without constructing improvements*
- *May 2022 Council presentation and discussion confirmed decision to proceed with improvements to receive treated wholesale supply*



# WATER SUPPLY ANALYSIS – ALTERNATIVE SOURCE OPTIONS



## Other Alternative Sources Considered

- *Salmon River*
  - City has adequate water rights
  - Development potential requires further investigation
  - Likely could not be permitted and constructed in less than 10 years
- *Local Groundwater*
  - Water rights uncertain
  - Capacity uncertain, likely less than 0.5 mgd per well
  - Requires an exploratory program and not likely to yield significant capacity to replace existing water supply sources

*Evaluate feasibility of Salmon River source development to meet the City's long-term needs as a future supplemental, or replacement, source beyond 20 years.*



# WATER SUPPLY ANALYSIS – SUPPLY VULNERABILITY

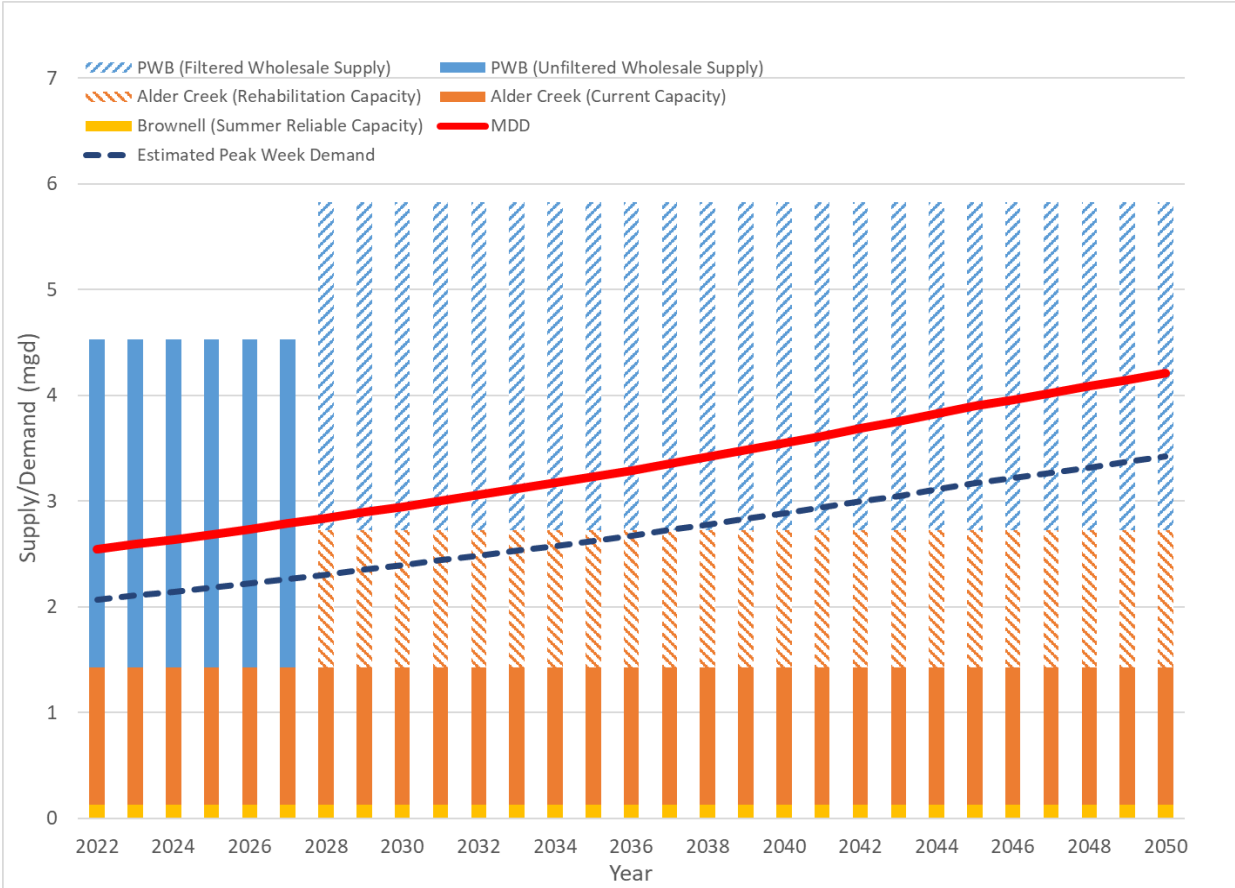
Vulnerability	Current Conditions: Bull Run Unfiltered Supply/Hudson Intertie and Existing Alder Creek Facilities	PWB Filtration Plant Connection and Upgraded Alder Creek Facilities
Turbidity Events <i>November 2022 example</i>		
Winter Storm Power Outage		
PGE Fire Prevention Outages <i>September 2022</i>		
Drought Impacts (supply curtailment)		
Other PWB Supply Disruptions		

Consequence of Event:

High	
Medium	
Low	



# WATER SUPPLY ANALYSIS – RECOMMENDED WATER SUPPLY STRATEGY



1. *Develop infrastructure to maintain PWB Wholesale supply*
2. *Assess Alder Creek and Brownell Springs to determine near-term and long-term investment requirements*
3. *Confirm benefit of maintaining City-owned supplies*
4. *Construct Alder Creek near-term improvements*
5. *Evaluate long-term supply options*
6. *Complete long-term supply improvements*



# CAPITAL IMPROVEMENTS PROGRAM— AREAS OF FOCUS



Water Supply Reliability



Provide for Development



Improve Existing System Resilience





# CAPITAL IMPROVEMENTS PROGRAM– BUDGET SUMMARY

Project No.	Project Description	CIP Schedule and Project Cost Summary (2022 Dollars)				Preliminary SDC Eligibility
		1-5 Years (2023-2027)	6-10 Years (2028-2032)	11-20 Years (2033-2042)	TOTAL	
R.1	5.0 MG Additional Storage		\$ 17,290,000	\$ 17,290,000	\$ 34,580,000	49%
R.2	Storage Siting Study	\$ 180,000			\$ 180,000	49%
R.3	Reservoir Seismic and Condition Assessment		\$ 375,000		\$ 375,000	49%
<i>Storage Subtotal</i>		\$ 180,000	\$ 17,665,000	\$ 17,290,000	\$ 35,135,000	
PS.1	Terra Fern Pump Station Upgrades	\$ 780,000			\$ 780,000	45%
PS.2	Vista Loop Pump Station	\$ 1,420,000			\$ 1,420,000	45%
<i>Pump Station Subtotal</i>		\$ 2,200,000	\$ -	\$ -	\$ 2,200,000	
D.1	Bluff Rd Fire Flow Improvements		\$ 5,870,000		\$ 5,870,000	45%
D.2	Hood St Fire Flow Improvements		\$ 540,000		\$ 540,000	45%
D.3	Mitchell Ct Fire Flow Improvements		\$ 260,000		\$ 260,000	45%
D.4	Seaman Ave Fire Flow Improvements		\$ 550,000		\$ 550,000	45%
<i>Distribution Subtotal</i>		\$ -	\$ 7,220,000	\$ -	\$ 7,220,000	
S.1	Near-Term Alder Creek WTP Improvements	\$ 1,050,000			\$ 1,050,000	0%
S.2	Short-Term Alder Creek WTP Assessment	\$ 240,000			\$ 240,000	45%
S.3	Alder Creek WTP Improvements	\$ 42,080,000			\$ 42,080,000	45%
S.4	PWB Filtered Water Supply Connection	\$ 39,416,000			\$ 39,416,000	45%
S.5	Long-Term Supply Study		\$ 240,000		\$ 240,000	45%
<i>Supply Subtotal</i>		\$ 82,786,000	\$ 240,000	\$ -	\$ 83,026,000	
M.1	Water System Master Plan Update		\$ 220,000		\$ 220,000	45%
M.2	Water Management and Conservation Plan	\$ 110,000			\$ 110,000	45%
M.3	Annual Replacement Budget	\$ -	\$ 6,000,000	\$ 24,000,000	\$ 30,000,000	45%
M.4	Water Service Meter Replacement			\$ 7,920,000		0%
M.5	SCADA Master Plan	\$ 150,000				45%
M.6	SCADA Upgrade (Preliminary Budget Placeholder)		\$ 750,000			45%
<i>Other Subtotal</i>		\$ 260,000	\$ 6,970,000	\$ 31,920,000	\$ 39,150,000	
<b>CIP Total</b>		<b>\$ 85,426,000</b>	<b>\$ 32,095,000</b>	<b>\$ 49,210,000</b>	<b>\$ 166,731,000</b>	



## NEXT STEPS



- *OHA-DWS Approval of the WSMP*
- *Council Review and Adoption of the WSMP*
- *Proceed with PWB Wholesale contract negotiations*
- *Update water rates and SDCs based on WSMP capital improvement project cost estimates and schedule*
- *Proceed with right-of-way acquisition, permitting and design of PWB supply pipeline and pump station*
- *Confirm Alder Creek improvement needs and re-assess cost-benefit of further investment in City-owned supply*
- *Implement near-term capital improvement projects*



# Q & A

Thank you!



# Opioid Litigation Settlement: *Using Evidence to Lead Action*

December 5, 2022

Apryl Herron, MPH

Clackamas County Public Health Division

Elizabeth White, MPA

Clackamas County Children, Family & Community  
Connections



# Agenda

- Review Impact of the Opioid Crisis
- Provide Settlement Agreement Background
- Overview of County Framework to Guide Investments
- Questions

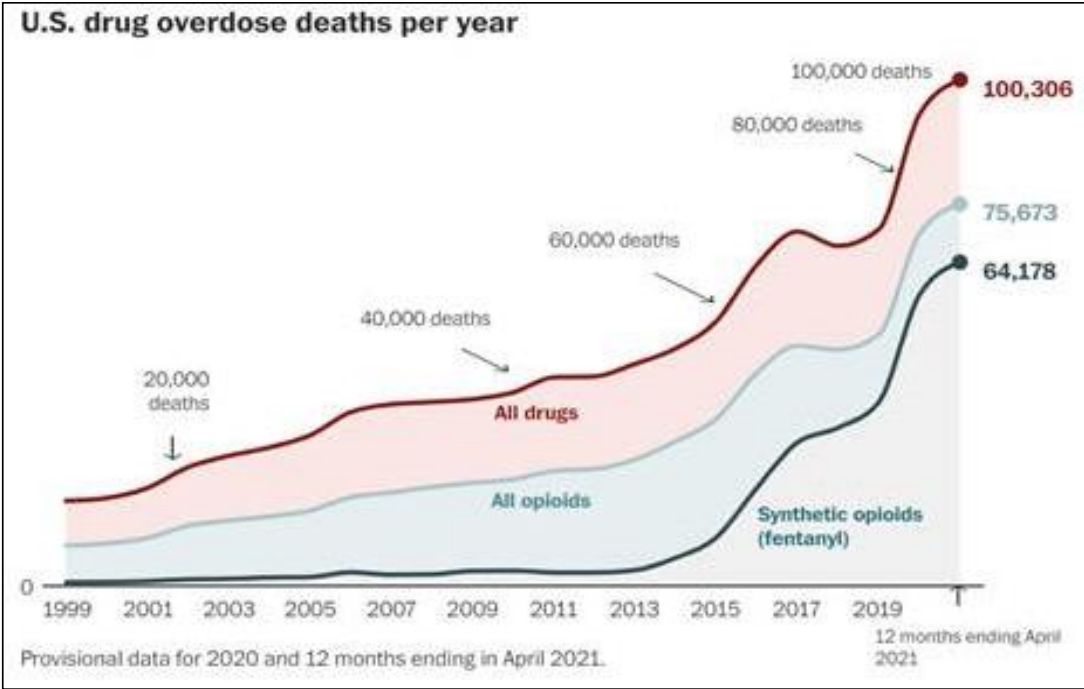
# Lifting Up Our Community

- Clackamas County and Cities will receive funding from the National Opioid Settlement to mitigate harms associated with the opioid and other drug crisis.
- New funding provides an opportunity to make strategic investments in evidence-based approaches that **strengthen our communities, prevent opioid misuse and stem the rising number of overdose deaths.**



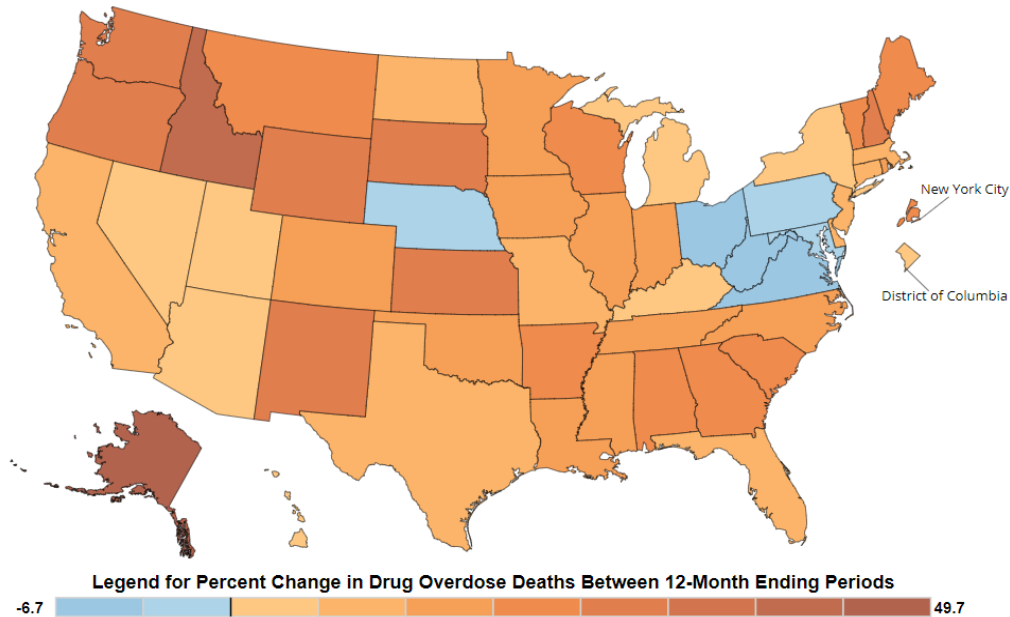
# National Opioid Crisis

- Over **100,000** people died as a result of the overdose epidemic from April 2020 to April 2021.
- Approximately **75,000** of those deaths involved opioids, most of which were due to synthetic opioids such as fentanyl.



# Local Impact

Oregon saw a 26.09% increase in ALL overdose deaths- March 2021-March 2022.



CDC, Center for Health Statistics, Vital Statistics Rapid Release (VSRR) program: <https://emergency.cdc.gov/han/2020/han00438.asp>

## Alcohol and Drug Addiction Worsens in Oregon- Deaths soar during pandemic

- Oregon now ranks 2nd in the country for substance use disorders
- Oregon fell to 50th in access to treatment,
- Oregon ranks 1st in prescription opioid misuse
- Oregon ranks 1st in methamphetamine use

[National Survey on Drug Use and Health](#), conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA), 2020

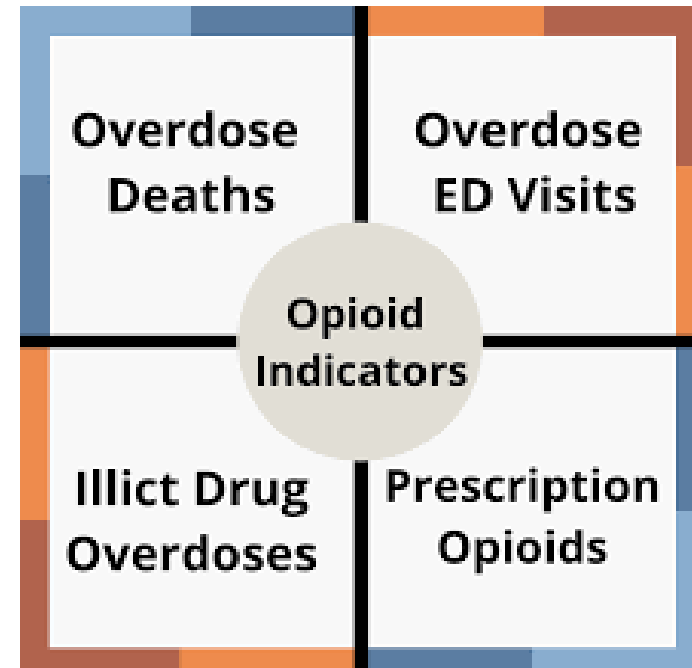


# Using Data to Inform Decisions

Public Health staff maintain a substance use data dashboard that includes key indicators of opioid harm. These numbers describe some, but not all, of the impact of opioids on the people of our county.

Data can be used to identify populations and areas of the county most impacted. Data collected includes:

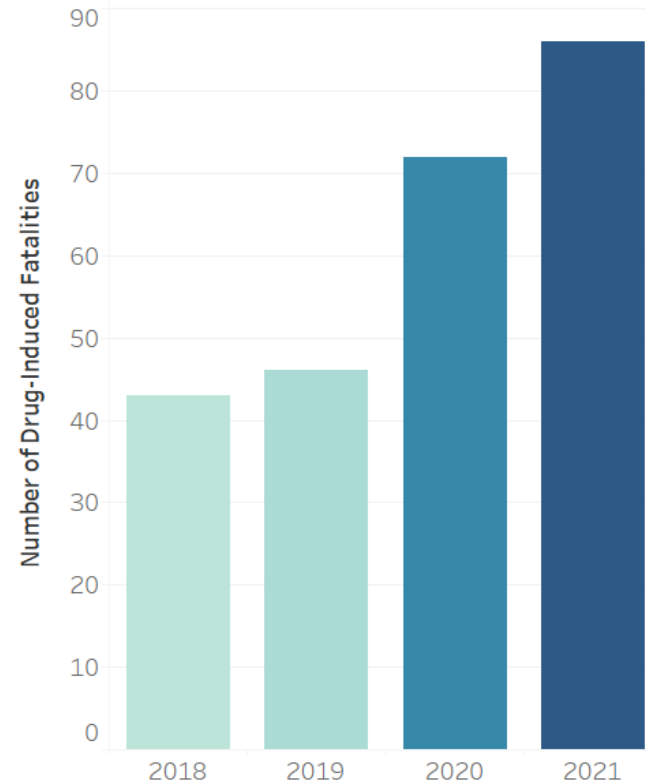
- **Overdose deaths** involving opioids
- **Emergency Department (ED) visits** for overdose
- Non-fatal overdoses that involve **illicit drugs, such as heroin, fentanyl and meth**
- The rate of **prescriptions for opioids**



# Local Impact

Clackamas County saw a 87% increase in drug-related deaths from 2019 (46) to 2021 (86).

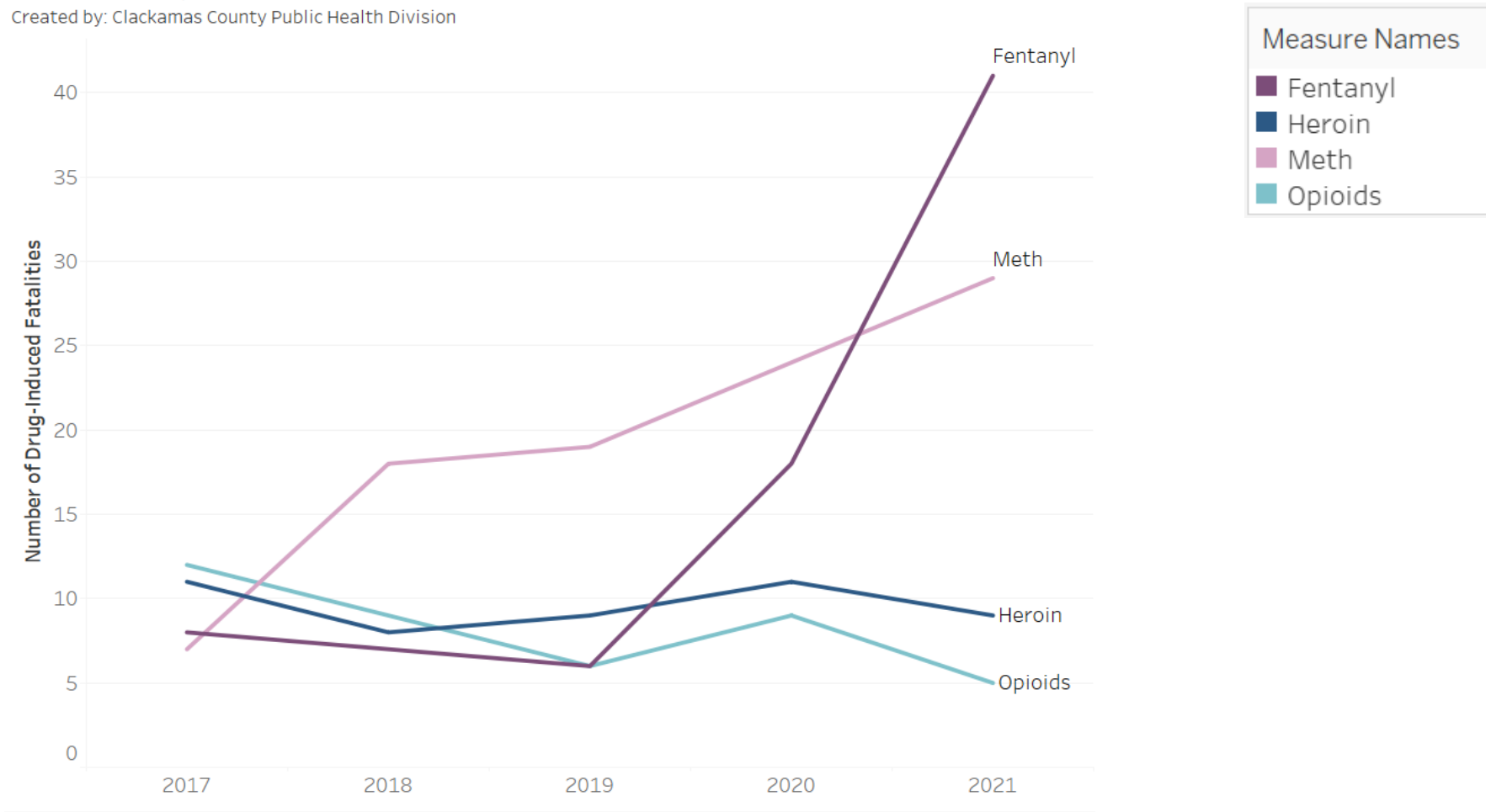
Number of Drug-Induced Deaths by year



Source: CDC Wonder, Vital Statistics  
Created by: Clackamas County Public Health Division  
Data are provisional and subject to change

# Number of Yearly Drug-Induced Fatalities in Clackamas County by Drug Type

Source: CDC Wonder, Vital Statistics  
Created by: Clackamas County Public Health Division



# % of Drug-Induced Deaths by Location of Death

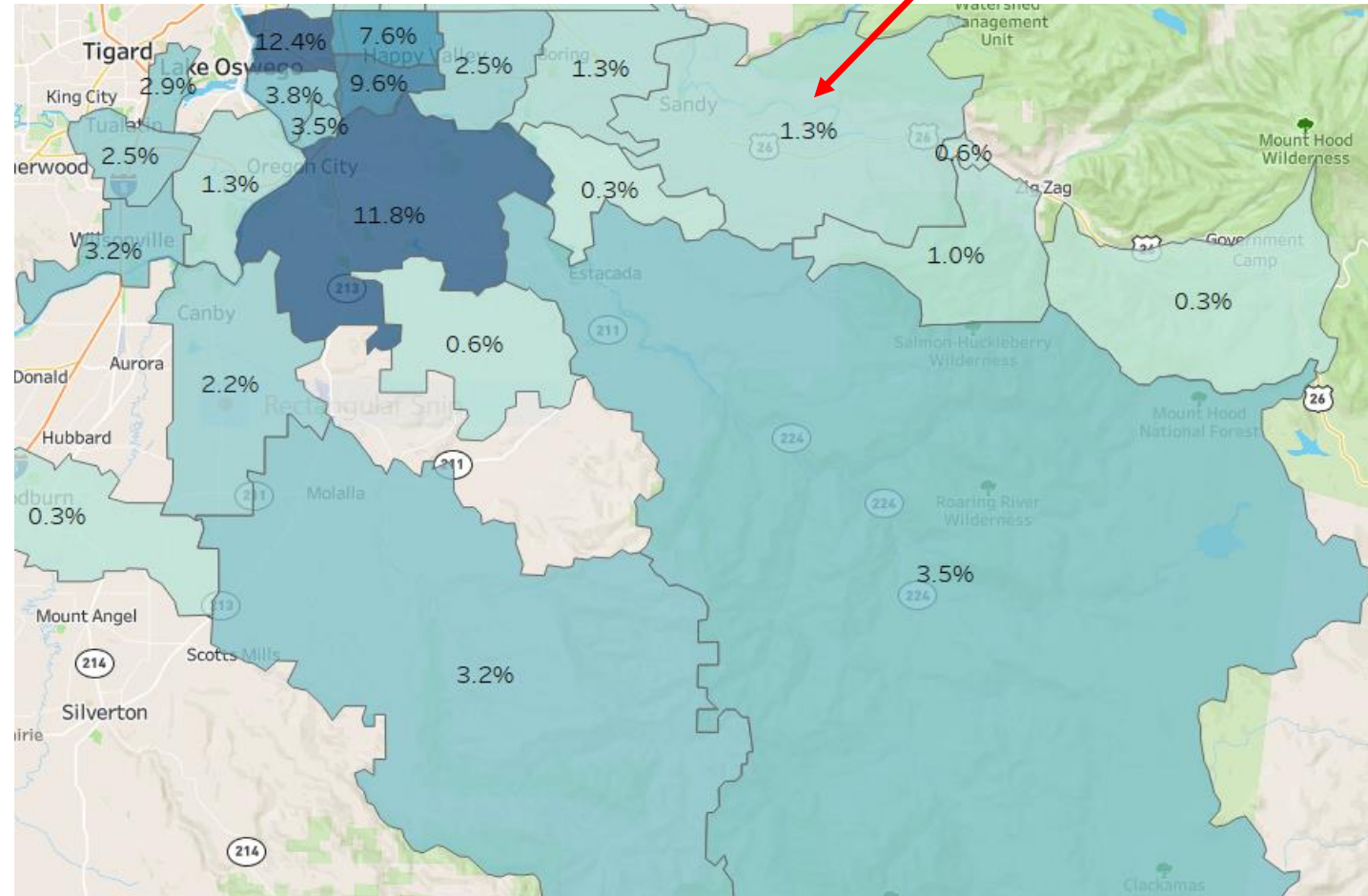
## 2015-2020

\*Data are provisional and subject to change

Source: CDC Wonder

Created by Clackamas County Public Health Division

Zip code 97055- 1.3%



# Local Impact

Overdose-Related 911 Calls via FirstWatch  
By City January – November 26, 2022

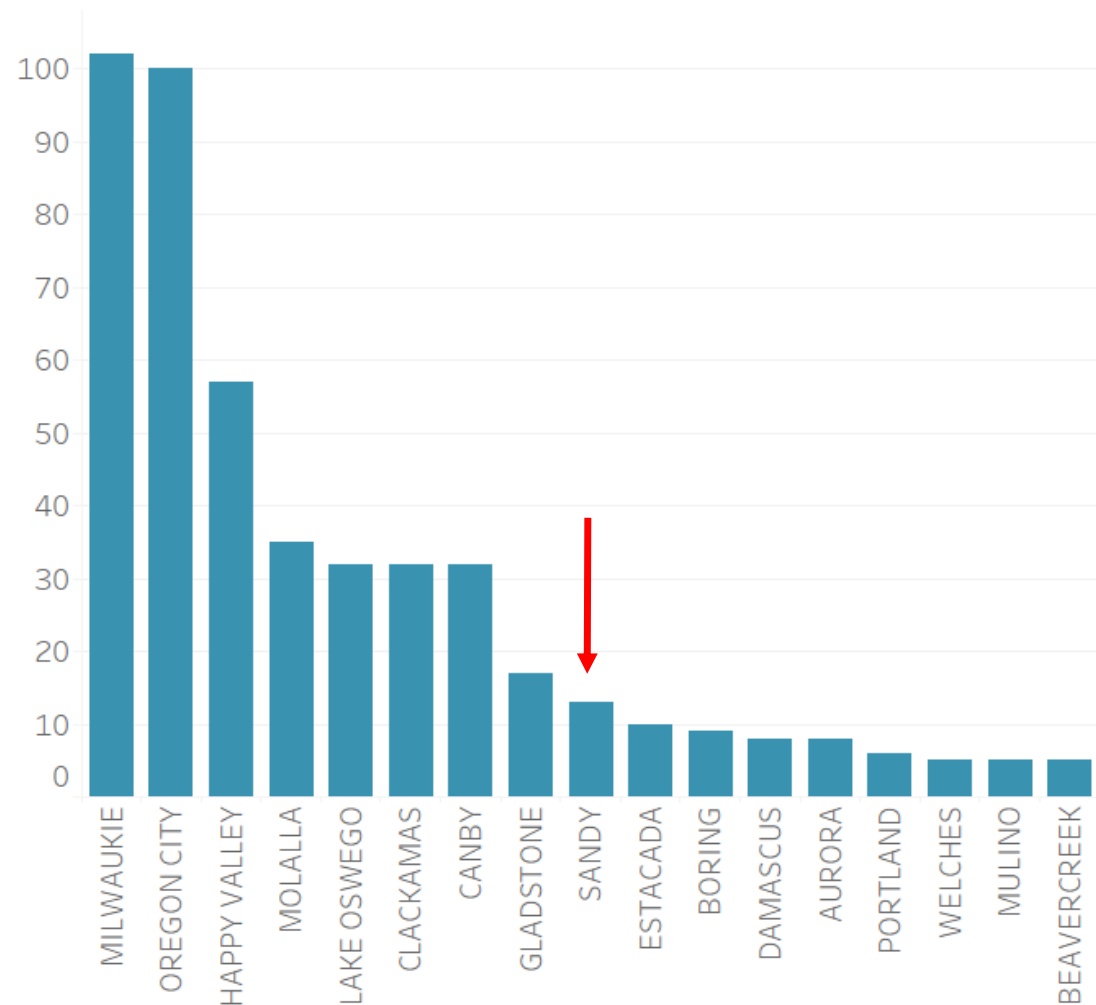
Source: FirstWatch

Created by Clackamas County Public Health Division

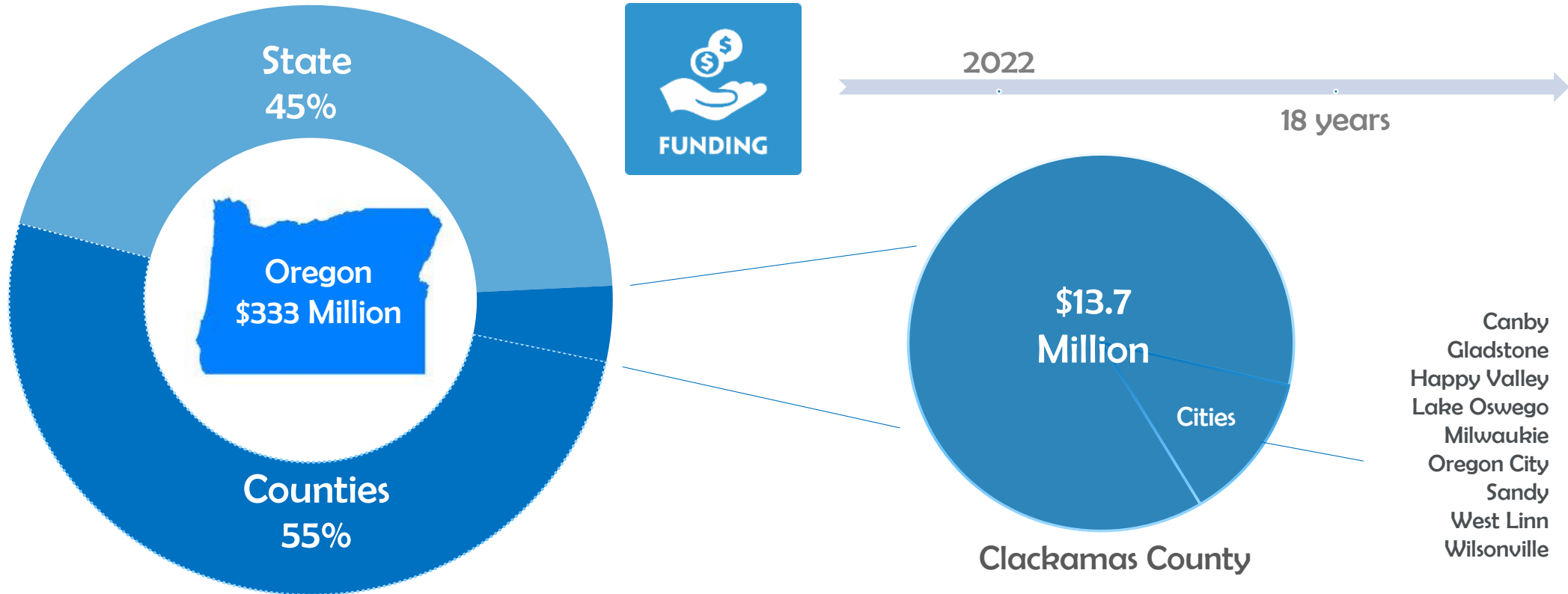
*# of Calls by Drug (Drugs appearing less than 5 times suppressed)*

UNKNOWN	173
fentanyl	73
oxy	27
meth	24
heroin	22
antidepressant	16
acetaminophen	13
opioid	12
antihistamine	7
ibuprofen	5
cocaine	5
antianxiety	5

*# of Calls by City (cities with less than 5 calls suppressed)*



# Settlement Agreement Background



# Allowable Uses of Settlement Funding

---

The Exhibit E of the Settlement Agreement identifies **nine core abatement strategies:**

- 1) Targeted naloxone distribution
- 2) Criminal justice interventions
- 3) Medication for Opioid Use Disorder
- 4) Enrich prevention strategies
- 5) Linkage to Syringe Exchange programs
- 6) Healthcare system interventions
- 7) Warm hand-off program and recovery support
- 8) Data collection and research
- 9) Treatment during pregnancy & postpartum period

# Guiding Principles

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- 1) Spend Money to save lives
- 2) Use evidence to guide spending
- 3) Invest in youth prevention
- 4) Focus on racial equity
- 5) Develop a fair & transparent process

Source: Principles For the Use of Funds from the Opioid Litigation, Johns Hopkins Bloomberg School of Public Health, [opioidprinciples.jhsph.edu](https://opioidprinciples.jhsph.edu)



# Opioid Settlement Framework:



Assess gaps in prevention, treatment, harm reduction and recovery to lift up disparities



Engage communities to identify funding priorities  
Stakeholder recommendations inform funding distribution



Annual report on investments and lives saved

# Support to Cities

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- **Inform investments**
  - Assessment findings & data
    - **Identify gap & needs**
  - Share evidence-based programs/practices
- **Maximize investments**
  - Coordinate aligned activities to build economies of scale
  - Strengthen local response through **collaborative investments**

# Questions?



**EXHIBIT E**

**List of Opioid Remediation Uses**

**Schedule A  
Core Strategies**

States and Qualifying Block Grantees shall choose from among the abatement strategies listed in Schedule B. However, priority shall be given to the following core abatement strategies (“*Core Strategies*”).<sup>14</sup>

- A. **NALOXONE OR OTHER FDA-APPROVED DRUG TO REVERSE OPIOID OVERDOSES**
  - 1. Expand training for first responders, schools, community support groups and families; and
  - 2. Increase distribution to individuals who are uninsured or whose insurance does not cover the needed service.
  
- B. **MEDICATION-ASSISTED TREATMENT (“MAT”) DISTRIBUTION AND OTHER OPIOID-RELATED TREATMENT**
  - 1. Increase distribution of MAT to individuals who are uninsured or whose insurance does not cover the needed service;
  - 2. Provide education to school-based and youth-focused programs that discourage or prevent misuse;
  - 3. Provide MAT education and awareness training to healthcare providers, EMTs, law enforcement, and other first responders; and
  - 4. Provide treatment and recovery support services such as residential and inpatient treatment, intensive outpatient treatment, outpatient therapy or counseling, and recovery housing that allow or integrate medication and with other support services.

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<sup>14</sup> As used in this Schedule A, words like “expand,” “fund,” “provide” or the like shall not indicate a preference for new or existing programs.

C. **PREGNANT & POSTPARTUM WOMEN**

1. Expand Screening, Brief Intervention, and Referral to Treatment (“*SBIRT*”) services to non-Medicaid eligible or uninsured pregnant women;
2. Expand comprehensive evidence-based treatment and recovery services, including MAT, for women with co-occurring Opioid Use Disorder (“*OUD*”) and other Substance Use Disorder (“*SUD*”)/Mental Health disorders for uninsured individuals for up to 12 months postpartum; and
3. Provide comprehensive wrap-around services to individuals with OUD, including housing, transportation, job placement/training, and childcare.

D. **EXPANDING TREATMENT FOR NEONATAL ABSTINENCE SYNDROME (“*NAS*”)**

1. Expand comprehensive evidence-based and recovery support for NAS babies;
2. Expand services for better continuum of care with infant-need dyad; and
3. Expand long-term treatment and services for medical monitoring of NAS babies and their families.

E. **EXPANSION OF WARM HAND-OFF PROGRAMS AND RECOVERY SERVICES**

1. Expand services such as navigators and on-call teams to begin MAT in hospital emergency departments;
2. Expand warm hand-off services to transition to recovery services;
3. Broaden scope of recovery services to include co-occurring SUD or mental health conditions;
4. Provide comprehensive wrap-around services to individuals in recovery, including housing, transportation, job placement/training, and childcare; and
5. Hire additional social workers or other behavioral health workers to facilitate expansions above.

F. **TREATMENT FOR INCARCERATED POPULATION**

1. Provide evidence-based treatment and recovery support, including MAT for persons with OUD and co-occurring SUD/MH disorders within and transitioning out of the criminal justice system; and
2. Increase funding for jails to provide treatment to inmates with OUD.

G. **PREVENTION PROGRAMS**

1. Funding for media campaigns to prevent opioid use (similar to the FDA’s “Real Cost” campaign to prevent youth from misusing tobacco);
2. Funding for evidence-based prevention programs in schools;
3. Funding for medical provider education and outreach regarding best prescribing practices for opioids consistent with the 2016 CDC guidelines, including providers at hospitals (academic detailing);
4. Funding for community drug disposal programs; and
5. Funding and training for first responders to participate in pre-arrest diversion programs, post-overdose response teams, or similar strategies that connect at-risk individuals to behavioral health services and supports.

H. **EXPANDING SYRINGE SERVICE PROGRAMS**

1. Provide comprehensive syringe services programs with more wrap-around services, including linkage to OUD treatment, access to sterile syringes and linkage to care and treatment of infectious diseases.

I. **EVIDENCE-BASED DATA COLLECTION AND RESEARCH ANALYZING THE EFFECTIVENESS OF THE ABATEMENT STRATEGIES WITHIN THE STATE**

## **Schedule B Approved Uses**

Support treatment of Opioid Use Disorder (OUD) and any co-occurring Substance Use Disorder or Mental Health (SUD/MH) conditions through evidence-based or evidence-informed programs or strategies that may include, but are not limited to, the following:

PART ONE: TREATMENT
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### **A. TREAT OPIOID USE DISORDER (OUD)**

Support treatment of Opioid Use Disorder (“OUD”) and any co-occurring Substance Use Disorder or Mental Health (“SUD/MH”) conditions through evidence-based or evidence-informed programs or strategies that may include, but are not limited to, those that:<sup>15</sup>

1. Expand availability of treatment for OUD and any co-occurring SUD/MH conditions, including all forms of Medication-Assisted Treatment (“MAT”) approved by the U.S. Food and Drug Administration.
2. Support and reimburse evidence-based services that adhere to the American Society of Addiction Medicine (“ASAM”) continuum of care for OUD and any co-occurring SUD/MH conditions.
3. Expand telehealth to increase access to treatment for OUD and any co-occurring SUD/MH conditions, including MAT, as well as counseling, psychiatric support, and other treatment and recovery support services.
4. Improve oversight of Opioid Treatment Programs (“OTPs”) to assure evidence-based or evidence-informed practices such as adequate methadone dosing and low threshold approaches to treatment.
5. Support mobile intervention, treatment, and recovery services, offered by qualified professionals and service providers, such as peer recovery coaches, for persons with OUD and any co-occurring SUD/MH conditions and for persons who have experienced an opioid overdose.
6. Provide treatment of trauma for individuals with OUD (*e.g.*, violence, sexual assault, human trafficking, or adverse childhood experiences) and family members (*e.g.*, surviving family members after an overdose or overdose fatality), and training of health care personnel to identify and address such trauma.
7. Support evidence-based withdrawal management services for people with OUD and any co-occurring mental health conditions.

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<sup>15</sup> As used in this Schedule B, words like “expand,” “fund,” “provide” or the like shall not indicate a preference for new or existing programs.

8. Provide training on MAT for health care providers, first responders, students, or other supporting professionals, such as peer recovery coaches or recovery outreach specialists, including telementoring to assist community-based providers in rural or underserved areas.
9. Support workforce development for addiction professionals who work with persons with OUD and any co-occurring SUD/MH conditions.
10. Offer fellowships for addiction medicine specialists for direct patient care, instructors, and clinical research for treatments.
11. Offer scholarships and supports for behavioral health practitioners or workers involved in addressing OUD and any co-occurring SUD/MH or mental health conditions, including, but not limited to, training, scholarships, fellowships, loan repayment programs, or other incentives for providers to work in rural or underserved areas.
12. Provide funding and training for clinicians to obtain a waiver under the federal Drug Addiction Treatment Act of 2000 (“*DATA 2000*”) to prescribe MAT for OUD, and provide technical assistance and professional support to clinicians who have obtained a DATA 2000 waiver.
13. Disseminate of web-based training curricula, such as the American Academy of Addiction Psychiatry’s Provider Clinical Support Service–Opioids web-based training curriculum and motivational interviewing.
14. Develop and disseminate new curricula, such as the American Academy of Addiction Psychiatry’s Provider Clinical Support Service for Medication–Assisted Treatment.

**B. SUPPORT PEOPLE IN TREATMENT AND RECOVERY**

Support people in recovery from OUD and any co-occurring SUD/MH conditions through evidence-based or evidence-informed programs or strategies that may include, but are not limited to, the programs or strategies that:

1. Provide comprehensive wrap-around services to individuals with OUD and any co-occurring SUD/MH conditions, including housing, transportation, education, job placement, job training, or childcare.
2. Provide the full continuum of care of treatment and recovery services for OUD and any co-occurring SUD/MH conditions, including supportive housing, peer support services and counseling, community navigators, case management, and connections to community-based services.
3. Provide counseling, peer-support, recovery case management and residential treatment with access to medications for those who need it to persons with OUD and any co-occurring SUD/MH conditions.



4. Provide access to housing for people with OUD and any co-occurring SUD/MH conditions, including supportive housing, recovery housing, housing assistance programs, training for housing providers, or recovery housing programs that allow or integrate FDA-approved medication with other support services.
5. Provide community support services, including social and legal services, to assist in deinstitutionalizing persons with OUD and any co-occurring SUD/MH conditions.
6. Support or expand peer-recovery centers, which may include support groups, social events, computer access, or other services for persons with OUD and any co-occurring SUD/MH conditions.
7. Provide or support transportation to treatment or recovery programs or services for persons with OUD and any co-occurring SUD/MH conditions.
8. Provide employment training or educational services for persons in treatment for or recovery from OUD and any co-occurring SUD/MH conditions.
9. Identify successful recovery programs such as physician, pilot, and college recovery programs, and provide support and technical assistance to increase the number and capacity of high-quality programs to help those in recovery.
10. Engage non-profits, faith-based communities, and community coalitions to support people in treatment and recovery and to support family members in their efforts to support the person with OUD in the family.
11. Provide training and development of procedures for government staff to appropriately interact and provide social and other services to individuals with or in recovery from OUD, including reducing stigma.
12. Support stigma reduction efforts regarding treatment and support for persons with OUD, including reducing the stigma on effective treatment.
13. Create or support culturally appropriate services and programs for persons with OUD and any co-occurring SUD/MH conditions, including new Americans.
14. Create and/or support recovery high schools.
15. Hire or train behavioral health workers to provide or expand any of the services or supports listed above.

**C. CONNECT PEOPLE WHO NEED HELP TO THE HELP THEY NEED  
(CONNECTIONS TO CARE)**

Provide connections to care for people who have—or are at risk of developing—OUD and any co-occurring SUD/MH conditions through evidence-based or evidence-informed programs or strategies that may include, but are not limited to, those that:

1. Ensure that health care providers are screening for OUD and other risk factors and know how to appropriately counsel and treat (or refer if necessary) a patient for OUD treatment.
2. Fund SBIRT programs to reduce the transition from use to disorders, including SBIRT services to pregnant women who are uninsured or not eligible for Medicaid.
3. Provide training and long-term implementation of SBIRT in key systems (health, schools, colleges, criminal justice, and probation), with a focus on youth and young adults when transition from misuse to opioid disorder is common.
4. Purchase automated versions of SBIRT and support ongoing costs of the technology.
5. Expand services such as navigators and on-call teams to begin MAT in hospital emergency departments.
6. Provide training for emergency room personnel treating opioid overdose patients on post-discharge planning, including community referrals for MAT, recovery case management or support services.
7. Support hospital programs that transition persons with OUD and any co-occurring SUD/MH conditions, or persons who have experienced an opioid overdose, into clinically appropriate follow-up care through a bridge clinic or similar approach.
8. Support crisis stabilization centers that serve as an alternative to hospital emergency departments for persons with OUD and any co-occurring SUD/MH conditions or persons that have experienced an opioid overdose.
9. Support the work of Emergency Medical Systems, including peer support specialists, to connect individuals to treatment or other appropriate services following an opioid overdose or other opioid-related adverse event.
10. Provide funding for peer support specialists or recovery coaches in emergency departments, detox facilities, recovery centers, recovery housing, or similar settings; offer services, supports, or connections to care to persons with OUD and any co-occurring SUD/MH conditions or to persons who have experienced an opioid overdose.
11. Expand warm hand-off services to transition to recovery services.
12. Create or support school-based contacts that parents can engage with to seek immediate treatment services for their child; and support prevention, intervention, treatment, and recovery programs focused on young people.
13. Develop and support best practices on addressing OUD in the workplace.

14. Support assistance programs for health care providers with OUD.
15. Engage non-profits and the faith community as a system to support outreach for treatment.
16. Support centralized call centers that provide information and connections to appropriate services and supports for persons with OUD and any co-occurring SUD/MH conditions.

**D. ADDRESS THE NEEDS OF CRIMINAL JUSTICE-INVOLVED PERSONS**

Address the needs of persons with OUD and any co-occurring SUD/MH conditions who are involved in, are at risk of becoming involved in, or are transitioning out of the criminal justice system through evidence-based or evidence-informed programs or strategies that may include, but are not limited to, those that:

1. Support pre-arrest or pre-arraignment diversion and deflection strategies for persons with OUD and any co-occurring SUD/MH conditions, including established strategies such as:
  1. Self-referral strategies such as the Angel Programs or the Police Assisted Addiction Recovery Initiative (“*PAARP*”);
  2. Active outreach strategies such as the Drug Abuse Response Team (“*DART*”) model;
  3. “Naloxone Plus” strategies, which work to ensure that individuals who have received naloxone to reverse the effects of an overdose are then linked to treatment programs or other appropriate services;
  4. Officer prevention strategies, such as the Law Enforcement Assisted Diversion (“*LEAD*”) model;
  5. Officer intervention strategies such as the Leon County, Florida Adult Civil Citation Network or the Chicago Westside Narcotics Diversion to Treatment Initiative; or
  6. Co-responder and/or alternative responder models to address OUD-related 911 calls with greater SUD expertise.
2. Support pre-trial services that connect individuals with OUD and any co-occurring SUD/MH conditions to evidence-informed treatment, including MAT, and related services.
3. Support treatment and recovery courts that provide evidence-based options for persons with OUD and any co-occurring SUD/MH conditions.

4. Provide evidence-informed treatment, including MAT, recovery support, harm reduction, or other appropriate services to individuals with OUD and any co-occurring SUD/MH conditions who are incarcerated in jail or prison.
5. Provide evidence-informed treatment, including MAT, recovery support, harm reduction, or other appropriate services to individuals with OUD and any co-occurring SUD/MH conditions who are leaving jail or prison or have recently left jail or prison, are on probation or parole, are under community corrections supervision, or are in re-entry programs or facilities.
6. Support critical time interventions (“CTP”), particularly for individuals living with dual-diagnosis OUD/serious mental illness, and services for individuals who face immediate risks and service needs and risks upon release from correctional settings.
7. Provide training on best practices for addressing the needs of criminal justice-involved persons with OUD and any co-occurring SUD/MH conditions to law enforcement, correctional, or judicial personnel or to providers of treatment, recovery, harm reduction, case management, or other services offered in connection with any of the strategies described in this section.

**E. ADDRESS THE NEEDS OF PREGNANT OR PARENTING WOMEN AND THEIR FAMILIES, INCLUDING BABIES WITH NEONATAL ABSTINENCE SYNDROME**

Address the needs of pregnant or parenting women with OUD and any co-occurring SUD/MH conditions, and the needs of their families, including babies with neonatal abstinence syndrome (“NAS”), through evidence-based or evidence-informed programs or strategies that may include, but are not limited to, those that:

1. Support evidence-based or evidence-informed treatment, including MAT, recovery services and supports, and prevention services for pregnant women—or women who could become pregnant—who have OUD and any co-occurring SUD/MH conditions, and other measures to educate and provide support to families affected by Neonatal Abstinence Syndrome.
2. Expand comprehensive evidence-based treatment and recovery services, including MAT, for uninsured women with OUD and any co-occurring SUD/MH conditions for up to 12 months postpartum.
3. Provide training for obstetricians or other healthcare personnel who work with pregnant women and their families regarding treatment of OUD and any co-occurring SUD/MH conditions.
4. Expand comprehensive evidence-based treatment and recovery support for NAS babies; expand services for better continuum of care with infant-need dyad; and expand long-term treatment and services for medical monitoring of NAS babies and their families.

5. Provide training to health care providers who work with pregnant or parenting women on best practices for compliance with federal requirements that children born with NAS get referred to appropriate services and receive a plan of safe care.
6. Provide child and family supports for parenting women with OUD and any co-occurring SUD/MH conditions.
7. Provide enhanced family support and child care services for parents with OUD and any co-occurring SUD/MH conditions.
8. Provide enhanced support for children and family members suffering trauma as a result of addiction in the family; and offer trauma-informed behavioral health treatment for adverse childhood events.
9. Offer home-based wrap-around services to persons with OUD and any co-occurring SUD/MH conditions, including, but not limited to, parent skills training.
10. Provide support for Children’s Services—Fund additional positions and services, including supportive housing and other residential services, relating to children being removed from the home and/or placed in foster care due to custodial opioid use.

PART TWO: PREVENTION

**F. PREVENT OVER-PRESCRIBING AND ENSURE APPROPRIATE PRESCRIBING AND DISPENSING OF OPIOIDS**

Support efforts to prevent over-prescribing and ensure appropriate prescribing and dispensing of opioids through evidence-based or evidence-informed programs or strategies that may include, but are not limited to, the following:

1. Funding medical provider education and outreach regarding best prescribing practices for opioids consistent with the Guidelines for Prescribing Opioids for Chronic Pain from the U.S. Centers for Disease Control and Prevention, including providers at hospitals (academic detailing).
2. Training for health care providers regarding safe and responsible opioid prescribing, dosing, and tapering patients off opioids.
3. Continuing Medical Education (CME) on appropriate prescribing of opioids.
4. Providing Support for non-opioid pain treatment alternatives, including training providers to offer or refer to multi-modal, evidence-informed treatment of pain.
5. Supporting enhancements or improvements to Prescription Drug Monitoring Programs (“*PDMPs*”), including, but not limited to, improvements that:

1. Increase the number of prescribers using PDMPs;
  2. Improve point-of-care decision-making by increasing the quantity, quality, or format of data available to prescribers using PDMPs, by improving the interface that prescribers use to access PDMP data, or both; or
  3. Enable states to use PDMP data in support of surveillance or intervention strategies, including MAT referrals and follow-up for individuals identified within PDMP data as likely to experience OUD in a manner that complies with all relevant privacy and security laws and rules.
6. Ensuring PDMPs incorporate available overdose/naloxone deployment data, including the United States Department of Transportation’s Emergency Medical Technician overdose database in a manner that complies with all relevant privacy and security laws and rules.
  7. Increasing electronic prescribing to prevent diversion or forgery.
  8. Educating dispensers on appropriate opioid dispensing.

**G. PREVENT MISUSE OF OPIOIDS**

Support efforts to discourage or prevent misuse of opioids through evidence-based or evidence-informed programs or strategies that may include, but are not limited to, the following:

1. Funding media campaigns to prevent opioid misuse.
2. Corrective advertising or affirmative public education campaigns based on evidence.
3. Public education relating to drug disposal.
4. Drug take-back disposal or destruction programs.
5. Funding community anti-drug coalitions that engage in drug prevention efforts.
6. Supporting community coalitions in implementing evidence-informed prevention, such as reduced social access and physical access, stigma reduction—including staffing, educational campaigns, support for people in treatment or recovery, or training of coalitions in evidence-informed implementation, including the Strategic Prevention Framework developed by the U.S. Substance Abuse and Mental Health Services Administration (“SAMHSA”).
7. Engaging non-profits and faith-based communities as systems to support prevention.

8. Funding evidence-based prevention programs in schools or evidence-informed school and community education programs and campaigns for students, families, school employees, school athletic programs, parent-teacher and student associations, and others.
9. School-based or youth-focused programs or strategies that have demonstrated effectiveness in preventing drug misuse and seem likely to be effective in preventing the uptake and use of opioids.
10. Create or support community-based education or intervention services for families, youth, and adolescents at risk for OUD and any co-occurring SUD/MH conditions.
11. Support evidence-informed programs or curricula to address mental health needs of young people who may be at risk of misusing opioids or other drugs, including emotional modulation and resilience skills.
12. Support greater access to mental health services and supports for young people, including services and supports provided by school nurses, behavioral health workers or other school staff, to address mental health needs in young people that (when not properly addressed) increase the risk of opioid or another drug misuse.

**H. PREVENT OVERDOSE DEATHS AND OTHER HARMS (HARM REDUCTION)**

Support efforts to prevent or reduce overdose deaths or other opioid-related harms through evidence-based or evidence-informed programs or strategies that may include, but are not limited to, the following:

1. Increased availability and distribution of naloxone and other drugs that treat overdoses for first responders, overdose patients, individuals with OUD and their friends and family members, schools, community navigators and outreach workers, persons being released from jail or prison, or other members of the general public.
2. Public health entities providing free naloxone to anyone in the community.
3. Training and education regarding naloxone and other drugs that treat overdoses for first responders, overdose patients, patients taking opioids, families, schools, community support groups, and other members of the general public.
4. Enabling school nurses and other school staff to respond to opioid overdoses, and provide them with naloxone, training, and support.
5. Expanding, improving, or developing data tracking software and applications for overdoses/naloxone revivals.
6. Public education relating to emergency responses to overdoses.

7. Public education relating to immunity and Good Samaritan laws.
8. Educating first responders regarding the existence and operation of immunity and Good Samaritan laws.
9. Syringe service programs and other evidence-informed programs to reduce harms associated with intravenous drug use, including supplies, staffing, space, peer support services, referrals to treatment, fentanyl checking, connections to care, and the full range of harm reduction and treatment services provided by these programs.
10. Expanding access to testing and treatment for infectious diseases such as HIV and Hepatitis C resulting from intravenous opioid use.
11. Supporting mobile units that offer or provide referrals to harm reduction services, treatment, recovery supports, health care, or other appropriate services to persons that use opioids or persons with OUD and any co-occurring SUD/MH conditions.
12. Providing training in harm reduction strategies to health care providers, students, peer recovery coaches, recovery outreach specialists, or other professionals that provide care to persons who use opioids or persons with OUD and any co-occurring SUD/MH conditions.
13. Supporting screening for fentanyl in routine clinical toxicology testing.

<b>PART THREE: OTHER STRATEGIES</b>
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**I. FIRST RESPONDERS**

In addition to items in section C, D and H relating to first responders, support the following:

1. Education of law enforcement or other first responders regarding appropriate practices and precautions when dealing with fentanyl or other drugs.
2. Provision of wellness and support services for first responders and others who experience secondary trauma associated with opioid-related emergency events.

**J. LEADERSHIP, PLANNING AND COORDINATION**

Support efforts to provide leadership, planning, coordination, facilitations, training and technical assistance to abate the opioid epidemic through activities, programs, or strategies that may include, but are not limited to, the following:

1. Statewide, regional, local or community regional planning to identify root causes of addiction and overdose, goals for reducing harms related to the opioid epidemic, and areas and populations with the greatest needs for treatment



intervention services, and to support training and technical assistance and other strategies to abate the opioid epidemic described in this opioid abatement strategy list.

2. A dashboard to (a) share reports, recommendations, or plans to spend opioid settlement funds; (b) to show how opioid settlement funds have been spent; (c) to report program or strategy outcomes; or (d) to track, share or visualize key opioid- or health-related indicators and supports as identified through collaborative statewide, regional, local or community processes.
3. Invest in infrastructure or staffing at government or not-for-profit agencies to support collaborative, cross-system coordination with the purpose of preventing overprescribing, opioid misuse, or opioid overdoses, treating those with OUD and any co-occurring SUD/MH conditions, supporting them in treatment or recovery, connecting them to care, or implementing other strategies to abate the opioid epidemic described in this opioid abatement strategy list.
4. Provide resources to staff government oversight and management of opioid abatement programs.

**K. TRAINING**

In addition to the training referred to throughout this document, support training to abate the opioid epidemic through activities, programs, or strategies that may include, but are not limited to, those that:

1. Provide funding for staff training or networking programs and services to improve the capability of government, community, and not-for-profit entities to abate the opioid crisis.
2. Support infrastructure and staffing for collaborative cross-system coordination to prevent opioid misuse, prevent overdoses, and treat those with OUD and any co-occurring SUD/MH conditions, or implement other strategies to abate the opioid epidemic described in this opioid abatement strategy list (*e.g.*, health care, primary care, pharmacies, PDMPs, etc.).

**L. RESEARCH**

Support opioid abatement research that may include, but is not limited to, the following:

1. Monitoring, surveillance, data collection and evaluation of programs and strategies described in this opioid abatement strategy list.
2. Research non-opioid treatment of chronic pain.
3. Research on improved service delivery for modalities such as SBIRT that demonstrate promising but mixed results in populations vulnerable to opioid use disorders.

4. Research on novel harm reduction and prevention efforts such as the provision of fentanyl test strips.
5. Research on innovative supply-side enforcement efforts such as improved detection of mail-based delivery of synthetic opioids.
6. Expanded research on swift/certain/fair models to reduce and deter opioid misuse within criminal justice populations that build upon promising approaches used to address other substances (*e.g.*, Hawaii HOPE and Dakota 24/7).
7. Epidemiological surveillance of OUD-related behaviors in critical populations, including individuals entering the criminal justice system, including, but not limited to approaches modeled on the Arrestee Drug Abuse Monitoring (“*ADAM*”) system.
8. Qualitative and quantitative research regarding public health risks and harm reduction opportunities within illicit drug markets, including surveys of market participants who sell or distribute illicit opioids.
9. Geospatial analysis of access barriers to MAT and their association with treatment engagement and treatment outcomes.



**MINUTES**  
**City Council Meeting**  
**Monday, November 21, 2022 7:00 PM**

**COUNCIL PRESENT:** Stan Pulliam, Mayor; Jeremy Pietzold, Council President; Laurie Smallwood, Councilor; Richard Sheldon, Councilor; Kathleen Walker, Councilor; Carl Exner, Councilor; and Don Hokanson, Councilor

**COUNCIL ABSENT:** (none)

**STAFF PRESENT:** Jordan Wheeler, City Manager; Jeff Aprati, City Recorder; Andi Howell, Transit Director; Tyler Deems, Deputy City Manager; Ernie Roberts, Police Chief; and Kelly O'Neill Jr., Development Services Director

**MEDIA PRESENT:** (none)

1. **CITY COUNCIL EXECUTIVE SESSION - 6:00 PM**  
The City Council met in executive session pursuant to ORS 192.660(2)(d)
2. **CITY COUNCIL REGULAR MEETING - 7:00 PM**
3. **Pledge of Allegiance**
4. **Roll Call**
5. **Changes to the Agenda**  
(none)
6. **Public Comment**  
(none)
7. **Response to Previous Public Comments**  
(none)
8. **Consent Agenda**
  - 8.1. **City Council Minutes**  
November 7, 2022
  - 8.2. **Sandy Transit Operations Contract**

Staff Report - 0630

**Moved by Carl Exner, seconded by Jeremy Pietzold**

***Adopt the Consent Agenda***

**CARRIED. 7-0**

Ayes: Stan Pulliam, Jeremy Pietzold, Laurie Smallwood,  
Richard Sheldon, Kathleen Walker, Carl Exner, and Don  
Hokanson

**9. Ordinances**

9.1. **PUBLIC HEARING: "Bull Run Terrace" Reconsideration**

Ordinance 2022-27

Staff Report - 0629

**Abstentions**

(none)

**Conflicts of Interest**

**Councilor Walker** stated that while she does not have a conflict of interest, she provided testimony about this property in 2020 before talking office regarding the number of units and parkland dedication, and that she can and will decide without bias in this current matter. In response to a question from **Mayor Pulliam** about activism, she reiterated that she can and will decide without bias in this current matter. **Councilors Sheldon** and **Hokanson** acknowledged that they also provided testimony regarding this property before talking office, and stated that they can and will decide without bias in this current matter.

**Ex Parte Contact**

**Mayor Pulliam**, and **Councilors Sheldon, Hokanson, Pietzold**, and **Exner** stated that they had previously visited the site.

**Challenges to the Hearing Body**

(none)

**Staff Report**

The **Development Services Director** summarized the staff report and presented slides. Both items were included in the agenda packet.

Council questions for staff during the staff report addressed the following issues:

- The applicability of the Equivalent Residential Unit (ERU) cap on this development despite it not being subject to the moratorium
- The village commercial portion of the municipal code has not changed since 2019
- Details on tree retention plans for the proposed development
- Substantial plans for stormwater improvements proposed by the applicant
- Clarity on the meaning of 'green streets' in the proposal
- Request for more information and explanation of Exhibit X

#### **Applicant Presentation**

##### **Garrett Stephenson**

- Thanks for the Council's agreement to reconsider the application
- Recap of the history and context of past development applications for this property
- Desire to be responsive to the concerns the Council has expressed regarding past development applications for this property, resulting in the following aspects of this current application:
  - A cap on the number of units at 200
  - Connection of Dubarko Rd to Hwy 26, which is required because of the type of application
  - Frontage improvements along Hwy 26
  - Contiguous parkland
- Desire to be collaborative with the City and the community

##### **Tracy Brown**

- Recap of the history of zoning for the site
- Overview of proposed zoning changes and other proposed improvements; consistency with City plans
- Remarks on the proposed unit cap
- Details on proposals to retain trees
- Details on anticipated access to commercial area

##### **Dave Vandehey**

- Thanks for the Council's agreement to reconsider the application
- Desire to be collaborative with the City and the community

##### **Mike Ard**

- Details on the rationale and meaning of Exhibit X
- Remarks on possible safety improvements at the intersection of Hwy 211 and Dubarko

- Discussion on whether and when a traffic signal would be required at the intersection of Hwy 26 and Dubarko; plans to make intersection improvements that would facilitate signal installation in the future
- Possibilities for reducing risk for individuals turning left from Dubarko onto Hwy 26, including making two-stage turns
- Discussion on impacts of traffic navigation applications on traffic counts, and the degree to which engineer analyses account for such impacts
  - Discussion on whether the calculated proportional share fees are accurate and appropriate

#### **Public Testimony**

- Kendal Pelton: Concerns about safety at the proposed intersection of Hwy 26 and Dubarko; traffic congestion on Hwy 26; removal of existing green space; and whether the City can adequately maintain the proposed parkland. Concern that the Bornstedt neighborhood, for comparison, is not an inviting area; concern about the ability of emergency vehicles to navigate narrow streets; concern that too much density is not in the community's interest; desire for DKS to be present at the meeting.
- Keely Jensen: agrees with the comments of Kendal Pelton.
- Written testimony from Scott Ruehrdanz, included in the record as Exhibit Z, was read aloud by **Councilor Hokanson**

#### **Staff Recap**

- A testimony submission deadline will be established for future applications
- Existing area zoning already allows multifamily development
- The area as a whole is undeveloped privately-owned land, not 'green space.' However, parkland is proposed under the application.
- Input from DKS is included in the staff report
- A traffic signal at the intersection of HWY 26 and Dubarko may be warranted sooner than the applicant seems to suggest
- Possible safety measures for HWY 26 are being studied as part of the Transportation System Plan update project
- The impact to the community's transportation system as a whole would be positive with this development

Council questions for staff during the staff recap addressed the following issues:

- Whether the City has sufficient funds to develop the parkland. Staff responded that the recent system development charge increases will be helpful.
- How the proposed streets compare to those in Bornstedt Village. Staff responded that they would be the same width, though Dubarko would be wider.
- Whether the timeline for dedication of parkland within 180 days is appropriate. Staff responded that once the ordinance is enacted, the land will be zoned as parkland anyway, so the required timeline is appropriate.
- The rationale for changing zoning if more units can be constructed under existing zoning. Staff responded that it is unclear how many units would be realistically feasible under current zoning, and that parking needs would serve as a limiting factor regardless. The Council also discussed impacts related to HB 2001.

#### **Applicant Rebuttal**

- This proposal would place multifamily housing and commercial elements in beneficial locations on the site.
- The existing zoning of the site reflects a past development project that was never brought to fruition.

\*\*The public hearing was closed at this point.\*\*

#### **Council Discussion**

Council discussion addressed the following issues:

- Recognition of the compromise involved in this proposal and the anticipated benefits for the community, including parkland, funds toward improvements at the Hwy 211/Dubarko intersection, a unit cap, Hwy 26 frontage improvements, and connection of Dubarko to Hwy 26.
- Appreciation that the developer appears to have listened to past City concerns.
- Appreciation for the following elements of the proposal: placement of the proposed housing elements; parkland dedication; prudent zone changes; stormwater improvements; orientation of Dubarko relative to Hwy 26
- Satisfaction with the proportional share funds for the intersection of Dubarko and Hwy 211, and with the extent to which this development would help implement the Transportation System Plan

- Discussion of the importance of proper lighting along Hwy 26, and on ensuring lighting, mechanical equipment, and trash does not adversely affect neighbors
- Concerns regarding changing low density land to high density; importance of maintaining a balance of housing options

**Moved by Carl Exner, seconded by Richard Sheldon**

***Close the public hearing.***

**CARRIED. 7-0**

Ayes: Stan Pulliam, Jeremy Pietzold, Laurie Smallwood,  
Richard Sheldon, Kathleen Walker, Carl Exner, and Don  
Hokanson

**Moved by Jeremy Pietzold, seconded by Carl Exner**

***Approve the first reading of Ordinance 2022-27***

**CARRIED. 6-1**

Ayes: Stan Pulliam, Jeremy Pietzold, Laurie Smallwood,  
Richard Sheldon, Carl Exner, and Don Hokanson

Nays: Kathleen Walker

**10. Report from the City Manager**

- Police are proceeding with software updates for body worn cameras
- Three new police vehicles have arrived
- Council Members are invited to take part in training opportunities
- A joint work session with the Parks and Trails Advisory Board is planned for December 14th. The Council discussed virtual vs. hybrid meeting options
- Employee holiday lunch is planned for December 15th
- Meinig Park holiday lights preview for Council on December 1st
- Council goal setting scheduling poll will be sent soon

**11. Committee /Council Reports**

**Councilor Hokanson**

- Suggestion that the Community Campus Subcommittee should participate in the park development proposal review process
- Praise for the Leadership Bootcamp program
- Praise for the upcoming Meinig Park holiday lights events

**Councilor Exner**



- Concern regarding dangerous tree limbs on Langensand
- Encouragement for ODOT to continue removing sidewalk barricades

**Councilor Walker**

- Congratulations to those who won their elections
- Support for staff inflation mitigation
- Kiwanis support for community holiday programs

**Councilor Sheldon**

- Appreciation for staff efforts responding to a recent crosswalk issue
- Recommendation to expand public comment speaking time from three to five minutes each

**Councilor Smallwood**

- Praise for the upcoming Meinig Park holiday lights events
- Praise for the parks and recreation cost recovery presentation

**Council President Pietzold**

- Suggestions on streets that need additional sweeping
- Praise for the recent chipper assistance event
- Reminder on the Tickle Trot event

**Mayor Pulliam**

- Praise for the Meinig Park holiday lights events
- Importance of communicating community benefits of the Bull Run Terrace development
- Recognition of Lila Leathers
- Opportunities for Congressional direct appropriations in the next session
- Reminder on the City Manager's performance review
- Committee assignments are upcoming
- The Public Art Advisory Board will restart soon
- Opportunities for ODOT funding for communities with state highways

**12. Staff updates**

12.1. [Monthly Reports](#)

**13. Adjourn**

City Council  
November 21, 2022

Mayor, Stan Pulliam

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City Recorder, Jeff Aprati

Draft



## Staff Report

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**Meeting Date:** November 21, 2022  
**From** Kelly O'Neill Jr., Development Services Director  
**SUBJECT:** Bull Run Terrace Reconsideration

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### **DECISION TO BE MADE:**

Hold a Type IV Quasi-Judicial de novo (starting from the beginning) public hearing to hear testimony from the applicant and the public, and either approve or deny the Bull Run Terrace land use application.

### **PURPOSE / OBJECTIVE:**

Approve or deny the Bull Run Terrace subdivision request. Approval will include among other things, a comprehensive plan change, a zone change, establishment of a specific area plan, and extensive tree removal. If the City Council decides to approve this subdivision request it will also necessitate the adoption of Ordinance No. 2022-27.

### **BACKGROUND / CONTEXT:**

On December 29, 2020, the City Council issued a decision denying the [Bull Run Terrace Subdivision](#) application (File No. 19-050 CPA/ZC/SAP/SUB/TREE). The applicant, Roll Tide Properties Corp., appealed the City Council decision to the Oregon Land Use Board of Appeals (LUBA). The LUBA appeal was then placed on stay, meaning 'on hold', until the City could process the alternative proposal, [Deer Meadows Subdivision](#) application which was denied by the Planning Commission and appealed to the City Council. On May 2, 2022, the City Council issued a decision denying the Deer Meadows Subdivision application. The applicant then appealed that City Council decision to LUBA.

In accordance with ORS 197.830(13)(b), the applicant requested the City Council reconsider the Bull Run Terrace Subdivision proposal with certain modifications, including a residential dwelling cap not to exceed 200 dwelling units. The applicant states that the existing zoning could accommodate 226 dwelling units. The applicant also proposed to increase the parkland dedication by 0.325 acres from the original plan to a total of 1.755 acres. The City Council has agreed to reconsider the proposal with the modifications. This document reviews the reconsideration.

The applicant requests a Type IV Zone Map Amendment, Comprehensive Plan Map Amendment, establishment of a Specific Area Plan, approval of a 7-lot subdivision, and tree removal. The subject site is approximately 15.91 acres. The site is located at 40808 and 41010 Highway 26. The development area would total 11.60 acres. Four lots are proposed as R-1 (low-density residential) zoning at 0.59 acres and will each contain a

single-family dwelling or duplex. One lot at 6.50 acres is proposed to have the R-3 (high-density residential) zoning designation, one lot at 1.23 acres is proposed to have the R-2 (medium-density residential) zoning designation, and one lot at 3.28 acres is proposed to have the C-3 (village commercial) zoning designation. The R-3 and R-2 lots would contain multi-family dwellings and the one lot of C-3 would likely contain a mix of commercial and residential development. The applicant also proposes to dedicate 1.755 acres for the eventual construction of Deer Pointe Park and zone this land as Parks and Open Space (POS).

**KEY CONSIDERATIONS / ANALYSIS:**

The findings throughout the staff report address the varying approval criteria and code requirements that are required to be analyzed with this land use application. Of utmost importance are the approval criteria tied to the comprehensive plan amendment, the zone change amendment, the specific area plan overlay, and the subdivision approval. The evaluation of the criteria is thoroughly evaluated in the staff report, but are more specifically described as follows:

Comprehensive Plan Amendment: Section 17.24.70, criteria A. and B.

Zoning Map Amendment: Section 17.26.40 B., criteria 1. through 4.

Specific Area Plan Overlay: Section 15.54.10 A. through H.

Subdivision Approval: Section 17.100.60 E., criteria 1. through 6.

Four important notes:

1. This application was originally submitted on December 30, 2019. The Sandy Development Code in effect at that time is what this reconsideration is being reviewed under. Therefore, it is important to note that modifications that have since occurred to the Sandy Development Code, particularly to Chapter 17.86, Parkland and Open Space, and Chapter 17.100, Land Division, do not apply to this application. However, because of how state legislation was adopted, House Bill 2001 and Senate Bill 458 are allowed to apply to this site, independent of the land use submission date.
2. Per Section 17.100.60(H) of the Development Code at the time of the original application submittal (December, 2019), the final plat shall be delivered to the Director for approval within one year following approval of the tentative plat and shall incorporate any modification or condition required by approval of the tentative plat. The Director may, upon written request, grant an extension of the tentative plat approval for up to one additional year. While the subdivision approval expires one year from approval, if a final plat is not recorded, the proposed comprehensive plan map and zoning map modifications go into effect 30 days from the date of the ordinance in accordance with Section 17.26.90.
3. This application is not subject to the moratorium on development adopted by Resolution 2022-24 because it was submitted prior to the effective date of the moratorium.
4. An exhaustive density analysis is included on pages 6 through 8 of the staff report in the section titled, 'Proposed Zoning Amendments.'

**RECOMMENDATION:**

The Development Services Director recommends the City Council approve the Type IV comprehensive plan amendment, zone change, subdivision, and specific area plan overlay with tree removal associated with the proposed development subject to the conditions of approval below. This proposal meets the applicable approval criteria in the Sandy Municipal Code and achieves some major goals consistent with long range planning objectives in the City of Sandy, including but not limited to the following:

1. Extending Dubarko Road to intersect with Highway 26 consistent with the Transportation System Plan that was adopted in 2011;
2. Installing Street B to the south consistent with the Transportation System Plan that was adopted in 2011;
3. Paying a proportional share fee of \$268,345 towards construction of future capacity improvements at the intersection of Highway 211 and Dubarko Road at a cost of \$15,785 per PM peak hour trip;
4. Extending Fawn Street to the east;
5. Expanding the Deer Pointe Park consistent with the goals of the Parks and Trails Advisory Board and Figure 11 of the 2022 Parks and Trails Master Plan;
6. Fulfilling housing needs as defined in the Urbanization Study that was adopted in 2015; and,
7. Providing a mixture of housing types consistent with the goals of the 2040 Plan that was created in 1997.

**SUGGESTED MOTION LANGUAGE:**

"I move to approve the first reading of Ordinance No. 2022-27; and to hold a vote on approval of the second reading, and on approval of File No. 22-038, on December 5, 2022."

**LIST OF ATTACHMENTS/EXHIBITS:**

*Clarification on Documents: The staff report contains exhibits, whereas the ordinance contains attachments. This was done to decrease the confusion over what documents are being referred to by staff, the hearing body, and the public.*

- Council Staff Report
- Ordinance 2022-27 with Attachments A, B, C
- Exhibit A. Cover Letter from Tracy Brown Planning Consultants, LLC
- Exhibit B. Project Narrative
- Exhibit C. Civil Plan Set
- Exhibit D. Preliminary Storm Drainage Design and Calculations
- Exhibit E. Traffic Impact Study
- Exhibit F. Arborist Reports from Teragan and Associates
- Exhibit G. Geotechnical and Slope Stability Investigation
- Exhibit H. Wetland Determination Report
- Exhibit I. Screening Concept Plan

- Exhibit J. Public Needs Analysis from Johnson Economics
- Exhibit K. Figure 11 from the 2022 Parks and Trails Master Plan
- Exhibits L. – S. Agency Comments
- Exhibits T. – U. Public Comments
- Exhibit V. Additional Public Comment
- Exhibit W. Staff Memo on Conditions
- Exhibit X. Ard Engineering Response
- Exhibit Y. Garrett Stevenson Email
- Exhibit Z. Ruehrdanz email (11.21.22)

**CITY COUNCIL STAFF REPORT (REVISED 11/17/22)**  
**TYPE IV LAND USE PROPOSAL**

This proposal was reviewed concurrently as a Type IV comprehensive plan amendment, zone change, subdivision, and specific area plan overlay with tree removal. The following exhibits, findings of fact, and conditions (bold text) explain the proposal and the proposed conditions of approval.

**DATE OF HEARING:** November 21, 2022

**FILE NO.:** 22-038 CPA/ZC/SUB/SAP/TREE

**PROJECT NAME:** Bull Run Terrace Reconsideration

**APPLICANT/OWNER:** Roll Tide Properties Corp.

**PHYSICAL ADDRESS:** 40808 and 41010 Highway 26

**TAX MAP/LOTS:** T2 R5E Section 18CD, Tax Lots 900 and 1000

**EXISTING ZONING DISTRICT DESIGNATIONS:** Low-Density Residential (R-1), Medium-Density Residential (R-2), and Village Commercial (C-3)

**PROPOSED ZONING DISTRICT DESIGNATIONS:** Low-Density Residential (R-1), Medium-Density Residential (R-2), High-Density Residential (R-3), Village Commercial (C-3), and Parks and Open Space (POS)

**COMPREHENSIVE PLAN DESIGNATION:** Village

**PROPOSED COMPREHENSIVE PLAN DESIGNATIONS:** Village and Parks and Open Space (POS)

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## EXHIBITS

### **Applicant's Submittals for Reconsideration:**

- A. Cover Letter from Tracy Brown Planning Consultants, LLC
- B. Project Narrative
- C. Civil Plan Set
  - Sheet C1 – Cover Sheet, Preliminary Plat Map, and Future Street Plan
  - Sheet C2 – Preliminary Plat Map and Specific Area Plan
  - Sheet C3 – Existing Conditions and Tree Retention Plan
  - Sheet C4 – Tree Tables
  - Sheet C5 – Master Street and Utility Plan
  - Sheet C6 – Street Sections
  - Sheet C7 – Street Tree Plan and Parking Analysis
  - Sheet C8 – Proposed Striping Plan
  - Sheet C9 – Preliminary Grading and Erosion Control Plan
  - Sheet C10 – Slope Analysis
  - Sheet 11 – Concept Plan
  - Sheet 12 – Net Zoning Area Comparison
- D. Preliminary Storm Drainage Design and Calculations
- E. Traffic Impact Study

### **Additional Documents from First Iteration of Bull Run Terrace:**

- F. Arborist Reports from Teragan and Associates
- G. Geotechnical and Slope Stability Investigation
- H. Wetland Determination Report
- I. Screening Concept Plan
- J. Public Needs Analysis from Johnson Economics

### **Additional Documents Included by Development Services Director:**

- K. Figure 11 from the 2022 Parks and Trails Master Plan

### **Agency Comments:**

- L. Parks and Trails Advisory Board (October 27, 2022)
- M. Director of Sandy Area Metro (October 28, 2022)
- N. Sandy Fire Marshal (October 24, 2022)
- O. City Engineer Curran-McLeod (October 27, 2022)
- P. Assistant Public Works Director (October 28, 2022)
- Q. City Transportation Engineer (October 31, 2022)
- R. City Transportation Engineer Proportional Share Memo (October 27, 2022)
- S. ODOT (November 2, 2022)

### **Public Comments:**

- T. Val and Gary Roche (October 21, 2022)
- U. David and Nancy Allan (October 21, 2022)

## FINDINGS OF FACT

### GENERAL FINDINGS

1. This application was originally submitted on December 30, 2019. The Sandy Development Code in effect at that time is what this reconsideration is being reviewed under. Therefore, it is important to note that modifications that have since occurred to the Sandy Development Code, particularly to Chapter 17.86, Parkland and Open Space, and Chapter 17.100, Land Division, do not apply to this application. However, because of how state legislation was adopted, House Bill 2001 and Senate Bill 458 are allowed to apply to this site, independent of the land use submission date.
2. This application is not subject to the moratorium on development adopted by Resolution 2022-24 because it was submitted prior to the effective date of the moratorium.
3. On December 29, 2020, the City Council issued a decision denying the Bull Run Terrace Subdivision application (File No. 19-050 CPA/ZC/SAP/SUB/TREE). The applicant, Roll Tide Properties Corp., appealed the City Council decision to the Oregon Land Use Board of Appeals (LUBA). The LUBA appeal was then placed on stay by the applicant, meaning ‘on hold’, until the City could process the Deer Meadows Subdivision proposal. On May 2, 2022, the City Council issued a decision denying the Deer Meadows Subdivision application. The applicant then appealed that City Council decision to LUBA. In accordance with ORS 197.830(13)(b), the applicant asked the City Council to reconsider the Bull Run Terrace Subdivision proposal with certain modifications, including a residential dwelling cap not to exceed 200 dwelling units. The applicant states that the existing zoning could accommodate 226 dwelling units. The City Council has agreed to reconsider the proposal with the modifications. This document reviews the reconsideration.
4. The applicant requests a Type IV Zone Map Amendment, Comprehensive Plan Map Amendment, establishment of a Specific Area Plan, approval of a 7-lot subdivision, and tree removal. The subject site is approximately 15.91 acres. The site is located at 40808 and 41010 Highway 26. The development area would total 11.60 acres with the remaining acreage dedicated as right-of-way, two stormwater facilities, and parkland. Four lots totaling 0.59 acres are proposed to be zoned R-1 (low-density residential) and will each contain a single-family dwelling or duplex. One lot at 6.50 acres is proposed to have the R-3 (high-density residential) zoning designation, one lot at 1.23 acres is proposed to have the R-2 (medium-density residential) zoning designation, and one lot at 3.28 acres is proposed to have the C-3 (village commercial) zoning designation. The R-3 and R-2 lots would contain multi-family dwellings and the one lot of C-3 would likely contain a mix of commercial and residential development.
5. The applicant also proposes to dedicate 1.755 acres for the eventual construction of Deer Pointe Park and zone this land as Parks and Open Space (POS). As referenced in Finding 1, above, and per Section 17.32.00 of the Development Code at the time of the original application submittal (December 2019), only publicly owned land can be zoned POS. **The**

**applicant shall dedicate the proposed 1.755 acres of parkland to the City through a dedication deed process, separate from the subdivision plat process.**

6. Staff has retained all original submittal items on file but did not include items that are no longer germane to the proposal as exhibits to this staff report as staff believes the omission of the original materials will make the proposal easier to understand and discuss.
7. The parcel has a Comprehensive Plan Map designation of Village. The designation of Village is not proposed to change, except for the parkland which is being proposed to be designated as Parks and Open Space (POS) on the Comprehensive Plan Map. The reason for this is that the Village designation does not include POS.
8. The City of Sandy completed the following notices:
  - a. A transmittal was sent to agencies asking for comment on October 13, 2022.
  - b. Notification of the proposed application was mailed to affected property owners within 500 feet of the subject property on October 13, 2022.
  - c. A legal notice was published in the Sandy Post on November 2, 2022.
9. Agency comments were received from the Parks and Trails Advisory Board, Director of Sandy Area Metro, Sandy Fire Marshal, City Engineer Curran-McLeod, the Assistant Public Works Director, City Transportation Engineer, and ODOT.
10. At publication of this staff report, two written public comments were received. The main concerns expressed by residents include the following:
  - a. Concerns about the intersection of Highway 26 and Dubarko Road.
  - b. High density residential and commercial being located too close to single family homes.
11. Staff is sympathetic to all concerns raised by the public but the existing designation of Medium Density Residential (R-2) allows multi-family dwellings. Multi-family is listed as a permitted outright use in the R-2 zoning district in Section 17.38.10(A)(6). Even if the applicant were not proposing a comprehensive plan map and zoning map amendment the applicant would still have property rights to construct multi-family housing on the existing R-2 and C-3 designated lands.

**PROPOSED ZONING AMENDMENTS – Chapters 17.24, 17.26, 17.30, 17.32, 17.36, 17.38, 17.40, and 17.46**

12. The existing zoning district designations and gross acreage, without dedications for roads, stormwater, or parkland, for the 15.91 acres are as follows:
  - a. Low-Density Residential (R-1): 8.05 acres
  - b. Medium-Density Residential (R-2): 5.01 acres
  - c. Village Commercial (C-3): 2.84 acres
  
13. The applicant's submitted Plan Set, Sheet 12 (Exhibit C), details the existing net zoning area and the proposed net zoning area for the reconsideration. Staff relied on this sheet as the evidence in the record as it was provided by a licensed surveyor.
  
14. **Existing Net Acres with Existing Zoning.** After removing 2.23 acres of right-of-way for roads, removing 0.32 acres for stormwater facilities, and removing the area for the 1.755-acre park, the remaining existing zoning district designations and acreage would be as follows:
  - a. Low-Density Residential (R-1): 4.57 acres
  - b. Medium-Density Residential (R-2): 4.43 acres
  - c. Village Commercial (C-3): 2.61 acres
  - d. TOTAL = 11.60 acres
  
15. **Proposed Net Acres with Modified Zoning for Reconsideration.** After removing 2.23 acres of right-of-way for roads, removing 0.32 acres for stormwater facilities, and removing the area for the 1.755-acre park, the remaining proposed zoning district designations and acreage would be as follows:
  - a. Low-Density Residential (R-1): 0.59 acres
  - b. Medium-Density Residential (R-2): 1.23 acres
  - c. High-Density Residential (R-3): 6.50 acres
  - d. Village Commercial (C-3): 3.28 acres
  - e. TOTAL = 11.60 acres
  
16. **Maximum Number of Dwelling Units Based on Existing Zoning.** Based on the existing net zoning acreage above and the allowances in House Bill 2001, staff has calculated that the existing zoning designations could potentially accommodate the following number of dwelling units:
  - a. Low-Density Residential (R-1): 74 dwelling units  
For the area zoned R-1, a minimum of 5 and a maximum of 8 units per acre are allowed.  
The minimum density for 4.57 net acres x 5 units/net acre = 22.85 rounded up to 23 units.  
The maximum density for 4.57 net acres x 8 units/net acre = 36.56 rounded up to 37 units. The maximum number of 37 dwelling units could be doubled with the introduction of House Bill 2001, to a maximum of 74 dwelling units.
  
  - b. Medium-Density Residential (R-2): 124 dwelling units  
For the area zoned R-2, a minimum of 8 and a maximum of 14 units per acre are allowed.  
The minimum density for 4.43 net acres x 8 units/net acre = 35.44 rounded down to 35

units. The maximum density for 4.43 net acres x 14 units/net acre = 62.02 rounded down to 62 units. The maximum number of 62 dwelling units could be doubled with the introduction of House Bill 2001, to a maximum of 124 dwelling units.

- c. Village Commercial (C-3): unknown number of dwelling units  
For the area zoned C-3, the exact number of potential residential units is not known at this time because in accordance with Section 17.46.10 (A)(2), multi-family dwellings above, beside or behind a commercial business is an outright permitted use. This means that the applicant could construct one business and designate the remainder of the 2.61 acres to multifamily development. Within the constraints of the existing zoning the exact number of dwelling units on the 2.61 acres of C-3 land is not possible to determine.
- d. TOTAL = 198 dwelling units, plus an unknown number of dwelling units in the C-3 zoning district. While it is unlikely that all the lots in the 4.57 acres of R-1 zoned land and the 4.43 acres of R-2 zoned land would be doubled through House Bill 2001 allowances, it is potentially possible, especially considering that some of the units could be oriented vertically and because House Bill 2001 required that parking requirements are the same for one single-family dwelling as for a duplex.

**17. Maximum Number of Dwelling Units Based on Modified Zoning for Reconsideration.**

Based on the proposed net zoning acreage above and the allowances in House Bill 2001, staff has calculated that the modified zoning designations could potentially accommodate the following number of dwelling units:

- a. Low-Density Residential (R-1): 8 dwelling units  
Low-Density Residential (R-1) Cap: 8 dwelling units  
For the area zoned R-1, a minimum of 5 and a maximum of 8 units per acre are allowed. The minimum density for 0.59 net acres x 5 units/net acre = 2.95 rounded down to 2 units. The maximum density for 0.59 net acres x 8 units/net acre = 4.72 rounded up to 5 units. The maximum number of 5 dwelling units could be doubled with the introduction of House Bill 2001, to a maximum of 10 dwelling units as the proposed subdivision includes individual lots in the R-1 zoning district. However, the applicant is only proposing 4 lots in the R-1 zoning district, so the maximum number of dwelling units is 8 dwelling units. *Note: In accordance with Section 17.30.20 (D) a dwelling unit figure is rounded down to the nearest whole number for all total maximum or minimum figures less than four dwelling units.*
- b. Medium-Density Residential (R-2): 17 dwelling units  
Medium-Density Residential (R-2) Cap: 17 dwelling units  
For the area zoned R-2, a minimum of 8 and a maximum of 14 units per acre are allowed. The minimum density for 1.23 net acres x 8 units/net acre = 9.84 rounded up to 10 units. The maximum density for 1.23 net acres x 14 units/net acre = 17.22 rounded down to 17 units. The maximum number of 17 dwelling units could be doubled with the introduction of House Bill 2001, to a maximum of 34 dwelling units if the proposal included lots, but the proposed subdivision is for one lot, so House Bill 2001 is not applicable.
- c. High-Density Residential (R-3): 130 dwelling units

High-Density Residential (R-3) Cap: 127 dwelling units

For the area zoned R-3, a minimum of 10 and a maximum of 20 units per acre are allowed. The minimum density for 6.50 net acres x 10 units/net acre = 65 units. The maximum density for 6.50 net acres x 20 units/net acre = 130 units. House Bill 2001 is not applicable to the R-3 zoning district as this zoning district does not permit single-family detached dwellings on new lots of record created with new subdivision plats.

- d. Village Commercial (C-3): unknown number of dwelling units

Village Commercial (C-3) Cap: 48 dwelling units

For the area zoned C-3, the exact number of potential residential units is not known at this time because in accordance with Section 17.46.10 (A)(2), multi-family dwellings above, beside or behind a commercial business is an outright permitted use. This means that the applicant could construct one business and designate the remainder of the 3.28 acres to multifamily development. Within the constraints of the existing zoning the exact number of dwelling units on the 3.28 acres of C-3 land is not possible to determine.

- e. **TOTAL with Cap = 200 dwelling units with the proposed cap.** Without the cap instated it is likely that the number of dwelling units would be greater than 200. For instance, the subdivision known as Vista Loop South that was approved in 2006, but never constructed, had 88 lots on the R-1 and R-2 land, which with the introduction of House Bill 2001 could have potentially allowed up to 176 dwelling units on the R-1 and R-2 land. While it is unlikely that all the lots in the 4.57 acres of R-1 zoned land and the 4.43 acres of R-2 zoned land in Vista Loop South would be doubled through House Bill 2001 allowances, it is potentially possible, especially considering that some of the units could be oriented vertically and because House Bill 2001 required that parking requirements are the same for one single-family dwelling as for a duplex. Also, without the cap on the C-3 zoned land there are no assurances on how many multi-family dwellings would be included on the C-3 land.

18. OAR 660-024 contains regulations related to urban growth boundaries and requires local governments to inventory land inside the UGB to determine whether there is adequate capacity to accommodate 20-years of growth. If the inventory demonstrates that the development capacity of land inside the UGB is inadequate to accommodate the estimated 20-year needs determined under OAR 660-024-0040, the local government must amend the plan to satisfy the need deficiency, either by increasing the development capacity of land already inside the UGB or by expanding the UGB, or both. A city cannot allow the rezoning of land that would bring the land supply for any given zone into a deficit. In accordance with OAR 660-024, the existing zoning designations for land within the UGB have the following 20-year land surplus:

- a. Commercial = surplus of 1.13 acres
- b. Low Density Residential = surplus of 19.20 acres
- c. Medium Density Residential = surplus of 17.10 acres
- d. High Density Residential = surplus of 12.60 acres

19. In accordance with OAR 660-024, the modified zoning designations for land within the UGB would result in the following 20-year land surplus:
  - a. Commercial = surplus of 1.80 acres (increase of 0.67 acres)
  - b. Low Density Residential = surplus of 15.22 acres (reduction of 3.98 acres)
  - c. Medium Density Residential = surplus of 13.90 acres (reduction of 3.20 acres)
  - d. High Density Residential = surplus of 19.10 acres (increase of 6.50 acres)
20. Chapter 17.24, Comprehensive Plan Amendment Procedures, contains review criteria for Comprehensive Plan amendments. The subject property has a comprehensive plan map designation of Village. Parks and Open Space (POS) is not a permitted zoning designation within Village as the Village designation was established in 1997 and the POS designation was only established in March of 2012 with the adoption of Ordinance 2012-01. The comprehensive plan map change is requested to modify 1.755 acres from Village to Parks and Open Space (POS).
21. The previous iteration of the Bull Run Terrace subdivision application also contained a density increase by greater than 20 percent, however, with the adoption of House Bill 2001 and as evident in the above density analysis, this is no longer the case. Therefore, the Comprehensive Plan Amendment with this application is solely for the 1.755 acres of parkland.
22. Section 17.24.70 (A) specifies the change being proposed is the best means of meeting the identified public need. Expanding the Deer Pointe Park is consistent with the goals of the Parks and Trails Advisory Board and the 1997 Parks Master Plan that was applicable at the time of this application. It is worth noting that this proposal is also consistent with the newly adopted 2022 Parks and Trails Master Plan. The concept plan in Figure 11 of the 2022 Parks and Trails Master Plan (Exhibit K) details parkland improvements on the subject property in the location of what is proposed to be dedicated to the City of Sandy and redesignated to POS. Therefore, this comprehensive plan change is the best means of meeting the identified public need as established in the 2022 Parks and Trails Master Plan.
23. Section 17.24.70(B) requires the change to conform to all applicable Statewide Planning Goals. These goals are evaluated concurrently with criteria in Section 17.26.40(B)(4), below.
24. Chapter 17.26, Zoning District Amendments, contains review criteria for zoning map amendments. Section 17.26.40 outlines the procedures for a quasi-judicial zoning map amendment. The proposed zone map change proposes to add High Density Residential (R-3) and Parks and Open Space (POS), increase Village Commercial (C-3), reduce Medium Density Residential (R-2), and reduce Low Density Residential (R-1).
25. Section 17.26.40(B)(1) requires the City Council to determine the effects on City facilities and services. With the proposed development, Dubarko Road will be extended from its current terminus through the subject site to connect with Highway 26. This road is identified as a necessary future minor arterial in the City's 2011 Transportation System Plan. An existing water line is located in the future alignment of Dubarko Road, and the applicant will accommodate this facility during the construction of this road. This application is not subject

to the moratorium on development adopted by Resolution 2022-24 because it was submitted prior to the effective date of the moratorium. Therefore, this proposed reconsideration does not negatively affect any City facilities or services.

26. Section 17.26.40(B)(2) and (3) requires the Council to assure consistency with the purposes of this chapter and with the policies of the Comprehensive Plan, including the following:
- a. Maintain sound, stable, and desirable development within the City
  - b. Permit changes in zoning district boundaries where appropriate
  - c. Ensure zoning changes are consistent with the community's land use policies and goals
  - d. Lessen the influence of private economic interests in the land use decision-making process

Given that the proposed development conforms with the Sandy Municipal Code and Comprehensive Plan goals, and that multiple conditions have been put in place to ensure that the development meets the intent of the Code and goals, staff finds that these criteria have been met.

27. Section 17.26.40(B)(4) requires the Council to assure consistency with the Statewide Planning Goals as may be necessary, and any other applicable policies and standards adopted by the City Council.

**Goal 1: Citizen Involvement**

A public notice was sent to adjoining property owners on October 13, 2022, a legal notice published in the Sandy Post on November 2, 2022, and a notice of the proposal was sent to the Department of Land Conservation and Development on October 7, 2022. Since this is a reconsideration of File No. 19-050 CPA/ZC/SAP/SUB/TREE the Planning Commission does not hear the proposal during this reconsideration. On November 21, 2022, the City Council will hold a public hearing to likely decide on the request. Because the public will have the opportunity to review and comment on the application, the proposal meets the intent of Goal 1.

**Goal 2: Land Use Planning**

The City's Comprehensive Plan guides land uses within the City's Urban Growth Boundary. The City's Zoning Ordinance enforces the Comprehensive Plan. Staff has reviewed the application for conformance with the Comprehensive Plan in review of Chapter 17.24, and Zoning Ordinance in review of Chapter 17.26. The City has sent notification of this proposal to both the Department of Land Conservation and Development as well as the Oregon Department of Transportation.

**Goal 3: Agricultural Lands**

Not Applicable

**Goal 4: Forest Lands**

Not Applicable



**Goal 5: Natural Resources**

The applicant, along with a consultant, have shown that the subject site does not contain any wetland area (Exhibit H). The applicant worked with an arborist to inventory trees and develop a tree retention plan as required in Chapter 17.102 (Exhibit F). The Planning Commission provided a code interpretation that retention trees only have to be protected consistent with Chapter 17.102, and not consistent with the distance requirements in Chapter 17.92 for a residential subdivision. That said, staff finds that to adequately protect the retention trees, the protection area shall be consistent with Chapter 17.92 and the recommendations of the arborist. **The applicant shall install tree protection fencing at the critical root zone of 1 foot per 1-inch DBH to protect all of the retention trees in the tree retention conservation easement on Lot 7, for the trees included in the parkland, and for the trees included on Lots 2 and 4 consistent with the arborist reports from Teragan and Associates. Up to 25 percent of the area between the minimum root protection zone of 0.5 feet per 1-inch DBH and the critical root zone of 1 foot per 1-inch DBH may be able to be impacted without compromising the tree, provided the work is monitored by a qualified arborist. The applicant shall retain an arborist on site to monitor any construction activity within the critical root protection zones of the retention trees or trees on adjacent properties that have critical root protection zones that would be impacted by development activity on the subject property.** Additional analysis and conditions are contained in the review of Chapter 17.102 in this document.

**Goal 6: Air, Water, and Land Quality**

The applicant proposes that the application complies with all regulations relative to air, water, and land quality.

**Goal 7: Natural Hazards**

The site contains minimal steep slopes, and no natural hazards are known to exist on the site.

**Goal 8: Recreational Needs**

The applicant is dedicating 1.755 acres of parkland to the City of Sandy. This dedication helps expand the existing parkland that will eventually be developed as Deer Pointe Park. Expanding the Deer Pointe Park is consistent with the goals of the Parks and Trails Advisory Board and the 1997 Parks Master Plan that was applicable at the time of this application. It is worth noting that this proposal is also consistent with the newly adopted 2022 Parks and Trails Master Plan. The concept plan in Figure 11 of the 2022 Parks and Trails Master Plan details parkland improvements on the subject property in the location of what is proposed to be dedicated to the City of Sandy. Staff finds that parkland dedication is preferable so long as the development to the east of the park is complementary to the parkland. The Parks and Trail Advisory Board provided a letter (Exhibit L) which contains a recommendation for the City Council to accept the parkland as it meets the objectives as listed in the 2022 Parks and Trails Master Plan by providing a true neighborhood park in an underserved area of the community. Additional analysis and conditions related to parks are contained in the parkland dedication section review of Chapter 17.86 in this document.

**Goal 9: Economic Development**

Goal 9 requires cities to provide an adequate supply of buildable lands for a variety of commercial and industrial activities and requires plans to be based on an analysis of the comparative advantages of a planning region. With the reconsideration proposal, staff finds that each type of land use in the Comprehensive Plan will continue to be in surplus.

**Goal 10: Housing**

This proposal to change residential designations on the subject property does not affect compliance with this goal. In fact, the proposed modification to the zoning map increases the potential diversity in housing types by providing additional multi-family housing.

**Goal 11: Public Facilities and Services**

Not Applicable

**Goal 12: Transportation**

With development of this project, Dubarko Road will be extended through the property to connect with Highway 26 in accordance with the 2011 Transportation System Plan (TSP). The applicant included a Traffic Impact Study from Ard Engineering with the application (Exhibit E). According to the revised traffic study, the assumptions were based on 8 duplex units, 192 multi-family units, and a 5,000 square foot office building. These three uses would produce 94 peak AM trips, 115 peak PM trips, and 1,418 total daily trips. Since this application involves a zone change, the traffic engineer also had to evaluate traffic volumes as measured under the “reasonable worst case” development scenarios as defined by Oregon’s Transportation Planning Rule (TPR). The reasonable worst case scenario analysis can be found on pages 13, 14, 15, 26, 27, and 28 of Exhibit E. Based on the TPR, Ard Engineering recommends that a trip cap of 340 PM net new peak hour trips be applied to the subject property as a condition of approval for the proposed zone change. The City Transportation Engineer (Exhibit Q) concurs with the importance of applying a trip cap of 340 PM net new peak hour trips. **The subject property shall be subject to a trip cap of 340 PM net new peak hour trips. Each application for development of a lot within the subject property shall include a report from a licensed traffic engineer stating the number of net new PM peak hour trips expected to be generated by the proposed development, and this number of trips will be deducted from the total trip cap of 340 net new PM peak hour trips upon approval of the application. No development application will be approved that would cause the total net new PM peak hour trips to exceed said cap unless the applicant agrees to pay additional proportionate share fees for the intersection of Highway 211 and Dubarko Road, in an amount determined by the City based on the number of trips in excess of the cap.** Additional analysis and conditions on transportation are contained in the transportation section review of Chapter 17.84 and Chapter 17.100 in this document.

**Goal 13: Energy Conservation**

Not Applicable

**Goal 14: Urbanization**

This proposal accomplishes the objectives of this Statewide Planning Goal by accommodating additional residential and commercial growth within the existing Urban Growth Boundary (UGB) as planned for in the adopted Urbanization Study completed in 2015. As detailed above, the proposed changes will not result in any deficit in available land use.

**Goals 15-19**

Not applicable for the City of Sandy as these goals relate to the Willamette River and the Oregon Coast.

28. Section 17.26.90 pertains to the effective date of the proposed zone change and states: “The decision of the City Council made in conjunction with a Zoning Map amendment shall become effective 30 days after passage of the ordinance. No zoning district changes will take effect, however, until and unless the necessary Comprehensive Plan amendment has been implemented by the City Council, if needed.” The comprehensive plan map will need to be amended to reflect the proposed change from Village to POS for the 1.755 acres of parkland. As referenced in Finding 1, above, and per Section 17.32.00 of the Development Code at the time of the original application submittal (December 2019), only publicly owned land can be zoned POS. **The applicant shall dedicate the proposed 1.755 acres of parkland to the City through a dedication deed process, separate from the subdivision plat process.**

**17.32 – Parks & Open Space (POS)**

29. The applicant proposes dedicating 1.755 acres of parkland to the City of Sandy and zoning the land as Parks and Open Space (POS). Section 17.32.10 contains the permitted uses in the POS zoning district. The applicant proposes a park dedication consistent with parkland in the 1997 Parks Master Plan and the 2022 Parks and Trails Master Plan.

**17.36 – Low Density Residential (R-1)**

30. The applicant proposes constructing four duplexes on the four proposed lots that are proposed to be zoned R-1, as permitted in this zoning district. While the net acreage for the R-1 zoned land is 0.59, the gross acreage including the two stormwater facilities is 0.91 acres. Section 17.36.30 contains the design standards for this zone. As shown in Exhibit C, Sheet C2, all lots four lots proposed as R-1 contain at least 5,500 square feet, have at least 20 feet of street frontage, and contain an average lot width of at least 50 feet as required. Lot 4 has frontage on Dubarko Road, but access is not permitted from Dubarko Road. Access to this lot will be by means of an access easement on Lot 3. **The dwellings on Lots 1, 2, 3, and 4 shall be designed to meet all of the requirements as specified in Chapter 17.36 and will be assessed with future building permits for those four lots.**
31. Section 17.36.50(B) requires that lots with 40 feet or less of street frontage shall be accessed by a rear alley or shared private driveway. No proposed lots have 40 feet or less of street frontage.

**17.38 – Medium Density Residential (R-2)**

32. The applicant proposes constructing 17 multi-family dwelling units on the one proposed lot that is proposed to be zoned R-2, as permitted in this zoning district. Exhibit C, Sheet 11 details a conceptual layout for this lot. **Conformity with the remainder of Chapter 17.38 shall be determined in a future design review process.**

**17.40 – High Density Residential (R-3)**

33. The applicant proposes constructing 127 multi-family dwelling units on the one proposed lot that is proposed to be zoned R-3, as permitted in this zoning district. Exhibit C, Sheet 11 details a conceptual layout for this lot. **Conformity with the remainder of Chapter 17.40 shall be determined in a future design review process.**

**17.46 – Village Commercial (C-3)**

34. The applicant proposes constructing 48 multi-family dwelling units above, beside, or behind a commercial business on the one proposed lot that is proposed to be zoned C-3, as permitted in this zoning district. Exhibit C, Sheet 11 details a conceptual layout for this lot. **Conformity with the remainder of Chapter 17.46 shall be determined in a future design review process.**

## **LAND DIVISION CRITERIA – Chapter 17.100**

35. This application was originally submitted on December 30, 2019. The Sandy Development Code in effect at that time is what this reconsideration is being reviewed under. Therefore, it is important to note that modifications that have since occurred to the Sandy Development Code, particularly to Chapter 17.86, Parkland and Open Space, and Chapter 17.100, Land Division, do not apply to this application.
36. Submittal of preliminary utility plans is solely to satisfy the requirements of Section 17.100.60. **Preliminary plat approval does not connote utility or public improvement plan approval which will be reviewed and approved separately upon submittal of public improvement construction plans.** As referenced in Finding 1, above, and per Section 17.100.60(H) of the Development Code at the time of the original application submittal (December 2019), **the final plat shall be delivered to the Director for approval within one year following approval of the tentative plat and shall incorporate any modification or condition required by approval of the tentative plat. The Director may, upon written request, grant an extension of the tentative plat approval for up to one additional year.** While the subdivision approval expires one year from approval, if a final plat is not recorded, **the proposed comprehensive plan map and zoning map modifications go into effect 30 days from the date of the ordinance in accordance with Section 17.26.90.**
37. Section 17.100.60(E)(1) requires subdivisions to be consistent with the density, setback, and dimensional standards of the base zoning district, unless modified by a Planned Development approval. Each base zoning district requires that residential development comply with Chapter 17.82. As explained throughout this document, the proposed subdivision meets the standards of the proposed base zoning districts, and adherence to this standard will be verified with future building permits or design reviews, whichever is applicable. Section 17.100.220 includes requirements for lot design. All lots in the proposed subdivision have been designed so that no foreseeable difficulties due to topography or other conditions will exist in securing building permits on these lots as required by Section 17.100.220(A). All lots in the R-1 zone comply with the minimum standards in that zone as required by Section 17.100.220(B). No lots are proposed to contain more than double the minimum lot size. Section 17.100.220 states that all new lots shall have at least 20 feet of street frontage. All lots in the proposed subdivision contain at least 20 feet of frontage along a public street therefore meeting the requirements of Section 17.100.220(C). Lots 6 and 7 both contain frontage on Highway 26 and Dubarko Road. Because no direct access to Highway 26 is allowed the creation of these double frontage lots is unavoidable and is thus allowed as required by Section 17.100.220(D). The proposal meets approval criteria 17.100.60 (E)(1).
38. Section 17.100.60(E)(2) requires subdivisions to be consistent with the design standards set forth in this chapter. In accordance with Section 17.100.70 the design standards in Chapter 17.100 are met as the proposed subdivision follows the 2011 City of Sandy Transportation System Plan by providing the connection of Dubarko Road to Highway 26. In accordance with Section 17.100.100 (A) the proposed subdivision meets the Street Connectivity Principle. Connecting Dubarko Road to Highway 26 provides safe and convenient options

for cars, bikes, and pedestrians; creates a logical, recognizable pattern of circulation; and spreads traffic over many streets so that key streets such as Langensand Road and Highway 211 are not overburdened. The proposal meets approval criteria 17.100.60 (E)(2).

39. Section 17.100.60(E)(3) requires the proposed street pattern to be connected and consistent with the Comprehensive Plan or official street plan for the City of Sandy. The proposed street pattern is consistent with the Comprehensive Plan and the city's standards, including connecting Dubarko Road to Highway 26. The 2011 Sandy Transportation System Plan (TSP) was adopted by Ordinance 2011-12 as an addendum to the Comprehensive Plan. Exhibit A of Ordinance 2011-12 is the TSP. Project M20 in the TSP is the connection of Dubarko Road to Highway 26. Furthermore, the proposal is consistent with OAR 660-012-0045, which requires that local governments implement their TSP. The proposal meets approval criteria 17.100.60 (E)(3).
40. Section 17.100.60(E)(4) requires that adequate public facilities are available or can be provided to serve the proposed subdivision. City water, sanitary sewer, and stormwater are available and will be extended by the applicant to serve the subdivision as detailed in Exhibit C, Sheet C5. The proposal meets approval criteria 17.100.60 (E)(4).
41. Section 17.100.60(E)(5) requires that all proposed improvements meet City standards. Extending Dubarko Road to connect with Highway 26 is consistent with the 2011 TSP and OAR 660-012-0045, which requires that local governments implement their TSP. Pursuant to 17.86.10 of the Development Code, new residential subdivisions "shall be required to provide parkland to serve existing and future residents of those developments." By providing 1.755 acres of parkland, the proposal meets the goals of the 1997 Parks Master Plan that designated Deer Pointe Park as a community park, and the 2022 Parks and Trails Master Plan, specifically Figure 11. By providing street frontage improvements (curbs, sidewalks, street lighting, street trees, storm drainage, etc.) on Highway 26, Dubarko Road, Street B, and Fawn Street, the proposal meets Chapter 17.84 for frontage improvements. The proposal meets approval criteria 17.100.60 (E)(5).
42. Section 17.100.60(E)(6) strives to ensure that a phasing plan, if requested, can be carried out in a manner that meets the objectives of the above criteria and provides necessary public improvements for each phase as it develops. The applicant is not requesting a phased development per their narrative in Exhibit B. That said, the applicant is proposing that the design of the multi-family dwellings and commercial development occurs at a future date. Reviewing multi-family and commercial development through a separate process is typical. The proposal meets approval criteria 17.100.60 (E)(6).

**ADDITIONAL SETBACKS AND SPECIAL SETBACKS – Chapters 17.80 and 17.82**

43. Chapter 17.80 requires all residential structures to be setback at least 20 feet on collector and arterial streets. Lots 3, 4, 5, 6 and 7 shall adhere to the setback standards in Chapter 17.80 for Highway 26 which is classified as an arterial, Dubarko Road which is classified as a minor arterial, and Street B which is classified as a collector. The revised Preliminary Plat (Exhibit C) details the 20-foot setbacks to Highway 26, Dubarko Road, and Street B.
44. Section 17.82.20(A) requires that all residential dwellings shall have their primary entrances oriented toward a transit street rather than a parking area, or if not adjacent to a transit street, toward a public right-of-way or private walkway which leads to a transit street. Section 17.82.20(B) requires that dwellings shall have a primary entrance connecting directly between the street and building interior and outlines requirements for the pedestrian route. Section 17.82.20(C) requires that primary dwelling entrances shall be architecturally emphasized and visible from the street and shall include a covered porch at least 5 feet in depth. **The dwellings on all lots abutting a transit street shall be designed to meet all of the requirements as specified in Chapter 17.82 and will be assessed with future building permits or design reviews, whichever is applicable.**
45. Section 17.82.20(D) requires that if the site has frontage on more than one transit street, the dwelling shall provide one main entrance oriented to a transit street or to a corner where two transit streets intersect. **The orientation of the future multi-family units that have frontage on both Highway 26 and Dubarko Road, or Street B and Dubarko Road will be determined in a future design review process.**

## **SPECIFIC AREA PLAN OVERLAY – Chapter 17.54**

46. The purpose of a specific area plan overlay zone is to allow development and approval of specific area plans in the city. The City of Sandy Comprehensive Plan, Goal 2, Land Use Designations, Village states: “shifting of the underlying zoning district boundaries to accommodate development constraints and land divisions for specific development proposals may be allowed through approval of a Specific Area Plan.”
47. The applicant proposes shifting zoning district boundaries as noted in this document and has submitted a Specific Area Plan request according to the standards in the chapter as required. The purpose of a specific area plan overlay zone is to allow development and approval of specific area plans in the city. A specific area plan is a master plan coordinating and directing development in terms of transportation, utilities, open space and land use; however, no phasing or timeline is required. Specific area plans may be located anywhere within the Urban Growth Boundary and are intended to promote coordinated planning concepts and pedestrian-oriented mixed-use development. The City of Sandy Comprehensive Plan, Goal 2, Land Use Designations, Village states: “shifting of the underlying zoning district boundaries to accommodate development constraints and land divisions for specific development proposals may be allowed through approval of a Specific Area Plan.”
48. The applicant proposes shifting of zoning district boundaries and addition of a new zoning designation for the subject properties and therefore submitted a Specific Area Plan request according to the standards in Chapter 17.54. Staff finds that the only other specific area plan in Sandy, the Bornstedt Village Specific Area Overlay, has additional standards related to additional tree retention, green streets, additional design standards for single family homes, etc. Keeping the Bornstedt Village Overlay in mind, staff recommends that additional consideration is given to additional tree protection for the proposed retention trees. The Planning Commission provided a code interpretation that retention trees only have to be protected consistent with Chapter 17.102, and not consistent with the distance requirements in Chapter 17.92 for residential subdivisions. That said, staff finds that to adequately protect the retention trees, the protection area shall be consistent with Chapter 17.92 and the recommendations of the arborist. **The applicant shall install tree protection fencing at the critical root zone of 1 foot per 1-inch DBH to protect all of the retention trees in the tree retention conservation easement on Lot 7, for the trees included in the parkland, and for the trees included on Lots 2 and 4 consistent with the arborist reports from Teragan and Associates. Up to 25 percent of the area between the minimum root protection zone of 0.5 feet per 1-inch DBH and the critical root zone of 1 foot per 1 inch DBH may be able to be impacted without compromising the tree, provided the work is monitored by a qualified arborist. The applicant shall retain an arborist on site to monitor any construction activity within the critical root protection zones of the retention trees or trees on adjacent properties that have critical root protection zones that would be impacted by development activity on the subject property.** The applicant is also proposing to retain five conifers (Exhibit C, Sheet C3), and to plant some maples, incense cedars, katsura, and Silver Queen Port Orford cedars along the common property line with Deer Pointe subdivision per the Screening Concept Plan (Exhibit I). Additional tree retention analysis and conditions are contained in the review of Chapter 17.102 in this document.



Consistent with the Bornstedt Village Overlay this development should also consider green streets where practicable. **The applicant shall explore locations for green street swales. If green streets are practicable as determined by the City Engineer in accordance with topography, the plan set shall be modified to detail additional right-of-way or easements to accommodate the swales, if needed.** In addition, the applicant shall be required to adhere to additional design standards for the four duplexes (or single-family homes) similar to the Bornstedt Village Overlay requirements. **Future development on Lots 1-4 shall adhere to the garage standards contained in Section 17.54.110(D).**

49. The process to establish a specific area plan shall be initiated by the City Council. The Planning Commission or interested property owners may submit requests to the City Council to initiate the specific area plan process. If owners request initiation of a specific area plan process, the City Council may require an application fee to cover the cost of creating the plan. The applicant requests initiation of this specific area plan and has paid the applicable fees. The comprehensive plan map change is requested to modify 1.755 acres from Village to Parks and Open Space (POS). The proposed zone map change proposes to add High Density Residential (R-3) and Parks and Open Space (POS), increase Village Commercial (C-3), reduce Medium Density Residential (R-2), and reduce Low Density Residential (R-1).
50. In accordance with Section 17.54.00(D) a specific area plan shall be adopted through a Type IV process and shall be evaluated for compliance with the criteria for zoning district amendments and/or comprehensive plan amendments where applicable. The applicant states that this specific area plan request will be reviewed through a Type IV process and shall comply with the criteria for zoning district and Comprehensive Plan amendments. As stated by the applicant, the criteria in Chapter 17.24, Comprehensive Plan Amendment Procedures and Chapter 17.26, Zoning District Amendments are reviewed in this document and as reviewed in these chapters, the proposal is found to comply with all required criteria if the conditions of approval as recommended by staff are required.
51. In accordance with Section 17.54.00(G) compliance with specific area plan standards and procedures are required. New construction and land divisions shall meet any development, land division, and design standards of the applicable specific area plan. Base zone and land division standards shall apply where no different standard is referenced for the specific plan area. Staff finds that with adequate conditions of approval the proposal will comply with the standards and procedures of a specific area plan.
52. Section 17.54.10 defines eight items that define the specific area plan by providing text and diagrams with the specific area plan application. The eight items relate to the following: plan objectives; site and context; land use diagram; density; facilities analysis; circulation/ transportation diagram; market analysis; and, design and development standards. The eight items are reviewed as follows:
  - a. Plan Objectives. A narrative shall set forth the goals and objectives of the plan. The applicant submitted a robust narrative explaining the proposal for the Bull Run Terrace subdivision reconsideration. The applicant's narrative elaborates on the objectives of their proposal and the desire to include 4 duplexes, 192 multi-family dwellings, and

village commercial development. The narrative also elaborates on dedications, including 1.755 acres of parkland.

- b. Site and Context. A map of the site and existing context shall identify the project area. The applicant submitted a 12-sheet plan set that details the project area and proposed improvements.
- c. Land Use Diagram. The land use diagram shall indicate the distribution and location of planned land uses, including open space and parks, within the area covered by the specific area plan. The applicant's plan set clearly identifies all proposed land uses (Exhibit C, Sheet 11). The development of commercial on Lot 7 will need to follow the uses as defined in Chapter 17.46, Village Commercial (C-3). If the applicant or successor-in-interest proposes uses in Section 17.46.20(B), Conditional Uses, the proposal will need to be reviewed by the Planning Commission.
- d. Density. If residential uses are proposed, a narrative shall describe planned residential densities. Density calculations were included by the applicant in their narrative and are included in review of Chapter 17.30, Zoning Districts in this document.
- e. Facilities Analysis. The plan shall include an analysis of the general location and extent of major components of sanitary sewer, water, and other essential facilities proposed to be located within the specific plan area and needed to support the land use and densities described in the plan. A review of existing facilities master plans shall be sufficient if these master plans indicate there is adequate capacity to serve the specific plan area. The applicant included a utility plan within the plan set and a preliminary stormwater report. The Assistant Public Works Director reviewed the applicant's submission and has provided analysis and recommended conditions as explained in this document.
- f. Circulation/Transportation Diagram. The circulation diagram shall indicate the proposed street pattern for the specific area plan area, including pedestrian pathways and bikeways. Design standards and street cross sections shall be included, if different than normal City standards. The applicant included a traffic study from Ard Engineering, a future street plan, a master street plan, and street section details. The City's Transportation Engineer, Assistant Public Works Director, ODOT, Fire Marshal, and the Director of Sandy Area Metro reviewed the applicant's submission and have provided analysis and recommended conditions as explained in this document.
- g. Market Analysis. Specific area plans that include amendments to the zoning map affecting the acreage of Village Commercial (C-3) land within the plan area shall include a market analysis of supportable retail space that verifies demand for the proposed acreage of C-3 land. The analysis should include a market delineation, a regional and local economic review, and a retail market evaluation. The applicant submitted an analysis from Johnson Economics. The revised proposal includes increasing the amount of available commercial lands by 0.67 acres. Johnson Economics explains that the proposal will provide capacity for additional housing options and provide more property that is an active urban use. The analysis states that an increase in multifamily housing

will increase local capacity for residential products that can meet a broad range of price points. The analysis goes on to explain that the Highway 26 infrastructure investment requirements were too great to be offset by the value of the underlying property, but that a zone change to allow more residential units will provide the ability of the site to support necessary infrastructure investments. As Johnson Economics correctly identifies, the extension of Dubarko Road to Highway 26 and the additional land needed for Deer Pointe Park cannot be completed unless the subject site is developed.

- h. Design and Development Standards. If standards differ from normal City standards, design and development standards shall be included in the plan. The applicant states that the proposal is anticipated to comply with all design and development standards. As identified by the applicant, the exact details of site and building review will be primarily addressed with submittal of subsequent land use applications for development on Lot 5, 6 and 7.

## **TRANSPORTATION – Chapters 17.84 and 17.100**

53. Section 17.84.30(A)(1) requires that all proposed sidewalks on the local streets will be five feet wide as required by the development code and separated from curbs by a tree planting area that is a minimum of five feet in width. Street A and Fawn Street both meet these requirements.
54. As required by Section 17.84.30(A)(2), six-foot sidewalks are proposed to be constructed along Highway 26, portions of Dubarko Road, and on Street B. These frontages will include planter strips as required with at least 5 feet wide of soil area. As required by Section 17.84.30(A)(4), the applicant intends to construct all sidewalk improvements as required by this section with the exception of some five-foot wide sidewalks on Dubarko Road. **The applicant shall revise the street sections and plan set to detail all sidewalks on Dubarko Road at least 6 feet in width.**
55. No exceptions or modifications listed in Section 17.84.30(A)(3) are requested with the application. In relation to Sections 17.84.30(B), 17.84.30(C), 17.84.30(D), and 17.84.30(E), no pedestrian or bicycle facilities other than sidewalks and on-street bicycle lanes have been identified or proposed in the application.
56. Traffic Study. Section 17.84.50 outlines the requirements for providing a traffic study. The applicant included a Traffic Impact Study from Ard Engineering with the application (Exhibit E). According to the revised traffic study, the assumptions were based on 8 duplex units, 192 multi-family units, and a 5,000 square foot office building. These three uses would produce 94 peak AM trips, 115 peak PM trips, and 1,418 total daily trips. Since this application involves a zone change, the traffic engineer also had to evaluate traffic volumes as measured under the “reasonable worst case” development scenarios as defined by Oregon’s Transportation Planning Rule (TPR). The reasonable worst case scenario analysis can be found on pages 13, 14, 15, 26, 27, and 28 of Exhibit F. Based on the TPR, Ard Engineering recommends that a trip cap of 340 PM net new peak hour trips be applied to the subject property as a condition of approval for the proposed zone change. The City Transportation Engineer (Exhibit Q) concurs with the importance of applying a trip cap of 340 PM net new peak hour trips. **The subject property shall be subject to a trip cap of 340 PM net new peak hour trips. Each application for development of a lot within the subject property shall include a report from a licensed traffic engineer stating the number of net new PM peak hour trips expected to be generated by the proposed development, and this number of trips will be deducted from the total trip cap of 340 net new PM peak hour trips upon approval of the application. No development application will be approved that would cause the total net new PM peak hour trips to exceed said cap unless the applicant agrees to pay additional proportionate share fees for the intersection of Highway 211 and Dubarko Road, in an amount determined by the City based on the number of trips in excess of the cap.** With its connection to Highway 26, Dubarko Road will become increasingly important to the transportation system in Sandy. The traffic analysis makes several references to a right-in/right-out intersection at Dubarko Road and Highway 26. These references are in the context of analysis of the performance of other study intersections examined in the traffic study and not a proposal to

construct a right-in/right-out intersection at this location. The adopted Transportation System Plan (TSP) does not contemplate a right-in/right-out intersection at Highway 26 and Dubarko Road. **The intersection of Highway 26 and Dubarko Road shall be constructed as a full-access intersection in compliance with the TSP.**

57. Highway 211 and Dubarko Road Intersection. The intersection improvements at Highway 211 and Dubarko Road are defined as Project M9 in the 2011 Sandy Transportation System Plan. The improvements include eventually constructing a traffic signal, northbound right turn lane, southbound left turn lane, and northbound left turn lane. The proposed development will add 17 PM peak hour trips to this intersection. The City Transportation Engineer (Exhibit Q) states that due to the impacts this proposed development will have on the intersection of Highway 211 and Dubarko Road, as offsite mitigation for that intersection shall be incorporated into the conditions of approval. The City Transportation Engineer created a memorandum (Exhibit R) summarizing the development of a proportionate share funding plan to construct improvements at the Highway 211 and Dubarko Road intersection. This proportionate share funding plan will collect financial contributions from multiple developments and will fund specific capacity improvements needed to mitigate traffic operation deficiency that is triggered by the impact of new trips from growth. Exhibit R explains the cost of the new improvement at over \$10 million, the proportionate share fee formula, and the fee analysis results. **The applicant shall contribute a proportional share fee of \$268,345 towards construction of future capacity improvements at the intersection of Highway 211 and Dubarko Road at a cost of \$15,785 per PM peak hour trip.**
58. Dubarko Road. The proposed street sections (Exhibit C, Sheet C6) depict Dubarko Road between its current eastern terminus and proposed Street A with a 76-foot-wide right-of-way consisting of two 0.5-foot monumentation strips, varying sidewalk widths, two five-foot wide planter strips, two 0.5-foot curbs, two five-foot bike lanes, and two varying travel lane widths and varying median width. **The applicant shall revise the street sections and plan set to detail all sidewalks on Dubarko Road at least 6 feet in width.** The standard section for an arterial street in the TSP consists of 11-foot travel lanes with 5-foot bike lanes. It is unclear to staff as to why some of the proposed travel lanes are so wide. The portion of Dubarko Road between Street A to the west boundary of the development should be used to provide a transition from the proposed three lane section with median to a two lane section with median to match the existing section. The proposed 17-foot wide travel lanes will be confusing to motorists. **The applicant shall submit a revised cross-section for the portion of Dubarko Road between the existing terminus and Street A with construction plans for City Engineer review and approval.** The extension of Dubarko Road is classified as a minor arterial street and shall meet the standards of Section 17.84.50(B) which states that arterial streets should generally be spaced in one-mile intervals and traffic signals should generally not be spaced closer than 1,500 ft for reasonable traffic progression. The proposed alignment of Dubarko Road is consistent with the TSP and is an extension of an existing arterial street, not a new arterial street. The traffic study concluded that based on warrant analysis a traffic signal is not warranted, but a traffic signal at Dubarko Road and Highway 26 will be needed in the future based on future development. Therefore, the Preliminary Plat (Exhibit C, Sheet C2) details a 40-foot by 40-foot traffic signal easement at the northeast

corner of Lot 7. The traffic signal easement could impact the tree retention area. **The applicant shall submit revised plans detailing how the traffic signal easement will impact the tree retention area. If the tree retention area is negatively impacted the applicant shall preserve additional trees.**

59. Street B. Street B (defined as ‘New Road in the TSP) is classified as a collector street and does not need to adhere to the standards in Section 17.84.50(B). Street B is proposed with a 60-foot right-of-way consisting of two 0.5-foot monumentation strips, two six-foot sidewalks, two five-foot wide planter strips, two 0.5-foot curbs, and two 18-foot travel lanes. In accordance with Figure 10 of the 2011 TSP, the travel lanes on a collector street may be as narrow as 11 feet wide. **The applicant shall revise the street sections and striping plan to accommodate two 5-foot-wide bike lanes and two 13-foot-wide travel lanes for Street B.**
60. Street A and Fawn Street. Street A and Fawn Street are both classified as local streets. Both streets are proposed with 50-foot right-of-ways consisting of two 0.5-foot monumentation strips, two five-foot wide sidewalks, two five-foot wide planter strips, two 0.5-foot curbs, two 7-foot-wide parking areas, and a combined 14-foot-wide travel lane. These proposed street sections meet the TSP requirements.
61. Credits for Dubarko Road. The widening of Dubarko Road to accommodate the section recommended in the TSP is eligible for Transportation System Development Charge credits. The difference in cost between the required minor arterial improvements and a standard local street section is eligible for credits. **Estimated costs shall be submitted to City staff and reviewed and approved by the City Engineer. The City and the Applicant shall enter into an agreement defining the eligible improvements and estimated costs prior to plat approval. SDC credits shall be based on final audited costs.**
62. Intersection with Highway 26. The extension of Dubarko Road to Highway 26 is defined as Project M20 in the 2011 Sandy Transportation System Plan. The subject property abuts Highway 26 and notification of the proposal was sent to ODOT as required by Section 17.100.90. ODOT provided comments as contained in Exhibit S. Dubarko Road will contain a dedicated left turn and right turn/through lane, a median with street trees, and a dedicated left turn lane to Street B. Highway 26 improvements will include among other things a dedicated right turn lane to Dubarko Road, sidewalks, street trees, and restriping. **The applicant shall adhere to all standards and requirements that are defined by ODOT, including the Dubarko Road connection to Highway 26 and all required improvements along Highway 26 including stormwater facilities constructed as necessary to be consistent with local, ODOT, and ADA standards.** As stated by the Assistant Public Works Director (Exhibit P), any ODOT required improvements on and adjacent to the Highway 26 frontage of the site are not included in the City’s TSP or capital plans and as such are not eligible for SDC credits or reimbursement.
  - a. ODOT recommends that the site layout and development be consistent with the approved and adopted Transportation System Plan, including: the Dubarko Road extension to Highway 26, aligned with the westerly most SE Vista Loop Drive intersection; accommodation of a Collector road terminating at the southern extents of the subject

property to allow the road to extend south from the westernmost leg of the SE Vista Loop Drive intersection; and curb, sidewalks, cross walk ramp, bikeways and road widening along Highway 26 constructed as necessary to be consistent with local, ODOT, and ADA standards.

- b. According to ODOT, the intersection of Dubarko Road and Highway 26 requires a grant of access from ODOT. **The applicant shall assist the City of Sandy in applying for a grant of access or other necessary approval from ODOT for access to Highway 26 at Dubarko Road.**
  - c. The conditions of approval shall require the development to comply with the standards and procedures specified by ODOT. **The ODOT grant of access shall be approved and the improvements completed per the grant of access prior to issuance of certificates of occupancy for any structures on the subject property.**
63. Average Daily Traffic. While this proposal will undoubtedly increase traffic on Dubarko Road the Average Daily Traffic (ADT) concerns that were raised during the Bailey Meadows approval process are not present with this land use application. In the Bailey Meadows case, Melissa Avenue is designated a local street and the concerns raised relative to ADT impacted a local street. In the case of Bull Run Terrace, the majority of the anticipated trips will use Dubarko Road, which is designated as a minor arterial, and Street B, which is designated as a collector. According to Chapter 17.10 of the Development Code, arterial streets are defined as helping interconnect and support the arterial highway system and link major commercial, residential, industrial, and institutional areas. Also, in Chapter 17.10, the definition for collector streets states they are meant to provide both access and circulation within residential neighborhoods and commercial/industrial areas. While staff is sympathetic of existing residents to the west of the proposed Bull Run Terrace subdivision, the extension of Dubarko Road has always been intended to occur and the street has been designed to accommodate high traffic volumes. The only street that ADT concerns are valid for is Fawn Street/Street A. The four proposed duplexes in the R-1 zoning district (Lots 1-4) will not cause any concerns, but the potential of trips generated from the C-3 zoned property (Lot 7) could cause additional traffic on Fawn Street/Street A and negatively impact the Deer Pointe subdivision. **The land use application for Lot 7 shall include proposed driveway designs to discourage commercial patrons existing Lot 7 to Street A from entering the Deer Pointe Subdivision on Street A. The designs shall be reviewed and approved by the City Engineer and Public Works Director.**
64. Tangent Alignment. The alignment of Street B and Dubarko Road does not provide the minimum 100 feet of tangent alignment (as measured from the curb line on Dubarko extended) on Street B as required by Section 17.84.50(H)(5)(a) of the Sandy Municipal Code (SMC). However, this requirement can be waived or modified by the City Engineer. In verbal discussions with the City Engineer, Curran-McLeod, and the Assistant Public Works Director, they find the proposed alignment to be adequate.
65. Future Street Plan. Proposed streets meet the requirements of 17.94.50(H). The future street plan (Exhibit C, Sheet C1) shows that the proposed development will facilitate and not preclude development on adjacent properties. Both Dubarko Road and Street B are identified in the TSP and proposed to be constructed with the development. All proposed streets

comply with the grade standards, centerline radii standards, and TSP-based right-of-way improvement widths. Dubarko Road will be extended by a continuation of the centerline of the existing section. All proposed streets are designed to intersect at right angles with the intersecting street and comply with the requirements of Section 17.94.50.(H)(5). Section 17.100.180(A) requires that intersections are designed with right angles. Both the extension of Fawn Street and Street B are designed to intersect at right angles to Dubarko Road as required. Additionally, Dubarko Road will intersect Highway 26 at a right angle. All streets in the proposed subdivision have a minimum curve radius as required by Section 17.100.180(B). **All streets shall meet the requirements of the Fire District as noted in Exhibit N.**

66. Street Extensions. Section 17.84.50(E) requires that public streets installed concurrent with development of a site shall be extended through the site to the edge of the adjacent property. The proposed street layout results in one temporary dead-end street (Street B) that will be stubbed to the southern property line of the subject property. To accommodate fire apparatus turnaround the temporary dead-end of Street B shall include turnarounds, subject to the approval of the Fire Marshal. **The applicant shall revise the plan set to detail fire turnaround easements on Lots 5 and 6 as approved by the Sandy Fire District Fire Marshal. The applicant shall also ensure that water supply requirements are in compliance with the adopted Oregon Fire Code.**
67. Blocks. All blocks within the proposed subdivision have sufficient width to provide for two tiers of lots as required in 17.100.120(A). The local streets of Fawn Street/Street A meet the maximum block length standards of 400 feet. The block length from Street A to Highway 26 is 437 feet and the block length from Street B to Highway 26 is 434 feet. The block length requirements in Section 17.100.120 are in conflict with the preferred spacing standards on arterial and collector streets. While local streets are required to be spaced 8-10 streets per mile in accordance with Section 17.100.110(E), the spacing standards for arterial and collector streets are required to be spaced at much greater distances. The distance from Highway 26 to Street B is needed to maintain distance between the Highway and the collector street (Street B). Fawn Street/Street A has to be aligned with Street B to create a safe intersection. Furthermore, the City Transportation Engineer did not recommend alternative spacing for the streets proposed in the Bull Run Terrace subdivision. Therefore, all block lengths meet the Sandy development code provisions and staff does not recommend any changes to street spacing. The spacing from Dubarko Road to the east property line of Lot 6 is 431 feet. Staff finds that providing a pedestrian connection along the east side of the Bull Run Terrace subdivision will be vital for providing future connectivity for the subject area and development to the south of Bull Run Terrace. **The applicant shall install an 8-foot-wide concrete walkway with pedestrian scale lighting through Lot 6 from the sidewalk on Highway 26 to the southern property line of Lot 6. This facility shall be contained within a pedestrian access easement or tract recorded prior to any certificate of occupancy on this lot.**
68. Street Naming. The proposed development includes the need to name Street B. **The street name shall follow the deer related theme in the development to the west and shall be an 'avenue' as it runs north/south. Staff recommends the name Velvet Avenue.**



69. Transit. Section 17.84.40(A) requires that the developer construct adequate public transit facilities. The Transit Master Plan (TMP) identifies new roads consistent with the 2011 Transportation System Plan. Pages 35 and 36 of the TMP describes long term future plans, including a circulator route that serves Dubarko Road, Vista Loop, and Proctor Blvd., as well as the importance of transit service that provides options along Highway 26. Development proposals, such as Bull Run Terrace, with high density residential and village development, should provide transit access along Highway 26 to support useful and high ridership transit. **The applicant shall install a pull-out transit stop on Highway 26 to the east of the intersection of Dubarko Road and Highway 26 to serve eastbound transit services along Highway 26 (within or by Lot 6). The applicant shall also install two concrete bus shelter pads and green benches (Fairweather model PL-3, powder coated RAL6028). The required pad size is 7 feet by 9 feet 6 inches and the amenities should be located adjacent to Lot 3 or 1 and Lot 6.** Engineering specifications are available from the Director of Sandy Area Metro.
70. The Sandy Development Code has a list of other considerations in the right-of-way that were evaluated as follows:
- a. Other Access Considerations. No public alleys, flag lots, or public access lanes are proposed in this development. One residential shared private drive is being proposed by using an easement over Lot 3 to access Lot 4. **The applicant shall modify the plat to include a vehicular easement on Lot 4 as necessary to accommodate maneuvering for vehicles on Lot 3.**
  - b. Lighting. A lighting plan will be coordinated with PGE and the City as part of the construction plan process and prior to installation of any fixtures as required by Section 17.100.210.
  - c. Planter Strips. Planter strips will be provided along all frontages as required in Section 17.100.290. Street trees in accordance with City standards will be provided in these areas. A Street Tree Plan is included in Exhibit C, Sheet C7.
  - d. Mail Facilities. Section 17.84.100 outlines the requirements for mail delivery facilities. **The location and type of mail delivery facilities shall be coordinated with the City Engineer and the Post Office as part of the construction plan process.**

## **PARKING, LOADING, AND ACCESS REQUIREMENTS – Chapter 17.98**

71. Section 17.98.10(M) requires that the developer provide a Residential Parking Analysis Plan. This plan identifying the location of parking for the four R-1 zoned lots and is included in Exhibit C, Sheet C7.
72. Section 17.98.20(A) requires that each duplex is required to provide at least two off-street parking spaces and that multi-family dwelling units are required to provide 1.5 off-street parking spaces for a studio or one-bedroom unit or provide 2.0 off-street parking spaces for a two-bedroom unit or greater. **Compliance with this requirement will be assessed with future building permits or design reviews, whichever is applicable.**
73. Section 17.98.60 has specifications for parking lot design and size of parking spaces. **Compliance with this requirement will be assessed with future building permits or design reviews, whichever is applicable.**
74. Section 17.98.90 requires that all streets proposed will be improved to city standards.
75. Section 17.98.100 has specifications for driveways. The minimum driveway width for a single-family dwelling is 10 feet. The Public Works driveway approach standard detail specifies a maximum of 24 feet wide for a residential driveway approach. Additionally, all driveways will meet vertical clearance, slope, and vision clearance requirements. **Driveway access locations to Lots 5 -7 shall be determined and approved by the City Public Works Director and City Engineer during design review for these lots.**
76. Section 17.98.110 outlines the requirements for vision clearance. **The requirements of Section 17.98.110 shall be considered in placing landscaping in these areas with construction of homes and will be evaluated with a future design review application for the multi-family units.**
77. Section 17.98.130 requires that all parking and vehicular maneuvering areas shall be paved with asphalt or concrete. As required by Section 17.98.130, **all parking, driveway and maneuvering areas shall be constructed of asphalt, concrete, or other approved material.**
78. Section 17.98.200 contains requirements for providing on-street parking spaces for new residential development. Per 17.98.200, one on-street parking space at least 22 feet in length has been identified within 200 feet of each of the 4 lots zoned as R-1 as required. Exhibit C, Sheet C7 shows that 20 on-street parking spaces have been identified in compliance with this standard. No parking courts are proposed by the applicant.

## **UTILITIES – Chapters 17.84 and 17.100**

79. Section 17.84.20(A)(1) requires that all improvements shall be installed concurrently with development or be financially guaranteed. **All lots in the proposed subdivision will be required to install public and franchise utility improvements or financially guarantee these improvements prior to final plat approval.**
80. As required by 17.100.130, eight-foot wide public utility easements will be included along all property lines abutting a public right-of-way. Because access is limited along Dubarko Road, an access easement is also proposed across Lot 3 to provide access to Lot 4. In addition, a 10-foot PUE/sidewalk easement is proposed along the Highway 26 frontage of Lot 7 and the majority of the frontage of Tract A. A conservation easement is also proposed to be platted across the northern portion of Lot 7 to protect retained trees in this area. The revised Preliminary Plat (Exhibit C, Sheet C2) details a 40 foot by 40 foot traffic signal easement.
81. Water. The applicant shall install all water lines and fire hydrants in compliance with the applicable standards in Section 17.100.230, which lists requirements for water facilities. According to the Assistant Public Works Director (Exhibit P), the existing 8-inch diameter water line resides in an easement granted to the City of Sandy recorded as Clackamas County Document No. 2004-110340. **The applicant shall replace the existing waterline with an 8-inch diameter water line at a depth approved by the City Engineer.** There will be no compensation or credits for replacement of the existing water line. This pipe is a standard pressure line and will be used to provide domestic water service to the development. The Assistant Public Works Director also stated that the City's water master plan shows an 18-inch diameter water line in Dubarko Road south of Highway 26. **The applicant shall install an 18-inch water line in Dubarko Road connected to the existing 18-inch water line at the west end of the site and the existing 12-inch line on Highway 26. The applicant shall extend the existing 12-inch water main in Highway 26 east from the proposed intersection of Dubarko Road and Highway 26 to the east boundary of the site.** The applicant will also need to work with the Sandy Fire Marshal (Exhibit M) to verify fire hydrant locations, fire department connections (FDCs), and fire flow. **The applicant shall modify the plan set to detail new fire hydrants ordered in an OSHA safety red finish and having a 4-inch non-threaded metal faced hydrant connection with cap installed on the steamer port (4 ½-inch NST x 4-inch Storz Adaptor).**
82. Sanitary Sewer. This application is not subject to the moratorium on development adopted by Resolution 2022-24 because it was submitted prior to the effective date of the moratorium. The applicant intends to install sanitary sewer lines in compliance with applicable standards in Section 17.100.240. All lots except Lot 7 are designed to gravity drain to the sanitary sewer line in Dubarko Road. Due to grade, Lot 7 is not able to drain to the line in Dubarko Road but is proposed to connect to the existing sanitary sewer line at the north end of the park property. The Assistant Public Works Director stated that sewer connections will be permitted as proposed (Exhibit P).

83. Stormwater. Section 17.100.250(A) details requirements for stormwater detention and treatment. Two public stormwater quality and detention facilities are proposed as Tract B to be located north of Lot 1 and Tract C in the SW corner of the property. However, the preliminary storm drainage and design calculations was done in November of 2019 and did not detail stormwater Tract C. **The applicant shall revise the storm drainage and design calculations with Tract C. All site runoff shall be detained such that post-development runoff does not exceed the predevelopment runoff rate for the 2, 5, 10 and 25 year storm events. Stormwater quality treatment shall be provided for all site drainage per the standards in the City of Portland Stormwater Management Manual (COP SWMM).**
84. Section 17.100.260 states that all subdivisions shall be required to install underground utilities. **The applicant shall install utilities underground with individual service to each lot.**
85. Section 17.84.60 outlines the requirements of public facility extensions. The applicant submitted a utility plan (Exhibit C, Sheet C5) which shows the location of proposed public water, sanitary sewer, and stormwater drainage facilities. Broadband fiber service will be detailed with construction plans. A private sanitary sewer connection is proposed to serve Lot 7. All other utilities will be public.
86. Franchise utilities will be provided to all lots within the proposed subdivision as required in Section 17.84.80. The location of these utilities will be identified on construction plans and installed or guaranteed prior to final plat approval. The applicant does not anticipate extending franchise utilities beyond the site. **All franchise utilities shall be installed underground.** The developer will make all necessary arrangements with franchise utility providers. The developer will install underground conduit for street lighting.
87. Section 17.84.90 outlines requirements for land for public purposes. The majority of public facilities will be located within public rights-of-way including the existing waterline that will be contained within the Dubarko Road right-of-way. Eight-foot wide public utility easements will be provided along all lots adjacent to street rights-of-way for future franchise utility installations. All easements and dedications will be identified on the final plat as required.

## **PARKLAND DEDICATION – Chapter 17.86**

88. The applicant intends to dedicate parkland as outlined in the requirements of Section 17.86. This application was originally submitted on December 30, 2019. The Sandy Development Code in effect at that time is what this reconsideration is being reviewed under. Therefore, it is important to note that modifications that have since occurred to the Sandy Development Code, particularly to Chapter 17.86, Parkland and Open Space, and Chapter 17.100, Land Division, do not apply to this application.
89. 17.86.10(2) contains the calculation requirements for parkland dedication. The formula is acres = proposed units x (persons/unit) x 0.0043 (per person parkland dedication factor).
- For the four duplexes, the acres equal 8 units x 3 persons per unit x 0.0043 = 0.103 acres.
  - For the 192 multifamily units, the acres equal 192 x 2 persons per unit x 0.0043 = 1.651 acres.
  - Combined, this totals 1.754 acres. The applicant proposes to dedicate 1.755 acres of parkland and is thus in compliance with this requirement.
90. Section 17.86.20 has a requirement that all homes must front on the parkland. The applicant is not proposing any houses to the south of the parkland, but instead is proposing a stormwater tract. The applicant is proposing housing to the east of the parkland. are proposing future commercial development. Staff supports the shift of commercial lands from the east side of Dubarko Road to the west side of Dubarko Road if the parkland is accommodated with adequate landscape buffering, pedestrian amenities, and housing facing the parkland. The purpose of having homes front the parkland is to provide eyes on the park and increase safety for park users. Having active storefronts or patios facing the park will provide the same safety measures as homes facing the park. **The applicant shall design Lot 7 to incorporate buildings facing the parkland and usable windows facing the parkland.** An additional consideration should be to connect the sidewalk along Highway 26 to the walkway on the parkland property to accommodate additional pedestrian connectivity. The Revised Master Street and Utility Plan (Exhibit C, Sheet C5) details a meandering walkway in the proposed park. While staff appreciates this preliminary walkway location being identified in the revisions, ultimately the location of the walkway will need to be determined with design of Deer Pointe Park. **The applicant shall install a walkway along the east side of the park or west side of Lot 7 that connects Fawn Street/Street A to the sidewalk on Highway 26 as determined during design of Deer Pointe Park. The design of Lot 7 shall incorporate a landscape buffer that provides visibility between Lot 7 and the parkland but provides a visually attractive separation.**
91. The Parks and Trails Advisory Board provided a letter (Exhibit L) which contains a recommendation for the City Council to accept the parkland as it meets the objectives as listed in the 2022 Parks and Trails Master Plan by providing a true neighborhood park in an underserved area of the community. The Parks and Trails Advisory Board would also like the City to pursue a development agreement with the developer to make initial improvements to the park based on the conceptual plan in the 2022 Parks and Trails Master Plan in-lieu of

paying Systems Development Charges. **The applicant shall work with the City of Sandy to create a mutually agreed upon engineer estimate for the Deer Pointe parkland improvements. The final engineer's estimate shall be used as the basis for an agreement to calculate Park SDC credits for the applicant. If the applicant and City agree to the applicant/developer completing parkland improvements, the park improvements shall be completed with approval from the Parks and Trails Advisory Board and prior to final plat approval or as otherwise established in a development agreement.**

92. Section 17.86.30 lists the requirements of the developer prior to acceptance of required parkland dedications. **The applicant shall clear, grade, and seed the proposed parkland as specified by the City in the construction plans.** The parkland grading could impact proposed tree retention. **The applicant shall submit revised plans detailing how the parkland grading will minimize impacts to tree retention. If tree retention is negatively impacted the applicant shall preserve additional trees.** As referenced in Finding 1, above, and per Section 17.32.00 of the Development Code at the time of the original application submittal (December 2019), only publicly owned land can be zoned POS. **The applicant shall dedicate the proposed 1.755 acres of parkland to the City through a dedication deed process, separate from the subdivision plat process. The applicant shall also provide a Phase I Environmental Assessment prior to dedication. This dedication shall occur within 180 days after approval of Ordinance No. 2022-27.**
93. The applicant proposes including two utility easements within the proposed parkland dedication. However, these easements are unavoidable given the location of existing utilities. **The applicant shall define these utilities on the tentative plat.**

## **URBAN FORESTRY – 17.102**

94. Section 17.102.20 contains information on the applicability of Urban Forestry regulations. Two Arborist Reports were included with the first iteration of Bull Run Terrace (Exhibit F) from Teragan and Associates. The applicant has also included an existing conditions and tree retention plan, and tree tables (Exhibit C, Sheet C3 and C4). The arborist inventoried all trees eleven inches and greater DBH for the portion of the property proposed to satisfy tree retention requirements as required in 17.102.50.
95. The property contains 15.91 acres requiring retention of 48 trees, 11 inches and greater DBH ( $15.91 \times 3 = 47.73$ ). The applicant is proposing to retain 81 trees, however, only 62 of the trees are both 11-inches or greater DBH and in good health according to the Arborist Reports (Exhibit F). The majority of the trees are conifers, with the majority of those being Doug fir. Five of the 81 trees marked for retention have been identified as in poor or very poor condition, but they are located in a grouping of healthy trees which makes removal difficult. The proposed retention is as follows:
- a. Lot 7: 44 trees at 11-inches DBH or greater and in good condition, 4 trees at 11-inches DBH or greater and in fair condition, 5 trees at less than 11-inches DBH and in good or fair condition, 4 trees in poor or very poor condition
  - b. Tract A (parkland): 15 trees at 11-inches DBH or greater and in good condition, 3 trees at 11-inches DBH or greater and in fair condition, 1 tree in poor condition
  - c. Lots 2 and 4: 3 trees at 11-inches DBH or greater and in good condition, 1 tree at 11-inches DBH or greater and in fair condition, 1 tree at less than 11-inches DBH and in good condition
96. The Arborist Reports (Exhibit F) provide recommendations for protection of retained trees including identification of the recommended tree protection zone for these trees. The requirements of 17.102.50(B) will be complied with prior to any grading or tree removal on the site. The Planning Commission provided a code interpretation that retention trees only have to be protected consistent with Chapter 17.102, and not consistent with the distance requirements in Chapter 17.92 for residential subdivisions. That said, staff finds that to adequately protect the retention trees, the protection area shall be consistent with Chapter 17.92 and the recommendations of the arborist. **The applicant shall install tree protection fencing at the critical root zone of 1 foot per 1-inch DBH to protect the 53 retention trees in the conservation easement on Lot 7, the 18 retention trees on the parkland, and the 5 trees included on Lots 2 and 4, consistent with the arborist reports from Teragan and Associates. Up to 25 percent of the area between the minimum root protection zone of 0.5 feet per 1-inch DBH and the critical root zone of 1 foot per 1 inch DBH may be able to be impacted without compromising the tree, provided the work is monitored by a qualified arborist. The applicant shall retain an arborist on site to monitor any construction activity within the critical root protection zones of the retention trees or trees on adjacent properties that have critical root protection zones that would be impacted by development activity on the subject property.**

97. **The tree protection fencing shall be 6-foot-tall chain link or no-jump horse fencing and the applicant shall affix a laminated sign (minimum 8.5 inches by 11 inches) every 50 feet to the tree protection fencing indicating that the area behind the fence is a tree retention area and that the fence shall not be removed or relocated. No construction activity shall occur within the tree protection zone, including, but not limited to, dumping or storage of materials such as building supplies, soil, waste items, equipment, or parked vehicles. The applicant shall request an inspection of tree protection measures prior to any tree removal, grading, or other construction activity on the site.**
98. The Tree Preservation Plan (Exhibit C, Sheet C3) details a number of trees being removed right next to the trees proposed for retention. **The trees proposed for removal that are adjacent to retention trees shall be removed in a way that does not harm or damage adjacent trees.** The applicant submitted a Tree Removal Plan from Teragan and Associates, Inc. The Tree Removal Plan identifies tree removal options, including directional felling, piece removal, and crane removal. The arborist also identifies options for stumps, including retention or careful surface grinding. **Tree removal and/or snag creation shall be completed without the use of heavy equipment in the tree protection zone; trunks and branches of adjacent trees shall not be contacted during tree removal or snag creation. The applicant shall submit a post-construction report prepared by the project arborist or other TRAQ qualified arborist to ensure none of the retention trees were damaged during construction.**
99. **To ensure protection of the required retention trees, the applicant shall record a tree protection covenant for all 76 trees in good or fair retention as defined in Exhibit F, specifying protection of trees on the subject property and limiting removal without submittal of an Arborist's Report and City approval. The 5 trees in poor or very poor condition shall not be included in the covenant. The plat shall also include a conservation easement on Lot 7.**



## **LANDSCAPING AND SCREENING – Chapter 17.92**

100. Section 17.92.10 contains general provisions for landscaping. As required by Section 17.92.10 (C), trees over 25-inches circumference measured at a height of 4.5 feet above grade are considered significant and should be preserved to the greatest extent practicable and integrated into the design of a development. A 25-inch circumference tree measured at 4.5 feet above grade has roughly an eight-inch diameter at breast height (DBH). Tree protection fencing and tree retention will be discussed in more detail under Chapter 17.102 in this document. **Per Section 17.92.10(L), all landscaping shall be continually maintained, including necessary watering, weeding, pruning, and replacing.**
101. Section 17.92.20 lists the requirements for minimum landscaping improvements. **The details of this section will be considered with submittal of all design review applications for the proposed multi-family units and commercial property.**
102. Section 17.92.30 specifies that street trees shall be chosen from the City-approved list. As required by Section 17.92.30, the development of the subdivision requires medium trees spaced 30 feet on center along all street frontages. The current street tree plan (Exhibit C, Sheet C7) details trees at an appropriate spacing per the development code, except there are two trees missing to the east of Lot 7 along Dubarko Road. **The applicant shall revise the street tree plan (Exhibit C, Sheet C7) to detail two additional street trees to the east of Lot 7.** The trees the applicant has identified are American hophornbeam, American linden, Greenspire linden, and Green Vase zelkova. These four street tree species are on the approved street tree list.
103. The applicant is proposing to mass grade the buildable portion of the site. This will remove top soil and heavily compact the soil. In order to maximize the success of the required street trees, **the applicant shall aerate the planter strips to a depth of 3 feet prior to planting street trees. The applicant shall submit documentation from the project landscaper stating that the soil has been amended and aerated prior to planting the street trees at the individual construction phase for each lot. If the plans change in a way that affects the number of street trees (e.g., driveway locations), the applicant shall submit an updated street tree plan for staff review and approval. Street trees are required to be a minimum caliper of 1.5-inches measured 6 inches from grade and shall be planted per the City of Sandy standard planting detail. Trees shall be planted, staked, and the planter strip shall be graded and backfilled as necessary, and bark mulch, vegetation, or other approved material installed prior to occupancy. Tree ties shall be loosely tied twine or other soft material and shall be removed after one growing season (or a maximum of 1 year).**
104. Section 17.92.40 requires that all landscaping shall be irrigated, either with a manual or automatic system. **As required by Section 17.92.140, the developer and lot owners shall be required to maintain all vegetation planted in the development for two (2) years from the date of completion, and shall replace any dead or dying plants during that period.**

105. Section 17.92.50 specifies the types and sizes of plant materials that are required when planting new landscaping. Street trees are typically required to be a minimum caliper of 1.5-inches measured 6 inches from grade. **All street trees shall be a minimum of 1.5-inches in caliper measured 6 inches above the ground and shall be planted per the City of Sandy standard planting detail. The applicant shall submit proposed trees specifics to City staff for review and approval concurrent with construction plan review.**
106. Section 17.92.60 requires revegetation in all areas that are not landscaped or remain as natural areas. The applicant did not submit any plans for re-vegetation of areas damaged through grading/construction, although most of the areas affected by grading will be improved. **Exposed soils shall be covered by mulch, sheeting, temporary seeding or other suitable material following grading or construction to maintain erosion control for a period of two (2) years following the date of recording of the final plat associated with those improvements.**
107. Section 17.92.90 has details on screening of unsightly views or visual conflicts. While the proposed lots are not unsightly, they are a big difference from the existing view of the natural landscape. This contrast was identified at the Planning Commission hearing on August 24, 2020 and the applicant was asked to look at some additional screening measures to protect existing trees or add additional landscaping. The applicant took the comments seriously and proposed some additional landscaping along the common property line with the Deer Pointe subdivision (Exhibit I). The applicant is proposing to retain five conifers (Exhibit C, Sheet C3), and to plant some maples, incense cedars, katsura, and Silver Queen Port Orford cedars. **The applicant shall retain the additional five trees on Lots 2 and 4 (Tree Nos. 13439, 13440, 13441, 13421, and 13423) and shall plant maples, incense cedars, katsura, Excelsa Western red cedars, and Silver Queen Port Orford cedars or other trees as approved by staff per the Screening Concept Plan (Exhibit I) along Lots 1, 2, 4, and Tracts B and C. Deciduous trees shall be at least 1.5 inches caliper at planting and the cedars shall be at least 6 to 8 feet in height at planting.**
108. Section 17.92.130 contains standards for a performance bond. The applicant has the option to defer the installation of street trees and/or landscaping for weather-related reasons. Staff recommends the applicant utilize this option rather than install trees and landscaping during the dry summer months. Consistent with the warranty period in Section 17.92.140, staff recommends a two-year maintenance and warranty period for street trees based on the standard establishment period of a tree. **If the applicant chooses to postpone street tree and/or landscaping installation, the applicant shall post a performance bond equal to 120 percent of the cost of the street trees/landscaping, assuring installation within 6 months. The cost of the street trees shall be based on the average of three estimates from three landscaping contractors; the estimates shall include as separate items all materials, labor, and other costs of the required action, including a two-year maintenance and warranty period.**

**HILLSIDE DEVELOPMENT, EROSION CONTROL, NUISANCES, AND ACCESSORY DEVELOPMENT – Chapters 17.56, 15.44, 15.30, and 17.74**

109. In accordance with the requirements of Chapter 17.56, Hillside Development, and Chapter 15.44, Erosion Control, the applicant submitted a Geotechnical and Slope Stability Investigation (Exhibit G) showing that the subject site contains a small area of slope exceeding 25 percent. **All recommendations in Section 6 of the submitted Geotechnical and Slope Stability Investigation (Exhibit G) shall be conditions for development.** The geotechnical report (2005) submitted with the application is nearly fifteen years old. It does not appear that there have been physical changes to the existing surface of the site in that time span that would impact the findings and recommendations in the geotechnical report but there may have been changes in industry standards or practices since then. As a result, the Applicant shall submit a letter from the original geotechnical engineering firm indicating that the findings and recommendations from the 2005 report remain substantially unchanged or modifying the original findings and recommendations as necessary. **The applicant shall submit a letter from the original geotechnical engineering firm indicating that the findings and recommendations from the 2005 report remain substantially unchanged or modifying the original findings and recommendations as necessary.**
110. **All the work within the public right-of-way and within the paved area should comply with American Public Works Association (APWA) and City requirements as amended. The applicant shall submit a grading and erosion control permit and request an inspection of installed devices prior to any additional grading onsite.** The grading and erosion control plan shall include a re-vegetation plan for all areas disturbed during construction of the subdivision. **All erosion control and grading shall comply with Section 15.44 of the Municipal Code. The proposed subdivision is greater than one acre which typically requires approval of a DEQ 1200-C Permit. The applicant shall submit confirmation from DEQ if a 1200-C Permit will not be required.**
111. Section 15.44.50 contains requirements for maintenance of a site including re-vegetation of all graded areas. **The applicant's Erosion Control Plan shall be designed in accordance with the standards of Section 15.44.50.** Grass seeding shall be completed as required by Section 17.100.300. The submitted preliminary Grading and Erosion Control Plan (Exhibit C, Sheet C9) provides additional details to address erosion control concerns. A separate Grading and Erosion Control Permit will be required prior to any site grading.
112. Recent development has sparked unintended rodent issues in surrounding neighborhoods. Prior to development of the site, **the applicant shall have a licensed pest control agent evaluate the site to determine if pest eradication, particularly rats, is needed.**
113. Section 17.74.40 specifies, among other things, retaining wall and fence height in front, side and rear yards. Retaining walls in residential zones shall not exceed 4 feet in height in the front yard, 8 feet in height in rear and side yards abutting other lots, and 6 feet in side and rear yards abutting a street. The submitted plan set does not define any retaining walls with the exception of a retaining wall for the stormwater facility in Tract B. **If retaining walls**

**are proposed, the applicant shall submit additional details/confirmation on the proposed retaining walls, including heights meeting code requirements and an architectural finish, for staff review and approval.**

114. Chapter 15.30 contains the City of Sandy's Dark Sky Ordinance. The applicant will need to install street lights along all street frontages wherever street lighting is determined necessary. **The locations of these fixtures shall be reviewed in detail with construction plans. Full cut-off lighting shall be required. Lights shall not exceed 4,125 Kelvins or 591 nanometers in order to minimize negative impacts on wildlife and human health.**

## RECOMMENDATION

The Development Services Director recommends the City Council **approve** the Type IV comprehensive plan amendment, zone change, subdivision, and specific area plan overlay with tree removal associated with the proposed development subject to the conditions of approval below. This proposal meets the applicable approval criteria in the Sandy Municipal Code and achieves some major goals consistent with long range planning objectives in the City of Sandy, including but not limited to the following:

- 1) Extending Dubarko Road to intersect with Highway 26 consistent with the Transportation System Plan that was adopted in 2011;
- 2) Installing Street B to the south consistent with the Transportation System Plan that was adopted in 2011;
- 3) Paying a proportional share fee of \$268,345 towards construction of future capacity improvements at the intersection of Highway 211 and Dubarko Road at a cost of \$15,785 per PM peak hour trip;
- 4) Extending Fawn Street to the east;
- 5) Expanding the Deer Pointe Park consistent with the 1997 Parks Master Plan, goals of the Parks and Trails Advisory Board, and Figure 11 of the 2022 Parks and Trails Master Plan;
- 6) Fulfilling housing needs as defined in the Urbanization Study that was adopted in 2015; and,
- 7) Providing a mixture of housing types consistent with the goals of the 2040 Plan that was created in 1997.

## **RECOMMENDED CONDITIONS OF APPROVAL**

- A. The applicant shall assist the City of Sandy in applying for a grant of access or other necessary approval from ODOT for access to Highway 26 at Dubarko Road.**
- B. The applicant shall dedicate the proposed 1.755 acres of parkland to the City through a dedication deed process, separate from the subdivision plat process. Prior to dedication, the applicant shall provide a Phase I Environmental Assessment for Tract A. This dedication shall occur within 180 days after approval of Ordinance No. 2022-27.**
- C. Prior to earthwork, grading, or excavation, the applicant shall complete the following and receive necessary approvals as described:**
1. Apply for a grading and erosion control permit in conformance with Chapter 15.44. The grading and erosion control plan shall include a re-vegetation plan for all areas disturbed during construction of the subdivision. *(Submit 2 copies to Planning/Building Department.)*
  2. Submit proof of receipt of a Department of Environmental Quality 1200-C permit or submit confirmation from DEQ if a 1200-C Permit will not be required. *(Submit to Planning/Building Department.)*
  3. Submit a letter from the original geotechnical engineering firm indicating that the findings and recommendations from the 2005 report remain substantially unchanged or modify the original findings and recommendations as necessary.
  4. Submit proof that a licensed pest control agent evaluated the site to determine if pest eradication, particularly rats, is needed.
  5. Submit revised plans detailing how the traffic signal easement will impact the tree retention area and how the parkland grading will impact tree retention. If tree retention is negatively impacted the applicant shall preserve additional trees.
  6. The applicant shall install tree protection fencing at the critical root zone of 1 foot per 1-inch DBH to protect the 53 retention trees in the conservation easement on Lot 7, the 18 retention trees on the parkland, and the 5 trees included on Lots 2 and 4, consistent with the arborist reports from Teragan and Associates. The following shall be followed:
    - a. Up to 25 percent of the area between the minimum root protection zone of 0.5 feet per 1-inch DBH and the critical root zone of 1 foot per 1-inch DBH may be able to be impacted without compromising the tree, provided the work is monitored by a qualified arborist. The applicant shall retain an arborist on site to monitor any construction activity within the critical root protection zones of the retention trees or trees on adjacent properties that have critical root protection zones that would be impacted by development activity on the subject property.

- b. The tree protection fencing shall be 6-foot-tall chain link or no-jump horse fencing and the applicant shall affix a laminated sign (minimum 8.5 inches by 11 inches) every 50 feet to the tree protection fencing indicating that the area behind the fence is a tree retention area and that the fence shall not be removed or relocated.
  - c. No construction activity shall occur within the tree protection zone, including, but not limited to, dumping or storage of materials such as building supplies, soil, waste items, equipment, or parked vehicles.
  - d. The applicant shall retain an arborist on site to monitor any construction activity within the critical root protection zones of the retention trees or trees on adjacent properties that have critical root protection zones that would be impacted by development activity on the subject property. Tree removal and/or snag creation shall be completed without the use of heavy equipment in the tree protection zone; trunks and branches of adjacent trees shall not be contacted during tree removal or snag creation.
7. Request an inspection of erosion control measures and tree protection measures as specified in Section 17.102.50 C. prior to construction activities or grading.

**D. Prior to all construction activities, except grading and/or excavation, the applicant shall submit the following additional information as part of construction plans and complete items during construction as identified below: (*Submit to the Assistant Public Works Director unless otherwise noted*)**

1. Submit estimated costs of widening Dubarko Road to City staff for review and approval by the City Engineer. The City and the Applicant shall enter into an agreement defining the eligible improvements and estimated costs prior to plat approval. SDC credits shall be based on final audited costs.
2. Work with the City of Sandy to create a mutually agreed upon engineer estimate for the Deer Pointe parkland improvements. The final Engineer's estimate shall be used as the basis for an agreement to calculate Park SDC credits for the applicant. If the applicant and City agree to the applicant/developer completing parkland improvements, the park improvements shall be completed with approval from the Parks and Trails Advisory Board.
3. Submit written confirmation from the Sandy Fire District regarding the number and location of required fire hydrants. Submit a revised Residential Parking Access Plan if required fire hydrants effect on-street parking spaces.
4. Submit revised plans including the following:
  - a. Detail a revised cross-section for the portion of Dubarko Road between the existing terminus and Street A.
  - b. Detail all sidewalks on Dubarko Road at least 6 feet in width.
  - c. Detail two 5-foot-wide bike lanes and two 13-foot-wide travel lanes for Street B.

- d. Detail a pull-out transit stop on Highway 26 to the east of the intersection of Dubarko Road and Highway 26 to serve eastbound transit services along Highway 26 (within or by Lot 6).
  - e. Detail the locations for green street swales as determined by the City Engineer in accordance with topography. If green street swales are incorporated into the design, the plan set shall be modified to detail additional right-of-way or easements to accommodate the swales, if needed.
  - f. Detail a walkway along the east side of the park or west side of Lot 7 that connects Fawn Street/Street A to the sidewalk on Highway 26 as determined during design of Deer Pointe Park. If Deer Pointe Park is not designed prior to construction plan submission the applicant shall revise the construction plans with the walkway modifications once the Deer Pointe Park design is complete.
  - g. Detail fire turnaround easements on Lots 5 and 6 as approved by the Sandy Fire District Fire Marshal.
  - h. Detail new fire hydrants in an OSHA safety red finish and having a 4-inch non-threaded metal faced hydrant connection with cap installed on the steamer port (4 ½-inch NST x 4-inch Storz Adaptor).
  - i. Detail two additional street trees to the east of Lot 7.
  - j. Detail the locations of streetlights on all streets being improved within and adjacent to the subdivision. Streetlights shall be full cut-off, shall not exceed 4,150 Kelvins, and shall conform to the Dark Sky standards of Chapter 15.30.
  - k. Detail proposed retaining walls, including heights meeting code requirements and an architectural finish.
  - l. Detail a revised utility plan to include broadband fiber locations as detailed by the SandyNet Manager.
5. Submit a detailed drainage report meeting the water quality and water quantity criteria as stated in the City of Sandy Development Code (SDC) 13.18 Standards and the most current City of Portland Stormwater Management Manual (SWMM) Standards that were adopted by reference into the Sandy Development Code. The drainage report and design calculations shall include Tract C.
  6. Submit a mail delivery plan, featuring grouped lockable mail facilities, to the City and the USPS for review. Mail delivery facilities shall be provided by the applicant in conformance with 17.84.100 and the standards of the USPS.
  7. Call PGE Service Coordination at 503-323-6700 when the developer is ready to start the project.

**E. Prior to Final Plat approval, the applicant shall complete the following tasks or provide assurance for their future completion:**

1. Submit two paper copies of a Final Plat and associated fee.



2. Pay a proportional share fee of \$268,345 towards construction of future capacity improvements at the intersection of Highway 211 and Dubarko Road at a cost of \$15,785 per PM peak hour trip.
3. The street name for Street B shall follow the deer related theme in the development to the west and shall be an 'avenue' as it runs north/south. Staff recommends the name Velvet Avenue.
4. Modify the plat to include a vehicular easement on Lot 4 as necessary to accommodate maneuvering for vehicles on Lot 3.
5. Pay plan review, inspection and permit fees as determined by the Public Works Director.
6. Pay addressing fees at the existing rate per the fee schedule.
7. Submit a post-construction report prepared by the project arborist or other TRAQ qualified arborist to ensure none of the retention trees were damaged during construction.
8. Install all public and private improvements consistent with this decision and the ODOT improvements consistent with the grant of access, the approved construction plans, and the Sandy Municipal Code, including, but not limited to the following:
  - a. A walkway along the east side of the park or west side of Lot 7 that connects Fawn Street/Street A to the sidewalk on Highway 26;
  - b. A pull-out transit stop on Highway 26 to the east of the intersection of Dubarko Road and Highway 26 to serve eastbound transit services along Highway 26 (within or by Lot 6);
  - c. Two concrete bus shelter pads and green benches (Fairweather model PL-3, powder coated RAL6028). The required pad size is 7 feet by 9 feet 6 inches and the amenities should be located adjacent to Lot 3 or 1 and Lot 5. Engineering specifications are available from the Director of Sandy Area Metro.
  - d. Replace the existing waterline with an 8-inch diameter water line at a depth approved by the City Engineer.
  - e. Install an 18-inch water line in Dubarko Road connected to the existing 18-inch water line at the west end of the site and the existing 12-inch line in Highway 26.
  - f. Extend the existing 12-inch water main in Highway 26 east from the proposed intersection of Dubarko Road and Highway 26 to the east boundary of the site.
9. Clear, grade, and seed the proposed parkland as specified by the City in the construction plans. If the applicant and City agree to the applicant/developer completing parkland improvements, the park improvements shall be completed prior to final plat approval or as otherwise established in a development agreement.
10. Retain the additional five trees on Lots 2 and 4 (Tree Nos. 13439, 13440, 13441, 13421, and 13423) and plant maples, incense cedars, katsura, Excelsa Western red cedars, and Silver Queen Port Orford cedars or other trees as approved by staff per the Screening

Concept Plan (Exhibit I) along Lots 1, 2, 4, and Tracts B and C. Deciduous trees shall be at least 1.5 inches caliper at planting and the cedars shall be at least 6 to 8 feet in height at planting.

11. Record a tree protection covenant for all 76 trees in good or fair condition as defined in Exhibit F, specifying protection of trees on the subject property and limiting removal without submittal of an Arborist's Report and City approval. The 5 trees in poor or very poor condition shall not be included in the covenant. The plat shall also include a conservation easement on Lot 7.
12. Submit a true and exact reproducible copy (Mylar) of the Final Plat for final review and signature.

**F. Conditions related to future development of the lots:**

1. Development on Lots 1 through 4 shall meet the standards of the R-1 zoning district and all other development standards in the Sandy Municipal Code. Future development on Lots 1-4 shall adhere to the garage standards contained in Section 17.54.110(D). Development of these four lots will be reviewed by means of a building permit.
2. Development on Lots 5, 6, and 7 shall meet the standards of the underlying zoning district and all other development standards in the Sandy Municipal Code. Development of these three lots will be reviewed by means of a design review.
3. Design review approval for Lot 7 shall incorporate buildings facing the parkland and usable windows facing the parkland. This design review approval for Lot 7 shall also incorporate a landscape buffer that provides visibility between Lot 7 and the parkland but provides a visually attractive separation.
4. Driveway access locations to Lots 5 -7 shall be determined and approved by the City Public Works Director and City Engineer during design review for these lots. The land use application for Lot 7 shall include proposed driveway designs to discourage commercial patrons existing Lot 7 to Street A from entering the Deer Pointe Subdivision on Street A. The designs shall be reviewed and approved by the City Engineer and Public Works Director.
5. The dwellings on all lots abutting a transit street shall be designed to meet all of the requirements as specified in Chapter 17.82 and will be assessed with future building permits or design reviews, whichever is applicable.
6. The orientation of the future multi-family units that have frontage on both Highway 26 and Dubarko Road, or Street B and Dubarko Road will be determined in a future design review process.
7. Aerate the planter strips to a depth of 3 feet prior to planting street trees. The applicant shall submit documentation from the project landscaper stating that the soil has been

amended and aerated prior to planting the street trees at the individual construction phase for each lot.

8. Install an 8-foot-wide concrete walkway with pedestrian scale lighting through Lot 6 from the sidewalk on Highway 26 to the southern property line of Lot 6. This facility shall be contained within a pedestrian access easement or tract recorded prior to any certificate of occupancy on this lot.

**G. General Conditions of Approval:**

1. The Final Plat shall be recorded as detailed in Section 17.100.60 (I). The final plat shall be delivered to the Director for approval within one year following approval of the tentative plat and shall incorporate any modification or condition required by approval of the tentative plat. The Director may, upon written request, grant an extension of the tentative plat approval for up to one additional year.
2. The comprehensive plan map and zoning map modifications go into effect 30 days from the date of the ordinance in accordance with Section 17.26.90.
3. The subject property is limited to 200 dwelling units, as follows:
  - a. Low-Density Residential (R-1) Cap: 8 dwelling units
  - b. Medium-Density Residential (R-2) Cap: 17 dwelling units
  - c. High-Density Residential (R-3) Cap: 127 dwelling units
  - d. Village Commercial (C-3) Cap: 48 dwelling units
4. The ODOT grant of access shall be approved and the improvements completed per the grant of access prior to issuance of certificates of occupancy for any structures on the subject property. The intersection of Highway 26 and Dubarko Road shall be constructed as a full-access intersection in compliance with the TSP.
5. Public plans are subject to a separate review and approval process. Preliminary Plat approval does not connote approval of public improvement construction plans, which will be reviewed and approved separately upon submittal of public improvement construction plans.
6. All on-site earthwork activities including any retaining wall construction should follow the requirements of the City of Sandy Development Code and the current edition of the Oregon Structural Specialty Code (OSSC).
7. The subject property shall be subject to a trip cap of 340 PM net new peak hour trips. Each application for development of a lot within the subject property shall include a report from a licensed traffic engineer stating the number of net new PM peak hour trips expected to be generated by the proposed development, and this number of trips will be deducted from the total trip cap of 340 net new PM peak hour trips upon approval of the application. No development application will be approved that would cause the total net new PM peak hour trips to exceed said cap unless the applicant agrees to pay additional

proportionate share fees for the intersection of Highway 211 and Dubarko Road, in an amount determined by the City based on the number of trips in excess of the cap.

8. If entry signs are desired, the applicant shall submit a detailed plan showing the location of such signage and a sign permit application.
9. All parking, driveway and maneuvering areas shall be constructed of asphalt, concrete, or other approved material.
10. All work within the public right-of-way and within the paved area shall comply with the American Public Works Association (APWA) and City requirements as amended and should be constructed to the City's structural streets standards.
11. All on-site earthwork activities including any retaining wall construction shall follow the current requirements of the current edition of the Oregon Structural Specialty Code (OSSC).
12. All recommendations in Section 6 of the submitted Geotechnical and Slope Stability Investigation (Exhibit I) shall be conditions for development.
13. All utilities shall be installed underground and in conformance with City standards. The applicant shall install utilities underground with individual service to each lot.
14. The applicant shall be responsible for the installation of all improvements detailed in Section 17.100.310, including fiber facilities. SandyNet requires the developer to work with the City to ensure that broadband infrastructure meets the design standards and adopted procedures as described in Section 17.84.70.
15. All public utility installations shall conform to the City's facilities master plans.
16. As required by Section 17.98.130, all parking, driveway and maneuvering areas shall be constructed of asphalt, concrete, or other approved material.
17. Water line sizes shall be based upon the Water Facilities Master Plan and shall be sized to accommodate domestic fire protection flows on the site.
18. All new public sanitary sewer and waterlines shall be a minimum of 8-inches in diameter.
19. All stormwater drains shall be a minimum of 12-inches in diameter and shall be extended to the plat boundaries where practical to provide future connections to adjoining properties.
20. All site runoff shall be detained such that post-development runoff does not exceed the predevelopment runoff rate for the 2, 5, 10 and 25 year storm events. Stormwater quality treatment shall be provided for all site drainage per the standards in the City of Portland Stormwater Management Manual (COP SWMM).

21. If the applicant chooses to postpone street tree and/or landscaping installation, the applicant shall post a performance bond equal to 120 percent of the cost of the street trees/landscaping, assuring installation within 6 months. The cost of the street trees shall be based on the average of three estimates from three landscaping contractors; the estimates shall include as separate items all materials, labor, and other costs of the required action, including a two-year maintenance and warranty period.
22. If the plans change in a way that affects the number of street trees (e.g., driveway locations), the applicant shall submit an updated street tree plan for staff review and approval. Street trees are required to be a minimum caliper of 1.5-inches measured 6 inches from grade and shall be planted per the City of Sandy standard planting detail. Trees shall be planted, staked, and the planter strip shall be graded and backfilled as necessary, and bark mulch, vegetation, or other approved material installed prior to occupancy. Tree ties shall be loosely tied twine or other soft material and shall be removed after one growing season (or a maximum of 1 year).
23. As required by Section 17.92.10(L), all landscaping shall be continually maintained, including necessary watering, weeding, pruning, and replacing. As required by Section 17.92.140, the developer shall maintain all vegetation planted in the development for two (2) years from the date of completion, and shall replace any dead or dying plants during that period.
24. Exposed soils shall be covered by mulch, sheeting, temporary seeding or other suitable material following grading or construction to maintain erosion control for a period of two (2) years following the date of recording of the final plat associated with those improvements.
25. Successors-in-interest of the applicant shall comply with site development requirements prior to the issuance of building permits.
26. All improvements listed in Section 17.100.300 shall be provided by the applicant including drainage facilities, monumentation, mail facilities, sanitary sewers, storm sewer, sidewalks, street lights, street signs, street trees, streets, traffic signs, underground communication lines including telephone and cable, underground power lines, water lines and fire hydrants.
27. Comply with all standards required by Section 17.84 of the Sandy Development Code. Public and franchise improvements shall be installed or financially guaranteed in accordance with Chapter 17 of the Sandy Municipal Code prior to temporary or final occupancy of structures. Water lines and fire hydrants shall be installed in accordance with City standards. All sanitary sewer lines shall be installed in accordance with City standards.
28. Comply with all other conditions or regulations imposed by the Sandy Fire District (Exhibit N) or state and federal agencies. Compliance is made a part of this approval and

any violations of these conditions and/or regulations may result in the review of this approval and/or revocation of approval.



# BULL RUN TERRACE RECONSIDERATION

City Council 11/21/2022

# VICINITY MAP





# HISTORY

December 2020 - the City Council denied the Bull Run Terrace Subdivision application (File No. 19-050). The applicant appealed the City Council decision to the Oregon Land Use Board of Appeals (LUBA). The LUBA appeal was then placed on stay by the applicant, meaning 'on hold', until the City could process the Deer Meadows Subdivision proposal.

May 2022 - the City Council denied the Deer Meadows Subdivision application. The applicant then appealed that City Council decision to LUBA. The LUBA appeal was then placed on stay by the applicant, meaning 'on hold'.

In accordance with ORS 197.830(13)(b), the applicant then asked the City Council to reconsider the Bull Run Terrace Subdivision proposal with certain modifications, including a residential dwelling cap not to exceed 200 dwelling units and additional parkland. The applicant states that the existing zoning could accommodate 226 dwelling units. **The City Council agreed to reconsider the proposal with the modifications.**

# REVIEW TYPE

Type IV comprehensive plan amendment, zone change, subdivision, and specific area plan overlay with tree removal.

Quasi-Judicial de novo (starting from the beginning) public hearing to hear testimony from the applicant and the public, and either approve or deny the Bull Run Terrace land use application.

Ordinance No. 2022-27 would have to be adopted to approve the application.

## *TIME LIMITS*

Applicant: 20 minutes for presentation, 10 minutes for rebuttal

Public: 3 minutes per each testimony

## APPLICABLE CODE

This application was originally submitted on December 30, 2019. The Sandy Development Code in effect at that time is what this reconsideration is being reviewed under.

Therefore, it is important to note that modifications that have since occurred to the Sandy Development Code, particularly to Chapter 17.86, Parkland and Open Space, and Chapter 17.100, Land Division, do not apply to this application.

However, because of how state legislation was adopted, House Bill 2001 and Senate Bill 458 are allowed to apply to this site, independent of the land use submission date.

# MORATORIUM

This application is not subject to the moratorium on development adopted by Resolution 2022-24 because it was submitted prior to the effective date of the moratorium.

If this application is approved, the applicant will still need to work with DEQ to get a sanitary sewer connection and will be potentially limited for building construction by the ERU limitations in effect at that time.

# REQUEST

- Approval of a 7-lot subdivision with tree removal.
- The subject site is 15.91 gross acres and 11.60 net acres after dedication of right-of-way, parkland, and stormwater tracts.
- Four lots totaling 0.59 acres are proposed with the R-1 (low-density residential) zoning designation with four duplexes (8 dwelling units).
- One lot at 1.23 acres is proposed with the R-2 (medium-density residential) zoning designation with 17 multifamily dwelling units.
- One lot at 6.50 acres is proposed with the R-3 (high-density residential) zoning designation with 127 multifamily dwelling units.
- One lot at 3.28 acres is proposed with the C-3 (village commercial) zoning designation with a commercial business and 48 multifamily dwelling units.

# ZONE MAP CHANGE (NET ACRES)

Zoning District	Existing Acres	Proposed Acres
R-1	4.57	0.59
R-2	4.43	1.23
R-3	0.00	6.50
C-3	2.61	3.28

# PROPOSED ZONING MAP CHANGE

## ATTACHMENT B

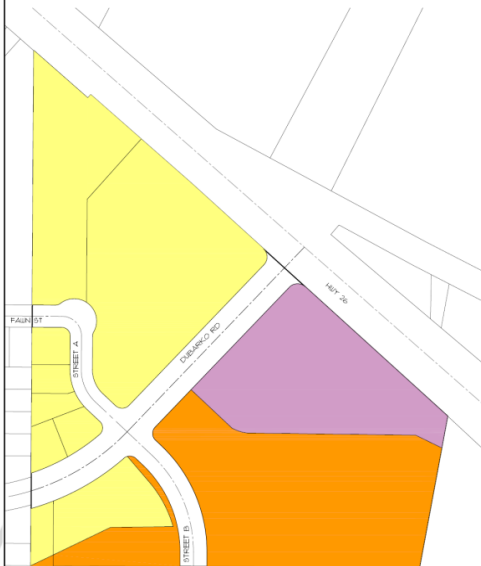
### EXISTING NET ZONING AREA

TOTAL SITE AREA	= 69,023 SF = 1.5700 ACRES
R1 SINGLE FAMILY	= 389,950 SF = 8.8443 ACRES
R2 MULTI-FAMILY	= 157,948 SF = 3.5835 ACRES
C-3 COMMERCIAL	= 103,703 SF = 2.3671 ACRES
PUBLIC USE	= 93,028 SF = 2.1250 ACRES



### LEGEND

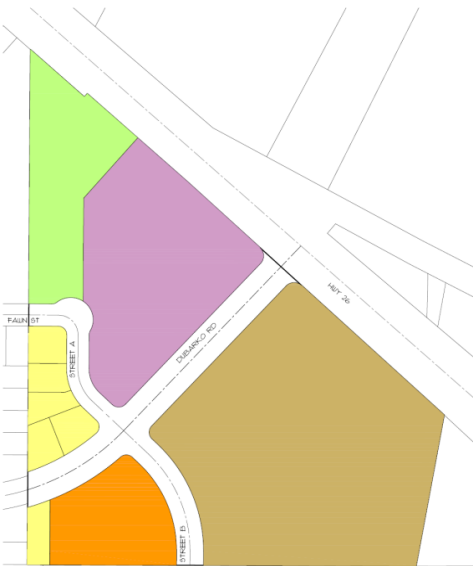
	PARKS AND OPEN SPACE ZONE
	R1 ZONE
	R2 ZONE
	R3 ZONE
	C-3 ZONE



EXISTING ZONING

### PROPOSED NET ZONING AREA

TOTAL SITE AREA	= 69,023 SF = 1.5700 ACRES
PARKS AND OPEN SPACE	= 51,440 SF = 1.1750 ACRES
R1 SINGLE FAMILY	= 33,446 SF = 0.7656 ACRES
R2 MULTI-FAMILY	= 31,524 SF = 0.7233 ACRES
R3 MULTI-FAMILY	= 283,234 SF = 6.5004 ACRES
C-3 COMMERCIAL	= 142,884 SF = 3.2802 ACRES
PUBLIC USE	= 119,599 SF = 2.7224 ACRES



PROPOSED ZONING

DATE	11/11/2011	SCALE	AS SHOWN
PROJECT	BULL RUN TERRACE SUBDIVISION		
NET ZONING AREA COMPARISON	40008 E. 40TH HWY 20, BANGOR, OR 97008		
PREPARED BY	SHERMAN & KERNAN, INC. 1000 NE 10TH ST., SUITE 100 BANGOR, OR 97008 PHONE: 503.685.9900 FAX: 503.685.9901 WWW.SHERMAN-KERNAN.COM		
DATE	11/11/2011	SCALE	AS SHOWN
PROJECT	BULL RUN TERRACE SUBDIVISION		
NET ZONING AREA COMPARISON	40008 E. 40TH HWY 20, BANGOR, OR 97008		
PREPARED BY	SHERMAN & KERNAN, INC. 1000 NE 10TH ST., SUITE 100 BANGOR, OR 97008 PHONE: 503.685.9900 FAX: 503.685.9901 WWW.SHERMAN-KERNAN.COM		
DATE	11/11/2011	SCALE	AS SHOWN
PROJECT	BULL RUN TERRACE SUBDIVISION		
NET ZONING AREA COMPARISON	40008 E. 40TH HWY 20, BANGOR, OR 97008		
PREPARED BY	SHERMAN & KERNAN, INC. 1000 NE 10TH ST., SUITE 100 BANGOR, OR 97008 PHONE: 503.685.9900 FAX: 503.685.9901 WWW.SHERMAN-KERNAN.COM		

# DENSITY

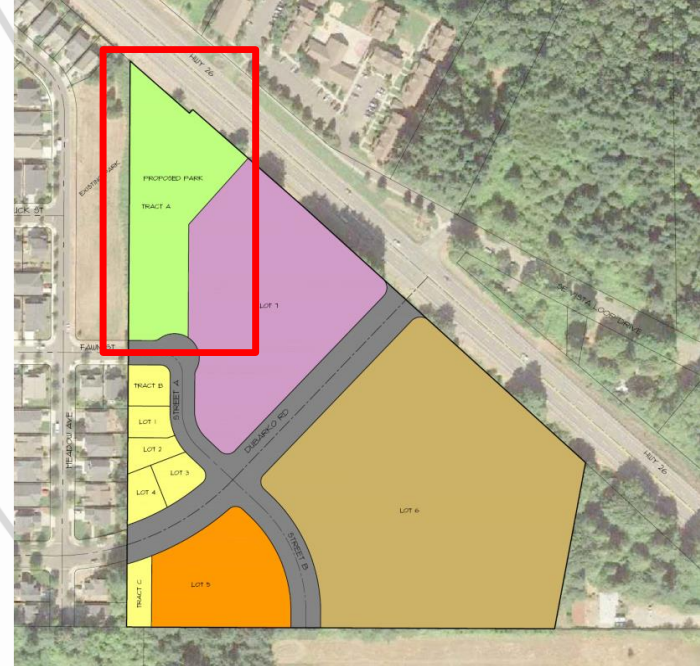
**The applicant is proposing a density cap of 200 dwelling units.** Without the cap instated it is likely that the number of dwelling units would be greater than 200.

*For instance, the subdivision known as Vista Loop South that was approved in 2006, but never constructed, had 88 lots on the R-1 and R-2 land, which with the introduction of House Bill 2001 could have potentially allowed up to 176 dwelling units on the R-1 and R-2 land. While it is unlikely that all the lots in the 4.57 acres of R-1 zoned land and the 4.43 acres of R-2 zoned land in Vista Loop South would be doubled through House Bill 2001 allowances, it is potentially possible, especially considering that some of the units could be oriented vertically and because House Bill 2001 required that parking requirements are the same for one single-family dwelling as for a duplex. Also, without the cap on the C-3 zoned land there are no assurances on how many multi-family dwellings would be included on the C-3 land.*



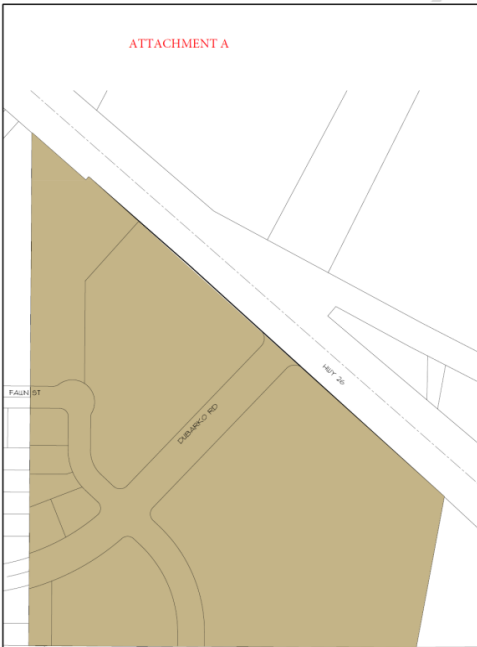
# PARKLAND DEDICATION

- Dedicate 1.755 acres for the eventual construction of Deer Pointe Park and zone this land as Parks and Open Space (POS).
- Necessitates a comprehensive plan map change from Village to POS.
- 0.33 acres larger than the 2019 proposal with Bull Run Terrace.



# PROPOSED COMPREHENSIVE PLAN MAP CHANGE

ATTACHMENT A

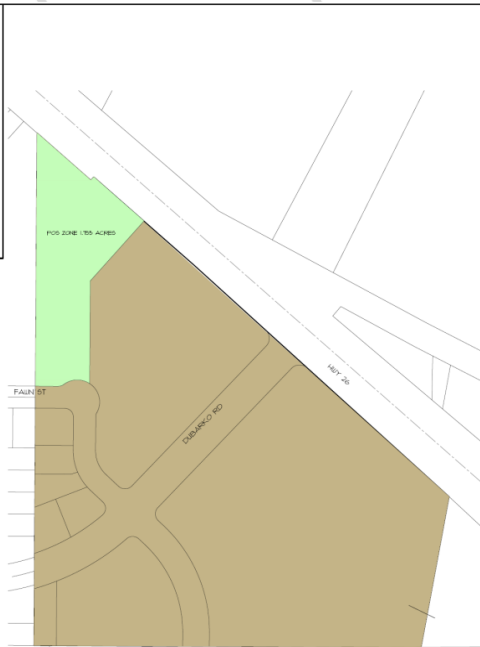


EXISTING COMPREHENSIVE PLAN

SCALE OF 1" = 600'

**LEGEND**

- POD ZONE
- VILLAGE



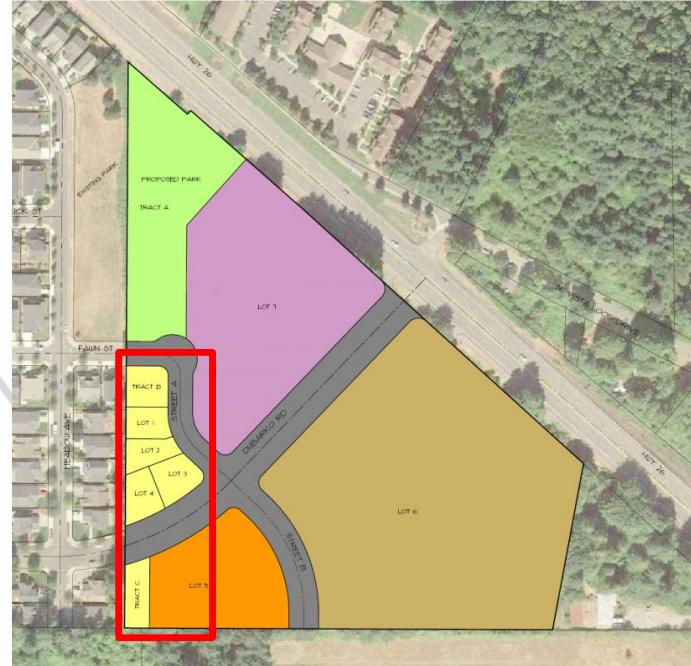
PROPOSED COMPREHENSIVE PLAN

SHEET		SK1	
PROJECT: BULL RUN TERRACE SUBDIVISION			
COMPREHENSIVE PLAN MAP CHANGE			
ADDRESS: 40008 S. 80TH HWY. 26 BANDY, OR 97005			
PREPARED BY:		DATE:	
PROJECT NO.:		SHEET NO.:	
DATE:		SCALE:	
DRAWN BY:		CHECKED BY:	
DATE:		DATE:	
PROJECT NO. 2011-001			
SHEET NO. 1			
DATE: 11/11/11			
SCALE: AS SHOWN			
PROJECT: BULL RUN TERRACE SUBDIVISION			
COMPREHENSIVE PLAN MAP CHANGE			
ADDRESS: 40008 S. 80TH HWY. 26 BANDY, OR 97005			
PREPARED BY:		DATE:	
PROJECT NO.:		SHEET NO.:	
DATE:		SCALE:	
DRAWN BY:		CHECKED BY:	
DATE:		DATE:	
PROJECT NO. 2011-001			
SHEET NO. 1			
DATE: 11/11/11			
SCALE: AS SHOWN			

# LOW DENSITY RESIDENTIAL (R-1)

## Lots 1, 2, 3, and 4

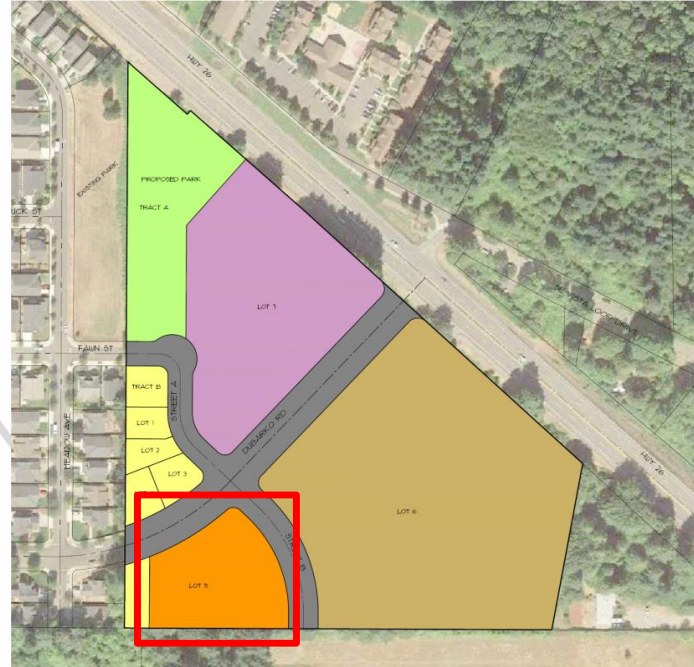
- Maximum density = 8 dwelling units
- Proposed Cap = 8 dwelling units
- Each lot is at least 7,500 sq ft
- Tracts B and C are stormwater facilities but are real property so have a zoning designation.



# MEDIUM DENSITY RESIDENTIAL (R-2)

## Lot 5

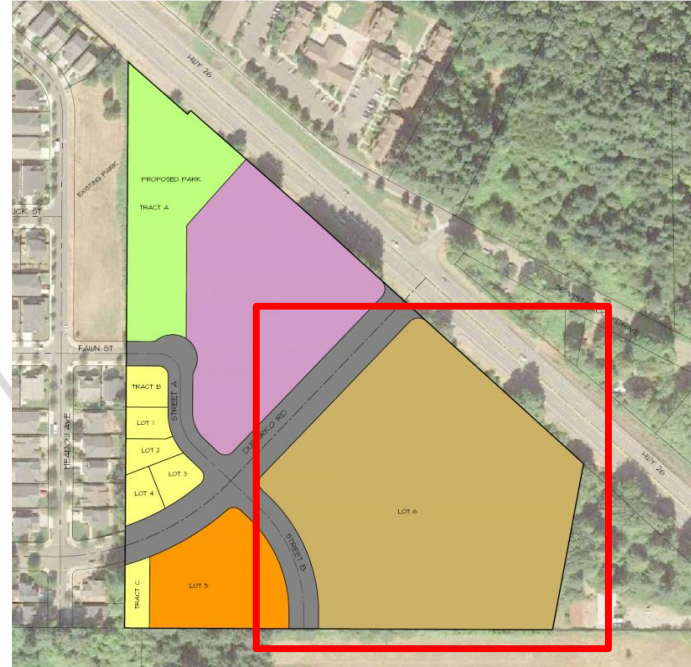
- Maximum density = 17 dwelling units
- Proposed Cap = 17 dwelling units
- The future design review application will include a review of development standards, minimum requirements, and additional requirements.



# HIGH DENSITY RESIDENTIAL (R-3)

## Lot 6

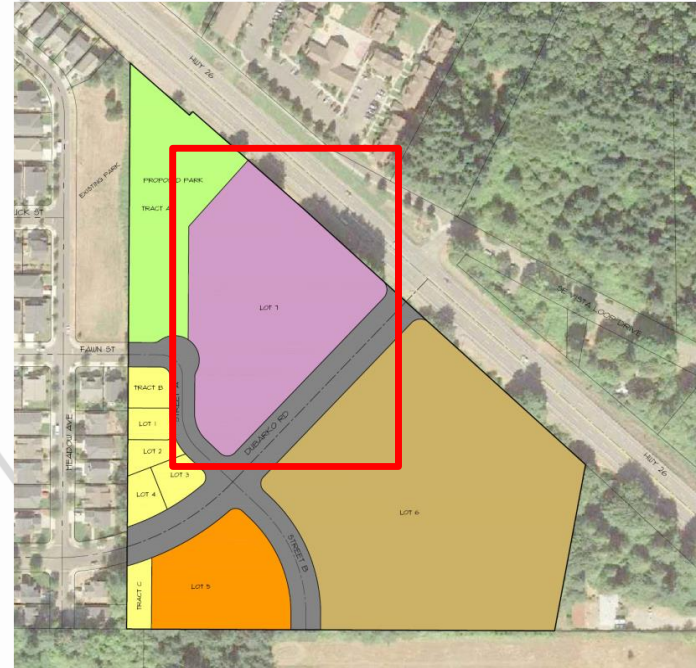
- Maximum density = 130 dwelling units
- Proposed Cap = 127 dwelling units
- The future design review application will include a review of development standards, minimum requirements, and additional requirements.



# VILLAGE COMMERCIAL (C-3)

## Lot 7

- Allows for mix of commercial and residential uses.
- Maximum density = unknown
- Proposed Cap = 48 dwelling units
- The future design review application will include a review of development standards, minimum requirements, and additional requirements.



# SPECIFIC AREA PLAN OVERLAY

The City of Sandy Comprehensive Plan, Goal 2, Land Use Designations, Village states: **“development within village areas is governed by a specific area plan approved by the city as a Type IV land use decision”** and, **“shifting of the underlying zoning district boundaries to accommodate development constraints and land divisions for specific development proposals may be allowed through approval of a Specific Area Plan.”**

Therefore, the City required submission of a Specific Area Plan (SAP) Overlay request.

The only other specific area plan in Sandy, the Bornstedt Village Specific Area Overlay, has additional standards related to additional tree retention, green streets, additional design standards for single family homes, etc.

# SPECIFIC AREA PLAN OVERLAY

With the Bornstedt Village Overlay in mind, staff recommends the additional provisions:

- Additional trees retained and additional retention requirements. **Additional requirements from the first Bull Run Terrace iteration.**
- Additional plantings along the common property line with Deer Pointe subdivision per the Screening Concept Plan (Exhibit I).
- The requirement to install green street swales anywhere that topography will allow.
- More restrictive garage design standards on Lots 1, 2, 3, and 4. **Additional requirements from the first Bull Run Terrace iteration.**



# APPROVAL CRITERIA

Staff finds that this proposed application meets the applicable approval criteria in the Sandy Development Code. These approval criteria are more specially listed as:

- Comprehensive Plan Amendment: Section 17.24.70, criteria A. and B.
- Zoning Map Amendment: Section 17.26.40 B., criteria 1. through 4.
- Specific Area Plan Overlay: Section 15.54.10 A. through H.
- Subdivision Approval: Section 17.100.60 E., criteria 1. through 6.

# MAIN POTENTIAL PUBLIC BENEFITS

- Extending Dubarko Road to intersect with Highway 26 consistent with the Transportation System Plan that was adopted in 2011.
  - Installs a much-needed transportation connection that is more suitable for turning movements than Langensand Road
- Paying a proportional share fee of \$268,345 towards construction of future capacity improvements at the intersection of Highway 211 and Dubarko Road at a cost of \$15,785 per PM peak hour trip.
  - The developer helps pay for intersection improvements at a location that is in need of modifications

# MAIN POTENTIAL PUBLIC BENEFITS

- Expanding the Deer Pointe Park by 1.755 acres, consistent with the goals of the Parks and Trails Advisory Board and Figure 11 of the 2022 Parks and Trails Master Plan.
  - 0.33 acres larger than the 2019 proposal with Bull Run Terrace
  - Parkland dedication would occur prior to plat recording with a separate deed process
  - Potential to partner with the developer to help develop the park property

# OTHER POTENTIAL PUBLIC BENEFITS

- Installing Street B to the south consistent with the Transportation System Plan that was adopted in 2011
- Extending Fawn Street to the east
- Fulfilling housing needs as defined in the Urbanization Study that was adopted in 2015
- Providing a mixture of housing types consistent with the goals of the 2040 Plan that was created in 1997

# RECOMMENDATION

- Approve the Bull Run Terrace subdivision per the findings and conditions in the staff report for File No. 22-038.
- Adopt Ordinance No. 2022-27.



NO. 2022-27

**AN ORDINANCE AMENDING THE CITY OF SANDY COMPREHENSIVE PLAN MAP BY CHANGING THE COMPREHENSIVE PLAN MAP DESIGNATION FOR 1.755 ACRES AND CHANGING THE ZONING MAP DESIGNATION FOR 15.91 ACRES (13.68 NET ACRES), AND ADOPTING THE BULL RUN TERRACE SPECIFIC AREA PLAN**

**Whereas**, on December 29, 2020, the City Council issued a decision denying the Bull Run Terrace Subdivision application (File No. 19-050 CPA/ZC/SAP/SUB/TREE). The applicant, Roll Tide Properties Corp., appealed the City Council decision to the Oregon Land Use Board of Appeals (LUBA). The LUBA appeal was then placed on stay until the City could process the Deer Meadows Subdivision proposal for the same subject properties. On May 2, 2022, the City Council issued a decision denying the Deer Meadows Subdivision application. The applicant then appealed that City Council decision to LUBA;

**Whereas**, in accordance with ORS 197.830(13)(b), the applicant asked the City Council to reconsider the Bull Run Terrace Subdivision proposal with certain modifications, including a residential dwelling cap not to exceed 200 dwelling units. The applicant stated that the existing zoning could accommodate 226 dwelling units. The City Council agreed to reconsider the proposal with the modifications;

**Whereas**, the applicant submitted, as part of the Bull Run Terrace subdivision application on reconsideration, a request to change the Comprehensive Plan Map and Zoning Map designation for a property identified as T2S R5E Section 18CD Tax Lots 900 and 1000, and to adopt a Specific Area Plan for the affected properties;

**Whereas**, more specifically, the applicant requested to change the Comprehensive Plan Map designation for 1.755 acres of land from Village to Parks and Open Space (POS), and to change the Zoning Map designation for the identified properties from 6.64 acres of Low Density Residential (R-1), 4.43 acres of Medium Density Residential (R-2), and 2.61 acres of Village Commercial (C-3) (totaling 13.68 net acres) to 0.91 acres of Low-Density Residential (R-1), 1.23 acres of Medium-Density Residential (R-2), 6.50 acres of High-Density Residential (R-3), 3.28 acres of Village Commercial (C-3), and 1.755 acres of Parks and Open Space (POS) (totaling 13.68 net acres), with the establishment of a Specific Area Plan;

**Whereas**, on October 7, 2022, the City provided notice of the proposed map amendments and Specific Area Plan to DLCD in conformance with ORS 197.610;

**Whereas**, the City Council held a public hearing to review the proposal on November 21, 2022.

#2022-27

**NOW, THEREFORE, THE CITY OF SANDY ORDAINS AS FOLLOWS,**

Section 1: The Council approves the Comprehensive Map and Zoning Map amendments for a property identified as T2S R5E Section 18CD Tax Lots 900 and 1000. The Comprehensive Plan Map designation for 1.755 acres of land will be changed from Village to Parks and Open Space (POS) as identified in Attachment A, and the Zoning Map designation for the identified property will be changed from 6.64 acres of Low Density Residential (R-1), 4.43 acres of Medium Density Residential (R-2), and 2.61 acres of Village Commercial (C-3) (totaling 13.68 net acres) to 0.91 acres of Low-Density Residential (R-1), 1.23 acres of Medium-Density Residential (R-2), 6.50 acres of High-Density Residential (R-3), 3.28 acres of Village Commercial (C-3), and 1.755 acres of Parks and Open Space (POS) (totaling 11.6 net acres), with the establishment of a Specific Area Plan, as identified in Attachment B. The Council further approves the adoption of the Bull Run Terrace Specific Area Plan as described in Attachment C.

Section 2: The Comprehensive Plan Map and Zoning Map amendments and adoption of the Bull Run Terrace Specific Area Plan are supported by the Findings and Conditions contained in the staff report published on November 14, 2022, attached as Attachment C and incorporated into this Ordinance. Attachment C contains findings supporting the above changes, and those changes are subject to the conditions contained in Attachment C.

This ordinance is adopted by the Common Council of the City of Sandy and approved by the Mayor this 21 day of November 2022

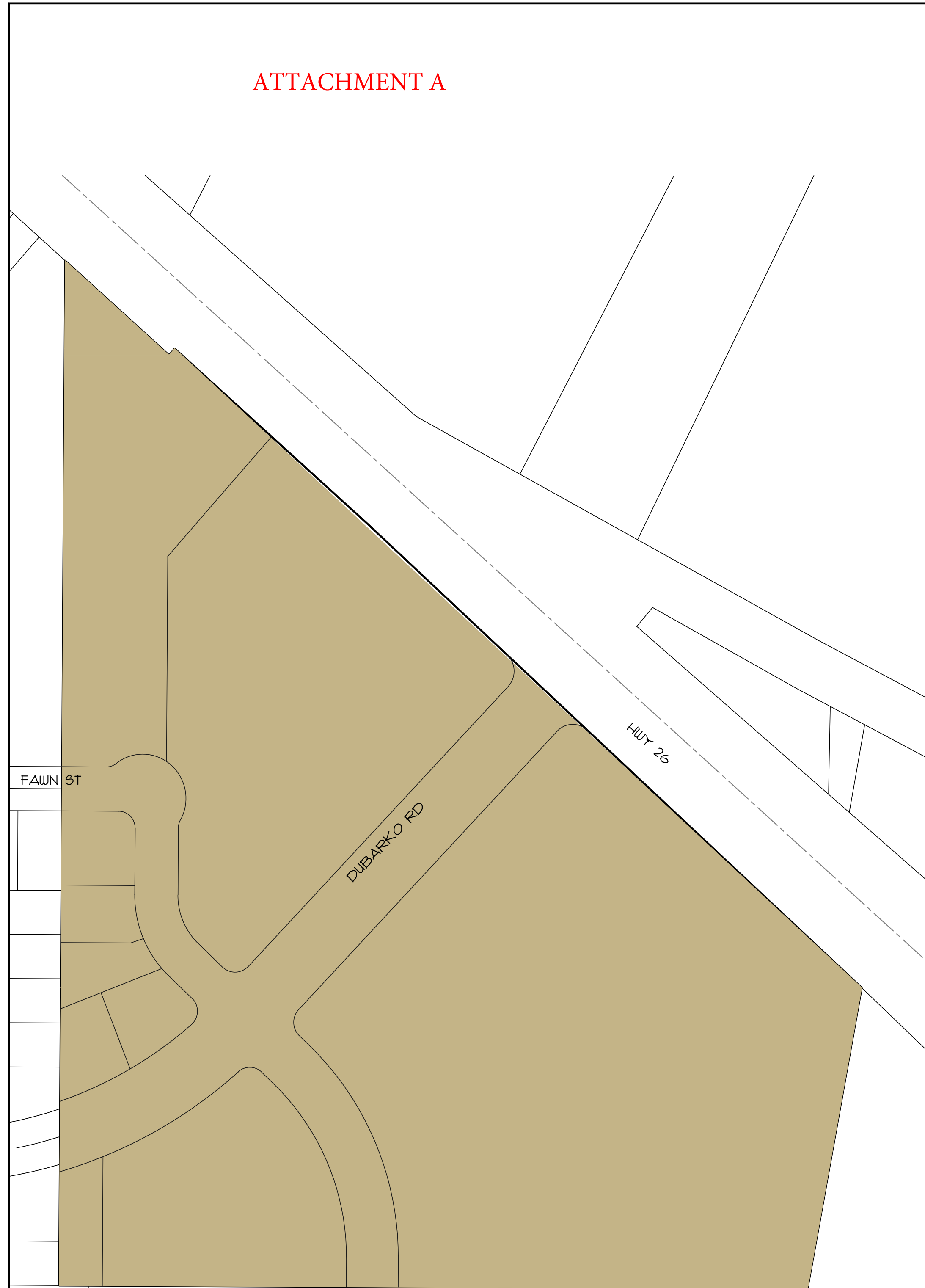
\_\_\_\_\_  
Stan Pulliam, Mayor

ATTEST:

\_\_\_\_\_  
Jeff Aprati, City Recorder

#2022-27

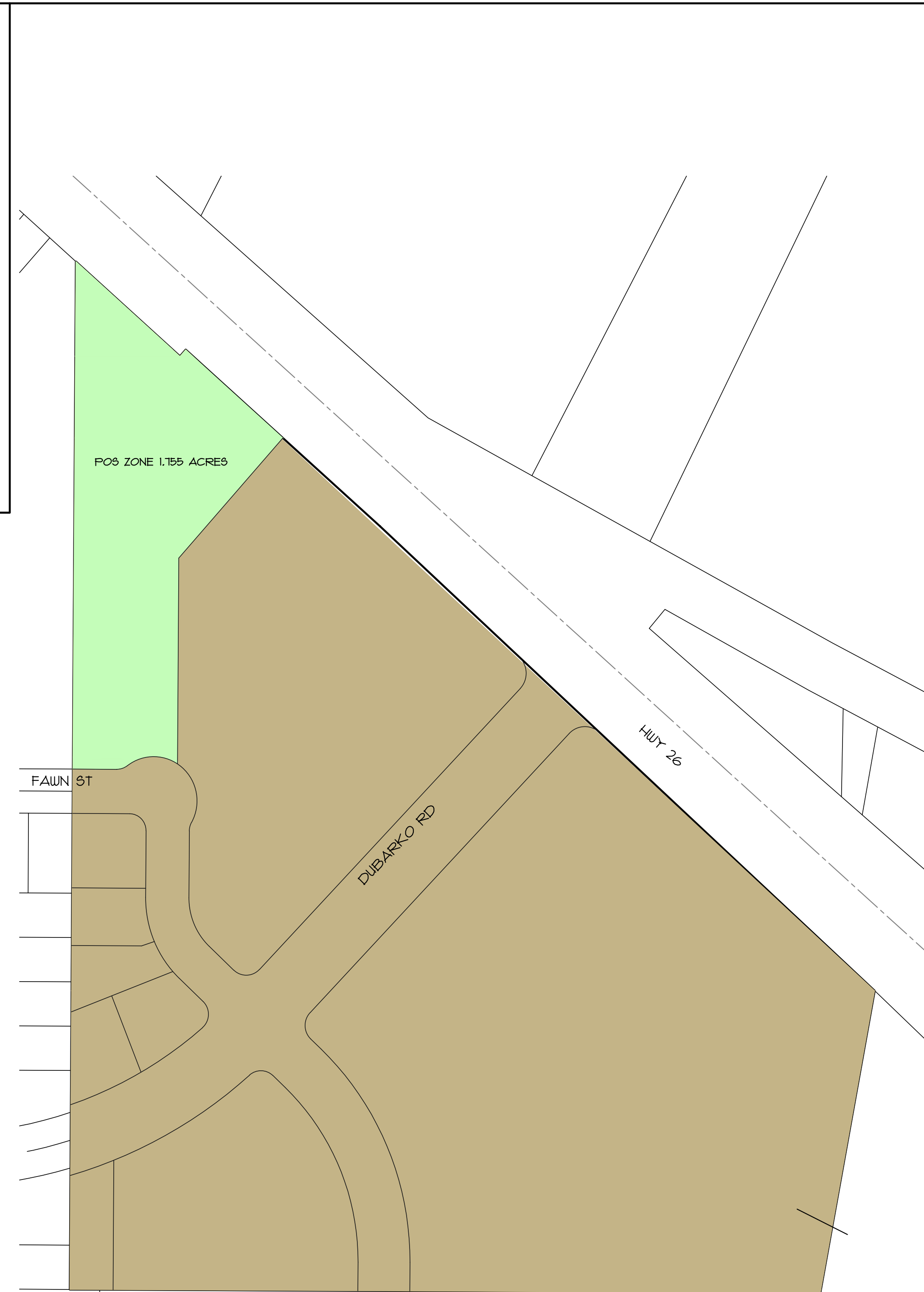
ATTACHMENT A



EXISTING COMPREHENSIVE PLAN

**LEGEND**

- POS ZONE
- VILLAGE



PROPOSED COMPREHENSIVE PLAN

CLIENT: ROLL TIDE PROPERTIES CORPORATION CORNELIUS, OR 97113	PROJECT: <b>BULL RUN TERRACE SUBDIVISION</b> COMPREHENSIVE PLAN MAP CHANGE	LOCATION: 40808 & 41010 HWY 26, SANDY, OR 97055	SCALE: N/A HORIZ: 1" = 80' DATE: 11-1-22 FILE: 19-038-CITY-SKETCH.dwg	LEGAL: SECTION: 18    TWP: 2S    RANGE: 5E	REVISION:	SHEET <b>SK1</b> OF 1
					DESIGNED: CTH DRAWN: CTH CHECKED: RLM APPROVED: RLM	REVISION NO.    DATE    BY





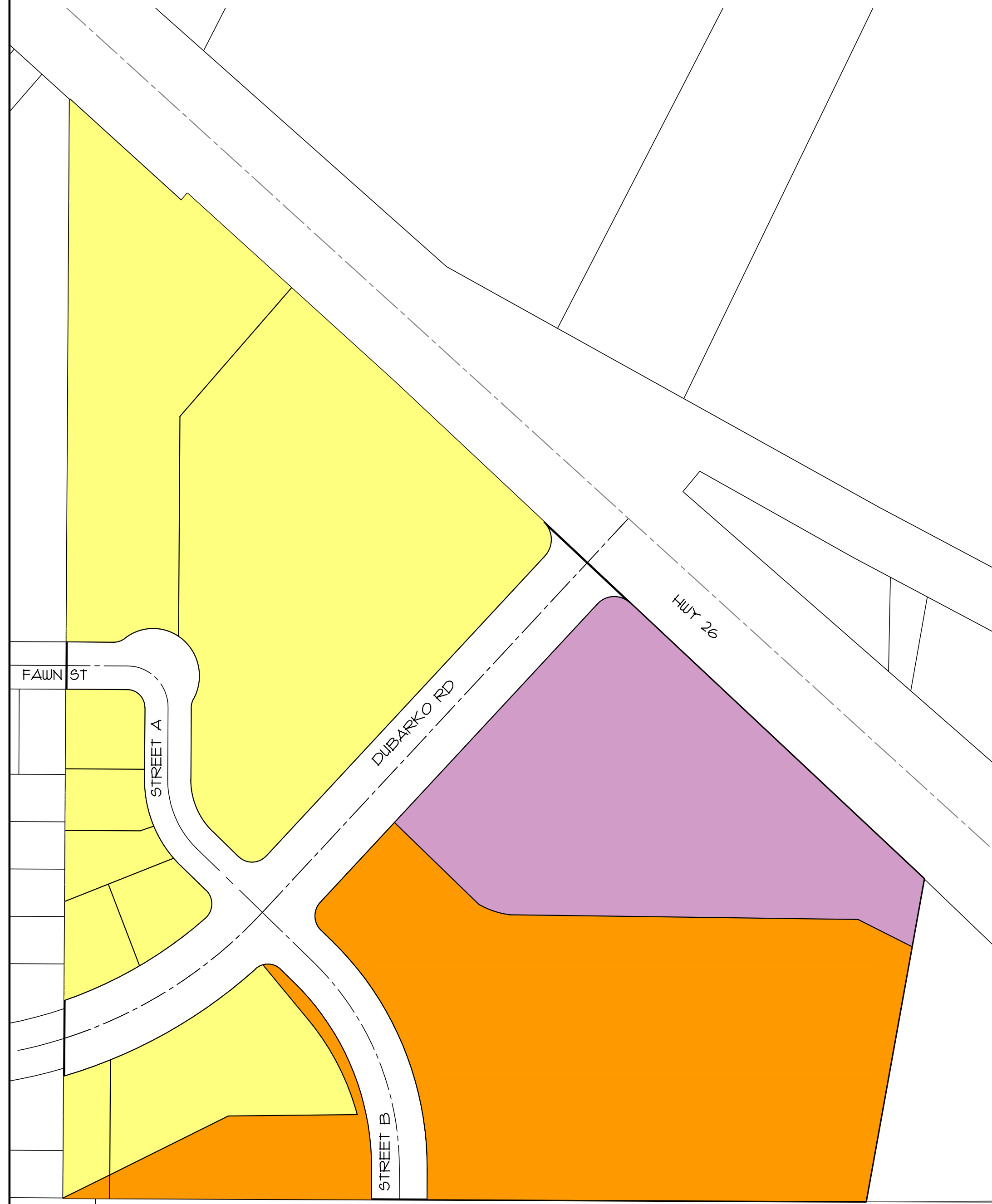
**ATTACHMENT B**

EXISTING NET ZONING AREA	
TOTAL SITE AREA	= 693,051 SF = 15.910 ACRES
R-1 SINGLE FAMILY	= 289,350 SF = 6.643 ACRES
R-2 MULTI-FAMILY	= 192,168 SF = 4.425 ACRES
C-3 COMMERCIAL	= 113,133 SF = 2.611 ACRES
PUBLIC ROW	= 91,205 SF = 2.232 ACRES

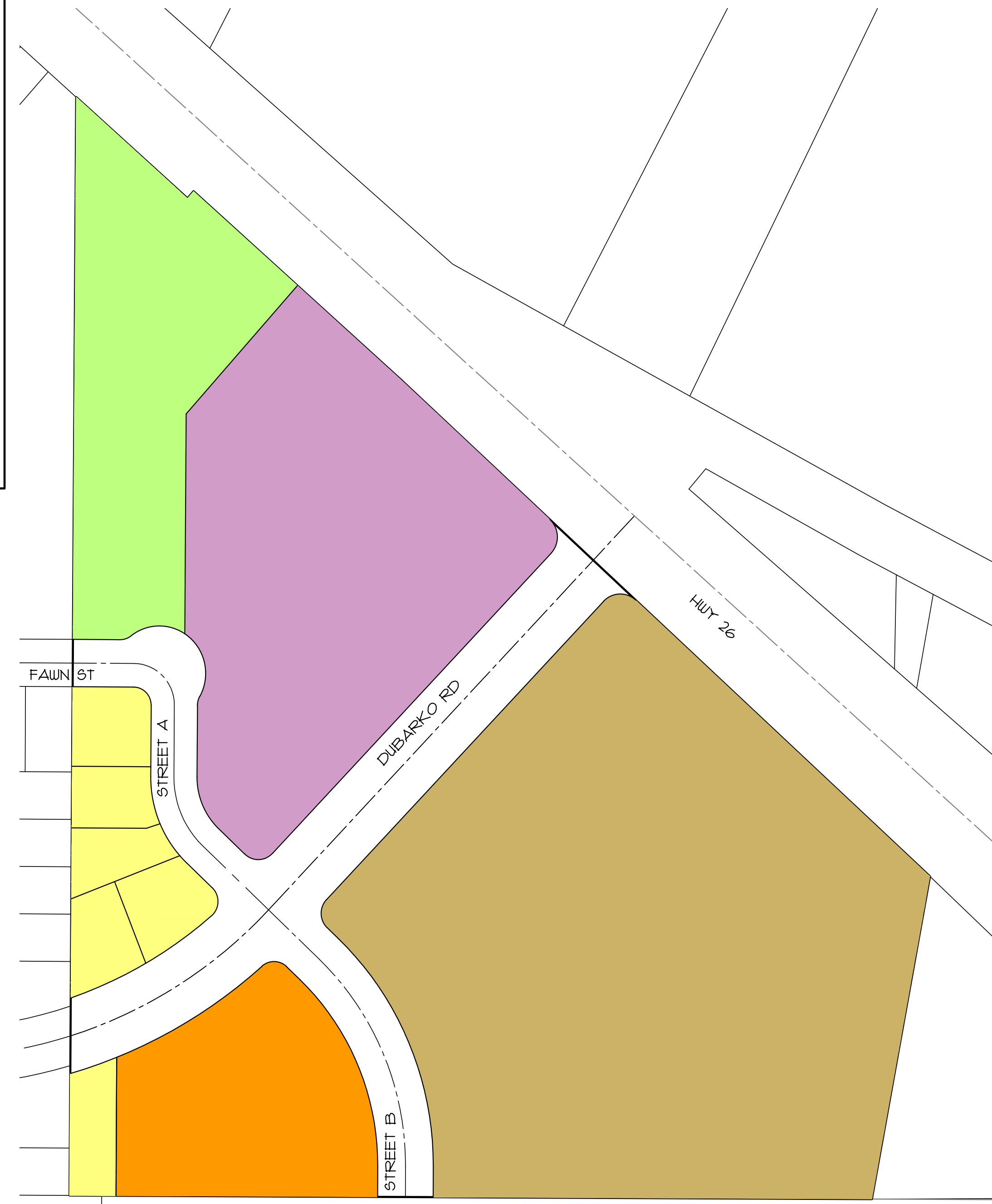


LEGEND	
	PARKS AND OPEN SPACE ZONE
	R-1 ZONE
	R-2 ZONE
	R-3 ZONE
	C-3 ZONE

PROPOSED NET ZONING AREA	
TOTAL SITE AREA	= 693,051 SF = 15.910 ACRES
PARKS AND OPEN SPACE	= 16,440 SF = 1.155 ACRES
R-1 SINGLE FAMILY	= 39,466 SF = 0.906 ACRES
R-2 MULTI-FAMILY	= 53,128 SF = 1.233 ACRES
R-3 MULTI-FAMILY	= 283,334 SF = 6.504 ACRES
C-3 COMMERCIAL	= 142,884 SF = 3.280 ACRES
PUBLIC ROW	= 91,205 SF = 2.232 ACRES

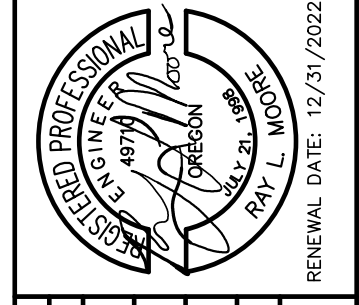


**EXISTING ZONING**



**PROPOSED ZONING**

BY	SK2
REVISION	OF 2
NO.	DESIGNED: CTH
DATE	DRAWN: CTH
	CHECKED: RLM
	APPROVED: RLM



SCALE	N/A
VERT. DATE	11-1-22
HORIZ. DATE	11-1-22
FILE	19-038-CITY-SKETCH.dwg
SECTION	TWP. 25
RANGE	18
LEGAL	5E

**PROJECT:** BULL RUN TERRACE SUBDIVISION  
**NET ZONING AREA COMPARISON**  
**LOCATION:** 40808 & 41010 HWY 26, SANDY, OR 97055

**Surveyors & Planners, Inc.**  
 Surveying, Planning and  
 Civil Engineering and  
 P.L.L.C.  
 P.O. Box 855 Sandy, OR 97055  
 Phone: (503) 668-4730  
 Fax: (503) 668-4730  
 DATE OF PLOT: 11-1-22

**CLIENT:** ROLL TIDE PROPERTIES CORPORATION  
 CORNELIUS, OR 97113

**ATTACHMENT C**



39250 Pioneer Blvd  
Sandy, OR 97055  
503-668-5533

**CITY COUNCIL STAFF REPORT (REVISED 11/17/22)  
TYPE IV LAND USE PROPOSAL**

This proposal was reviewed concurrently as a Type IV comprehensive plan amendment, zone change, subdivision, and specific area plan overlay with tree removal. The following exhibits, findings of fact, and conditions (bold text) explain the proposal and the proposed conditions of approval.

**DATE OF HEARING:** November 21, 2022

**FILE NO.:** 22-038 CPA/ZC/SUB/SAP/TREE

**PROJECT NAME:** Bull Run Terrace Reconsideration

**APPLICANT/OWNER:** Roll Tide Properties Corp.

**PHYSICAL ADDRESS:** 40808 and 41010 Highway 26

**TAX MAP/LOTS:** T2 R5E Section 18CD, Tax Lots 900 and 1000

**EXISTING ZONING DISTRICT DESIGNATIONS:** Low-Density Residential (R-1), Medium-Density Residential (R-2), and Village Commercial (C-3)

**PROPOSED ZONING DISTRICT DESIGNATIONS:** Low-Density Residential (R-1), Medium-Density Residential (R-2), High-Density Residential (R-3), Village Commercial (C-3), and Parks and Open Space (POS)

**COMPREHENSIVE PLAN DESIGNATION:** Village

**PROPOSED COMPREHENSIVE PLAN DESIGNATIONS:** Village and Parks and Open Space (POS)

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## EXHIBITS

### **Applicant's Submittals for Reconsideration:**

- A. Cover Letter from Tracy Brown Planning Consultants, LLC
- B. Project Narrative
- C. Civil Plan Set
  - Sheet C1 – Cover Sheet, Preliminary Plat Map, and Future Street Plan
  - Sheet C2 – Preliminary Plat Map and Specific Area Plan
  - Sheet C3 – Existing Conditions and Tree Retention Plan
  - Sheet C4 – Tree Tables
  - Sheet C5 – Master Street and Utility Plan
  - Sheet C6 – Street Sections
  - Sheet C7 – Street Tree Plan and Parking Analysis
  - Sheet C8 – Proposed Striping Plan
  - Sheet C9 – Preliminary Grading and Erosion Control Plan
  - Sheet C10 – Slope Analysis
  - Sheet 11 – Concept Plan
  - Sheet 12 – Net Zoning Area Comparison
- D. Preliminary Storm Drainage Design and Calculations
- E. Traffic Impact Study

### **Additional Documents from First Iteration of Bull Run Terrace:**

- F. Arborist Reports from Teragan and Associates
- G. Geotechnical and Slope Stability Investigation
- H. Wetland Determination Report
- I. Screening Concept Plan
- J. Public Needs Analysis from Johnson Economics

### **Additional Documents Included by Development Services Director:**

- K. Figure 11 from the 2022 Parks and Trails Master Plan

### **Agency Comments:**

- L. Parks and Trails Advisory Board (October 27, 2022)
- M. Director of Sandy Area Metro (October 28, 2022)
- N. Sandy Fire Marshal (October 24, 2022)
- O. City Engineer Curran-McLeod (October 27, 2022)
- P. Assistant Public Works Director (October 28, 2022)
- Q. City Transportation Engineer (October 31, 2022)
- R. City Transportation Engineer Proportional Share Memo (October 27, 2022)
- S. ODOT (November 2, 2022)

### **Public Comments:**

- T. Val and Gary Roche (October 21, 2022)
- U. David and Nancy Allan (October 21, 2022)

## FINDINGS OF FACT

### GENERAL FINDINGS

1. This application was originally submitted on December 30, 2019. The Sandy Development Code in effect at that time is what this reconsideration is being reviewed under. Therefore, it is important to note that modifications that have since occurred to the Sandy Development Code, particularly to Chapter 17.86, Parkland and Open Space, and Chapter 17.100, Land Division, do not apply to this application. However, because of how state legislation was adopted, House Bill 2001 and Senate Bill 458 are allowed to apply to this site, independent of the land use submission date.
2. This application is not subject to the moratorium on development adopted by Resolution 2022-24 because it was submitted prior to the effective date of the moratorium.
3. On December 29, 2020, the City Council issued a decision denying the Bull Run Terrace Subdivision application (File No. 19-050 CPA/ZC/SAP/SUB/TREE). The applicant, Roll Tide Properties Corp., appealed the City Council decision to the Oregon Land Use Board of Appeals (LUBA). The LUBA appeal was then placed on stay by the applicant, meaning ‘on hold’, until the City could process the Deer Meadows Subdivision proposal. On May 2, 2022, the City Council issued a decision denying the Deer Meadows Subdivision application. The applicant then appealed that City Council decision to LUBA. In accordance with ORS 197.830(13)(b), the applicant asked the City Council to reconsider the Bull Run Terrace Subdivision proposal with certain modifications, including a residential dwelling cap not to exceed 200 dwelling units. The applicant states that the existing zoning could accommodate 226 dwelling units. The City Council has agreed to reconsider the proposal with the modifications. This document reviews the reconsideration.
4. The applicant requests a Type IV Zone Map Amendment, Comprehensive Plan Map Amendment, establishment of a Specific Area Plan, approval of a 7-lot subdivision, and tree removal. The subject site is approximately 15.91 acres. The site is located at 40808 and 41010 Highway 26. The development area would total 11.60 acres with the remaining acreage dedicated as right-of-way, two stormwater facilities, and parkland. Four lots totaling 0.59 acres are proposed to be zoned R-1 (low-density residential) and will each contain a single-family dwelling or duplex. One lot at 6.50 acres is proposed to have the R-3 (high-density residential) zoning designation, one lot at 1.23 acres is proposed to have the R-2 (medium-density residential) zoning designation, and one lot at 3.28 acres is proposed to have the C-3 (village commercial) zoning designation. The R-3 and R-2 lots would contain multi-family dwellings and the one lot of C-3 would likely contain a mix of commercial and residential development.
5. The applicant also proposes to dedicate 1.755 acres for the eventual construction of Deer Pointe Park and zone this land as Parks and Open Space (POS). As referenced in Finding 1, above, and per Section 17.32.00 of the Development Code at the time of the original application submittal (December 2019), only publicly owned land can be zoned POS. **The**

**applicant shall dedicate the proposed 1.755 acres of parkland to the City through a dedication deed process, separate from the subdivision plat process.**

6. Staff has retained all original submittal items on file but did not include items that are no longer germane to the proposal as exhibits to this staff report as staff believes the omission of the original materials will make the proposal easier to understand and discuss.
7. The parcel has a Comprehensive Plan Map designation of Village. The designation of Village is not proposed to change, except for the parkland which is being proposed to be designated as Parks and Open Space (POS) on the Comprehensive Plan Map. The reason for this is that the Village designation does not include POS.
8. The City of Sandy completed the following notices:
  - a. A transmittal was sent to agencies asking for comment on October 13, 2022.
  - b. Notification of the proposed application was mailed to affected property owners within 500 feet of the subject property on October 13, 2022.
  - c. A legal notice was published in the Sandy Post on November 2, 2022.
9. Agency comments were received from the Parks and Trails Advisory Board, Director of Sandy Area Metro, Sandy Fire Marshal, City Engineer Curran-McLeod, the Assistant Public Works Director, City Transportation Engineer, and ODOT.
10. At publication of this staff report, two written public comments were received. The main concerns expressed by residents include the following:
  - a. Concerns about the intersection of Highway 26 and Dubarko Road.
  - b. High density residential and commercial being located too close to single family homes.
11. Staff is sympathetic to all concerns raised by the public but the existing designation of Medium Density Residential (R-2) allows multi-family dwellings. Multi-family is listed as a permitted outright use in the R-2 zoning district in Section 17.38.10(A)(6). Even if the applicant were not proposing a comprehensive plan map and zoning map amendment the applicant would still have property rights to construct multi-family housing on the existing R-2 and C-3 designated lands.

**PROPOSED ZONING AMENDMENTS – Chapters 17.24, 17.26, 17.30, 17.32, 17.36, 17.38, 17.40, and 17.46**

12. The existing zoning district designations and gross acreage, without dedications for roads, stormwater, or parkland, for the 15.91 acres are as follows:
  - a. Low-Density Residential (R-1): 8.05 acres
  - b. Medium-Density Residential (R-2): 5.01 acres
  - c. Village Commercial (C-3): 2.84 acres
  
13. The applicant's submitted Plan Set, Sheet 12 (Exhibit C), details the existing net zoning area and the proposed net zoning area for the reconsideration. Staff relied on this sheet as the evidence in the record as it was provided by a licensed surveyor.
  
14. **Existing Net Acres with Existing Zoning.** After removing 2.23 acres of right-of-way for roads, removing 0.32 acres for stormwater facilities, and removing the area for the 1.755-acre park, the remaining existing zoning district designations and acreage would be as follows:
  - a. Low-Density Residential (R-1): 4.57 acres
  - b. Medium-Density Residential (R-2): 4.43 acres
  - c. Village Commercial (C-3): 2.61 acres
  - d. TOTAL = 11.60 acres
  
15. **Proposed Net Acres with Modified Zoning for Reconsideration.** After removing 2.23 acres of right-of-way for roads, removing 0.32 acres for stormwater facilities, and removing the area for the 1.755-acre park, the remaining proposed zoning district designations and acreage would be as follows:
  - a. Low-Density Residential (R-1): 0.59 acres
  - b. Medium-Density Residential (R-2): 1.23 acres
  - c. High-Density Residential (R-3): 6.50 acres
  - d. Village Commercial (C-3): 3.28 acres
  - e. TOTAL = 11.60 acres
  
16. **Maximum Number of Dwelling Units Based on Existing Zoning.** Based on the existing net zoning acreage above and the allowances in House Bill 2001, staff has calculated that the existing zoning designations could potentially accommodate the following number of dwelling units:
  - a. Low-Density Residential (R-1): 74 dwelling units  
For the area zoned R-1, a minimum of 5 and a maximum of 8 units per acre are allowed.  
The minimum density for 4.57 net acres x 5 units/net acre = 22.85 rounded up to 23 units.  
The maximum density for 4.57 net acres x 8 units/net acre = 36.56 rounded up to 37 units. The maximum number of 37 dwelling units could be doubled with the introduction of House Bill 2001, to a maximum of 74 dwelling units.
  
  - b. Medium-Density Residential (R-2): 124 dwelling units  
For the area zoned R-2, a minimum of 8 and a maximum of 14 units per acre are allowed.  
The minimum density for 4.43 net acres x 8 units/net acre = 35.44 rounded down to 35

units. The maximum density for 4.43 net acres x 14 units/net acre = 62.02 rounded down to 62 units. The maximum number of 62 dwelling units could be doubled with the introduction of House Bill 2001, to a maximum of 124 dwelling units.

- c. Village Commercial (C-3): unknown number of dwelling units  
For the area zoned C-3, the exact number of potential residential units is not known at this time because in accordance with Section 17.46.10 (A)(2), multi-family dwellings above, beside or behind a commercial business is an outright permitted use. This means that the applicant could construct one business and designate the remainder of the 2.61 acres to multifamily development. Within the constraints of the existing zoning the exact number of dwelling units on the 2.61 acres of C-3 land is not possible to determine.
- d. TOTAL = 198 dwelling units, plus an unknown number of dwelling units in the C-3 zoning district. While it is unlikely that all the lots in the 4.57 acres of R-1 zoned land and the 4.43 acres of R-2 zoned land would be doubled through House Bill 2001 allowances, it is potentially possible, especially considering that some of the units could be oriented vertically and because House Bill 2001 required that parking requirements are the same for one single-family dwelling as for a duplex.

**17. Maximum Number of Dwelling Units Based on Modified Zoning for Reconsideration.**

Based on the proposed net zoning acreage above and the allowances in House Bill 2001, staff has calculated that the modified zoning designations could potentially accommodate the following number of dwelling units:

- a. Low-Density Residential (R-1): 8 dwelling units  
Low-Density Residential (R-1) Cap: 8 dwelling units  
For the area zoned R-1, a minimum of 5 and a maximum of 8 units per acre are allowed. The minimum density for 0.59 net acres x 5 units/net acre = 2.95 rounded down to 2 units. The maximum density for 0.59 net acres x 8 units/net acre = 4.72 rounded up to 5 units. The maximum number of 5 dwelling units could be doubled with the introduction of House Bill 2001, to a maximum of 10 dwelling units as the proposed subdivision includes individual lots in the R-1 zoning district. However, the applicant is only proposing 4 lots in the R-1 zoning district, so the maximum number of dwelling units is 8 dwelling units. *Note: In accordance with Section 17.30.20 (D) a dwelling unit figure is rounded down to the nearest whole number for all total maximum or minimum figures less than four dwelling units.*
- b. Medium-Density Residential (R-2): 17 dwelling units  
Medium-Density Residential (R-2) Cap: 17 dwelling units  
For the area zoned R-2, a minimum of 8 and a maximum of 14 units per acre are allowed. The minimum density for 1.23 net acres x 8 units/net acre = 9.84 rounded up to 10 units. The maximum density for 1.23 net acres x 14 units/net acre = 17.22 rounded down to 17 units. The maximum number of 17 dwelling units could be doubled with the introduction of House Bill 2001, to a maximum of 34 dwelling units if the proposal included lots, but the proposed subdivision is for one lot, so House Bill 2001 is not applicable.
- c. High-Density Residential (R-3): 130 dwelling units



High-Density Residential (R-3) Cap: 127 dwelling units

For the area zoned R-3, a minimum of 10 and a maximum of 20 units per acre are allowed. The minimum density for 6.50 net acres x 10 units/net acre = 65 units. The maximum density for 6.50 net acres x 20 units/net acre = 130 units. House Bill 2001 is not applicable to the R-3 zoning district as this zoning district does not permit single-family detached dwellings on new lots of record created with new subdivision plats.

- d. Village Commercial (C-3): unknown number of dwelling units

Village Commercial (C-3) Cap: 48 dwelling units

For the area zoned C-3, the exact number of potential residential units is not known at this time because in accordance with Section 17.46.10 (A)(2), multi-family dwellings above, beside or behind a commercial business is an outright permitted use. This means that the applicant could construct one business and designate the remainder of the 3.28 acres to multifamily development. Within the constraints of the existing zoning the exact number of dwelling units on the 3.28 acres of C-3 land is not possible to determine.

- e. **TOTAL with Cap = 200 dwelling units with the proposed cap.** Without the cap instated it is likely that the number of dwelling units would be greater than 200. For instance, the subdivision known as Vista Loop South that was approved in 2006, but never constructed, had 88 lots on the R-1 and R-2 land, which with the introduction of House Bill 2001 could have potentially allowed up to 176 dwelling units on the R-1 and R-2 land. While it is unlikely that all the lots in the 4.57 acres of R-1 zoned land and the 4.43 acres of R-2 zoned land in Vista Loop South would be doubled through House Bill 2001 allowances, it is potentially possible, especially considering that some of the units could be oriented vertically and because House Bill 2001 required that parking requirements are the same for one single-family dwelling as for a duplex. Also, without the cap on the C-3 zoned land there are no assurances on how many multi-family dwellings would be included on the C-3 land.

18. OAR 660-024 contains regulations related to urban growth boundaries and requires local governments to inventory land inside the UGB to determine whether there is adequate capacity to accommodate 20-years of growth. If the inventory demonstrates that the development capacity of land inside the UGB is inadequate to accommodate the estimated 20-year needs determined under OAR 660-024-0040, the local government must amend the plan to satisfy the need deficiency, either by increasing the development capacity of land already inside the UGB or by expanding the UGB, or both. A city cannot allow the rezoning of land that would bring the land supply for any given zone into a deficit. In accordance with OAR 660-024, the existing zoning designations for land within the UGB have the following 20-year land surplus:

- a. Commercial = surplus of 1.13 acres
- b. Low Density Residential = surplus of 19.20 acres
- c. Medium Density Residential = surplus of 17.10 acres
- d. High Density Residential = surplus of 12.60 acres

19. In accordance with OAR 660-024, the modified zoning designations for land within the UGB would result in the following 20-year land surplus:
  - a. Commercial = surplus of 1.80 acres (increase of 0.67 acres)
  - b. Low Density Residential = surplus of 15.22 acres (reduction of 3.98 acres)
  - c. Medium Density Residential = surplus of 13.90 acres (reduction of 3.20 acres)
  - d. High Density Residential = surplus of 19.10 acres (increase of 6.50 acres)
20. Chapter 17.24, Comprehensive Plan Amendment Procedures, contains review criteria for Comprehensive Plan amendments. The subject property has a comprehensive plan map designation of Village. Parks and Open Space (POS) is not a permitted zoning designation within Village as the Village designation was established in 1997 and the POS designation was only established in March of 2012 with the adoption of Ordinance 2012-01. The comprehensive plan map change is requested to modify 1.755 acres from Village to Parks and Open Space (POS).
21. The previous iteration of the Bull Run Terrace subdivision application also contained a density increase by greater than 20 percent, however, with the adoption of House Bill 2001 and as evident in the above density analysis, this is no longer the case. Therefore, the Comprehensive Plan Amendment with this application is solely for the 1.755 acres of parkland.
22. Section 17.24.70 (A) specifies the change being proposed is the best means of meeting the identified public need. Expanding the Deer Pointe Park is consistent with the goals of the Parks and Trails Advisory Board and the 1997 Parks Master Plan that was applicable at the time of this application. It is worth noting that this proposal is also consistent with the newly adopted 2022 Parks and Trails Master Plan. The concept plan in Figure 11 of the 2022 Parks and Trails Master Plan (Exhibit K) details parkland improvements on the subject property in the location of what is proposed to be dedicated to the City of Sandy and redesignated to POS. Therefore, this comprehensive plan change is the best means of meeting the identified public need as established in the 2022 Parks and Trails Master Plan.
23. Section 17.24.70(B) requires the change to conform to all applicable Statewide Planning Goals. These goals are evaluated concurrently with criteria in Section 17.26.40(B)(4), below.
24. Chapter 17.26, Zoning District Amendments, contains review criteria for zoning map amendments. Section 17.26.40 outlines the procedures for a quasi-judicial zoning map amendment. The proposed zone map change proposes to add High Density Residential (R-3) and Parks and Open Space (POS), increase Village Commercial (C-3), reduce Medium Density Residential (R-2), and reduce Low Density Residential (R-1).
25. Section 17.26.40(B)(1) requires the City Council to determine the effects on City facilities and services. With the proposed development, Dubarko Road will be extended from its current terminus through the subject site to connect with Highway 26. This road is identified as a necessary future minor arterial in the City's 2011 Transportation System Plan. An existing water line is located in the future alignment of Dubarko Road, and the applicant will accommodate this facility during the construction of this road. This application is not subject

to the moratorium on development adopted by Resolution 2022-24 because it was submitted prior to the effective date of the moratorium. Therefore, this proposed reconsideration does not negatively affect any City facilities or services.

26. Section 17.26.40(B)(2) and (3) requires the Council to assure consistency with the purposes of this chapter and with the policies of the Comprehensive Plan, including the following:
- a. Maintain sound, stable, and desirable development within the City
  - b. Permit changes in zoning district boundaries where appropriate
  - c. Ensure zoning changes are consistent with the community's land use policies and goals
  - d. Lessen the influence of private economic interests in the land use decision-making process

Given that the proposed development conforms with the Sandy Municipal Code and Comprehensive Plan goals, and that multiple conditions have been put in place to ensure that the development meets the intent of the Code and goals, staff finds that these criteria have been met.

27. Section 17.26.40(B)(4) requires the Council to assure consistency with the Statewide Planning Goals as may be necessary, and any other applicable policies and standards adopted by the City Council.

**Goal 1: Citizen Involvement**

A public notice was sent to adjoining property owners on October 13, 2022, a legal notice published in the Sandy Post on November 2, 2022, and a notice of the proposal was sent to the Department of Land Conservation and Development on October 7, 2022. Since this is a reconsideration of File No. 19-050 CPA/ZC/SAP/SUB/TREE the Planning Commission does not hear the proposal during this reconsideration. On November 21, 2022, the City Council will hold a public hearing to likely decide on the request. Because the public will have the opportunity to review and comment on the application, the proposal meets the intent of Goal 1.

**Goal 2: Land Use Planning**

The City's Comprehensive Plan guides land uses within the City's Urban Growth Boundary. The City's Zoning Ordinance enforces the Comprehensive Plan. Staff has reviewed the application for conformance with the Comprehensive Plan in review of Chapter 17.24, and Zoning Ordinance in review of Chapter 17.26. The City has sent notification of this proposal to both the Department of Land Conservation and Development as well as the Oregon Department of Transportation.

**Goal 3: Agricultural Lands**

Not Applicable

**Goal 4: Forest Lands**

Not Applicable

**Goal 5: Natural Resources**

The applicant, along with a consultant, have shown that the subject site does not contain any wetland area (Exhibit H). The applicant worked with an arborist to inventory trees and develop a tree retention plan as required in Chapter 17.102 (Exhibit F). The Planning Commission provided a code interpretation that retention trees only have to be protected consistent with Chapter 17.102, and not consistent with the distance requirements in Chapter 17.92 for a residential subdivision. That said, staff finds that to adequately protect the retention trees, the protection area shall be consistent with Chapter 17.92 and the recommendations of the arborist. **The applicant shall install tree protection fencing at the critical root zone of 1 foot per 1-inch DBH to protect all of the retention trees in the tree retention conservation easement on Lot 7, for the trees included in the parkland, and for the trees included on Lots 2 and 4 consistent with the arborist reports from Teragan and Associates. Up to 25 percent of the area between the minimum root protection zone of 0.5 feet per 1-inch DBH and the critical root zone of 1 foot per 1-inch DBH may be able to be impacted without compromising the tree, provided the work is monitored by a qualified arborist. The applicant shall retain an arborist on site to monitor any construction activity within the critical root protection zones of the retention trees or trees on adjacent properties that have critical root protection zones that would be impacted by development activity on the subject property.** Additional analysis and conditions are contained in the review of Chapter 17.102 in this document.

**Goal 6: Air, Water, and Land Quality**

The applicant proposes that the application complies with all regulations relative to air, water, and land quality.

**Goal 7: Natural Hazards**

The site contains minimal steep slopes, and no natural hazards are known to exist on the site.

**Goal 8: Recreational Needs**

The applicant is dedicating 1.755 acres of parkland to the City of Sandy. This dedication helps expand the existing parkland that will eventually be developed as Deer Pointe Park. Expanding the Deer Pointe Park is consistent with the goals of the Parks and Trails Advisory Board and the 1997 Parks Master Plan that was applicable at the time of this application. It is worth noting that this proposal is also consistent with the newly adopted 2022 Parks and Trails Master Plan. The concept plan in Figure 11 of the 2022 Parks and Trails Master Plan details parkland improvements on the subject property in the location of what is proposed to be dedicated to the City of Sandy. Staff finds that parkland dedication is preferable so long as the development to the east of the park is complementary to the parkland. The Parks and Trail Advisory Board provided a letter (Exhibit L) which contains a recommendation for the City Council to accept the parkland as it meets the objectives as listed in the 2022 Parks and Trails Master Plan by providing a true neighborhood park in an underserved area of the community. Additional analysis and conditions related to parks are contained in the parkland dedication section review of Chapter 17.86 in this document.

**Goal 9: Economic Development**

Goal 9 requires cities to provide an adequate supply of buildable lands for a variety of commercial and industrial activities and requires plans to be based on an analysis of the comparative advantages of a planning region. With the reconsideration proposal, staff finds that each type of land use in the Comprehensive Plan will continue to be in surplus.

**Goal 10: Housing**

This proposal to change residential designations on the subject property does not affect compliance with this goal. In fact, the proposed modification to the zoning map increases the potential diversity in housing types by providing additional multi-family housing.

**Goal 11: Public Facilities and Services**

Not Applicable

**Goal 12: Transportation**

With development of this project, Dubarko Road will be extended through the property to connect with Highway 26 in accordance with the 2011 Transportation System Plan (TSP). The applicant included a Traffic Impact Study from Ard Engineering with the application (Exhibit E). According to the revised traffic study, the assumptions were based on 8 duplex units, 192 multi-family units, and a 5,000 square foot office building. These three uses would produce 94 peak AM trips, 115 peak PM trips, and 1,418 total daily trips. Since this application involves a zone change, the traffic engineer also had to evaluate traffic volumes as measured under the “reasonable worst case” development scenarios as defined by Oregon’s Transportation Planning Rule (TPR). The reasonable worst case scenario analysis can be found on pages 13, 14, 15, 26, 27, and 28 of Exhibit E. Based on the TPR, Ard Engineering recommends that a trip cap of 340 PM net new peak hour trips be applied to the subject property as a condition of approval for the proposed zone change. The City Transportation Engineer (Exhibit Q) concurs with the importance of applying a trip cap of 340 PM net new peak hour trips. **The subject property shall be subject to a trip cap of 340 PM net new peak hour trips. Each application for development of a lot within the subject property shall include a report from a licensed traffic engineer stating the number of net new PM peak hour trips expected to be generated by the proposed development, and this number of trips will be deducted from the total trip cap of 340 net new PM peak hour trips upon approval of the application. No development application will be approved that would cause the total net new PM peak hour trips to exceed said cap unless the applicant agrees to pay additional proportionate share fees for the intersection of Highway 211 and Dubarko Road, in an amount determined by the City based on the number of trips in excess of the cap.** Additional analysis and conditions on transportation are contained in the transportation section review of Chapter 17.84 and Chapter 17.100 in this document.

**Goal 13: Energy Conservation**

Not Applicable

#### **Goal 14: Urbanization**

This proposal accomplishes the objectives of this Statewide Planning Goal by accommodating additional residential and commercial growth within the existing Urban Growth Boundary (UGB) as planned for in the adopted Urbanization Study completed in 2015. As detailed above, the proposed changes will not result in any deficit in available land use.

#### **Goals 15-19**

Not applicable for the City of Sandy as these goals relate to the Willamette River and the Oregon Coast.

28. Section 17.26.90 pertains to the effective date of the proposed zone change and states: “The decision of the City Council made in conjunction with a Zoning Map amendment shall become effective 30 days after passage of the ordinance. No zoning district changes will take effect, however, until and unless the necessary Comprehensive Plan amendment has been implemented by the City Council, if needed.” The comprehensive plan map will need to be amended to reflect the proposed change from Village to POS for the 1.755 acres of parkland. As referenced in Finding 1, above, and per Section 17.32.00 of the Development Code at the time of the original application submittal (December 2019), only publicly owned land can be zoned POS. **The applicant shall dedicate the proposed 1.755 acres of parkland to the City through a dedication deed process, separate from the subdivision plat process.**

#### **17.32 – Parks & Open Space (POS)**

29. The applicant proposes dedicating 1.755 acres of parkland to the City of Sandy and zoning the land as Parks and Open Space (POS). Section 17.32.10 contains the permitted uses in the POS zoning district. The applicant proposes a park dedication consistent with parkland in the 1997 Parks Master Plan and the 2022 Parks and Trails Master Plan.

#### **17.36 – Low Density Residential (R-1)**

30. The applicant proposes constructing four duplexes on the four proposed lots that are proposed to be zoned R-1, as permitted in this zoning district. While the net acreage for the R-1 zoned land is 0.59, the gross acreage including the two stormwater facilities is 0.91 acres. Section 17.36.30 contains the design standards for this zone. As shown in Exhibit C, Sheet C2, all lots four lots proposed as R-1 contain at least 5,500 square feet, have at least 20 feet of street frontage, and contain an average lot width of at least 50 feet as required. Lot 4 has frontage on Dubarko Road, but access is not permitted from Dubarko Road. Access to this lot will be by means of an access easement on Lot 3. **The dwellings on Lots 1, 2, 3, and 4 shall be designed to meet all of the requirements as specified in Chapter 17.36 and will be assessed with future building permits for those four lots.**
31. Section 17.36.50(B) requires that lots with 40 feet or less of street frontage shall be accessed by a rear alley or shared private driveway. No proposed lots have 40 feet or less of street frontage.

**17.38 – Medium Density Residential (R-2)**

32. The applicant proposes constructing 17 multi-family dwelling units on the one proposed lot that is proposed to be zoned R-2, as permitted in this zoning district. Exhibit C, Sheet 11 details a conceptual layout for this lot. **Conformity with the remainder of Chapter 17.38 shall be determined in a future design review process.**

**17.40 – High Density Residential (R-3)**

33. The applicant proposes constructing 127 multi-family dwelling units on the one proposed lot that is proposed to be zoned R-3, as permitted in this zoning district. Exhibit C, Sheet 11 details a conceptual layout for this lot. **Conformity with the remainder of Chapter 17.40 shall be determined in a future design review process.**

**17.46 – Village Commercial (C-3)**

34. The applicant proposes constructing 48 multi-family dwelling units above, beside, or behind a commercial business on the one proposed lot that is proposed to be zoned C-3, as permitted in this zoning district. Exhibit C, Sheet 11 details a conceptual layout for this lot. **Conformity with the remainder of Chapter 17.46 shall be determined in a future design review process.**

## **LAND DIVISION CRITERIA – Chapter 17.100**

35. This application was originally submitted on December 30, 2019. The Sandy Development Code in effect at that time is what this reconsideration is being reviewed under. Therefore, it is important to note that modifications that have since occurred to the Sandy Development Code, particularly to Chapter 17.86, Parkland and Open Space, and Chapter 17.100, Land Division, do not apply to this application.
36. Submittal of preliminary utility plans is solely to satisfy the requirements of Section 17.100.60. **Preliminary plat approval does not connote utility or public improvement plan approval which will be reviewed and approved separately upon submittal of public improvement construction plans.** As referenced in Finding 1, above, and per Section 17.100.60(H) of the Development Code at the time of the original application submittal (December 2019), **the final plat shall be delivered to the Director for approval within one year following approval of the tentative plat and shall incorporate any modification or condition required by approval of the tentative plat. The Director may, upon written request, grant an extension of the tentative plat approval for up to one additional year.** While the subdivision approval expires one year from approval, if a final plat is not recorded, **the proposed comprehensive plan map and zoning map modifications go into effect 30 days from the date of the ordinance in accordance with Section 17.26.90.**
37. Section 17.100.60(E)(1) requires subdivisions to be consistent with the density, setback, and dimensional standards of the base zoning district, unless modified by a Planned Development approval. Each base zoning district requires that residential development comply with Chapter 17.82. As explained throughout this document, the proposed subdivision meets the standards of the proposed base zoning districts, and adherence to this standard will be verified with future building permits or design reviews, whichever is applicable. Section 17.100.220 includes requirements for lot design. All lots in the proposed subdivision have been designed so that no foreseeable difficulties due to topography or other conditions will exist in securing building permits on these lots as required by Section 17.100.220(A). All lots in the R-1 zone comply with the minimum standards in that zone as required by Section 17.100.220(B). No lots are proposed to contain more than double the minimum lot size. Section 17.100.220 states that all new lots shall have at least 20 feet of street frontage. All lots in the proposed subdivision contain at least 20 feet of frontage along a public street therefore meeting the requirements of Section 17.100.220(C). Lots 6 and 7 both contain frontage on Highway 26 and Dubarko Road. Because no direct access to Highway 26 is allowed the creation of these double frontage lots is unavoidable and is thus allowed as required by Section 17.100.220(D). The proposal meets approval criteria 17.100.60 (E)(1).
38. Section 17.100.60(E)(2) requires subdivisions to be consistent with the design standards set forth in this chapter. In accordance with Section 17.100.70 the design standards in Chapter 17.100 are met as the proposed subdivision follows the 2011 City of Sandy Transportation System Plan by providing the connection of Dubarko Road to Highway 26. In accordance with Section 17.100.100 (A) the proposed subdivision meets the Street Connectivity Principle. Connecting Dubarko Road to Highway 26 provides safe and convenient options



for cars, bikes, and pedestrians; creates a logical, recognizable pattern of circulation; and spreads traffic over many streets so that key streets such as Langensand Road and Highway 211 are not overburdened. The proposal meets approval criteria 17.100.60 (E)(2).

39. Section 17.100.60(E)(3) requires the proposed street pattern to be connected and consistent with the Comprehensive Plan or official street plan for the City of Sandy. The proposed street pattern is consistent with the Comprehensive Plan and the city's standards, including connecting Dubarko Road to Highway 26. The 2011 Sandy Transportation System Plan (TSP) was adopted by Ordinance 2011-12 as an addendum to the Comprehensive Plan. Exhibit A of Ordinance 2011-12 is the TSP. Project M20 in the TSP is the connection of Dubarko Road to Highway 26. Furthermore, the proposal is consistent with OAR 660-012-0045, which requires that local governments implement their TSP. The proposal meets approval criteria 17.100.60 (E)(3).
40. Section 17.100.60(E)(4) requires that adequate public facilities are available or can be provided to serve the proposed subdivision. City water, sanitary sewer, and stormwater are available and will be extended by the applicant to serve the subdivision as detailed in Exhibit C, Sheet C5. The proposal meets approval criteria 17.100.60 (E)(4).
41. Section 17.100.60(E)(5) requires that all proposed improvements meet City standards. Extending Dubarko Road to connect with Highway 26 is consistent with the 2011 TSP and OAR 660-012-0045, which requires that local governments implement their TSP. Pursuant to 17.86.10 of the Development Code, new residential subdivisions "shall be required to provide parkland to serve existing and future residents of those developments." By providing 1.755 acres of parkland, the proposal meets the goals of the 1997 Parks Master Plan that designated Deer Pointe Park as a community park, and the 2022 Parks and Trails Master Plan, specifically Figure 11. By providing street frontage improvements (curbs, sidewalks, street lighting, street trees, storm drainage, etc.) on Highway 26, Dubarko Road, Street B, and Fawn Street, the proposal meets Chapter 17.84 for frontage improvements. The proposal meets approval criteria 17.100.60 (E)(5).
42. Section 17.100.60(E)(6) strives to ensure that a phasing plan, if requested, can be carried out in a manner that meets the objectives of the above criteria and provides necessary public improvements for each phase as it develops. The applicant is not requesting a phased development per their narrative in Exhibit B. That said, the applicant is proposing that the design of the multi-family dwellings and commercial development occurs at a future date. Reviewing multi-family and commercial development through a separate process is typical. The proposal meets approval criteria 17.100.60 (E)(6).

**ADDITIONAL SETBACKS AND SPECIAL SETBACKS – Chapters 17.80 and 17.82**

43. Chapter 17.80 requires all residential structures to be setback at least 20 feet on collector and arterial streets. Lots 3, 4, 5, 6 and 7 shall adhere to the setback standards in Chapter 17.80 for Highway 26 which is classified as an arterial, Dubarko Road which is classified as a minor arterial, and Street B which is classified as a collector. The revised Preliminary Plat (Exhibit C) details the 20-foot setbacks to Highway 26, Dubarko Road, and Street B.
44. Section 17.82.20(A) requires that all residential dwellings shall have their primary entrances oriented toward a transit street rather than a parking area, or if not adjacent to a transit street, toward a public right-of-way or private walkway which leads to a transit street. Section 17.82.20(B) requires that dwellings shall have a primary entrance connecting directly between the street and building interior and outlines requirements for the pedestrian route. Section 17.82.20(C) requires that primary dwelling entrances shall be architecturally emphasized and visible from the street and shall include a covered porch at least 5 feet in depth. **The dwellings on all lots abutting a transit street shall be designed to meet all of the requirements as specified in Chapter 17.82 and will be assessed with future building permits or design reviews, whichever is applicable.**
45. Section 17.82.20(D) requires that if the site has frontage on more than one transit street, the dwelling shall provide one main entrance oriented to a transit street or to a corner where two transit streets intersect. **The orientation of the future multi-family units that have frontage on both Highway 26 and Dubarko Road, or Street B and Dubarko Road will be determined in a future design review process.**

## **SPECIFIC AREA PLAN OVERLAY – Chapter 17.54**

46. The purpose of a specific area plan overlay zone is to allow development and approval of specific area plans in the city. The City of Sandy Comprehensive Plan, Goal 2, Land Use Designations, Village states: “shifting of the underlying zoning district boundaries to accommodate development constraints and land divisions for specific development proposals may be allowed through approval of a Specific Area Plan.”
47. The applicant proposes shifting zoning district boundaries as noted in this document and has submitted a Specific Area Plan request according to the standards in the chapter as required. The purpose of a specific area plan overlay zone is to allow development and approval of specific area plans in the city. A specific area plan is a master plan coordinating and directing development in terms of transportation, utilities, open space and land use; however, no phasing or timeline is required. Specific area plans may be located anywhere within the Urban Growth Boundary and are intended to promote coordinated planning concepts and pedestrian-oriented mixed-use development. The City of Sandy Comprehensive Plan, Goal 2, Land Use Designations, Village states: “shifting of the underlying zoning district boundaries to accommodate development constraints and land divisions for specific development proposals may be allowed through approval of a Specific Area Plan.”
48. The applicant proposes shifting of zoning district boundaries and addition of a new zoning designation for the subject properties and therefore submitted a Specific Area Plan request according to the standards in Chapter 17.54. Staff finds that the only other specific area plan in Sandy, the Bornstedt Village Specific Area Overlay, has additional standards related to additional tree retention, green streets, additional design standards for single family homes, etc. Keeping the Bornstedt Village Overlay in mind, staff recommends that additional consideration is given to additional tree protection for the proposed retention trees. The Planning Commission provided a code interpretation that retention trees only have to be protected consistent with Chapter 17.102, and not consistent with the distance requirements in Chapter 17.92 for residential subdivisions. That said, staff finds that to adequately protect the retention trees, the protection area shall be consistent with Chapter 17.92 and the recommendations of the arborist. **The applicant shall install tree protection fencing at the critical root zone of 1 foot per 1-inch DBH to protect all of the retention trees in the tree retention conservation easement on Lot 7, for the trees included in the parkland, and for the trees included on Lots 2 and 4 consistent with the arborist reports from Teragan and Associates. Up to 25 percent of the area between the minimum root protection zone of 0.5 feet per 1-inch DBH and the critical root zone of 1 foot per 1 inch DBH may be able to be impacted without compromising the tree, provided the work is monitored by a qualified arborist. The applicant shall retain an arborist on site to monitor any construction activity within the critical root protection zones of the retention trees or trees on adjacent properties that have critical root protection zones that would be impacted by development activity on the subject property.** The applicant is also proposing to retain five conifers (Exhibit C, Sheet C3), and to plant some maples, incense cedars, katsura, and Silver Queen Port Orford cedars along the common property line with Deer Pointe subdivision per the Screening Concept Plan (Exhibit I). Additional tree retention analysis and conditions are contained in the review of Chapter 17.102 in this document.

Consistent with the Bornstedt Village Overlay this development should also consider green streets where practicable. **The applicant shall explore locations for green street swales. If green streets are practicable as determined by the City Engineer in accordance with topography, the plan set shall be modified to detail additional right-of-way or easements to accommodate the swales, if needed.** In addition, the applicant shall be required to adhere to additional design standards for the four duplexes (or single-family homes) similar to the Bornstedt Village Overlay requirements. **Future development on Lots 1-4 shall adhere to the garage standards contained in Section 17.54.110(D).**

49. The process to establish a specific area plan shall be initiated by the City Council. The Planning Commission or interested property owners may submit requests to the City Council to initiate the specific area plan process. If owners request initiation of a specific area plan process, the City Council may require an application fee to cover the cost of creating the plan. The applicant requests initiation of this specific area plan and has paid the applicable fees. The comprehensive plan map change is requested to modify 1.755 acres from Village to Parks and Open Space (POS). The proposed zone map change proposes to add High Density Residential (R-3) and Parks and Open Space (POS), increase Village Commercial (C-3), reduce Medium Density Residential (R-2), and reduce Low Density Residential (R-1).
50. In accordance with Section 17.54.00(D) a specific area plan shall be adopted through a Type IV process and shall be evaluated for compliance with the criteria for zoning district amendments and/or comprehensive plan amendments where applicable. The applicant states that this specific area plan request will be reviewed through a Type IV process and shall comply with the criteria for zoning district and Comprehensive Plan amendments. As stated by the applicant, the criteria in Chapter 17.24, Comprehensive Plan Amendment Procedures and Chapter 17.26, Zoning District Amendments are reviewed in this document and as reviewed in these chapters, the proposal is found to comply with all required criteria if the conditions of approval as recommended by staff are required.
51. In accordance with Section 17.54.00(G) compliance with specific area plan standards and procedures are required. New construction and land divisions shall meet any development, land division, and design standards of the applicable specific area plan. Base zone and land division standards shall apply where no different standard is referenced for the specific plan area. Staff finds that with adequate conditions of approval the proposal will comply with the standards and procedures of a specific area plan.
52. Section 17.54.10 defines eight items that define the specific area plan by providing text and diagrams with the specific area plan application. The eight items relate to the following: plan objectives; site and context; land use diagram; density; facilities analysis; circulation/transportation diagram; market analysis; and, design and development standards. The eight items are reviewed as follows:
  - a. Plan Objectives. A narrative shall set forth the goals and objectives of the plan. The applicant submitted a robust narrative explaining the proposal for the Bull Run Terrace subdivision reconsideration. The applicant's narrative elaborates on the objectives of their proposal and the desire to include 4 duplexes, 192 multi-family dwellings, and

village commercial development. The narrative also elaborates on dedications, including 1.755 acres of parkland.

- b. Site and Context. A map of the site and existing context shall identify the project area. The applicant submitted a 12-sheet plan set that details the project area and proposed improvements.
- c. Land Use Diagram. The land use diagram shall indicate the distribution and location of planned land uses, including open space and parks, within the area covered by the specific area plan. The applicant's plan set clearly identifies all proposed land uses (Exhibit C, Sheet 11). The development of commercial on Lot 7 will need to follow the uses as defined in Chapter 17.46, Village Commercial (C-3). If the applicant or successor-in-interest proposes uses in Section 17.46.20(B), Conditional Uses, the proposal will need to be reviewed by the Planning Commission.
- d. Density. If residential uses are proposed, a narrative shall describe planned residential densities. Density calculations were included by the applicant in their narrative and are included in review of Chapter 17.30, Zoning Districts in this document.
- e. Facilities Analysis. The plan shall include an analysis of the general location and extent of major components of sanitary sewer, water, and other essential facilities proposed to be located within the specific plan area and needed to support the land use and densities described in the plan. A review of existing facilities master plans shall be sufficient if these master plans indicate there is adequate capacity to serve the specific plan area. The applicant included a utility plan within the plan set and a preliminary stormwater report. The Assistant Public Works Director reviewed the applicant's submission and has provided analysis and recommended conditions as explained in this document.
- f. Circulation/Transportation Diagram. The circulation diagram shall indicate the proposed street pattern for the specific area plan area, including pedestrian pathways and bikeways. Design standards and street cross sections shall be included, if different than normal City standards. The applicant included a traffic study from Ard Engineering, a future street plan, a master street plan, and street section details. The City's Transportation Engineer, Assistant Public Works Director, ODOT, Fire Marshal, and the Director of Sandy Area Metro reviewed the applicant's submission and have provided analysis and recommended conditions as explained in this document.
- g. Market Analysis. Specific area plans that include amendments to the zoning map affecting the acreage of Village Commercial (C-3) land within the plan area shall include a market analysis of supportable retail space that verifies demand for the proposed acreage of C-3 land. The analysis should include a market delineation, a regional and local economic review, and a retail market evaluation. The applicant submitted an analysis from Johnson Economics. The revised proposal includes increasing the amount of available commercial lands by 0.67 acres. Johnson Economics explains that the proposal will provide capacity for additional housing options and provide more property that is an active urban use. The analysis states that an increase in multifamily housing

will increase local capacity for residential products that can meet a broad range of price points. The analysis goes on to explain that the Highway 26 infrastructure investment requirements were too great to be offset by the value of the underlying property, but that a zone change to allow more residential units will provide the ability of the site to support necessary infrastructure investments. As Johnson Economics correctly identifies, the extension of Dubarko Road to Highway 26 and the additional land needed for Deer Pointe Park cannot be completed unless the subject site is developed.

- h. Design and Development Standards. If standards differ from normal City standards, design and development standards shall be included in the plan. The applicant states that the proposal is anticipated to comply with all design and development standards. As identified by the applicant, the exact details of site and building review will be primarily addressed with submittal of subsequent land use applications for development on Lot 5, 6 and 7.

## **TRANSPORTATION – Chapters 17.84 and 17.100**

53. Section 17.84.30(A)(1) requires that all proposed sidewalks on the local streets will be five feet wide as required by the development code and separated from curbs by a tree planting area that is a minimum of five feet in width. Street A and Fawn Street both meet these requirements.
54. As required by Section 17.84.30(A)(2), six-foot sidewalks are proposed to be constructed along Highway 26, portions of Dubarko Road, and on Street B. These frontages will include planter strips as required with at least 5 feet wide of soil area. As required by Section 17.84.30(A)(4), the applicant intends to construct all sidewalk improvements as required by this section with the exception of some five-foot wide sidewalks on Dubarko Road. **The applicant shall revise the street sections and plan set to detail all sidewalks on Dubarko Road at least 6 feet in width.**
55. No exceptions or modifications listed in Section 17.84.30(A)(3) are requested with the application. In relation to Sections 17.84.30(B), 17.84.30(C), 17.84.30(D), and 17.84.30(E), no pedestrian or bicycle facilities other than sidewalks and on-street bicycle lanes have been identified or proposed in the application.
56. Traffic Study. Section 17.84.50 outlines the requirements for providing a traffic study. The applicant included a Traffic Impact Study from Ard Engineering with the application (Exhibit E). According to the revised traffic study, the assumptions were based on 8 duplex units, 192 multi-family units, and a 5,000 square foot office building. These three uses would produce 94 peak AM trips, 115 peak PM trips, and 1,418 total daily trips. Since this application involves a zone change, the traffic engineer also had to evaluate traffic volumes as measured under the “reasonable worst case” development scenarios as defined by Oregon’s Transportation Planning Rule (TPR). The reasonable worst case scenario analysis can be found on pages 13, 14, 15, 26, 27, and 28 of Exhibit F. Based on the TPR, Ard Engineering recommends that a trip cap of 340 PM net new peak hour trips be applied to the subject property as a condition of approval for the proposed zone change. The City Transportation Engineer (Exhibit Q) concurs with the importance of applying a trip cap of 340 PM net new peak hour trips. **The subject property shall be subject to a trip cap of 340 PM net new peak hour trips. Each application for development of a lot within the subject property shall include a report from a licensed traffic engineer stating the number of net new PM peak hour trips expected to be generated by the proposed development, and this number of trips will be deducted from the total trip cap of 340 net new PM peak hour trips upon approval of the application. No development application will be approved that would cause the total net new PM peak hour trips to exceed said cap unless the applicant agrees to pay additional proportionate share fees for the intersection of Highway 211 and Dubarko Road, in an amount determined by the City based on the number of trips in excess of the cap.** With its connection to Highway 26, Dubarko Road will become increasingly important to the transportation system in Sandy. The traffic analysis makes several references to a right-in/right-out intersection at Dubarko Road and Highway 26. These references are in the context of analysis of the performance of other study intersections examined in the traffic study and not a proposal to

construct a right-in/right-out intersection at this location. The adopted Transportation System Plan (TSP) does not contemplate a right-in/right-out intersection at Highway 26 and Dubarko Road. **The intersection of Highway 26 and Dubarko Road shall be constructed as a full-access intersection in compliance with the TSP.**

57. Highway 211 and Dubarko Road Intersection. The intersection improvements at Highway 211 and Dubarko Road are defined as Project M9 in the 2011 Sandy Transportation System Plan. The improvements include eventually constructing a traffic signal, northbound right turn lane, southbound left turn lane, and northbound left turn lane. The proposed development will add 17 PM peak hour trips to this intersection. The City Transportation Engineer (Exhibit Q) states that due to the impacts this proposed development will have on the intersection of Highway 211 and Dubarko Road, as offsite mitigation for that intersection shall be incorporated into the conditions of approval. The City Transportation Engineer created a memorandum (Exhibit R) summarizing the development of a proportionate share funding plan to construct improvements at the Highway 211 and Dubarko Road intersection. This proportionate share funding plan will collect financial contributions from multiple developments and will fund specific capacity improvements needed to mitigate traffic operation deficiency that is triggered by the impact of new trips from growth. Exhibit R explains the cost of the new improvement at over \$10 million, the proportionate share fee formula, and the fee analysis results. **The applicant shall contribute a proportional share fee of \$268,345 towards construction of future capacity improvements at the intersection of Highway 211 and Dubarko Road at a cost of \$15,785 per PM peak hour trip.**
58. Dubarko Road. The proposed street sections (Exhibit C, Sheet C6) depict Dubarko Road between its current eastern terminus and proposed Street A with a 76-foot-wide right-of-way consisting of two 0.5-foot monumentation strips, varying sidewalk widths, two five-foot wide planter strips, two 0.5-foot curbs, two five-foot bike lanes, and two varying travel lane widths and varying median width. **The applicant shall revise the street sections and plan set to detail all sidewalks on Dubarko Road at least 6 feet in width.** The standard section for an arterial street in the TSP consists of 11-foot travel lanes with 5-foot bike lanes. It is unclear to staff as to why some of the proposed travel lanes are so wide. The portion of Dubarko Road between Street A to the west boundary of the development should be used to provide a transition from the proposed three lane section with median to a two lane section with median to match the existing section. The proposed 17-foot wide travel lanes will be confusing to motorists. **The applicant shall submit a revised cross-section for the portion of Dubarko Road between the existing terminus and Street A with construction plans for City Engineer review and approval.** The extension of Dubarko Road is classified as a minor arterial street and shall meet the standards of Section 17.84.50(B) which states that arterial streets should generally be spaced in one-mile intervals and traffic signals should generally not be spaced closer than 1,500 ft for reasonable traffic progression. The proposed alignment of Dubarko Road is consistent with the TSP and is an extension of an existing arterial street, not a new arterial street. The traffic study concluded that based on warrant analysis a traffic signal is not warranted, but a traffic signal at Dubarko Road and Highway 26 will be needed in the future based on future development. Therefore, the Preliminary Plat (Exhibit C, Sheet C2) details a 40-foot by 40-foot traffic signal easement at the northeast



corner of Lot 7. The traffic signal easement could impact the tree retention area. **The applicant shall submit revised plans detailing how the traffic signal easement will impact the tree retention area. If the tree retention area is negatively impacted the applicant shall preserve additional trees.**

59. Street B. Street B (defined as ‘New Road in the TSP) is classified as a collector street and does not need to adhere to the standards in Section 17.84.50(B). Street B is proposed with a 60-foot right-of-way consisting of two 0.5-foot monumentation strips, two six-foot sidewalks, two five-foot wide planter strips, two 0.5-foot curbs, and two 18-foot travel lanes. In accordance with Figure 10 of the 2011 TSP, the travel lanes on a collector street may be as narrow as 11 feet wide. **The applicant shall revise the street sections and striping plan to accommodate two 5-foot-wide bike lanes and two 13-foot-wide travel lanes for Street B.**
60. Street A and Fawn Street. Street A and Fawn Street are both classified as local streets. Both streets are proposed with 50-foot right-of-ways consisting of two 0.5-foot monumentation strips, two five-foot wide sidewalks, two five-foot wide planter strips, two 0.5-foot curbs, two 7-foot-wide parking areas, and a combined 14-foot-wide travel lane. These proposed street sections meet the TSP requirements.
61. Credits for Dubarko Road. The widening of Dubarko Road to accommodate the section recommended in the TSP is eligible for Transportation System Development Charge credits. The difference in cost between the required minor arterial improvements and a standard local street section is eligible for credits. **Estimated costs shall be submitted to City staff and reviewed and approved by the City Engineer. The City and the Applicant shall enter into an agreement defining the eligible improvements and estimated costs prior to plat approval. SDC credits shall be based on final audited costs.**
62. Intersection with Highway 26. The extension of Dubarko Road to Highway 26 is defined as Project M20 in the 2011 Sandy Transportation System Plan. The subject property abuts Highway 26 and notification of the proposal was sent to ODOT as required by Section 17.100.90. ODOT provided comments as contained in Exhibit S. Dubarko Road will contain a dedicated left turn and right turn/through lane, a median with street trees, and a dedicated left turn lane to Street B. Highway 26 improvements will include among other things a dedicated right turn lane to Dubarko Road, sidewalks, street trees, and restriping. **The applicant shall adhere to all standards and requirements that are defined by ODOT, including the Dubarko Road connection to Highway 26 and all required improvements along Highway 26 including stormwater facilities constructed as necessary to be consistent with local, ODOT, and ADA standards.** As stated by the Assistant Public Works Director (Exhibit P), any ODOT required improvements on and adjacent to the Highway 26 frontage of the site are not included in the City’s TSP or capital plans and as such are not eligible for SDC credits or reimbursement.
  - a. ODOT recommends that the site layout and development be consistent with the approved and adopted Transportation System Plan, including: the Dubarko Road extension to Highway 26, aligned with the westerly most SE Vista Loop Drive intersection; accommodation of a Collector road terminating at the southern extents of the subject

property to allow the road to extend south from the westernmost leg of the SE Vista Loop Drive intersection; and curb, sidewalks, cross walk ramp, bikeways and road widening along Highway 26 constructed as necessary to be consistent with local, ODOT, and ADA standards.

- b. According to ODOT, the intersection of Dubarko Road and Highway 26 requires a grant of access from ODOT. **The applicant shall assist the City of Sandy in applying for a grant of access or other necessary approval from ODOT for access to Highway 26 at Dubarko Road.**
- c. The conditions of approval shall require the development to comply with the standards and procedures specified by ODOT. **The ODOT grant of access shall be approved and the improvements completed per the grant of access prior to issuance of certificates of occupancy for any structures on the subject property.**

63. Average Daily Traffic. While this proposal will undoubtedly increase traffic on Dubarko Road the Average Daily Traffic (ADT) concerns that were raised during the Bailey Meadows approval process are not present with this land use application. In the Bailey Meadows case, Melissa Avenue is designated a local street and the concerns raised relative to ADT impacted a local street. In the case of Bull Run Terrace, the majority of the anticipated trips will use Dubarko Road, which is designated as a minor arterial, and Street B, which is designated as a collector. According to Chapter 17.10 of the Development Code, arterial streets are defined as helping interconnect and support the arterial highway system and link major commercial, residential, industrial, and institutional areas. Also, in Chapter 17.10, the definition for collector streets states they are meant to provide both access and circulation within residential neighborhoods and commercial/industrial areas. While staff is sympathetic of existing residents to the west of the proposed Bull Run Terrace subdivision, the extension of Dubarko Road has always been intended to occur and the street has been designed to accommodate high traffic volumes. The only street that ADT concerns are valid for is Fawn Street/Street A. The four proposed duplexes in the R-1 zoning district (Lots 1-4) will not cause any concerns, but the potential of trips generated from the C-3 zoned property (Lot 7) could cause additional traffic on Fawn Street/Street A and negatively impact the Deer Pointe subdivision. **The land use application for Lot 7 shall include proposed driveway designs to discourage commercial patrons existing Lot 7 to Street A from entering the Deer Pointe Subdivision on Street A. The designs shall be reviewed and approved by the City Engineer and Public Works Director.**

64. Tangent Alignment. The alignment of Street B and Dubarko Road does not provide the minimum 100 feet of tangent alignment (as measured from the curb line on Dubarko extended) on Street B as required by Section 17.84.50(H)(5)(a) of the Sandy Municipal Code (SMC). However, this requirement can be waived or modified by the City Engineer. In verbal discussions with the City Engineer, Curran-McLeod, and the Assistant Public Works Director, they find the proposed alignment to be adequate.

65. Future Street Plan. Proposed streets meet the requirements of 17.94.50(H). The future street plan (Exhibit C, Sheet C1) shows that the proposed development will facilitate and not preclude development on adjacent properties. Both Dubarko Road and Street B are identified in the TSP and proposed to be constructed with the development. All proposed streets

comply with the grade standards, centerline radii standards, and TSP-based right-of-way improvement widths. Dubarko Road will be extended by a continuation of the centerline of the existing section. All proposed streets are designed to intersect at right angles with the intersecting street and comply with the requirements of Section 17.94.50.(H)(5). Section 17.100.180(A) requires that intersections are designed with right angles. Both the extension of Fawn Street and Street B are designed to intersect at right angles to Dubarko Road as required. Additionally, Dubarko Road will intersect Highway 26 at a right angle. All streets in the proposed subdivision have a minimum curve radius as required by Section 17.100.180(B). **All streets shall meet the requirements of the Fire District as noted in Exhibit N.**

66. Street Extensions. Section 17.84.50(E) requires that public streets installed concurrent with development of a site shall be extended through the site to the edge of the adjacent property. The proposed street layout results in one temporary dead-end street (Street B) that will be stubbed to the southern property line of the subject property. To accommodate fire apparatus turnaround the temporary dead-end of Street B shall include turnarounds, subject to the approval of the Fire Marshal. **The applicant shall revise the plan set to detail fire turnaround easements on Lots 5 and 6 as approved by the Sandy Fire District Fire Marshal. The applicant shall also ensure that water supply requirements are in compliance with the adopted Oregon Fire Code.**
67. Blocks. All blocks within the proposed subdivision have sufficient width to provide for two tiers of lots as required in 17.100.120(A). The local streets of Fawn Street/Street A meet the maximum block length standards of 400 feet. The block length from Street A to Highway 26 is 437 feet and the block length from Street B to Highway 26 is 434 feet. The block length requirements in Section 17.100.120 are in conflict with the preferred spacing standards on arterial and collector streets. While local streets are required to be spaced 8-10 streets per mile in accordance with Section 17.100.110(E), the spacing standards for arterial and collector streets are required to be spaced at much greater distances. The distance from Highway 26 to Street B is needed to maintain distance between the Highway and the collector street (Street B). Fawn Street/Street A has to be aligned with Street B to create a safe intersection. Furthermore, the City Transportation Engineer did not recommend alternative spacing for the streets proposed in the Bull Run Terrace subdivision. Therefore, all block lengths meet the Sandy development code provisions and staff does not recommend any changes to street spacing. The spacing from Dubarko Road to the east property line of Lot 6 is 431 feet. Staff finds that providing a pedestrian connection along the east side of the Bull Run Terrace subdivision will be vital for providing future connectivity for the subject area and development to the south of Bull Run Terrace. **The applicant shall install an 8-foot-wide concrete walkway with pedestrian scale lighting through Lot 6 from the sidewalk on Highway 26 to the southern property line of Lot 6. This facility shall be contained within a pedestrian access easement or tract recorded prior to any certificate of occupancy on this lot.**
68. Street Naming. The proposed development includes the need to name Street B. **The street name shall follow the deer related theme in the development to the west and shall be an 'avenue' as it runs north/south. Staff recommends the name Velvet Avenue.**

69. Transit. Section 17.84.40(A) requires that the developer construct adequate public transit facilities. The Transit Master Plan (TMP) identifies new roads consistent with the 2011 Transportation System Plan. Pages 35 and 36 of the TMP describes long term future plans, including a circulator route that serves Dubarko Road, Vista Loop, and Proctor Blvd., as well as the importance of transit service that provides options along Highway 26. Development proposals, such as Bull Run Terrace, with high density residential and village development, should provide transit access along Highway 26 to support useful and high ridership transit. **The applicant shall install a pull-out transit stop on Highway 26 to the east of the intersection of Dubarko Road and Highway 26 to serve eastbound transit services along Highway 26 (within or by Lot 6). The applicant shall also install two concrete bus shelter pads and green benches (Fairweather model PL-3, powder coated RAL6028). The required pad size is 7 feet by 9 feet 6 inches and the amenities should be located adjacent to Lot 3 or 1 and Lot 6.** Engineering specifications are available from the Director of Sandy Area Metro.
70. The Sandy Development Code has a list of other considerations in the right-of-way that were evaluated as follows:
- a. Other Access Considerations. No public alleys, flag lots, or public access lanes are proposed in this development. One residential shared private drive is being proposed by using an easement over Lot 3 to access Lot 4. **The applicant shall modify the plat to include a vehicular easement on Lot 4 as necessary to accommodate maneuvering for vehicles on Lot 3.**
  - b. Lighting. A lighting plan will be coordinated with PGE and the City as part of the construction plan process and prior to installation of any fixtures as required by Section 17.100.210.
  - c. Planter Strips. Planter strips will be provided along all frontages as required in Section 17.100.290. Street trees in accordance with City standards will be provided in these areas. A Street Tree Plan is included in Exhibit C, Sheet C7.
  - d. Mail Facilities. Section 17.84.100 outlines the requirements for mail delivery facilities. **The location and type of mail delivery facilities shall be coordinated with the City Engineer and the Post Office as part of the construction plan process.**

## **PARKING, LOADING, AND ACCESS REQUIREMENTS – Chapter 17.98**

71. Section 17.98.10(M) requires that the developer provide a Residential Parking Analysis Plan. This plan identifying the location of parking for the four R-1 zoned lots and is included in Exhibit C, Sheet C7.
72. Section 17.98.20(A) requires that each duplex is required to provide at least two off-street parking spaces and that multi-family dwelling units are required to provide 1.5 off-street parking spaces for a studio or one-bedroom unit or provide 2.0 off-street parking spaces for a two-bedroom unit or greater. **Compliance with this requirement will be assessed with future building permits or design reviews, whichever is applicable.**
73. Section 17.98.60 has specifications for parking lot design and size of parking spaces. **Compliance with this requirement will be assessed with future building permits or design reviews, whichever is applicable.**
74. Section 17.98.90 requires that all streets proposed will be improved to city standards.
75. Section 17.98.100 has specifications for driveways. The minimum driveway width for a single-family dwelling is 10 feet. The Public Works driveway approach standard detail specifies a maximum of 24 feet wide for a residential driveway approach. Additionally, all driveways will meet vertical clearance, slope, and vision clearance requirements. **Driveway access locations to Lots 5 -7 shall be determined and approved by the City Public Works Director and City Engineer during design review for these lots.**
76. Section 17.98.110 outlines the requirements for vision clearance. **The requirements of Section 17.98.110 shall be considered in placing landscaping in these areas with construction of homes and will be evaluated with a future design review application for the multi-family units.**
77. Section 17.98.130 requires that all parking and vehicular maneuvering areas shall be paved with asphalt or concrete. As required by Section 17.98.130, **all parking, driveway and maneuvering areas shall be constructed of asphalt, concrete, or other approved material.**
78. Section 17.98.200 contains requirements for providing on-street parking spaces for new residential development. Per 17.98.200, one on-street parking space at least 22 feet in length has been identified within 200 feet of each of the 4 lots zoned as R-1 as required. Exhibit C, Sheet C7 shows that 20 on-street parking spaces have been identified in compliance with this standard. No parking courts are proposed by the applicant.

## **UTILITIES – Chapters 17.84 and 17.100**

79. Section 17.84.20(A)(1) requires that all improvements shall be installed concurrently with development or be financially guaranteed. **All lots in the proposed subdivision will be required to install public and franchise utility improvements or financially guarantee these improvements prior to final plat approval.**
80. As required by 17.100.130, eight-foot wide public utility easements will be included along all property lines abutting a public right-of-way. Because access is limited along Dubarko Road, an access easement is also proposed across Lot 3 to provide access to Lot 4. In addition, a 10-foot PUE/sidewalk easement is proposed along the Highway 26 frontage of Lot 7 and the majority of the frontage of Tract A. A conservation easement is also proposed to be platted across the northern portion of Lot 7 to protect retained trees in this area. The revised Preliminary Plat (Exhibit C, Sheet C2) details a 40 foot by 40 foot traffic signal easement.
81. Water. The applicant shall install all water lines and fire hydrants in compliance with the applicable standards in Section 17.100.230, which lists requirements for water facilities. According to the Assistant Public Works Director (Exhibit P), the existing 8-inch diameter water line resides in an easement granted to the City of Sandy recorded as Clackamas County Document No. 2004-110340. **The applicant shall replace the existing waterline with an 8-inch diameter water line at a depth approved by the City Engineer.** There will be no compensation or credits for replacement of the existing water line. This pipe is a standard pressure line and will be used to provide domestic water service to the development. The Assistant Public Works Director also stated that the City's water master plan shows an 18-inch diameter water line in Dubarko Road south of Highway 26. **The applicant shall install an 18-inch water line in Dubarko Road connected to the existing 18-inch water line at the west end of the site and the existing 12-inch line on Highway 26. The applicant shall extend the existing 12-inch water main in Highway 26 east from the proposed intersection of Dubarko Road and Highway 26 to the east boundary of the site.** The applicant will also need to work with the Sandy Fire Marshal (Exhibit M) to verify fire hydrant locations, fire department connections (FDCs), and fire flow. **The applicant shall modify the plan set to detail new fire hydrants ordered in an OSHA safety red finish and having a 4-inch non-threaded metal faced hydrant connection with cap installed on the steamer port (4 ½-inch NST x 4-inch Storz Adaptor).**
82. Sanitary Sewer. This application is not subject to the moratorium on development adopted by Resolution 2022-24 because it was submitted prior to the effective date of the moratorium. The applicant intends to install sanitary sewer lines in compliance with applicable standards in Section 17.100.240. All lots except Lot 7 are designed to gravity drain to the sanitary sewer line in Dubarko Road. Due to grade, Lot 7 is not able to drain to the line in Dubarko Road but is proposed to connect to the existing sanitary sewer line at the north end of the park property. The Assistant Public Works Director stated that sewer connections will be permitted as proposed (Exhibit P).

83. Stormwater. Section 17.100.250(A) details requirements for stormwater detention and treatment. Two public stormwater quality and detention facilities are proposed as Tract B to be located north of Lot 1 and Tract C in the SW corner of the property. However, the preliminary storm drainage and design calculations was done in November of 2019 and did not detail stormwater Tract C. **The applicant shall revise the storm drainage and design calculations with Tract C. All site runoff shall be detained such that post-development runoff does not exceed the predevelopment runoff rate for the 2, 5, 10 and 25 year storm events. Stormwater quality treatment shall be provided for all site drainage per the standards in the City of Portland Stormwater Management Manual (COP SWMM).**
84. Section 17.100.260 states that all subdivisions shall be required to install underground utilities. **The applicant shall install utilities underground with individual service to each lot.**
85. Section 17.84.60 outlines the requirements of public facility extensions. The applicant submitted a utility plan (Exhibit C, Sheet C5) which shows the location of proposed public water, sanitary sewer, and stormwater drainage facilities. Broadband fiber service will be detailed with construction plans. A private sanitary sewer connection is proposed to serve Lot 7. All other utilities will be public.
86. Franchise utilities will be provided to all lots within the proposed subdivision as required in Section 17.84.80. The location of these utilities will be identified on construction plans and installed or guaranteed prior to final plat approval. The applicant does not anticipate extending franchise utilities beyond the site. **All franchise utilities shall be installed underground.** The developer will make all necessary arrangements with franchise utility providers. The developer will install underground conduit for street lighting.
87. Section 17.84.90 outlines requirements for land for public purposes. The majority of public facilities will be located within public rights-of-way including the existing waterline that will be contained within the Dubarko Road right-of-way. Eight-foot wide public utility easements will be provided along all lots adjacent to street rights-of-way for future franchise utility installations. All easements and dedications will be identified on the final plat as required.

## **PARKLAND DEDICATION – Chapter 17.86**

88. The applicant intends to dedicate parkland as outlined in the requirements of Section 17.86. This application was originally submitted on December 30, 2019. The Sandy Development Code in effect at that time is what this reconsideration is being reviewed under. Therefore, it is important to note that modifications that have since occurred to the Sandy Development Code, particularly to Chapter 17.86, Parkland and Open Space, and Chapter 17.100, Land Division, do not apply to this application.
89. 17.86.10(2) contains the calculation requirements for parkland dedication. The formula is acres = proposed units x (persons/unit) x 0.0043 (per person parkland dedication factor).
- For the four duplexes, the acres equal 8 units x 3 persons per unit x 0.0043 = 0.103 acres.
  - For the 192 multifamily units, the acres equal 192 x 2 persons per unit x 0.0043 = 1.651 acres.
  - Combined, this totals 1.754 acres. The applicant proposes to dedicate 1.755 acres of parkland and is thus in compliance with this requirement.
90. Section 17.86.20 has a requirement that all homes must front on the parkland. The applicant is not proposing any houses to the south of the parkland, but instead is proposing a stormwater tract. The applicant is proposing housing to the east of the parkland. are proposing future commercial development. Staff supports the shift of commercial lands from the east side of Dubarko Road to the west side of Dubarko Road if the parkland is accommodated with adequate landscape buffering, pedestrian amenities, and housing facing the parkland. The purpose of having homes front the parkland is to provide eyes on the park and increase safety for park users. Having active storefronts or patios facing the park will provide the same safety measures as homes facing the park. **The applicant shall design Lot 7 to incorporate buildings facing the parkland and usable windows facing the parkland.** An additional consideration should be to connect the sidewalk along Highway 26 to the walkway on the parkland property to accommodate additional pedestrian connectivity. The Revised Master Street and Utility Plan (Exhibit C, Sheet C5) details a meandering walkway in the proposed park. While staff appreciates this preliminary walkway location being identified in the revisions, ultimately the location of the walkway will need to be determined with design of Deer Pointe Park. **The applicant shall install a walkway along the east side of the park or west side of Lot 7 that connects Fawn Street/Street A to the sidewalk on Highway 26 as determined during design of Deer Pointe Park. The design of Lot 7 shall incorporate a landscape buffer that provides visibility between Lot 7 and the parkland but provides a visually attractive separation.**
91. The Parks and Trails Advisory Board provided a letter (Exhibit L) which contains a recommendation for the City Council to accept the parkland as it meets the objectives as listed in the 2022 Parks and Trails Master Plan by providing a true neighborhood park in an underserved area of the community. The Parks and Trails Advisory Board would also like the City to pursue a development agreement with the developer to make initial improvements to the park based on the conceptual plan in the 2022 Parks and Trails Master Plan in-lieu of



paying Systems Development Charges. **The applicant shall work with the City of Sandy to create a mutually agreed upon engineer estimate for the Deer Pointe parkland improvements. The final engineer's estimate shall be used as the basis for an agreement to calculate Park SDC credits for the applicant. If the applicant and City agree to the applicant/developer completing parkland improvements, the park improvements shall be completed with approval from the Parks and Trails Advisory Board and prior to final plat approval or as otherwise established in a development agreement.**

92. Section 17.86.30 lists the requirements of the developer prior to acceptance of required parkland dedications. **The applicant shall clear, grade, and seed the proposed parkland as specified by the City in the construction plans.** The parkland grading could impact proposed tree retention. **The applicant shall submit revised plans detailing how the parkland grading will minimize impacts to tree retention. If tree retention is negatively impacted the applicant shall preserve additional trees.** As referenced in Finding 1, above, and per Section 17.32.00 of the Development Code at the time of the original application submittal (December 2019), only publicly owned land can be zoned POS. **The applicant shall dedicate the proposed 1.755 acres of parkland to the City through a dedication deed process, separate from the subdivision plat process. The applicant shall also provide a Phase I Environmental Assessment prior to dedication. This dedication shall occur within 180 days after approval of Ordinance No. 2022-27.**
93. The applicant proposes including two utility easements within the proposed parkland dedication. However, these easements are unavoidable given the location of existing utilities. **The applicant shall define these utilities on the tentative plat.**

## **URBAN FORESTRY – 17.102**

94. Section 17.102.20 contains information on the applicability of Urban Forestry regulations. Two Arborist Reports were included with the first iteration of Bull Run Terrace (Exhibit F) from Teragan and Associates. The applicant has also included an existing conditions and tree retention plan, and tree tables (Exhibit C, Sheet C3 and C4). The arborist inventoried all trees eleven inches and greater DBH for the portion of the property proposed to satisfy tree retention requirements as required in 17.102.50.
95. The property contains 15.91 acres requiring retention of 48 trees, 11 inches and greater DBH ( $15.91 \times 3 = 47.73$ ). The applicant is proposing to retain 81 trees, however, only 62 of the trees are both 11-inches or greater DBH and in good health according to the Arborist Reports (Exhibit F). The majority of the trees are conifers, with the majority of those being Doug fir. Five of the 81 trees marked for retention have been identified as in poor or very poor condition, but they are located in a grouping of healthy trees which makes removal difficult. The proposed retention is as follows:
- a. Lot 7: 44 trees at 11-inches DBH or greater and in good condition, 4 trees at 11-inches DBH or greater and in fair condition, 5 trees at less than 11-inches DBH and in good or fair condition, 4 trees in poor or very poor condition
  - b. Tract A (parkland): 15 trees at 11-inches DBH or greater and in good condition, 3 trees at 11-inches DBH or greater and in fair condition, 1 tree in poor condition
  - c. Lots 2 and 4: 3 trees at 11-inches DBH or greater and in good condition, 1 tree at 11-inches DBH or greater and in fair condition, 1 tree at less than 11-inches DBH and in good condition
96. The Arborist Reports (Exhibit F) provide recommendations for protection of retained trees including identification of the recommended tree protection zone for these trees. The requirements of 17.102.50(B) will be complied with prior to any grading or tree removal on the site. The Planning Commission provided a code interpretation that retention trees only have to be protected consistent with Chapter 17.102, and not consistent with the distance requirements in Chapter 17.92 for residential subdivisions. That said, staff finds that to adequately protect the retention trees, the protection area shall be consistent with Chapter 17.92 and the recommendations of the arborist. **The applicant shall install tree protection fencing at the critical root zone of 1 foot per 1-inch DBH to protect the 53 retention trees in the conservation easement on Lot 7, the 18 retention trees on the parkland, and the 5 trees included on Lots 2 and 4, consistent with the arborist reports from Teragan and Associates. Up to 25 percent of the area between the minimum root protection zone of 0.5 feet per 1-inch DBH and the critical root zone of 1 foot per 1 inch DBH may be able to be impacted without compromising the tree, provided the work is monitored by a qualified arborist. The applicant shall retain an arborist on site to monitor any construction activity within the critical root protection zones of the retention trees or trees on adjacent properties that have critical root protection zones that would be impacted by development activity on the subject property.**

97. **The tree protection fencing shall be 6-foot-tall chain link or no-jump horse fencing and the applicant shall affix a laminated sign (minimum 8.5 inches by 11 inches) every 50 feet to the tree protection fencing indicating that the area behind the fence is a tree retention area and that the fence shall not be removed or relocated. No construction activity shall occur within the tree protection zone, including, but not limited to, dumping or storage of materials such as building supplies, soil, waste items, equipment, or parked vehicles. The applicant shall request an inspection of tree protection measures prior to any tree removal, grading, or other construction activity on the site.**
98. The Tree Preservation Plan (Exhibit C, Sheet C3) details a number of trees being removed right next to the trees proposed for retention. **The trees proposed for removal that are adjacent to retention trees shall be removed in a way that does not harm or damage adjacent trees.** The applicant submitted a Tree Removal Plan from Teragan and Associates, Inc. The Tree Removal Plan identifies tree removal options, including directional felling, piece removal, and crane removal. The arborist also identifies options for stumps, including retention or careful surface grinding. **Tree removal and/or snag creation shall be completed without the use of heavy equipment in the tree protection zone; trunks and branches of adjacent trees shall not be contacted during tree removal or snag creation. The applicant shall submit a post-construction report prepared by the project arborist or other TRAQ qualified arborist to ensure none of the retention trees were damaged during construction.**
99. **To ensure protection of the required retention trees, the applicant shall record a tree protection covenant for all 76 trees in good or fair retention as defined in Exhibit F, specifying protection of trees on the subject property and limiting removal without submittal of an Arborist's Report and City approval. The 5 trees in poor or very poor condition shall not be included in the covenant. The plat shall also include a conservation easement on Lot 7.**

## **LANDSCAPING AND SCREENING – Chapter 17.92**

100. Section 17.92.10 contains general provisions for landscaping. As required by Section 17.92.10 (C), trees over 25-inches circumference measured at a height of 4.5 feet above grade are considered significant and should be preserved to the greatest extent practicable and integrated into the design of a development. A 25-inch circumference tree measured at 4.5 feet above grade has roughly an eight-inch diameter at breast height (DBH). Tree protection fencing and tree retention will be discussed in more detail under Chapter 17.102 in this document. **Per Section 17.92.10(L), all landscaping shall be continually maintained, including necessary watering, weeding, pruning, and replacing.**
101. Section 17.92.20 lists the requirements for minimum landscaping improvements. **The details of this section will be considered with submittal of all design review applications for the proposed multi-family units and commercial property.**
102. Section 17.92.30 specifies that street trees shall be chosen from the City-approved list. As required by Section 17.92.30, the development of the subdivision requires medium trees spaced 30 feet on center along all street frontages. The current street tree plan (Exhibit C, Sheet C7) details trees at an appropriate spacing per the development code, except there are two trees missing to the east of Lot 7 along Dubarko Road. **The applicant shall revise the street tree plan (Exhibit C, Sheet C7) to detail two additional street trees to the east of Lot 7.** The trees the applicant has identified are American hophornbeam, American linden, Greenspire linden, and Green Vase zelkova. These four street tree species are on the approved street tree list.
103. The applicant is proposing to mass grade the buildable portion of the site. This will remove top soil and heavily compact the soil. In order to maximize the success of the required street trees, **the applicant shall aerate the planter strips to a depth of 3 feet prior to planting street trees. The applicant shall submit documentation from the project landscaper stating that the soil has been amended and aerated prior to planting the street trees at the individual construction phase for each lot. If the plans change in a way that affects the number of street trees (e.g., driveway locations), the applicant shall submit an updated street tree plan for staff review and approval. Street trees are required to be a minimum caliper of 1.5-inches measured 6 inches from grade and shall be planted per the City of Sandy standard planting detail. Trees shall be planted, staked, and the planter strip shall be graded and backfilled as necessary, and bark mulch, vegetation, or other approved material installed prior to occupancy. Tree ties shall be loosely tied twine or other soft material and shall be removed after one growing season (or a maximum of 1 year).**
104. Section 17.92.40 requires that all landscaping shall be irrigated, either with a manual or automatic system. **As required by Section 17.92.140, the developer and lot owners shall be required to maintain all vegetation planted in the development for two (2) years from the date of completion, and shall replace any dead or dying plants during that period.**

105. Section 17.92.50 specifies the types and sizes of plant materials that are required when planting new landscaping. Street trees are typically required to be a minimum caliper of 1.5-inches measured 6 inches from grade. **All street trees shall be a minimum of 1.5-inches in caliper measured 6 inches above the ground and shall be planted per the City of Sandy standard planting detail. The applicant shall submit proposed trees specifics to City staff for review and approval concurrent with construction plan review.**
106. Section 17.92.60 requires revegetation in all areas that are not landscaped or remain as natural areas. The applicant did not submit any plans for re-vegetation of areas damaged through grading/construction, although most of the areas affected by grading will be improved. **Exposed soils shall be covered by mulch, sheeting, temporary seeding or other suitable material following grading or construction to maintain erosion control for a period of two (2) years following the date of recording of the final plat associated with those improvements.**
107. Section 17.92.90 has details on screening of unsightly views or visual conflicts. While the proposed lots are not unsightly, they are a big difference from the existing view of the natural landscape. This contrast was identified at the Planning Commission hearing on August 24, 2020 and the applicant was asked to look at some additional screening measures to protect existing trees or add additional landscaping. The applicant took the comments seriously and proposed some additional landscaping along the common property line with the Deer Pointe subdivision (Exhibit I). The applicant is proposing to retain five conifers (Exhibit C, Sheet C3), and to plant some maples, incense cedars, katsura, and Silver Queen Port Orford cedars. **The applicant shall retain the additional five trees on Lots 2 and 4 (Tree Nos. 13439, 13440, 13441, 13421, and 13423) and shall plant maples, incense cedars, katsura, Excelsa Western red cedars, and Silver Queen Port Orford cedars or other trees as approved by staff per the Screening Concept Plan (Exhibit I) along Lots 1, 2, 4, and Tracts B and C. Deciduous trees shall be at least 1.5 inches caliper at planting and the cedars shall be at least 6 to 8 feet in height at planting.**
108. Section 17.92.130 contains standards for a performance bond. The applicant has the option to defer the installation of street trees and/or landscaping for weather-related reasons. Staff recommends the applicant utilize this option rather than install trees and landscaping during the dry summer months. Consistent with the warranty period in Section 17.92.140, staff recommends a two-year maintenance and warranty period for street trees based on the standard establishment period of a tree. **If the applicant chooses to postpone street tree and/or landscaping installation, the applicant shall post a performance bond equal to 120 percent of the cost of the street trees/landscaping, assuring installation within 6 months. The cost of the street trees shall be based on the average of three estimates from three landscaping contractors; the estimates shall include as separate items all materials, labor, and other costs of the required action, including a two-year maintenance and warranty period.**

**HILLSIDE DEVELOPMENT, EROSION CONTROL, NUISANCES, AND ACCESSORY DEVELOPMENT – Chapters 17.56, 15.44, 15.30, and 17.74**

109. In accordance with the requirements of Chapter 17.56, Hillside Development, and Chapter 15.44, Erosion Control, the applicant submitted a Geotechnical and Slope Stability Investigation (Exhibit G) showing that the subject site contains a small area of slope exceeding 25 percent. **All recommendations in Section 6 of the submitted Geotechnical and Slope Stability Investigation (Exhibit G) shall be conditions for development.** The geotechnical report (2005) submitted with the application is nearly fifteen years old. It does not appear that there have been physical changes to the existing surface of the site in that time span that would impact the findings and recommendations in the geotechnical report but there may have been changes in industry standards or practices since then. As a result, the Applicant shall submit a letter from the original geotechnical engineering firm indicating that the findings and recommendations from the 2005 report remain substantially unchanged or modifying the original findings and recommendations as necessary. **The applicant shall submit a letter from the original geotechnical engineering firm indicating that the findings and recommendations from the 2005 report remain substantially unchanged or modifying the original findings and recommendations as necessary.**
110. **All the work within the public right-of-way and within the paved area should comply with American Public Works Association (APWA) and City requirements as amended. The applicant shall submit a grading and erosion control permit and request an inspection of installed devices prior to any additional grading onsite.** The grading and erosion control plan shall include a re-vegetation plan for all areas disturbed during construction of the subdivision. **All erosion control and grading shall comply with Section 15.44 of the Municipal Code. The proposed subdivision is greater than one acre which typically requires approval of a DEQ 1200-C Permit. The applicant shall submit confirmation from DEQ if a 1200-C Permit will not be required.**
111. Section 15.44.50 contains requirements for maintenance of a site including re-vegetation of all graded areas. **The applicant's Erosion Control Plan shall be designed in accordance with the standards of Section 15.44.50.** Grass seeding shall be completed as required by Section 17.100.300. The submitted preliminary Grading and Erosion Control Plan (Exhibit C, Sheet C9) provides additional details to address erosion control concerns. A separate Grading and Erosion Control Permit will be required prior to any site grading.
112. Recent development has sparked unintended rodent issues in surrounding neighborhoods. Prior to development of the site, **the applicant shall have a licensed pest control agent evaluate the site to determine if pest eradication, particularly rats, is needed.**
113. Section 17.74.40 specifies, among other things, retaining wall and fence height in front, side and rear yards. Retaining walls in residential zones shall not exceed 4 feet in height in the front yard, 8 feet in height in rear and side yards abutting other lots, and 6 feet in side and rear yards abutting a street. The submitted plan set does not define any retaining walls with the exception of a retaining wall for the stormwater facility in Tract B. **If retaining walls**

**are proposed, the applicant shall submit additional details/confirmation on the proposed retaining walls, including heights meeting code requirements and an architectural finish, for staff review and approval.**

114. Chapter 15.30 contains the City of Sandy's Dark Sky Ordinance. The applicant will need to install street lights along all street frontages wherever street lighting is determined necessary. **The locations of these fixtures shall be reviewed in detail with construction plans. Full cut-off lighting shall be required. Lights shall not exceed 4,125 Kelvins or 591 nanometers in order to minimize negative impacts on wildlife and human health.**

## RECOMMENDATION

The Development Services Director recommends the City Council **approve** the Type IV comprehensive plan amendment, zone change, subdivision, and specific area plan overlay with tree removal associated with the proposed development subject to the conditions of approval below. This proposal meets the applicable approval criteria in the Sandy Municipal Code and achieves some major goals consistent with long range planning objectives in the City of Sandy, including but not limited to the following:

- 1) Extending Dubarko Road to intersect with Highway 26 consistent with the Transportation System Plan that was adopted in 2011;
- 2) Installing Street B to the south consistent with the Transportation System Plan that was adopted in 2011;
- 3) Paying a proportional share fee of \$268,345 towards construction of future capacity improvements at the intersection of Highway 211 and Dubarko Road at a cost of \$15,785 per PM peak hour trip;
- 4) Extending Fawn Street to the east;
- 5) Expanding the Deer Pointe Park consistent with the 1997 Parks Master Plan, goals of the Parks and Trails Advisory Board, and Figure 11 of the 2022 Parks and Trails Master Plan;
- 6) Fulfilling housing needs as defined in the Urbanization Study that was adopted in 2015; and,
- 7) Providing a mixture of housing types consistent with the goals of the 2040 Plan that was created in 1997.



## **RECOMMENDED CONDITIONS OF APPROVAL**

- A. The applicant shall assist the City of Sandy in applying for a grant of access or other necessary approval from ODOT for access to Highway 26 at Dubarko Road.**
- B. The applicant shall dedicate the proposed 1.755 acres of parkland to the City through a dedication deed process, separate from the subdivision plat process. Prior to dedication, the applicant shall provide a Phase I Environmental Assessment for Tract A. This dedication shall occur within 180 days after approval of Ordinance No. 2022-27.**
- C. Prior to earthwork, grading, or excavation, the applicant shall complete the following and receive necessary approvals as described:**
1. Apply for a grading and erosion control permit in conformance with Chapter 15.44. The grading and erosion control plan shall include a re-vegetation plan for all areas disturbed during construction of the subdivision. (*Submit 2 copies to Planning/Building Department.*)
  2. Submit proof of receipt of a Department of Environmental Quality 1200-C permit or submit confirmation from DEQ if a 1200-C Permit will not be required. (*Submit to Planning/Building Department.*)
  3. Submit a letter from the original geotechnical engineering firm indicating that the findings and recommendations from the 2005 report remain substantially unchanged or modify the original findings and recommendations as necessary.
  4. Submit proof that a licensed pest control agent evaluated the site to determine if pest eradication, particularly rats, is needed.
  5. Submit revised plans detailing how the traffic signal easement will impact the tree retention area and how the parkland grading will impact tree retention. If tree retention is negatively impacted the applicant shall preserve additional trees.
  6. The applicant shall install tree protection fencing at the critical root zone of 1 foot per 1-inch DBH to protect the 53 retention trees in the conservation easement on Lot 7, the 18 retention trees on the parkland, and the 5 trees included on Lots 2 and 4, consistent with the arborist reports from Teragan and Associates. The following shall be followed:
    - a. Up to 25 percent of the area between the minimum root protection zone of 0.5 feet per 1-inch DBH and the critical root zone of 1 foot per 1-inch DBH may be able to be impacted without compromising the tree, provided the work is monitored by a qualified arborist. The applicant shall retain an arborist on site to monitor any construction activity within the critical root protection zones of the retention trees or trees on adjacent properties that have critical root protection zones that would be impacted by development activity on the subject property.

- b. The tree protection fencing shall be 6-foot-tall chain link or no-jump horse fencing and the applicant shall affix a laminated sign (minimum 8.5 inches by 11 inches) every 50 feet to the tree protection fencing indicating that the area behind the fence is a tree retention area and that the fence shall not be removed or relocated.
  - c. No construction activity shall occur within the tree protection zone, including, but not limited to, dumping or storage of materials such as building supplies, soil, waste items, equipment, or parked vehicles.
  - d. The applicant shall retain an arborist on site to monitor any construction activity within the critical root protection zones of the retention trees or trees on adjacent properties that have critical root protection zones that would be impacted by development activity on the subject property. Tree removal and/or snag creation shall be completed without the use of heavy equipment in the tree protection zone; trunks and branches of adjacent trees shall not be contacted during tree removal or snag creation.
7. Request an inspection of erosion control measures and tree protection measures as specified in Section 17.102.50 C. prior to construction activities or grading.

**D. Prior to all construction activities, except grading and/or excavation, the applicant shall submit the following additional information as part of construction plans and complete items during construction as identified below: (*Submit to the Assistant Public Works Director unless otherwise noted*)**

1. Submit estimated costs of widening Dubarko Road to City staff for review and approval by the City Engineer. The City and the Applicant shall enter into an agreement defining the eligible improvements and estimated costs prior to plat approval. SDC credits shall be based on final audited costs.
2. Work with the City of Sandy to create a mutually agreed upon engineer estimate for the Deer Pointe parkland improvements. The final Engineer's estimate shall be used as the basis for an agreement to calculate Park SDC credits for the applicant. If the applicant and City agree to the applicant/developer completing parkland improvements, the park improvements shall be completed with approval from the Parks and Trails Advisory Board.
3. Submit written confirmation from the Sandy Fire District regarding the number and location of required fire hydrants. Submit a revised Residential Parking Access Plan if required fire hydrants effect on-street parking spaces.
4. Submit revised plans including the following:
  - a. Detail a revised cross-section for the portion of Dubarko Road between the existing terminus and Street A.
  - b. Detail all sidewalks on Dubarko Road at least 6 feet in width.
  - c. Detail two 5-foot-wide bike lanes and two 13-foot-wide travel lanes for Street B.

- d. Detail a pull-out transit stop on Highway 26 to the east of the intersection of Dubarko Road and Highway 26 to serve eastbound transit services along Highway 26 (within or by Lot 6).
  - e. Detail the locations for green street swales as determined by the City Engineer in accordance with topography. If green street swales are incorporated into the design, the plan set shall be modified to detail additional right-of-way or easements to accommodate the swales, if needed.
  - f. Detail a walkway along the east side of the park or west side of Lot 7 that connects Fawn Street/Street A to the sidewalk on Highway 26 as determined during design of Deer Pointe Park. If Deer Pointe Park is not designed prior to construction plan submission the applicant shall revise the construction plans with the walkway modifications once the Deer Pointe Park design is complete.
  - g. Detail fire turnaround easements on Lots 5 and 6 as approved by the Sandy Fire District Fire Marshal.
  - h. Detail new fire hydrants in an OSHA safety red finish and having a 4-inch non-threaded metal faced hydrant connection with cap installed on the steamer port (4 ½-inch NST x 4-inch Storz Adaptor).
  - i. Detail two additional street trees to the east of Lot 7.
  - j. Detail the locations of streetlights on all streets being improved within and adjacent to the subdivision. Streetlights shall be full cut-off, shall not exceed 4,150 Kelvins, and shall conform to the Dark Sky standards of Chapter 15.30.
  - k. Detail proposed retaining walls, including heights meeting code requirements and an architectural finish.
  - l. Detail a revised utility plan to include broadband fiber locations as detailed by the SandyNet Manager.
5. Submit a detailed drainage report meeting the water quality and water quantity criteria as stated in the City of Sandy Development Code (SDC) 13.18 Standards and the most current City of Portland Stormwater Management Manual (SWMM) Standards that were adopted by reference into the Sandy Development Code. The drainage report and design calculations shall include Tract C.
  6. Submit a mail delivery plan, featuring grouped lockable mail facilities, to the City and the USPS for review. Mail delivery facilities shall be provided by the applicant in conformance with 17.84.100 and the standards of the USPS.
  7. Call PGE Service Coordination at 503-323-6700 when the developer is ready to start the project.

**E. Prior to Final Plat approval, the applicant shall complete the following tasks or provide assurance for their future completion:**

1. Submit two paper copies of a Final Plat and associated fee.

2. Pay a proportional share fee of \$268,345 towards construction of future capacity improvements at the intersection of Highway 211 and Dubarko Road at a cost of \$15,785 per PM peak hour trip.
3. The street name for Street B shall follow the deer related theme in the development to the west and shall be an 'avenue' as it runs north/south. Staff recommends the name Velvet Avenue.
4. Modify the plat to include a vehicular easement on Lot 4 as necessary to accommodate maneuvering for vehicles on Lot 3.
5. Pay plan review, inspection and permit fees as determined by the Public Works Director.
6. Pay addressing fees at the existing rate per the fee schedule.
7. Submit a post-construction report prepared by the project arborist or other TRAQ qualified arborist to ensure none of the retention trees were damaged during construction.
8. Install all public and private improvements consistent with this decision and the ODOT improvements consistent with the grant of access, the approved construction plans, and the Sandy Municipal Code, including, but not limited to the following:
  - a. A walkway along the east side of the park or west side of Lot 7 that connects Fawn Street/Street A to the sidewalk on Highway 26;
  - b. A pull-out transit stop on Highway 26 to the east of the intersection of Dubarko Road and Highway 26 to serve eastbound transit services along Highway 26 (within or by Lot 6);
  - c. Two concrete bus shelter pads and green benches (Fairweather model PL-3, powder coated RAL6028). The required pad size is 7 feet by 9 feet 6 inches and the amenities should be located adjacent to Lot 3 or 1 and Lot 5. Engineering specifications are available from the Director of Sandy Area Metro.
  - d. Replace the existing waterline with an 8-inch diameter water line at a depth approved by the City Engineer.
  - e. Install an 18-inch water line in Dubarko Road connected to the existing 18-inch water line at the west end of the site and the existing 12-inch line in Highway 26.
  - f. Extend the existing 12-inch water main in Highway 26 east from the proposed intersection of Dubarko Road and Highway 26 to the east boundary of the site.
9. Clear, grade, and seed the proposed parkland as specified by the City in the construction plans. If the applicant and City agree to the applicant/developer completing parkland improvements, the park improvements shall be completed prior to final plat approval or as otherwise established in a development agreement.
10. Retain the additional five trees on Lots 2 and 4 (Tree Nos. 13439, 13440, 13441, 13421, and 13423) and plant maples, incense cedars, katsura, Excelsa Western red cedars, and Silver Queen Port Orford cedars or other trees as approved by staff per the Screening

Concept Plan (Exhibit I) along Lots 1, 2, 4, and Tracts B and C. Deciduous trees shall be at least 1.5 inches caliper at planting and the cedars shall be at least 6 to 8 feet in height at planting.

11. Record a tree protection covenant for all 76 trees in good or fair condition as defined in Exhibit F, specifying protection of trees on the subject property and limiting removal without submittal of an Arborist's Report and City approval. The 5 trees in poor or very poor condition shall not be included in the covenant. The plat shall also include a conservation easement on Lot 7.
12. Submit a true and exact reproducible copy (Mylar) of the Final Plat for final review and signature.

**F. Conditions related to future development of the lots:**

1. Development on Lots 1 through 4 shall meet the standards of the R-1 zoning district and all other development standards in the Sandy Municipal Code. Future development on Lots 1-4 shall adhere to the garage standards contained in Section 17.54.110(D). Development of these four lots will be reviewed by means of a building permit.
2. Development on Lots 5, 6, and 7 shall meet the standards of the underlying zoning district and all other development standards in the Sandy Municipal Code. Development of these three lots will be reviewed by means of a design review.
3. Design review approval for Lot 7 shall incorporate buildings facing the parkland and usable windows facing the parkland. This design review approval for Lot 7 shall also incorporate a landscape buffer that provides visibility between Lot 7 and the parkland but provides a visually attractive separation.
4. Driveway access locations to Lots 5 -7 shall be determined and approved by the City Public Works Director and City Engineer during design review for these lots. The land use application for Lot 7 shall include proposed driveway designs to discourage commercial patrons existing Lot 7 to Street A from entering the Deer Pointe Subdivision on Street A. The designs shall be reviewed and approved by the City Engineer and Public Works Director.
5. The dwellings on all lots abutting a transit street shall be designed to meet all of the requirements as specified in Chapter 17.82 and will be assessed with future building permits or design reviews, whichever is applicable.
6. The orientation of the future multi-family units that have frontage on both Highway 26 and Dubarko Road, or Street B and Dubarko Road will be determined in a future design review process.
7. Aerate the planter strips to a depth of 3 feet prior to planting street trees. The applicant shall submit documentation from the project landscaper stating that the soil has been

amended and aerated prior to planting the street trees at the individual construction phase for each lot.

8. Install an 8-foot-wide concrete walkway with pedestrian scale lighting through Lot 6 from the sidewalk on Highway 26 to the southern property line of Lot 6. This facility shall be contained within a pedestrian access easement or tract recorded prior to any certificate of occupancy on this lot.

**G. General Conditions of Approval:**

1. The Final Plat shall be recorded as detailed in Section 17.100.60 (I). The final plat shall be delivered to the Director for approval within one year following approval of the tentative plat and shall incorporate any modification or condition required by approval of the tentative plat. The Director may, upon written request, grant an extension of the tentative plat approval for up to one additional year.
2. The comprehensive plan map and zoning map modifications go into effect 30 days from the date of the ordinance in accordance with Section 17.26.90.
3. The subject property is limited to 200 dwelling units, as follows:
  - a. Low-Density Residential (R-1) Cap: 8 dwelling units
  - b. Medium-Density Residential (R-2) Cap: 17 dwelling units
  - c. High-Density Residential (R-3) Cap: 127 dwelling units
  - d. Village Commercial (C-3) Cap: 48 dwelling units
4. The ODOT grant of access shall be approved and the improvements completed per the grant of access prior to issuance of certificates of occupancy for any structures on the subject property. The intersection of Highway 26 and Dubarko Road shall be constructed as a full-access intersection in compliance with the TSP.
5. Public plans are subject to a separate review and approval process. Preliminary Plat approval does not connote approval of public improvement construction plans, which will be reviewed and approved separately upon submittal of public improvement construction plans.
6. All on-site earthwork activities including any retaining wall construction should follow the requirements of the City of Sandy Development Code and the current edition of the Oregon Structural Specialty Code (OSSC).
7. The subject property shall be subject to a trip cap of 340 PM net new peak hour trips. Each application for development of a lot within the subject property shall include a report from a licensed traffic engineer stating the number of net new PM peak hour trips expected to be generated by the proposed development, and this number of trips will be deducted from the total trip cap of 340 net new PM peak hour trips upon approval of the application. No development application will be approved that would cause the total net new PM peak hour trips to exceed said cap unless the applicant agrees to pay additional

proportionate share fees for the intersection of Highway 211 and Dubarko Road, in an amount determined by the City based on the number of trips in excess of the cap.

8. If entry signs are desired, the applicant shall submit a detailed plan showing the location of such signage and a sign permit application.
9. All parking, driveway and maneuvering areas shall be constructed of asphalt, concrete, or other approved material.
10. All work within the public right-of-way and within the paved area shall comply with the American Public Works Association (APWA) and City requirements as amended and should be constructed to the City's structural streets standards.
11. All on-site earthwork activities including any retaining wall construction shall follow the current requirements of the current edition of the Oregon Structural Specialty Code (OSSC).
12. All recommendations in Section 6 of the submitted Geotechnical and Slope Stability Investigation (Exhibit I) shall be conditions for development.
13. All utilities shall be installed underground and in conformance with City standards. The applicant shall install utilities underground with individual service to each lot.
14. The applicant shall be responsible for the installation of all improvements detailed in Section 17.100.310, including fiber facilities. SandyNet requires the developer to work with the City to ensure that broadband infrastructure meets the design standards and adopted procedures as described in Section 17.84.70.
15. All public utility installations shall conform to the City's facilities master plans.
16. As required by Section 17.98.130, all parking, driveway and maneuvering areas shall be constructed of asphalt, concrete, or other approved material.
17. Water line sizes shall be based upon the Water Facilities Master Plan and shall be sized to accommodate domestic fire protection flows on the site.
18. All new public sanitary sewer and waterlines shall be a minimum of 8-inches in diameter.
19. All stormwater drains shall be a minimum of 12-inches in diameter and shall be extended to the plat boundaries where practical to provide future connections to adjoining properties.
20. All site runoff shall be detained such that post-development runoff does not exceed the predevelopment runoff rate for the 2, 5, 10 and 25 year storm events. Stormwater quality treatment shall be provided for all site drainage per the standards in the City of Portland Stormwater Management Manual (COP SWMM).

21. If the applicant chooses to postpone street tree and/or landscaping installation, the applicant shall post a performance bond equal to 120 percent of the cost of the street trees/landscaping, assuring installation within 6 months. The cost of the street trees shall be based on the average of three estimates from three landscaping contractors; the estimates shall include as separate items all materials, labor, and other costs of the required action, including a two-year maintenance and warranty period.
22. If the plans change in a way that affects the number of street trees (e.g., driveway locations), the applicant shall submit an updated street tree plan for staff review and approval. Street trees are required to be a minimum caliper of 1.5-inches measured 6 inches from grade and shall be planted per the City of Sandy standard planting detail. Trees shall be planted, staked, and the planter strip shall be graded and backfilled as necessary, and bark mulch, vegetation, or other approved material installed prior to occupancy. Tree ties shall be loosely tied twine or other soft material and shall be removed after one growing season (or a maximum of 1 year).
23. As required by Section 17.92.10(L), all landscaping shall be continually maintained, including necessary watering, weeding, pruning, and replacing. As required by Section 17.92.140, the developer shall maintain all vegetation planted in the development for two (2) years from the date of completion, and shall replace any dead or dying plants during that period.
24. Exposed soils shall be covered by mulch, sheeting, temporary seeding or other suitable material following grading or construction to maintain erosion control for a period of two (2) years following the date of recording of the final plat associated with those improvements.
25. Successors-in-interest of the applicant shall comply with site development requirements prior to the issuance of building permits.
26. All improvements listed in Section 17.100.300 shall be provided by the applicant including drainage facilities, monumentation, mail facilities, sanitary sewers, storm sewer, sidewalks, street lights, street signs, street trees, streets, traffic signs, underground communication lines including telephone and cable, underground power lines, water lines and fire hydrants.
27. Comply with all standards required by Section 17.84 of the Sandy Development Code. Public and franchise improvements shall be installed or financially guaranteed in accordance with Chapter 17 of the Sandy Municipal Code prior to temporary or final occupancy of structures. Water lines and fire hydrants shall be installed in accordance with City standards. All sanitary sewer lines shall be installed in accordance with City standards.
28. Comply with all other conditions or regulations imposed by the Sandy Fire District (Exhibit N) or state and federal agencies. Compliance is made a part of this approval and



any violations of these conditions and/or regulations may result in the review of this approval and/or revocation of approval.

## EXHIBIT A

September 29, 2022

Mayor Pulliam and City Council  
City of Sandy  
39250 Pioneer Blvd.  
Sandy, OR. 97055

Dear Mayor and Councilors,

On behalf of Roll Tide Properties Corp., I would like to thank the Council for reconsidering the revised Bull Run Terrace Subdivision application. As you review the new plan, we believe you will find it far superior to the previously presented plans and warrants your approval. As detailed in the application submittal package, the revised plan differs from the previous Bull Run plan in that the area devoted to parkland dedication has been increased in size by 0.325 acres to 1.755 acres. In this plan the applicant is also proposing to cap the number dwelling units for the entire subdivision at 200 units. In addition to these changes, the applicant also proposes constructing Dubarko Road through the property and completing Highway 26 frontage improvements.

As you are aware City Planning staff supported the original Bull Run Terrace application and the application was recommended for approval by unanimous vote of the Planning Commission in October 2020. The City Council then reviewed the application and adopted the first reading of an Ordinance approving the application. It was during the Council's consideration of the second reading of this Ordinance that confusion over the proposed unit count on the site resulted in Councilors changing their vote and the application was then denied. The current plan is the same as the original plan except a unit cap and a larger parkland dedication have been proposed.

It is our understanding during your discussion to reconsider the revised plan, the Council requested the applicant provide additional information regarding the validity of the existing zoning unit count calculations and to also prepare a conceptual plan showing how the property could be developed. Both items are discussed below.

### Existing Zoning

My August 31, 2022, memo prepared for your reconsideration discussion compared the maximum dwelling unit count for the Revised Bull Run Terrace plan, to the Original Bull Run Terrace plan, and the Deer Meadows plan. In addition, the maximum unit count under the existing zoning designation was included. The calculation used for the existing zoning scenario followed the typical methodology used when conducting buildable lands inventories. In this scenario the net area of each zoning designation was derived after deducting assumed factors for roads, tree protection and parkland dedication. Based on these calculations, 226 dwelling units is the maximum unit count expected under existing zoning.

To provide additional certainty regarding the validity of these numbers, I reviewed the Vista Loop South Subdivision approved in 2006 on this site. This approval expired in 2008 but was later reinstated in 2013. Although the development never received final plat approval and was never built due to the high cost of improvements, all the zoning designations on the property as they exist today are the result of this approval.

The table to the right compares the maximum unit count calculated for existing zoning to the lot and unit count approved with the Vista Loop South subdivision application. As shown on this table, the maximum unit count under existing zoning, after factoring in the middle housing provisions of HB 2001, results in just two fewer units than the number of units approved with the Vista Loop Subdivision (226 to 228 units). I hope this additional information provides the Council with the information you were looking for regarding the accuracy of these calculations.

Zoning	Existing Zoning with Assumptions		Vista Loop as Approved	
	Density Units	Max Units	Approved Lots	Max Units
R-1	28	56	36	72
R-2	59	118	52	104
R-3	0	0	0	0
C-3	52	52	1	52
<b>Total Dwelling Units</b>	<b>139</b>	<b>226</b>	<b>89</b>	<b>228</b>

1. The C-3 zone unit count is based on 20 units/net acre maximum. The actual number of units on this lot will be determined with a future design review application.

Conceptual Plan

As you requested, a Conceptual Plan is included with the revised application package. This plan is intended to show an initial layout for developing the property with the proposed lot changes. The R-1 zoned lots (Lots 1 - 4) on this plan are likely to be constructed with duplexes, the R-2 and R-3 lots with multi-family dwellings, and the C-3 zoned lot with a combination of multi-family dwellings and commercial development or commercial development only. The table below shows the proposed conceptual unit count for each zoning designation. As is proposed with the unit cap, the maximum unit count totals 200 dwellings. It is important to note that the layout shown on this sheet is only conceptual at this time and is likely to change following completion of a detailed grading analysis and submittal of a design review application at a future date.

Zoning District	Capped Units	Proposed Uses
R-1	8	4 Duplexes
R-2	17	Multi-family
R-3	127	Multi-family
C-3	48	Combination res./com. or commercial only
<b>Total Dwelling Units</b>	<b>200</b>	

On behalf of Roll Tide Properties Corp., I would like to thank the Council again for reconsidering the revised Bull Run Terrace plan. I hope the information in this letter and the Conceptual Plan have addressed your questions and concerns. We look forward to reviewing the application with you in more detail in the near future. Please do not hesitate to let us know if you have any further questions or need additional information.

Best Regards,

*Tracy A. Brown*

Tracy Brown  
Tracy Brown Planning Consultants, LLC

# EXHIBIT B

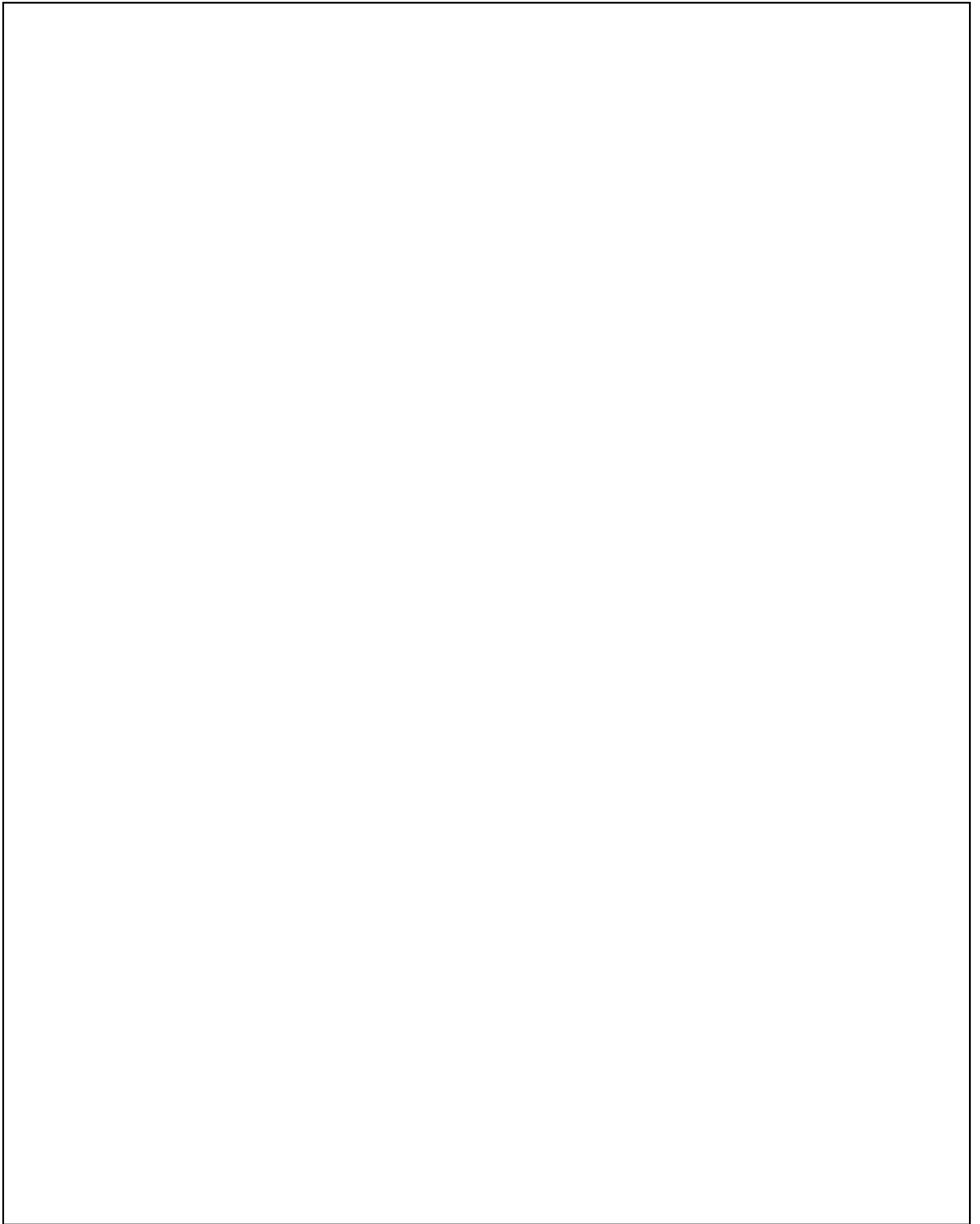
Revised

## Project Narrative for Bull Run Terrace Subdivision

40808 and 41010 Highway 26, Sandy, Oregon  
(25E 18CD, tax lots 900 and 1000)



Revised  
September 2022



**Note:** This revised project narrative is intended to replace all previously submitted narratives for this project.

### Project Details

Project Location: 40808 and 41010 Highway 26, south side of Highway 26; directly south across Highway 26 from Vista Loop Drive and east of Meadow Ave.

Legal Description: Map 25E 18CD, Tax Lots 900 and 1000

Existing Comprehensive Plan - V, Village

Proposed Comprehensive Plan - V, Village and POS, Parks and Open Space

Existing Zoning - R-1, Low Density Residential, R-2, Medium Density Residential and C-3, Village Commercial

Proposed Zoning - R-1, Low Density Residential, R-2, Medium Density Residential, R-3, High Density Residential, C-3, Village Commercial, and POS, Parks and Open Space

Site Size: 15.91 ac. (693,058 sf)

#### I. Project Description

The subject property consists of two tax lots totaling 15.91 acres. The requested seven-lot subdivision includes four lots to be platted with R-1 zoning (Lots 1 - 4), one lot (Lot 5) zoned R-2, one lot (Lot 6) zoned R-3, and one lot (Lot 7) zoned C-3. Development on Lots 5 - 7 is only conceptual at this time and will to be reviewed with a subsequent design review application submitted following approval of the initial request.

In addition to platting seven lots, the applicant proposes dedicating all public streets and conveying 1.755 acres (76,440 square feet) of parkland (Tract A), a 0.16 acre (7,062 square feet) stormwater tract (Tract B) and a (6,845 square foot) stormwater tract (Tract C) to the City. With the proposed plan, Dubarko Road will be extended through the site to connect with Highway 26 and highway frontage improvements completed.

In addition to these improvements, the applicant is also proposing to cap the number of dwelling units constructed on the site at 200 units. This number was chosen after reviewing the maximum unit count allowed units under existing zoning (226 units) and the maximum unit count with the proposed zoning (213 units). The applicant feels the proposed 200 unit cap represents a reasonable number given previously heard public and Council comments and his goals for developing the site.

#### II. Approval Requests

The following approvals are requested with this application:

- Type IV, Comprehensive Plan map amendment to designate 1.755 of land Parks and Open Space (POS);
- Type IV, Zoning Map amendment to change the current zoning designations on the property from a mix of C-3 (Village Commercial), R-2 (Medium Density Residential), and R-1 (Low Density Residential) to a mix of C-3 (Village Commercial), R-3 (High Density Residential), R-2 (Medium Density Residential), R-1 (Low Density Residential), and Parks and Open Space (POS);
- Type IV, Specific Area Plan to shift the zoning designations on the site;
- Type II, seven-lot subdivision;
- Type II, tree removal.

### III. Items Submitted With This Revised Application

- Notification List and Mailing Labels (*Updated September, 2022*)
- Exhibit A - Project Narrative (*Revised September, 2022*)
- Exhibit B - Civil Plans (*Revised September, 2022*)
  - Sheet C1 - Cover Sheet and Future Street Plan
  - Sheet C2 - Preliminary Plat Map
  - Sheet C3 - Existing Conditions and Tree Retention Plan
  - Sheet C4 - Tree Tables
  - Sheet C5 - Master Street and Utility Plan
  - Sheet C6 - Street Sections
  - Sheet C7 - Preliminary Street Tree and Parking Plan
  - Sheet C8 - Proposed Striping Plan
  - Sheet C9 - Preliminary Grading and Erosion Control Plan
  - Sheet C10 - Slope Analysis
  - Sheet C11 - Concept Plan
  - Sheet C12 - Net Zoning Area Comparison
- Exhibit C - Preliminary Stormwater Report
- Exhibit E - Traffic Impact Study (*Revised September, 2022*)

### IV. Review of Applicable Approval Criteria

Development applications are required to meet development standards set forth in the City of Sandy Development Code. This section addresses all applicable review criteria. Pertinent code provisions are cited below in regular text followed by a response describing how the proposal complies with this standard in *italics*. Criteria related to the proposed Comprehensive Plan Map Amendment and Zoning Map Amendment are reviewed first followed by a review of the Specific Area Plan request and finally all relevant criteria for the proposed residential subdivision are reviewed last. The following code chapters are reviewed in this narrative:

<u>Chapter</u>	<u>Title</u>
17.24	Comprehensive Plan Amendment Procedures
17.26	Zoning District Amendments
17.54	Specific Area Plan Overlay

### Subdivision Review

17.30	Zoning Districts
17.36	Low Density Residential (R-1)
17.38	Medium Density Residential (R-2)
17.40	High Density Residential (R-3)
17.46	Village Commercial (C-3)
17.56	Hillside Development
17.80	Additional Setbacks on Collector and Arterial Streets
17.82	Special Setbacks on Transit Streets
17.84	Improvements Required with Development
17.86	Parkland and Open Space
17.92	Landscaping and Screening
17.98	Parking, Loading, and Access Requirements
17.100	Land Division
17.102	Urban Forestry
15.30	Dark Sky Ordinance

#### **CHAPTER 17.24 - COMPREHENSIVE PLAN AMENDMENT PROCEDURES**

**RESPONSE:** *The subject property is designated Village in the City's Comprehensive Plan. Because the Village Plan designation as described in the Comprehensive Plan does not expressly allow Parks and Open Space zoning and the city is requiring the applicant to dedicate parkland, the city is also requiring the applicant to apply for a Comprehensive Plan Map amendment to designate the proposed 1.755 acre parkland dedication Parks and Open Space (POS). In the previously submitted Bull Run Terrace application the application also requested a Comprehensive Plan amendment to increase the maximum density on the property by more than 20 percent. With that application the applicant proposed increasing the density on the property by 61 percent. With the passage of HB 2001 allowing any lot permitting a single family dwelling is also required to permit construction of a duplex. With the passage of this legislations and incorporation of these regulations into City code, the maximum density allowed on the site with the current zoning designations increased from 139 units to 226 units. As noted above, the applicant is proposing to voluntarily impose a dwelling unit cap of 200 units on the property with the current application. With this cap, the proposal will now contain approximately 12 percent fewer units than the maximum allowed under existing zoning. For this reason, a Comprehensive Plan amendment for this item is no longer needed.*

##### **17.24.10 INTENT**

This chapter sets forth review criteria and procedural requirements in order to:

- A. Respond to changing conditions and community attitudes;
- B. Ensure flexibility while at the same time maintain the integrity of the Comprehensive Plan; and
- C. Establish procedures by which the Plan text and map may be amended.

**RESPONSE:** *As noted above, the applicant requests a Comprehensive Plan Map amendment to designate parkland required by the city, Parks and Open Space (POS).*

##### **17.24.20 INITIATION**

Comprehensive Plan amendments may be initiated by one of the following:



- A. An application submitted by a property's owners or their authorized agents for a specific property; or
- B. A majority vote of the City Council.

**RESPONSE:** *This request has been initiated by the property owner as allowed by Subsection (A).*

#### **17.24.70 REVIEW CRITERIA**

Comprehensive Plan amendments shall be reviewed to assure consistency with the purposes of this chapter, policies of the Comprehensive Plan, and any other applicable policies and standards adopted by the City Council. Amendments shall be approved only when the following findings are made:

- A. The change being proposed is the best means of meeting the identified public need; and,

**RESPONSE:** *The proposed Plan Amendment will address several public needs with approval of this request and the eventual development of the property. First, construction of the proposed development will extend Dubarko Road through the property to connect with Highway 26. This road is classified as a Minor Arterial in the City's Transportation System Plan (TSP) and has been included in this plan for a number of years. Identified as "Project M20" in this plan, this project is intended to provide an alternative transportation road generally paralleling Highway 26. With improvement of this final unbuilt section, this road will now be complete from 362nd Avenue on the West to Highway 26 on the East. Development of the property and the extension of Dubarko Road will also trigger extensive improvements along Highway 26. The cost of constructing Dubarko Road and improvements to the highway are likely the reasons the project did not move forward in 2006 and 2013.*

*A second public need realized is the proposal to dedicate 1.755 acres of public parkland to the City of Sandy located directly east of the 1.4 acres of previously dedicated parkland as part of the Deer Pointe 2 Subdivision in 2006. The proposed parkland dedication will ensure completion of park improvements in a timely manner.*

*Approval of this request also will facilitate this currently undeveloped commercial property to develop thereby creating additional employment opportunities and goods and services in this area of the community.*

*Another public need the proposal addresses is the need for additional rental housing options. Development of the property with multi-family housing units following approval of the current request strives to fill this market need.*

*The applicant believes the proposed Comprehensive Plan amendment to designate land for Parks and Open Space is the best means to meet the public needs described above. In addition, development of the property as proposed will provide additional tax revenues to the city to provide needed services.*

- B. The change conforms with all applicable Statewide Planning Goals.

**RESPONSE:** As reviewed below, the proposed Comprehensive Plan Map amendment conforms to all applicable Statewide Planning Goals.

Goal 1 - Citizen Involvement The City will provide notification of the proposal to all property owners within 500 feet of the subject property and will place a legal notice in the Sandy Post newspaper. The City will also hold legally noticed and conducted public hearings before the Sandy City Council. Goal 1 is satisfied.

Goal 2 - Land Use Planning Goal 2 requires the City's decision on this application to be coordinated with other governmental agencies and to be supported by an adequate factual base. The City will send notification of the proposal to both the Department of Land Conservation and Development and the Oregon Department of Transportation. The City will consider comments from these agencies in evaluating the proposal. Goal 2 is satisfied.

Goal 3 - Agricultural Lands Goal 3 is not applicable to this proposal.

Goal 4 - Forest Lands Goal 4 is not applicable to this proposal.

Goal 5 - Natural Resources No resources identified on the City's Flood and Slope Hazard map are located on the subject property. An intermittent stream is shown on the City's wetland inventory as "TCL". The applicant contracted with a wetlands consultant to evaluate the status of this resource and to determine if wetlands exist on the site. The conclusion of this report is that the mapping of an intermittent stream is not accurate and the site does not contain any stream or wetland resources. The applicant then sent an Offsite Determination Request to the Department of State Lands who responded that there are unlikely to be jurisdictional wetlands or waterways located on the site. The site contains a number of conifer and deciduous trees. The applicant hired an Arborist to evaluate the size, species, and condition of these trees provided with this application. The applicant then reviewed the tree retention requirements in Chapter 17.102, Urban Forestry Ordinance to develop a tree retention plan that is consistent with these regulations. As reviewed in detail below, the applicant's tree retention plan exceeds the minimum required by City Code. Goal 5 is satisfied.

Goal 6 - Air, Water, and Land Quality - The proposal complies with all regulations relative to air, water, and land quality. Goal 6 is satisfied to the extent it is applicable to the proposal.

Goal 7 - Natural Hazards - The proposal to change the Comprehensive Plan designation for the subject property does not affect compliance with this goal. The site contains minimal steep slopes and no natural hazards are known to exist on the site. Goal 7 is satisfied to the extent it is applicable to the proposal.

Goal 8 - Recreational Needs - No resorts are proposed with this application. The proposal includes dedication of 1.755 acres of parkland as requested by the City of Sandy. This land is proposed to be conveyed to the City as identified on the

preliminary subdivision plat. Goal 8 is satisfied to the extent it is applicable to the decision.

**Goal 9 - Economy** - Goal 9 requires the city to maintain a 20 year supply of buildable employment land within the UGB. In 2015 the City completed an Economic Opportunities Analysis (EOA) in accordance with the methodology required by OAR 660-009-0015. This study included an analysis and update of the City's Comprehensive Plan with respect to Goal 9 and concluded that the Urban Growth Boundary did not contain sufficient employment land to meet projected employment needs. Based on the results of this study, the City then completed an Urban Growth Boundary Expansion Analysis to resolve this issue and the City Council adopted this study and it was acknowledged by DLCD in February 2017. As shown on Table 3.10 from this study below, the city added approximately 38 acres of commercial land and four acres of industrial land to the UGB. In addition, approximately 18 acres of other properties were changed to commercial zoning. With expansion of the UGB and designation of lands as contained in the study, a surplus of land in all land use categories is projected through the year 2034.

**Table 3.10: Area of Land Surplus (deficit) of the Preferred UGB Expansion Alternative**

Land Use Type	Existing Land Needs	Efficiency Measures	Expansion Alternative	Adjusted UGB
LDR	(276.8)	(21.55)	317.50	<b>19.2</b>
MDR	(4.5)	21.55		<b>17.1</b>
HDR	13.9	(1.34)		<b>12.6</b>
Commercial	(51.8)	17.74	37.66	<b>3.6</b>
Industrial	45.0	(16.40)	4.18	<b>32.8</b>

The table below shows data from Table 3.10 of the UGB Expansion Analysis reduced by 2.47 acres (Commercial to HDR) as a result of a previously approved Plan Amendment and the adjusted area based on the applicant's proposal. As shown on this table, a surplus in all employment land use categories will be maintained over the 20 year planning horizon and Goal 9 is satisfied.

**Adjusted UGB Area**

Land Use Type	Adjusted UGB area (Table 3.10)	Adjusted area previous approval 2.47 acres Commercial to HDR	Proposed area changes (reductions)	Adjusted UGB with proposal
LDR	19.2		(7.46)	<b>11.74</b>
MDR	17.1		(3.77)	<b>13.33</b>
HDR	12.6	15.07	6.50	<b>21.57</b>
Commercial	3.6	1.13	2.61	<b>3.74</b>
Industrial	32.8		0.00	<b>32.8</b>

Goal 10 - Housing - The 2015 Urbanization Report included an analysis and update of the City's comprehensive plan with respect to Goal 10 and concluded the existing UGB did not contain sufficient residential lands to meet the City's housing needs to 2034. To meet this need, the City expanded the Urban Growth Boundary by adding approximately 318 acres of low density residential land and changed the zoning on approximately 22 acres of land zoned another designation to medium density residential. As shown on the Adjusted UGB Area table above, the proposal to reduce the area of LDR and MDR designated land, and add HDR designated land will not adversely affect the city's 20 year buildable lands supply of residential lands. Goal 10 is satisfied.

Goal 11 - Public Facilities - The proposal to change zoning designations on the subject property does not affect the ability of the City to comply with Goal 11. Public facilities are guided by City master plans and the Development Code and the proposal does not affect the assumptions or conclusions in these documents. Goal 11 is satisfied to the extent it is applicable to the proposal.

Goal 12 - Transportation - In order to evaluate compliance with this goal, the applicant contracted with a Traffic Engineer to prepare a Traffic Impact Study. The scope of this study was coordinated with both the City of Sandy and the Oregon Department of Transportation. With development of the project, Dubarko Road will be extended through the property to connect with Highway 26. The subject property currently contains a mix of R-1, R-2, and C-3 zoning. The proposal changes zoning to a combination of R-1, R-2, R-3, C-3, and POS (Parks and Open Space). As detailed in the traffic study, the proposed zone change results in a modest increase in vehicle trips compared to uses under existing zoning. The prior transportation impact study prepared as part of the initial application demonstrated the proposed zone change could comply with the requirements of Goal 12 and the Transportation Planning Rule with implementation of a trip cap of no greater than 340 PM peak hour trips on the subject property. This prior study was scoped and reviewed by City of Sandy and ODOT staff. The revised traffic study prepared for consideration of the revised application which the change in Oregon law which allows duplex development within the R-1 zone (HB 2001) and refreshes the report to include more recent crash data at area intersections and expected development within the C-3 zone. The results of the analysis were substantially similar to the original report, and a trip cap of 340 PM peak hour trips in association with the proposed zone change is recommended. As demonstrated in this study all intersections will operate acceptably upon project completion. As such, the proposed zone change is not expected to degrade the performance of any existing or planned transportation facilities and no mitigation is necessary or recommended. As reviewed in this study, the Transportation Planning Rule and Goal 12 are satisfied.

Goal 13 - Energy Conservation - The City's Development Code contains various criteria to implement Goal 13. The proposal to increase the area designated R-3 and convey parkland to the City ensures Goal 13 is satisfied.

*Goal 14 - Urbanization - The Urbanization Report adopted in 2015 and the Urban Growth Boundary Expansion Analysis adopted in 2017 have both been acknowledged and are part of the City's Comprehensive Plan. As reviewed in Goals 9, Economy and Goal 10, Housing above, the applicant's proposal to change Comprehensive Plan and Zoning designations on the subject property will not affect compliance with these studies. Goal 14 is satisfied.*

*Goals 15 - 19 - Sandy is not subject to these Goals and they are not applicable.*

## **CHAPTER 17.26 - ZONING DISTRICT AMENDMENTS**

### **17.26.00 INTENT**

This chapter sets forth review criteria and procedural requirements for quasi-judicial and legislative zoning map amendments to accomplish the following:

- A. Maintain sound, stable, and desirable development within the City;
- B. Permit changes in zoning district boundaries where appropriate;
- C. Ensure zoning changes are consistent with the community's land use policies and goals; and
- D. Lessen the influence of private economic interests in the land use decision-making process.

***RESPONSE:** The applicant requests approval of a quasi-judicial zoning map amendment to modify the zoning district boundaries for the site. As contained in this submittal, the applicant believes the proposed zone changes are critical to the economic viability of the project.*

### **17.26.40 QUASI-JUDICIAL AMENDMENT PROCEDURES**

- A. Initiation-Quasi-Judicial. Initiation of a zoning district change that is quasi-judicial in nature may be accomplished by one of the following ways:
  1. Filing of an application by the owner(s) of the subject property(ies); or
  2. A majority vote of the City Council or Planning Commission following the same procedures used for legislative amendments discussed above.

***RESPONSE:** The property owner filed this application for a quasi-judicial zone change as provided by this section.*

- B. Review Criteria. Quasi-judicial zoning district changes shall be reviewed to:

1. Determine the effects on City facilities and services;

***RESPONSE:** The proposed zone change is necessary to facilitate development of the property. With this development, Dubarko Road will be extended from its current terminus through the site to connect with Highway 26. This road is identified as a necessary future minor arterial in the City's Transportation System Plan. Due to the cost of these improvements, the applicant has determined it is unlikely this road will ever be built without development of the property. A revised Traffic Impact Study completed by a Traffic Engineer evaluated the impacts of the proposed development and the connection of Dubarko Road with Highway 26. The conclusion of this study is the proposed zone change is not expected to degrade the performance of any existing or planned transportation facilities and no mitigation is necessary or recommended. An existing water line is located in the future alignment of Dubarko Road and this facility will be*

accommodated as this road is constructed. All public facilities will be extended to the farthest extent of the subject property as required. With these facts in mind, the proposal will have a positive effect on City facilities and services in compliance with this criteria.

2. To assure consistency with the purposes of this chapter;  
**RESPONSE:** Chapter 17.26 contains relevant criteria and procedural requirements for quasi-judicial and legislative zoning map amendments. The intent of these standards as stated in Section 17.26.00 include the following statements:
  - A. Maintain sound, stable, and desirable development within the City;
  - B. Permit changes in zoning district boundaries where appropriate;
  - C. Ensure zoning changes are consistent with the community's land use policies and goals; and
  - D. Lessen the influence of private economic interests in the land use decision-making process.

The proposal to change zoning on the property represents an appropriate zoning boundary modification and the development represents a sound, stable, and desirable development proposal as detailed in the submitted Economic Analysis submitted with this application. As discussed in this review, the proposed zoning designations are consistent with the Comprehensive Plan and Statewide Planning Goals.

3. To assure consistency with the policies of the Comprehensive Plan;  
**RESPONSE:** The applicant requests Comprehensive Plan Map approval to designate 1.755 acres of the property as Parks and Open Space as required by the city and to shift the current zoning designations. A review of all applicable goals and policies of the City of Sandy Comprehensive Plan is included below.

## **CITY OF SANDY COMPREHENSIVE PLAN**

### **Goal 2 - Land Use Planning**

#### **Specific Area Plans**

3. The City may use Specific Area Plans to refine the Comprehensive Plan and/or the zoning ordinance in order to further implement the Comprehensive Plan policies. A Specific Area Plan designates specific land uses and transportation elements through broad local participation. Specific Area Plans may be developed in a single linear process, including neighborhood workshops, Planning Commission hearing(s), and City Council adoption hearing(s).

**RESPONSE:** The applicant has applied for Specific Area Plan approval concurrently with this application.

4. Specific Area Plans may be used as a tool for coordinating development in a specific area plan, such as a village area. Specific Area Plans should implement coordinated residential and commercial development while integrating surrounding uses and transportation linkages.

**RESPONSE:** The subject property is located within a designated Village as identified on the Comprehensive Plan Map and the applicant has applied for a

*Specific Area Plan concurrently with this request. The proposal includes a seven lot subdivision including the extension of Dubarko Drive through the site.*

5. A Specific Area Plan is developed through an extensive public process that relies upon the contributions of citizens and stakeholders. The creation of a Specific Area Plan Overlay District in the zoning ordinance shall further implement the policies of the Comprehensive Plan.

**RESPONSE:** *The City of Sandy will send notices to affected property owners and agencies as required by SDC Chapter 17.22. In addition, the city will hold a public hearing as required by SDC Chapter 17.20.*

#### **Land Use Regulations**

6. The uses, area, and household number projected for each of the villages may be modified by a Specific Area Plan.

**RESPONSE:** *The subject property is located in an area designated as Village on the City's Comprehensive Plan map. The applicant is proposing to dedicate 1.755 acres of parkland and designating this area POS as required by the city. The applicant also proposes shifting zoning district boundaries and has applied for Specific Area Plan approval concurrently with this application.*

7. Land development proposals shall be consistent with the Sandy Development Code, Municipal Code, and all adopted standards and enforcement codes of the City of Sandy. The burden of proof with regard to consistency with the applicable standards and codes lies with the prospective developer.

**RESPONSE:** *The applicant proposes constructing a seven-lot subdivision to include four lots (Lots 1 - 4) zoned R-1, Low Density Residential, one lot (Lot 5) zoned R-2, Medium Density Residential, one lot (Lot 6) zoned R-3, High Density Residential, and one lot (Lot 7) zoned C-3. In addition, the proposal includes dedication of 1.755 acres of parkland (Tract A) and two public stormwater facilities (Tracts B and C). The details of the development of Lots 5 - 7 will be evaluated with a design review application at a later date. As discussed in this application, the proposal is consistent with the Sandy Development Code, Municipal Code, and all relevant standards and codes in compliance with this policy.*

11. Where a development offers greater improvement to the community infrastructure than is normally required, or extraordinarily serves to fulfill the objectives of the Sandy Comprehensive Plan, the City of Sandy may provide relief from city standards or requirements in consideration thereof. Relief from standards or requirements can be considered only where there is no infringement to PUBLIC health or safety.

**RESPONSE:** *The proposed subdivision includes the construction of Dubarko Road and a new collector street stubbed to the southern property line. Both of these roads are included in the city's Transportation System and are sized larger than is necessary to provide access to the proposed development. The city has indicated that system development charge credits will be provided to the applicant for constructing these facilities.*

12. It is important that land divisions do not preclude the development of the property or nearby property to planned urban densities. For that reason, land partitioning and subdivision will be controlled to the extent that there are options remaining for the future extension of public facilities and services.

**RESPONSE:** *The submitted subdivision design requires Dubarko Road to be extended through the site to connect to Highway 26. In addition, the City's Transportation System Plan identifies a future collector street intersecting Dubarko Road, extended to the South. Both of these roads will be dedicated with the proposed subdivision. All public facilities will be constructed on the subject property as required to facilitate their extension to adjacent properties as necessary.*

#### **Interpretation of Comprehensive Plan Map**

14. Proposed plan elements such as parks, roadways, schools, etc., are intended to be conceptual. Actual locations and quantities should be determined through the development process.

**RESPONSE:** *As specified in this policy, the neighborhood park "N" shown on the Comprehensive Plan map is intended to be conceptual.*

#### **Land Use Designations**

##### **Parks and Open Space (POS)**

This designation is intended to recognize those publicly-owned lands designated or proposed for parks and open spaces. Parks include publicly developed parks and undeveloped park land where typical uses include active and passive outdoor recreation activities, trails, open space, cultural activities, park buildings and structures, concessions, general park operations and maintenance, and storm drainage facilities. Open space includes publicly developed and undeveloped lands and sensitive areas such as wetlands, steep slopes, forested areas, and stream corridors.

**RESPONSE:** *The proposal includes dedication of 1.755 acres of parkland (Tract A) as shown on the Preliminary Plat submitted with this application. The proposed parkland will expand the existing 1.4 acre parkland dedication provided in 2006 with development of the Deer Pointe 2 Subdivision located directly west of the subject property. The proposed 1.755 acre parkland dedication will increase the total parkland in this neighborhood of the city to 3.155 acres.*

##### **Low Density Residential (LDR)**

The Low Density Residential (R-1) district is intended for 5 to 8 dwelling units per net acre. Intended uses are single family detached and attached units. Duplexes, subject to siting standards, are also allowed in these areas. Low Density Residential districts are located outside village boundaries and on the periphery of the villages.

**RESPONSE:** *The subject property does not contain any restricted development areas. The area proposed for R-1 zoning contains 0.59 net acres after removing the proposed public stormwater tract (Tract B). The minimum density for this area is 2 units ( $0.59 \times 5 = 2.95$ , rounded down to 2 units) and the maximum density is 5 units ( $0.59 \times 8 = 4.72$ , rounded up to 5 units). Four lots are proposed in compliance with*



*the density range. As permitted in this zoning district, the applicant intends to construct either single family detached dwellings or duplexes on these lots as permitted.*

Medium Density Residential (MDR)

The Medium Density Residential (R-2) district is intended to implement the Medium Density Residential Comprehensive Plan designation by providing for medium density single-family and multi-family uses in suitable locations, where public sewer, water, and other services are readily accessible. All development shall also provide access to the surrounding neighborhood with excellent linkage between residential areas, schools, and parks. Density shall not be less than eight or more than 14 units per net acre.

**RESPONSE:** *The area proposed for R-2 zoning (Lot 5) contains 1.233 net acres requiring a minimum density of 10 units ( $1.233 \times 8 = 9.86$ ) and allowing a maximum density of 17 units ( $1.233 \times 14 = 17.26$ ). The applicant intends to construct multi-family dwellings, an allowed housing type on this lot. The exact number of dwelling units proposed will be determined with submittal of a separate design review application following approval of the current application.*

High Density Residential (HDR)

The High Density Residential (R-3) district is intended for high density residential development at 10 to 20 dwelling units per net acre. Intended uses are apartments, row houses, and townhouses, duplexes, single-family planned developments, and manufactured home parks including existing developed areas and areas suitable for development at this density.

**RESPONSE:** *The area proposed for R-3 zoning (Lot 6) contains 6.504 net acres requiring a minimum density of 65 units ( $6.504 \times 10 = 65.04$ ) and allowing a maximum density of 130 units ( $6.504 \times 20 = 130.08$ ). The applicant intends to construct multi-family dwellings, an allowed housing type on this lot. The exact number of dwelling units proposed on this lot will be determined with submittal of a separate design review application following approval of the current application.*

Village

The Village (V) designation provides for a mixture of commercial and residential uses within the context of a village. The village designation is intended to provide flexibility in developing specific area plans. Permitted zoning in a village includes single family residential (when identified as part of a specific area plan), low density residential, medium density residential, high density residential, and village commercial.

A shifting of the underlying zoning district boundaries to accommodate development constraints and land divisions for specific development proposals may be allowed through approval of a Specific Area Plan. Area and density increases may be increased or decreased up to 20%. Changes greater than 20% will require a Plan Map amendment.

**RESPONSE:** *As described in this section, the Village (V) designation is intended to provide a mix of commercial and residential uses within the context of a village. Proposed zoning includes low density residential, medium density residential, high*

*density residential, village commercial, and parks and open space. The applicant requests approval of a Comprehensive Plan amendment to include parks and open space in this village as required by the city. Also as specified in this section, the applicant has requested approval to shift underlying zoning district boundaries through a Specific Area Plan.*

*The applicant proposes increasing the area devoted to C-3 zoning from 2.611 net acres to 2.790 net acres, decreasing the area of R-1 zoning and R-2 zoning, and adding R-3 and POS zoning. With the adoption of HB 2001, any lot permitted to contain a single family dwelling also allows construction of a duplex. The addition of property zoned R-3 as proposed will have a marginal affect on the residential density allowed on the property. Under existing zoning it is estimated that 226 dwelling units could be constructed on the site. With the current proposal it is estimated 213 dwelling units could be constructed. As noted above, the applicant is proposing to impose a dwelling unit cap of 200 units, 26 units less than allowed under current zoning. The submitted application includes both a Specific Area Plan and a Plan Map amendment request as required.*

#### **Commercial**

The Village Commercial (C-3) district is primarily oriented to serve residents of the village and the immediately surrounding residential area. The Village Commercial area is intended to help form the core of the villages. Allowing a mixture of residential uses beside and/or above commercial uses will help create a mixed use environment which integrates uses harmoniously and increases the intensity of activity in the area. The orientation of the uses should integrate pedestrian access and provide linkages to adjacent residential areas, plazas and/or parks, and amenities.

**RESPONSE:** *The proposal includes a single lot (Lot 7) zoned C-3 containing 2.790 acres. The location of the area zoned C-3 is located next to the proposed parkland and contains frontage on both Highway 26 and Dubarko Drive. This lot is also located across the street from a lot zoned for high density residential development and four lots zoned for low density residential. Lot 7 is well positioned to serve as a central component of this village. The use proposed on this lot is not known at this time and will be determined with a subsequent land use application following approval of the current application.*

#### **Goal 6 - Air, Water, and Land Resources**

This goal is to establish policies to maintain and improve the quality of the air, water, and land resources of the state.

1. Maintain environmental quality by guiding future development and land use activities. Allow activities that will not significantly deteriorate the existing high quality of air, water and land resources.

**RESPONSE:** *As noted above, the subject property does not contain any known protected natural resources. The applicant will dedicate 1.755 acres of parkland with this application in addition to retaining and protecting a significant number of trees on the site.*

4. Reduce congestion and delay on major streets to lessen localized pollution impacts of automobile travel through methods such as signal timing, access management, intersection improvements, etc.  
**RESPONSE:** *As noted in the Traffic Impact Study submitted with this application, the proposal will not have a significant effect on the operation of area roadways and intersections at the planning horizon as defined by the Oregon Transportation Planning Rule.*

**Goal 8 - Parks and Recreation**

1. Ensure that new residential development contributes equitably to park land acquisition, development, and maintenance.  
**RESPONSE:** *The applicant proposes dedicating 1.755 acres for park use. This area has been sized based on the proposed 200 dwelling unit cap for the property in conformance with the parkland calculation formula specified in Chapter 17.86.*
10. The conceptual location of community and neighborhood parks and areas of open space have been indicated on the City of Sandy Land Use Map. Actual park locations may be determined based on more site-specific information  
**RESPONSE:** *As noted above, the Comprehensive Plan map and Parks Master Plan show a future park in the vicinity of the subject property. The applicant proposes dedicating 1.755 acres of parkland with this proposal.*

**Goal 9 - Economic Development**  
**Commercial**

1. The City of Sandy shall ensure, at each periodic review, an adequate supply of land to meet the forecast 20-year commerce and service needs of the city's residents and trade area.  
**RESPONSE:** *As shown on the table below and discussed in the review of Goal 9 for the Comprehensive Plan amendment, with approval of the proposal the city will continue to have an adequate supply of employment lands to meet the forecasted 20-year buildable lands supply. Goal 9 is satisfied with the proposal.*

**Adjusted UGB Area**

Land Use Type	Adjusted UGB area (Table 3.10)	Adjusted area previous approval 2.47 acres Commercial to HDR	Proposed area changes (reductions)	Adjusted UGB with proposal
LDR	19.2		(7.46)	11.74
MDR	17.1		(3.77)	13.33
HDR	12.6	15.07	6.50	21.57
Commercial	3.6	1.13	2.61	3.74
Industrial	32.8		0.00	32.8

**Village Commercial Policies**

28. One of the central themes in the Comprehensive Plan is the use of Village areas. These are compact neighborhoods (160-200 acres) which are designed to

encourage travel on foot, and reduce reliance on the car. The center of each village includes housing, retail shops, public uses, a village green or park, and, potentially, a transit stop. The street pattern is connected and designed to provide direct and convenient access to the village center.

**RESPONSE:** *The subject property is located in a designated village as shown on the Comprehensive Plan map. The applicant's proposal to increase the area zoned C-3, add an area zoned R-3, dedicate a 1.755 park, and adjust zoning district boundaries will positively ensure compliance with this policy.*

**Goal 10 - Housing** - This goal is to establish policies to provide for housing needs of the state.

1. Assure an adequate supply of developable land for low, medium, and high density housing to meet the 20-year population projections.

**RESPONSE:** *As reviewed in Goal 10 above and shown on the Adjusted UGB Area table, approval of the proposal will result in a surplus of all residential land categories to meet the city's 20-year population projections.*

#### **Residential Districts**

7. Provide for distinct mixed use villages separate from the central core of the city. Villages are to be developed around a commercial center or other focal point.

**RESPONSE:** *The proposal will increase the area of property zoned C-3, Village Commercial by 0.179 acres. The applicant intends developing this property following approval of a subsequent land use application.*

9. Assure that residential densities are appropriately related to site conditions, including slopes, potential hazards, and natural features.

**RESPONSE:** *The proposed project has been designed in consideration of the site conditions as stated in this policy. No excessively steep slopes, potential hazards, or significant natural features exist on the site. The details of the design of structures on the R-2, R-3 and C-3 lots will be determined following submittal of a subsequent land use application.*

10. Link housing density and location to reduce automobile travel by locating higher density housing near village centers, schools, and potential transit routes.

**RESPONSE:** *Lot 5 to contain R-2, zoning and Lot 6 R-3, zoning are located directly across Dubarko Road from Lot 7 zoned C-3, Village Commercial, the proposed village center. Dubarko Road will be constructed through the property and will serve as a transit route. The City's Transit Manager is requiring construction of two bus shelter pads and the installation of two benches on these pads in locations accessible to all residents. The subject property is well suited for residential development.*

#### **Goal 11 - Public Facilities and Services**

9. Require developers to install and extend all public utilities to, and through, the property to serve the needs of the development and surrounding properties in a logical manner.

*RESPONSE: The applicant is aware that public facilities will need to be installed to and through the site. Following construction, these facilities will be available to be extended to adjacent properties as appropriate.*

### **Goal 12 - Transportation**

#### **Neighborhood Street System**

1. Support a pattern of connected streets, sidewalks, and bicycle routes to: a) provide safe and convenient options for cars, bikes, and pedestrians; b) create a logical, recognizable pattern of circulation; and, c) spread traffic over local streets so that collector and arterial streets are not overburdened.

*RESPONSE: The proposed design includes the extension of Dubarko Road through the site and a new collector street stubbed to the southern property line. All proposed streets will contain sidewalks and bike lanes will be included on streets as required.*

#### **Major Roadway Circulation**

22. Submit notice of development proposals impacting Highways 26 and 211 to ODOT for review and comment.

*RESPONSE: The scope of the submitted Transportation Impact Study was coordinated with the Oregon Department of Transportation and the City's Traffic Consultant. ODOT attended the pre-application conference for the proposal and the City will send notification of the proposal to ODOT as part of the required notification process.*

### **Goal 14 - Land Use and Urbanization**

#### **Urbanization Policies**

1. Maintain an urban growth boundary with sufficient residential, commercial, industrial, and public use lands necessary to support forecast population and employment for a 20-year horizon. The City will evaluate and update the 20-year land supply at each periodic review plan update.

*RESPONSE: As reviewed in Goal 9 and 10 and shown on the Adjusted UGB Area table above, the proposal will not adversely impact the City's adopted Buildable Lands Inventory and the findings of the UGB Expansion Analysis. With approval of the proposal, an adequate supply of all land use categories to meet the city's 20-year population projections will remain.*

4. To assure consistency with the Statewide Planning Goals as may be necessary, and any other applicable policies and standards adopted by the City Council.

*RESPONSE: A review of all applicable Statewide Planning Goals is included as part of the review of the Comprehensive Plan amendment request in Chapter 17.24 above. As discussed in this review, the proposal is consistent with all applicable Statewide Planning Goals and this policy is satisfied.*

## **CHAPTER 17.54 - SPECIFIC AREA PLAN OVERLAY**

### **17.54.00 - SPECIFIC AREA PLAN DEVELOPMENT AND APPROVAL PROCESS**

- A. Purpose. The purpose of a specific area plan overlay zone is to allow development and approval of specific area plans in the city. A specific area plan is a master plan

coordinating and directing development in terms of transportation, utilities, open space and land use, however, no phasing or timeline is required. Specific area plans may be located anywhere within the Urban Growth Boundary and are intended to promote coordinated planning concepts and pedestrian-oriented mixed-use development.

**Response:** *The City of Sandy Comprehensive Plan, Goal 2, Land Use Designations, Village states: “shifting of the underlying zoning district boundaries to accommodate development constraints and land divisions for specific development proposals may be allowed through approval of a Specific Area Plan”. The applicant proposes shifting zoning district boundaries as noted above and has submitted a Specific Area Plan request according to the standards in this chapter as required.*

- B. Initiation. The process to establish a specific area plan shall be initiated by the City Council. The Planning Commission or interested property owners may submit requests to the City Council to initiate the specific area plan process. If owners request initiation of a specific area plan process, the City Council may require an application fee to cover the cost of creating the plan.

**Response:** *The proposed Specific Area Plan application requests approval to shift zoning district boundaries currently existing on the property, to add areas zoned R-3 and POS, and to adjust the location of the R-1, R-2, and C-3 properties. As a result of these changes, with the adoption of HB 2001 and the proposed unit cap, the projected residential density for the property is expected to decrease by 12 percent as discussed in Chapter 17.24 above. The Village (V) land use designation as described in the Comprehensive Plan allows a mix of residential and commercial uses including low density residential, medium density residential, high density residential, and village commercial. The applicant’s proposal includes a mix of Low Density Residential, Medium Density Residential, High Density Residential, and Village Commercial. In addition, the applicant proposes dedicating 1.755 acres of parkland to be zoned Parks and Open Space.*

- D. Adoption. A specific area plan shall be adopted through a Type IV process, and shall be evaluated for compliance with the criteria for zoning district amendments and/or comprehensive plan amendments where applicable.

**Response:** *This Specific Area Plan request will be reviewed through a Type IV process and shall comply with the criteria for zoning district and Comprehensive Plan amendments. The criteria in Chapter 17.24, Comprehensive Plan Amendment Procedures and Chapter 17.26, Zoning District Amendments are reviewed above and as reviewed in these chapters, the proposal is found to comply with all required criteria.*

- F. Comprehensive Plan Amendment. A specific area plan is similar to a master plan and does not automatically require a comprehensive plan amendment. A comprehensive plan amendment shall only be required if a need for such an amendment is identified during development of the specific area plan.

**Response:** *The applicant has applied for a Comprehensive Plan Amendment concurrently with this request.*

G. Compliance with Specific Area Plan Standards and Procedures. New construction and land divisions shall meet any development, land division and design standards of the applicable specific area plan. Base zone and land division standards shall apply where no different standard is referenced for the specific plan area.

**Response:** *As reviewed below, the proposal complies with all relevant standards and criteria found in applicable code chapters.*

H. Specific Area Plan Standards. Specific standards for adopted specific area plans are defined below.

**Response:** *Each of these standards are reviewed below.*

#### **17.54.10 - SPECIFIC AREA PLAN CONTENT**

At a minimum, a specific area plan shall include the following text and diagrams:

A. Plan Objectives. A narrative shall set forth the goals and objectives of the plan.

**Response:** *The details of the goals and objectives of this proposal are articulated throughout the project narrative. In general, the proposal strives to create a mixed-use development to include detached single family dwellings or duplexes, multi-family dwellings, and village commercial development. In addition, the applicant proposes dedicating 1.755 acres to the city for a future park. With this plan Dubarko Road will be extended through the site to complete this TSP identified road segment.*

B. Site and Context. A map of the site and existing context shall identify the project area.

**Response:** *A map showing the site and context are included with this application.*

C. Land Use Diagram. The land use diagram shall indicate the distribution and location of planned land uses, including open space and parks, within the area covered by the specific area plan.

**Response:** *The submitted plan set clearly identifies the distribution of all proposed land uses.*

D. Density. If residential uses are proposed, a narrative shall describe planned residential densities.

**Response:** *Density calculations are included in Chapter 17.30, Zoning Districts above.*

E. Facilities Analysis. The plan shall include an analysis of the general location and extent of major components of sanitary sewer, water, and other essential facilities proposed to be located within the specific plan area and needed to support the land uses and densities described in the plan. A review of existing facilities master plans shall be sufficient if these master plans indicate there is adequate capacity to serve the specific plan area.

**Response:** *A Utility Plan is included with the plan set showing the location of all public facilities proposed to serve the development.*

- F. Circulation/Transportation Diagram. The circulation diagram shall indicate the proposed street pattern for the specific area plan area, including pedestrian pathways and bikeways. Design standards and street cross sections shall be included, if different than normal City standards.

**Response:** *The submitted plan set shows the location and dimensions of all proposed roads and cross-section drawings of these streets are also included.*

- G. Market Analysis. Specific area plans that include amendments to the zoning map affecting the acreage of Village Commercial (C-3) land within the plan area shall include a market analysis of supportable retail space that verifies demand for the proposed acreage of C-3 land. The analysis should include a market delineation, a regional and local economic review, and a retail market evaluation.

**Response:** *An Economic Analysis is included as part of the application package.*

- H. Design and Development Standards. If standards differ from normal City standards, design and development standards shall be included in the plan.

**Response:** *The proposal is anticipated to comply with all design and development standards. The details of this review will be addressed with submittal of subsequent land use applications for development on Lot 5 - 7.*

#### **SUBDIVISION REVIEW**

*The applicant requests approval to construct a seven-lot subdivision with this application. Four lots (Lots 1 - 4) will be zoned R-1, Low Density Residential constructed with either single-family residential dwellings or duplexes, one lot (Lot 5) zoned R-2, Medium Density Residential and one lot (Lot 6) zoned R-3, High Density Residential to contain multi-family units, and one lot (Lot 7) zoned C-3, Village Commercial and constructed with buildings in compliance with this zone. In addition, the applicant proposes dedicating 1.755 acres of parkland (Tract A) and constructing and dedicating two public stormwater facilities (Tracts B and C).*

#### **CHAPTER 17.30 - ZONING DISTRICTS**

##### **17.30.20 RESIDENTIAL DENSITY CALCULATION PROCEDURE**

The number of dwelling units permitted on a parcel of land is calculated after the determination of the net site area and the acreage of any restricted development areas (as defined by Chapter 17.60). Limited density transfers are permitted from restricted development areas to unrestricted areas consistent with the provisions of the Flood and Slope Hazard Area Overlay District, Chapter 17.60. No areas within the FSH Overlay are located on the subject property.

**Response:** *The applicant proposes a seven-lot subdivision with three tracts to be dedicated to the city. The subject property contains a gross site area of 15.91 acres. The net area identified to be zoned R-1 contains 0.59 net acres. This zone allows a minimum of 5 and allows a maximum of 8 units per net acre. The minimum density is (0.59 acres x 5 units/net acres = 2.95 units round down to 2 units) and the maximum density is (0.59 acres x 8 units/net acre = 4.72, rounded up to 5 units). As a result of these calculations the density range for this part of the property is a minimum of two units and a maximum of five units. As permitted by HB 2001, duplexes are permitted on any lot where a single family dwelling is permitted. For this reason, a maximum of 10*



units are allowed. The applicant proposes platting four R-1 zoned lots to be constructed with either single family dwellings or duplexes on these lots as permitted.

The net area identified to be zoned R-2 (Lot 5) contains 1.233 acres. The R-2 zone requires a minimum of 8 and allows a maximum of 14 units per net acre. The minimum density is (1,233 acres x 8 units/acre = 10 units) and the maximum density is (1.233 acres x 14 units/acre = 17 units). The applicant proposes constructing multi-family dwellings on this lot.

The area identified to be zoned R-3 (Lot 6) contains a net area of 6.504 acres. The R-3 zone allows a minimum of 10 and a maximum of 20 units per net acre. The minimum density is (6.504 acres x 10 units/acre = 65 units) and the maximum density is (6.504 acres x 20 units/acre = 130 units). The applicant proposes constructing multi-family dwellings on this lot.

As a result of these calculations the density range for the residential portion of the subject property is a minimum of 80 units and a maximum of 157 units and with the C-3 portion of the property included the maximum density is 213 units. At this time the applicant does not know the exact number of units that will be constructed on Lots 5 and 6, however, the applicant is proposing a cap of 200 units be imposed for the entire site. The number of units constructed is likely to be less than the maximum allowed and will be determined with design review applications submitted at a later date.

## **CHAPTER 17.32 - PARKS & OPEN SPACE (POS)**

### **17.32.00 - INTENT**

This district is intended to recognize those publicly-owned lands designated or proposed for parks and open spaces. Parks include publicly developed parks and undeveloped park land where typical uses include active and passive outdoor recreation activities, trails, open space, cultural activities, park buildings and structures, concessions, general park operations and maintenance, and storm drainage facilities. Open space includes publicly developed and undeveloped lands and sensitive areas such as wetlands, steep slopes, forested areas, and stream corridors.

**Response:** The applicant proposes dedicating 1.755 acres (Tract A) to be designated and used as public parkland. The land proposed for parkland abuts the existing 1.4 acres of parkland dedicated in 2007 with the Deer Pointe 2 Subdivision approval along its entire western line. The subject property is generally level and suitable for parkland.

### **17.32.10 - PERMITTED USES**

#### **A. Primary Uses Permitted Outright:**

1. Park improvements identified in the Parks Master Plan or Park Specific Master Plans adopted by the City Council.

**Response:** The City has prepared a master plan for the Deer Pointe Park. With dedication of the additional land with the current proposal, the city now have the area to develop a new 3.155 acre neighborhood park.

### **17.32.40 - DEVELOPMENT STANDARDS**

#### **A. Parks & Open Space**

Lot Area - No minimum

Lot Dimension - No minimum

Setbacks - No minimum or maximum  
 Lot Coverage - No maximum  
 Structure Height - 35 ft. maximum  
 Off-Street Parking - See Chapter 17.98  
 Design Review Standards - See Section 17.90.120

**Response:** *The proposal complies with all applicable development standards. The city will need to determine compliance as the master plan for this new park is prepared and as part of the approval process.*

**17.32.50 - ADDITIONAL REQUIREMENTS**

- A. Where applicable, park improvements shall comply with city design standards.
- B. Provisions for pedestrian and vehicular off-street access to adjoining properties shall be included in park master plans

**Response:** *These items are required to be addressed with preparation of the master plan for this park.*

**CHAPTER 17.36 - LOW DENSITY RESIDENTIAL (R-1)**

**17.36.00 - INTENT**

This district is intended to implement the Low Density Residential Comprehensive Plan designation by providing for an urban level of low-density residential development. It is to be used as a transition between the Single Family Residential zone and the higher densities of a village. The uses are to be fully serviced by public facilities. This zone is intended to provide walkable neighborhoods with excellent linkage between residential areas, schools, parks, and village commercial. This zone is one of four zones included in a village area and is designed as a mixed-use neighborhood with a range of housing types and accessible commercial areas. Density shall not be less than 5 or more than 8 units per net acre.

**Response:** *As detailed in Chapter 17.30 above, the four lots (Lots 1 - 4) proposed to contain R-1 zoning fall within the density range (2 - 5 units) for this area. As noted below, either a single family dwelling or duplex are permitted on this lots.*

**17.36.10 - PERMITTED USES**

A. Primary Uses Permitted Outright:

- 1. Single detached dwelling subject to design standards in Chapter 17.90;

**Response:** *The applicant proposes constructing either single-family detached dwellings or duplexes on this lots as permitted.*

**17.36.30 - DEVELOPMENT STANDARDS**

Type	Standard	Proposed
A. Minimum Lot Area - Single detached dwelling - Other permitted uses	5,500 square ft. Minimum No minimum	Lot 1 - 5,708 s.f. Lot 2 - 5,791 s.f. Lot 3 - 7,389 s.f. Lot 4 - 6,671 s.f.
B. Minimum Average Lot Width - Single detached dwelling - Other permitted uses (no min.)	50 ft	Complies

C. Minimum Lot Frontage	20 ft. except as allowed by Section 17.100.160	<i>Complies.</i>
D. Minimum Average Lot Depth	No minimum	<i>Complies</i>
E. Setbacks (Main Building) Front yard Rear yard Side yard (interior) Corner Lot Garage	10 ft. minimum 15 ft. minimum 5 ft. minimum 10 ft. minimum on side abutting the street 22 ft. minimum for front vehicle access 15 ft. minimum if entrance is perpendicular to the street (subject to Section 17.90.220)	<i>All lots are capable of complying with setbacks. Setbacks will be confirmed with submittal of building permits.</i>
F. Projections into Required Setbacks	See Chapter 17.74	<i>No projections are proposed at this time.</i>
G. Accessory Structures in Required Setbacks	See Chapter 17.74	<i>No accessory structures are proposed at this time.</i>
H. Structure Height	35 ft. maximum	<i>To be determined.</i>
I. Building Site Coverage	No minimum	<i>Complies</i>
J. Off-Street Parking	See Chapter 17.98	<i>See Chapter 17.98.</i>

**Response:** As shown on the plan set, all lots in the proposed subdivision contain at least 5,500 square feet, have at least 20 feet of street frontage, and contain an average lot width of at least 50 feet as required. Lot 4 fronts Dubarko Road and will be accessed from Street A across an easement on Lot 3. All lots are capable of complying with applicable setbacks in the zone. All development standards will be reviewed with submittal of building permits. Compliance with required off-street parking has been shown and is reviewed in Chapter 17.98 below.

**17.36.40 - MINIMUM REQUIREMENTS**

A. Must connect to municipal water.

**Response:** The applicant proposes extending water service to serve all dwellings in the new subdivision.

B. Must connect to municipal sewer if service is currently within 200 feet of the site.

Sites more than 200 feet from municipal sewer, may be approved to connect to an alternative disposal system provided all of the following are satisfied:

1. A county septic permit is secured and a copy is provided to the city;
2. The property owner executes a waiver of remonstrance to a local improvement district and/or signs a deed restriction agreeing to complete improvements, including but not limited, to curbs, sidewalks, sanitary sewer, water, storm sewer or other improvements which directly benefit the property;
3. The minimum size of the property is one acre or is a pre-existing buildable lot, as determined by the city;
4. Site consists of a buildable parcel(s) created through dividing property in the city, which is less than five acres in size.

**Response:** All proposed units will be connected to sanitary sewer service.

- C. The location of any real improvements to the property must provide for a future street network to be developed.

**Response:** *A new street network will be constructed to serve each dwelling as required.*

- D. Must have frontage or approved access to public streets.

**Response:** *All lots contain frontage on a public street and all lots will gain access directly from a public street with the exception of Lot 4 which fronts Dubarko Road but will gain access across an easement on Lot 3 fronting Fawn Street (Street A).*

#### **17.36.50 - ADDITIONAL REQUIREMENTS**

- A. Design review as specified in Chapter 17.90 is required for all uses.

**Response:** *Only Section 17.90.150, Residential Design Standards of Chapter 17.90 is applicable to residential developments. This section is reviewed below.*

- B. Lots with 40 feet or less of street frontage shall be accessed by a rear alley or a shared private driveway.

**Response:** *All lots contain at least 40 feet of street frontage.*

#### **CHAPTER 17.38 - MEDIUM DENSITY RESIDENTIAL (R-2)**

##### **17.38.00 - INTENT**

This district is intended to implement the Medium Density Residential Comprehensive Plan designation by providing for medium density single-family and multi-family uses in suitable locations, where public sewer, water, and other services are readily accessible. All development shall also provide access to the surrounding neighborhood with excellent linkage between residential areas, schools, and parks. Density shall not be less than eight or more than 14 units per net acre.

**Response:** *As detailed in Section 17.30 above, the applicant proposes one lot (Lot 5) to be zoned R-2 allowing a maximum of 17 dwelling units. The exact number of units will be determined with a future design review application.*

##### **17.38.10 - PERMITTED USES**

- A. Primary Uses Permitted Outright:

6. Multi-family dwellings

**Response:** *The applicant proposes constructing multi-family dwellings on this lot as permitted in this zoning district.*

##### **17.38.30 - DEVELOPMENT STANDARDS**

**Response:** *The details of this section will be addressed with a design review application for the proposed multi-family dwelling project.*

##### **17.38.40 - MINIMUM REQUIREMENTS**

- A. Must connect to municipal water.

**Response:** *The applicant proposes extending water service to serve all dwellings.*

- B. Must connect to municipal sewer.

**Response:** *The applicant proposes extending water service to serve all dwellings.*

- C. The location of any real improvements to the property must provide for a future street network to be developed.

**Response:** *A new street network will be constructed to serve each dwelling as required.*

- D. Must have frontage or approved access to public streets.

**Response:** *Each lot will be served by construction of a new public street. Units constructed on the lots will be served by a private driveway and parking lot.*

#### **17.38.50 - ADDITIONAL REQUIREMENTS**

- A. Design review as specified in Chapter 17.90 is required for all uses.

**Response:** *The requirements of Section 17.90.160, Additional Requirements - Multi-family Development Standards will be addressed as part of a future design review application.*

- B. Lots with 40 feet or less of street frontage shall be accessed by a rear alley or a shared private driveway.

**Response:** *No lots contain less than 40 feet of street frontage.*

- C. Zero Lot Line Dwellings: Prior to building permit approval, the applicant shall submit a recorded easement between the subject property and the abutting lot next to the yard having the zero setback. This easement shall be sufficient to guarantee rights for maintenance purposes of structures and yard, but in no case shall it be less than 5 feet in width.

**Response:** *No zero lot dwellings are proposed.*

#### **CHAPTER 17.40 - HIGH DENSITY RESIDENTIAL (R-3)**

##### **17.40.00 - INTENT**

This district is intended to implement the High Density Residential Comprehensive Plan designation by providing for housing in close proximity to retail, public amenities; major transportation routes and transit services where public sewer, water and other services are readily accessible. R-3 uses are designed to be a transition area between commercial and industrial uses and low density single family uses. Pedestrian connections are required to ensure a direct walking route to retail shops. All development shall also provide access to the surrounding neighborhood with excellent linkage between residential areas, schools, parks, and commercial. Density shall not be less than 10 or more than 20 units per net acre.

**Response:** *As detailed in Section 17.30 above, the applicant proposes one lot (Lot 6) zoned R-3 allowing a maximum of 30 dwelling units. The exact number of units will be determined with a future design review application.*

##### **17.40.10 - PERMITTED USES**

- A. Primary Uses Permitted Outright:

6. Multi-family dwellings

**Response:** *The applicant proposes constructing multi-family dwellings as permitted in this zoning district.*

#### **17.40.30 - DEVELOPMENT STANDARDS**

**Response:** *The details of this section will be addressed with a design review application for the proposed multi-family dwelling project.*

#### **17.40.40 - MINIMUM REQUIREMENTS**

A. Must connect to municipal water.

**Response:** *The applicant proposes extending water service to serve all dwellings.*

B. Must connect to municipal sewer.

**Response:** *The applicant proposes extending water service to serve all dwellings.*

C. The location of any real improvements to the property must provide for a future street network to be developed.

**Response:** *A new street network will be constructed to serve each dwelling as required.*

D. Must have frontage or approved access to public streets.

**Response:** *Each lot will be served by construction of a new public street. Units constructed on the lots will be served by a private driveway and parking lot.*

#### **17.40.50 - ADDITIONAL REQUIREMENTS**

A. Design review as specified in Chapter 17.90 is required for all uses.

**Response:** *The requirements of Section 17.90.160, Additional Requirements - Multi-family Development Standards will be addressed as part of a future design review application.*

B. Lots with 40 feet or less of street frontage shall be accessed by a rear alley or a shared private driveway.

**Response:** *No lots contain less than 40 feet of street frontage.*

C. Zero Lot Line Dwellings: Prior to building permit approval, the applicant shall submit a recorded easement between the subject property and the abutting lot next to the yard having the zero setback. This easement shall be sufficient to guarantee rights for maintenance purposes of structures and yard, but in no case shall it be less than 5 feet in width.

**Response:** *No zero lot dwellings are proposed.*

### **CHAPTER 17.46 - VILLAGE COMMERCIAL (C-3)**

#### **17.46.00 - INTENT**

The intent of the village commercial district is primarily oriented to serve residents of the village and the immediately surrounding residential area. The Village Commercial area is intended to help form the core of the villages. Allowing a mixture of residential uses beside and/or above commercial uses will help create a mixed-use environment, which integrates uses harmoniously and increases the intensity of activity in the area. The orientation of the uses should integrate pedestrian access and provide linkages to adjacent residential areas, plazas and/or parks, and amenities.

*Response: As shown on submitted plan one lot (Lot 7) is proposed to be zoned C-3.*

#### **17.46.10 - PERMITTED USES**

##### **A. Primary Uses Permitted Outright—Residential**

2. Multi-family dwellings above, beside or behind a commercial business.

*Response: The applicant intends to construct a combination of multi-family dwellings and a commercial business or commercial only as allowed by this section. The exact unit count and the proposed commercial use will be determined at a later date.*

#### **17.46.30 - DEVELOPMENT STANDARDS**

*Response: The details of this section will be addressed with a subsequent design review application .*

### **CHAPTER 17.56 - HILLSIDE DEVELOPMENT**

#### **17.56.10 APPLICABILITY**

These regulations shall apply to any parcel with slopes greater than twenty-five percent (25%) as shown on the Hillside Development Overlay District Map or with slope hazards mapped by the Department of Geology and Mineral Industries (DOGAMI). This chapter shall apply only to activities and uses that require a building, grading, tree removal and/or land use permit.

*Response: As shown on the slope analysis submitted with the plan set, the site contains a small area of slopes exceeding 25 percent. A Geotechnical and Slope Stability Investigation is included with the submittal.*

### **CHAPTER 17.80 - ADDITIONAL SETBACKS ON COLLECTOR AND ARTERIAL STREETS**

#### **17.80.20 - SPECIFIC SETBACKS**

Any structure located on streets listed above or identified in the Transportation System Plan as arterials or collectors shall have a minimum setback of 20 feet measured from the property line. This applies to applicable front, rear and side yards.

*Response: The City's Transportation System Plan identifies Dubarko Road through the subject property as a "Minor Arterial" street, Highway 26 a "Major Arterial", and Street B ("New" street) terminating to tax lot 900 a "Collector Street". The Preliminary Plat shows a 20 foot setback for all lots adjacent to Dubarko Road and Street B. The requirements of this section will be confirmed with submittal of a design review application to construct the proposed dwellings and building permits on these lots.*

### **CHAPTER 17.82 - SPECIAL SETBACKS ON TRANSIT STREETS**

#### **17.82.10 APPLICABILITY**

This chapter applies to all residential development located adjacent to a transit street. A transit street is defined as any street designated as a collector or arterial, unless otherwise designated in the Transit System Plan.

*Response: Lots 3 - 7 of the proposed subdivision are located adjacent to Dubarko Road, a transit street. Lots 3 and 4 will be zoned R-1, Lot 5 will be zoned R2, Lot 6 will be zoned R-3, and Lot 7 will be zoned C-3. The requirements of this chapter will be addressed with the design review application for the dwellings on Lots 5 - 7 as applicable.*

#### **17.82.20 BUILDING ORIENTATION**

- A. All residential dwellings shall have their primary entrances oriented toward a transit street rather than a parking area, or if not adjacent to a transit street, toward a public right-of-way or private walkway which leads to a transit street.

*Response: Lot 4 will be accessed by an easement across Lot 3 and will be designed in accordance with this standard. Lot 3 will be located at the corner of Dubarko Drive and a new local street. The dwelling on this lot can be designed in compliance with this standard as required.*

- B. Dwellings shall have a primary entrance connecting directly between the street and building interior. A clearly marked, convenient, safe and lighted pedestrian route shall be provided to the entrance, from the transit street. The pedestrian route shall consist of materials such as concrete, asphalt, stone, brick, permeable pavers, or other materials as approved by the Director. The pedestrian path shall be permanently affixed to the ground with gravel subsurface or a comparable subsurface as approved by the Director.

*Response: The dwellings on Lots 3 and 4 will be designed in accordance with this standard. The future dwellings on Lots 5 - 6 and future development on Lot 7 will address this requirement as part of the design review application for these lots.*

- C. Primary dwelling entrances shall be architecturally emphasized and visible from the street and shall include a covered porch at least 5 feet in depth.

*Response: The dwellings on Lots 3 and 4 will be designed in accordance with this standard. The multi-family dwellings on Lots 5 - 6 and future development on Lot 7 will address this requirement during design review.*

- D. If the site has frontage on more than one transit street, the dwelling shall provide one main entrance oriented to a transit street or to a corner where two transit streets intersect.

*Response: It is unclear if Highway 26 is identified as a transit street adjacent to the site. If Highway 26 is considered a transit street, Lots 6 will contain frontage on both Dubarko Road and Highway 26 and Lot 7 will contain frontage on Highway 26, Dubarko Road, and Street B ("New Street"). The details of this design will be determined with the future design review application for these lots.*

#### **CHAPTER 17.84 - IMPROVEMENTS REQUIRED WITH DEVELOPMENT**

##### **17.84.20 - TIMING OF IMPROVEMENTS**

- A. All improvements required by the standards in this chapter shall be installed concurrently with development, as follows:

1. Where a land division is proposed, each proposed lot shall have required public and franchise utility improvements installed or financially guaranteed in accordance with the provisions of Chapter 17 prior to approval of the final plat.

*Response: All lots in the proposed subdivision are required to install public and franchise utility improvements or financially guarantee these improvements prior to final plat approval.*



2. Where a land division is not proposed, the site shall have required public and franchise utility improvements installed or financially guaranteed in accordance with the provisions of Chapter 17 prior to temporary or final occupancy of structures.

**Response:** *This section is not applicable because a land division is proposed.*

- B. Where specific approval for a phasing plan has been granted for a planned development and/or subdivision, improvements may similarly be phased in accordance with that plan.

**Response:** *The applicant does not propose constructing the subdivision in phases.*

#### **17.84.30 - PEDESTRIAN AND BICYCLIST REQUIREMENTS**

- A. Sidewalks shall be required along both sides of all arterial, collector, and local streets, as follows:

1. Sidewalks shall be a minimum of 5 ft. wide on local streets. The sidewalks shall be separated from curbs by a tree planting area that provides separation between sidewalk and curb, unless modified in accordance with Subsection 3 below.

**Response:** *All proposed sidewalks on local streets will be five feet wide as required and separated from curbs by a tree planting area.*

2. Sidewalks along arterial and collector streets shall be separated from curbs with a planting area, except as necessary to continue an existing curb-tight sidewalk. The planting area shall be landscaped with trees and plant materials approved by the City. The sidewalks shall be a minimum of 6 ft. wide.

**Response:** *As shown, six-foot sidewalks are proposed to be constructed along Highway 26, Dubarko Road north of Street B and on Street B. These frontages will include a planter strip as required.*

3. Sidewalk improvements shall be made according to city standards, unless the city determines that the public benefit in the particular case does not warrant imposing a severe adverse impact to a natural or other significant feature such as requiring removal of a mature tree, requiring undue grading, or requiring modification to an existing building. Any exceptions to the standards shall generally be in the following order.

- a) Narrow landscape strips
- b) Narrow sidewalk or portion of sidewalk to no less than 4 feet in width
- c) Eliminate landscape strips
- d) Narrow on-street improvements by eliminating on-street parking
- e) Eliminate sidewalks

**Response:** *As shown on submitted plans, the applicant proposes constructing the sidewalk along Dubarko Road from Street B to Highway 26 five feet rather than six feet due to the increased median width along this section.*

4. The timing of the installation of sidewalks shall be as follows:

- a) Sidewalks and planted areas along arterial and collector streets shall be installed with street improvements, or with development of the site if street improvements are deferred.

- b) Sidewalks along local streets shall be installed in conjunction with development of the site, generally with building permits, except as noted in (c) below.
- c) Where sidewalks on local streets abut common areas, drainageways, or other publicly owned or semi-publicly owned areas, the sidewalks and planted areas shall be installed with street improvements.

**Response:** *The applicant intends constructing all sidewalk improvements as required by this section. The sidewalks along Highway 26, Dubarko Road and Street B will be constructed prior to final plat approval, or at the time of home construction whichever the city prefers. Sidewalks along Street A will be constructed at the time of home construction.*

- B. Safe and convenient pedestrian and bicyclist facilities that strive to minimize travel distance to the extent practicable shall be provided in conjunction with new development within and between new subdivisions, planned developments, commercial developments, industrial areas, residential areas, public transit stops, school transit stops, and neighborhood activity centers such as schools and parks, as follows:

- 1. For the purposes of this section, “safe and convenient” means pedestrian and bicyclist facilities that: are reasonably free from hazards which would interfere with or discourage travel for short trips; provide a direct route of travel between destinations; and meet the travel needs of pedestrians and bicyclists considering destination and length of trip.

**Response:** *No pedestrian or bicycle facilities other than sidewalks and on-street bicycle lanes have been identified or are proposed.*

- 2. To meet the intent of “B” above, right-of-ways connecting cul-de-sacs or passing through unusually long or oddly shaped blocks shall be a minimum of 15 ft. wide with 8 feet of pavement.

**Response:** *As noted above, no facilities are proposed.*

- 3. 12 feet wide pathways shall be provided in areas with high bicycle volumes or multiple use by bicyclists, pedestrians, and joggers.

**Response:** *No facilities of this type are proposed with the subdivision.*

- 4. Pathways and sidewalks shall be encouraged in new developments by clustering buildings or constructing convenient pedestrian ways. Pedestrian walkways shall be provided in accordance with the following standards:

- a) The pedestrian circulation system shall be at least five feet in width and shall connect the sidewalk on each abutting street to the main entrance of the primary structure on the site to minimize out of direction pedestrian travel.
- b) Walkways at least five feet in width shall be provided to connect the pedestrian circulation system with existing or planned pedestrian facilities which abut the site but are not adjacent to the streets abutting the site.
- c) Walkways shall be as direct as possible and avoid unnecessary meandering.

**Response:** *No pedestrian pathways are proposed, only sidewalks adjacent to public streets.*

- d) Walkway/driveway crossings shall be minimized. Internal parking lot design shall maintain ease of access for pedestrians from abutting streets, pedestrian facilities, and transit stops.
- e) With the exception of walkway/driveway crossings, walkways shall be separated from vehicle parking or vehicle maneuvering areas by grade, different paving material, painted crosshatching or landscaping. They shall be constructed in accordance with the sidewalk standards adopted by the City. (This provision does not require a separated walkway system to collect drivers and passengers from cars that have parked on site unless an unusual parking lot hazard exists).
- f) Pedestrian amenities such as covered walk-ways, awnings, visual corridors and benches will be encouraged. For every two benches provided, the minimum parking requirements will be reduced by one, up to a maximum of four benches per site. Benches shall have direct access to the circulation system.  
**Response:** *The requirements of these sections are not applicable to the proposed subdivision.*

C. Where a development site is traversed by or adjacent to a future trail linkage identified within the Transportation System Plan, improvement of the trail linkage shall occur concurrent with development. Dedication of the trail to the City shall be provided in accordance with 17.84.80.  
**Response:** *No trails are identified in the City's Transportation System Plan or Parks Master Plan on the subject property and none are proposed.*

D. To provide for orderly development of an effective pedestrian network, pedestrian facilities installed concurrent with development of a site shall be extended through the site to the edge of adjacent property(ies).  
**Response:** *No pedestrian facilities, except sidewalks are proposed.*

E. To ensure improved access between a development site and an existing developed facility such as a commercial center, school, park, or trail system, the Planning Commission or Director may require off-site pedestrian facility improvements concurrent with development.  
**Response:** *No off-site pedestrian improvements have been identified.*

#### **17.84.40 - TRANSIT AND SCHOOL BUS TRANSIT REQUIREMENTS**

- A. Development sites located along existing or planned transit routes shall, where appropriate, incorporate bus pull-outs and/or shelters into the site design. These improvements shall be installed in accordance with the guidelines and standards of the transit agency. School bus pull-outs and/or shelters may also be required, where appropriate, as a condition of approval for a residential development of greater than 50 dwelling units where a school bus pick-up point is anticipated to serve a large number of children.  
**Response:** *The subject property is located along Dubarko Road, a future transit street. During the pre-application conference for the project the city Transit*

*Manager identified two required transit amenities. These facilities are shown on the plan set.*

- B. New developments at or near existing or planned transit or school bus transit stops shall design development sites to provide safe, convenient access to the transit system, as follows:
  - 1. Commercial and civic use developments shall provide a prominent entrance oriented towards arterial and collector streets, with front setbacks reduced as much as possible to provide access for pedestrians, bicycles, and transit.
  - 2. All developments shall provide safe, convenient pedestrian walkways between the buildings and the transit stop, in accordance with the provisions of 17.84.30 B.

**Response:** *The proposed subdivision complies with the requirements of this section.*

#### **17.84.50 - STREET REQUIREMENTS**

- A. Traffic evaluations may be required of all development proposals in accordance with the following:
  - 1. A proposal establishing the scope of the traffic evaluation shall be submitted for review to the City Engineer. The evaluation requirements shall reflect the magnitude of the project in accordance with accepted traffic engineering practices. Large projects should assess all nearby key intersections. Once the scope of the traffic evaluation has been approved, the applicant shall present the results with and an overall site development proposal. If required by the City Engineer, such evaluations shall be signed by a Licensed Professional Civil Engineer or Licensed Professional Traffic Engineer licensed in the State of Oregon.
  - 2. If the traffic evaluation identifies level-of-service conditions less than the minimum standard established in the Transportation System Plan, improvements and funding strategies mitigating the problem shall be considered concurrent with a development proposal.

**Response:** *A Traffic Impact Study is included with this application as requested by the City and ODOT. This study does not identify any required mitigation.*

- B. Location of new arterial streets shall conform to the Transportation System Plan in accordance with the following:
  - 1. Arterial streets should generally be spaced in one-mile intervals.
  - 2. Traffic signals should generally not be spaced closer than 1500 ft. for reasonable traffic progression.

**Response:** *The extension of Dubarko Road is classified as a minor arterial street. This street has been designed in accordance with this standard as applicable. The applicant understands improvement of this street is eligible for SDC credits.*

- C. Local streets shall be designed to discourage through traffic. NOTE: for the purposes of this section, “through traffic” means the traffic traveling through an area that does not have a local origination or destination. To discourage through traffic and excessive vehicle speeds the following street design characteristics shall be considered, as well as other designs intended to discourage traffic:

1. Straight segments of local streets should be kept to less than a quarter mile in length. As practical, local streets should include traffic calming features, and design features such as curves and “T” intersections while maintaining pedestrian connectivity.
2. Local streets should typically intersect in “T” configurations rather than 4-way intersections to minimize conflicts and discourage through traffic. Adjacent “T” intersections shall maintain a minimum of 150 ft. between the nearest edges of the 2 rights-of-way.

**Response:** *The proposed subdivision does not include any long straight street segments. All streets have been designed in accordance with the requirements of these sections.*

3. Cul-de-sacs should generally not exceed 400 ft. in length nor serve more than 20 dwelling units, except in cases where existing topography, wetlands, or drainage systems or other existing features necessitate a longer cul-de-sac in order to provide adequate access to an area. Cul-de-sacs longer than 400 feet or developments with only one access point may be required to provide an alternative access for emergency vehicle use only, install fire prevention sprinklers, or provide other mitigating measures, determined by the City.

**Response:** *No cul-de-sac streets are proposed.*

D. Development sites shall be provided with access from a public street improved to City standards in accordance with the following:

1. Where a development site abuts an existing public street not improved to City standards, the abutting street shall be improved to City standards along the full frontage of the property concurrent with development.

**Response:** *All single-family homes will gain direct access from a public street improved to city standards with the exception of Lot 4 which will be accessed across an easement on Lot 3.*

2. Half-street improvements are considered the minimum required improvement. Three quarter-street or full-street improvements shall be required where traffic volumes generated by the development are such that a half-street improvement would cause safety and/or capacity problems. Such a determination shall be made by the City Engineer.

**Response:** *All new streets are proposed as full street improvements with the exception of improvements along Highway 26.*

3. To ensure improved access to a development site consistent with policies on orderly urbanization and extension of public facilities the Planning Commission or Director may require off-site improvements concurrent with development. Off-site improvement requirements upon the site developer shall be reasonably related to the anticipated impacts of the development.

**Response:** *No off-site improvements have been identified or are warranted with construction of this subdivision.*

4. Reimbursement agreements for 3/4 street improvements (i.e., curb face to curb face) may be requested by the developer per Chapter 12 of the SMC.

**Response:** *All streets are proposed as full streets. No 3/4 streets are proposed.*

5. A 1/2 street improvement includes curb and pavement 2 feet beyond the center line of the right-of-way. A 3/4 street improvement includes curbs on both sides of the side and full pavement between curb faces.

**Response:** *The applicant intends to complete frontage improvements along the Highway 26 frontage as required. No 1/2 streets are proposed.*

E. As necessary to provide for orderly development of adjacent properties, public streets installed concurrent with development of a site shall be extended through the site to the edge of the adjacent property(ies) in accordance with the following:

1. Temporary dead-ends created by this requirement to extend street improvements to the edge of adjacent properties may be installed without turn-arounds, subject to the approval of the Fire Marshal.

2. In order to assure the eventual continuation or completion of the street, reserve strips may be required.

**Response:** *The proposed street layout results in one temporary dead-end street (Street B. "New Street") that will be stubbed to the southern property line of the subject property. The applicant is aware the Fire Marshal will need to review the proposal. In addition, the applicant is aware that reserve strips will likely be required at the end of this street.*

F. Where required by the Planning Commission or Director, public street improvements may be required through a development site to provide for the logical extension of an existing street network or to connect a site with a nearby neighborhood activity center, such as a school or park. Where this creates a land division incidental to the development, a land partition shall be completed concurrent with the development.

**Response:** *The applicant does not anticipate any public street improvements will be required to be extended beyond the site boundaries. No such improvements were identified at the pre-application conference.*

G. Except for extensions of existing streets, no street names shall be used that will duplicate or be confused with names of existing streets. Street names and numbers shall conform to the established pattern in the surrounding area and be subject to approval of the Director.

**Response:** *The proposal contains only three street segments: Dubarko Road, an extension of Fawn Street to intersect with Dubarko Road, and Street B ("New Street") from Dubarko Road to the southern property line of the subject property. The City will need to determine if Street A will be named Fawn Street or a different name and the name for Street B.*

H. Location, grades, alignment, and widths for all public streets shall be considered in relation to existing and planned streets, topographical conditions, public convenience and safety, and proposed land use. Where topographical conditions present special circumstances, exceptions to these standards may be granted by the City Engineer

provided the safety and capacity of the street network is not adversely affected. The following standards shall apply:

1. Location of streets in a development shall not preclude development of adjacent properties. Streets shall conform to planned street extensions identified in the Transportation Plan and/or provide for continuation of the existing street network in the surrounding area.

**Response:** *A future street plan is included with this application as part of the plan set. This plan demonstrates that the proposal does not preclude development on adjacent properties. Both Dubarko Road and Street B (“New Street”) are identified on the TSP and proposed to be constructed with this development.*

2. Grades shall not exceed 6 percent on arterial streets, 10 percent on collector streets, and 15 percent on local streets.

**Response:** *Dubarko, a minor arterial is designed to have a grade of 2% to 6%, Street B (“New Street”) a grade of 2% to 10%, and the extension of Fawn Street, a local street will have a grade of 1% to 7%. All streets comply with the standards in this section.*

3. As far as practical, arterial streets and collector streets shall be extended in alignment with existing streets by continuation of the street centerline. When staggered street alignments resulting in “T” intersections are unavoidable, they shall leave a minimum of 150 ft. between the nearest edges of the two rights-of-way.

**Response:** *Dubarko Road, a minor arterial, will be extended by a continuation of the centerline of this existing street. Street B (“New Road”) is not an extension of an existing street except that it will align with the extension of Fawn Street (Street A).*

4. Centerline radii of curves shall not be less than 500 ft. on arterial streets, 300 ft. on collector streets, and 100 ft. on local streets.

**Response:** *Dubarko Road, a minor arterial is designed with a centerline radii of 500 feet, Street B, a collector with 300 feet, and the extension of Fawn Street will have a centerline radii of 100 feet in compliance with this standard.*

5. Streets shall be designed to intersect at angles as near as practicable to right angles and shall comply with the following:

- a) The intersection of an arterial or collector street with another arterial or collector street shall have a minimum of 100 ft. of straight (tangent) alignment perpendicular to the intersection.

**Response:** *The proposed tangent length from the projected curb line is proposed to be 75 feet on Street B. The applicant requests approval of this design.*

- b) The intersection of a local street with another street shall have a minimum of 50 ft. of straight (tangent) alignment perpendicular to the intersection.

- c) Where right angle intersections are not possible, exceptions can be granted by the City Engineer provided that intersections not at right angles have a minimum corner radius of 20 ft. along the right-of-way lines of the acute angle.
- d) Intersections with arterial streets shall have a minimum curb corner radius of 20 ft. All other intersections shall have a minimum curb corner radius of 10 ft.  
**Response:** *All proposed streets are designed to intersect at right angles with the intersecting street and comply with the requirements of this section.*

- 6. Right-of-way and improvement widths shall be as specified by the Transportation System Plan. Exceptions to those specifications may be approved by the City Engineer to deal with specific unique physical constraints of the site.  
**Response:** *The proposed right-of-way width of Dubarko Road is 76 feet, Street B (“New Street”) is 60 feet, and the extension of Fawn Street is proposed at 50 feet in compliance this standard.*

- J. Private streets may be considered within a development site provided all the following conditions are met:  
**Response:** *No private streets are proposed.*

**17.84.60 - PUBLIC FACILITY EXTENSIONS**

- A. All development sites shall be provided with public water, sanitary sewer, broadband (fiber), and storm drainage.  
**Response:** *The submitted Utility Plan shows the location of proposed public water, sanitary sewer, and stormwater drainage facilities. Broadband fiber service will be detailed with construction plans.*
- B. Where necessary to serve property as specified in “A” above, required public facility installations shall be constructed concurrent with development.  
**Response:** *All of the utilities identified above will be constructed concurrent with the development.*
- C. Off-site public facility extensions necessary to fully serve a development site and adjacent properties shall be constructed concurrent with development.  
**Response:** *The applicant will extend all utilities as necessary to serve the development as required by this section.*
- D. As necessary to provide for orderly development of adjacent properties, public facilities installed concurrent with development of a site shall be extended through the site to the edge of adjacent property(ies).  
**Response:** *As shown on the submitted Master Street and Utility Plan, all public facilities are proposed to be extended through the site to the edge of adjacent properties.*
- E. Private on-site sanitary sewer and storm drainage facilities may be considered provided all the following conditions exist:



**Response:** A private sanitary sewer and stormwater drainage connection is proposed to serve Lot 7. All other utilities will be public.

**17.84.70 - PUBLIC IMPROVEMENT PROCEDURES**

**Response:** The applicant is aware of and intends to comply with the requirements of this section.

**17.84.80 - FRANCHISE UTILITY INSTALLATIONS**

These standards are intended to supplement, not replace or supersede, requirements contained within individual franchise agreements the City has with providers of electrical power, telephone, cable television, and natural gas services (hereinafter referred to as “franchise utilities”).

- A. Where a land division is proposed, the developer shall provide franchise utilities to the development site. Each lot created within a subdivision shall have an individual service available or financially guaranteed prior to approval of the final plat.

**Response:** Franchise utilities will be provided to all lots within the proposed subdivision as required. The location of these utilities will be identified on construction plans and installed or guaranteed prior to final plat approval.

- B. Where necessary, in the judgment of the Director, to provide for orderly development of adjacent properties, franchise utilities shall be extended through the site to the edge of adjacent property(ies), whether or not the development involves a land division.

**Response:** The applicant does not anticipate extending franchise utilities beyond the site.

- C. The developer shall have the option of choosing whether or not to provide natural gas or cable television service to the development site, providing all of the following conditions exist:

1. Extension of franchise utilities through the site is not necessary for the future orderly development of adjacent property(ies);
2. The development site remains in one ownership and land division does not occur (with the exception of land divisions that may occur under the provisions of 17.84.50 F above); and
3. The development is non-residential.

**Response:** The applicant anticipates installing natural gas and will determine if the installation of cable television service is required.

- D. Where a land division is not proposed, the site shall have franchise utilities required by this section provided in accordance with the provisions of 17.84.70 prior to occupancy of structures.

**Response:** A land division is proposed, as such this section is not applicable. With the future review of the proposed multi-family units, this section will be applicable.

- E. All franchise utility distribution facilities installed to serve new development shall be placed underground except as provided below. The following facilities may be installed aboveground:
1. Poles for street lights and traffic signals, pedestals for police and fire system communications and alarms, pad mounted transformers, pedestals, pedestal mounted terminal boxes and meter cabinets, concealed ducts, substations, or facilities used to carry voltage higher than 35,000 volts;
  2. Overhead utility distribution lines may be permitted upon approval of the City Engineer when unusual terrain, soil, or other conditions make underground installation impracticable. Location of such overhead utilities shall follow rear or side lot lines wherever feasible.  
**Response:** *All franchise utilities will be installed underground with the exception of street lights as allowed by this section.*

- F. The developer shall be responsible for making necessary arrangements with franchise utility providers for provision of plans, timing of installation, and payment for services installed. Plans for franchise utility installations shall be submitted concurrent with plan submittal for public improvements to facilitate review by the City Engineer.  
**Response:** *The developer will make all necessary arrangements with franchise utility providers as required by this section.*

- G. The developer shall be responsible for installation of underground conduit for street lighting along all public streets improved in conjunction with the development in accordance with the following:
1. The developer shall coordinate with the City Engineer to determine the location of future street light poles. The street light plan shall be designed to provide illumination meeting standards set by the City Engineer.
  2. The developer shall make arrangements with the serving electric utility for trenching prior to installation of underground conduit for street lighting.  
**Response:** *The developer will install underground conduit for street lighting in accordance with the requirements of this section.*

#### **17.84.90 - LAND FOR PUBLIC PURPOSES**

- A. Easements for public sanitary sewer, water, storm drain, pedestrian and bicycle facilities shall be provided whenever these facilities are located outside a public right-of-way in accordance with the following:
1. When located between adjacent lots, easements shall be provided on one side of a lot line.
  2. The minimum easement width for a single utility is 15 ft. The minimum easement width for two adjacent utilities is 20 ft. The easement width shall be centered on the utility to the greatest extent practicable. Wider easements may be required for unusually deep facilities.  
**Response:** *The majority of public facilities will be located within public rights-of-way including the existing waterline that will be contained within the Dubarko Road right-of-way.*

- B. Public utility easements with a minimum width of 5 feet shall be provided adjacent to all street rights-of-way for franchise utility installations.

**Response:** *Despite the language in this section, eight foot wide public utility easements will be provided along all lots adjacent to street rights-of-way for future franchise utility installations.*

- C. Where a development site is traversed by a drainageway or water course, a drainage way dedication shall be provided to the City.

**Response:** *The site is not traversed by a drainage way or water course and this section is not applicable.*

- D. Where a development is traversed by, or adjacent to, a future trail linkage identified within the Transportation System Plan, dedications of suitable width to accommodate the trail linkage shall be provided. This width shall be determined by the City Engineer, considering the type of trail facility involved.

**Response:** *No future trail is identified in the TSP on subject property and none are proposed.*

- E. Where existing rights-of-way and/or easements within or adjacent to development sites are nonexistent or of insufficient width, dedications may be required. The need for and widths of those dedications shall be determined by the City Engineer.

**Response:** *The only existing right-of-way adjacent to the development is Highway 26. No additional right-of-way dedication along this street has been identified.*

- F. Where easement or dedications are required in conjunction with land divisions, they shall be recorded on the plat. Where a development does not include a land division, easements and/or dedications shall be recorded on standard document forms provided by the City Engineer.

**Response:** *All easements and dedications will be identified on the plat as required.*

#### **17.84.100 - MAIL DELIVERY FACILITIES**

**Response:** *The location and type of mail delivery facilities will be coordinated with the City Engineer and the Post Office as part of the construction plan process.*

#### **CHAPTER 17.86 - PARKLAND and OPEN SPACE**

##### **17.86.00 - INTENT**

The availability of parkland and open space is a critical element in maintaining and improving the quality of life in Sandy. Land that features trees, grass and vegetation provides not only an aesthetically pleasing landscape but also buffers incompatible uses, and preserves sensitive environmental features and important resources. Parks and open space, together with support facilities, also help to meet the active and passive recreational needs of the population of Sandy. This chapter implements policies of Goal 8 of the Comprehensive Plan and the Parks Master Plan by outlining provisions for parks and open space in the City of Sandy.

**Response:** *The city's Parks Master Plan and Comprehensive Plan map show a neighborhood park located on the subject property. The applicant proposes dedicating 1.755 acres parkland with this application.*

### 17.86.10 - MINIMUM PARKLAND DEDICATION REQUIREMENTS

Parkland Dedication: New residential subdivisions, planned developments, multi-family or manufactured home park developments shall be required to provide parkland to serve existing and future residents of those developments.

**Response:** *The proposed residential subdivision is subject to the provisions of this chapter.*

1. The required parkland shall be dedicated as a condition of approval for the following:
  - a. Tentative plat for a subdivision or partition;
  - b. Planned Development conceptual or detailed development plan;
  - c. Design review for a multi-family development or manufactured home park; and
  - d. Replat or amendment of any site plan for multi-family development or manufactured home park where dedication has not previously been made or where the density of the development involved will be increased.

**Response:** *A subdivision to contain single family detached or duplexes and multi-family dwellings is proposed. The applicant proposes dedicating 1.755 acres of parkland with this application.*

2. Calculation of Required Dedication: The required parkland acreage to be dedicated is based on a calculation of the following formula rounded to the nearest 1/100 (0.00) of an acre:

Required parkland dedication (acres) = (proposed units) x (persons/unit) x 0.0043 (per person park land dedication factor)

**Response:** *The proposed seven-lot subdivision includes four lots for single-family dwellings or duplexes and the two lots for multi-family dwellings. An additional lot is proposed to be zoned C-3. As noted above, the applicant is proposing a cap of 200 dwelling units for the property to include a maximum of 8 duplex units and 192 multi-family units.*

*As such, the proposal results in the following formulas: 1) Lots 1 - 4: 8 (duplex units) x 3 (persons/unit) x 0.0043 (per person park land dedication factor) = 0.1032 acres rounded to 0.10 acres, and 2) 3 lots (Lots 5 - 7) to contain 192 multi-family units: 192 (proposed multi-family units) x 2 (persons/unit) x 0.0043 (per person park land dedication factor) = 1.6512 acres rounded to 1.65 acres. 3) The combined total required parkland dedication is 1.75 acres (0.10 + 1.65). As shown on submitted plans, the applicant proposes dedicating 1.755 acres of parkland, exceeding the minimum parkland dedication required by this section by 0.005 acres.*

### 17.86.20 MINIMUM PARKLAND STANDARDS

Land required or proposed for parkland dedication shall be contained within a continuous unit and must be suitable for active use as a neighborhood or mini-park, based on the following criteria:

1. Homes must front on the parkland as shown in the example below:

**Response:** *The diagram in this section shows the preferred relationship of parkland to single family residential dwellings with homes fronting the park. The proposed parkland dedication with this application expands parkland dedicated previously*

*dedicated with the Deer Pointe 2 Subdivision. With this configuration the entire park after dedication with the current application will be bordered on its western border by Meadow Avenue with homes across the street, on the South by an extension of Fawn Street, on the North by Highway 26, and on the East by Lot 7 zoned C-3, Village Commercial. The details of the development of Lot 7 are only conceptual at this time and will be determined following a pre-application conference and approval of a design review application at a later date.*

2. The required dedication shall be contained as a contiguous unit and not separated into pieces or divided by roadways.

**Response:** *The proposed 1.755 acre parkland dedication will be contiguous to 1.4 acres of parkland previously dedicated as part of the Deer Point 2 Subdivision.*

3. The parkland must be able to accommodate play structures, play fields, picnic areas, or other active park use facilities. The average slope of the active use parkland shall not exceed 15%.

**Response:** *The majority of the proposed parkland contains slopes less than 15 percent as required. As shown on submitted plans, a small area of the proposed park currently exists exceeding this grade and could either be regraded or left in a natural condition in order to provide visual interest or an additional amenity. The subject property is able to accommodate a variety of amenities including those listed in this section. The city's Master Plan for this park will determine appropriate amenities for this park.*

4. Any retaining wall constructed at the perimeter of the park adjacent to a public right-of-way or private street shall not exceed 4 feet in height.

**Response:** *No retaining walls are proposed.*

5. Once dedicated, the City will assume maintenance responsibility for the neighborhood or mini parkland.

**Response:** *The applicant understands the City will assume maintenance responsibility once the land is dedicated.*

#### **17.86.30 DEDICATION PROCEDURES**

Prior to approval of the final plat, the developer shall dedicate the land as previously determined by the City in conjunction with approval of the tentative plat. Dedication of land in conjunction with multi-family development shall be required prior to issuance of permits and commencement of construction.

A. Prior to acceptance of required parkland dedications, the applicant/developer shall complete the following items for all proposed dedication areas:

1. The developer shall clear, fill, and/or grade all land to the satisfaction of the City, install sidewalks on the park land adjacent to any street, and seed the park land; and,

**Response:** *The applicant understands he will be required to clear, grade, and seed the proposed parkland as desired by the City.*

2. The developer shall submit a Phase I Environmental Site Assessment completed by a qualified professional according to American Society of Testing and Materials (ASTM) standards (ASTM E 1527). The results of this study shall indicate a clean environmental record.

*Response: The applicant understands submittal of a Phase I Environmental Assessment will be required prior to the City accepting the parkland dedication.*

#### B. Additional Requirements

1. In addition to a formal dedication on the plat to be recorded, the subdivider shall convey the required lands to the city by general warranty deed. The developer of a multi-family development or manufactured home park shall deed the lands required to be dedicated by a general warranty deed. In any of the above situations, the land so dedicated and deeded shall not be subject to any reservations of record, encumbrances of any kind or easements which, in the opinion of the Director, will interfere with the use of the land for park, open space or recreational purposes.

The subdivider or developer shall be required to present to the City a title insurance policy on the subject property ensuring the marketable state of the title.

*Response: The applicant understands this requirement.*

2. Where any reservations, encumbrances or easements exist, the City may require payment in lieu of the dedication of lands unless it chooses to accept the land subject to encumbrances.

*Response: The applicant proposes including two utility easements within the proposed parkland dedication. These easements are unavoidable given the location of existing utilities.*

#### **17.86.40 - CASH IN LIEU OF DEDICATION**

At the city's discretion only, the city may accept payment of a fee in lieu of land dedication. The city may require payment in lieu of land when the park land to be dedicated is less than 3 acres. A payment in lieu of land dedication is separate from Park Systems Development Charges, and is not eligible for a credit of Park Systems Development Charges. The amount of the fee in lieu of land dedication (in dollars per acre) shall be set by City Council Resolution, and it shall be based on the typical market value of developed property (finished lots) in Sandy net of related development costs.

*Response: The applicant proposes dedicating 1.755 acres of parkland with this application rather than paying a fee in lieu. This area exceeds the required dedication calculated in Section 17.86.10(2) above by 0.005 acres.*

#### **CHAPTER 17.92 - LANDSCAPING AND SCREENING GENERAL STANDARDS - ALL ZONES**

*Response: This chapter has limited applicability to subdivisions so only those applicable sections are reviewed in this submittal.*

#### **17.92.10 - GENERAL PROVISIONS**

- A. Where landscaping is required by this Code, detailed planting plans shall be submitted for review with development applications. No development may commence until the Director or Planning Commission has determined the plans comply with the purposes clause and specific standards in this chapter. All required landscaping and related improvements shall be completed or financially guaranteed prior to the issuance of a Certificate of Occupancy.
- B. Appropriate care and maintenance of landscaping onsite and landscaping in the adjacent public right-of-way is the right and responsibility of the property owner, unless City ordinances specify otherwise for general public and safety reasons. If street trees or other plant materials do not survive or are removed, materials shall be replaced in kind within 6 months.
- C. Significant plant and tree specimens should be preserved to the greatest extent practicable and integrated into the design of a development. Trees of 25-inches or greater circumference measured at a height of 4-1/2 ft. above grade are considered significant. Plants to be saved and methods of protection shall be indicated on the detailed planting plan submitted for approval. Existing trees may be considered preserved if no cutting, filling, or compaction of the soil takes place between the trunk of the tree and the area 5-ft. outside the tree's drip line. Trees to be retained shall be protected from damage during construction by a construction fence located 5 ft. outside the dripline.

*Response: The requirements of this section do not apply to residential subdivisions per the Planning Commission's Code Interpretation as part of the Jacoby Heights Subdivision (File No. 18-025 SUB/VAR/FSH/TREE/INT). Tree retention requirements are contained in Chapter 17.102, Urban Forestry and are reviewed below. The proposed tree plan proposes to retain more than the minimum required by this chapter.*

#### **17.92.20 - MINIMUM IMPROVEMENTS - LANDSCAPING AND SCREENING**

*Response: The Single Family Residential zone is not listed in this section requiring minimum landscaping. The details of this section will be considered with submittal of a design review application for the proposed multi-family units to be zoned R-2, Medium Density Residential, R-3, High Density Residential, and C-3 portions of the property.*

#### **CHAPTER 17.98 - PARKING, LOADING, AND ACCESS REQUIREMENTS**

##### **17.98.10 - GENERAL PROVISIONS**

- M. Residential Parking Analysis Plan. A Residential Parking Analysis Plan shall be required for all new residential planned developments, subdivisions, and partitions to include a site plan depicting all of the following:
  - a. Location and dimension of required parking spaces as specified in Section 17.98.200.
  - b. Location of areas where parking is not permitted as specified in Sections 17.98.200(A)(3) and (5).
  - c. Location and design of parking courts (if applicable).

*Response: A Residential Parking Analysis Plan identifying the location of parking for the four R-1 lots as required by this section is included with the plan set. The details of this analysis is discussed in Section 17.98.200 below.*

#### **17.98.20 - OFF-STREET PARKING REQUIREMENTS**

- A. Off Street Parking Requirements. Off street parking shall conform to the following standards:
1. All square footage measurements are gross square feet of total floor area.
  2. 18 lineal inches of bench shall be considered 1 seat.
  3. Except as otherwise specified, parking for employees shall be provided based on 1 space per 2 employees for the largest shift in addition to required parking specified in Sections A6-A9 below.
  4. Where less than 5 parking spaces are required, then only one bicycle space shall be required except as otherwise modified in Sections 5-9 below.
  5. In addition to requirements for residential off street parking, new dwellings shall meet the on-street parking requirements in Section 17.98.200.

*Response: Each single-family dwelling or duplex are required to provide at least two off-street parking spaces. All lots are designed to ensure compliance with this standard and will be evaluated during building plan review. Parking for the proposed multi-family units will be evaluated as part of a future design review application.*

#### **17.98.60 - DESIGN, SIZE AND ACCESS**

All off-street parking facilities, vehicular maneuvering areas, driveways, loading facilities, accessways, and private streets shall conform to the standards set forth in this section.

*Response: The details of this section will be evaluated with submittal of the design review application for the multi-family units.*

#### **17.98.80 - ACCESS TO ARTERIAL AND COLLECTOR STREETS**

*Response: No lots are proposed to gain access from an arterial or collector street.*

#### **17.98.90 - ACCESS TO UNIMPROVED STREETS**

*Response: All streets proposed in the subdivision will be improved to city standards.*

#### **17.98.100 - DRIVEWAYS**

- A. A driveway to an off-street parking area shall be improved from the public roadway to the parking area a minimum width of 20 feet for a two-way drive or 12 feet for a one-way drive but in either case not less than the full width of the standard approach for the first 20 feet of the driveway.

*Response: Lots 5 and 6 to contain multi-family units will be accessed by a 26 foot wide curb cut and driveway approach.*

- B. A driveway for a single-family dwelling shall have a minimum width of 10 feet.

*Response: All single family lots will have a 12-foot wide curb cut and driveway approach. This reduction from the typical standard width is proposed to accommodate additional on-street parking.*

- C. A driveway for a two-family dwelling shall have a minimum width of 20 feet. A driveway approach must be constructed in accordance with applicable city standards and the entire driveway must be paved with asphalt or concrete.



**Response:** *None of the lots will be developed with two-family dwellings and this section is not applicable.*

- D. Driveways, aisles, turnaround areas and ramps shall have a minimum vertical clearance of twelve feet for their entire length and width but such clearance may be reduced in parking structures.

**Response:** *All driveways will be designed in compliance with this standard.*

- E. No driveway shall traverse a slope in excess of 15 percent at any point along the driveway length.

**Response:** *All driveways will be designed in compliance with this standard.*

- F. The location and design of the driveway shall provide for unobstructed sight per the vision clearance requirements. Requests for exceptions to these requirements will be evaluated by the City Engineer considering the physical limitations of the lot and safety impacts to vehicular, bicycle, and pedestrian traffic.

**Response:** *All driveways will be designed in compliance with this standard.*

#### **17.98.110 - VISION CLEARANCE**

- A. Except within the Central Business District, vision clearance areas shall be provided at intersections of all streets and at intersections of driveways and alleys with streets to promote pedestrian, bicycle, and vehicular safety. The extent of vision clearance to be provided shall be determined from standards in Chapter 17.74 and taking into account functional classification of the streets involved, type of traffic control present at the intersection, and designated speed for the streets.

**Response:** *The subject property will contain R-1, R-2, R-3, and C-3 zoning requiring compliance with this section. The requirements of this section will be considered in placing landscaping in these areas with construction of homes and will be evaluated with future design review applications.*

- B. Traffic control devices, streetlights, and utility installations meeting approval by the City Engineer are permitted within vision clearance areas.

**Response:** *The exceptions contained in this section will be considered in the design and placement of these structures.*

#### **17.98.200 - RESIDENTIAL ON-STREET PARKING REQUIREMENTS**

- A. Residential On-Street Parking Requirements. Residential on-street parking shall conform to the following standards:

1. In addition to required off-street parking, all new residential planned developments, subdivisions and partitions shall provide one (1) on-street parking space within 200 feet of each dwelling except as provided in Section 17.98.200(A) (6) below.
2. The location of residential on-street parking shall be reviewed for compliance with this section through submittal of a Residential Parking Analysis Plan as required in Section 17.98.10(M).
3. Residential on-street parking shall not obstruct required clear vision areas and shall not violate any local or state laws.

4. Parallel residential on-street parking spaces shall be 22 feet minimum in length.
5. Residential on-street parking shall be measured along the curb from the outside edge of a driveway wing or curb cut. Parking spaces must be set back a minimum of 15 feet from an intersection and may not be located within 10 feet of a fire hydrant.

**Response:** *This section is only applicable to the portion of the property zoned R-1. A Residential On-Street Parking Analysis designed in compliance with the requirements of this section is included with the application package. One on-street parking space at least 22 feet in length has been identified within 200 feet of each of the 4 lots as required. This analysis shows 20 on-street parking spaces in compliance with this standard.*

6. Portions of residential on-street parking required by this section may be provided in parking courts that are interspersed throughout a development when the following standards are met:

**Response:** *No parking courts are proposed.*

#### **CHAPTER 17.100 - LAND DIVISION**

##### **17.100.20 - LAND DIVISION CLASSIFICATION - TYPE I, II OR III PROCEDURES**

- C. Type II Land Division (Major Partition or Subdivision). A major partition or subdivision shall be a Type II procedure when a street is extended, satisfactory street conditions exist and the resulting parcels/lots comply with the standards of the zoning district and this chapter. Satisfactory street conditions exist when the Director determines one of the following:
  1. Existing streets are stubbed to the property boundaries and are linked by the land division.
  2. An existing street or a new proposed street need not continue beyond the land division in order to complete an appropriate street system or to provide access to adjacent property.
  3. The proposed street layout is consistent with a street pattern adopted as part of the Comprehensive Plan or an officially adopted City street plan.

**Response:** *The proposed subdivision preliminary plat complies with all applicable code requirements to be processed as a Type II application. However, because the application also includes Type IV applications for a Specific Area Plan, Comprehensive Plan Map Amendment, and Zoning Map amendment, the entire application will be processed under the Type IV quasi-judicial procedure.*

##### **17.100.60 - SUBDIVISIONS**

Approval of a subdivision is required for a land division of 4 or more parcels in a calendar year. A two-step procedure is required for subdivision approval: (1) tentative plat review and approval; and (2) final plat review and approval.

**Response:** *As defined by this section the seven-lot land division is considered a subdivision.*

- A. Preapplication Conference. The applicant for a subdivision shall participate in a preapplication conference with city staff to discuss procedures for approval,

applicable state and local requirements, objectives and policies of the Sandy Comprehensive Plan, and the availability of services.

**Response:** *Pre-application conferences were held with the City on January 10, 2018, June 12, 2018, and October 10, 2018.*

- B. Application Requirements for a Tentative Plat. Subdivision applications shall be made on forms provided by the planning department and shall be accompanied by:

**Response:** *All of the items required by this section are included with the submittal.*

- E. Approval Criteria. The Director or Planning Commission shall review the tentative plat for the subdivision based on the classification procedure (Type II or III) set forth in Section 17.12 and the following approval criteria:

1. The proposed subdivision is consistent with the density, setback and dimensional standards of the base zoning district, unless modified by a Planned Development approval.

**Response:** *As reviewed in the narrative above, the proposed subdivision is consistent with the density, setback, and dimensional standards in the R-1, R-2, R-3, and C-3 zoning districts. The details of the development on Lots 5 - 7 will be addressed with future design review applications.*

2. The proposed subdivision is consistent with the design standards set forth in this chapter.

**Response:** *As detailed in this narrative, the proposal complies with the design standards of this chapter.*

3. The proposed street pattern is connected and consistent with the Comprehensive Plan or official street plan for the City of Sandy.

**Response:** *As illustrated on the submitted Future Street Plan, the proposed street system is consistent with the City's Transportation System Plan and Comprehensive Plan.*

4. Adequate public facilities are available or can be provided to serve the proposed subdivision.

**Response:** *The City has previously indicated that all public facilities have capacity to serve the proposed subdivision.*

5. All proposed improvements meet City standards.

**Response:** *As reviewed in this narrative, all improvements in the proposed development are designed in compliance with City standards.*

6. The phasing plan, if requested, can be carried out in a manner that meets the objectives of the above criteria and provides necessary public improvements for each phase as it develops.

**Response:** *The applicant proposes developing the subdivision in a single phase. The applicant intends to submit design review applications for development proposed on Lots 5 - 7 at a later date.*

#### **17.100.80 - CHARACTER OF THE LAND**

Land which the Director or the Planning Commission finds to be unsuitable for development due to flooding, improper drainage, steep slopes, rock formations, adverse earth formations or topography, utility easements, or other features which will reasonably be harmful to the safety, health, and general welfare of the present or future inhabitants of the partition or subdivision and the surrounding areas, shall not be developed unless adequate methods are formulated by the subdivider and approved by the Director or the Planning Commission to solve the problems created by the unsuitable land conditions.

*Response: As reviewed in this narrative, the subject property is suitable for development as proposed. The site does not contain any physical constraints or utility concerns that would make it unsuitable for the proposed subdivision. The proposal is not expected to degrade the performance of any existing or planned transportation facilities and no mitigation is necessary or recommended.*

#### **17.100.90 - ACCESS CONTROL GUIDELINES AND COORDINATION**

- A. Notice and coordination with ODOT required. The city will coordinate and notify ODOT regarding all proposals for new or modified public and private accesses on to Highways 26 and 211.

*Response: The subject property abuts Highway 26 and notification of the proposal will be sent to ODOT. The applicant's traffic consultant coordinated with ODOT and the City's traffic consultant prior to the preparation of the traffic impact study submitted with this application. The proposal does not include direct access to Highway 26 with the exception of the Dubarko Road intersection, a planned public road.*

#### **17.100.100 - STREETS GENERALLY**

- A. Transportation Impact Studies. Transportation impact studies may be required by the city engineer to assist the city to evaluate the impact of development proposals, determine reasonable and prudent transportation facility improvements and justify modifications to the design standards. Such studies will be prepared in accordance with the following:

1. A proposal established with the scope of the transportation impact study shall be coordinated with, and agreed to, by the city engineer. The study requirements shall reflect the magnitude of the project in accordance with accepted transportation planning and engineering practices. A professional civil or traffic engineer registered in the State of Oregon shall prepare such studies.
2. If the study identifies level-of-service conditions less than the minimum standards established in the Sandy Transportation System Plan, improvements and funding strategies mitigating the problem shall be considered as part of the land use decision for the proposal.

*Response: A traffic impact study prepared in compliance with city standards is included with the application package. With the exception of a revised striping plan and frontage improvements along the Highway 26 frontage, this study does not identify any issues requiring mitigation by the applicant.*

- B. Topography and Arrangement. All streets shall be properly related to special traffic generators such as industries, business districts, schools, and shopping centers and to the pattern of existing and proposed land uses.

*Response: None of the special traffic generators listed in this section are located near the subject property. All existing and proposed residential uses have been considered in development of the proposed street pattern. A future street plan is submitted with this application showing how streets can be extended beyond the subject property in the future.*

- C. Street Spacing. Street layout shall generally use a rectangular grid pattern with modifications as appropriate to adapt to topography or natural conditions.

*Response: The proposed street layout is predominately controlled by the alignment of Dubarko Road that will be extended through the site from the current terminus to connect with Highway 26 and the location of Street B ("New Street"). Both of these streets are identified in the city's Transportation System Plan as future streets. The only other street in the subdivision is the extension of Fawn Street (Street "A") on the property. The proposed street layout represents a logical street pattern.*

- D. Future Street Plan. Future street plans are conceptual plans, street extensions and connections on acreage adjacent to land divisions. They assure access for future development and promote a logical, connected pattern of streets. It is in the interest of the city to promote a logical, connected pattern of streets. All applications for land divisions shall provide a future street plan that shows the pattern of existing and proposed future streets within the boundaries of the proposed land divisions, proposed connections to abutting properties, and extension of streets to adjacent parcels within a 400 foot radius of the study area where development may practically occur.

*Response: A future street plan in compliance with the requirements of this section is included as part of the application package. This plan assures that access for future development will promote a logical and connected pattern of streets.*

- E. Connections. Except as permitted under Exemptions, all streets, alleys and pedestrian walkways shall connect to other streets within the development and to existing and planned streets outside the development and to undeveloped properties which have no future street plan. Streets shall terminate at other streets or at parks, schools or other public land within a neighborhood.

Where practicable, local roads shall align and connect with other roads when crossing collectors and arterials.

Proposed streets or street extensions shall be located to provide direct access to existing or planned transit stops, and existing or planned neighborhood activity centers, such as schools, shopping areas and parks.

*Response: The proposal includes a limited number of streets because of the alignment of Dubarko Road, Street B ("New Street"), and the location of Fawn Street extended into the property. Because the proposed subdivision includes two large lot multi-family development sites proposed on Lots 5 and 6 and future Village*

*Commercial development on Lot 7, the street network is further limited. Given these facts, the proposed street layout represents a logical design.*

**17.100.120 - BLOCKS AND ACCESSWAYS**

- A. Blocks. Blocks shall have sufficient width to provide for two tiers of lots at appropriate depths. However, exceptions to the block width shall be allowed for blocks that are adjacent to arterial streets or natural features.

*Response: All blocks within the proposed subdivision have sufficient width to provide for two tiers of lots.*

- B. Residential Blocks. Blocks fronting local streets shall not exceed 400 feet in length, unless topographic, natural resource, or other similar physical conditions justify longer blocks. Blocks may exceed 400 feet if approved as part of a Planned Development, Specific Area Plan, adjustment or variance.

*Response: No blocks exceed 400 feet in length.*

- D. Pedestrian and Bicycle Access Way Requirements. In any block in a residential or commercial district over 600 feet in length, a pedestrian and bicycle accessway with a minimum improved surface of 10 feet within a 15-foot right-of-way or tract shall be provided through the middle of the block. To enhance public convenience and mobility, such accessways may be required to connect to cul-de-sacs, or between streets and other public or semipublic lands or through greenway systems.

*Response: None of the blocks within the proposed subdivision exceed 600 feet in length.*

**17.100.130 - EASEMENTS**

A minimum eight (8) foot public utility easement shall be required along property lines abutting a right-of-way for all lots within a partition or subdivision. Where a partition or subdivision is traversed by a watercourse, drainage way, channel or stream, the land division shall provide a stormwater easement or drainage right-of-way conforming substantially with the lines of such watercourse, and such further width as determined needed for water quality and quantity protection.

*Response: The preliminary plat includes eight foot wide public utility easements along all property lines abutting a public right-of-way. Because access is limited along Dubarko Drive, a shared private drive and access easement is also proposed across Lot 3 to provide access to Lot 4. In addition, a 10-foot PUE/Sidewalk easement is proposed along the Highway 26 frontage of Lot 7 and the majority of the frontage of Tract A. A Conservation Easement is proposed to be platted across the northern portion of Lot 7 to protect retained trees in this area.*

**17.100.140 - PUBLIC ALLEYS**

*Response: No alleys are proposed with this development.*

**17.100.150 RESIDENTIAL SHARED PRIVATE DRIVES**

*Response: No residential shared private drives as defined by this section are proposed. The proposal does include an access easement to provide access to both Lots 3 and 4. This drive serves only two lots as allowed and will be designed in accordance with this*

section. A shared maintenance agreement will be recorded with the plat to ensure maintenance for this facility into the future.

#### **17.100.160 PUBLIC ACCESS LANES**

**Response:** No public access lanes are proposed in this development

#### **17.100.170 - FLAG LOTS**

Flag lots can be created where it can be shown that no other street access is possible to achieve the requested land division. The flag lot shall have a minimum street frontage of 15 feet for its accessway. The following dimensional requirements shall apply to flag lots:

- A. Setbacks applicable to the underlying zoning district shall apply to the flag lot.
- B. The access strip (pole) may not be counted toward the lot size requirements.

**Response:** No flag lots are proposed.

#### **17.100.180 - INTERSECTIONS**

- A. Intersections. Streets shall be laid out so as to intersect as nearly as possible at right angles. A proposed intersection of two new streets at an angle of less than 75 degrees shall not be acceptable. No more than two streets shall intersect at any one point unless specifically approved by the City Engineer. The city engineer may require left turn lanes, signals, special crosswalks, curb extensions and other intersection elements justified by a traffic study or necessary to comply with the Development Code.

**Response:** Both the extension of Fawn Street (Street A) and Street B (“New Street”) are designed to intersect at right angles to the Dubarko Road as required. In addition, Dubarko Road will intersect Highway 26 at a right angle.

- B. Curve Radius. All local and neighborhood collector streets shall have a minimum curve radius (at intersections of rights-of-way) of 20 feet, unless otherwise approved by the City Engineer. When a local or neighborhood collector enters on to a collector or arterial street, the curve radius shall be a minimum of 30 feet, unless otherwise approved by the City Engineer.

**Response:** All streets in the proposed subdivision have a minimum curve radius as required by this section.

#### **17.100.190 - STREET SIGNS**

The subdivider shall pay the cost of street signs prior to the issuance of a Certificate of Substantial Completion. The City shall install all street signs and upon completion will bill the developer for costs associated with installation. In addition, the subdivider may be required to pay for any traffic safety devices related to the development. The City Engineer shall specify the type and location of the street signs and/or traffic safety devices.

**Response:** The applicant understands it is his responsibility to pay the cost of street signs and the city will install these signs.

#### **17.100.200 - STREET SURFACING**

Public streets, including alleys, within the development shall be improved in accordance with the requirements of the City or the standards of the Oregon State Highway

Department. An overlay of asphalt concrete, or material approved by the City Engineer, shall be placed on all streets within the development. Where required, speed humps shall be constructed in conformance with the City's standards and specifications.

**Response:** *All streets in the proposed subdivision will be improved in accordance with City standards.*

#### **17.100.210 - STREET LIGHTING**

A complete lighting system (including, but not limited to: conduits, wiring, bases, poles, arms, and fixtures) shall be the financial responsibility of the subdivider on all cul-de-sacs, local streets, and neighborhood collector streets. The subdivider will be responsible for providing the arterial street lighting system in those cases where the subdivider is required to improve an arterial street. Standards and specifications for street lighting shall be coordinated with the utility and any lighting district, as appropriate.

**Response:** *The applicant is aware of the requirements of this section. A lighting plan will be coordinated with PGE and the city as part of the construction plan process and prior to installation of any fixtures.*

#### **17.100.220 - LOT DESIGN**

A. The lot arrangement shall be such that there will be no foreseeable difficulties, for reason of topography or other conditions, in securing building permits to build on all lots in compliance with the Development Code.

**Response:** *All lots in the proposed subdivision have been designed so that no foreseeable difficulties due to topography or other conditions will exist in securing building permits on these lots. A Geotechnical Evaluation is included with the application package.*

B. The lot dimensions shall comply with the minimum standards of the Development Code. When lots are more than double the minimum lot size required for the zoning district, the subdivider may be required to arrange such lots to allow further subdivision and the opening of future streets to serve such potential lots.

**Response:** *All lots in the R-1 zone comply with the minimum standards in that zone and no lots are proposed to contain more than double the minimum lot size. The R-2 and R-3 zoning districts do not contain a minimum or maximum lot size standard.*

C. The lot or parcel width at the front building line shall meet the requirements of the Development Code and shall abut a public street other than an alley for a width of at least 20 feet. A street frontage of not less than 15 feet is acceptable in the case of a flag lot division resulting from the division of an unusually deep land parcel which is of a size to warrant division into not more than two parcels.

**Response:** *All lots in the proposed subdivision contain at least 20 feet of frontage along a public street. As noted above, no flag lots are proposed.*

D. Double frontage lots shall be avoided except where necessary to provide separation of residential developments from arterial streets or to overcome specific disadvantages of topography or orientation.



**Response:** Lots 6 and 7 both contain frontage on Highway 26 and Dubarko Road. In addition, Lot 7 also contains frontage on Street A (Fawn Street). Because no direct access to Highway 26 is allowed, the creation of a double frontage lot is unavoidable.

- E. Lots shall avoid deriving access from major or minor arterials. When driveway access from major or minor arterials may be necessary for several adjoining lots, the Director or the Planning Commission may require that such lots be served by a common access drive in order to limit possible traffic hazards on such streets. Where possible, driveways should be designed and arranged to avoid requiring vehicles to back into traffic on minor or major arterials.

**Response:** Lots 6 and 7 are proposed to be provided full access to Dubarko Road, a minor arterial. Lot 6 will also have access on Street B (“New Street”), a collector street, but because of the size of this lot and the number of units proposed for this lot, the applicant is proposing two access points. Lot 7 will have access on Street A, a local street and the applicant may request a full access to Dubarko Road in the future.

#### **17.100.230 - WATER FACILITIES**

Water lines and fire hydrants serving the subdivision or partition, and connecting the development to City mains, shall be installed to provide adequate water pressure to serve present and future consumer demand. The materials, sizes, and locations of water mains, valves, service laterals, meter boxes and other required appurtenances shall be in accordance with the standards of the Fire District, the City, and the State.

If the city requires the subdivider to install water lines in excess of eight inches, the city may participate in the oversizing costs. Any oversizing agreements shall be approved by the city manager based upon council policy and dependent on budget constraints. If required water mains will directly serve property outside the subdivision, the city may enter into an agreement with the subdivider setting forth methods for reimbursement for the proportionate share of the cost.

**Response:** The applicant intends installing all water lines and fire hydrants in compliance with applicable standards.

**17.100.240 - SANITARY SEWERS** Sanitary sewers shall be installed to serve the subdivision and to connect the subdivision to existing mains. Design of sanitary sewers shall take into account the capacity and grade to allow for desirable extension beyond the subdivision.

If required sewer facilities will directly serve property outside the subdivision, the city may enter into an agreement with the subdivider setting forth methods for reimbursement by nonparticipating landowners for the proportionate share of the cost of construction.

**Response:** The applicant intends installing sanitary sewer lines in compliance with applicable standards. All lots except Lot 7 are designed to gravity drain to the sanitary sewer line in Dubarko Road. Because Lot 7 is lower in elevation than this line, it will be served by connecting to the existing sanitary sewer line at the North end of Tract A.

**17.100.250 - SURFACE DRAINAGE AND STORM SEWER SYSTEM**

- A. Drainage facilities shall be provided within the subdivision and to connect with off-site drainage ways or storm sewers. Capacity, grade and materials shall be by a design approved by the city engineer. Design of drainage within the subdivision shall take into account the location, capacity and grade necessary to maintain unrestricted flow from areas draining through the subdivision and to allow extension of the system to serve such areas.

*Response: A public stormwater water quality and detention facility is proposed as Tract B to be located north of Lot 1 and south of the Fawn Street extension and Tract C, west of Lot 5. These facilities have been sized and located to accommodate the water quality and stormwater detention needs of all streets in addition to those of Lots 1 - 4. The water quality and detention needs of Lots 5 - 7 will be accommodated on each of these lots. Stormwater from Lots 5 and 6 will also be routed to flow through the facility in Tract B. After onsite detention and water quality treatment, Stormwater from Lot 7 will be piped and connected to the existing storm line in Tract A. A stormwater report is included with this application.*

- B. In addition to normal drainage design and construction, provisions shall be taken to handle any drainage from preexisting subsurface drain tile. It shall be the design engineer's duty to investigate the location of drain tile and its relation to public improvements and building construction.

*Response: No subsurface drain tiles are known to exist on the site.*

- C. The roof and site drainage from each lot shall be discharged to either curb face outlets (if minor quantity), to a public storm drain or to a natural acceptable drainage way if adjacent to the lot.

*Response: All roof and site drainage will be discharged to curb face outlets or another approved system as required.*

**17.100.260 - UNDERGROUND UTILITIES**

All subdivisions or major partitions shall be required to install underground utilities (including, but not limited to, electrical and telephone wiring). The utilities shall be installed pursuant to the requirements of the utility company.

*Response: The applicant intends installing all utilities underground as required.*

**17.100.270 - SIDEWALKS**

Sidewalks shall be installed on both sides of a public street and in any special pedestrian way within the subdivision.

*Response: Sidewalks will be installed on both sides of all streets with the exception of Highway 26 which will only be improved on the frontage adjacent to the subject property.*

**17.100.280 - BICYCLE ROUTES**

If appropriate to the extension of a system of bicycle routes, existing or planned, the Director or the Planning Commission may require the installation of bicycle lanes within streets. Separate bicycle access ways may be required to reduce walking or cycling distance when no feasible street connection is available.

*Response: No existing, planned, or proposed bicycle routes are proposed with the exception of stripped bike lanes on Dubarko Road. A cross-section showing this improvement is included.*

#### **17.100.290 - STREET TREES**

Where planting strips are provided in the public right-of-way, a master street tree plan shall be submitted and approved by the Director. The street tree plan shall provide street trees approximately every 30' on center for all lots.

*Response: Planter strips will be provided along all frontages as required. Street trees in accordance with City standards will be provided in these areas. A Street Tree Plan is included with the submittal package.*

#### **17.100.300 - EROSION CONTROL**

Grass seed planting shall take place prior to September 30th on all lots upon which a dwelling has not been started but the ground cover has been disturbed. The seeds shall be of an annual rye grass variety and shall be sown at not less than four pounds to each 1000 square feet of land area.

*Response: Grass seeding will be completed as required by this section. The submitted preliminary Grading and Erosion Control plan provides additional details to address erosion control concerns. A separate Grading and Erosion Control Permit will be required prior to any site grading.*

#### **17.100.310 - REQUIRED IMPROVEMENTS**

The following improvements shall be installed at no expense to the city, consistent with the design standards of Chapter 17.84, except as otherwise provided in relation to oversizing.

- A. Drainage facilities
- B. Lot, street and perimeter monumentation
- C. Mailbox delivery units
- D. Sanitary sewers
- E. Sidewalks
- F. Street lights
- G. Street name signs
- H. Street trees
- I. Streets
- J. Traffic signs
- K. Underground communication lines, including broadband (fiber), telephone, and cable. Franchise agreements will dictate whether telephone and cable lines are required.
- L. Underground power lines
- M. Water distribution lines and fire hydrants

*Response: All of the improvements specified in this section are required to be installed by the developer at no expense to the City of Sandy consistent with the design standards of Chapter 17.84 and applicable standards.*

### **CHAPTER 17.102 - URBAN FORESTRY**

#### **17.102.20 - APPLICABILITY**

This chapter applies only to properties within the Sandy Urban Growth Boundary that are greater than one acre including contiguous parcels under the same ownership.

A. General: No person shall cut, harvest, or remove trees 11 inches DBH or greater without first obtaining a permit and demonstrating compliance with this chapter.

1. As a condition of permit issuance, the applicant shall agree to implement required provisions of this chapter and to allow all inspections to be conducted.
2. Tree removal is subject to the provisions of Chapter 15.44, Erosion Control, Chapter 17.56, Hillside Development, and Chapter 17.60 Flood and Slope Hazard.

*Response: The subject property contains 15.91 acres and the standards of this chapter are applicable to the proposed subdivision. The applicant intends removing the majority of the trees on the property to accommodate development of this subdivision. The proposed tree removal and protection plan have been designed in accordance with the standards of this chapter. As noted in a review of Chapter 17.92, Landscaping above, the Planning Commission has determined only the requirements of Chapter 17.102 are applicable to residential subdivisions.*

#### **17.102.50 - TREE RETENTION AND PROTECTION REQUIREMENTS**

A. Tree Retention: The landowner is responsible for retention and protection of trees required to be retained as specified below:

1. At least three trees 11 inches DBH or greater are to be retained for every one-acre of contiguous ownership.
2. Retained trees can be located anywhere on the site at the landowner's discretion before the harvest begins. Clusters of trees are encouraged.
3. Trees proposed for retention shall be healthy and likely to grow to maturity, and be located to minimize the potential for blow-down following the harvest.
4. If possible, at least two of the required trees per acre must be of conifer species.
5. Trees within the required protected setback areas may be counted towards the tree retention standard if they meet these requirements.

*Response: An Arborist Report completed by a professional Arborist is included with the submittal package. The Arborist inventoried all trees eleven-inches and greater DBH for the portion of the property proposed to satisfy tree retention requirements (northern portion of Lot 7 and Tract A parkland) as required. This inventory and the proposed retention trees are included in the plan set. The subject property contains 15.91 acres requiring retention of 48 trees, 11 inches and greater DBH ( $15.91 \times 3 = 47.73$  rounded up to 48 trees) and in good condition. Only those trees on the portion of the site proposed to be retained were inventoried because most of the trees on the site except those in the proposed tree retention areas will need to be removed to facilitate development of the project. The plans list all trees in the inventory area by number, species, condition, and whether it is proposed to be retained or removed.*

*The submitted plan identifies 63 trees that will be retained. All of the trees proposed for retention are at least 11-inches DBH, and in "good" condition as*

*identified by the Arborist. The applicant proposes protecting a majority of these trees within a Tree Protection Easement. The proposal complies with the requirements of this section.*

- B. Tree Protection Area: Except as otherwise determined by the Planning Director, all tree protection measures set forth in this section shall be instituted prior to any development activities and removed only after completion of all construction activity. Tree protection measures are required for land disturbing activities including but not limited to tree removal, clearing, grading, excavation, or demolition work.
1. Trees identified for retention shall be marked with yellow flagging tape and protected by protective barrier fencing placed no less than 10 horizontal feet from the outside edge of the trunk.
  2. Required fencing shall be a minimum of six feet tall supported with metal posts placed no farther than ten feet apart installed flush with the initial undisturbed grade.
  3. No construction activity shall occur within the tree protection zone, including, but not limited to dumping or storage of materials such as building supplies, soil, waste items, equipment, or parked vehicles.

*Response: The Arborist Report provides recommendations for protection of retained trees including identification of the recommended tree protection zone for these trees. As noted above, the applicant proposes protecting the retained trees with a Tree Protection Easement. The requirements of this section will be complied with prior to any grading or tree removal on the site.*

#### **17.102.60 - TREE REPLANTING REQUIREMENTS**

1. All areas with exposed soils resulting from tree removal shall be replanted with a ground cover of native species within 30 days of harvest during the active growing season, or by June 1st of the following spring.
2. All areas with exposed soils resulting from tree removal occurring between October 1 and March 31 shall also be covered with straw to minimize erosion.
3. Removal of hazard trees as defined shall be replanted with two native trees of quality nursery stock for every tree removed.
4. Tree Removal allowed within the FSH Overlay District shall be replanted with two native trees of quality nursery stock for every tree removed.
5. Tree Removal not associated with a development plan must be replanted following the provisions of OAR Chapter 629, Division 610, Section 020-060

*Response: No trees are proposed to be replanted at this time.*

#### **17.102.70 - VARIANCES**

*Response: The submitted plan is designed in compliance with the standards of this chapter and a variance to these standards is not requested or required.*

#### **CHAPTER 15.30 - DARK SKY ORDINANCE**

##### **15.30.000 - PURPOSE**

The purpose of the Sandy Dark Sky Ordinance is to regulate outdoor lighting in order to reduce or prevent light pollution. This means to the extent reasonably possible the

reduction or prevention of glare and light trespass, the conservation of energy, and promotion of safety and security. (Ord. 2002-11)

**15.30.030 - EXEMPTIONS AND EXCEPTIONS**

D. Full cutoff street lighting, which is part of a federal, state, or municipal installation.

**15.30.060 - GENERAL STANDARDS**

D. All outdoor lighting systems shall be designed and operated so that the area 10 feet beyond the property line of the premises receives no more than .25 (one quarter) of a foot-candle of light from the premises lighting system.

*Response: The applicant understands the requirements of this chapter. A detailed lighting plan will be submitted with construction plans following land use approval.*

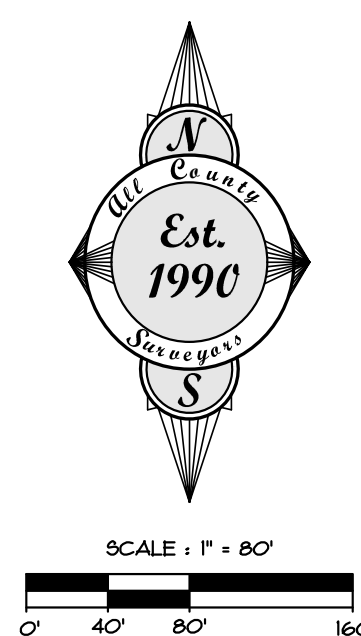
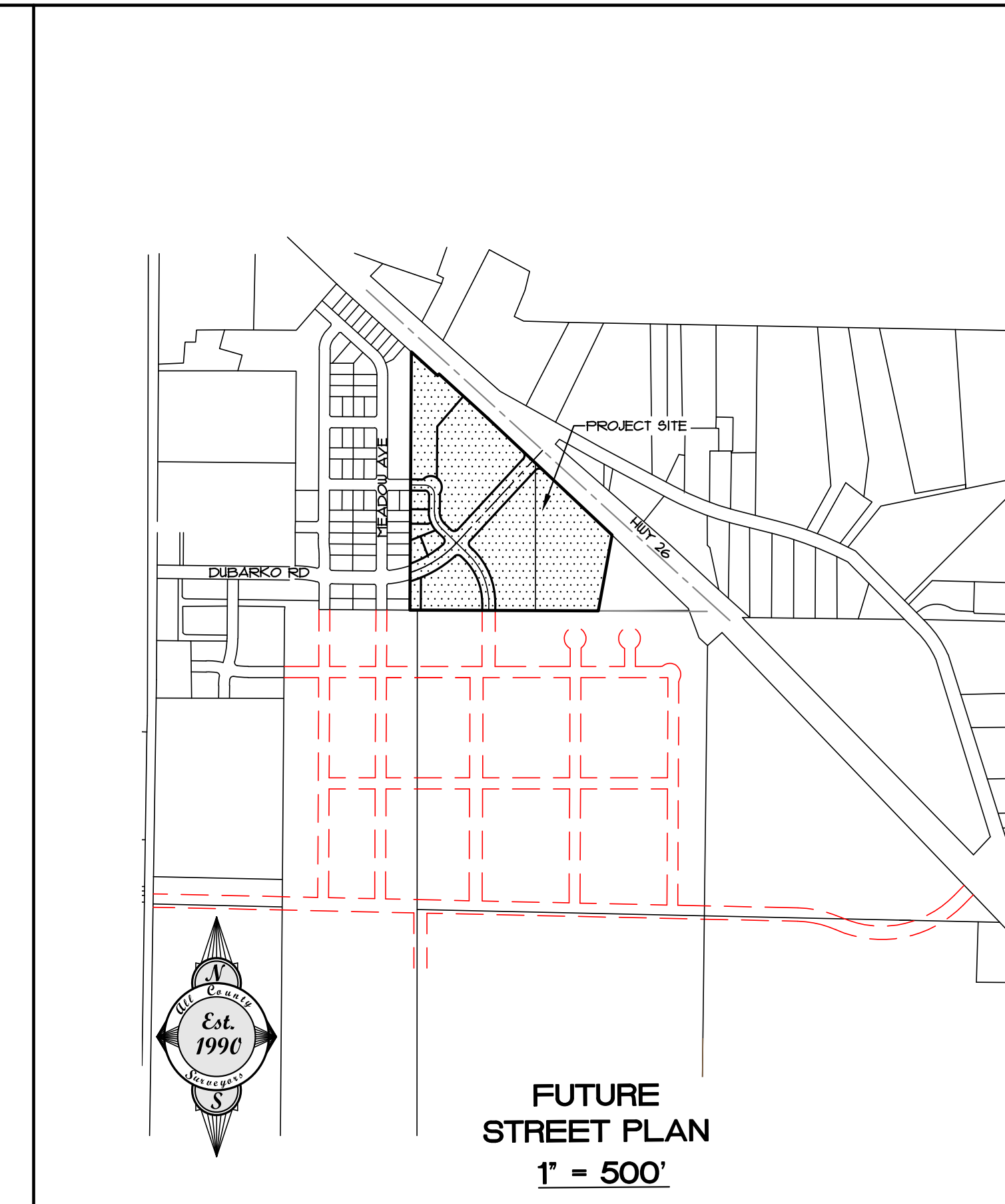
**VI. Conclusion**

As reviewed in the submitted narrative, the applicant requests Specific Area Plan approval to shift the zoning district boundaries for the property and a Comprehensive Plan and Map amendment to designate Tract A, a proposed park, as Parks and Open Space (POS). The proposal also includes a Zoning Map amendment to change the zoning designations on the property from a mix of C-3 (Village Commercial), R-2 (Medium Density Residential), and R-1 (Low Density Residential) to a mix of C-3 (Village Commercial), R-3 (High Density Residential), R-2, (Medium Density Residential), R-1 (Low Density Residential), and Parks and Open Space (POS).

The four R-1 zoned lots (Lots 1 - 4) are proposed to contain single-family detached dwellings or duplexes and the two R-2 and R-3 zoned lots (Lots 5 and 6) will contain multi-family dwellings. Lot 7 zoned C-3 will be developed according to the standards of that zone with either a combination of commercial and multi-family dwellings or commercial only. With this application, the applicant proposes dedicating 1.755 acres to the city to be used as a public park and imposing a dwelling cap of 200 units for the entire site. As discussed in this narrative, the proposal complies with all relevant approval criteria, code standards, policies, and goals, and the applicant respectfully requests the application be approved as submitted.

# EXHIBIT C BULL RUN TERRACE

## 7-LOT SUBDIVISION



**CLIENT**  
 ROLL TIDE PROPERTIES CORPORATION  
 PO BOX 103  
 CORNELIUS, OR 97113

**SURVEYOR/ENGINEER**  
 ALL COUNTY SURVEYORS & PLANNERS, INC.  
 PO BOX 955  
 SANDY, OR 97055

**PLANNER**  
 TRACY BROWN PLANNING CONSULTANTS, LLC  
 17075 FIR DR.  
 SANDY, OR 97055

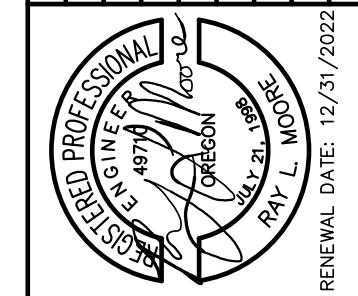
**LEGEND (PROPOSED ZONING)**

	PARKS AND OPEN SPACE ZONE
	R-3 ZONE
	R-1 ZONE
	C-3 ZONE

**SHEET INDEX**

1.	COVER SHEET & FUTURE STREET PLAN AREA PLAN
2.	PRELIMINARY PLAT MAP AND SPECIFIC STREET SECTIONS
3.	EXISTING CONDITIONS AND TREE RETENTION PLAN
4.	TREE TABLES
5.	MASTER STREET & UTILITY PLAN
6.	STREET SECTIONS
7.	PRELIMINARY STREET TREE & PARKING PLAN
8.	PROPOSED STRIPING PLAN
9.	PRELIMINARY GRADING & EROSION CONTROL PLAN
10.	SLOPE ANALYSIS
11.	CONCEPT PLAN
12.	NET ZONING AREA COMPARISON

DATE	NO.	REVISION	BY	SHEET
				12
DESIGNED: CTH	CHECKED: RLM	APPROVED: RLM		

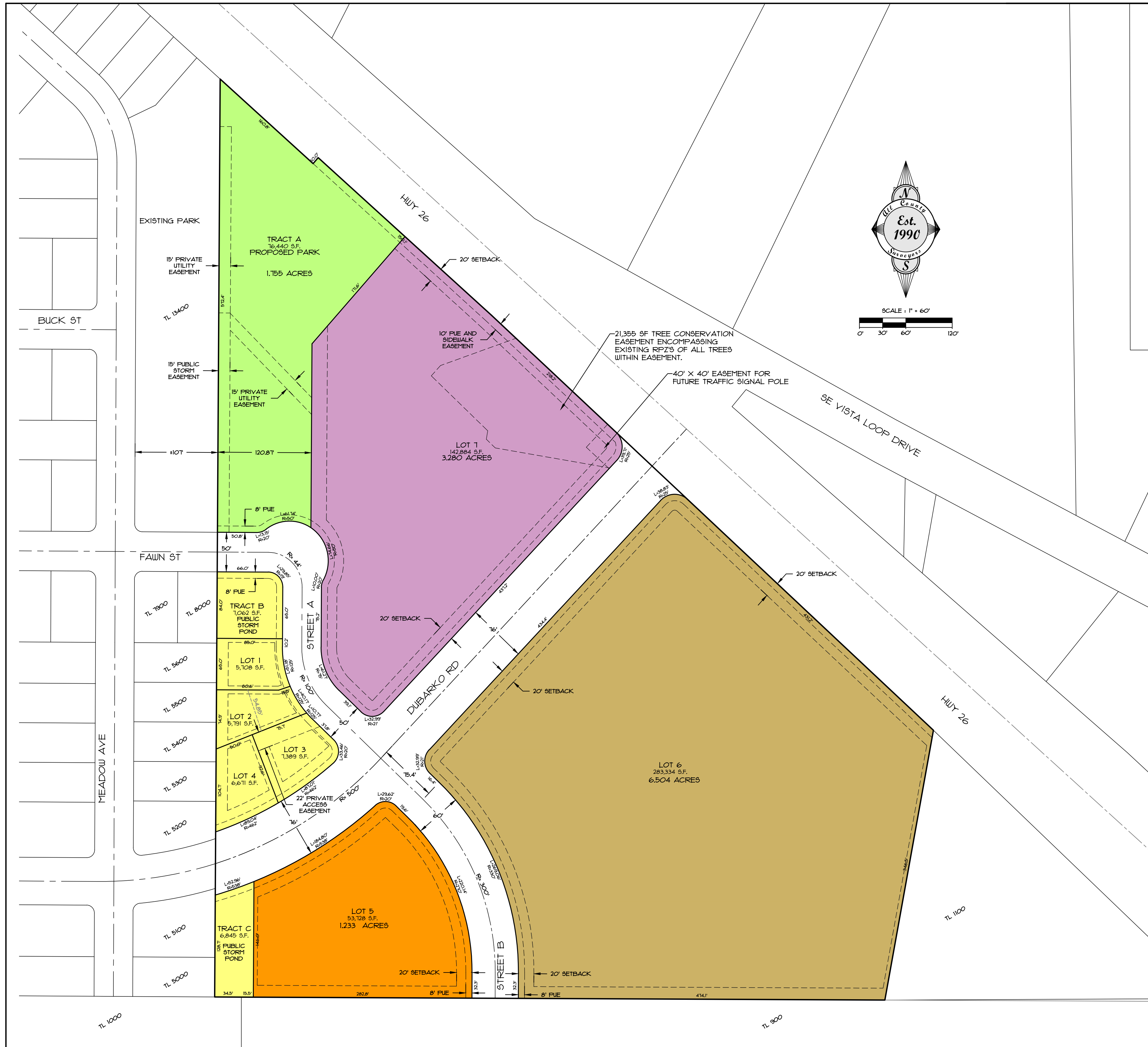


SCALE	VERT. N/A	DATE	FILE
1" = 500'	07/26/2018	18-038-Planning-LDE-Land	
SECTION	TWP.	RANGE	5E
1B	2S		

**BULL RUN TERRACE SUBDIVISION**  
 COVER SHEET, PRELIMINARY PLAT MAP, AND FUTURE STREET PLAN  
 LOCATION: 40808 & 41010 HWY 26, SANDY, OR 97055

**Surveyors & Planners, Inc.**  
 Surveying, Planning and Engineering  
 P.O. Box 955 Sandy, OR 97055  
 Phone: (503) 668-4730  
 Fax: (503) 668-4730  
 DATE OF PLOT: 9-27-22

CLIENT:  
 ROLL TIDE PROPERTIES CORPORATION  
 CORNELIUS, OR 97113



**AREA TOTALS**

TOTAL SITE AREA	= 693,051 SF	= 15.910 ACRES
TRACT A (PARK)	= 16,440 SF	= 1.155 ACRES
TRACT B (POND)	= 1,062 SF	= 0.162 ACRES
TRACT C (POND)	= 6,845 SF	= 0.151 ACRES
R-1 SINGLE FAMILY	= 25,559 SF	= 0.581 ACRES
R-2 MULTI-FAMILY	= 53,728 SF	= 1.233 ACRES
R-3 MULTI-FAMILY	= 283,334 SF	= 6.504 ACRES
C-3 COMMERCIAL	= 142,884 SF	= 3.280 ACRES
PUBLIC ROW	= 91,205 SF	= 2.232 ACRES

**DENSITY CALCULATIONS**

R-1 SINGLE FAMILY MIN DENSITY	0.59 AC*(5 UNITS/AC) = 2 UNITS
R-1 SINGLE FAMILY MAX DENSITY	0.59 AC*(8 UNITS/AC) = 5 UNITS
R-1 SINGLE FAMILY PROPOSED DENSITY	4 UNITS
R-2 MULTI-FAMILY MIN DENSITY	1.23 AC*(8 UNITS/AC) = 9.8 = 10 UNITS
R-2 MULTI-FAMILY MAX DENSITY	1.23 AC*(14 UNITS/AC) = 17.2 = 17 UNITS
R-3 MULTI-FAMILY MIN DENSITY	6.50 AC*(10 UNITS/AC) = 65 UNITS
R-3 MULTI-FAMILY MAX DENSITY	6.50 AC*(20 UNITS/AC) = 130 UNITS

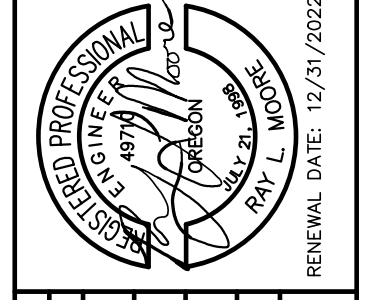
**LEGEND**

	PARKS AND OPEN SPACE ZONE
	R-1 ZONE
	R-2 ZONE
	R-3 ZONE
	C-3 ZONE

**NOTES**

1. THIS IS NOT A BOUNDARY SURVEY. NO LIABILITY IS ASSUMED BY ALL COUNTY SURVEYORS AND PLANNERS FOR THE EXISTENCE OF ANY EASEMENTS, ENCUMBRANCES AND DISCREPANCIES IN BOUNDARY OR TITLE DEFECTS.

BY	REVISION	SHEET
		<b>C2</b>
		OF <b>12</b>
DATE	DESIGNED: CTH	CHECKED: RLM
	DRAWN: CTH	APPROVED: RLM



SCALE	VERT. N/A	HORIZ. 1"=60'
DATE	07/26/2018	
FILE	19-038-Planning-LDE-1419	
SECTION	TWP. 18	RANGE 25
	SECTION 5E	

**BULL RUN TERRACE SUBDIVISION**

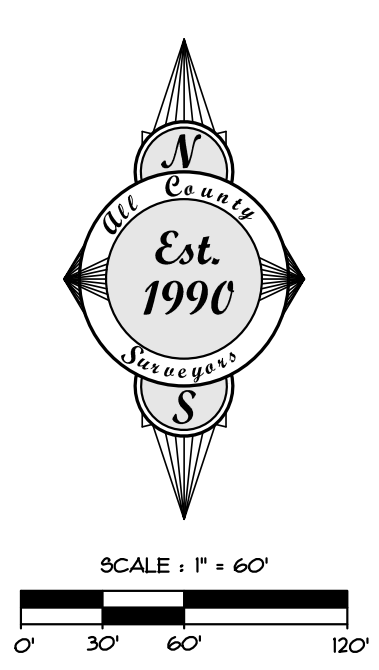
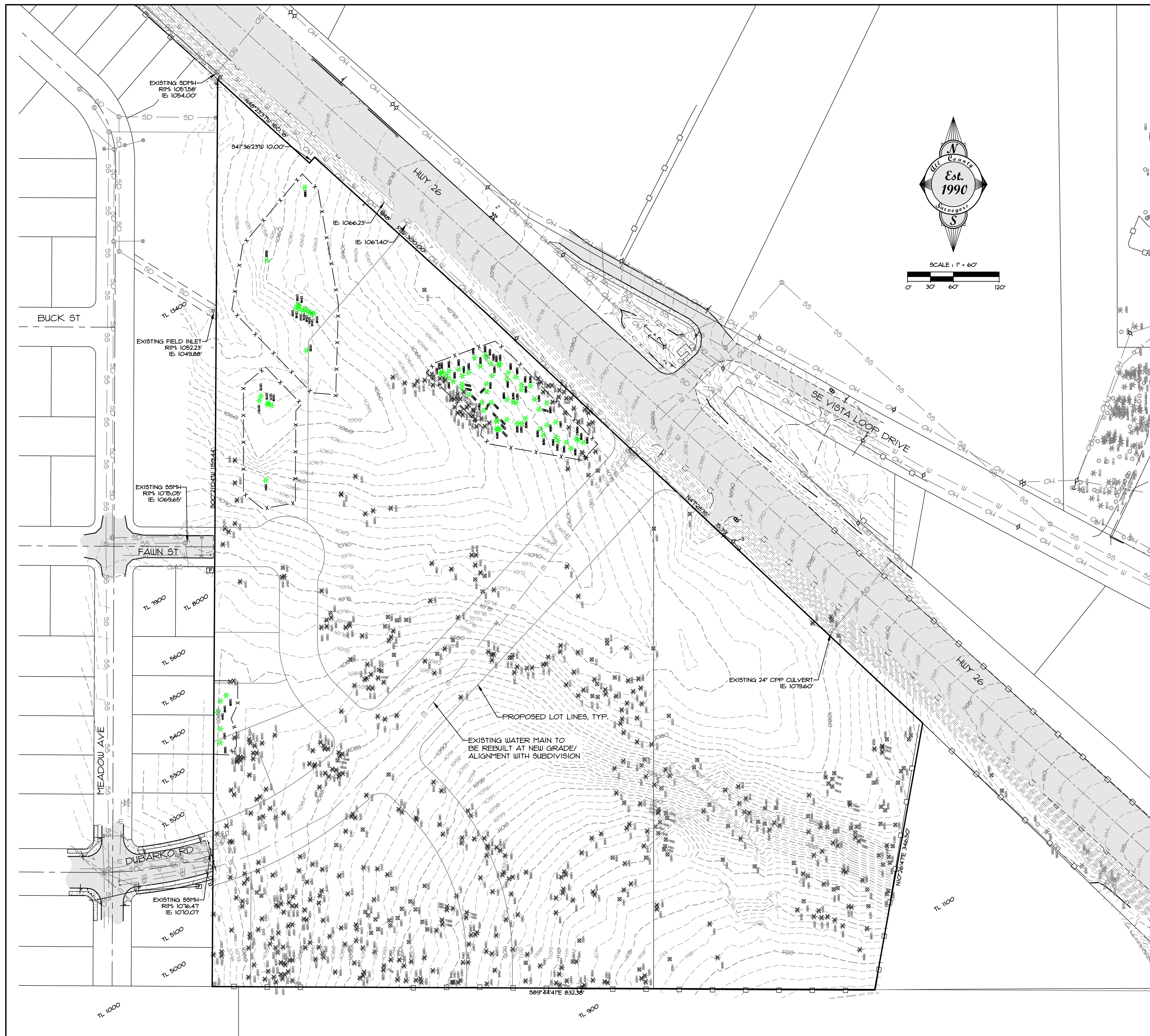
**PRELIMINARY PLAT MAP AND SPECIFIC AREA PLAN**

**40808 & 41010 HWY 26, SANDY, OR 97055**

**Surveyors & Planners, Inc.**  
 Surveying, Planning and  
 Civil Engineering and  
 P.L.L.C.  
 P.O. Box 955 Sandy, OR 97055  
 Phone: (503) 668-4730  
 Fax: (503) 668-4730  
 DATE OF PLOT: 9-27-22

CLIENT:  
 ROLL TIDE  
 PROPERTIES CORPORATION  
 CORNELIUS, OR 97113





LEGEND	
---	PROPERTY LINE
---	LOT LINE
▨	EXISTING BUILDING
▨	EXISTING EDGE OF PAVEMENT
▨	EXISTING SIDEWALK/CONCRETE
---	EXISTING CURB
W	EXISTING WATER LINE
SD	EXISTING STORM LINE
SS	EXISTING SANITARY LINE
GA	EXISTING GAS LINE
T	EXISTING TELEPHONE LINE
P	EXISTING UNDERGROUND POWER
⊕	EXISTING STORM MANHOLE
⊕	EXISTING CATCH BASIN
⊕	EXISTING SANITARY MANHOLE
⊕	EXISTING UTILITY POLE
⊕	EXISTING WATER METER
⊕	EXISTING WATER VALVE
⊕	EXISTING FIRE HYDRANT
⊕	EXISTING SIGN
---	EXISTING GROUND CONTOUR
---	EXISTING LIGHT POLE
*	EXISTING DECIDUOUS TREE
⊙	EXISTING CONIFEROUS TREE
---	NEW LOT LINE
---	NEW EASEMENT LINE
---	NEW CURB
▨	NEW SIDEWALK/CONCRETE
---	NEW AC
W	NEW WATER LINE
SS	NEW SANITARY LINE
SD	NEW STORM LINE
---	SAUCUT LINE
---	NEW FINISH GRADE CONTOUR
⊕	NEW WATER METER
⊕	NEW STORM MANHOLE
⊕	NEW CATCH BASIN
⊕	NEW SANITARY MANHOLE
⊕	NEW CLEANOUT
⊕	NEW FIRE HYDRANT
⊕	NEW WATER VALVE
⊕	NEW STREET LIGHT
⊕	NEW SIGN
⊕	NEW MAILBOX UNIT

LEGEND	
⊙	EXISTING DECIDUOUS TREE TO BE PRESERVED
*	EXISTING CONIFEROUS TREE TO BE PRESERVED
×	EXISTING DECIDUOUS TREE TO BE REMOVED
*×	EXISTING CONIFEROUS TREE TO BE REMOVED
-x-x-	INSTALL PROTECTIVE BARRIER FENCING TO PROTECT TREES DURING EXCAVATION FOR THE UTILITIES. REQUEST AN INSPECTION OF EROSION CONTROL MEASURES AND TREE PROTECTION MEASURES AS SPECIFIED IN SECTION 11.02.50(C) PRIOR TO CONSTRUCTION ACTIVITIES OR GRADING. REFER TO ARBORIST REPORT FOR DETAIL ON FENCING LOCATION.

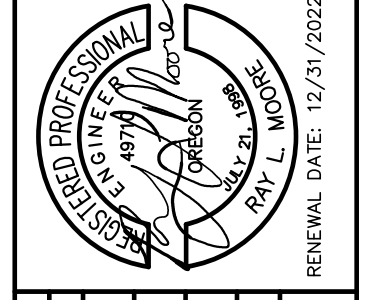
**TREE RETENTION NOTES**

TREES REQUIRED TO BE RETAINED:  
 3 TREES/ACRE X 15.91 ACRES = **48 TREES**

NUMBER OF TREES PROPOSED FOR RETENTION:  
**63 TREES**

- NOTES**
- THIS IS NOT A BOUNDARY SURVEY. NO LIABILITY IS ASSUMED BY ALL COUNTY SURVEYORS AND PLANNERS FOR THE EXISTENCE OF ANY EASEMENTS, ENCUMBRANCES AND DISCREPANCIES IN BOUNDARY OR TITLE DEFECTS.
  - UNDERGROUND UTILITIES SHOWN ON THIS SURVEY ARE LIMITED TO THOSE ITEMS VISIBLE BY SURFACE INSPECTION AND LOCATED PAINTED ON THE GROUND AS OF THE DATE OF THIS SURVEY. SUBSURFACE STRUCTURES, IF ANY, ARE NOT SHOWN.
  - UNDERGROUND UTILITY LOCATIONS MUST BE POTHOLED AND VERIFIED PRIOR TO CONSTRUCTION.
  - THE ELEVATION DATUM IS BASED ON THE CITY OF SANDY BENCHMARK #33. THE BENCHMARK IS LOCATED AT THE INTERSECTION OF MCCORMICK AND LANGENBEND. THE PUBLISHED ELEVATION IS 10215.1'

BY	REVISION	SHEET
		<b>C3</b>
		OF <b>12</b>
DATE	DESIGNED: CTH	
	DRAWN: CTH	
	CHECKED: RLM	
	APPROVED: RLM	



SCALE	VERT. N/A	HORIZ. 1"=60'
DATE	07/26/2018	
FILE	19-038-Planning-LDE-443	
SECTION	TWP. 18	RANGE 5E
LEGAL	19-038-Planning-LDE-443	

**BULL RUN TERRACE SUBDIVISION**

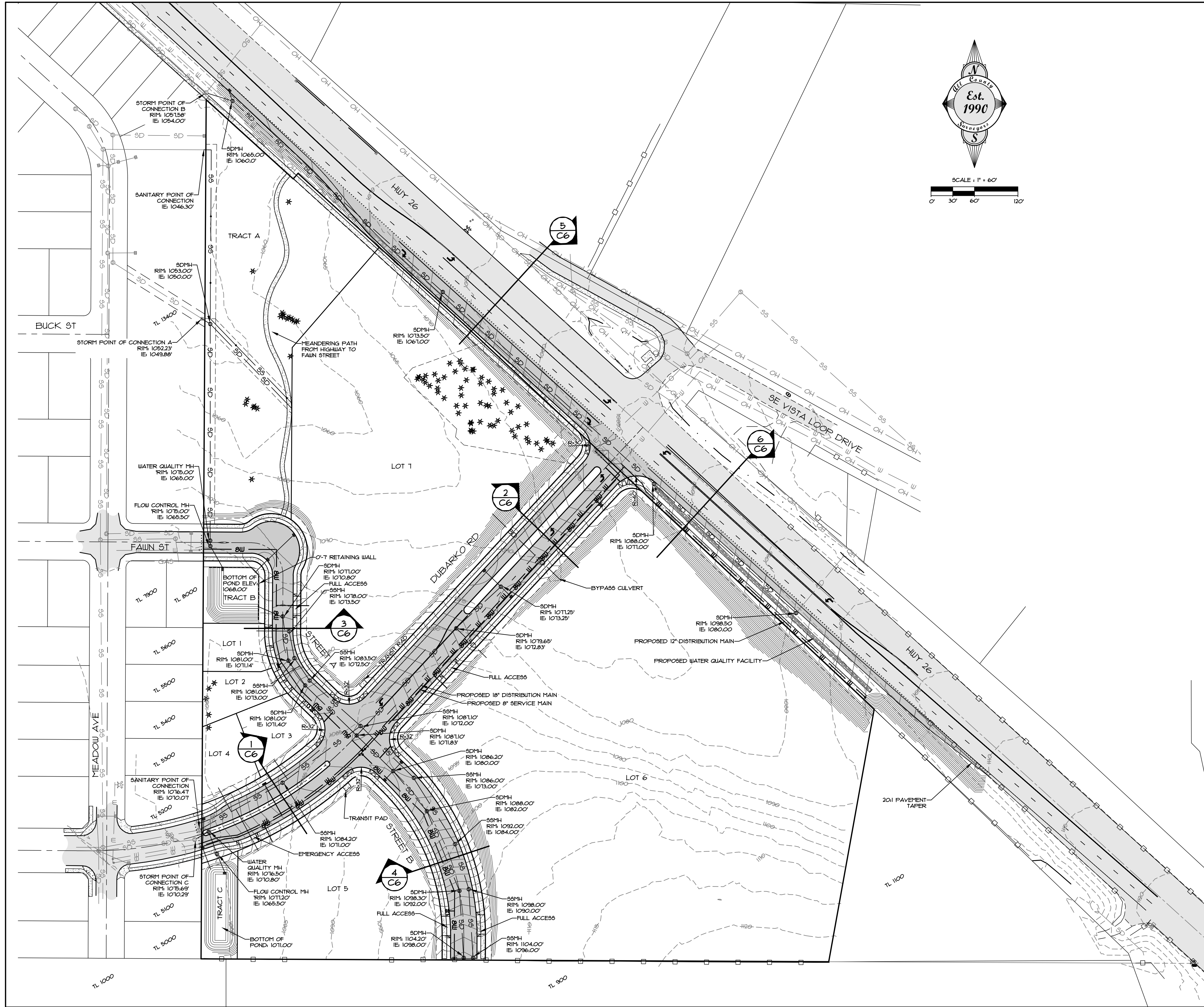
**EXISTING CONDITIONS AND TREE RETENTION PLAN**

**40808 & 41010 HWY 26, SANDY, OR 97055**

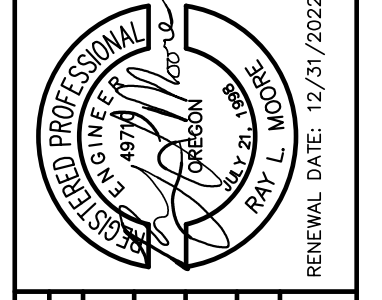
**Surveyors & Planners, Inc.**  
 Surveying, Planning and  
 Civil Engineering and  
 P.L.L.C.  
 P.O. Box 955 Sandy, OR 97055  
 Phone: (503) 668-4730  
 Fax: (503) 668-4730  
 DATE OF PLOT: 9-27-22

CLIENT:  
 ROLL TIDE  
 PROPERTIES CORPORATION  
 CORNELIUS, OR 97113





DATE	REVISION	BY	SHEET
			C5
			OF 12
DESIGNED:	CTH		
DRAWN:	CTH		
CHECKED:	RLM		
APPROVED:	RLM		

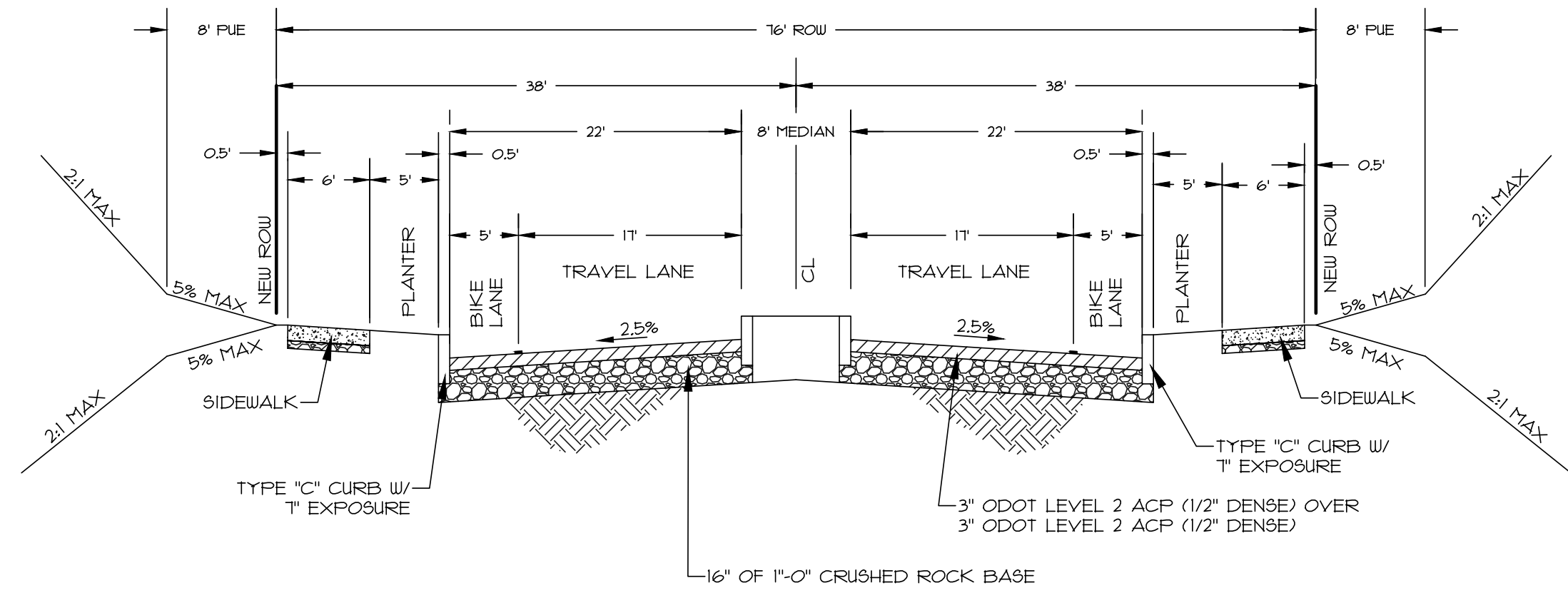


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HORIZ.:	1"=60'	DATE:	07/26/2018
FILE:	19-038-Planning-LDE-148	LEGAL:	
SECTION:	1B	RANGE:	5E
TWP.:	2S		

PROJECT: **BULL RUN TERRACE SUBDIVISION**  
**MASTER STREET AND UTILITY PLAN**  
 LOCATION: **40808 & 41010 HWY 26, SANDY, OR 97055**

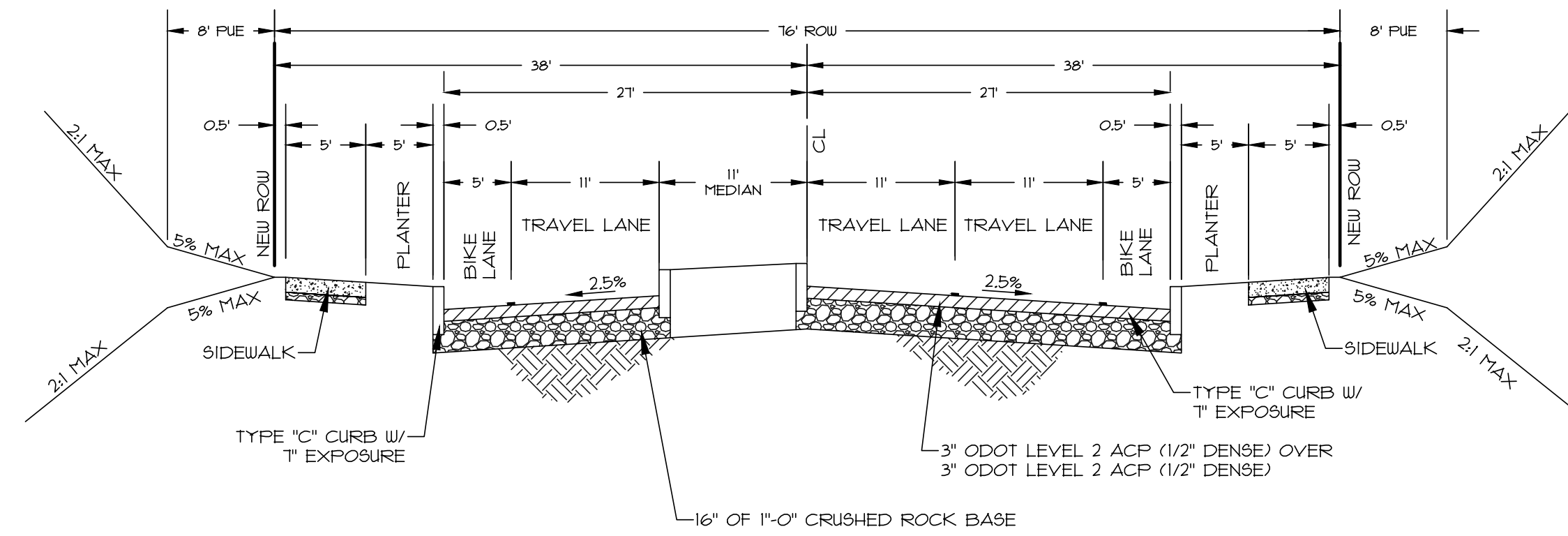
**Surveyors & Planners, Inc.**  
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 Civil Engineering  
 P.O. Box 955 Sandy, OR 97055  
 Phone: (503) 666-4730  
 Fax: (503) 666-4730  
 DATE OF PLOT: 9-21-22

CLIENT: **ROLL TIDE PROPERTIES CORPORATION**  
 CORNELIUS, OR 97113



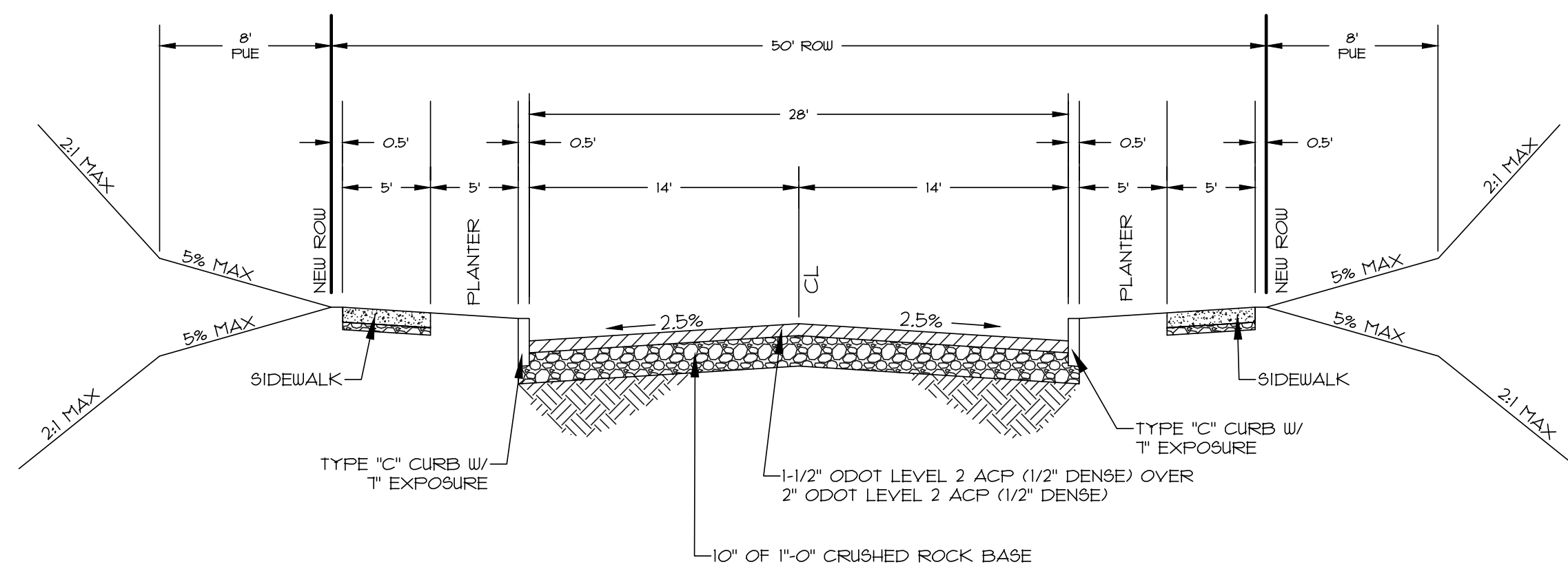
**SECTION ① (76' ROW - FULL STREET IMPROVEMENTS)**

DUBARKO ROAD - ARTERIAL STREET  
NTS



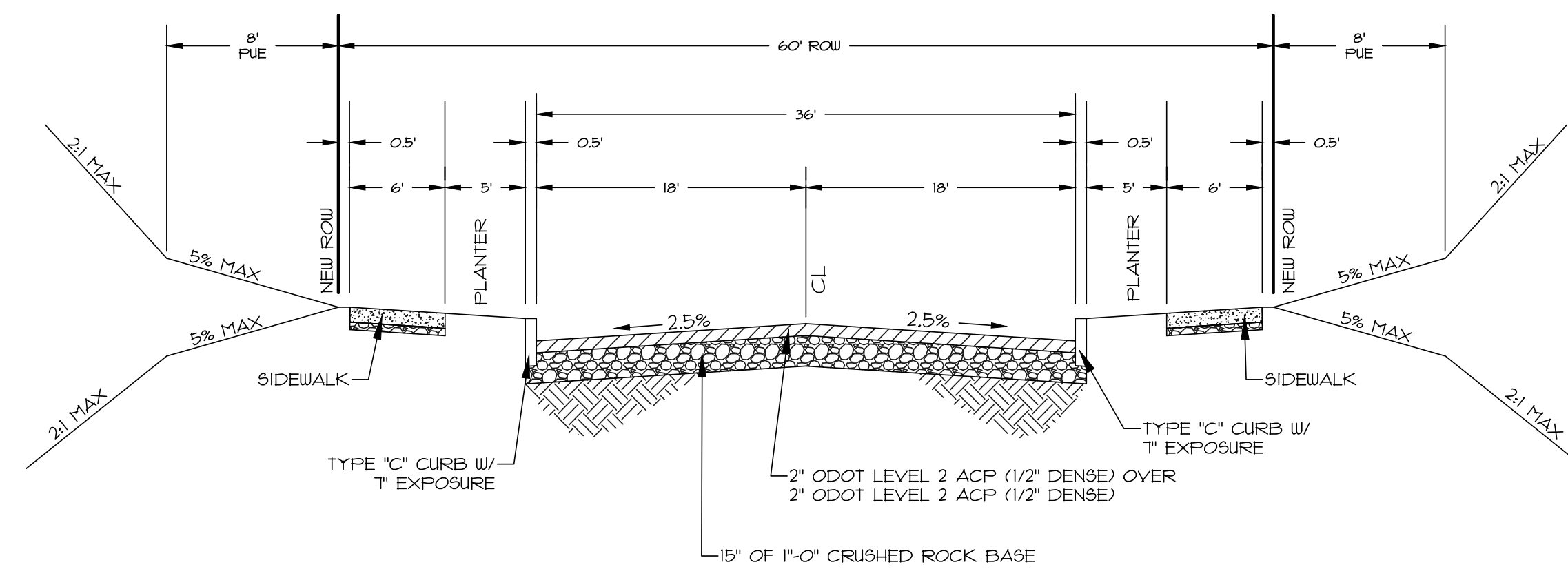
**SECTION ② (76' ROW - FULL STREET IMPROVEMENTS)**

DUBARKO ROAD - ARTERIAL STREET  
NTS



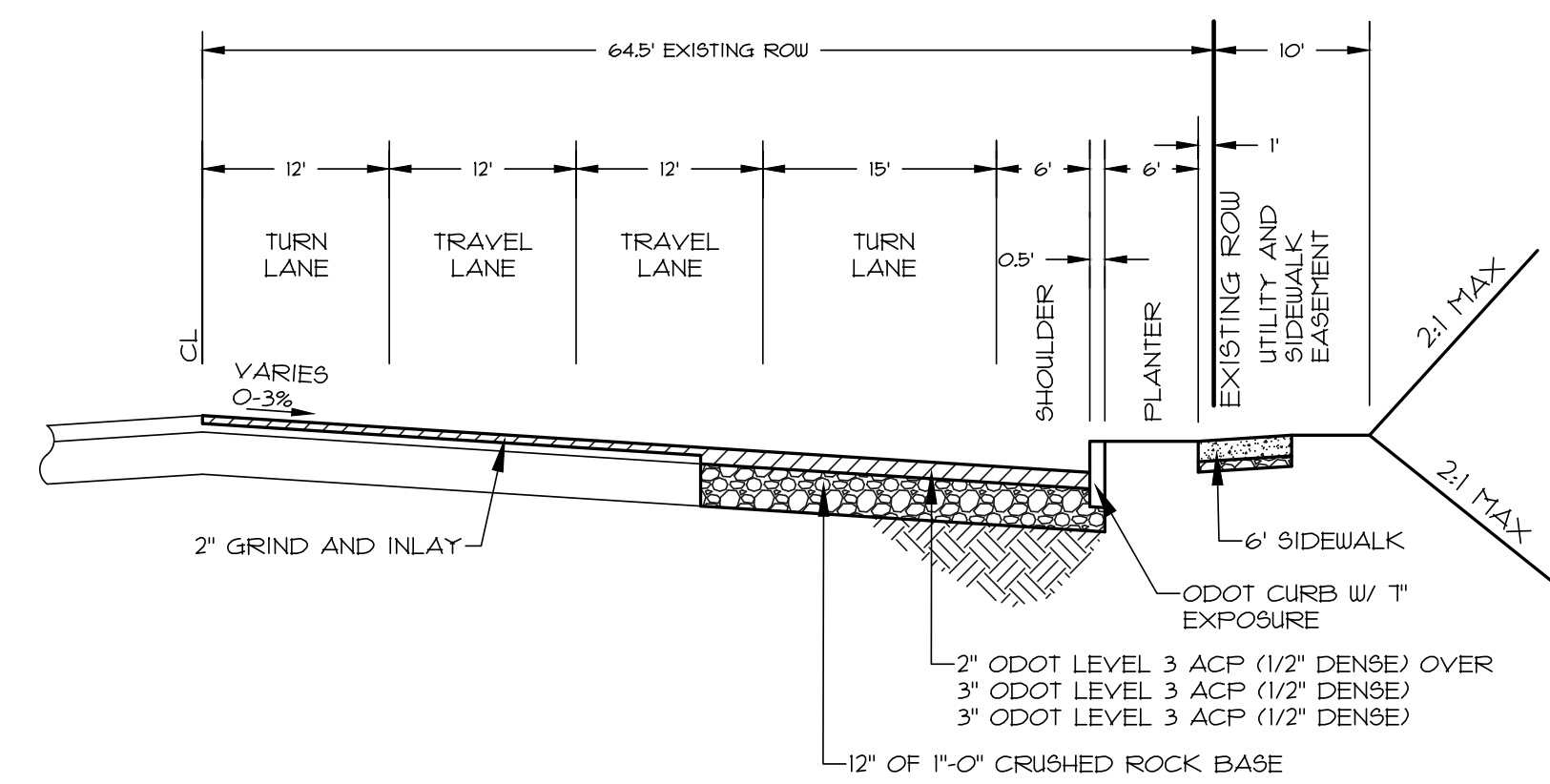
**SECTION ③ (50' ROW - FULL STREET IMPROVEMENTS)**

STREET A - LOCAL STREET  
NTS



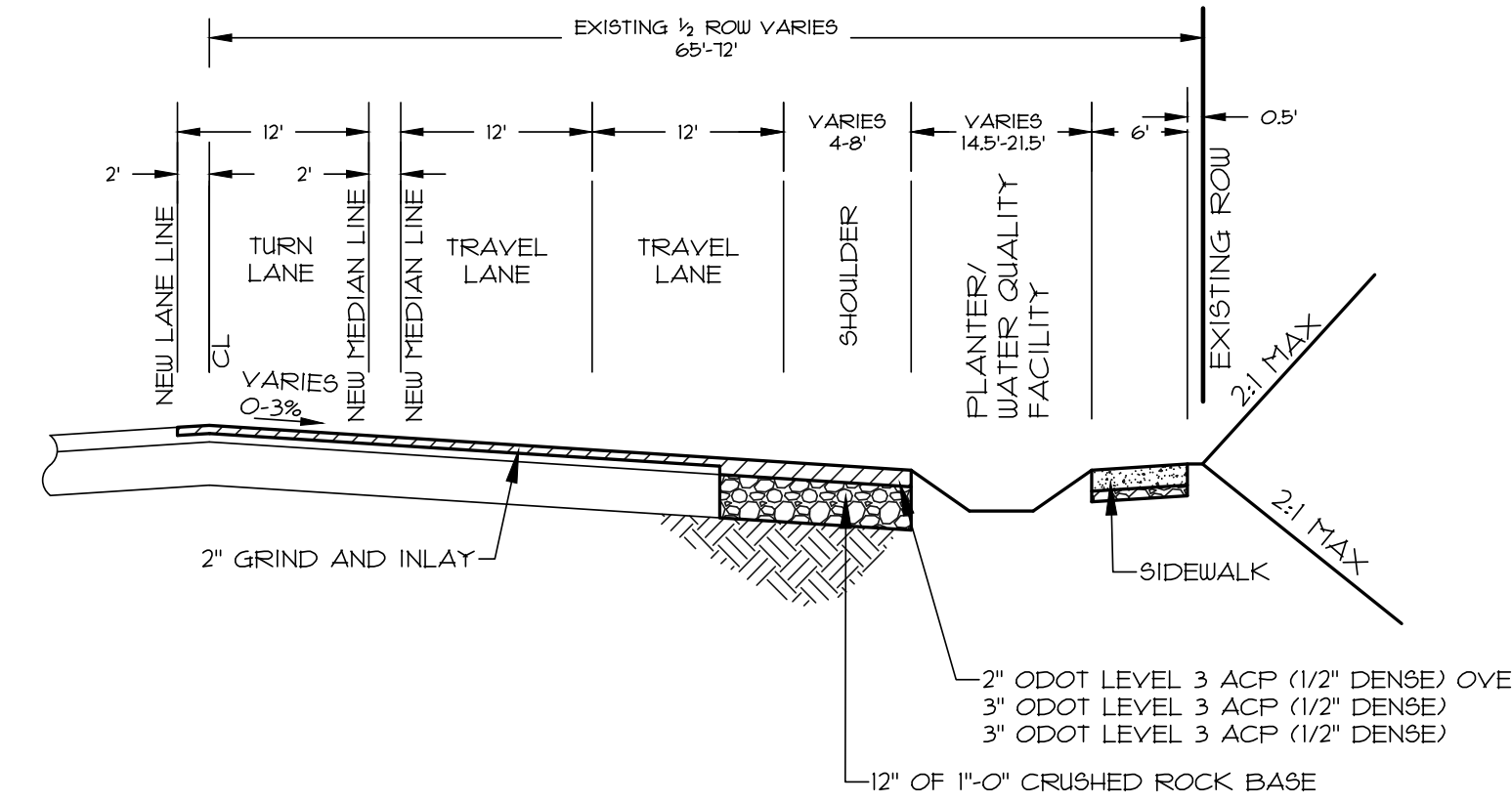
**SECTION ④ (60' ROW - FULL STREET IMPROVEMENTS)**

STREET B - COLLECTOR STREET  
NTS



**SECTION ⑤ (ODOT - HALF STREET IMPROVEMENTS)**

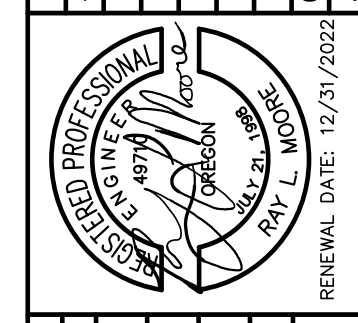
HIGHWAY 26 - HIGHWAY  
NTS



**SECTION ⑥ (ODOT - HALF STREET IMPROVEMENTS)**

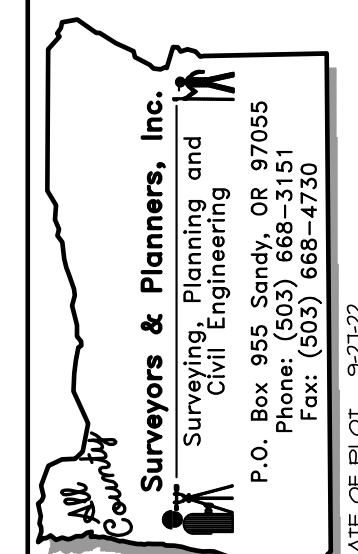
HIGHWAY 26 - HIGHWAY  
NTS

BY	REVISION	SHEET
		<b>C6</b>
		OF <b>12</b>
DATE	DESIGNED: CTH	
	DRAWN: CTH	
	CHECKED: RLM	
	APPROVED: RLM	

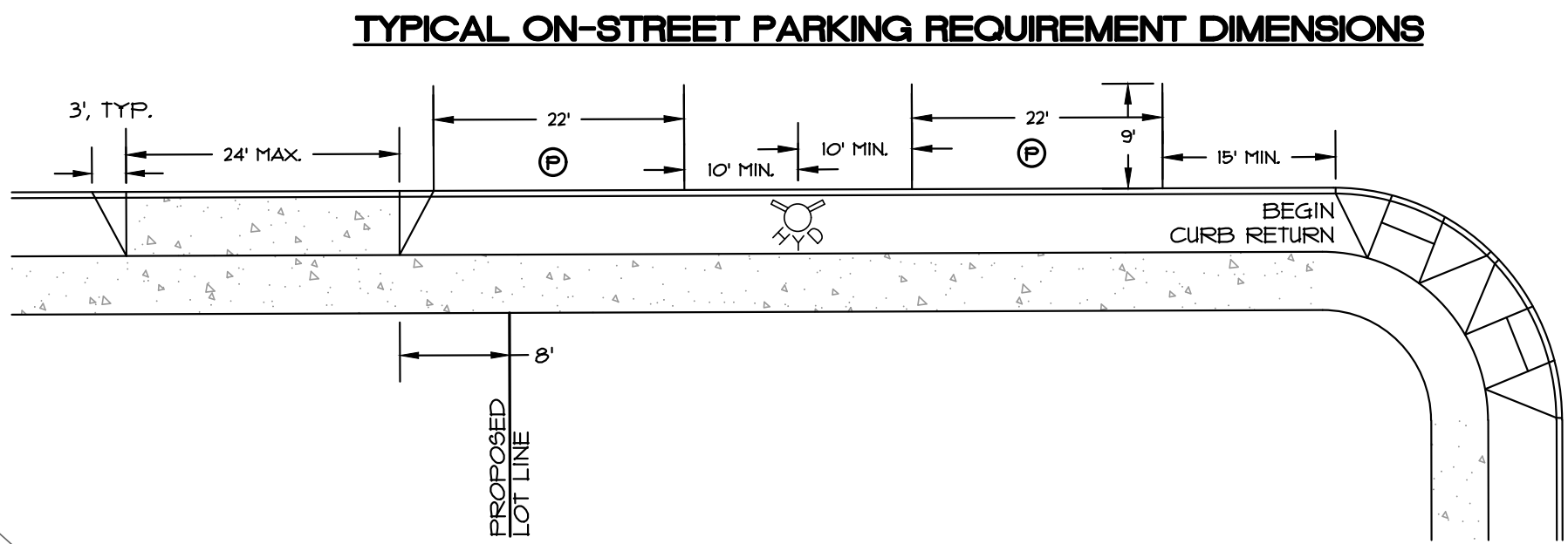
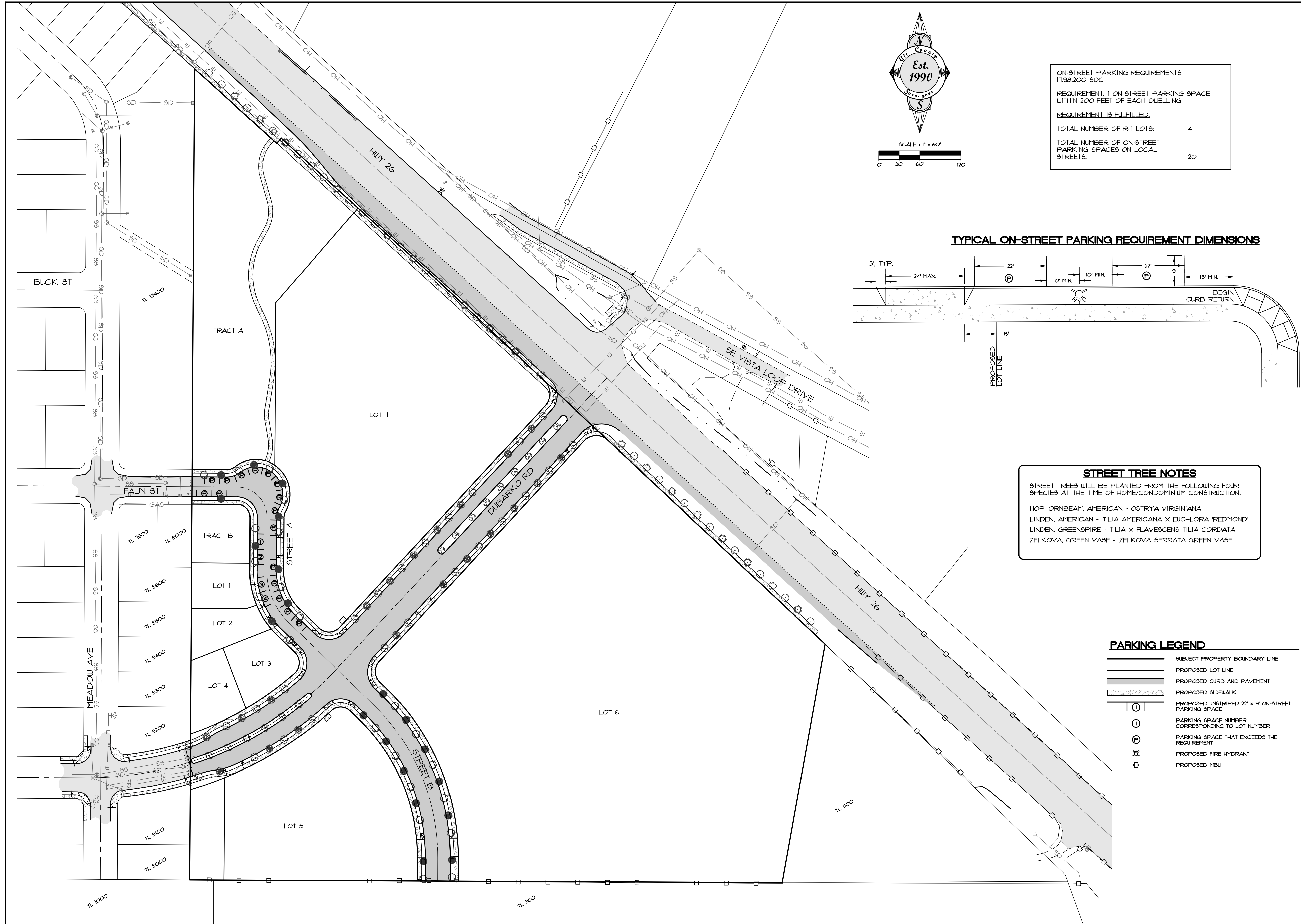


SCALE	VERT. N/A	HORIZ. 1"=60'
DATE	07/26/2018	
FILE	18-038-Planning-LDE-LDE	
SECTION	TWP. 1	RANGE 5E
	1B	25

**BULL RUN TERRACE SUBDIVISION**  
**STREET SECTIONS**  
PROJECT: 40808 & 41010 HWY 26, SANDY, OR 97055  
LOCATION: 9-21-22



CLIENT: ROLL TIDE PROPERTIES CORPORATION  
CORNELIUS, OR 97113



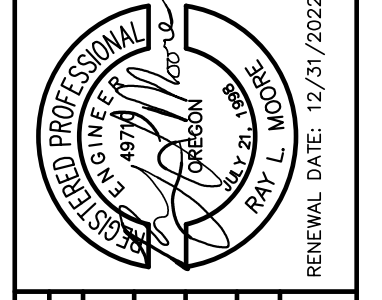
**STREET TREE NOTES**

STREET TREES WILL BE PLANTED FROM THE FOLLOWING FOUR SPECIES AT THE TIME OF HOME/CONDOMINIUM CONSTRUCTION.

HOPHORNBEAM, AMERICAN - OSTRYA VIRGINIANA  
 LINDEN, AMERICAN - TILIA AMERICANA X EUCHLORA 'REDMOND'  
 LINDEN, GREENSPIRE - TILIA X FLAVESCENS TILIA CORDATA  
 ZELKOVA, GREEN VASE - ZELKOVA SERRATA 'GREEN VASE'

- PARKING LEGEND**
- SUBJECT PROPERTY BOUNDARY LINE
  - PROPOSED LOT LINE
  - PROPOSED CURB AND PAVEMENT
  - PROPOSED SIDEWALK
  - PROPOSED UNSTRIPED 22' x 9' ON-STREET PARKING SPACE
  - ① PARKING SPACE NUMBER CORRESPONDING TO LOT NUMBER
  - ⊕ PARKING SPACE THAT EXCEEDS THE REQUIREMENT
  - ⚡ PROPOSED FIRE HYDRANT
  - PROPOSED MBU

BY	REVISION	SHEET
		<b>C7</b>
		OF <b>12</b>
DATE	DESIGNED: CTH	
	DRAWN: CTH	
	CHECKED: RLM	
	APPROVED: RLM	



SCALE	VERT. N/A	HORIZ. 1"=60'
DATE:	07/26/2018	
FILE:	19-038-Planning-LDE-448	
SECTION	TWP. 18	RANGE 25
	SECTION 18	5E

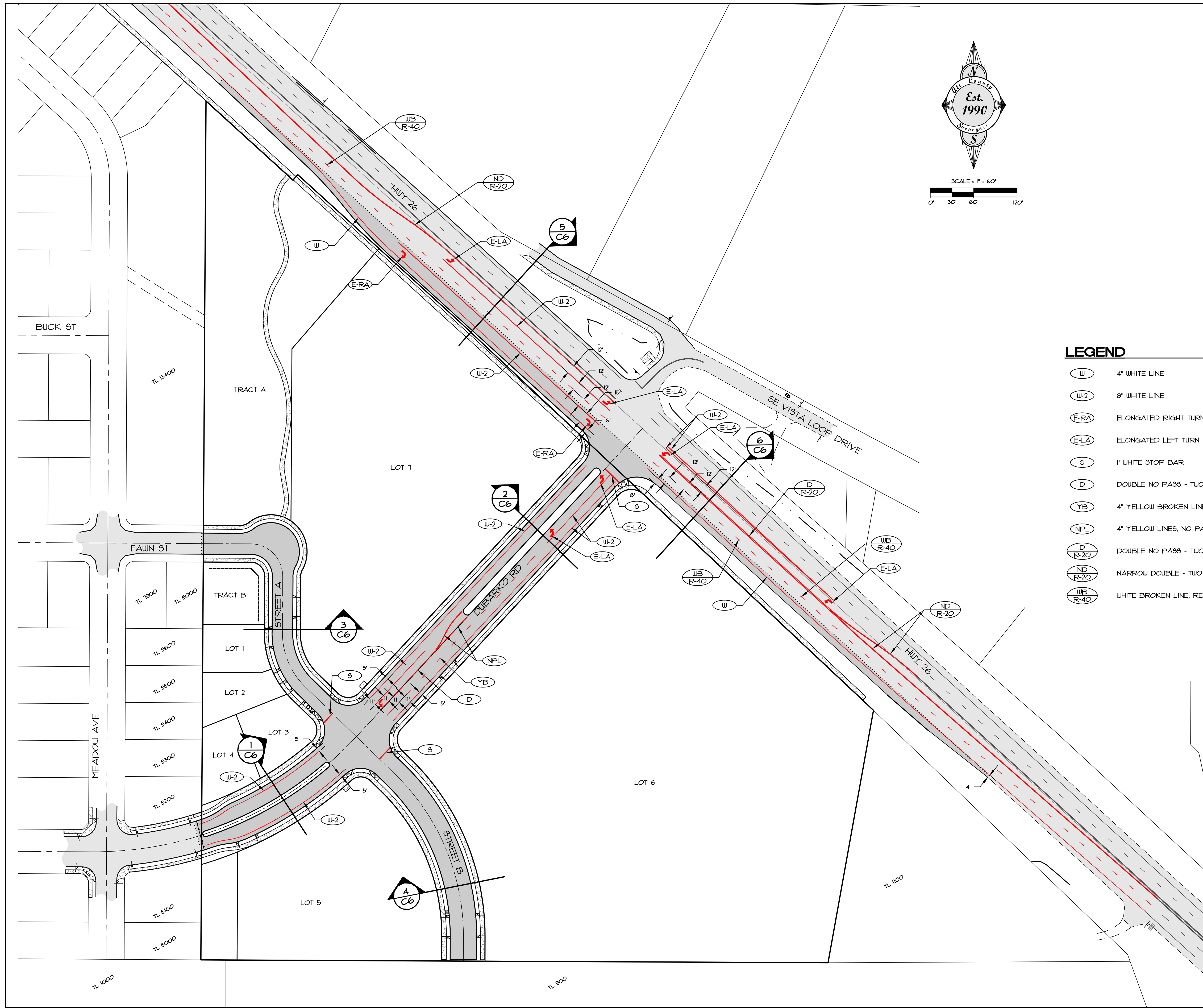
PROJECT: **BULL RUN TERRACE SUBDIVISION**

STREET TREE PLAN & PARKING ANALYSIS

LOCATION: **40808 & 41010 HWY 26, SANDY, OR 97055**

**Surveyors & Planners, Inc.**  
 Surveying, Planning and  
 Civil Engineering and  
 Construction Management  
 P.O. Box 895 Sandy, OR 97055  
 Phone: (503) 668-4730  
 Fax: (503) 668-4730  
 DATE OF PLOT: 9-21-22

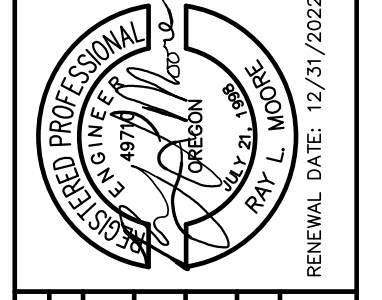
CLIENT: **ROLL TIDE PROPERTIES CORPORATION**  
 CORNELIUS, OR 97113



**LEGEND**

- (W) 4" WHITE LINE
- (W-2) 8" WHITE LINE
- (E-RA) ELONGATED RIGHT TURN ARROW
- (E-LA) ELONGATED LEFT TURN ARROW
- (S) 1' WHITE STOP BAR
- (D) DOUBLE NO PASS - TWO (2), 4" YELLOW LINES
- (YB) 4" YELLOW BROKEN LINE
- (NFL) 4" YELLOW LINES, NO PASS LEFT
- (D-R-20) DOUBLE NO PASS - TWO (2), 4" YELLOW LINES, REFLECTORS EVERY 20'
- (ND-R-20) NARROW DOUBLE - TWO (2), 4" YELLOW LINES, REFLECTORS EVERY 20'
- (WB-R-40) WHITE BROKEN LINE, REFLECTORS EVERY 40'

DATE	NO.	REVISION	BY
DESIGNED: CTH	SHEET <b>C8</b>		
DRAWN: CTH	OF <b>12</b>		
CHECKED: RLM			
APPROVED: RLM			

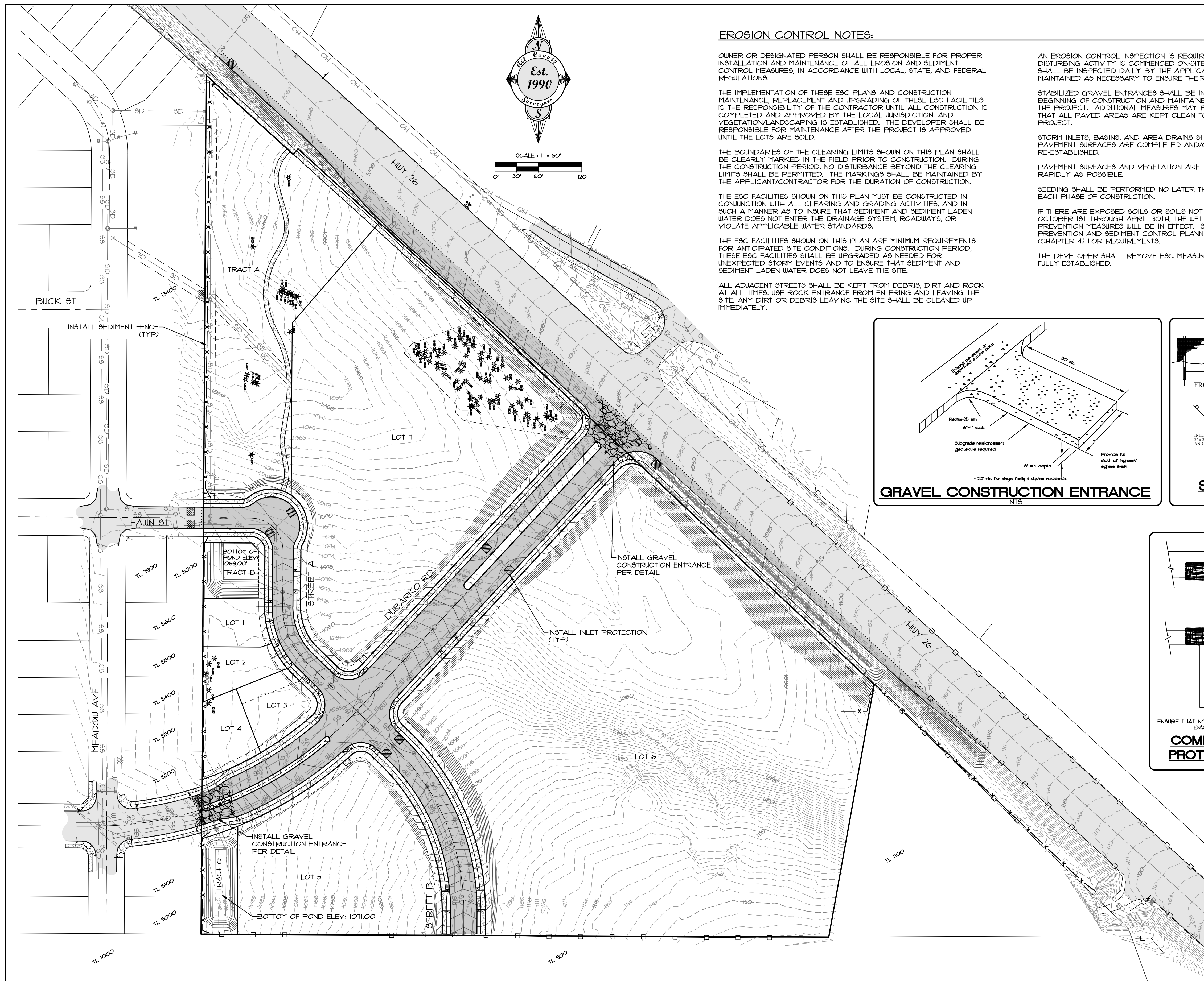


SCALE	VERT.	N/A
HORIZ.	1"=60'	
DATE	07/26/2018	
FILE	18-038-Planning-LDE-LMB	
SECTION	TWP.	RANGE
	25	5E
	1B	

**BULL RUN TERRACE SUBDIVISION**  
**PROPOSED STRIPING PLAN**  
 40808 & 41010 HWY 26, SANDY, OR 97055

**Surveyors & Planners, Inc.**  
 Surveying, Planning and  
 Civil Engineering and  
 P.L.L.C.  
 P.O. Box 855 Sandy, OR 97055  
 Phone: (503) 666-4730  
 Fax: (503) 666-4730  
 DATE OF PLOT: 9-27-22

CLIENT:  
 ROLL TIDE  
 PROPERTIES CORPORATION  
 CORNELIUS, OR 97113



**EROSION CONTROL NOTES:**

OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

THE IMPLEMENTATION OF THESE ESC PLANS AND CONSTRUCTION MAINTENANCE REPLACEMENT AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED BY THE LOCAL JURISDICTION, AND VEGETATION/LANDSCAPING IS ESTABLISHED. THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THE PROJECT IS APPROVED UNTIL THE LOTS ARE SOLD.

THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE MARKINGS SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.

THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.

THE ESC FACILITIES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.

ALL ADJACENT STREETS SHALL BE KEPT FROM DEBRIS, DIRT AND ROCK AT ALL TIMES. USE ROCK ENTRANCE FROM ENTERING AND LEAVING THE SITE. ANY DIRT OR DEBRIS LEAVING THE SITE SHALL BE CLEANED UP IMMEDIATELY.

AN EROSION CONTROL INSPECTION IS REQUIRED BEFORE ANY GROUND DISTURBING ACTIVITY IS COMMENCED ON-SITE. ALSO, THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.

STABILIZED GRAVEL ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

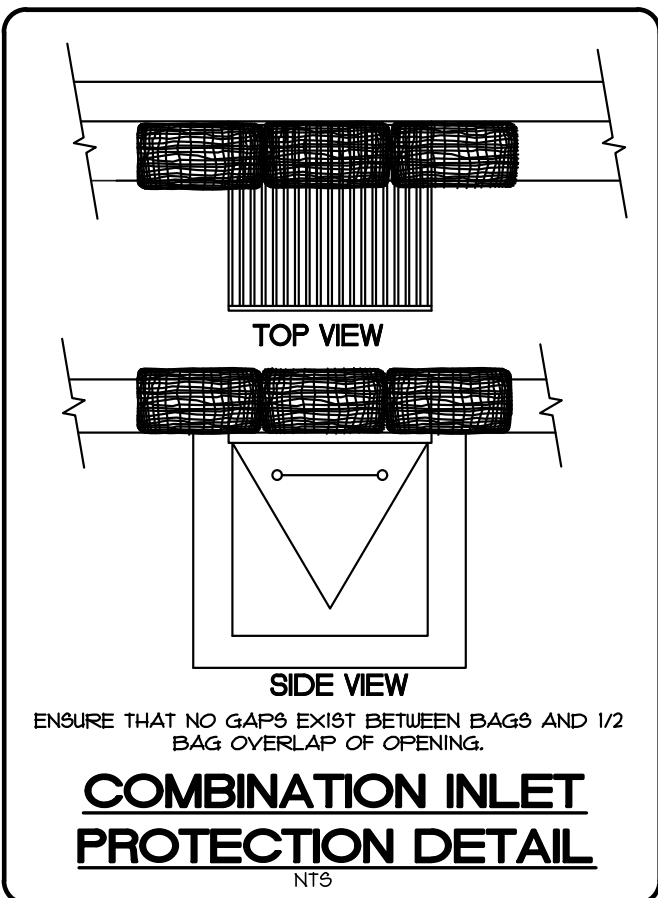
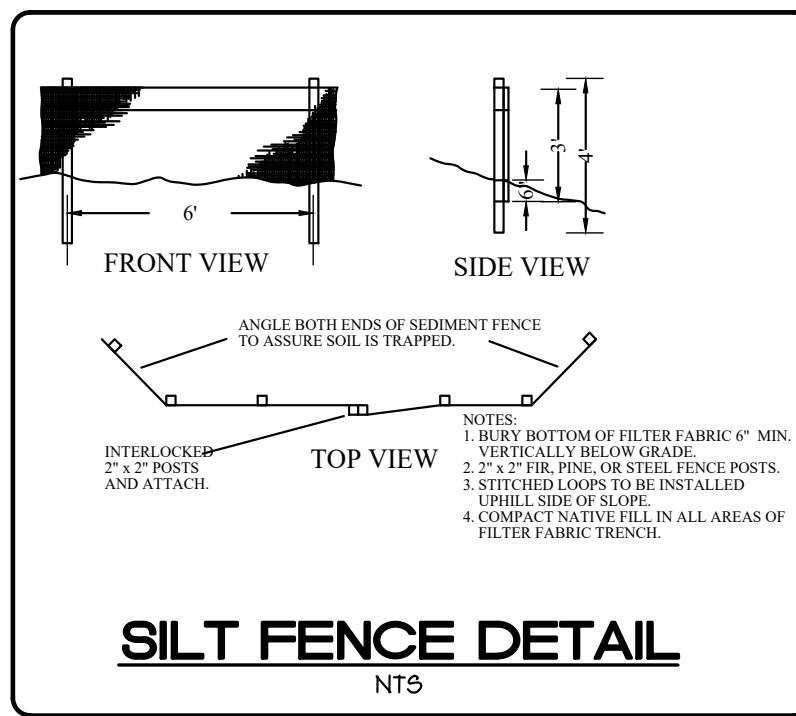
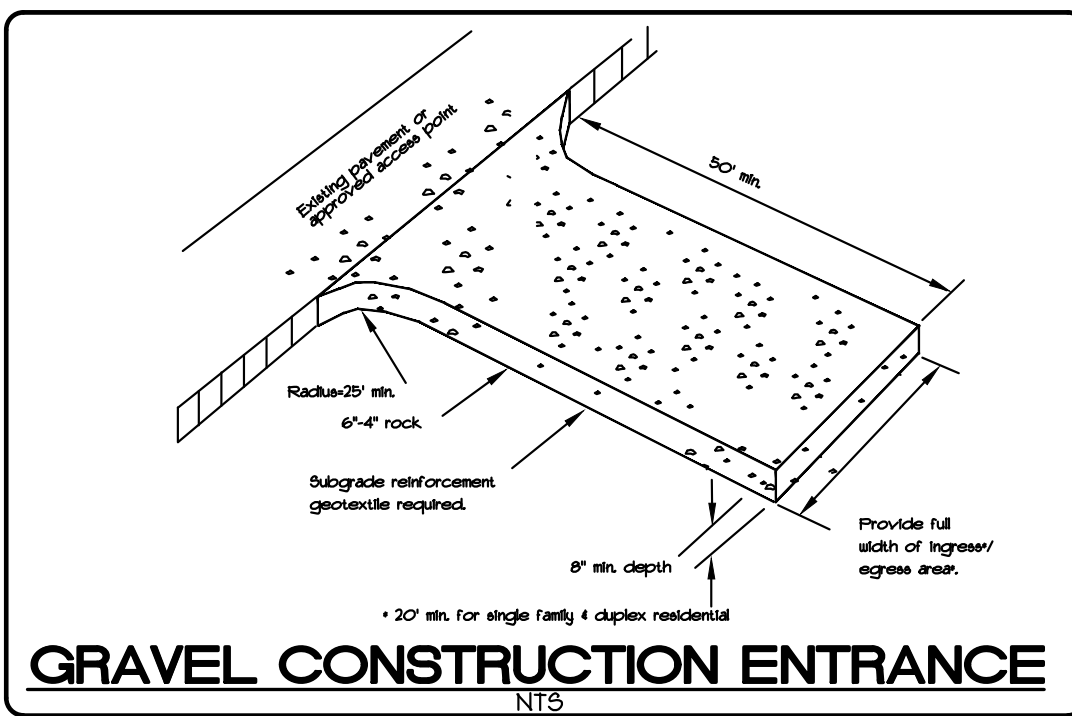
STORM INLETS, BASINS, AND AREA DRAINS SHALL BE PROTECTED UNTIL PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS RE-ESTABLISHED.

PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPIDLY AS POSSIBLE.

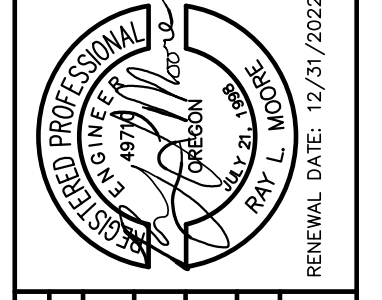
SEEDING SHALL BE PERFORMED NO LATER THAN SEPTEMBER 1 FOR EACH PHASE OF CONSTRUCTION.

IF THERE ARE EXPOSED SOILS OR SOILS NOT FULLY ESTABLISHED FROM OCTOBER 1ST THROUGH APRIL 30TH, THE WET WEATHER EROSION PREVENTION MEASURES WILL BE IN EFFECT. SEE THE EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (CHAPTER 4) FOR REQUIREMENTS.

THE DEVELOPER SHALL REMOVE ESC MEASURES WHEN VEGETATION IS FULLY ESTABLISHED.



BY	REVISION	SHEET
		<b>C9</b>
		OF <b>12</b>
DATE	DESIGNED: CTH	
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	APPROVED: RLM	

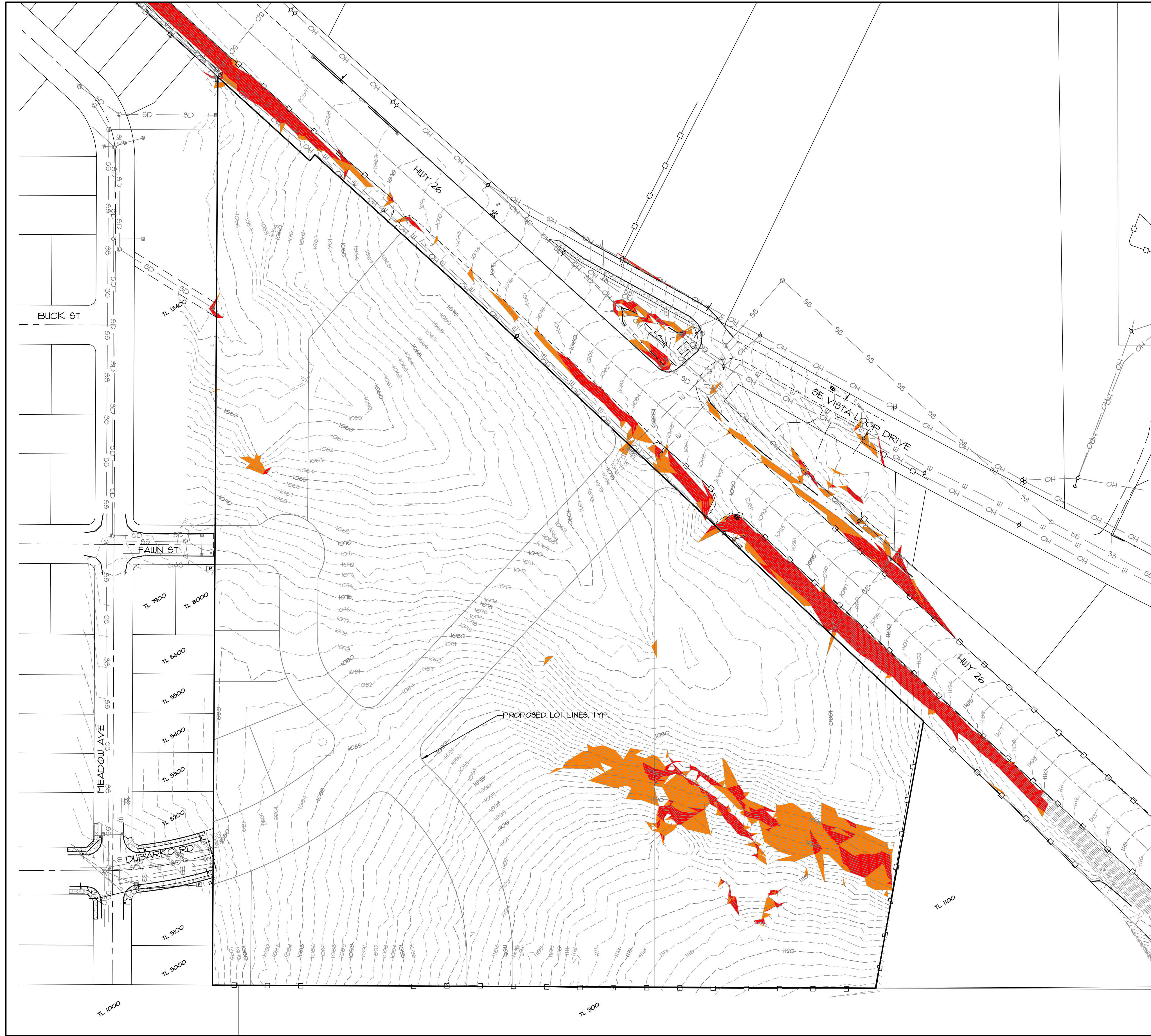


SCALE	VERT. HORIZ.	N/A	5E
DATE	FILE	07/26/2018	19
SECTION	RANGE		25
	TWP.		

**BULL RUN TERRACE SUBDIVISION**  
**PRELIMINARY GRADING AND EROSION CONTROL PLAN**  
 PROJECT: 40808 & 41010 HWY 26, SANDY, OR 97055  
 LOCATION:

**Surveyors & Planners, Inc.**  
 Surveying, Planning and  
 Civil Engineering  
 P.O. Box 855 Sandy, OR 97055  
 Phone: (503) 668-4730  
 Fax: (503) 668-4730  
 DATE OF PLOT: 9-21-22

CLIENT:  
 ROLL TIDE  
 PROPERTIES CORPORATION  
 CORVALLIS, OR 97333



**LEGEND**

- SLOPES OF 25-34.99%
- SLOPES OF 35% AND GREATER



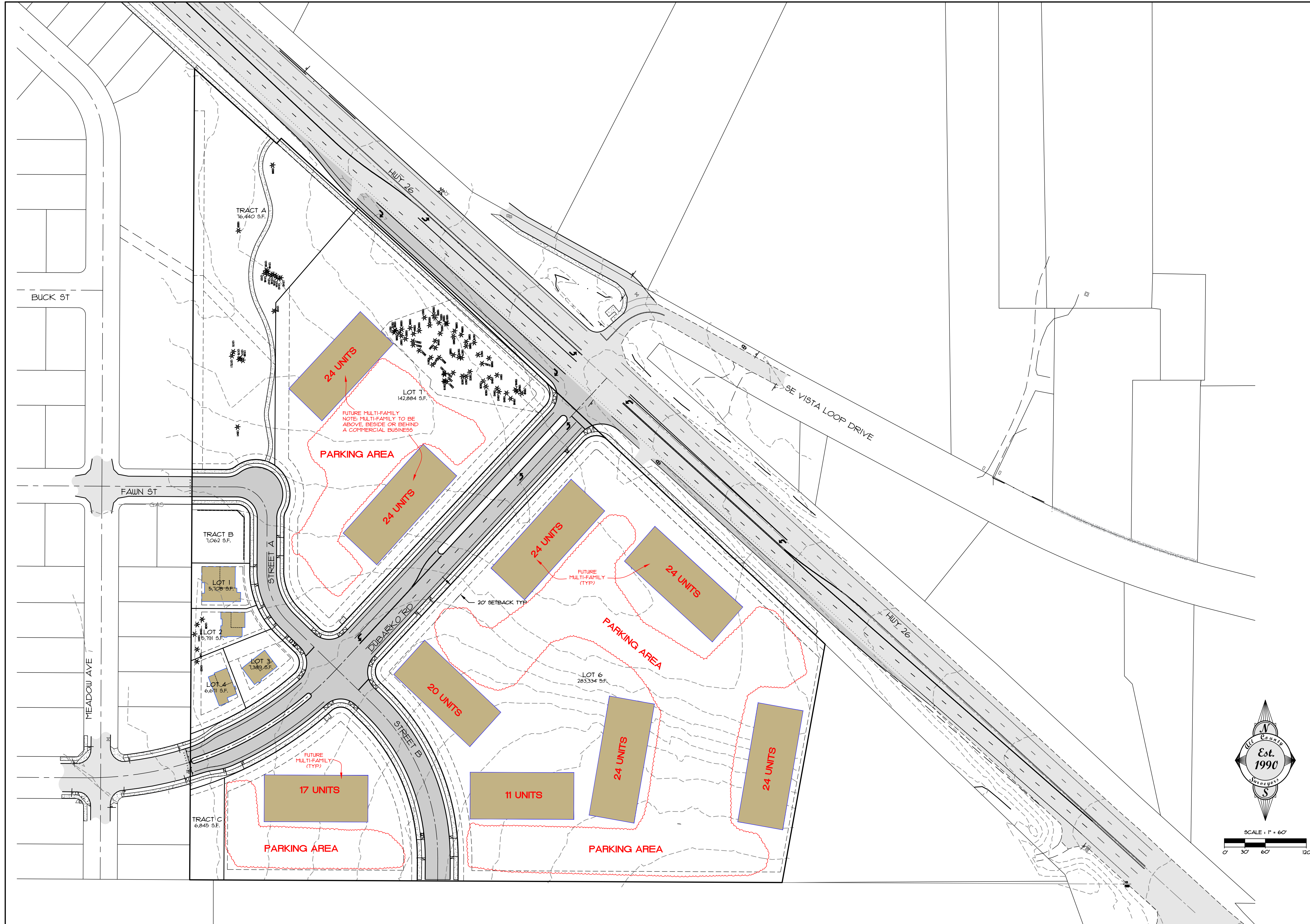
<p>CLIENT: ROLL TIDE PROPERTIES CORPORATION CORNELIUS, OR 97113</p>	<p>PROJECT: <b>BULL RUN TERRACE SUBDIVISION</b> <b>SLOPE ANALYSIS</b></p>	SCALE:	N/A	VERT.:	N/A	DATE:	07/26/2018	FILE:	19-038-Planning-LDE-1443
		SECTION:	TWP.:	RANGE:	5E				
LOCATION: <b>40808 &amp; 41010 HWY 26, SANDY, OR 97055</b>		REVISION:		BY:		DATE:		SHEET	
								<b>C10</b>	
								OF <b>12</b>	
								DESIGNED: CTH	
								DRAWN: CTH	
								CHECKED: RLM	
								APPROVED: RLM	
								RENEWAL DATE: 12/31/2022	

**Surveyors & Planners, Inc.**  
Surveying, Planning and  
Civil Engineering and  
P.L.L.C.  
P.O. Box 855 Sandy, OR 97055  
Phone: (503) 668-4730  
Fax: (503) 668-4730  
DATE OF PLOT: 9-21-22

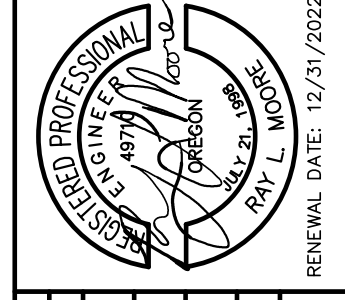


SCALE:	N/A	VERT.:	N/A	DATE:	07/26/2018	FILE:	19-038-Planning-LDE-1443
SECTION:	TWP.:	RANGE:	5E				





DATE	NO.	REVISION	BY
DESIGNED:	CTH		
DRAWN:	CTH		
CHECKED:	RLM		
APPROVED:	RLM		



SCALE	N/A
VERT.:	1"=60'
HORIZ.:	1"=60'
DATE:	07/26/2018
FILE:	18-0305-Planning-DE-1.dwg
LEGAL:	
SECTION:	TWP. RANGE
	18 25 5E

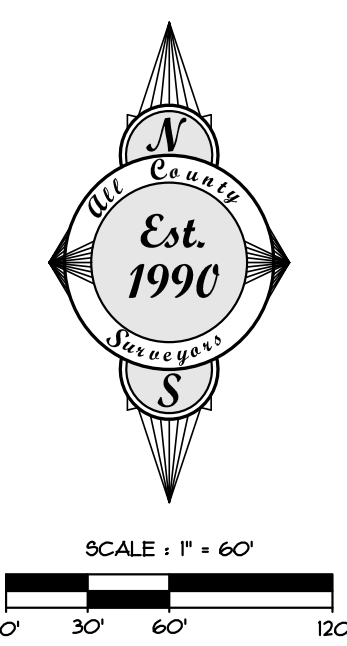
PROJECT: **BULL RUN TERRACE SUBDIVISION**

CONCEPT PLAN

LOCATION: **40808 & 41010 HWY 26, SANDY, OR 97055**

**Surveyors & Planners, Inc.**  
 Surveying, Planning and  
 Civil Engineering and  
 Construction Management  
 P.O. Box 855 Sandy, OR 97055  
 Phone: (503) 668-4730  
 Fax: (503) 668-4730  
 DATE OF PLOT: 9-21-22

CLIENT:  
 ROLL-TIDE PROPERTIES LLC  
 PO BOX 103  
 CORNELIUS, OR 97113  
 PHONE:  
 (503) 453-5599



SHEET  
**11**

OF  
**12**

RENEWAL DATE: 12/31/2022

REVISION

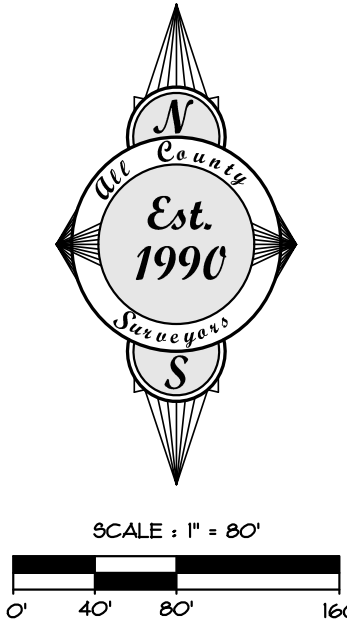
REVISION

REVISION

REVISION

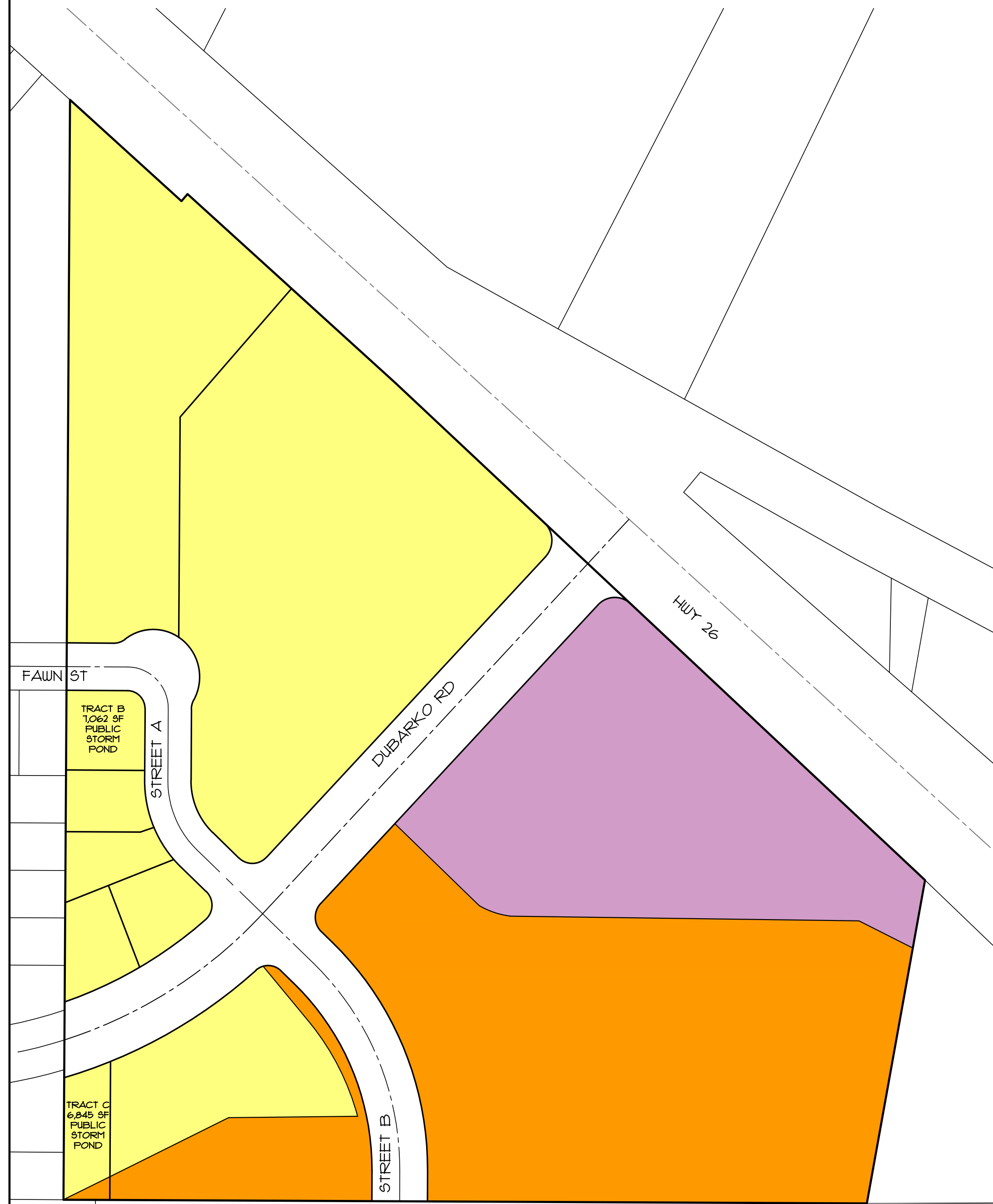
REVISION

EXISTING NET ZONING AREA	
TOTAL SITE AREA	= 693,051 SF = 15.910 ACRES
R-1 SINGLE FAMILY	= 275,443 SF = 6.323 ACRES
R-2 MULTI-FAMILY	= 192,768 SF = 4.425 ACRES
C-3 COMMERCIAL	= 113,133 SF = 2.611 ACRES
PUBLIC ROW & STORM PONDS	= 111,112 SF = 2.551 ACRES

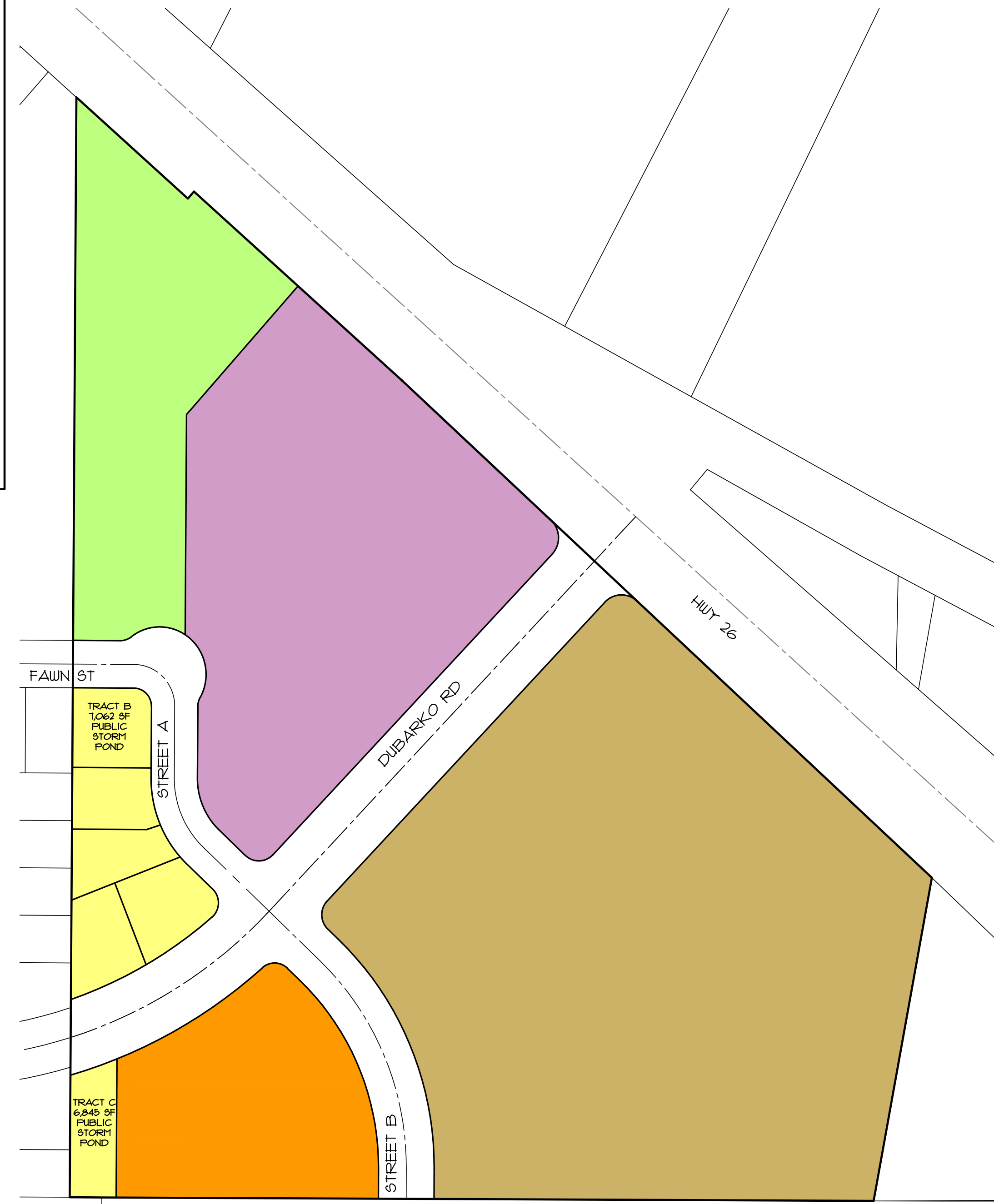


LEGEND	
	PARKS AND OPEN SPACE ZONE
	R-1 ZONE
	R-2 ZONE
	R-3 ZONE
	C-3 ZONE

PROPOSED NET ZONING AREA	
TOTAL SITE AREA	= 693,051 SF = 15.910 ACRES
PARKS AND OPEN SPACE	= 76,440 SF = 1.755 ACRES
R-1 SINGLE FAMILY	= 25,559 SF = 0.581 ACRES
R-2 MULTI-FAMILY	= 53,728 SF = 1.233 ACRES
R-3 MULTI-FAMILY	= 283,334 SF = 6.504 ACRES
C-3 COMMERCIAL	= 142,884 SF = 3.280 ACRES
PUBLIC ROW & STORM PONDS	= 111,112 SF = 2.551 ACRES

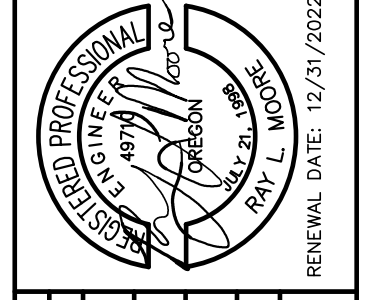


EXISTING ZONING



PROPOSED ZONING

NO.	REVISION	DATE	BY
1			



SCALE	N/A	VERT. DATE	07/26/2018
HORIZ.	1" = 80'	FILE	19-038-Planning-LDE-1.dwg
SECTION	1B	RANGE	5E
TWP.	25	LEGAL	

PROJECT: **BULL RUN TERRACE SUBDIVISION**  
**NET ZONING AREA COMPARISON**  
 LOCATION: **40808 & 41010 HWY 26, SANDY, OR 97055**

**Surveyors & Planners, Inc.**  
 Surveying, Planning and  
 Civil Engineering and  
 P.L.L.C.  
 P.O. Box 855 Sandy, OR 97055  
 Phone: (503) 668-4730  
 Fax: (503) 668-4730  
 DATE OF PLOT: 9-27-22

CLIENT:  
 ROLL TIDE  
 PROPERTIES CORPORATION  
 CORNELIUS, OR 97113

SHEET	12
OF	12
DESIGNED:	CTH
DRAWN:	CTH
CHECKED:	RLM
APPROVED:	RLM