



CITY OF MOLALLA

CITY COUNCIL WORK SESSION

AGENDA

Council Chambers | Molalla Civic Center - 315 Kennel Avenue - Molalla
Wednesday | August 26, 2026 | 5:00 PM

NOTICE: City Council will hold this meeting in-person and through video Live-Streaming on the City's Facebook Page and YouTube Channel. Work Sessions are open to the public, however closed for Public Comment.

1. CALL TO ORDER AND ROLL CALL

2. DISCUSSION ITEMS

A. Urban Growth Boundary Update	
Staff Report	Pg. 2
Exhibit A: Revised Subarea Map	Pg. 4
Exhibit B: Proposed Urban Growth Boundary Expansion Areas	Pg. 5
Exhibit C: Draft Urban Growth Boundary Goal 14 Public Facilities Review	Pg. 6
Exhibit D: Adopted Goal 14 Analysis	Pg. 109
Exhibit E: Letter from DLCD On Submission Timeline	Pg. 166
Exhibit F: Written Comment Received To Date	Pg. 169

3. ADJOURN



CITY OF MOLALLA

117 N. Molalla Avenue
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Staff Report

Agenda Category: Work Session

Agenda Date: August 26, 2026

From: Dan Zinder, Planning Manager

Approved by: Mac Corthell, Assistant City Manager

SUBJECT: UGB Expansion Update – Draft Cost Analysis and Proposed Expansion Map

FISCAL IMPACT: Unknown

RECOMMENDATION/RECOMMEND MOTION: None

BACKGROUND:

As Molalla's Urban Growth Boundary Expansion project nears completion, Staff provides this work session update to Council prior to an official adoption hearing in September to answer questions and gain feedback from the Council.

Submitted with this staff report is a report prepared by the Dyer Partnership that models the relative costs of expanding water, sewer, storm, and transportation infrastructure for subareas north and south of the City. This report was prepared in response to concerns by the Molalla general public and City Council during last year's meetings on the City's Goal 14 analysis regarding the feasibility of expanding the City's urban growth boundary into "exception" lands south of the City. The results of this report will be integrated into an addendum to the City's Goal 14 analysis. The report serves as a basis to determine whether the exception lands could be determined as "impracticable" for expansion in accordance with ORS 660-024-0065 if the costs were substantially higher to expand there.

The results of this analysis showed that infrastructure expansion to subareas to the north was not significantly different from expanding into the subarea within the exceptions lands, and in some cases it was cheaper to go south. Based on the results of this report, the City could not reasonably make an argument that expansion to all of the southern subareas is "impracticable." The study did provide basis to exclude subareas 2, 4, and 6 within the exception lands due to costs substantially higher than those within subareas 3, 5, 7, 8, and 9. However, subareas 3, 5, 7, 8, and 9 provided more than enough land to meet the revised residential land need of 198

acres of land. The proposed map exclusively proposes residential expansion to those subareas. Notably, while these per unit costs are substantially high across the board, the numbers were reached by considering infrastructure costs in entirety for each subarea. If properties from adjacent subareas are brought into the UGB, shared costs bring that overall number down though those precise amounts were not determined in this report.

The proposed residential expansion includes 177.5 acres of residential land. Additionally, it includes 7.47 acres of commercial lands in the exception areas, 77.18 acres of land in Subarea 12, west of the wastewater treatment plant, and 84.75 acres of land in Subareas 1 and 3. The entirety of the lands proposed in Subarea 1 is Ivor Davies Park, a park currently owned and operated by the City of Molalla that is outside the existing urban growth boundary. Considerations for Subarea 12 were not included in the Dyer report as the criteria for employment land inclusion in an urban growth boundary expansion includes site area characteristics. The City's adopted Economic Opportunities Analysis specifically identified a need for larger industrial sites over 20 acres and no such sites were available within the exception lands, nor were contiguously owned buildable parcels available that would meet this need. For employment lands, the lack of suitable sites within the exception lands provides a basis for cities to look for lands in lower priority areas.

The City held a public meeting on July 20th and will be incorporating feedback from that meeting as well as online feedback into a final proposal. Hearings for the proposal will be held with:

- Molalla Planning Commission September 2, 2026
- City Council on September 23, 2026
- Clackamas County Planning Commission on dates to be determined – anticipated in November and December respectively.

The City is under a tight timeline to complete this project as failure to complete prior to 2027 may expose the City to requirements to complete its Urban Growth Boundary Amendment under new OHNA rules. Refer to Exhibit E.

Exhibits

Exhibit A: Revised Subarea Map

Exhibit B: Proposed Urban Growth Boundary Expansion Areas

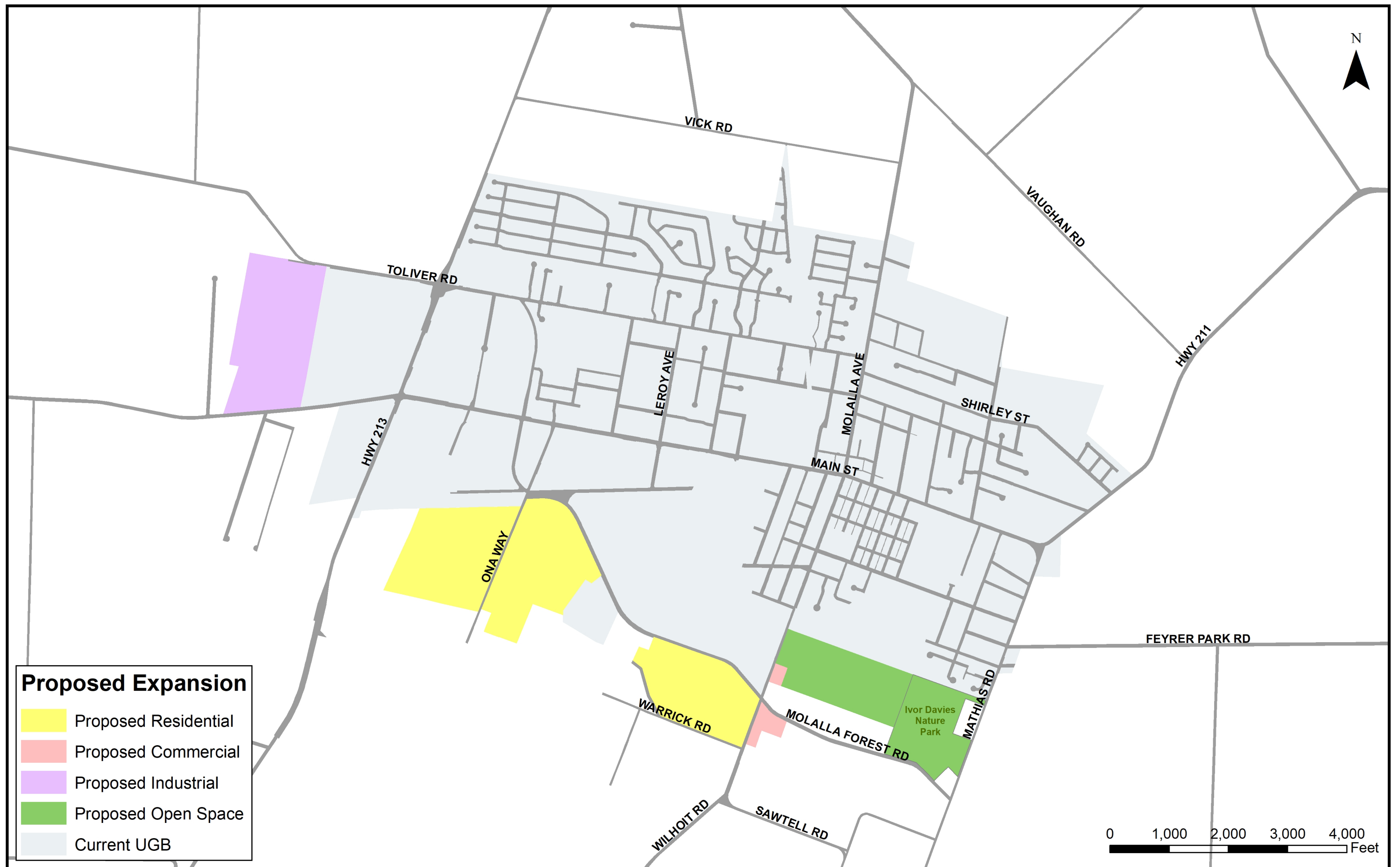
Exhibit C: Draft Urban Growth Boundary Goal 14 Public Facilities Review

Exhibit D: Adopted Goal 14 Analysis

Exhibit E: Letter from DLCD On Submission Timeline

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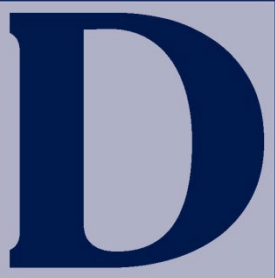


City of Molalla
Clackamas County, Oregon

URBAN GROWTH BOUNDARY GOAL 14
PUBLIC FACILITIES REVIEW

DRAFT

JULY 2026



The Dyer Partnership
Engineers & Planners, Inc.

Project No. 198.60

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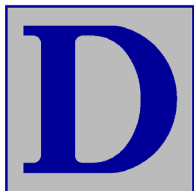
City of Molalla
Clackamas County, Oregon

Urban Growth Boundary Goal 14
Public Facilities Review

DRAFT

July 2026

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APPENDICES

Appendix A	Single-Family Detached Housing Trip Generation
Appendix B	Cost Estimates

Introduction

Project Need and Purpose

The City of Molalla has identified a land deficiency within its Urban Growth Boundary (UGB) to provide enough residential housing units for the forecast 20-year population growth. The services of 3J Consulting, Inc. have been retained by the City to analyze and update urbanization for the City's Statewide Land Use Planning Goal 14. Additional lands are to be identified for inclusion in the UGB.

The Urban Growth Boundary Goal 14 Analysis Draft (3J Consulting, Inc., 2025) stated the City has conducted the 2025 Molalla Economic Opportunity Analysis, Buildable Lands Inventory, and the 2023 Molalla Housing Needs Analysis. The population forecast was determined to be 15,660 people in 2042, an increase of 5,432 from the current population.

These documents identified a land deficiency to accommodate the 20-year growth forecast within the UGB. The Housing Needs Analysis found an initial deficit of 1,996 housing units by 2042. The current estimated deficit is 929 housing units, following recent high-density developments and rezoning efforts.

3J Consulting, Inc. identified twenty (20) study subareas for potential inclusion into the UGB and completed a preliminary evaluation to select certain subareas for further study. As illustrated in Figure 1, Subareas 2 - 8 and 13 - 16 have been selected for further study.

The purpose of this report is to identify public facilities constraints and order of magnitude cost estimates in relation to service to residential developments on the selected subareas. The illustrated facility layouts and analysis contained herein are not to be considered as an update or amendment to any existing City planning documents. The City should amend each of its master plans to formally incorporate the resulting service areas and capital improvements into the adopted plans upon completion of the Goal 14 analysis effort.

Costs for private facilities such as stormwater management, franchise utilities, and lot grading are excluded.

Cost estimates presented in this report are considered Class 5 estimates as defined by the Association for the Advancement of Cost Engineering (AACE). Class 5 estimates are intended for conceptual screening and have an expected accuracy range of +/- 30 percent. Cost estimates are in 2026 dollars and were developed using unit costs from public capital improvement projects. The costs for private developers may vary from public costs.



Public Facilities Analysis Methodology

The following three-step procedure was used to develop the service requirements and cost estimates to serve the subareas. Results of each step are provided later in the report.

Step 1: High-Level Screening and Demand Calculation

The selected subareas were grouped into South (Subareas 2 - 9) and North (Subareas 13 - 16) Regions. Service demands for each subarea and for the South and North Regions were developed for transportation, water, and sewer using the per-dwelling trip generation rates from the Trip Generation Manual (TGM), 12th Edition (Institute of Transportation Engineers (ITE), 2025) and the per-capita water and wastewater flow rates from the Water Master Plan (WMP) and Wastewater Facilities Plan (WWFP).

The design population of 15,660 in 2042 was compared to the populations in each public facilities master plan to verify the capacities of offsite infrastructure to serve the proposed development areas. Each plan's recommended improvements were also reviewed to identify known capital improvement projects that need to be considered with the study subareas.

The scope of this analysis is limited to the study subareas. However, recent development sites inside City Limits were also reviewed to check if any new large demands have been added which would significantly reduce the remaining capacity of the existing systems to serve the study subareas.

Options to evaluate the utility service requirements were to connect each subarea to the nearest available utility lines or to plan new regional trunk mains.

The nearest water and sewer mains are located at the edges of City Limits and are predominantly comprised of small diameter subdivision piping. Connection to these lines would require upsizing a significant amount of the existing systems to provide capacity. Analysis of how many pipes to upsize for 12 separate subareas would be very complex and the piecemeal utility planning would be likely to result in a poorly thought-out system that would be more difficult for the City to maintain in perpetuity.

Planning for new regional trunk mains is preferred with long-range planning. Providing a cohesive system structure is recommended to ensure adequate capacity for the development area while minimizing impacts to existing developments. This approach was selected, creating analysis Step 2 described below.

Step 2: Regional Service Requirements

The South and North Regions were considered from a master planning perspective for interconnected roads and utilities. The total dwelling unit counts for both the South and North Regions exceeds the required 929 units. Developing all subareas in either region is not anticipated to be necessary. Several adjacent subareas are expected to be potentially selected for inclusion in the UGB.

Conceptual system layouts for streets, water, wastewater, and stormwater were drawn for the South and North Regions. The purpose of the conceptual layouts was to evaluate the buildability of each subarea within topographical and environmental constraints and to estimate the footage of public facilities required within each subarea. Future site development layouts are expected to vary from the conceptual layouts.

Tentative street classifications were assigned to provide for subsequent cost estimating in Step 3. The trip counts estimated in Step 1 were compared to nearby traffic counts and forecasts obtained from the Oregon Department of Transportation (ODOT) and Clackamas County to estimate the impact of each region on

nearby roadways. Potential street alignments were drafted based on the average housing density of 5 units per acre (8,700 square feet per lot) then adjusted for site topography, wetlands, neighborhood connectivity, and emergency access requirements. Existing public and private roads within the study areas were selected for reconstruction to the extent feasible, particularly as existing wetland crossings.

Dead-end streets were provided with 96-foot (ft) cul-de-sac bulbs and limited to less than 750 ft length in accordance with Oregon Fire Code. The Standard Specifications for Public Works Construction (Standard Specifications) (City of Molalla, 2020) specifies the following typical maximum grades for new streets:

- 6 percent for arterial streets (up to 12 percent for short distances may be reviewed case-by-case)
- 8 percent for collector streets (up to 12 percent for short distances may be reviewed case-by-case)
- 10 percent for local streets (up to 16 percent for short distances may be reviewed case-by-case)

Ten percent was selected for this analysis as the general limit for street slopes for planning purposes. Lidar was used to avoid proposing streets on slopes exceeding ten percent.

Step 2 also included scoping the major water and sewer components, sizing of transmission / trunk mains to each region, and identification of any pumping requirements. Water transmission main alignments were drafted to check fire flow capacity to and through the subareas. Major stormwater elements such as road crossings and major outfall locations were identified.

The Federal Emergency Management Agency (FEMA) National Flood Hazard Layer was reviewed and determined there are no special flood hazard areas within the study area. No floodplain habitat assessments or mitigation are anticipated.

The wetlands used in this analysis were the three layers provided in the Oregon Wetland Database: Local Wetland Inventory (LWI), National Wetland Inventory (NWI), and More Oregon Wetlands (More). Impacts to these mapped wetlands were minimized, but some level of disturbance is anticipated. A wetland mitigation unit cost was developed using data and information from the City's Wastewater Treatment Plant.

3J Consulting, Inc. performed a high-level screening for potential unmapped wetlands based on hydric soils and determined *"Hydric soils are indicative wetlands but are not an existing constraint on development unless those wetlands are later determined to be locally significant wetlands pursuant to an inventory. Inventories occur during concept planning stage after land has been brought into the UGB."* Urban Growth Boundary Goal 14 Analysis Draft (3J Consulting, Inc., 2025). Accordingly, hydric soils were not used as a development constraint in this analysis.

Step 3: Subareas Analysis

High-level cost estimates were created for each subarea and include transportation, piping, conveyance, and wetland mitigation required to provide transportation and public utilities for each subarea. The cost estimates are provided in the Appendix and summarized for each subarea throughout this report.

The cost of the regional facilities that serve multiple subareas is iterated in each cost estimate as though that subarea was the only site being developed. Regional facilities are itemized and noted on each cost estimate. **Care must be taken in assessing total costs for various combinations of subareas. Direct addition of adjacent subareas would result in double counting the regional facility costs.**

Street improvement costs for new, widened, or reconstructed streets were determined using an average cost per foot for each functional classification.

New and widened street Rights of Way (ROW) are expected to be dedicated by the developers in accordance with City standards. No ROW land acquisition costs have been applied because ROW dedication does not constitute a monetary construction expense to the future developer. The subareas' housing unit counts already deduct 18 percent from the buildable area for ROW dedication.

Potential sewer alignments within each subarea were developed to identify areas of gravity and pressure service according to topography. The sewer mains within each subarea were not sized and are assumed to require typical 8-inch through 12-inch sizes. The footage of internal sewer collection piping was estimated from these tentative alignments. The subarea connections to the trunk main were also checked for preliminary sizing using the demands per subarea calculated in Step 1.

Potential water transmission main alignments were drafted and sized for fire flow to and through the subareas. Other than the transmission mains, water distribution pipe alignments were not drawn or sized within the subareas and are assumed to require typical 8-inch and 10-inch sizes. The footage of internal water distribution piping is assumed to be equal to the footage of the internal street network.

Stormwater is typically conveyed by gravity. Although the real-world alignments and outlet locations may differ, it was assumed that the total footage of gravity stormwater conveyance is approximately equal to the footage of gravity sewer pipe within each subarea.

The estimated size and cost of wetland impacts to install infrastructure was developed for each subarea. The estimated area of impact was calculated as the width of the street ROW plus a 15-foot construction buffer on both sides, for the length of the impacted wetland. A unit cost for wetland mitigation was developed based on the City's 2023 purchase of wetland mitigation credits through the Garret Creek Mitigation Bank for the Wastewater Treatment Plant Upgrades. The 2023 unit cost was \$390,000 per acre. Adjusting for three years of assumed three percent annual inflation resulted in a 2026 unit cost of \$425,000 per acre used in this analysis. Wetland impacts associated with lot grading and home construction activities are excluded. Costs for such activities may be estimated using the above wetland mitigation unit cost and assumed impact areas, if necessary.

Step 1 Findings: High-Level Screening and Demand Calculation

Existing Public Facilities Plans and Other Data Sources

The following public facilities documents were used to perform the analyses contained in this report:

- Transportation System Plan (TSP) (Kittelson & Associates, 2018)
- Clackamas County Comprehensive Plan, Chapter 5: Transportation System Plan (CCTSP) (Clackamas County, 2025)
- Water Management, Conservation and Water System Master Plan (WMCWSMP) (The Dyer Partnership, 2021)
- Wastewater Facilities and Collection System Master Plan (WWFCSMP) (The Dyer Partnership, 2018)
- Predesign Report Wastewater Treatment Plant Upgrades (PDR) (The Dyer Partnership, 2021)

- Stormwater Master Plan (SWMP) (Tetra Tech / KCM, 2003)

A preliminary screening was conducted to compare this study's design population against the overall system capacities given in each public facilities plan. The results were used to select elements of each system for further analysis in later sections of this report.

Traffic counts and 20-year forecasts were obtained from the ODOT TransGIS system for available state highways and county roads. The currently available data was collected in 2024.

Step 1 Findings

Transportation

The TSP provided a design population of 15,841 in 2040 which is greater than the design population for this analysis. Therefore, the traffic demands to the city center and community facilities is not expected to significantly deviate from the TSP's existing projections. However, the geographic distribution of traffic demand will likely vary from the TSP because it assumed all growth would occur within the existing UGB, which is no longer the case.

Traffic demands for each subarea were calculated using the Trip Generation Manual rates for Land Use 210: Single-Family Detached Housing as provided in the Appendix. The trip generation rates are 9.09 average weekday trips per dwelling unit and 0.70 peak hour afternoon trips per dwelling unit. The resulting trips for each subarea and region are presented in Table 1.

**TABLE 1
STUDY AREA TRAFFIC DEMANDS**

Subarea	Units	Average Weekday Trips	Peak Hour (PM) trips
2	116	1,054	108
3	106	964	99
4	289	2,627	269
5	235	2,136	219
6	215	1,954	200
7	266	2,418	247
8	171	1,554	159
9	318	2,891	296
South Region Total	1,716	15,598	1,596
13	1,003	9,117	933
14	245	2,227	228
15	151	1,373	140
16	148	1,345	138
North Region Total	1,547	14,062	1,439
Required Units	929	8,445	864

Since the total dwelling unit counts in each region exceeded the required 929 units, the maximum demand used for each region was limited to 929 units, or 8,445 average weekday trips and 864 peak hour trips.

The TSP identified 32 motor vehicle system improvements, 44 bicycle system improvements, and 44 pedestrian system improvements. Development of the South Region is likely to prompt improvement projects on S Mathias Road, S Molalla Avenue, and/or S Molalla Forest Road. Development of the North Region is likely to initiate improvement projects on OR 213, as well. These are evaluated further in Steps 2 and 3 below.

Sanitary Sewer

Treatment

The WWFP provided a design population of 16,977 in 2043. The PDR updated the design population to 15,939 in 2043. Both estimates are greater than the design population for this analysis. Upon completion of the new Wastewater Treatment Plant (WWTP) improvements currently in construction, the City will have surplus capacity for the design population.

Collections

Subarea sewer demands were calculated using the per capita flow rates from the WWFP as presented in Table 2. The units for each subarea were converted to population using the factor of 2.83 persons/household provided in the Urban Growth Boundary Goal 14 Analysis. The resulting sewer demands are presented in Table 3.

TABLE 2
STUDY AREA WASTEWATER DEMAND FACTORS

Parameter	Value	Units	Source
Population	2.83	persons/household	UGB Goal 14 Analysis page 7
ADWF	112	gpcd	WWFP Table ES.4.1
PDAF ₅	524	gpcd	WWFP Table ES.4.1
PIF	735	gpcd	WWFP Table ES.4.1

- **Average Dry Weather Flow (ADWF)** - Base sewage flows for the months of July, August, and September when groundwater is not present. This parameter is derived from recorded plant flows. Expressed in gallons per capita per day (gpcd).
- **Peak Day Average Flow Associated with a Five-Year Storm (PDAF₅)** - The expected sewage flows including inflow and infiltration following a five-year storm. This parameter is calculated via statistical analysis of recorded plant flows and rainfall data. Expressed in gpcd.
- **Peak Instantaneous Flow (PIF)** - The gallons per day (gpd) average during the one-hour period with the highest sewage flows. Peak hour demand is commonly required for WWTP sizing. This parameter is calculated via statistical analysis of recorded plant flows. Expressed in gpcd.

**TABLE 3
STUDY AREA WASTEWATER DEMANDS**

Subarea	Units	Population	ADWF, MGD	PDAF ₅ , MGD	PIF, MGD
2	116	328	0.037	0.082	0.063
3	106	300	0.034	0.075	0.058
4	289	818	0.092	0.204	0.157
5	235	665	0.074	0.166	0.128
6	215	608	0.068	0.152	0.117
7	266	753	0.084	0.187	0.145
8	171	484	0.054	0.120	0.093
9	318	900	0.101	0.224	0.173
South Region Total	1,716	4,856	0.544	1.209	0.932
13	1,003	2,838	0.318	0.707	0.545
14	245	693	0.078	0.173	0.133
15	151	427	0.048	0.106	0.082
16	148	419	0.047	0.104	0.080
North Region Total	1,547	4,378	0.490	1.090	0.841
Required Units	929	2,629	0.294	0.655	0.505

The sewer collection system capacity is constrained. The WWTP stated existing flows exceeded the Environmental Protection Agency (EPAs) non-excessive Inflow and Infiltration (I&I) flow rates and recommended rehabilitation projects to reduce I&I. Sewer main design capacities were not evaluated; however, City staff are aware of several capacity problems in the collection system and have pending capital projects to upsize pipe segments.

Beginning at the WWTP, the 21-inch trunk main located on the WWTP site has a design capacity of 6.0 Million Gallons per Day (MGD) and is at capacity. Upsizing will be required.

From there the collection system splits into two basins. Toliver Basin generally collects flows from Toliver Road, N Molalla Avenue, and residential areas east of N Molalla Avenue. Toliver Basin has a 12-inch trunk main that runs westerly down Toliver Avenue, turns into a 15-inch trunk main heading south into the WWTP site, then joins into the 21-inch trunk main. The 15-inch trunk main is expected to require upsizing to serve any additional areas.

Bear Creek Basin consists of two large geographically separate subbasins which surround the Toliver Basin on both the north and south. Bear Creek Basin was analyzed as two major subbasins because of its unique geographical divide. The basins are referred to herein as North Bear Creek and South Bear Creek.

North Bear Creek Basin collects flows from the residential areas along Meadowlawn Place and conveys flows south along OR 213 through a 12-inch trunk main. South Bear Creek Basin generally collects flows from OR 211 and S Molalla Avenue and conveys flows northwesterly alongside Bear Creek through a 15-

inch trunk main to OR 213. These two trunk mains join into a single 15-inch trunk main at OR 213 then flow west into the 21-inch trunk main at the WWTP.

The design capacities and existing demands of the Toliver and Bear Creek trunk mains are not known. The WWFP and PER calculated total citywide flows, not flows within individual basins. However, City staff have observed a lack of capacity in the collection system and it is expected that one or more trunk mains will need to be upsized to provide capacity for the study subareas.

The existing demands on the trunk mains were estimated based on sewer lateral counts. Counts of large and small diameter sewer services were obtained using the City's GIS data. See Table 4.

**TABLE 4
BASIN SEWER SERVICE COUNTS**

Collection Basin	Approximate Sewer Service Counts		
	4" Ø	≥6" Ø	Total
Toliver	1,138	405	1,543
North Bear Creek	818	2	820
South Bear Creek	479	142	621

The lateral counts, current population, and historical gallons per capita day (gpcd) values were used to estimate the existing flow rates for ADWF, PDAF, PIF per basin. The results are shown in Table 5. A period of flow monitoring of the collection system is recommended to check the assumed flow rates.

**TABLE 5
EXISTING SEWER DEMANDS PER BASIN**

Collection Basin	ADWF, MGD	PDAF ₅ , MGD	PIF, MGD
Toliver	0.62	3.57	5.39
North Bear Creek	0.25	1.45	2.19
South Bear Creek	0.24	1.39	2.10
Totals	1.11	6.62	9.68

Trunk main sizing for combined existing and new flows is evaluated in Step 2. The minimum sewer main size used in subsequent analysis is 8-inch diameter within the study subareas.

Pump Stations

There is potential for one or more subareas to require pump stations to convey sewage to a suitable connection point. This will be evaluated in Step 2.

Water

Treatment

The WMP provided a design population of 16,118 in 2040 which is greater than the design population for this analysis. The WTP has surplus capacity for the design population.

Distribution

Finished water demands were calculated using the per-capita rates from the WMP as presented in Table 6.

TABLE 6
STUDY AREA WATER DEMAND FACTORS

Parameter	Value	Units	Source
Population	2.83	persons/household	UGB Goal 14 Analysis page 7
MDD	207	gpcd	WMP Table 6.2.8
PHD	268	gpcd	WMP Table 6.2.8
Fire Flow	1,500	gpm	Molalla Standard Specifications Section 5.2.1.a

The units for each subarea were converted to population using the factor of 2.83 persons/household provided in the Urban Growth Boundary Goal 14 Analysis. The resulting water demands are presented in Table 7.

The distribution system should be sized for the greater of the Maximum Day Demand (MDD) or the design fire flow. The Standard Specifications require a minimum of 1,500 gallons per minute (gpm) fire flow to residential areas.

- **Maximum Day Demand (MDD)** - The largest volume of water delivered to the system in a single day expressed in gpm. The water supply, treatment plant, and transmission lines should be designed to handle the maximum day demand.
- **Peak Hour Demand (PHD)** - The gpd average during the one-hour period with the highest water demand. Peak hour demand is commonly experienced during the early morning hours when many water users are bathing, cooking, and engaging in other activities that require widespread water use. Expressed in gpm.

**TABLE 7
STUDY AREA FINISHED WATER DEMANDS**

Subarea	Units	Population	MDD, gpm	PHD, gpm	Fire Flow, gpm
2	116	328	47	61	1500
3	106	300	43	56	1500
4	289	818	118	152	1500
5	235	665	96	124	1500
6	215	608	87	113	1500
7	266	753	108	140	1500
8	171	484	70	90	1500
9	318	900	129	167	1500
South Region Total	1,716	4,856	698	904	1500
13	1,003	2,838	408	528	1500
14	245	693	100	129	1500
15	151	427	61	80	1500
16	148	419	60	78	1500
North Region Total	1,547	4,378	629	815	1500
Required Units	929	2,629	378	489	1500

The fire flow is greater than the MDD for each subarea; therefore, the fire flow was selected as the criteria for distribution system sizing.

The minimum water main size used in this analysis is 8-inch diameter.

The WMP water modeling results showed the available fire flow rates generally in excess of 4,000 gpm at the south and north City Limits. The fire flow rates are provided for before and after the recommended capital improvements. It is therefore expected for the existing system to have the capacity to serve the subareas. In Step 2 this will be verified by updating the water model with recent distribution main installations and the study subareas to check proposed system flows and pressures.

The City has a pending capital improvement project to install Pressure Reducing Valve (PRV) stations to create a new distribution system pressure zone. The PRV station requirements for the South and North Regions are evaluated in Steps 2 and 3.

Storage

The WMP found that the existing treated water storage capacity is insufficient for the design population. The City currently has 3.2 Million Gallons (MG) of treated water storage. The required storage for 2040 was calculated to be 3.66 MG. The existing reservoir capacity was projected to become inadequate between 2020 and 2025 and is therefore expected to still be inadequate.

Storage capacity improvements will be required to serve the subareas. The required total system storage is a combination of the MDD and a fixed fire reserve volume. The MDD contribution from each subarea

ranges from 62,000 gallons to 588,000 gallons. The design requirement of 929 housing units equates to 544,000 gallons of MDD storage.

The City has a pending capital improvement project to replace an aging 1.2 MG reservoir with a new 2.0 MG reservoir to provide the required capacity. It is recommended to prioritize this project, rather than requiring distributed storage facilities at the subareas. Recovering the proportionate cost share through System Development Charges (SDC) is also recommended. The capital cost of new storage is therefore excluded from the subsequent cost estimates.

Stormwater

The City's current stormwater master plan was prepared in 2003. A new stormwater master plan is in progress as of June 2026.

The SWMP summarized previous population projections and did not present its own. The development assumed in this analysis does not interact with most of the Capital Improvement Plan (CIP) projects, which are located towards the center of the City Limits. In addition to the City Limit CIP projects, the SWMP identified four Bear Creek culvert upsizing projects on county and state roads which are near the development areas in this study. It is acknowledged that multiple Bear Creek culverts have been recommended for upsizing; however, these costs are not included in this analysis with the expectation the post-development discharge will be limited through detention and on-site management.

Major Drainage Ways and Public Conveyance System

Storm runoff within the UGB flows to three major drainageways. The far northeast drains directly into the Molalla River. The north and west drains into Creamery Creek. The south drains into Bear Creek. Each of these main drainageways has multiple tributaries in the form of creeks and roadside ditches.

Unlike the other public facilities systems, stormwater service is not population-based. Stormwater runoff is determined by hydrologic analysis of the site characteristics including slope, land use, and soil characteristics for a given design storm (25-year storm, 100-year storm, etc). Existing 100-year flow rates through major drainage ways were obtained using the United States Geological Survey (USGS) StreamStats online tool. Subbasins were delineated for the analysis areas using elevation data and USGS StreamStats waterway map. In general, the drainage subbasins roughly correspond to the analysis subareas.

The conveyance system should be sized for the peak flow from each drainage basin as determined by hydrologic analysis. Steps 2 and 3 size the major drainage outlet(s) from each subarea based on the 100-year storm. For this analysis it was assumed that all road culverts will need replacement to serve upstream development. The minimum stormwater culvert pipe size used in this analysis is 24-inch diameter.

Step 2 Findings: South Region (Subareas 2 - 9)

The total unit count of all subareas in the North Region is 1,716 which exceeds the required 929 units. Regional utility sizing was accordingly based on new demand from a maximum of 929 units. The preliminary streets and utilities are depicted in Figures 2 and 3.

Transportation

The TSP identifies capital projects for two roundabouts on Molalla Forest Road. One is at Ona Way and one is at S Molalla Avenue. Development of the South Region will require these projects. The TSP also identifies reconstruction of S Molalla Forest Road into a Portland cement concrete street and truck route with an adjacent multi-use path. Bicycle and pedestrian projects on S Mathias Road are also included.

S Molalla Forest Road is currently closed to through traffic west of S Molalla Avenue. It was a truck route prior to its closure. Development of the South Region will re-establish this truck route. City staff anticipate freight traffic from Feyrer Park Road will re-route onto S Molalla Forest Road via S Mathias Road. Traffic currently goes north to OR 211 and west through downtown. Combining the truck traffic re-route with the new traffic generated by residential development of the South Region, these conditions will require construction of S Mathias Road improvements as identified in the TSP.

Sanitary Sewer

The South Region would connect into the South Bear Creek Basin. The 15-inch South Bear Creek trunk main from OR 213 currently receives 4.27 MGD PIF, operating at capacity and requires upsizing to serve the additional 929 new dwelling units.

S Molalla Forest Road is conducive to a gravity sewer system. There is an average of 1.3 percent downslope to the west and no problematic hills or creek crossings. A trunk main consisting of 3,100 ft of 8-inch pipe, 6,225 ft of 12-inch pipe, and 1,370 ft of 18-inch pipe will be required to serve the 929 housing units. The proposed system connection point is at S Molalla Forest Road and OR 211.

The existing 15-inch trunk main follows Bear Creek to the northwest and crosses OR 213 before reaching the WWTP. Rather than planning to use this line, which is already near capacity and end of service life, the City proposed a new trunk main routing that goes west along OR 211, crosses OR 213, then turns north to the WWTP. This trunk main is expected to require at least an 18-inch pipe to serve the added 929 units. Upsizing even further to accommodate infill within the existing UGB is recommended (a total of 1,996 new housing units), which is estimated to require at least a 21-inch pipe.

The WWFP did not identify any capital improvement projects that are significant to the South Region.

Water

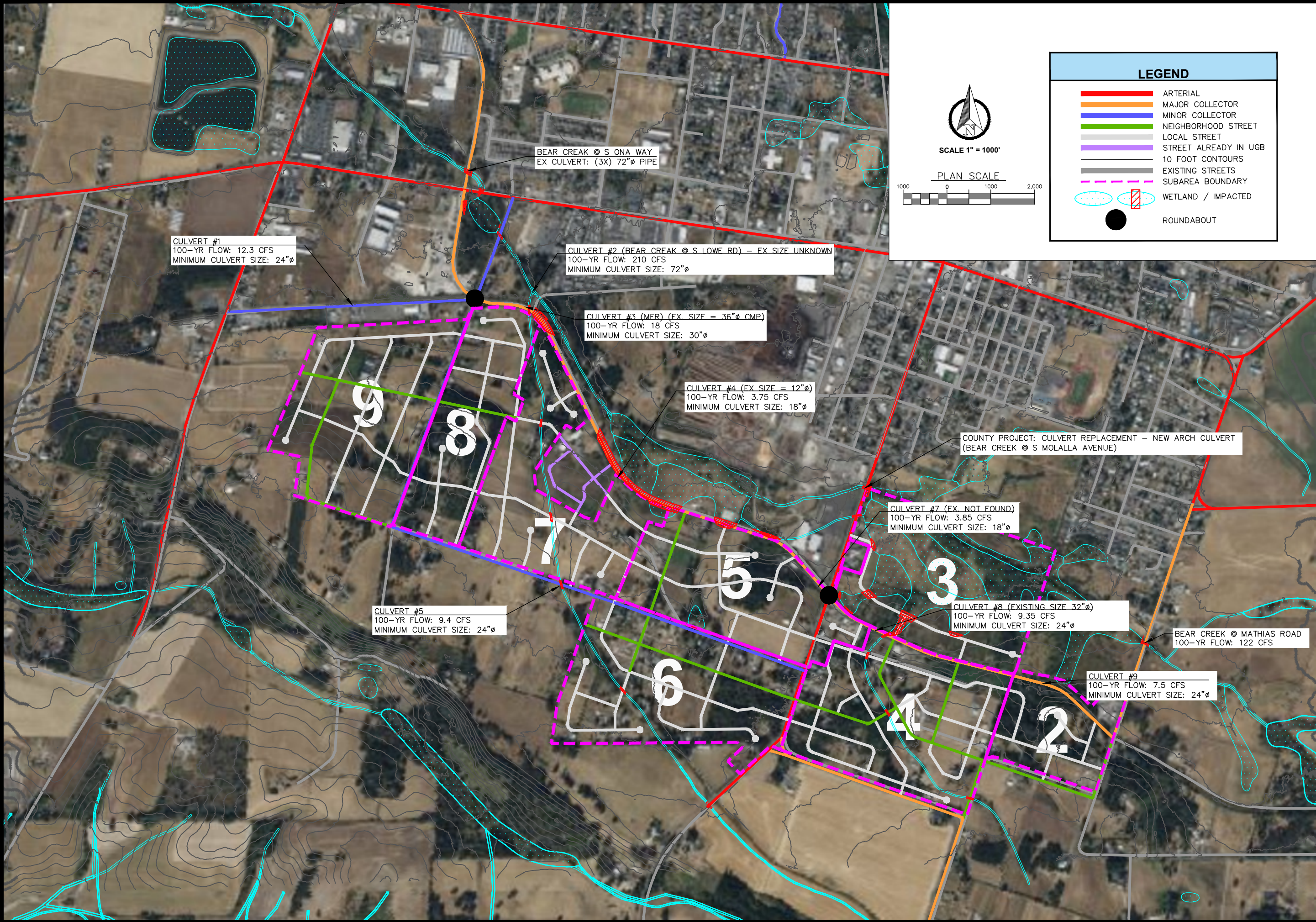
Development of the Subareas 5-9 will prompt WMP project 20 which consists of a 12-inch transmission main on 7,400 ft of S Molalla Forest Road from S Molalla Avenue to S Ona Way and a PRV station at S Ona Way. Development of Subareas 2-4 will prompt extension of the S Molalla Forest Road transmission main between S Molalla Avenue and S Mathias Road and northward on S Mathias Road to Feyrer Park Road.

Stormwater

Runoff from the South Region drains into Bear Creek, a tributary of the Molalla River. Stormwater is collected in ditches along Molalla Forest Road and then passed through culverts under Molalla Forest Road. The exact number of culvert crossings across Molalla Forest Road is unknown as some are partially buried and some culverts go into private property. Bear Creek culverts downstream of the analysis subareas located in private property have been described as undersized by previous reports. The cost of upsizing these culverts is not included in this analysis.

The south sites generally slope from the southeast to the northwest. The South Region has an average slope of two to four percent with a few steep areas exceeding ten percent. The South Region is currently used as very low density residential. The average lot size is 3.7 acres.

The Natural Resources Conservation Service (NRCS) Soil survey shows the dominant soil type in the South Region is Sawtell silt loam (hydrologic group C/D), with a small amount of Clackamas silt loam (C/D) and Dayton silt loam (D). Hydrologic group C and D soils have low infiltration rates.



Step 3 Findings: South Region (Subareas 2 - 9)

Subarea 2

Subarea 2 includes parcel 52E16 02402 which is a Bureau of Land Management (BLM) facility. Redevelopment of the BLM property into residential use is not anticipated. It is possible that the facility use could increase and/or connect to City utilities. Since this acreage was included in the development of the unit count for Subarea 2, no additional demands were added for this property because it is not expected to vary substantially from the equivalent number of residential units on that acreage.

Transportation

The major transportation elements to serve Subarea 2 include:

- 1.5 centerline miles of internal and fronting streets for internal circulation and 0.9 miles of offsite street improvements for connectivity.
- Development of Subarea 2 is expected to require improvements to approximately 3,710 ft of S Molalla Forest Road from S Mathias Road to S Molalla Avenue. This includes the frontage of Subarea 2 and TSP projects P43 and M18 for reconstruction of S Molalla Forest Road and creation of a multi-use path. These TSP projects are also included in Subareas 3 and 4.
- Development of Subarea 2 is expected to require improvements to approximately 3,480 ft of S Mathias Road from Feyrer Park Road to S Eves Road. This includes the frontage of Subarea 2 and TSP projects M8, P17, and B15 for construction of lane widening, bicycle lanes, and sidewalks.

Sanitary Sewer

Development of Subarea 2 will prompt construction of 10,700 ft of the regional trunk main sewer along S Molalla Forest Road, consisting of pipe ranging from 8-inch to 12-inch diameters. It will also require replacement of the existing South Bear Creek trunk main downstream of Main St to the WWTP with 5,360 feet of new pipe in sizes ranging from approximately 15-inch to 24-inch.

The majority of Subarea 2 can be served by gravity.

Water

A regional water transmission system serving Subarea 2 should consist of a minimum 12-inch line along S Molalla Forest Road from S Molalla Avenue to S Mathias Road, and along S Mathias Road from S Molalla Forest Road to E 8th Street. A 10-inch line should be extended along the south frontage (S Eves Road to the intersection with S Sawtell Road). In addition to these regional lines, it is assumed that approximately 4,600 linear feet of 8-inch pipe will serve the development within the subarea.

Stormwater

Runoff flows north into Bear Creek through an existing culvert (size and condition unconfirmed) that crosses S Molalla Forest Road. An estimated 24-inch diameter culvert is required to pass the 100-year storm. The cost estimate includes replacement of the existing culvert.

Stormwater conveyance is estimated to require approximately 4,900 feet of 12-inch pipe within the subbasin plus approximately 10,700 feet of 18-inch pipe along S Molalla Forest Road with associated catch basins and manholes.

The existing Bear Creek culvert under S Mathias Road requires replacement. The cost estimate includes replacement with box culverts similar to the Clackamas County project at Bear Creek and S Molalla Avenue.

Environmental Impacts

S Molalla Forest Road is an existing crossing of a linear wetland between Subareas 3 and 4. A wetland abuts the north edge of S Molalla Forest Road on Subarea 3 near S Molalla Avenue. A wetland abuts the north edge of S Molalla Forest Road on Subarea 2 on Ivor Davies Nature Park. A wetland crosses S Mathias Road along Bear Creek. The street reconstruction areas may impact the wetlands.

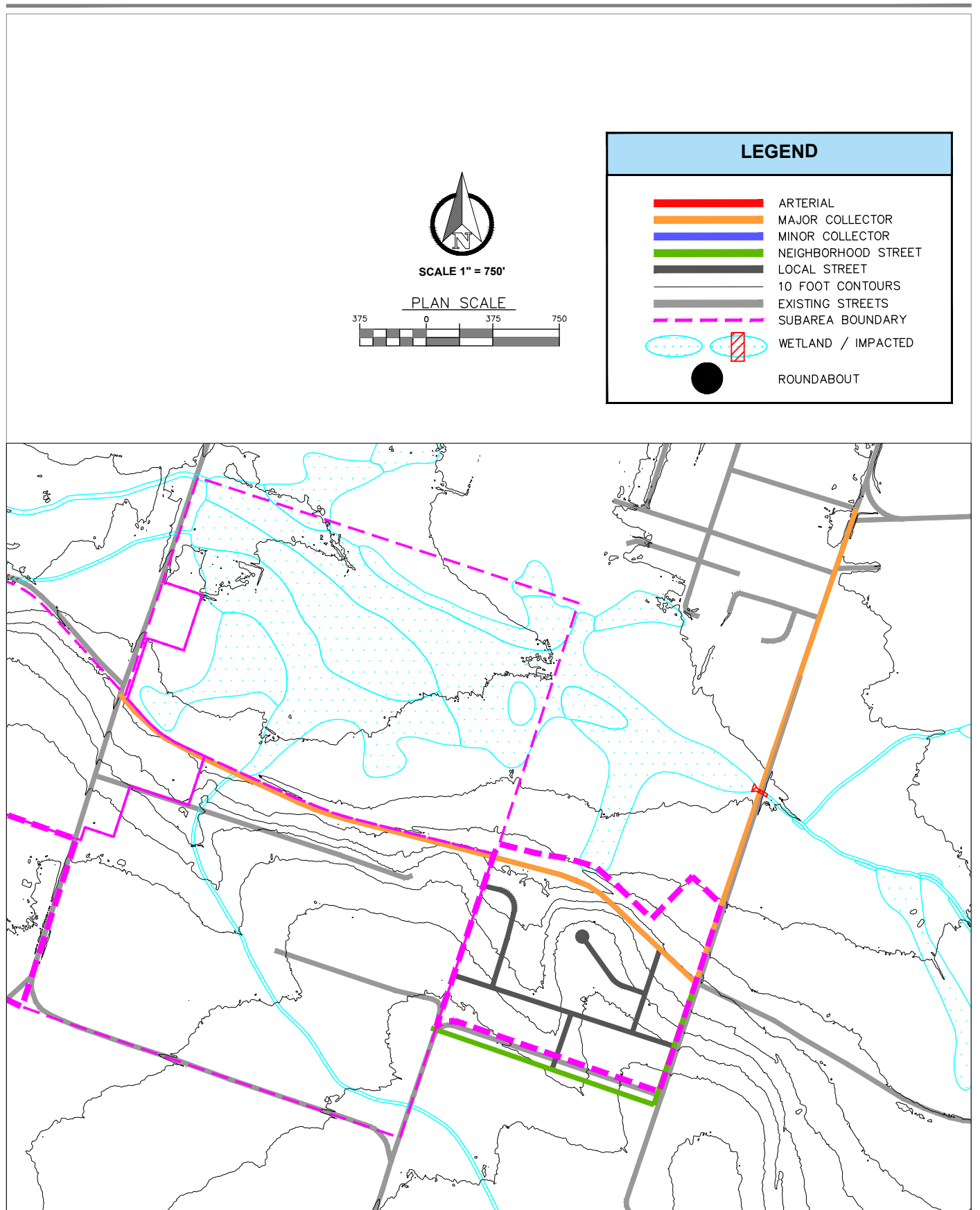
An assumed area of 0.16 acres has been included in the cost estimate.

Subarea 2 Summary

The road and utility alignments developed for this analysis are shown in Figures 4 and 5. The cost estimates are summarized in Table 8.

**TABLE 8
SUBAREA 2 PUBLIC INFRASTRUCTURE EXPANSION**

System	Cost
General Construction	\$7,107,262
Transportation	\$16,786,896
Sanitary Sewer	\$5,813,610
Water	\$2,749,180
Stormwater	\$4,726,045
Environmental	\$167,936
Construction Subtotal	\$37,350,928
Non-Construction Costs	\$13,132,825
Total	\$50,483,753
Low Range -30%	\$35,338,627
High Range +30%	\$65,628,879
Units per Subarea	116
Cost per Unit	\$435,205



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CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA STREET LAYOUT

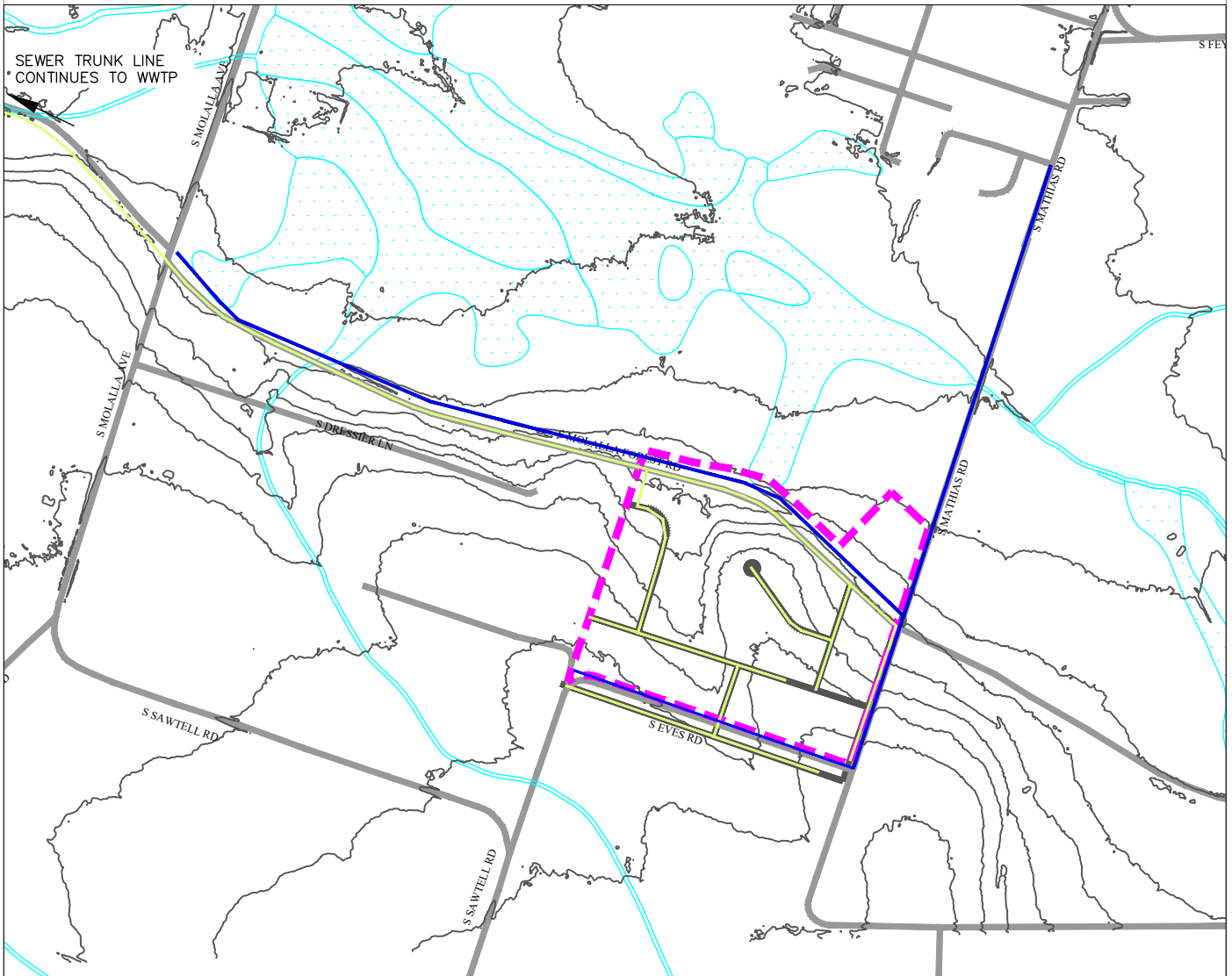
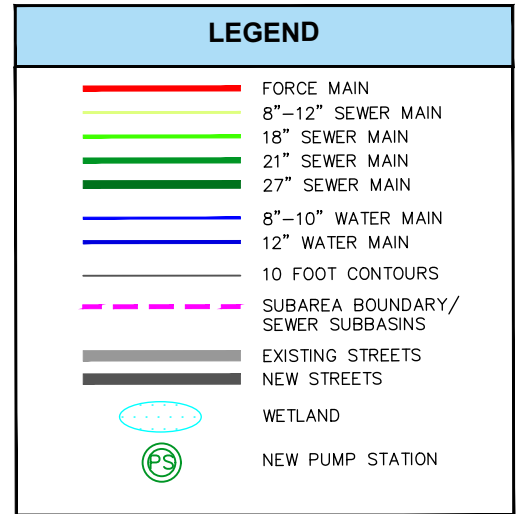
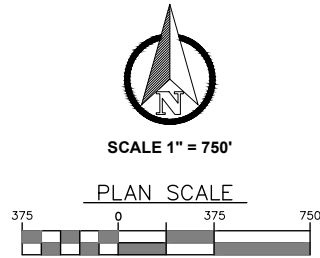
SUBAREA 2

FIGURE NO.

4

NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



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**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 2

FIGURE NO.

5

Subarea 3

Subarea 3 is 75.95 acres of which an estimated 47.84 acres (63 percent) is identified as either LWI or NWI wetlands. For analysis it was assumed that development will concentrate on the south and west borders of Subarea 3 to minimize wetland disturbance.

Subarea 3 wraps around a few parcels along S Molalla Avenue which are included in Subarea 5. However, the public facilities to Subarea 3 will be readily available to serve these parcels at no additional cost and extension through these parcels will be more cost-effective than constructing them separately as part of Subarea 5. It is therefore recommended to redraw the Subarea 3 boundary to align with S Molalla Avenue.

Transportation

The major transportation elements to serve Subarea 3 include:

- 1.9 centerline miles of internal and fronting streets for internal circulation and 0.5 miles of offsite street improvements for connectivity.
- Development of Subarea 3 is expected to require improvements to approximately 3,710 ft of S Molalla Forest Road from S Mathias Road to S Molalla Avenue. The frontage of Subarea 3 and TSP projects P43 and M18 for reconstruction of S Molalla Forest Road and creation of a multi-use path are included. These TSP projects are also included in Subareas 2 and 4.
- Development of Subarea 3 is expected to require improvements to approximately 2,700 ft of S Molalla Avenue from 5th Street to S Molalla Forest Road. This includes the frontage of Subarea 3 and TSP projects B11 and P8 for construction of bicycle lanes and sidewalks. These projects are also applicable to Subareas 4, 5, and 6 which have frontage on S Molalla Avenue.

The proposed interior street alignments in Subarea 3 include an extension up to Ivor Davies Nature Park for additional public access and/or maintenance access.

Sanitary Sewer

Development of Subarea 3 will prompt construction of 9,300 ft of the regional trunk main sewer along S Molalla Forest Road, consisting of pipe ranging from 8-inch to 12-inch diameters. Subarea 3 will require a pump station and 700 ft of force main to connect to the trunk main. It will also require replacement of the existing South Bear Creek trunk main downstream of Main St to the WWTP with 5,360 feet of new pipe in sizes ranging from approximately 15-inch to 24-inch.

Water

A regional water transmission system serving Subarea 3 should consist of a minimum 12-inch line along S Molalla Forest Road from S Molalla Avenue to S Mathias Road. In addition to this regional line, it is assumed that approximately 3,300 linear feet of 8-inch pipe will serve the development within the subarea.

Stormwater

Runoff flows north into Bear Creek through an existing 60-inch diameter corrugated metal pipe (CMP) culvert that crosses S Molalla Forest Road. Clackamas County has completed design for a project that

will replace the existing culvert with a new 12 feet wide by 7 feet high precast concrete arch structure. Construction is scheduled for 2026 - 2027.

Stormwater conveyance is estimated to require approximately 4,900 feet of 12-inch pipe within the subbasin plus approximately 9,300 feet of 18-inch pipe along S Molalla Forest Road with associated catch basins and manholes.

Environmental Impacts

Subarea 3 has extensive mapped wetlands which are expected to greatly reduce the developable area.

S Molalla Forest Road is an existing crossing of a linear wetland between Subareas 3 and 4. A wetland abuts the north edge of S Molalla Forest Road on Subarea 3 near S Molalla Avenue. A wetland abuts the north edge of S Molalla Forest Road on Subarea 2 on Ivor Davies Nature Park. The street reconstruction may impact the wetlands.

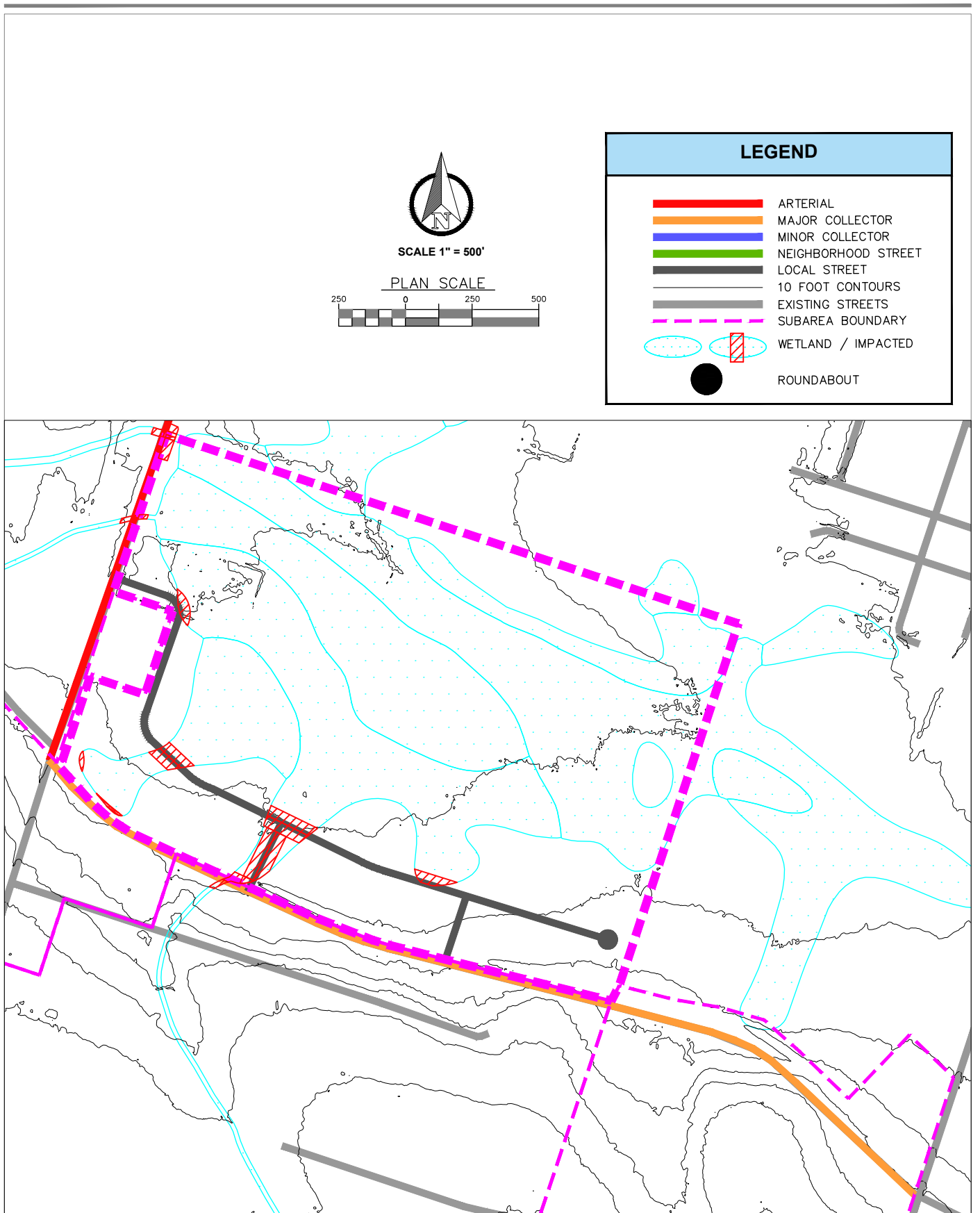
An assumed area of 1.4 acres has been included in the cost estimate.

Subarea 3 Summary

The road and utility alignments developed for this analysis are shown in Figures 6 and 7. The cost estimates are summarized in Table 9.

**TABLE 9
SUBAREA 3 PUBLIC INFRASTRUCTURE EXPANSION**

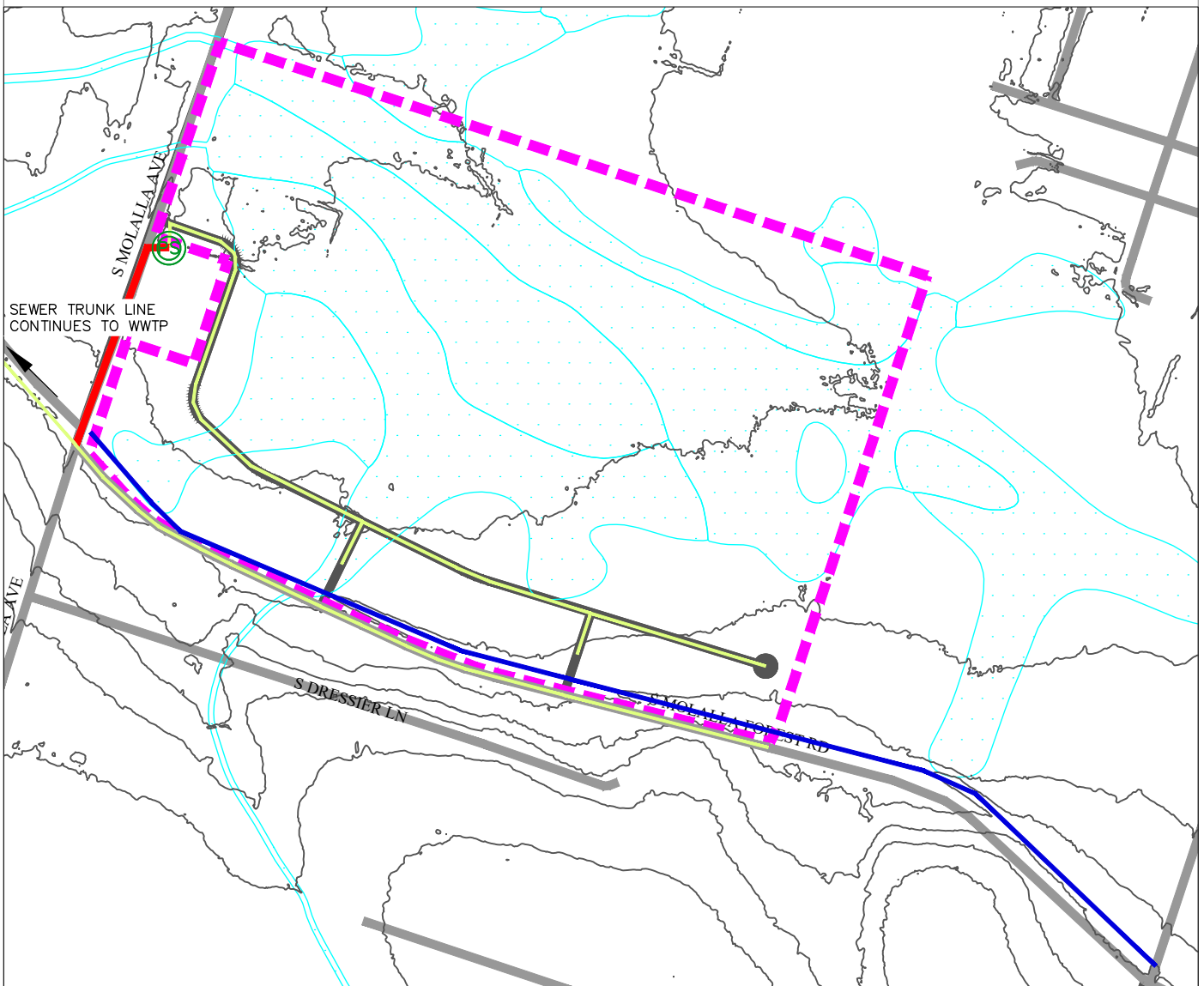
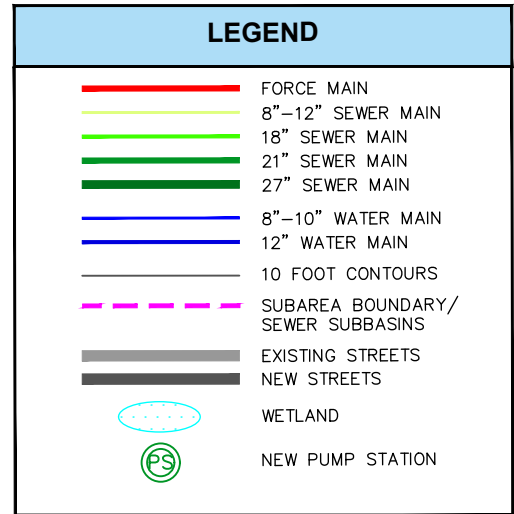
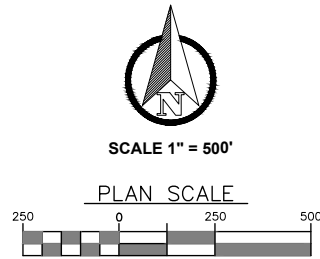
System	Cost
General Construction	\$6,455,774
Transportation	\$15,004,039
Sanitary Sewer	\$6,522,080
Water	\$2,009,930
Stormwater	\$3,359,630
Environmental	\$575,701
Construction Subtotal	\$33,927,155
Non-Construction Costs	\$11,934,504
Total	\$45,861,659
Low Range -30%	\$32,103,161
High Range +30%	\$59,620,157
Units per Subarea	106
Cost per Unit	\$432,657



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC. DATE: JULY 2026 PROJECT NO.: 198.60	CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE SUBAREA STREET LAYOUT SUBAREA 3	FIGURE NO. 6
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NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



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**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 3

FIGURE NO.

7

Subarea 4

Subarea 4 wraps around a few parcels at the southeast corner of the S Molalla Avenue and S Molalla Forest Road intersection, which are identified as part of Subarea 5. However, the public facilities to Subarea 4 will be readily available to serve these parcels and extension through these parcels will be more cost-effective than constructing them separately as part of Subarea 5. It is therefore recommended to redraw the Subarea 4 boundary to align with the existing streets.

Transportation

The major transportation elements to serve Subarea 4 include:

- 4.2 centerline miles of internal and fronting streets for internal circulation and 1.0 miles of offsite street improvements for connectivity.
- Improvements to approximately 4,400 ft of S Molalla Avenue from 5th Street to S Sawtell Road. This includes the frontage of Subarea 4 and TSP projects B11 and P8 for construction of bicycle lanes and sidewalks. Portions of these projects are also applicable to Subareas 3, 5, and 6 which have frontage on S Molalla Avenue.
- Improvements to approximately 3,710 ft of S Molalla Forest Road from S Mathias Road to S Molalla Avenue. This includes the frontage of Subarea 4 and TSP projects P43 and M18 for reconstruction of S Molalla Forest Road and creation of a multi-use path. These TSP projects are also included in Subareas 2 and 3.
- The traffic generated is expected to warrant construction of TSP project M31 for the S Molalla Forest Road and S Molalla Avenue roundabout. The roundabout cost estimate has been included and is also applicable to Subareas 5 and 6.
- Three-quarter street improvements for approximately 2,360 ft of S Sawtell Road along the Subarea 4 south frontage. Sawtell Road is the proposed city-county interface and it is recommended to bring the entire ROW into the City rather than attempting to split it or share maintenance with the county. There may be difficulties implementing long-term maintenance and improvements.

Sanitary Sewer

Development of Subarea 4 will prompt construction of 9,300 ft of the regional trunk main sewer along S Molalla Forest Road, consisting of pipe ranging from 8-inch to 12-inch diameters. Subarea 4 can be served by gravity. A portion of Subarea 4 sewer flows may need to drain through the adjacent parcel from Subarea 5. It will also require replacement of the existing South Bear Creek trunk main downstream of Main St to the WWTP with 5,360 feet of new pipe in sizes ranging from approximately 15-inch to 24-inch.

Water

A regional water transmission system serving Subarea 4 should consist of a minimum 12-inch line along S Molalla Forest Road from S Molalla Avenue to S Mathias Road. A minimum 10-inch line should be extended along the south and west frontage (S Molalla Avenue to S Sawtell Road to S Eves Road).

In addition to these regional lines, it is assumed that approximately 15,300 linear feet of 8-inch pipe will serve the development within the subarea.

Stormwater

Runoff flows north into Bear Creek through an existing 32-inch diameter CMP culvert that crosses S Molalla Forest Road. An estimated 24-inch diameter culvert is required to pass the 100-year storm. The cost estimate includes replacement of the existing culvert in like size.

Stormwater conveyance is estimated to require approximately 13,300 feet of 12-inch pipe within the subbasin plus approximately 9,300 feet of 18-inch pipe along S Molalla Forest Road with associated catch basins and manholes.

Environmental Impacts

A linear wetland crosses the middle of Subarea 4. Two proposed new street crossings will impact the wetland area. S Eves Road is an existing crossing but the frontage improvements are expected to impact the wetland. S Molalla Forest Road is an existing crossing on the same linear wetland. The reconstruction is expected to impact the wetland. A wetland abuts the north edge of S Molalla Forest Road on Subarea 3 near S Molalla Avenue. The street reconstruction and the roundabout may impact the wetland. A wetland abuts the north edge of S Molalla Forest Road on Subarea 2 on Ivor Davies Nature Park. The street reconstruction may impact the wetland.

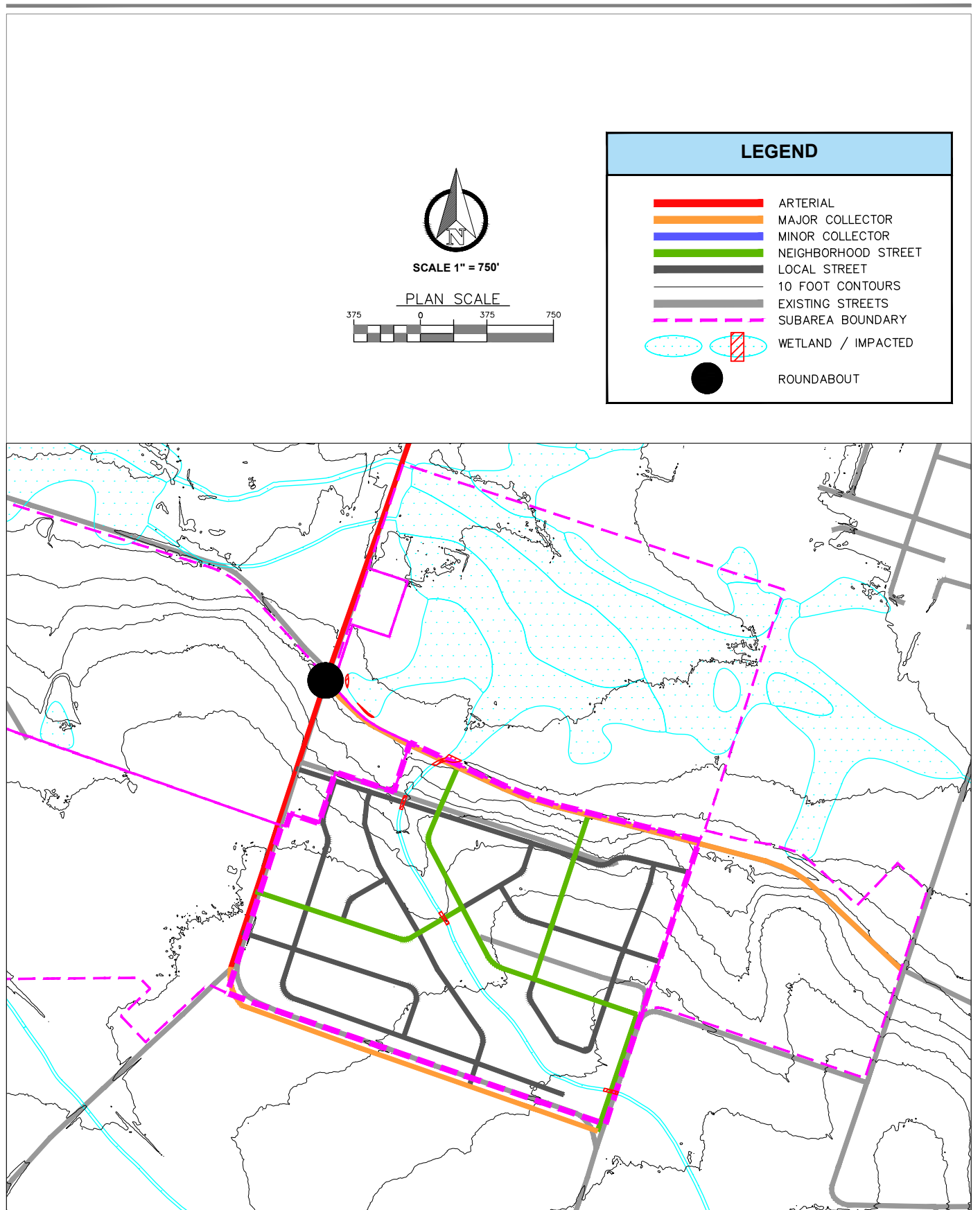
An assumed area of 0.17 acres has been included in the cost estimate.

Subarea 4 Summary

The road and utility alignments developed for this analysis are shown in Figures 8 and 9. The cost estimates are summarized in Table 10.

**TABLE 10
SUBAREA 4 PUBLIC INFRASTRUCTURE EXPANSION**

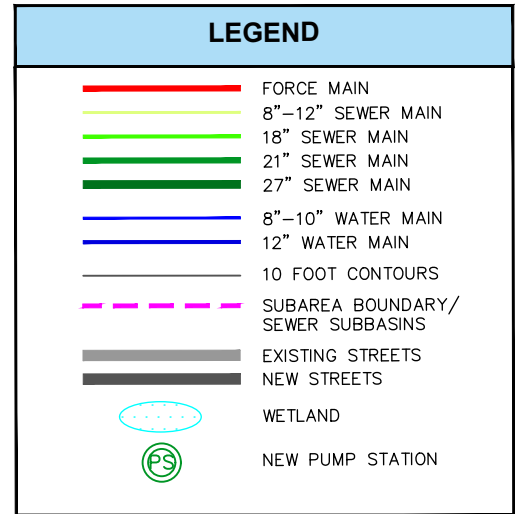
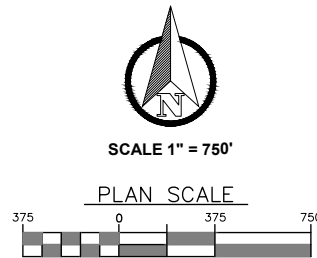
System	Cost
General Construction	\$12,487,812
Transportation	\$33,042,988
Sanitary Sewer	\$8,917,810
Water	\$5,264,165
Stormwater	\$5,743,145
Environmental	\$71,516
Construction Subtotal	\$65,627,436
Non-Construction Costs	\$23,029,603
Total	\$88,657,039
Low Range -30%	\$62,059,927
High Range +30%	\$115,254,150
Units per Subarea	289
Cost per Unit	\$306,772



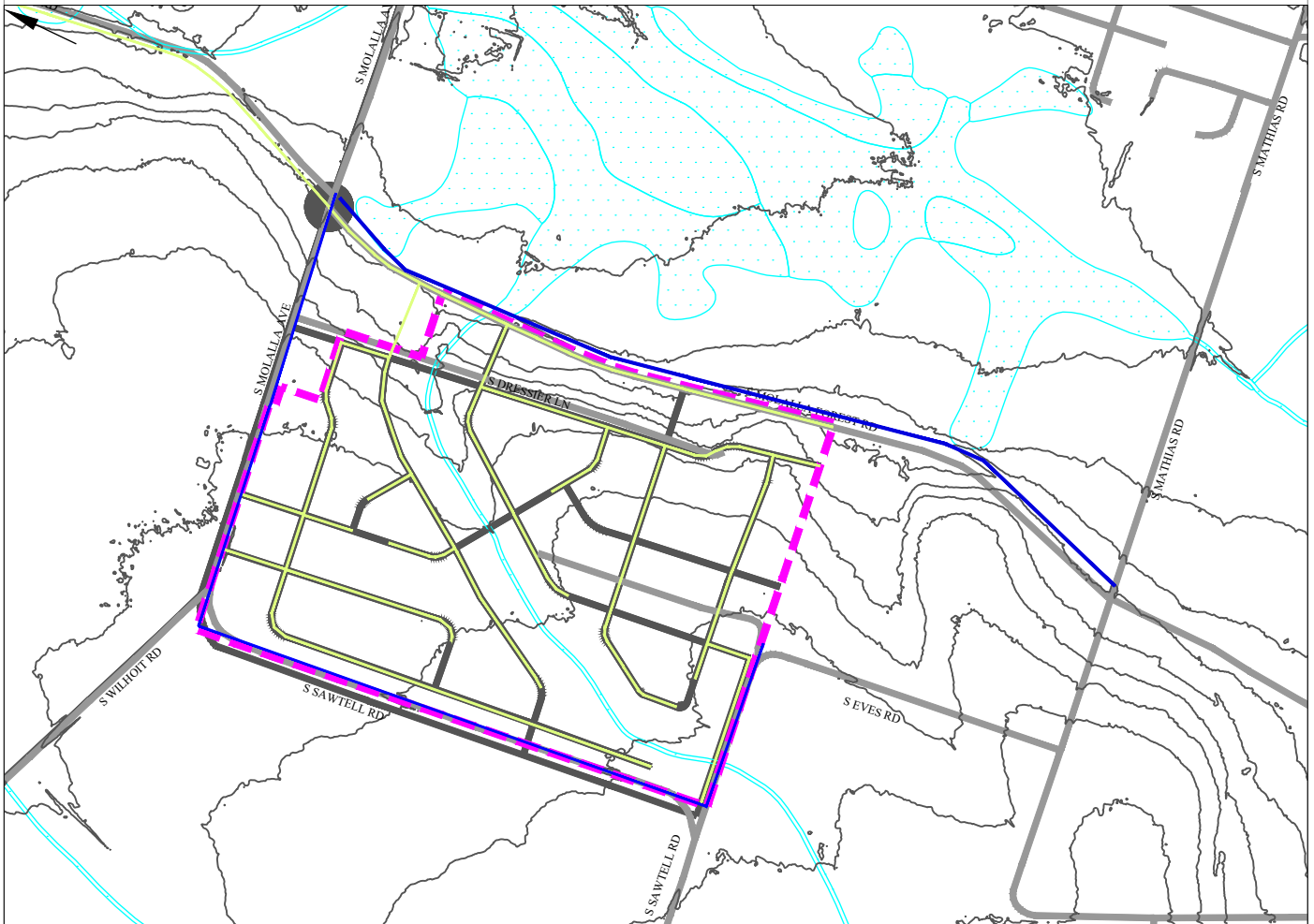
THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC. DATE: JULY 2026 PROJECT NO.: 198.60	CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE SUBAREA STREET LAYOUT SUBAREA 4	FIGURE NO. 8
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NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



SEWER TRUNK LINE
CONTINUES TO WWTP



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**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 4

FIGURE NO.

9

Subarea 5

The majority of Subarea 5 lies to the southwest of the S Molalla Forest Road and S Molalla Avenue intersection. Subarea 5 it includes some non-contiguous parcels by Subareas 3 and 4. Costs to serve these isolated lots have been included in Subarea 5 and notated as regional improvements. However, since the area would be more efficiently served as parts of Subareas 3 and 4 respectively, it is recommended to redraw the Subarea 5 boundary to align with the existing streets.

Transportation

The major transportation elements to serve Subarea 5 include:

- 3.1 centerline miles of internal and fronting streets for internal circulation and 1.2 miles of offsite street improvements for connectivity.
- Development of Subarea 5 is expected to require improvements to approximately 6,220 ft of S Molalla Forest Road from S Molalla Avenue to S Ona Way. The frontage of Subarea 5 and TSP projects P43 and M18 for reconstruction of S Molalla Forest Road and creation of a multi-use path are included. The TSP projects are also included in Subareas 7 and 8.
- The traffic generated is expected to warrant construction of TSP project M31 for the S Molalla Forest Road and S Molalla Avenue roundabout. The roundabout cost estimate has been included and is also applicable to Subareas 4 and 6.
- Improvements to approximately 3,600 ft of S Molalla Avenue from 5th Street to Warrick Road. This includes the frontage of Subarea 5 and TSP projects B11 and P8 for construction of bicycle lanes and sidewalks. These projects are also applicable to Subareas 3, 4, and 6 which have frontage on S Molalla Avenue.
- Reconstruction of approximately 2,500 ft of Warrick Road from a rural road to City standard. This is also applicable to Subarea 6.

The regional street circulation layout developed in Step 2 includes use of Warrick Road as a City street. If Subarea 5 is brought into the UGB without Subarea 6, then Warrick Road would be the proposed city-county interface. Adjusting the boundary of Subarea 5 to include Warrick Road is recommended. Another recommendation is to bring the entire ROW into the City rather than attempting to split it or share maintenance with the county. Difficulties implementing long-term maintenance and improvements may occur with shared ownership.

The cost estimate currently includes full street improvements. If Subarea 5 is brought into the UGB without Subarea 6, the scope of Warrick Road improvements could be reduced.

Sanitary Sewer

Development of Subarea 5 will prompt construction of 7,600 ft of the regional trunk main sewer along S Molalla Forest Road, consisting of pipe ranging from 8-inch to 12-inch diameters. Subarea 5 can be served by gravity. 1,200 ft of sewer piping internal to Subarea 5 will also be available to serve Subarea 6. No pump stations are anticipated. It will also require replacement of the existing South Bear Creek trunk main downstream of Main St to the WWTP with 5,360 feet of new pipe in sizes ranging from approximately 15-inch to 24-inch.

Water

A regional water transmission system serving Subarea 5 should consist of a minimum 10-inch line along S Molalla Forest Road from S Ona Way to the east extent of its Molalla Forest Road frontage. A minimum 10-inch line should be extended along the south and east frontage (S Warrick Road to S Molalla Avenue). In addition to these regional lines, it is assumed that approximately 10,300 linear feet of 8-inch pipe will serve the development within the subarea.

As part of the regional improvements, a pressure reducing valve (PRV) station will be needed at the intersection of S Ona Way and S Molalla Forest Road.

Stormwater

Runoff flows north into Bear Creek through an existing 12-inch diameter PVC culvert which crosses S Molalla Forest Road. An estimated 18-inch diameter culvert is required to pass the 100-year storm. The cost estimate includes replacement of the existing culvert.

Stormwater conveyance is estimated to require approximately 8,700 feet of 12-inch pipe within the subbasin plus approximately 7,600 feet of 18-inch pipe along S Molalla Forest Road with associated catch basins and manholes.

Environmental Impacts

A portion of S Molalla Forest Road through Subarea 5, 7 and 8 appears to be within mapped wetlands. Reconstruction of S Molalla Forest Road is expected to impact the wetland. A linear wetland also crosses the middle of Subarea 7. Three proposed street crossings will impact the wetland area. A wetland abuts the north edge of S Molalla Forest Road on Subarea 3 near S Molalla Avenue. The roundabout may impact the wetland.

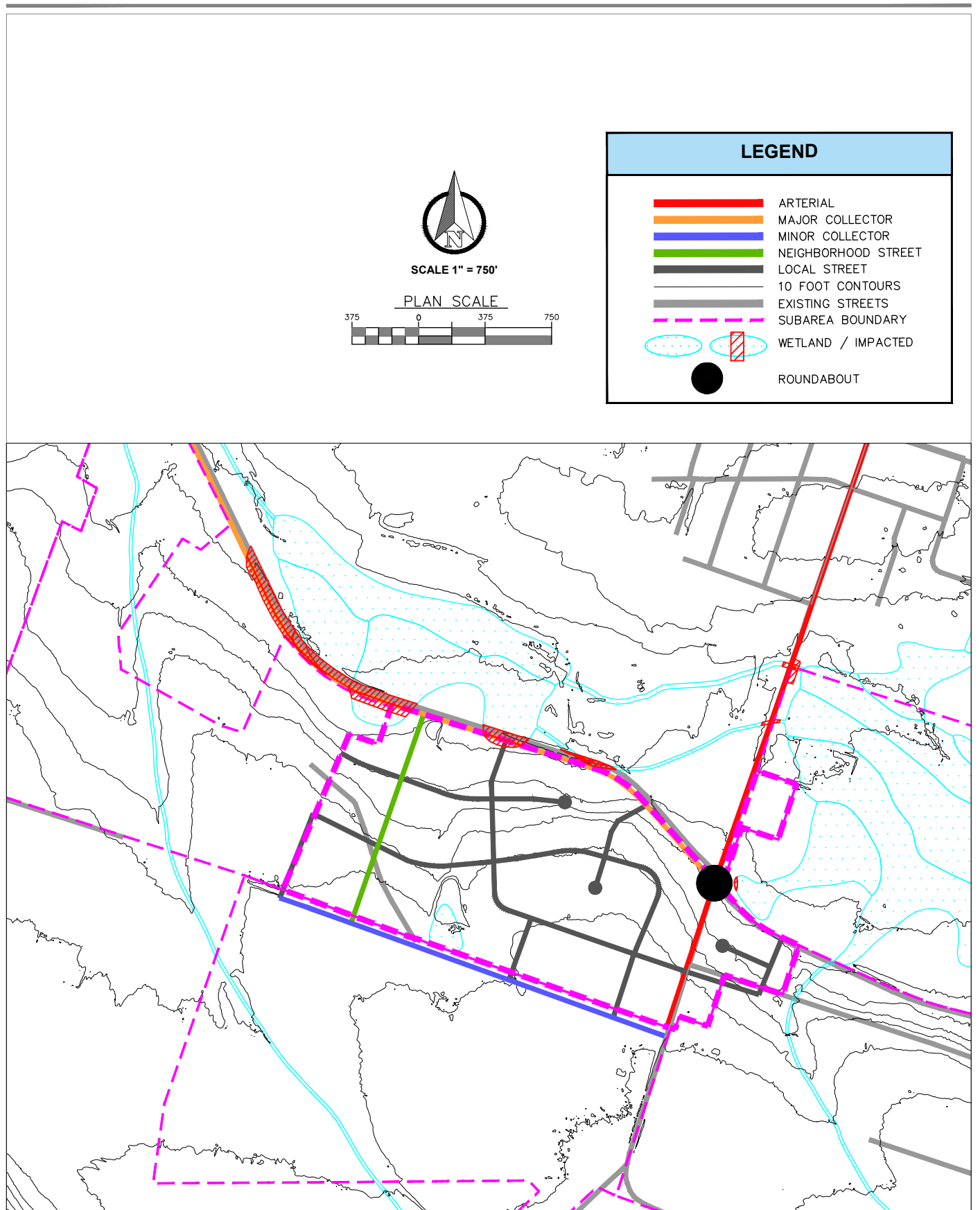
An assumed area of 2.7 acres has been included in the cost estimate.

Subarea 5 Summary

The road and utility alignments developed for this analysis are shown in Figures 10 and 11. The cost estimates are summarized in Table 11.

TABLE 11
SUBAREA 5 PUBLIC INFRASTRUCTURE EXPANSION

System	Cost
General Construction	\$11,369,896
Transportation	\$30,938,779
Sanitary Sewer	\$7,073,180
Water	\$5,053,585
Stormwater	\$4,183,785
Environmental	\$1,133,206
Construction Subtotal	\$59,752,431
Non-Construction Costs	\$20,973,351
Total	\$80,725,782
Low Range -30%	\$56,508,048
High Range +30%	\$104,943,517
Units per Subarea	235
Cost per Unit	\$343,514



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC. DATE: JULY 2026 PROJECT NO.: 198.60	CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE SUBAREA STREET LAYOUT SUBAREA 5	FIGURE NO. 10
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NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



SCALE 1" = 750'

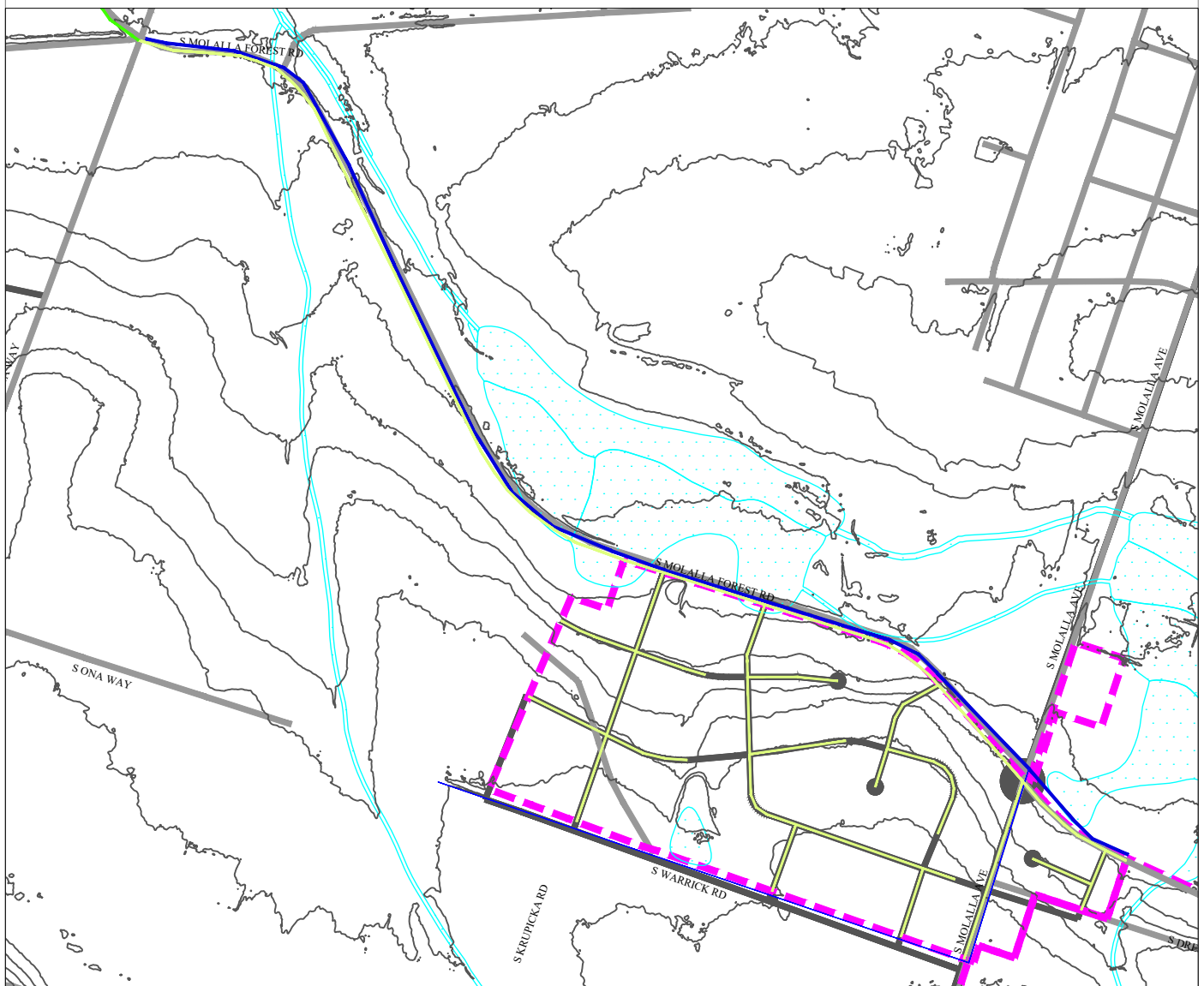
PLAN SCALE



LEGEND

- FORCE MAIN
- 8"-12" SEWER MAIN
- 18" SEWER MAIN
- 21" SEWER MAIN
- 27" SEWER MAIN
- 8"-10" WATER MAIN
- 12" WATER MAIN
- 10 FOOT CONTOURS
- SUBAREA BOUNDARY/
SEWER SUBBASINS
- EXISTING STREETS
- NEW STREETS
- ⋯ WETLAND
- ⊙ NEW PUMP STATION

SEWER TRUNK LINE
CONTINUES TO WWTP



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**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 5

FIGURE NO.

11

Subarea 6

Transportation

The major transportation elements to serve Subarea 6 include:

- 3.0 centerline miles of internal and fronting streets for internal circulation and 0.7 miles of offsite street improvements for connectivity.
- Development of Subarea 6 is expected to require improvements to approximately 6,220 ft of S Molalla Forest Road from S Molalla Avenue to S Ona Way. This includes the frontage of Subarea 5 and TSP projects P43 and M18 for reconstruction of S Molalla Forest Road and creation of a multi-use path. These TSP projects are also included in Subareas 7 and 8.
- The traffic generated is expected to warrant construction of TSP project M31 for the S Molalla Forest Road and S Molalla Avenue roundabout. The roundabout cost estimate has been included and is also applicable to Subareas 4 and 6.
- Improvements to approximately 5,050 ft of S Molalla Avenue from 5th Street to the south edge of the subarea. This includes the frontage of Subarea 6 and TSP projects B11 and P8 for construction of bicycle lanes and sidewalks. These projects are also applicable to Subareas 3, 4, and 5 which have frontage on S Molalla Avenue.
- Reconstruction of approximately 2,500 ft of Warrick Road from a rural road to City standard. This is also applicable to Subarea 5.

Sanitary Sewer

Development of Subarea 6 will prompt construction of 5,600 ft of the regional trunk main sewer along S Molalla Forest Road, consisting of pipe ranging from 8-inch to 12-inch diameters. Subarea 6 can be served by gravity if 1,200 ft of sewer piping crosses Subarea 5. It is recommended to consider Subareas 5 and 6 together. It will also require replacement of the existing South Bear Creek trunk main downstream of Main St to the WWTP with 5,360 feet of new pipe in sizes ranging from approximately 15-inch to 24-inch.

Water

A regional water transmission system serving Subarea 6 should consist of a minimum 12-inch line along S Molalla Avenue Road from S Molalla Forest Road to S Sawtell Road. A minimum 10-inch line should be extended along the north frontage (S Warrick Road to S Molalla Avenue). In addition to these regional lines, it is assumed that approximately 10,100 linear feet of 8-inch pipe will serve the development within the subarea.

Stormwater

Runoff from Subarea 6 splits into two flow paths that both cross Molalla Forest Road to reach Bear Creek. The northeast flows through Subarea 5 to an existing 12-inch diameter PVC culvert. The southwest flows through Subarea 7 to a larger 36-inch diameter CMP culvert near Lowe Road. To pass the 100-year storm the 12-inch diameter culvert is estimated to need to be upsized to 24-inches while the 36-inch diameter culvert is estimated to have sufficient capacity. The cost estimate includes replacement of both culverts.

Stormwater conveyance is estimated to require approximately 14,600 feet of 12-inch pipe within the subbasin plus approximately 4,600 feet of 18-inch pipe along S Molalla Forest Road with associated catch basins and manholes.

Environmental Impacts

A linear wetland crosses the western third of Subarea 6. Krupicka Way is an existing street crossing over this wetland. Improvement of Krupicka Way is expected to impact the wetland. A wetland abuts the north edge of S Molalla Forest Road on Subarea 3 near S Molalla Avenue. The roundabout may impact the wetland.

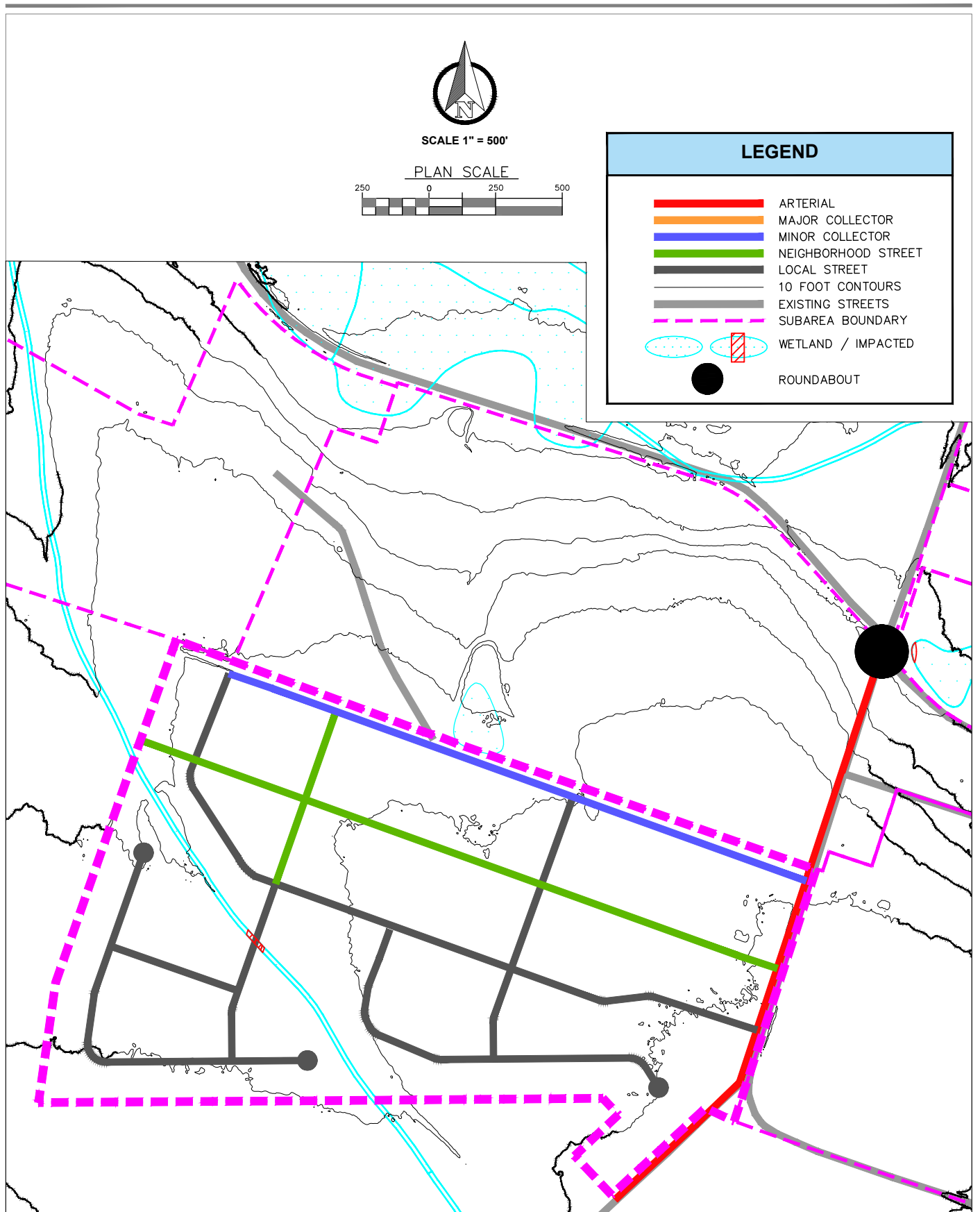
An assumed area of 0.04 acres has been included in the cost estimate.

Subarea 6 Summary

The road and utility alignments developed for this analysis are shown in Figures 12 and 13. The cost estimates are summarized in Table 12.

**TABLE 12
SUBAREA 6 PUBLIC INFRASTRUCTURE EXPANSION**

System	Cost
General Construction	\$8,279,964
Transportation	\$19,780,684
Sanitary Sewer	\$1,075,000
Water	\$3,781,425
Stormwater	\$4,492,140
Environmental	\$15,220
Construction Subtotal	\$43,513,853
Non-Construction Costs	\$15,289,849
Total	\$58,803,702
Low Range -30%	\$41,162,591
High Range +30%	\$76,444,812
Units per Subarea	215
Cost per Unit	\$273,506



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC. DATE: JULY 2026 PROJECT NO.: 198.60	CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE SUBAREA STREET LAYOUT SUBAREA 6	FIGURE NO. 12
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NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



SCALE 1" = 500'

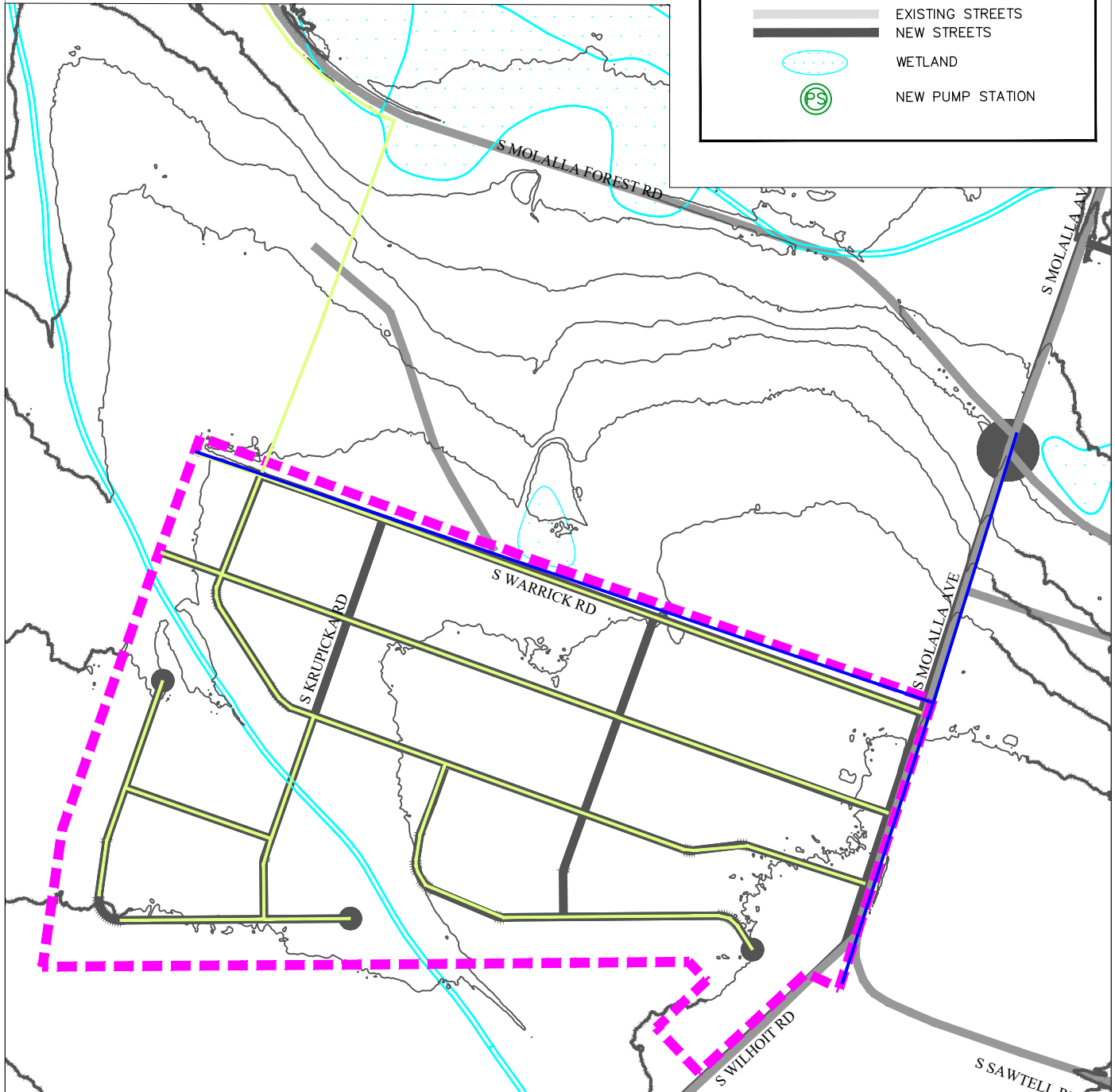
PLAN SCALE



SEWER TRUNK LINE
CONTINUES TO WWTP

LEGEND

- FORCE MAIN
- 8"–12" SEWER MAIN
- 18" SEWER MAIN
- 21" SEWER MAIN
- 27" SEWER MAIN
- 8"–10" WATER MAIN
- 12" WATER MAIN
- 10 FOOT CONTOURS
- - - SUBAREA BOUNDARY/
SEWER SUBBASINS
- EXISTING STREETS
- NEW STREETS
- ⋯ WETLAND
- ⊙ NEW PUMP STATION



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**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 6

FIGURE NO.

13

Subarea 7

Subarea 7 surrounds a 15.23-acre parcel that is already inside the UGB, identified as Clackamas County Assessor tax map 5S 2E 14 lot 300. The infrastructure required to serve Subarea 7 is expected to also serve this parcel. At the R1 density of 5 units per acre with a 25 percent infrastructure offset (higher than the 18% used in the subareas because there are no existing roads inside that parcel), it is the parcel is estimated to add service demand from 57 units to the trunk main serving Subarea 7.

Transportation

The major transportation elements to serve Subarea 7 include:

- 2.7 centerline miles of internal and fronting streets for internal circulation and 0.9 miles of offsite street improvements for connectivity.
- Development of Subarea 7 is expected to require improvements to approximately 5,620 ft of S Molalla Forest Road from S Molalla Avenue to S Ona Way. This includes the frontage of Subarea 7 and TSP projects P43 and M18 for reconstruction of S Molalla Forest Road and creation of a multi-use path. These TSP projects are also included in Subareas 5 and 8.
- The traffic generated is expected to warrant construction of TSP project M31 for the S Molalla Forest Rd/S Molalla Avenue roundabout. The roundabout cost estimate has been included and is also applicable to Subareas 8 and 9.
- Incorporation and reconstruction of a 1,700 ft private driveway into a public street and 700 ft of new construction to connect Warrick Road through to S Ona Way.

The regional street circulation layout developed in Step 2 includes use of Warrick Road as a City street connection from S Molalla Avenue to S Ona Way. The existing driveway on tax lot 52E17 01500 is ideally situated to connect Warrick Road west to S Ona Way. We recommend adjusting the boundary of Subarea 7 to include the existing and potential future alignment of Warrick Road.

The extension of Warrick Road will be the proposed city-county interface. The recommendation is to bring the entire ROW into the City rather than attempting to split it or share maintenance with the county. Difficulties implementing long-term maintenance and improvements may occur with shared ownership.

Sanitary Sewer

Development of Subarea 5 will prompt construction of 5,400 ft of the regional trunk main sewer along S Molalla Forest Road, consisting of pipe ranging from 8-inch to 12-inch diameters. Subarea 7 can be served by gravity. A portion of Subarea 7 sewer flows may need to drain through adjacent parcel 52E17 00300 which is already inside the UGB. It will also require replacement of the existing South Bear Creek trunk main downstream of Main St to the WWTP with 5,360 feet of new pipe in sizes ranging from approximately 15-inch to 24-inch.

Water

A regional water transmission system serving Subarea 7 should consist of a minimum 12-inch line along S Molalla Forest Road from S Ona Way to S Molalla Avenue. A minimum 10-inch line should be extended along the south frontage. In addition to these regional lines, it is assumed that approximately 7,500 linear feet of 8-inch pipe will serve the development within the subarea.

As part of the regional improvements, a pressure reducing valve (PRV) station will be needed at the intersection of S Ona Way and S Molalla Forest Road.

Stormwater

Runoff from subarea 7 flows into Bear Creek through an existing 36-inch diameter CMP culvert which crosses S Molalla Forest Road near Lowe Road. The cost estimate includes replacement of the existing culvert with one of similar size.

Stormwater conveyance is estimated to require approximately 9,700 feet of 12-inch pipe within the subbasin plus approximately 4,800 feet of 18-inch pipe along S Molalla Forest Road with associated catch basins and manholes.

Environmental Impacts

A substantial portion of S Molalla Forest Road through Subarea 7 appears to be within mapped wetlands. A linear wetland also crosses the middle of Subarea 7. Three proposed street crossings will impact the wetland area. A small portion of S Molalla Forest Road through Subareas 5 and 8 appears to be within mapped wetlands. Reconstruction of S Molalla Forest Road is expected to impact the wetlands.

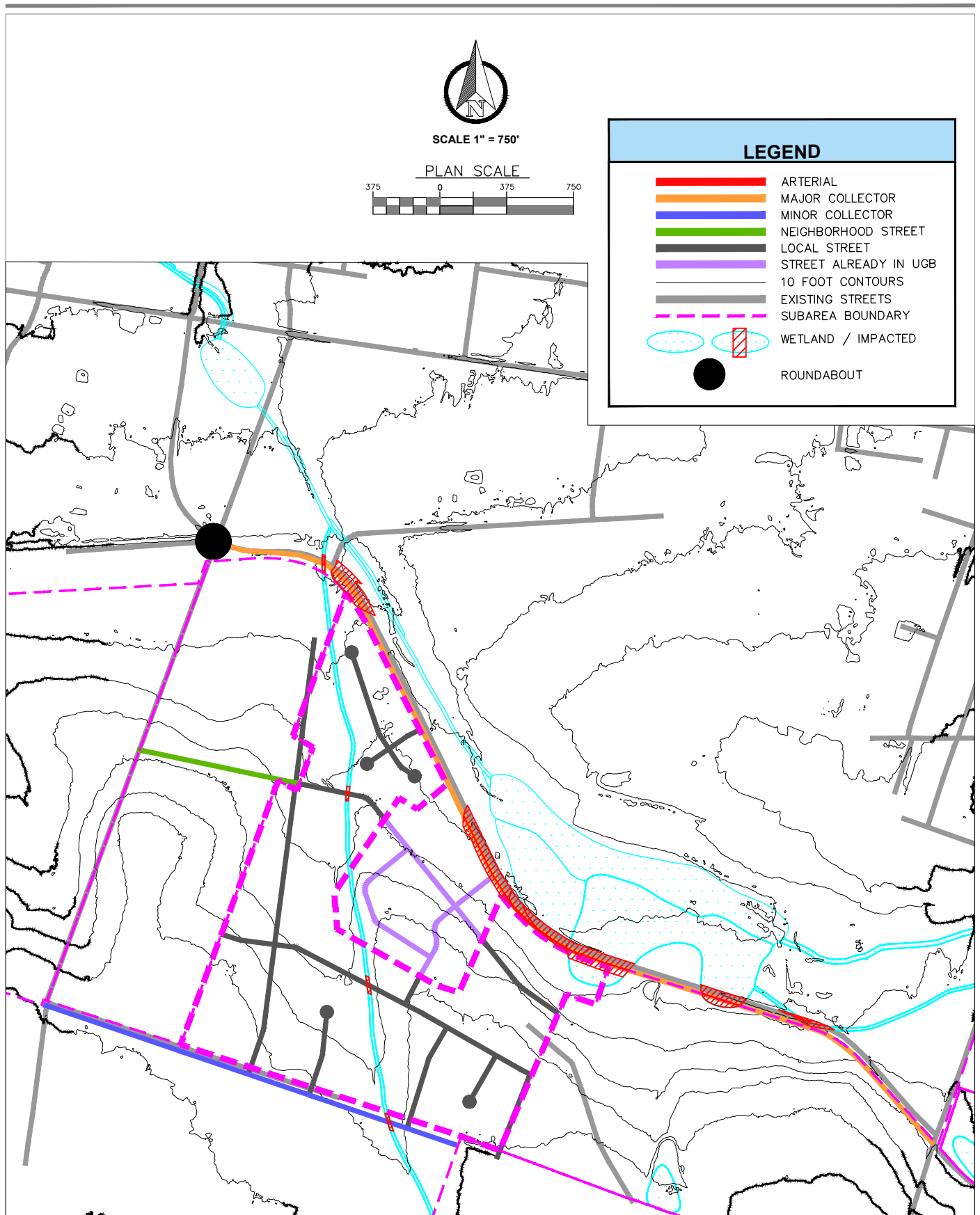
An assumed area of 3.4 acres has been included in the cost estimate.

Subarea 7 Summary

The road and utility alignments developed for this analysis are shown in Figures 14 and 15. The cost estimates are summarized in Table 13.

**TABLE 13
SUBAREA 7 PUBLIC INFRASTRUCTURE EXPANSION**

System	Cost
General Construction	\$10,715,943
Transportation	\$29,558,334
Sanitary Sewer	\$6,639,350
Water	\$4,263,095
Stormwater	\$3,688,650
Environmental	\$1,450,327
Construction Subtotal	\$56,315,699
Non-Construction Costs	\$19,770,495
Total	\$76,086,193
Low Range -30%	\$53,260,335
High Range +30%	\$98,912,051
Units per Subarea	266
Cost per Unit	\$286,038



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC. DATE: JULY 2026 PROJECT NO.: 198.60	CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE SUBAREA STREET LAYOUT SUBAREA 7	FIGURE NO. 14
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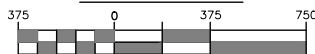
NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



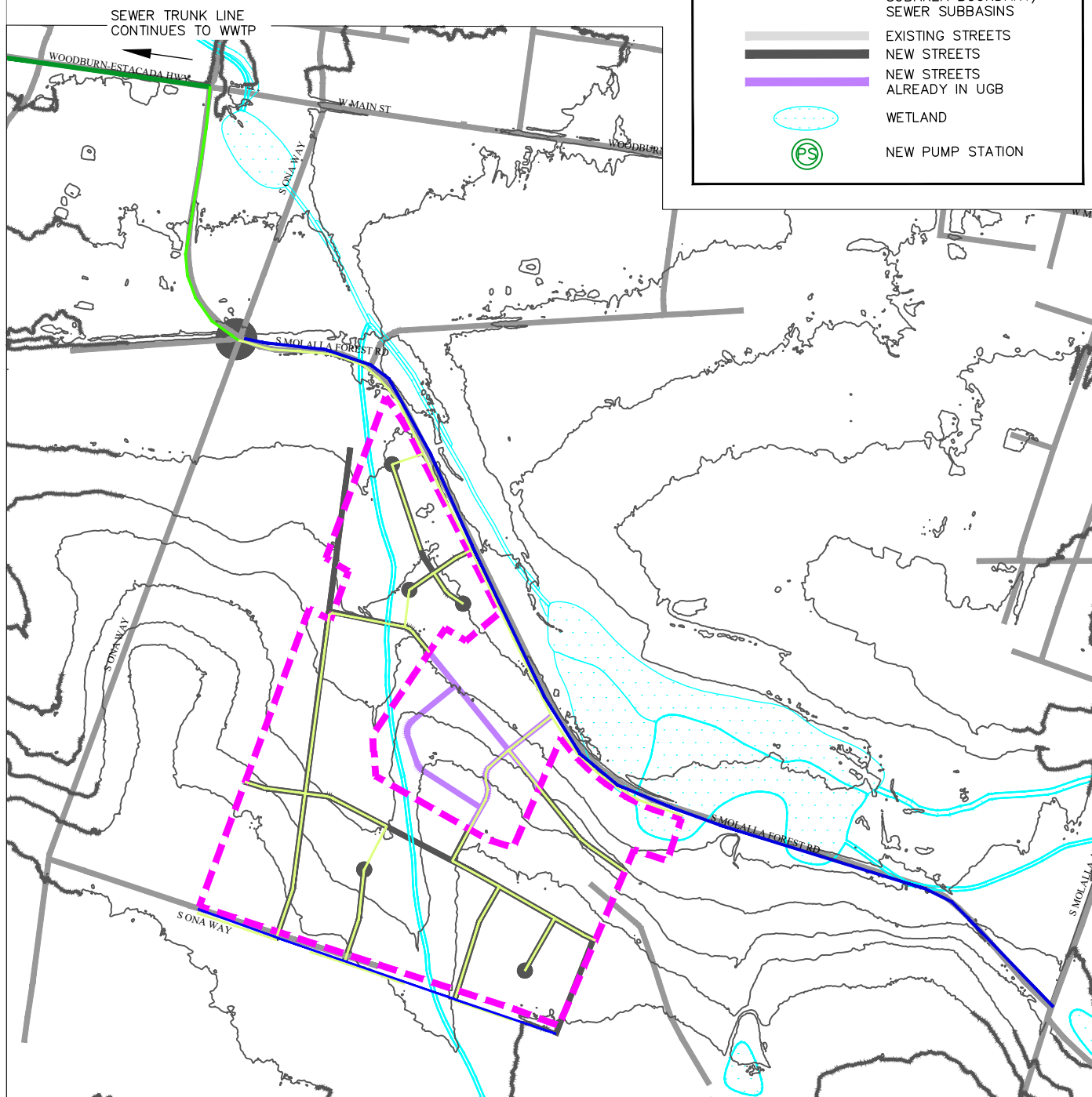
SCALE 1" = 750'

PLAN SCALE



LEGEND

- FORCE MAIN
- 8"–12" SEWER MAIN
- 18" SEWER MAIN
- 21" SEWER MAIN
- 27" SEWER MAIN
- 8"–10" WATER MAIN
- 12" WATER MAIN
- 10 FOOT CONTOURS
- SUBAREA BOUNDARY/SEWER SUBBASINS
- EXISTING STREETS
- NEW STREETS
- NEW STREETS ALREADY IN UGB
- ... WETLAND
- (PS) NEW PUMP STATION



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**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 7

FIGURE NO.

15

Subarea 8

Transportation

The major transportation elements to serve Subarea 8 include:

- 2.4 centerline miles of internal and fronting streets for internal circulation and 0.5 miles of offsite street improvements for connectivity.
- Development of Subarea 8 is expected to require improvements to approximately 2,180 ft of S Molalla Forest Road from the east boundary of the subarea to OR 211. This includes the frontage of Subarea 8 and TSP projects P43 and M18 for reconstruction of S Molalla Forest Road and creation of a multi-use path. These TSP projects are also included in Subareas 5, 6, and 7. A portion is also included in Subarea 9.
- The traffic generated is expected to warrant construction of TSP project M31 for the S Molalla Forest Rd/S Molalla Avenue roundabout. The roundabout cost estimate has been included and is also applicable to Subareas 7 and 9.
- Improvement of 4,000 ft of S Ona Way to City standards from OR 211 to the south edge of Subarea 8.
- Incorporation and reconstruction of a 800 ft private driveway into a public street for connectivity of Warrick Road through to S Ona Way.

The regional street circulation layout developed in Step 2 includes use of Warrick Road as a City street connection from S Molalla Avenue to S Ona Way. The existing driveway on tax lot 52E17 01500 is ideally situated to connect Warrick Road west to S Ona Way. We recommend adjusting the boundary of Subarea 7 to include the existing and potential future alignment of Warrick Road.

The extension of Warrick Road will be the proposed city-county interface. The recommendation is to bring the entire ROW into the City rather than attempting to split it or share maintenance with the county. Difficulties implementing long-term maintenance and improvements may occur with shared ownership.

Sanitary Sewer

Development of Subarea 8 will prompt construction of 2,200 ft of the regional trunk main sewer along S Molalla Forest Road, consisting of pipe ranging from 8-inch to 12-inch diameters. Subarea 8 can be served by gravity. No pump stations are anticipated. It will also require replacement of the existing South Bear Creek trunk main downstream of Main St to the WWTP with 5,360 feet of new pipe in sizes ranging from approximately 15-inch to 24-inch.

Water

A regional water transmission system serving Subarea 8 should consist of a minimum 10-inch line along S Ona Way from S Molalla Forest Road to its south frontage and along its north and south frontage. In addition to these regional lines, it is assumed that approximately 8,300 linear feet of 8-inch pipe will serve the development within the subarea.

As part of the regional improvements, a pressure reducing valve (PRV) station will be needed at the intersection of S Ona Way and S Molalla Forest Road.

Stormwater

Runoff from Subarea 8 flows into Bear Creek through an existing 36-inch diameter CMP culvert that crosses S Molalla Forest Road near Lowe Road. The cost estimate includes replacement of the existing culvert with one of like size.

Stormwater conveyance is estimated to require approximately 9,100 feet of 12-inch pipe within the subbasin plus approximately 2,200 feet of 18-inch pipe along S Molalla Forest Road with associated catch basins and manholes.

Environmental Impacts

There is a mapped wetland on S Molalla Forest Road at the northeast corner of Subarea 8. Reconstruction of S Molalla Forest Road is expected to the wetland. A linear wetland also crosses the northeast corner of Subarea 8 but is not expected to be impacted. There are also mapped wetlands near Ona Way and S Molalla Forest Road near OR 211 which may be impacted by the offsite street improvements.

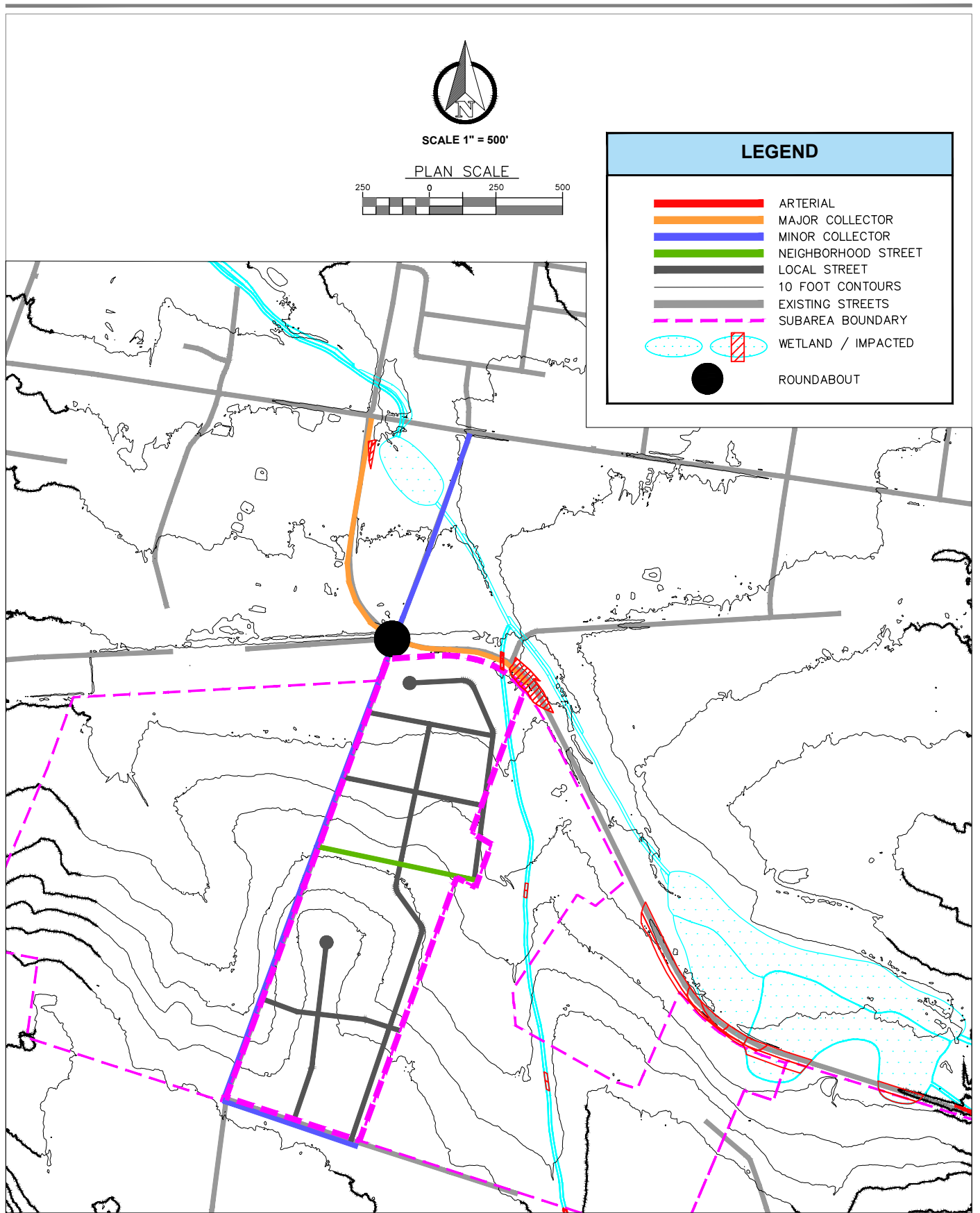
An assumed area of 0.42 acres has been included in the cost estimate.

Subarea 8 Summary

The road and utility alignments developed for this analysis are shown in Figures 16 and 17. The cost estimates are summarized in Table 14.

TABLE 14
SUBAREA 8 PUBLIC INFRASTRUCTURE EXPANSION

System	Cost
General Construction	\$7,683,637
Transportation	\$21,291,111
Sanitary Sewer	\$5,211,720
Water	\$3,235,200
Stormwater	\$2,779,190
Environmental	\$179,108
Construction Subtotal	\$40,379,966
Non-Construction Costs	\$14,192,988
Total	\$54,572,954
Low Range -30%	\$38,201,068
High Range +30%	\$70,944,840
Units per Subarea	171
Cost per Unit	\$319,140



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC. DATE: JULY 2026 PROJECT NO.: 198.60	CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE SUBAREA STREET LAYOUT SUBAREA 8	FIGURE NO. 16
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NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



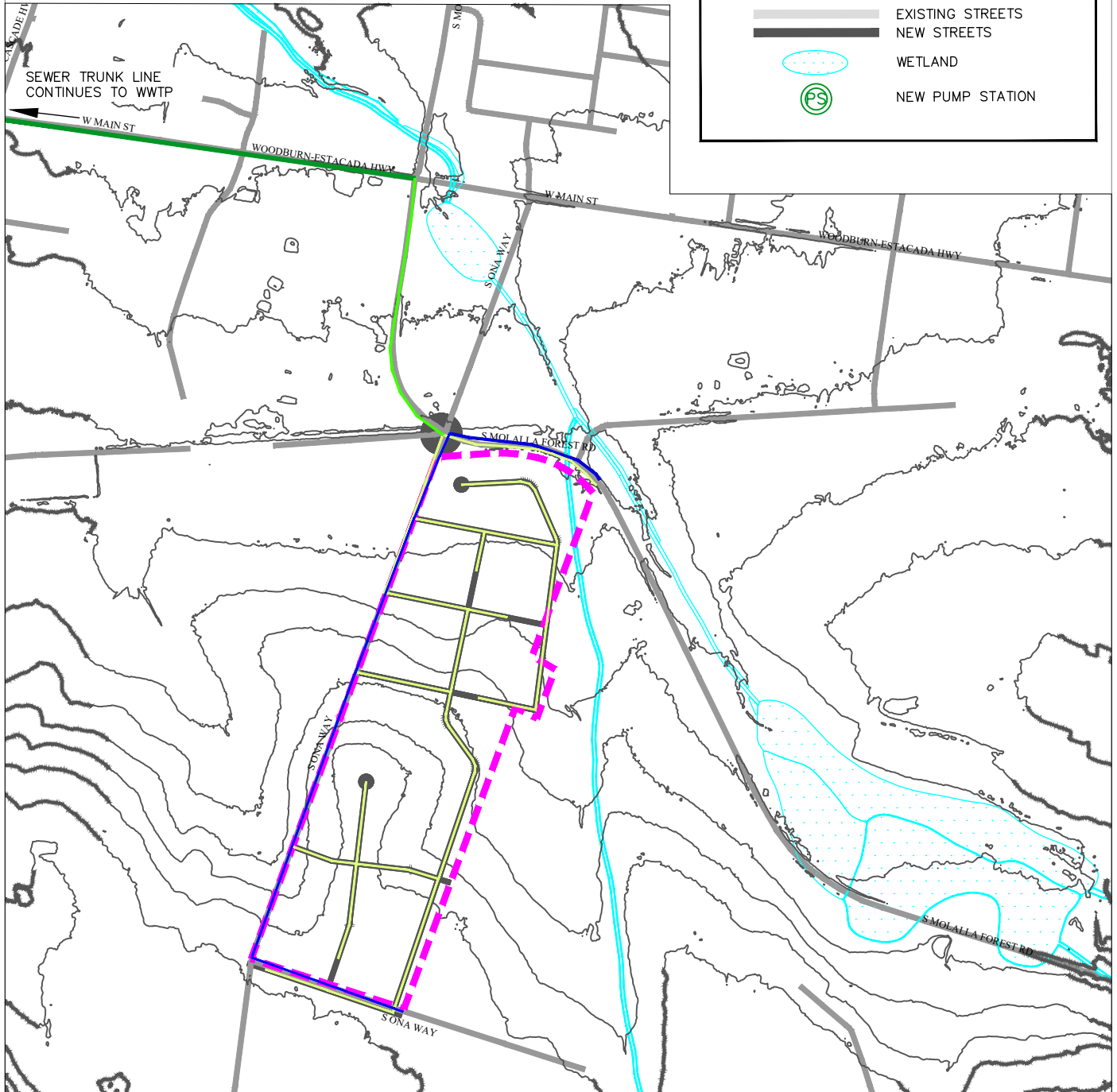
SCALE 1" = 750'

PLAN SCALE



LEGEND

- FORCE MAIN
- 8"-12" SEWER MAIN
- 18" SEWER MAIN
- 21" SEWER MAIN
- 27" SEWER MAIN
- 8"-10" WATER MAIN
- 12" WATER MAIN
- 10 FOOT CONTOURS
- SUBAREA BOUNDARY/
SEWER SUBBASINS
- EXISTING STREETS
- NEW STREETS
- ⋯ WETLAND
- PS NEW PUMP STATION



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**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 8

FIGURE NO.

17

Subarea 9

Transportation

The major transportation elements to serve Subarea 9 include:

- 3.0 centerline miles of internal and fronting streets for internal circulation and 0.5 miles of offsite street improvements for connectivity.
- Development of Subarea 9 is expected to require improvements to approximately 1,350 ft of S Molalla Forest Road from S Ona Way to OR 211. It will also prompt TSP projects P43 and M18 for reconstruction of S Molalla Forest Road and creation of a multi-use path. This segment of the TSP project is also included in Subarea 8.
- The traffic generated is expected to warrant construction of TSP project M31 for the S Molalla Forest Rd/S Molalla Avenue roundabout. The roundabout cost estimate has been included and is also applicable to Subareas 7 and 8.
- Improvement of 4,000 ft of S Ona Way to City standards from OR 211 to the south edge of Subarea 9.

Sanitary Sewer

Development of Subarea 9 will prompt construction of 1,350 ft of the regional trunk main sewer along S Molalla Forest Road, consisting of pipe ranging from 8-inch to 12-inch diameters. Subarea 9 can be served by gravity. No pump stations are anticipated. It will also require replacement of the existing South Bear Creek trunk main downstream of Main St to the WWTP with 5,360 feet of new pipe in sizes ranging from approximately 15-inch to 24-inch.

Water

A regional water transmission system serving Subarea 9 should consist of a minimum 10-inch line along S Ona Way from S Molalla Forest Road to its south frontage and along its north S Molalla Avenue frontage. In addition to these regional lines, it is assumed that approximately 11,000 linear feet of 8-inch pipe will serve the development within the subarea.

As part of the regional improvements, a pressure reducing valve (PRV) station will be needed at the intersection of S Ona Way and S Molalla Forest Road.

Stormwater

Runoff from subarea 9 flows into Bear Creek through an existing culvert that crosses an unnamed private road between OR-213 and S Ona Way. Size and condition of the culvert is unconfirmed. An estimated 24-inch diameter culvert is required to pass the 100-year storm. The cost estimate includes replacement of the existing culvert.

Stormwater conveyance is estimated to require approximately 11,700 feet of 12-inch pipe within the subbasin plus approximately 1,400 feet of 18-inch pipe along S Molalla Forest Road with associated catch basins and manholes.

Environmental Impacts

There are no mapped wetlands in Subarea 9. There are mapped wetlands near Ona Way and S Molalla Forest Road near OR 211 which may be impacted by the offsite street improvements.

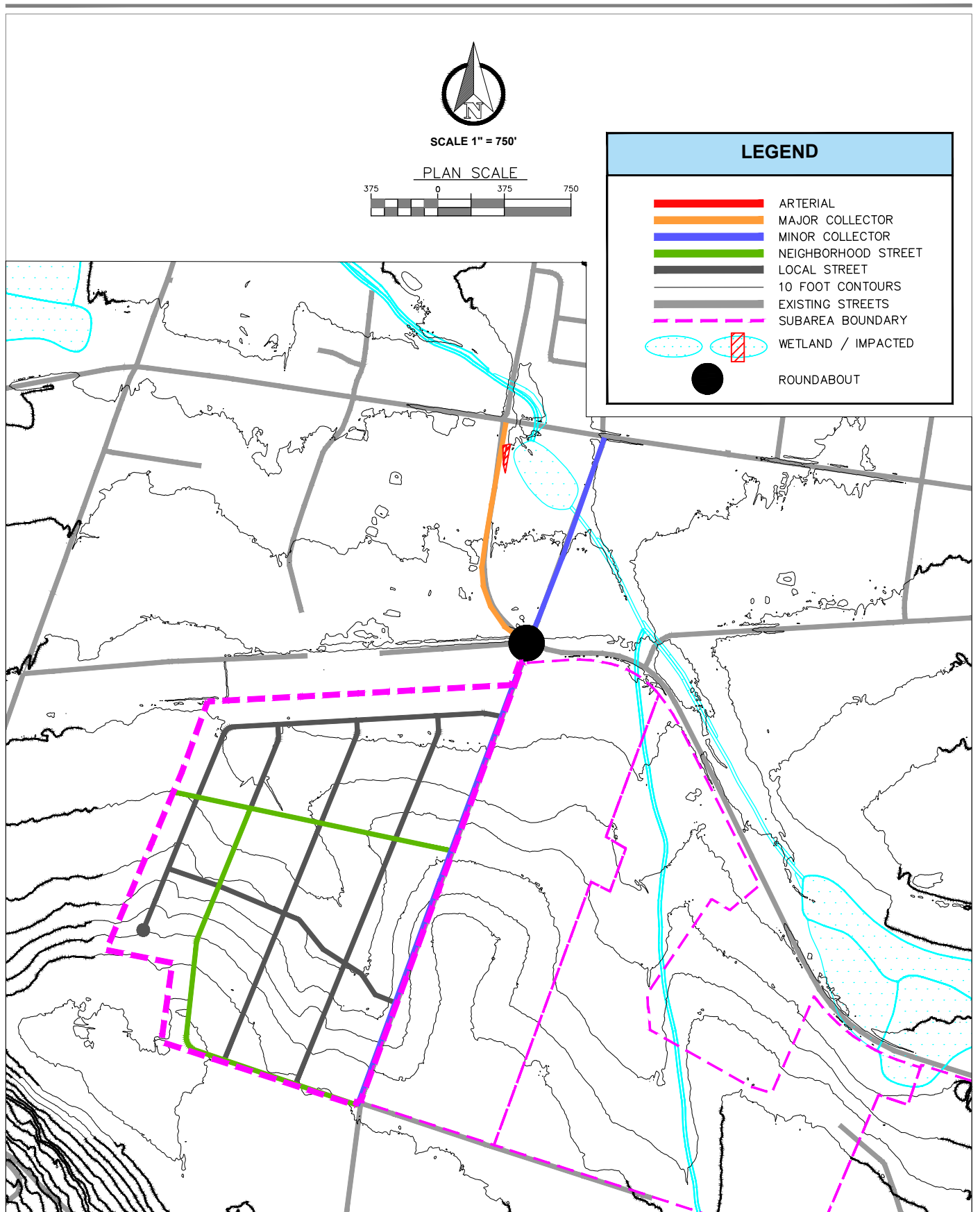
An assumed area of 0.09 acres has been included in the cost estimate.

Subarea 9 Summary

The road and utility alignments developed for this analysis are shown in Figures 18 and 19. The cost estimates are summarized in Table 15.

TABLE 15
SUBAREA 9 PUBLIC INFRASTRUCTURE EXPANSION

System	Cost
General Construction	\$8,188,095
Transportation	\$21,153,297
Sanitary Sewer	\$6,313,650
Water	\$4,118,765
Stormwater	\$3,219,850
Environmental	\$37,397
Construction Subtotal	\$43,031,055
Non-Construction Costs	\$15,120,869
Total	\$58,151,924
Low Range -30%	\$40,706,347
High Range +30%	\$75,597,501
Units per Subarea	318
Cost per Unit	\$182,868



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC. DATE: JULY 2026 PROJECT NO.: 198.60	CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE SUBAREA STREET LAYOUT SUBAREA 9	FIGURE NO. 18
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NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



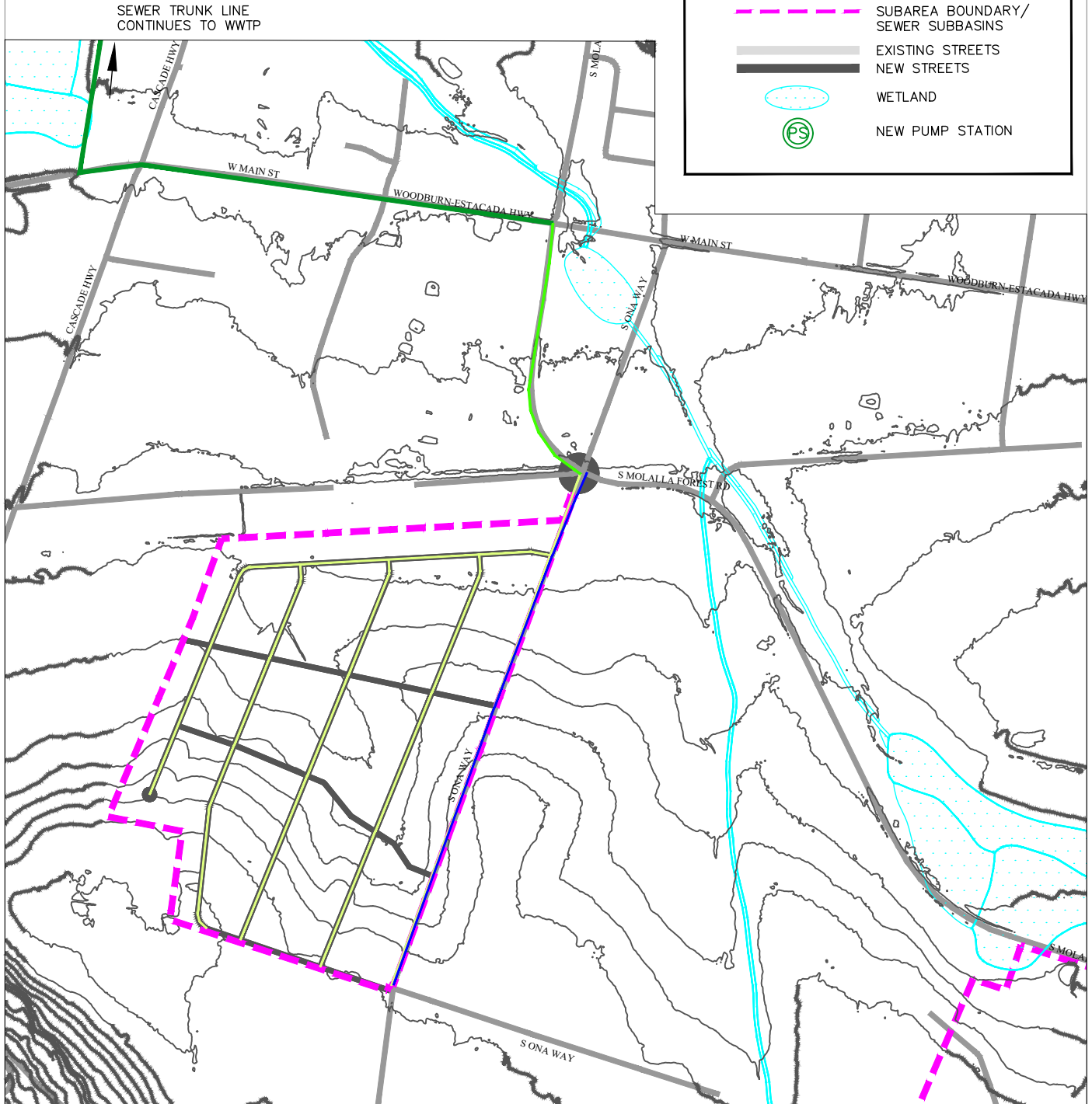
SCALE 1" = 750'

PLAN SCALE



LEGEND

- FORCE MAIN
- 8"-12" SEWER MAIN
- 18" SEWER MAIN
- 21" SEWER MAIN
- 27" SEWER MAIN
- 8"-10" WATER MAIN
- 12" WATER MAIN
- 10 FOOT CONTOURS
- SUBAREA BOUNDARY/ SEWER SUBBASINS
- EXISTING STREETS
- NEW STREETS
- WETLAND
- (PS) NEW PUMP STATION



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ENGINEERS & PLANNERS, INC.

DATE: JULY 2026
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**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 9

FIGURE NO.

19

Step 2 Findings: North Region (Subareas 13 - 16)

The total unit count of all subareas in the North Region is 1,547 which exceeds the required 929 units. Regional utility sizing was accordingly limited to a maximum of 929 units. The preliminary streets and utilities are depicted in Figures 20 and 21.

Transportation

Subareas 14 - 16 are primarily accessible by OR 213 and Vick Road. Toliver Road is also a significant access to Subarea 13 and Mary Drive is a significant access to Subarea 16. Development of the North Region will require frontage improvements to segments of OR 213, segments of Toliver Road, and the majority of Vick Road.

Development of Subareas 14 -16 would include the improvement of the western 4,600 ft of Vick Road. The remaining 1,900 ft on the east end would remain in county jurisdiction. The total trip generation estimate for Subareas 14 -16 is 4,945 average weekday trips. Existing traffic counts are not available on Vick Road for comparison. The future demand on Vick Road is expected to surpass 2,500 Average Annual Daily Traffic (AADT) if it is assumed half of the trips travel to Vick Road and half drive to the other street connections. The Vick Road AADT results in a similar order of magnitude as S Molalla Avenue (2,518 AADT) and Feyrer Park Road (2,849 AADT). The CCTSP classifies Vick Road, S Molalla Avenue, and Feyrer Park Road as minor arterials. No change is anticipated to the county road functional classification. Lane width may need to be slightly increased due to the increased demand.

S Molalla Avenue outside of City Limits and Feyrer Park Road both appear to have approximately 24 ft pavement width, fog lane striping, and gravel shoulders. Vick Road has approximately 22 ft existing paved width with no striping and no noticeable shoulders. Consequently, this analysis has assumed a 2 ft increase to pavement width, added fog lane striping, and widened shoulders on the eastern 1,900 ft of Vick Road.

Sanitary Sewer

The North Region could connect into either the Toliver Basin or the North Bear Creek Basin. The trunk mains from these two basins cross at OR 213 and Toliver Road without joining. Subareas 14 -16 will be served by a trunk main in Vick Rd and a pump station at OR 213 to convey sewage south. Flows from Subareas 14 -16 will require upsizing the existing North Bear Creek trunk main. The 12-inch North Bear Creek trunk main in OR 213 is at capacity and will require upsizing to an estimated 15-inch main to serve the 544 combined units in Subareas 14 -16. Resizing would also allow for reconfiguration of the City's sewer basins, if selected, either by rerouting North Bear Creek into the Toliver Basin or by creating a new independent basin.

Subarea 13 can be readily isolated into a new independent basin. Two pump stations will be required. The pressure line out of Subarea 13 can be routed down Toliver Road into the WWTP and directly into headworks. All capacity problems in the existing trunk mains would be avoided.

The WWFP did not identify any significant capital improvement projects for the North Region.

Water

System connectivity to the North Region is poor. The best water availability is to Subarea 16, which has five (5) water stubs for future connection. There is an existing 12-inch water main in Mary Drive from

Toliver Road to Eric Drive then reduces to an 8-inch stub for the last 140 ft. Upsizing that 140 ft segment to 12-inch would provide transmission system continuity into Subarea 16.

Subareas 14 and 15 have no readily available water mains to provide service. Although the subareas are bordered by existing subdivisions to the south, no water main stubs were provided for future northward extension. These subdivisions also have small setbacks with approximately 10 ft average spacing between homes, which precludes the acquisition of any public utility easements through side yards. Therefore, Subareas 14 and 15 will require system extensions from OR 213, June Drive, and/or from Subarea 16.

Subarea 13 has partial access to water from an 8-inch water main in the first 600 ft of OR 213 and an 8-inch water main in the first 1,800 ft of Toliver Road. Water system upsize and extension will be required.

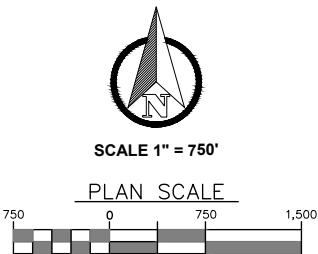
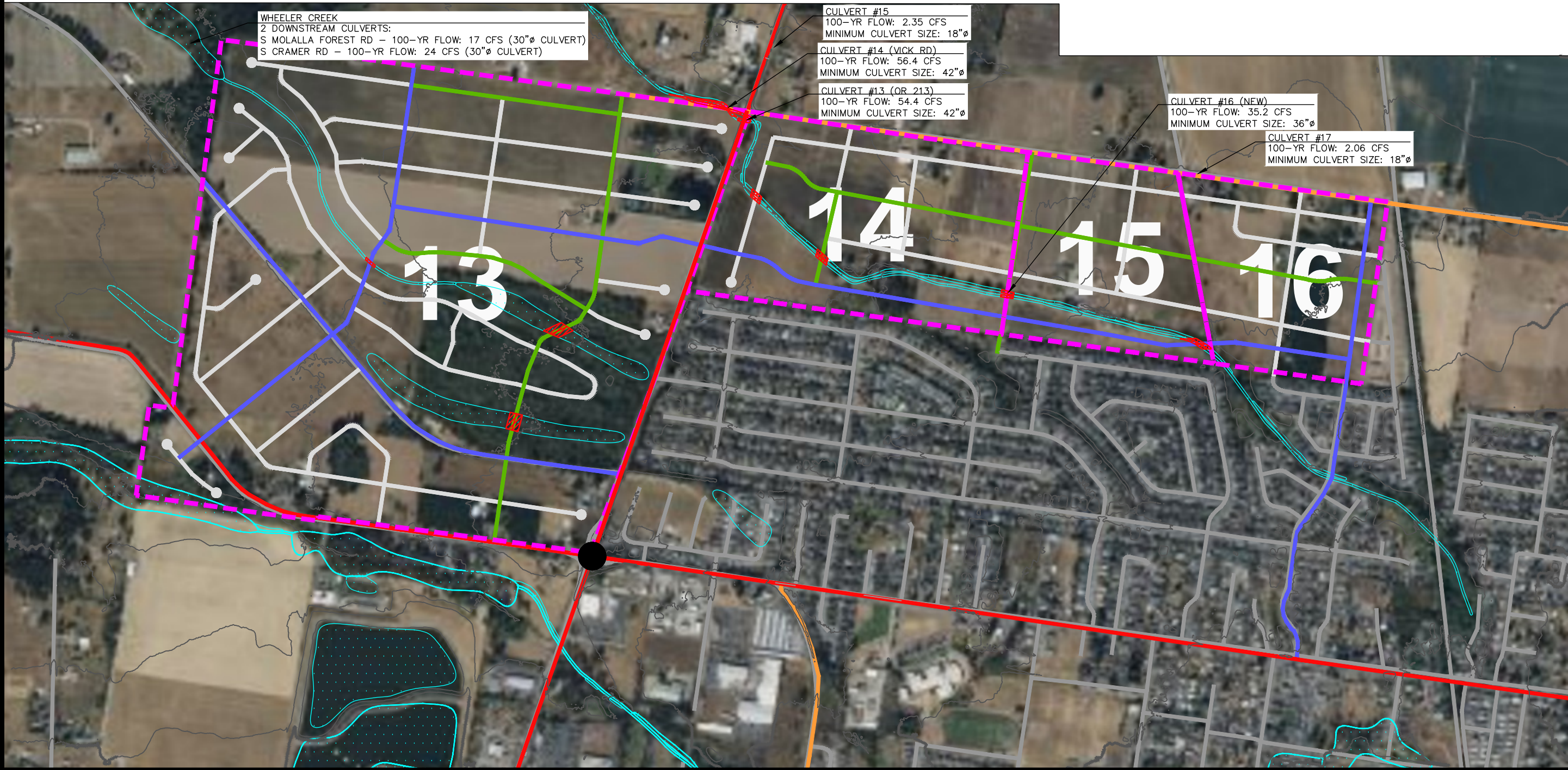
A regional water transmission system should consist of a minimum 12-inch loop from OR 213 to Mary Drive and have minimum 8-inch system connections at June Drive and Rachel Lane if Subarea 13 is selected for development.

There is a water system PRV project to install three PRV stations in the City of Molalla to create a second pressure zone. The North Region is located entirely within a single pressure zone. No additional PRV station is required.

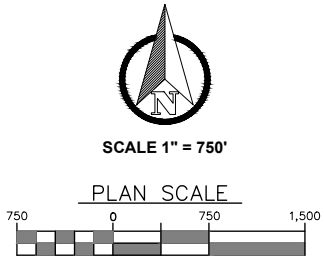
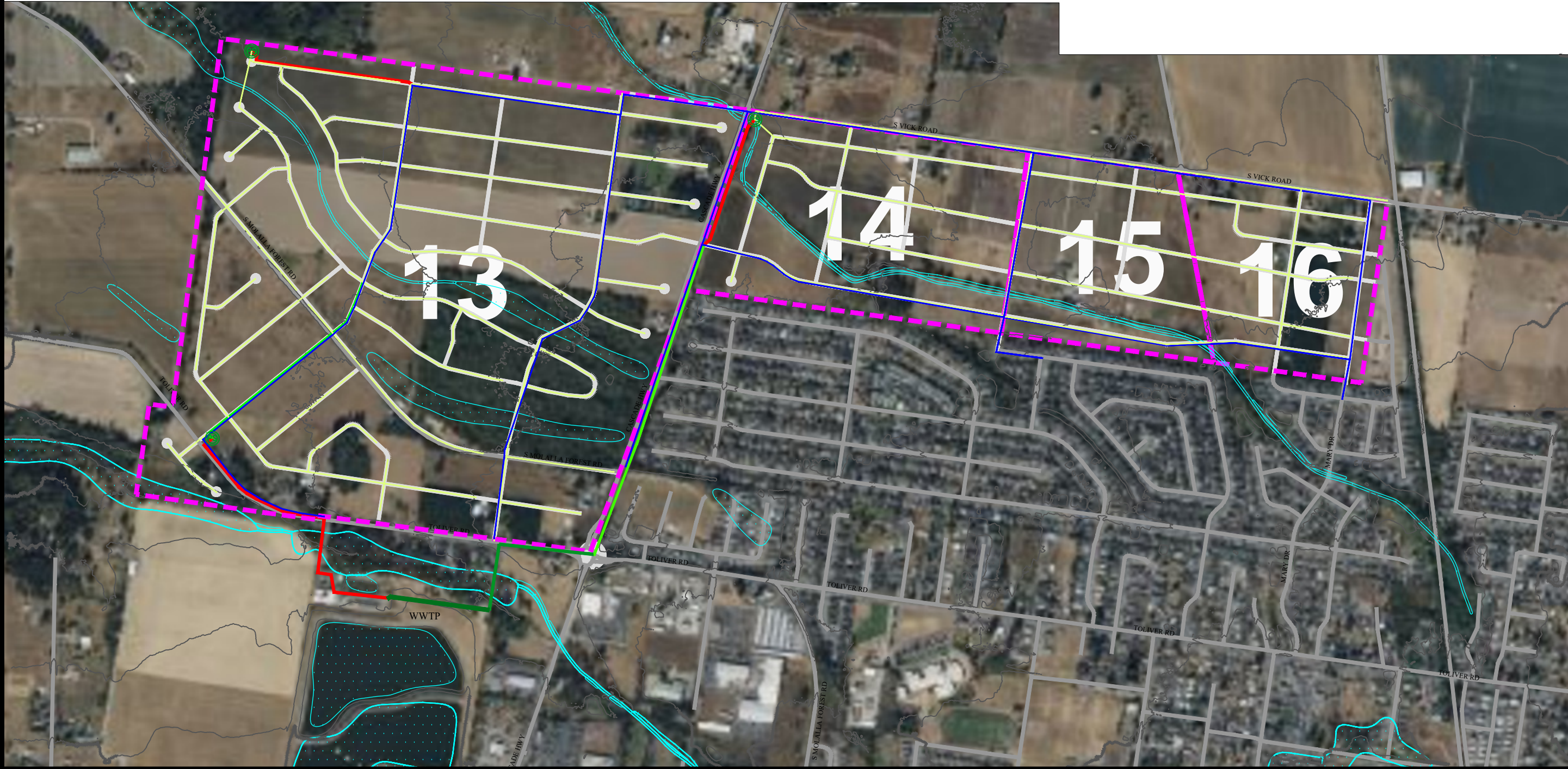
Stormwater

Runoff from the North Region flows into Creamery Creek, a tributary of the Molalla River. The USGS StreamStats system was used to estimate the peak flows for culvert sizing. At the Creamery Creek crossing at OR 213, the 25-year flow estimate is 41.5 cfs and the 100-year flow estimate is 54.4 cfs.

The North Region is largely flat and is currently used as farmland. The NRCS Soil survey shows the dominant soil type in the North Region is Aloha silt loam (hydrologic group C/D), with a small amount of Huberly silt loam (C/D) and Dayton silt loam (D). Hydrologic group C and D soils have slow infiltration rates.



LEGEND	
—	ARTERIAL
—	MAJOR COLLECTOR
—	MINOR COLLECTOR
—	NEIGHBORHOOD STREET
—	LOCAL STREET
—	10 FOOT CONTOURS
—	EXISTING STREETS
---	SUBAREA BOUNDARY
---	WETLAND / IMPACTED
●	ROUNDABOUT



LEGEND	
—	FORCE MAIN
—	8"–12" SEWER MAIN
—	18" SEWER MAIN
—	21" SEWER MAIN
—	27" SEWER MAIN
—	8"–10" WATER MAIN
—	12" WATER MAIN
—	10 FOOT CONTOURS
—	SUBAREA BOUNDARY/ SEWER SUBBASINS
—	EXISTING STREETS
—	NEW STREETS
---	WETLAND
(PS)	NEW PUMP STATION

Step 3 Findings: North Region (Subareas 13 - 16)

Subarea 13

The Subarea 13 unit count is 1,003 which exceeds the required 929 units. Utility sizing was accordingly limited to a maximum of 929 units.

Transportation

The major transportation elements to serve Subarea 13 include:

- 9.5 centerline miles of internal and fronting streets for internal circulation.
- Development of Subarea 13 will require frontage improvements for approximately 3,080 ft of OR 213, TSP projects M1, P26, B35, and P1 for highway lane widening, enhanced bicycle & pedestrian crossings, and sidewalk infill.
- Development of Subarea 13 will require frontage improvements for approximately 3,440 ft of Toliver Road.
- Conversion of Vick Road into a 4-way intersection with a westward leg into Subarea 13.
- Capacity increase of the existing Toliver Road roundabout may be required. This will require a determination by ODOT.

The 2024 traffic counts on this segment of OR 213 show existing use of approximately 11,986 AADT. The given 1,003 housing units in Subarea 13 are estimated generate approximately 9,117 average weekday trips ends, a 76 percent increase to existing highway traffic. The ODOT's 20-year forecast of 14,900 AADT would also be exceeded by about 42 percent. Development of Subarea 13 may require roundabout capacity upgrades.

Vick Road is the only alternate route available that would not use the roundabout. Westward extension of Vick Road into Subarea 13 is recommended. The existing driveway on Tax Lot 52E06 00900 will facilitate converting Vick Road into a four-way intersection. It is recommended to adjust the boundary of Subarea 13 to include the driveway.

The internal circulation in Subarea 13 was laid out to avoid creating a cutoff route for highway traffic to avoid the roundabout. Highway traffic routinely traveling through residential neighborhoods is unwanted and has a high potential of occurring if travel times through Subarea 13 were faster than the roundabout. Through routes have been provided for circulation but are deliberately divided up by intersections and curves to discourage highway cutoff usage.

The former N Molalla Forest Road roadbed still exists and is proposed for re-establishment into a public street. If approved, ODOT may require channelization devices to limit this intersection to right turns only due to the proximity to the OR 213 roundabout.

Sanitary Sewer

Subarea 13 can be isolated into a new independent basin. Two pump stations will be required. One smaller pump station would be situated at the northwest corner. One larger pump station would be situated near the southwest corner and would convey flows out of the entire subarea down Toliver Road,

into the WWTP via the north driveway, and east through the WWTP into the headworks screens. Capacity problems would be avoided in the existing Toliver and Bear Creek trunk mains.

Water

The water system would connect into Subarea 13 at multiple locations along Toliver Road and OR 213. A regional line along OR-213 would serve both Subareas 13 and 14. The proposed system consists of 54,200 ft of 8-inch pipe. No booster stations or PRV stations are required.

Stormwater

Runoff from Subarea 13 splits into two flow paths. The larger region north of Toliver Road flows northwest to Wheeler Creek which feeds into Creamery Creek. The South Region flows southeast through an existing culvert that crosses OR-211 to reach Bear Creek. Size and condition of the culvert is unconfirmed.

The nearest culverts downstream on Wheeler Creek are approximately a half-mile northwest of Subarea 13, where the drainage path crosses S Cramer Road and S Molalla Forest Road. Existing culvert sizes and conditions are unknown. It is estimated that a minimum 30-inch diameter culvert is needed at each crossing.

Stormwater conveyance is estimated to require approximately 39,600 feet of 12-inch pipe with associated catch basins and manholes.

Environmental Impacts

Development of the driveway on Tax Lot 52E06 00900 into a westward extension of Vick Road will impact the Creamery Creek wetland. There are two linear wetlands mapped in the middle of Subarea 13. Three proposed street crossings will impact the wetland area. Wetland impacts are also possible along the south edge of Subarea 13 along Toliver Road and a new local street.

An assumed area of 0.95 acres has been included in the cost estimate.

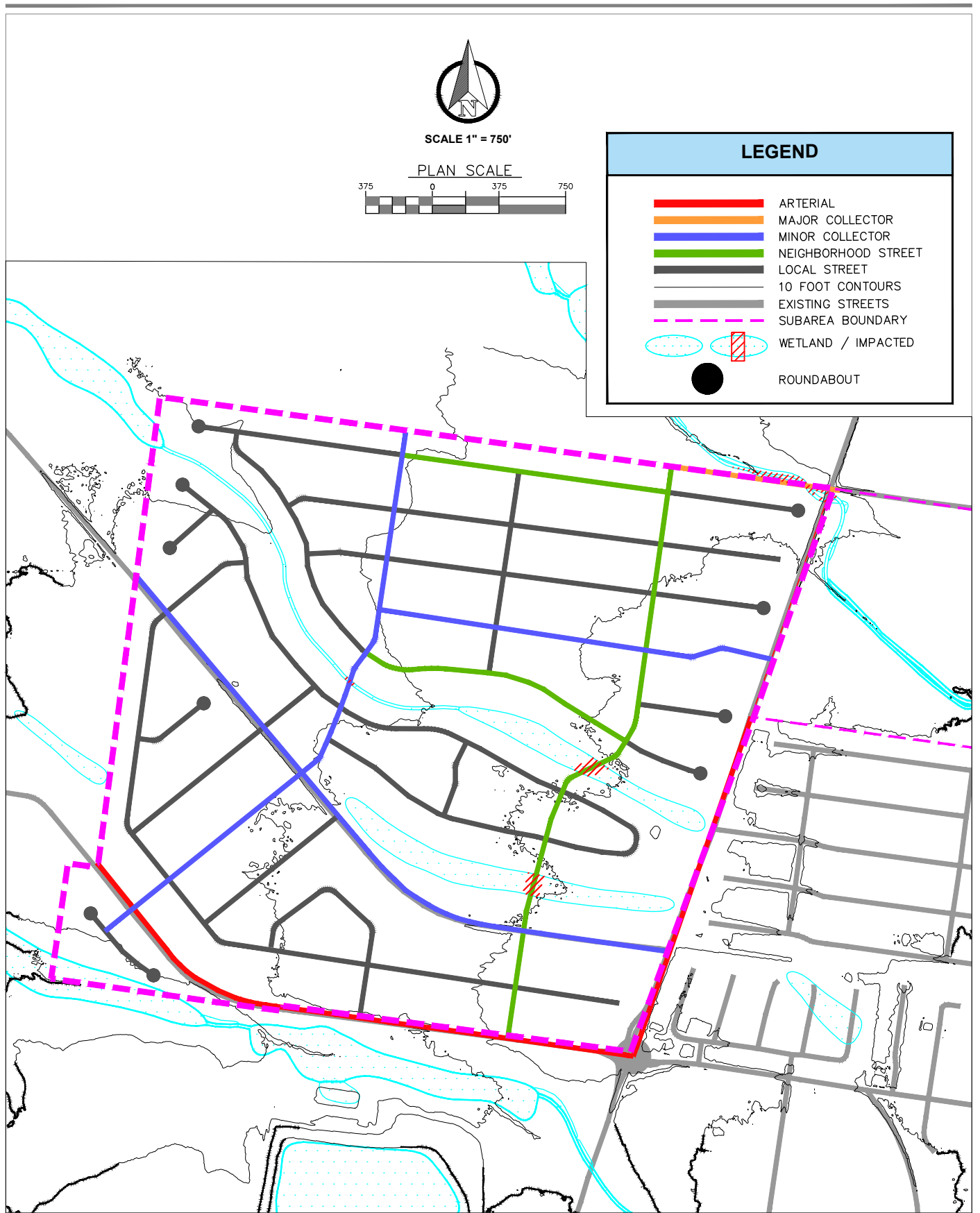
Subarea 13 Summary

The road and utility alignments developed for this analysis are shown in Figures 22 and 23. The cost estimates are summarized in Table 16.

TABLE 16
SUBAREA 13 PUBLIC INFRASTRUCTURE EXPANSION

System	Cost
General Construction	\$30,178,045
Transportation ¹	\$85,113,527
Sanitary Sewer	\$17,746,260
Water	\$14,193,590
Stormwater	\$10,758,895
Environmental	\$604,940
Construction Subtotal	\$158,595,257
Non-Construction Costs	\$55,568,340
Total	\$214,163,597
Low Range -30%	\$149,914,518
High Range +30%	\$278,412,676
Units per Subarea	1003
Cost per Unit	\$213,523

¹ Capacity increase of the existing Toliver Road roundabout may be required. This will require a determination by ODOT. Potential costs are not well understood and are excluded.



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC. DATE: JULY 2026 PROJECT NO.: 198.60	CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE SUBAREA STREET LAYOUT SUBAREA 13	FIGURE NO. 22
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NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



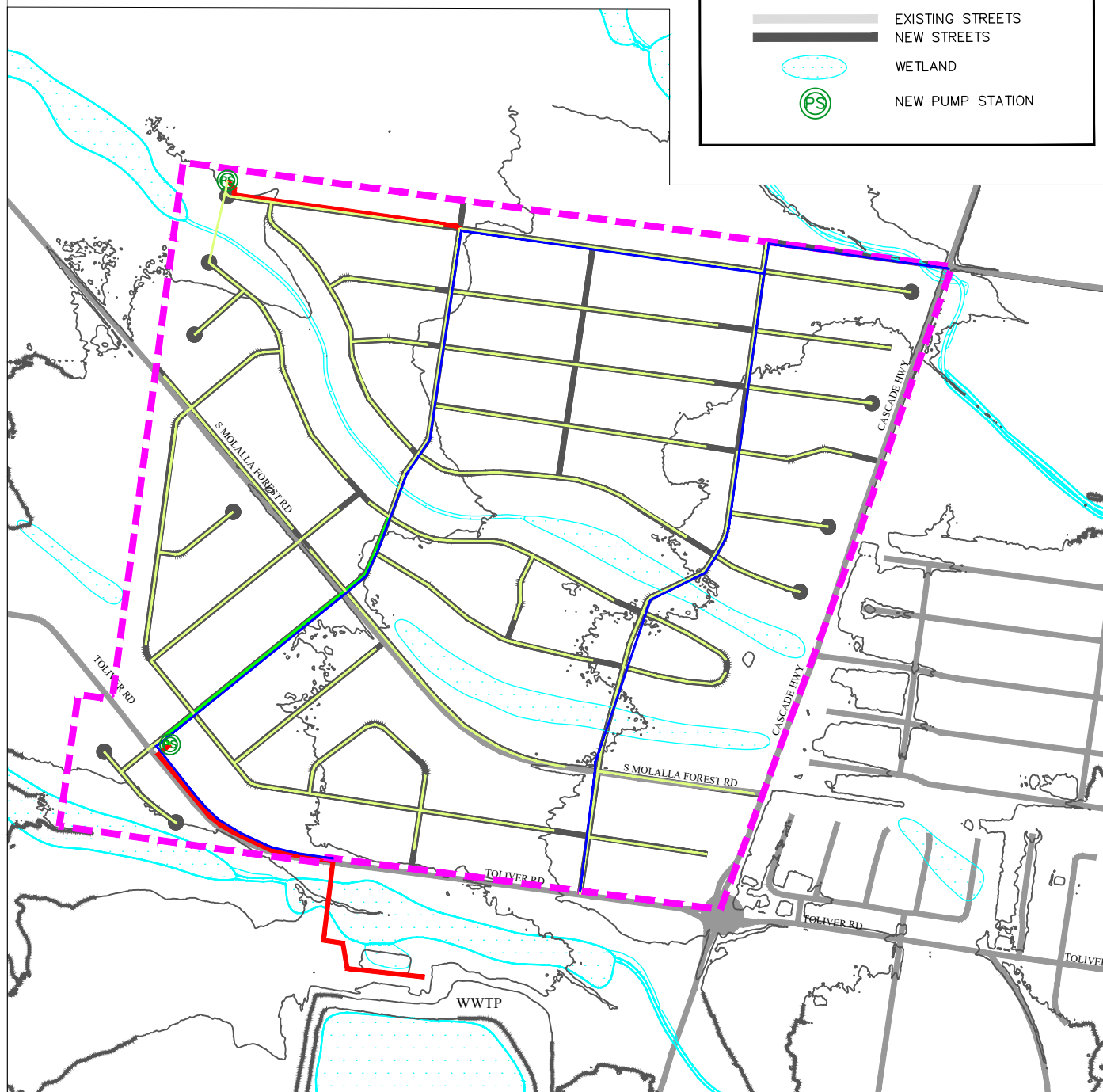
SCALE 1" = 750'

PLAN SCALE



LEGEND

- FORCE MAIN
- 8"–12" SEWER MAIN
- 18" SEWER MAIN
- 21" SEWER MAIN
- 27" SEWER MAIN
- 8"–10" WATER MAIN
- 12" WATER MAIN
- 10 FOOT CONTOURS
- - - SUBAREA BOUNDARY/SEWER SUBBASINS
- EXISTING STREETS
- NEW STREETS
- ... WETLAND
- PS NEW PUMP STATION



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DATE: JULY 2026

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**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 13

FIGURE NO.

23

Subarea 14

Transportation

The major transportation elements to serve Subarea 14 include:

- 2.9 centerline miles of internal and fronting streets for internal circulation.
- Development of Subarea 14 will require frontage improvements for approximately 1,360 ft of OR 213, TSP projects M1, P26, B35, and P1 for highway lane widening, enhanced bicycle & pedestrian crossings, and sidewalk infill.
- Development of Subarea 14 will require frontage improvements for approximately 2,040 ft of Vick Road.
- Convert a portion of Big Meadow Park into a street connection with June Drive.
- Capacity increase of the existing Toliver Road roundabout may be required. This will require a determination by ODOT.

Existing access to Subarea 14 is provided via Vick Road. The TSP functional classification map indicates future northward street connections at Cascade Lane and Mt View Lane. This type of street connection is preferred to provide neighborhood connectivity with the existing subdivisions to the south and to provide additional routes for emergency and community services. However, analysis found these specific street extension locations infeasible because the accesses both require acquisition and demolition of single family dwelling(s), Mt View Lane would add a wetland crossing, and connectivity may be provided from other locations.

The recommended location is Big Meadow Park at the west end of June Drive on Tax Lot 52E05CD 13000. The hammerhead can be dedicated to ROW and redeveloped into a street extension. The loss of recreational square footage may be replaced with a dedication of new park lands upon development. This street connection would also serve Subarea 15.

An additional intersection with OR 213 is recommended at the southwest corner of Subarea 14 to promote east-west regional travel.

The TSP's estimated capital improvement cost of OR 213 frontage and lane widening improvements was doubled to allow budget for enclosing the large roadside ditch into a piped system and for any unforeseen ODOT requirements such as turn lanes or signals.

Sanitary Sewer

Development of Subarea 14 will require a trunk main on Vick Rd, a pump station at the Vick Road and OR 213 intersection, and extension or upsizing of 3,500 ft of the North Bear Creek trunk main on OR 213 and Toliver Road. The required trunk main size is estimated at minimum 18-inch diameter. The pump station and the regional trunk mains will also be available to serve Subareas 15 and 16.

It will also require replacement of the existing South Bear Creek trunk main downstream of Main St to the WWTP with 5,360 feet of new pipe in sizes ranging from approximately 15-inch to 24-inch.

Water

The water system would connect into Subarea 14 from OR 213 and June Drive. The proposed system consists of 10,200 ft of 8-inch pipe. A regional line along OR-213 would serve both Subareas 13 and 14, and the regional line at the border of Subareas 14 and 15 would serve both. No booster stations or PRV stations are required.

Stormwater

Runoff is collected into Creamery Creek which runs through the length of the subarea to the northwest where it crosses OR-213 and S Vick Road. Existing culvert sizes and conditions are unknown. It is estimated that a minimum of two 48-inch diameter culverts are needed at each crossing, based on the existing crossing upstream at Mary Drive (next to Strawberry Park).

Stormwater conveyance is estimated to require approximately 10,100 feet of 12-inch pipe with associated catch basins and manholes.

Environmental Impacts

Creamery Creek crosses through Subarea 14 and is a mapped wetland. Three proposed street crossings will impact the wetland area.

An assumed area of 0.27 acres has been included in the cost estimate.

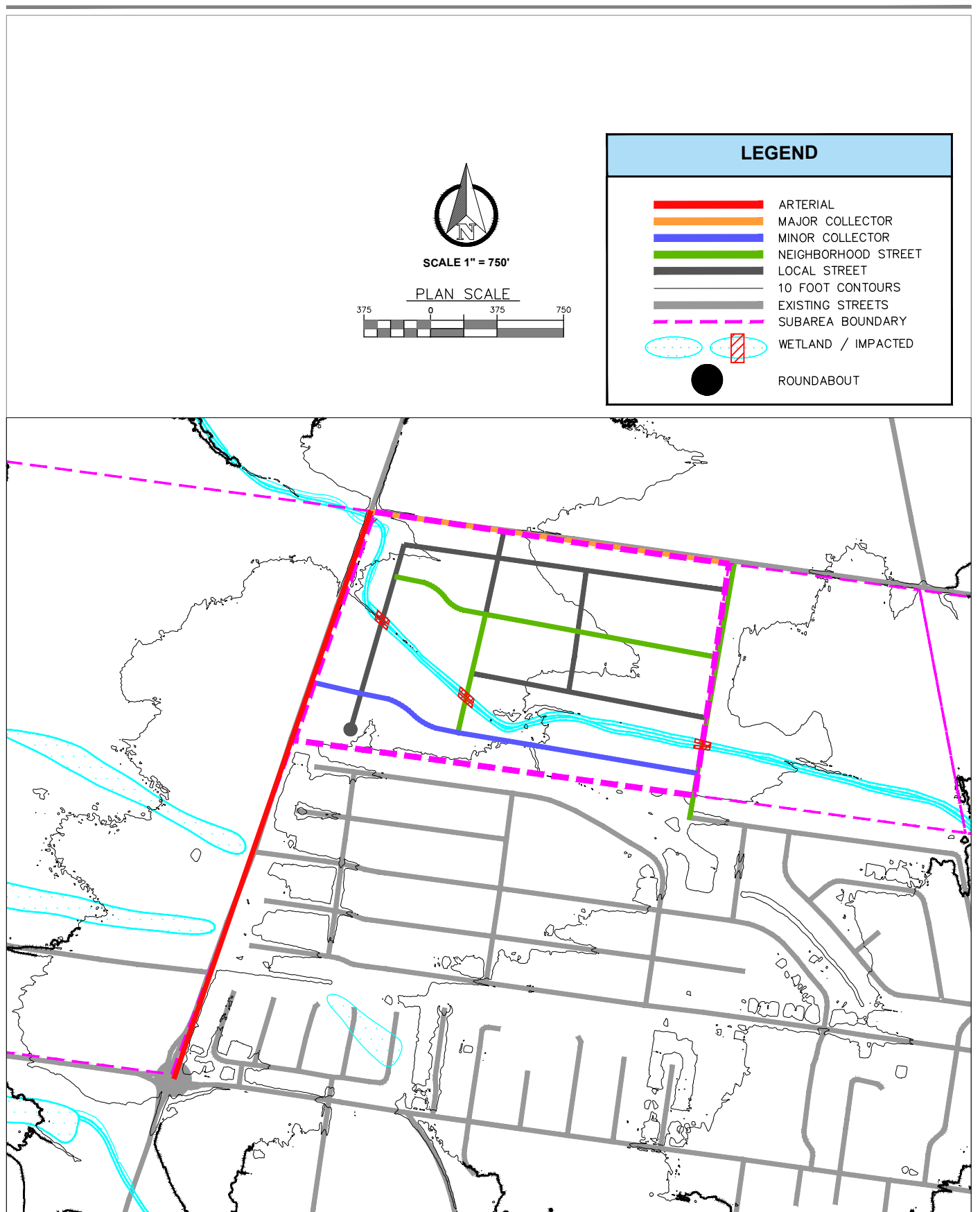
Subarea 14 Summary

The road and utility alignments developed for this analysis are shown in Figures 24 and 25. The cost estimates are summarized in Table 17.

TABLE 17
SUBAREA 14 PUBLIC INFRASTRUCTURE EXPANSION

System	Cost
General Construction	\$7,136,328
Transportation ¹	\$18,105,367
Sanitary Sewer	\$5,240,670
Water	\$4,327,080
Stormwater	\$2,479,750
Environmental	\$214,485
Construction Subtotal	\$37,503,679
Non-Construction Costs	\$13,186,288
Total	\$50,689,967
Low Range -30%	\$35,482,977
High Range +30%	\$65,896,957
Units per Subarea	245
Cost per Unit	\$206,898

¹ Capacity increase of the existing Toliver Road roundabout may be required. This will require a determination by ODOT. Potential costs are not well understood and are excluded.



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC. DATE: JULY 2026 PROJECT NO.: 198.60	CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE SUBAREA STREET LAYOUT SUBAREA 14	FIGURE NO. 24
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NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



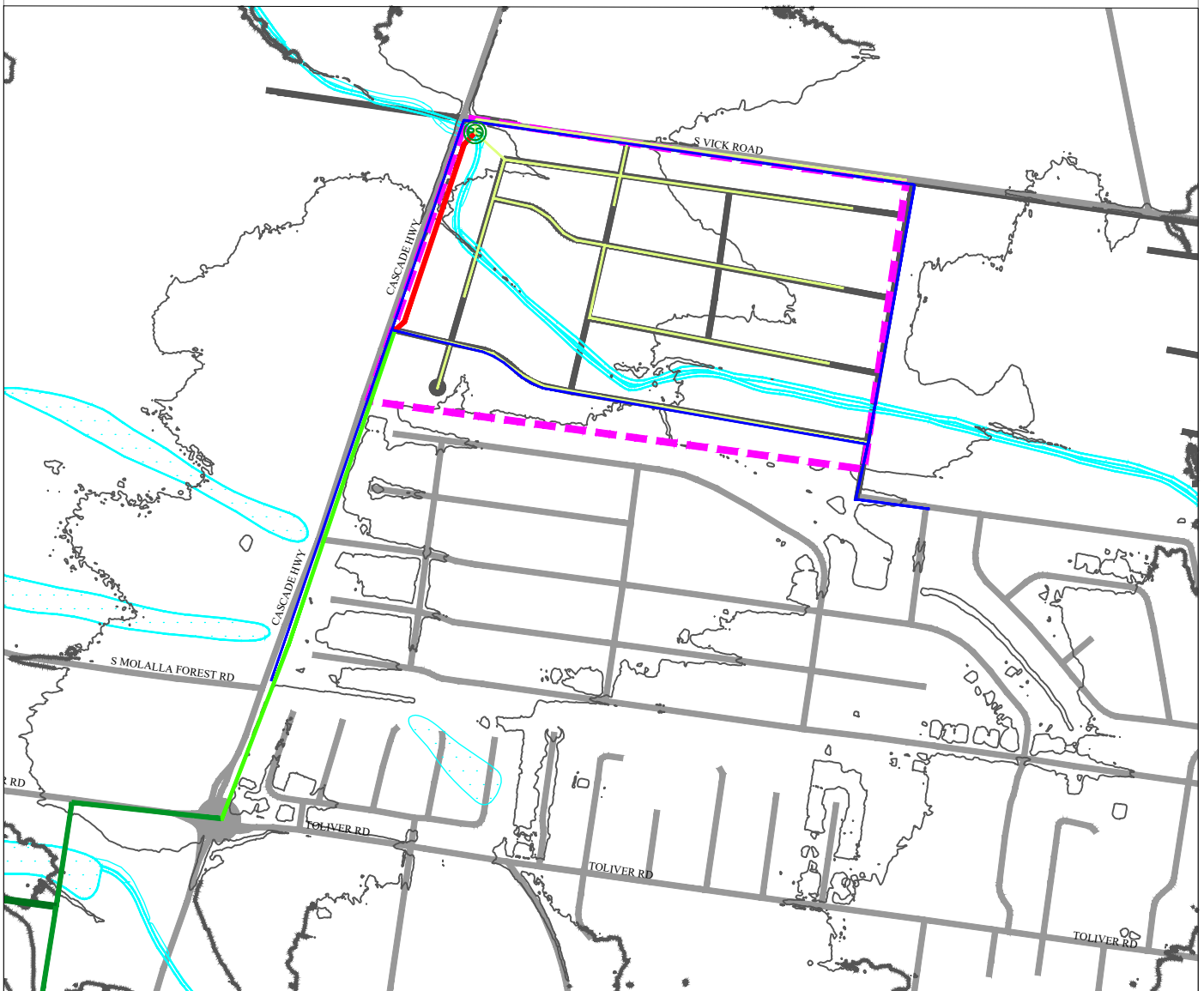
SCALE 1" = 500'

PLAN SCALE



LEGEND

- FORCE MAIN
- 8"–12" SEWER MAIN
- 18" SEWER MAIN
- 21" SEWER MAIN
- 27" SEWER MAIN
- 8"–10" WATER MAIN
- 12" WATER MAIN
- 10 FOOT CONTOURS
- - - SUBAREA BOUNDARY/
SEWER SUBBASINS
- EXISTING STREETS
- NEW STREETS
- ⋯ WETLAND
- ⊙ NEW PUMP STATION



THE DYER PARTNERSHIP
ENGINEERS & PLANNERS, INC.

DATE: JULY 2026

PROJECT NO.: 198.60

**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 14

FIGURE NO.

25

Subarea 15

Transportation

The major transportation elements to serve Subarea 15 include:

- 1.7 centerline miles of internal and fronting streets for internal circulation and 0.7 miles of offsite street improvements for connectivity.
- Frontage improvements for approximately 3,160 ft of Vick Road to City standards.
- Convert a portion of Big Meadow Park into a street connection with June Drive.

Vick Road is the only existing access to Subarea 15. Two new southward connections are recommended to provide circulation between Subarea 15 and the City Center. As described in Subarea 14, street connection is recommended to June Drive across Big Meadow Park. The loss of recreational square footage may be replaced with a dedication of new park lands upon development. This street connection would also serve Subarea 14.

The proposed layout also includes street connections to Eric Drive and Mary Drive for connectivity with the City. This route would cross approximately 600 ft of Subarea 16 and includes a wetland crossing.

Subarea 15 is estimated to generate 1,373 average weekday vehicle trips. Existing traffic counts are not available for Vick Road but development is expected to substantially increase the vehicle traffic on Vick Road. Development of Subarea 15 will require three-quarter street improvements for approximately 1,090 ft of Vick Road. The county road segments may require lane widening to accommodate the added traffic. Lane widening has been included in the cost estimate.

No TSP projects were identified that would be affected by this development.

Sanitary Sewer

Development of Subarea 15 will require a trunk main on Vick Rd, a pump station at the Vick Road and OR 213 intersection, and extension or upsizing of 3,500 ft of the North Bear Creek trunk main on OR 213 and Toliver Road. The required trunk main size is estimated at minimum 18-inch diameter. The pump station and the regional trunk mains will also be available to serve Subareas 14 and 16.

Water

The water system would connect into Subarea 15 from June Drive, Eric Drive, and Mary Drive. The proposed system consists of approximately 7,700 ft of 8-inch pipe. A regional line at the border of Subareas 14 and 15 would serve both subareas. No booster stations or PRV stations are required.

Stormwater

Runoff from Subarea 15 splits into two flow paths that both ultimately drain to Creamery Creek. The southern half drains south directly into the creek while the north portion continues north along a secondary drainage path which rejoins the Creek after crossing OR-213 through an existing culvert. The size and conditions of the culvert are unknown. An estimated 18-inch diameter culvert is required to pass the 100-year storm.

Stormwater conveyance is estimated to require approximately 6,600 feet of 12-inch pipe with associated catch basins and manholes.

Environmental Impacts

Creamery Creek crosses through Subarea 15 and is a mapped wetland. Three proposed street crossings will impact the wetland area.

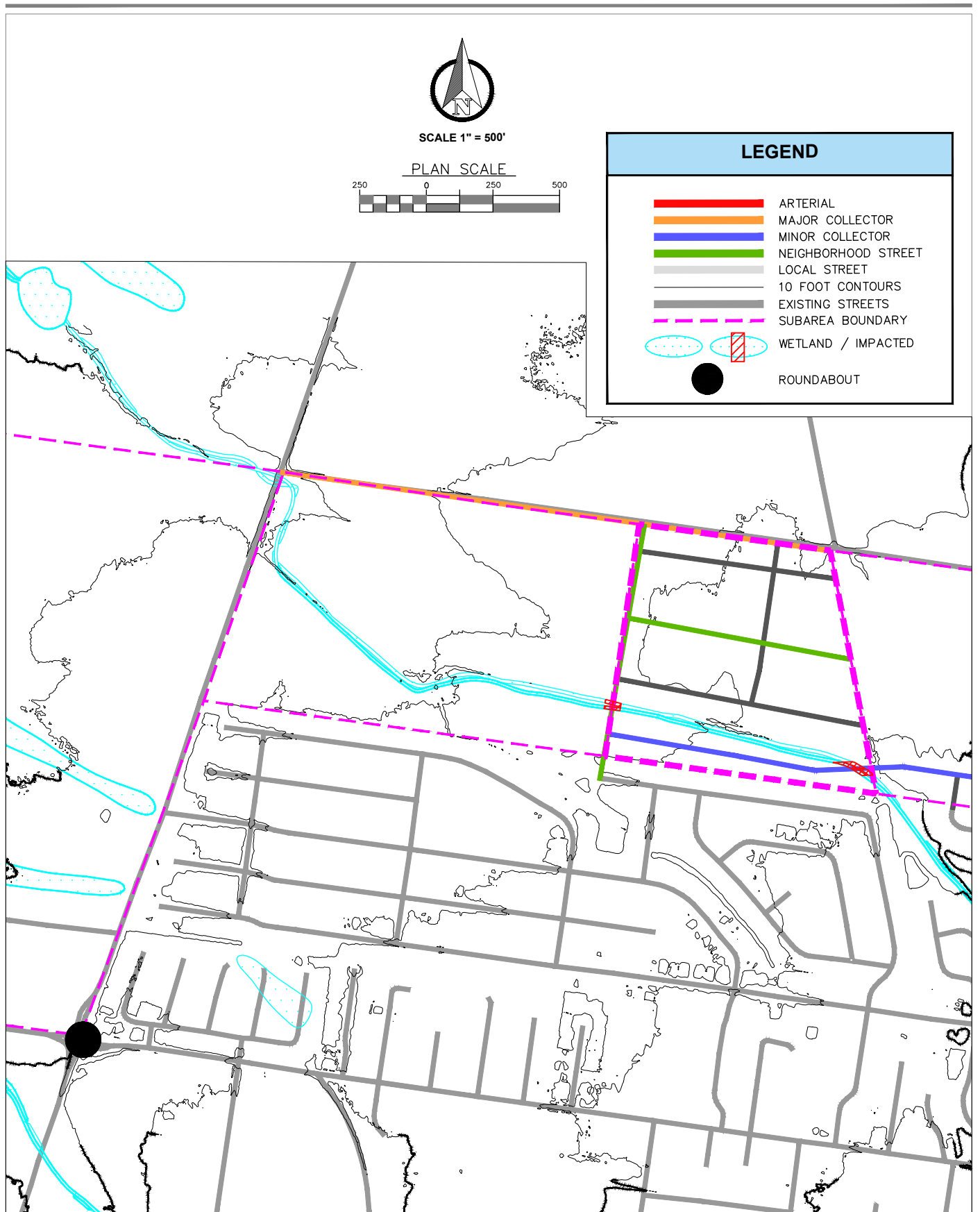
An assumed area of 0.2 acres has been included in the cost estimate.

Subarea 15 Summary

The road and utility alignments developed for this analysis are shown in Figures 26 and 27. The cost estimates are summarized in Table 18.

TABLE 18
SUBAREA 15 PUBLIC INFRASTRUCTURE EXPANSION

System	Cost
General Construction	\$6,124,615
Transportation	\$16,601,871
Sanitary Sewer	\$4,720,530
Water	\$2,799,250
Stormwater	\$1,754,995
Environmental	\$185,546
Construction Subtotal	\$32,186,808
Non-Construction Costs	\$11,325,383
Total	\$43,512,190
Low Range -30%	\$30,458,533
High Range +30%	\$56,565,847
Units per Subarea	151
Cost per Unit	\$288,160



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC. DATE: JULY 2026 PROJECT NO.: 198.60	CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE SUBAREA STREET LAYOUT SUBAREA 15	FIGURE NO. 26
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NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



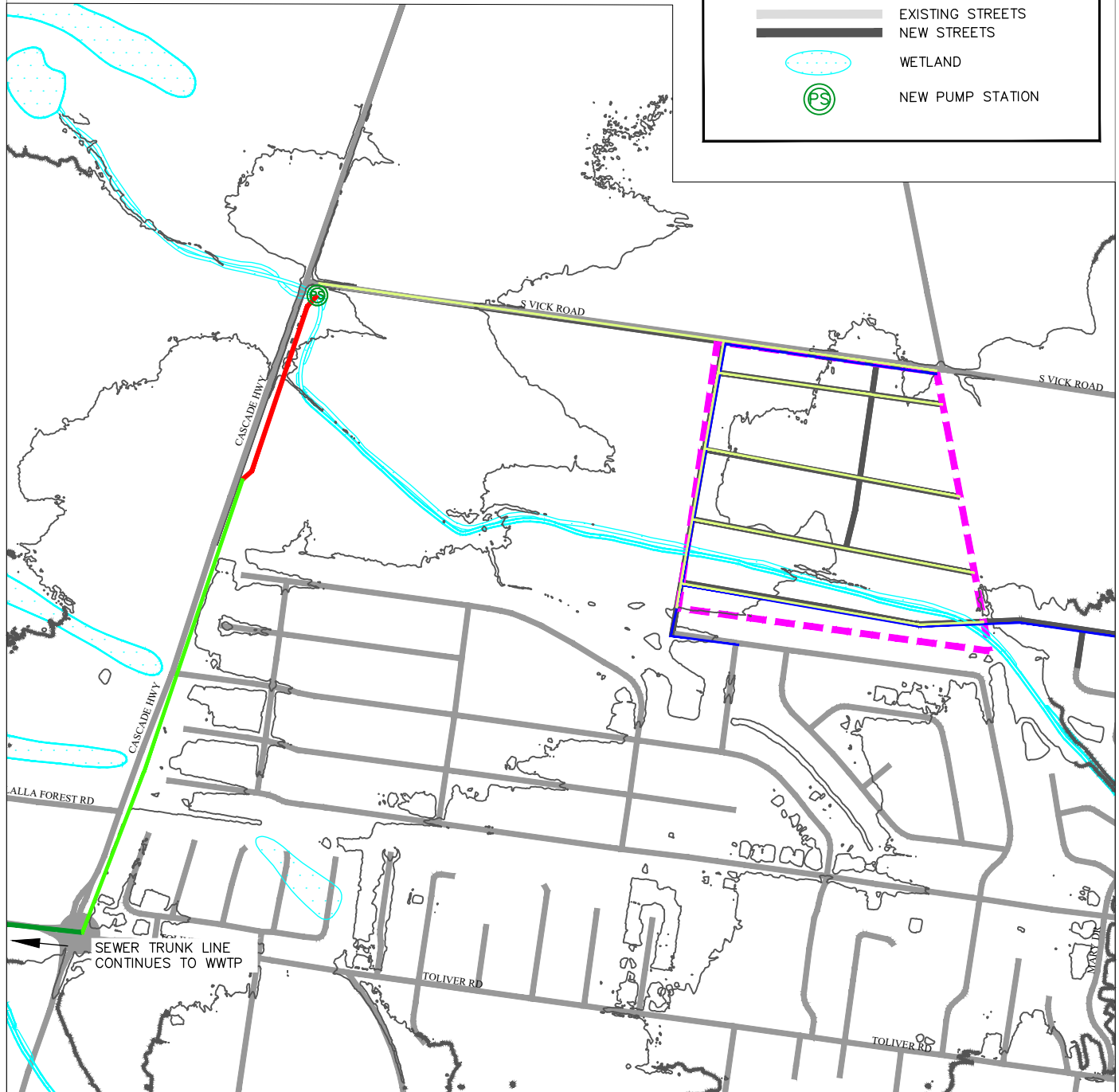
SCALE 1" = 750'

PLAN SCALE



LEGEND

- FORCE MAIN
- 8"–12" SEWER MAIN
- 18" SEWER MAIN
- 21" SEWER MAIN
- 27" SEWER MAIN
- 8"–10" WATER MAIN
- 12" WATER MAIN
- 10 FOOT CONTOURS
- - - SUBAREA BOUNDARY/
SEWER SUBBASINS
- EXISTING STREETS
- NEW STREETS
- ⋯ WETLAND
- ⊙ NEW PUMP STATION



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**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 15

FIGURE NO.

27

Subarea 16

Transportation

The major transportation elements to serve Subarea 16 include:

- 2.1 centerline miles of internal and fronting streets for internal circulation and 0.4 miles of offsite street improvements for connectivity.
- Development of Subarea 16 will require frontage improvements for approximately 1,520 ft of Vick Road to City standards.

Access to Subarea 16 is available via Vick Road and five City street stubouts along south and east boundaries of the subarea: Eric Drive, Mary Drive, Wingfield Drive, Sarah Lane, and Rachel Lane. The proposed street layout includes all five City street connections and two new street connections to Vick Road.

Approximately 1,990 ft of Vick Road will remain in the county and may require lane widening to accommodate the added traffic. Lane widening has been included in the cost estimate.

No TSP projects were identified that would be affected by this development.

Sanitary Sewer

Development of Subarea 16 will require a trunk main on Vick Rd, a pump station at the Vick Road and OR 213 intersection, and extension or upsizing of 3,500 ft of the North Bear Creek trunk main on OR 213 and Toliver Road. The required trunk main size is estimated at minimum 18-inch diameter. The pump station and the regional trunk mains will also be available to serve Subareas 14 and 15.

Water

The water system would connect into Subarea 16 from Eric Drive and Mary Drive. The proposed system consists of 10,600 ft of 8-inch pipe. No booster stations or PRV stations are required.

Stormwater

Runoff from Subarea 16 splits into two flow paths. The southern half drains south directly into Creamery Creek while the north portion continues north along a secondary drainage path to Dove Creek and Gribble Creek.

Stormwater conveyance is estimated to require approximately 7,600 feet of 12-inch pipe with associated catch basins and manholes.

Environmental Impacts

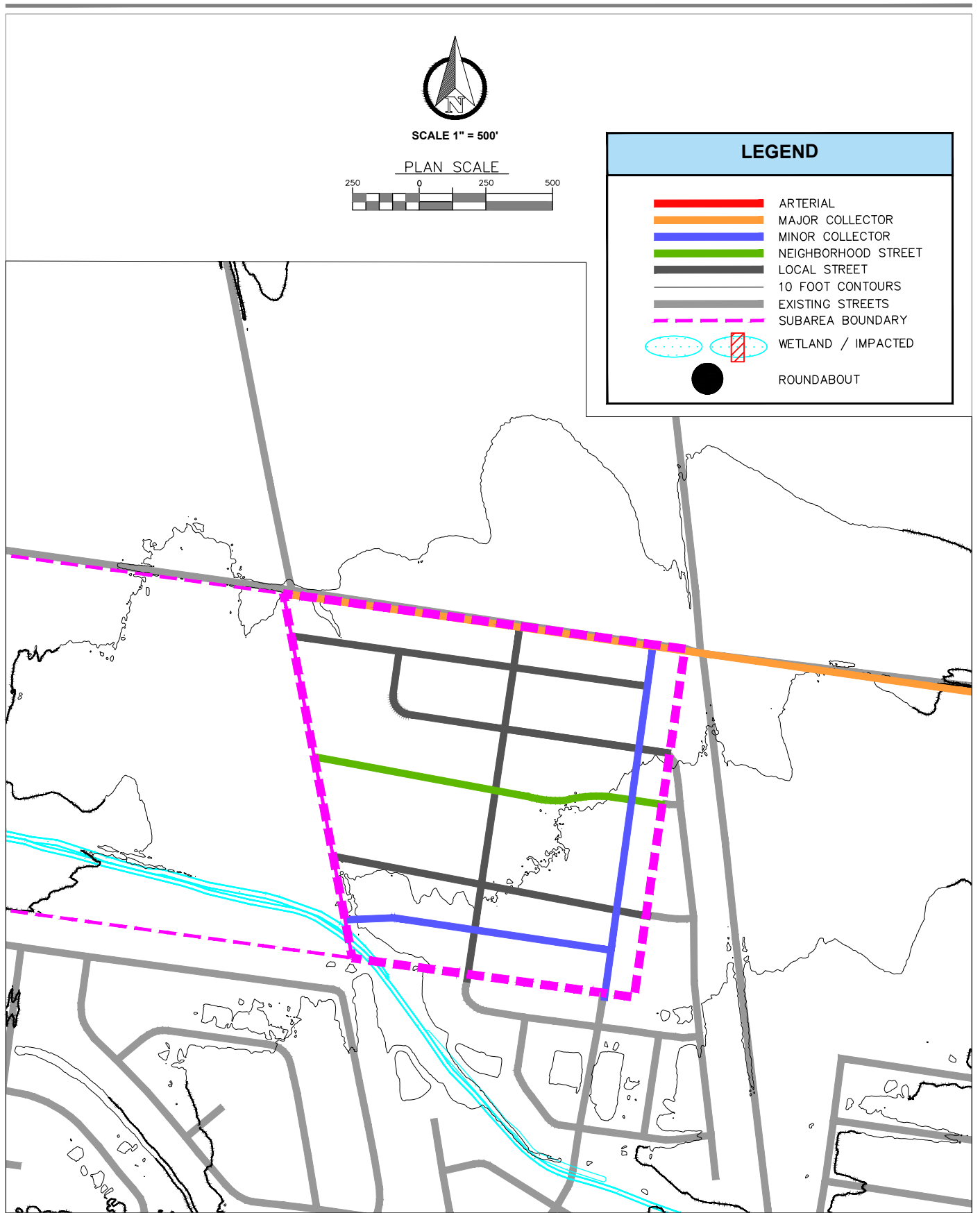
There are no proposed street crossings expected to impact wetlands. The westward stubout to Subarea 15 next to Creamery Creek Subarea 16 is expected to be constructed without impacting the wetland. The future extension into Subarea 15 would impact wetlands but is not required for Subarea 16 development. Therefore the associated wetland costs have been included in Subarea 15 only.

Subarea 16 Summary

The road and utility alignments developed for this analysis are shown in Figures 28 and 29. The cost estimates are summarized in Table 19.

TABLE 19
SUBAREA 16 PUBLIC INFRASTRUCTURE EXPANSION

System	Cost
General Construction	\$4,599,338
Transportation	\$9,933,498
Sanitary Sewer	\$5,055,820
Water	\$2,778,515
Stormwater	\$1,703,820
Environmental	\$100,000
Construction Subtotal	\$24,170,991
Non-Construction Costs	\$8,519,847
Total	\$32,690,838
Low Range -30%	\$22,883,587
High Range +30%	\$42,498,090
Units per Subarea	148
Cost per Unit	\$220,884



THE DYER PARTNERSHIP ENGINEERS & PLANNERS, INC. DATE: JULY 2026 PROJECT NO.: 198.60	CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE SUBAREA SEWER LAYOUT SUBAREA 16	FIGURE NO. 28
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NOTES:

- WATER LINES SHOWN ARE REGIONAL TRANSMISSION MAINS. INTERNAL WATER LINES WITHIN SUBAREAS ARE NOT SHOWN FOR CLARITY.
- STORM LINES ARE NOT SHOWN FOR CLARITY. FOOTAGE ASSUMED EQUAL TO LENGTH OF NEW SANITARY SEWER INCLUDED IN COST ESTIMATES.



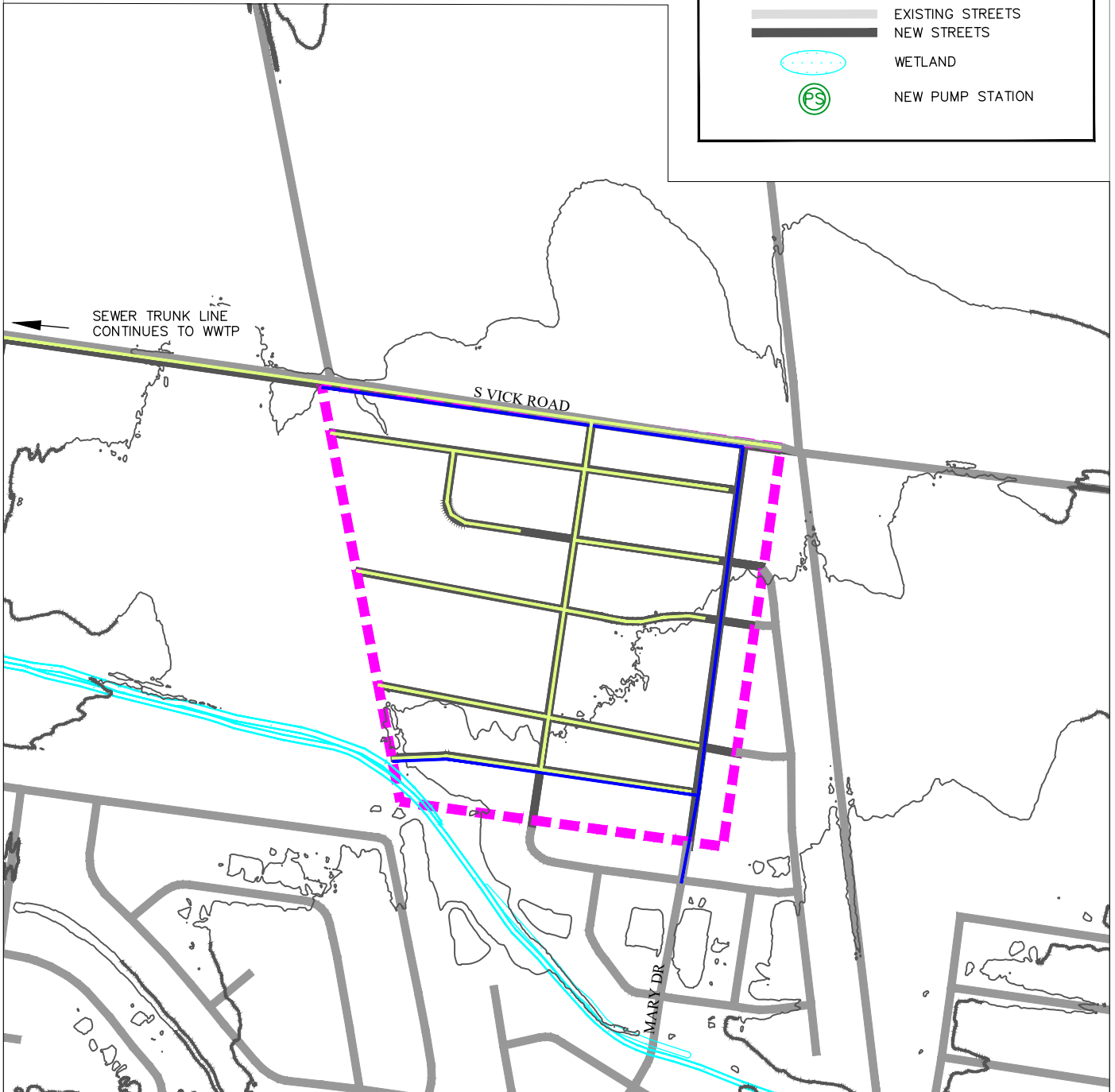
SCALE 1" = 500'

PLAN SCALE



LEGEND

- FORCE MAIN
- 8"–12" SEWER MAIN
- 18" SEWER MAIN
- 21" SEWER MAIN
- 27" SEWER MAIN
- 8"–10" WATER MAIN
- 12" WATER MAIN
- 10 FOOT CONTOURS
- - - SUBAREA BOUNDARY/
SEWER SUBBASINS
- EXISTING STREETS
- NEW STREETS
- (dashed line) WETLAND
- (PS in circle) NEW PUMP STATION



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DATE: JULY 2026
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**CITY OF MOLALLA - UGB EXPANSION GOAL 14 MEMO UPDATE
SUBAREA UTILITY LAYOUT**

SUBAREA 16

FIGURE NO.

29

Summary and Recommendations

The sewer system trunk mains in the South Bear Creek Basin and the North Bear Creek Basin will require upsizing to provide capacity for new development in either region. In the south region, Subarea 3 will require a pump station. In the north region, all subareas will require pump stations.

The water system lacks storage capacity to provide emergency water storage for the study area. The City should prioritize the new 2.0 MG reservoir project as recommended in the WTP to provide the required capacity. Recovering the proportionate cost share through System Development Charges (SDC) is also recommended and therefore excluded from the cost estimates.

Development of the north region may require capacity increase of the existing Toliver Road roundabout. This will require a determination by ODOT. Potential costs are not well understood and are excluded. Obtaining additional information from ODOT is recommended.

Boundary adjustments to Subareas 3, 4, 5, 7, and 13 are recommended.

The total estimated costs are summarized in Tables 20 and 21. As previously described in the Methodology section, the cost of the regional facilities that serve multiple subareas is iterated in each cost estimate as though that subarea was the only site being developed. The development costs per housing unit can be reduced by grouping adjacent subareas that will share regional infrastructure.

Further cost evaluation per housing unit is recommended using subarea groups to attain the required 929 housing units. Due to the extent of interrelated infrastructure between Subareas 5 and 6, they are best considered together for shared infrastructure regardless of other groups. Subareas 2 through 4, Subareas 5 through 9, and Subareas 14 through 16 are also readily apparent geographic groups. Other potential groups resulting from non-monetary factors should also be considered. Care must be taken in assessing total costs for various combinations of subareas. Direct addition of adjacent subareas would result in double counting the regional facility costs.

TABLE 20
SOUTH REGION PUBLIC INFRASTRUCTURE SUMMARY

	Subarea							
	2	3	4	5	6	7	8	9
General Construction	\$6,862,577	\$6,445,906	\$12,487,812	\$11,369,896	\$8,279,964	\$10,715,943	\$7,683,637	\$8,188,095
Transportation	\$17,176,233	\$15,004,039	\$33,042,988	\$30,938,779	\$19,780,684	\$29,558,334	\$21,291,111	\$21,153,297
Sanitary Sewer	\$5,813,610	\$6,522,080	\$8,917,810	\$7,073,180	\$1,075,000	\$6,639,350	\$5,211,720	\$6,313,650
Water	\$2,789,880	\$1,967,935	\$5,264,165	\$5,053,585	\$3,781,425	\$4,263,095	\$3,235,200	\$4,118,765
Stormwater	\$3,254,795	\$3,359,630	\$5,743,145	\$4,183,785	\$4,492,140	\$3,688,650	\$2,779,190	\$3,219,850
Environmental	\$167,936	\$575,701	\$71,516	\$1,133,206	\$15,220	\$1,450,327	\$179,108	\$37,397
Construction Subtotal	\$36,065,030	\$33,875,291	\$65,627,436	\$59,752,431	\$43,513,853	\$56,315,699	\$40,379,966	\$43,031,055
Non-Construction Costs	\$12,682,761	\$11,916,352	\$23,029,603	\$20,973,351	\$15,289,849	\$19,770,495	\$14,192,988	\$15,120,869
Total	\$48,747,791	\$45,791,643	\$88,657,039	\$80,725,782	\$58,803,702	\$76,086,193	\$54,572,954	\$58,151,924
Low Range -30%	\$34,123,454	\$32,054,150	\$62,059,927	\$56,508,048	\$41,162,591	\$53,260,335	\$38,201,068	\$40,706,347
High Range +30%	\$63,372,128	\$59,529,136	\$115,254,150	\$104,943,517	\$76,444,812	\$98,912,051	\$70,944,840	\$75,597,501
Units per Subarea	116	106	289	235	215	266	171	318
Cost per Unit	\$420,240	\$431,997	\$306,772	\$343,514	\$273,506	\$286,038	\$319,140	\$182,868

Note: Care must be taken in assessing total costs for various combinations of subareas. Direct addition of adjacent subareas would result in double counting the regional facility costs.

TABLE 21
NORTH REGION PUBLIC INFRASTRUCTURE SUMMARY

System	Subarea			
	13 ¹	14 ¹	15	16
General Construction	\$30,178,045	\$7,136,328	\$6,124,615	\$4,599,338
Transportation	\$85,113,527	\$18,105,367	\$16,601,871	\$9,933,498
Sanitary Sewer	\$17,746,260	\$5,240,670	\$4,720,530	\$5,055,820
Water	\$14,193,590	\$4,327,080	\$2,799,250	\$2,778,515
Stormwater	\$10,758,895	\$2,479,750	\$1,754,995	\$1,703,820
Environmental	\$604,940	\$214,485	\$185,546	\$100,000
Construction Subtotal	\$158,595,257	\$37,503,679	\$32,186,808	\$24,170,991
Non-Construction Costs	\$55,568,340	\$13,186,288	\$11,325,383	\$8,519,847
Total	\$214,163,597	\$50,689,967	\$43,512,190	\$32,690,838
Low Range -30%	\$149,914,518	\$35,482,977	\$30,458,533	\$22,883,587
High Range +30%	\$278,412,676	\$65,896,957	\$56,565,847	\$42,498,090
Units per Subarea	1,003	245	151	148
Cost per Unit	\$213,523	\$206,898	\$288,160	\$220,884

¹ Capacity increase of the existing Toliver Road roundabout may be required. This will require a determination by ODOT. Potential costs are not well understood and are excluded.

Note: Care must be taken in assessing total costs for various combinations of subareas. Direct addition of adjacent subareas would result in double counting the regional facility costs.

APPENDICES

APPENDIX A: SINGLE-FAMILY DETACHED HOUSING TRIP GENERATION

Land Use: 210

Single-Family Detached Housing

Description

A single-family detached housing site includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision.

Specialized Land Use

Data have been submitted for several single-family detached housing developments with homes that are commonly referred to as patio homes. A patio home is a detached housing unit that is located on a small lot with little (or no) front or back yard. In some subdivisions, communal maintenance of outside grounds is provided for the patio homes. The three patio home sites total 299 dwelling units with overall weighted average trip generation rates of 5.35 vehicle trips per dwelling unit for weekday, 0.26 for the AM adjacent street peak hour, and 0.47 for the PM adjacent street peak hour. These patio home rates, based on a small sample of sites, are lower than those for single-family detached housing (Land Use 210), lower than those for single-family attached housing (Land Use 215), and higher than those for senior adult housing—single-family (Land Use 251). (Source 1008)

Additional Data

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alabama, Arizona, British Columbia (CAN), California, Delaware, Illinois, Kentucky, Massachusetts, Minnesota, Montana, New Jersey, New York, North Carolina, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Vermont, and West Virginia.

Source Numbers

356, 357, 367, 384, 387, 407, 435, 522, 550, 552, 579, 598, 601, 603, 614, 637, 711, 716, 720, 728, 735, 868, 869, 903, 925, 936, 1005, 1007, 1008, 1010, 1033, 1066, 1077, 1078, 1079, 1204, 1221, 1225, 1236, 1251, 1265, 1267

Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: **Weekday**

Setting/Location: **General Urban/Suburban**

Number of Studies: 155

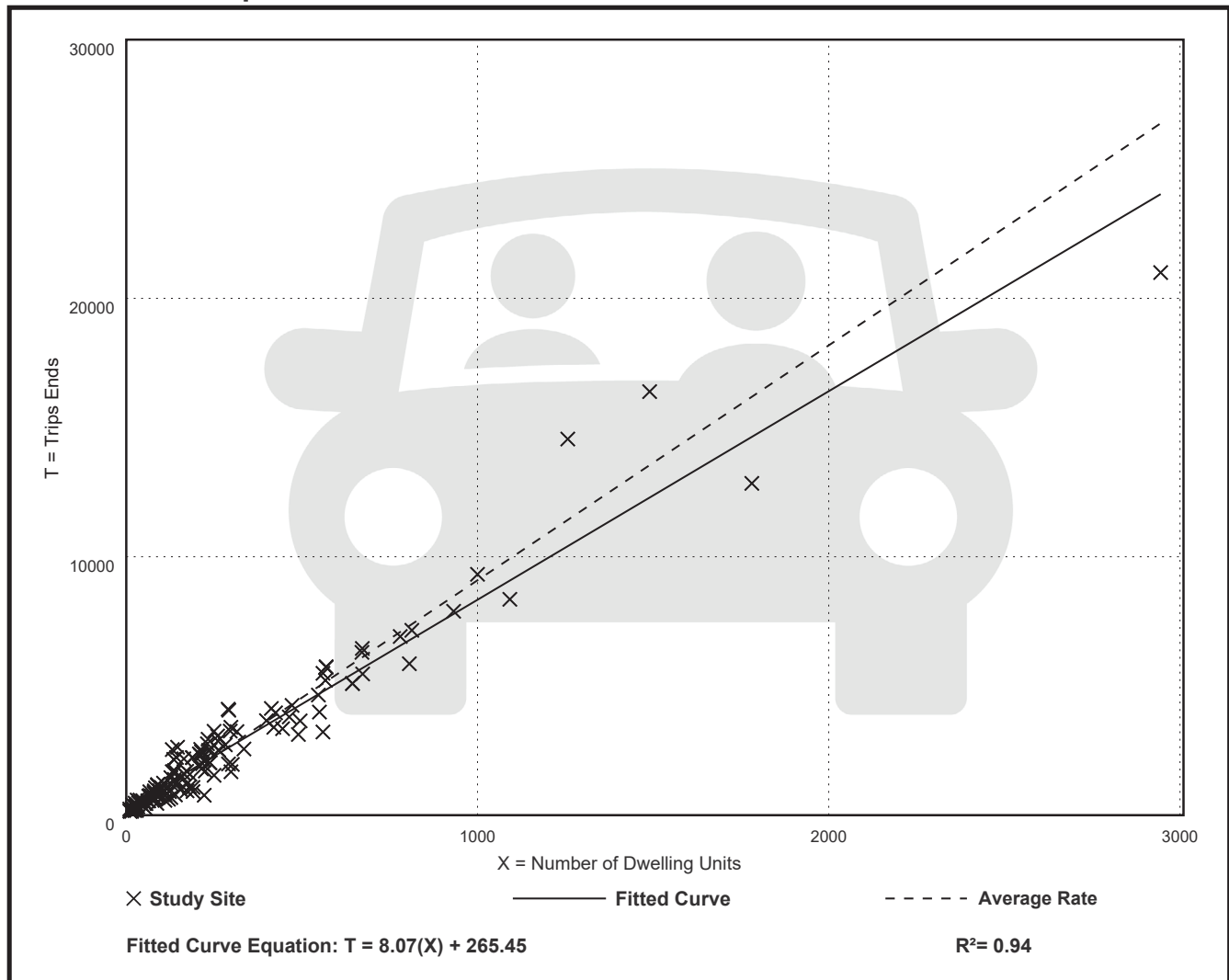
Avg. Num. of Dwelling Units: 261

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.09	3.47 - 23.80	2.29

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 **a.m.**

Setting/Location: General Urban/Suburban

Number of Studies: 153

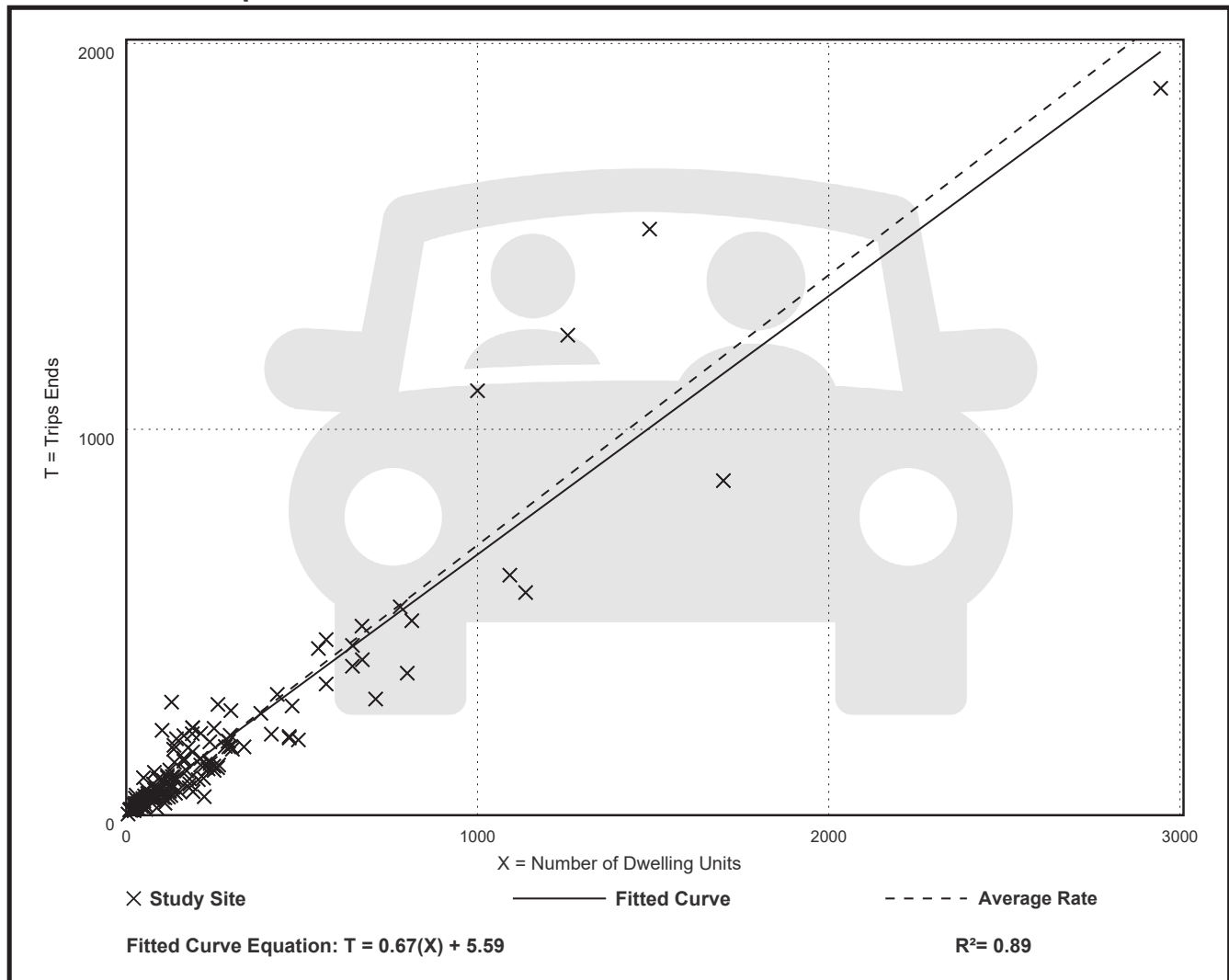
Avg. Num. of Dwelling Units: 239

Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.22 - 2.27	0.26

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 **p.m.**

Setting/Location: General Urban/Suburban

Number of Studies: 166

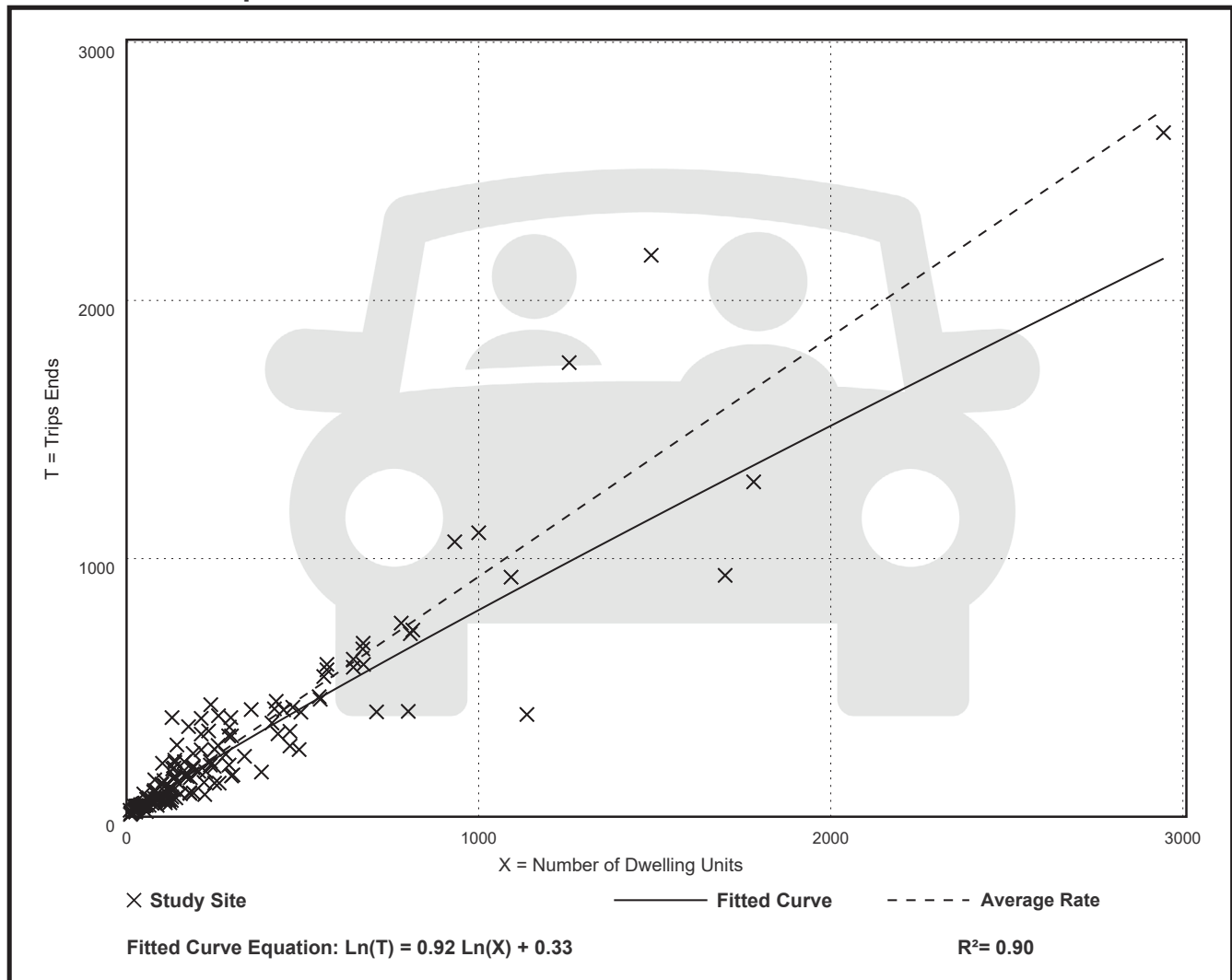
Avg. Num. of Dwelling Units: 266

Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.93	0.35 - 2.98	0.33

Data Plot and Equation



APPENDIX B: COST ESTIMATES

System	South Region Subareas							
	2	3	4	5	6	7	8	9
General Construction	\$7,107,262	\$6,455,774	\$12,487,812	\$11,369,896	\$8,279,964	\$10,715,943	\$7,683,637	\$8,188,095
Transportation	\$16,786,896	\$15,004,039	\$33,042,988	\$30,938,779	\$19,780,684	\$29,558,334	\$21,291,111	\$21,153,297
Sanitary Sewer	\$5,813,610	\$6,522,080	\$8,917,810	\$7,073,180	\$1,075,000	\$6,639,350	\$5,211,720	\$6,313,650
Water	\$2,749,180	\$2,009,930	\$5,264,165	\$5,053,585	\$3,781,425	\$4,263,095	\$3,235,200	\$4,118,765
Stormwater	\$4,726,045	\$3,359,630	\$5,743,145	\$4,183,785	\$4,492,140	\$3,688,650	\$2,779,190	\$3,219,850
Environmental	\$167,936	\$575,701	\$71,516	\$1,133,206	\$15,220	\$1,450,327	\$179,108	\$37,397
Construction Subtotal	\$37,350,928	\$33,927,155	\$65,627,436	\$59,752,431	\$43,513,853	\$56,315,699	\$40,379,966	\$43,031,055
Non-Construction Costs	\$13,132,825	\$11,934,504	\$23,029,603	\$20,973,351	\$15,289,849	\$19,770,495	\$14,192,988	\$15,120,869
Total	\$50,483,753	\$45,861,659	\$88,657,039	\$80,725,782	\$58,803,702	\$76,086,193	\$54,572,954	\$58,151,924
Low Range -30%	\$35,338,627	\$32,103,161	\$62,059,927	\$56,508,048	\$41,162,591	\$53,260,335	\$38,201,068	\$40,706,347
High Range +30%	\$65,628,879	\$59,620,157	\$115,254,150	\$104,943,517	\$76,444,812	\$98,912,051	\$70,944,840	\$75,597,501
Units per Subarea	116	106	289	235	215	266	171	318
Cost per Unit	\$435,205	\$432,657	\$306,772	\$343,514	\$273,506	\$286,038	\$319,140	\$182,868

Note: Care must be taken in assessing total costs for various combinations of subareas. Direct addition of adjacent subareas would result in double counting the regional facility costs.

System	North Region Subareas			
	13	14	15	16
General Construction	\$30,178,045	\$7,136,328	\$6,124,615	\$4,599,338
Transportation ¹	\$85,113,527	\$18,105,367	\$16,601,871	\$9,933,498
Sanitary Sewer	\$17,746,260	\$5,240,670	\$4,720,530	\$5,055,820
Water	\$14,193,590	\$4,327,080	\$2,799,250	\$2,778,515
Stormwater	\$10,758,895	\$2,479,750	\$1,754,995	\$1,703,820
Environmental	\$604,940	\$214,485	\$185,546	\$100,000
Construction Subtotal	\$158,595,257	\$37,503,679	\$32,186,808	\$24,170,991
Non-Construction Costs	\$55,568,340	\$13,186,288	\$11,325,383	\$8,519,847
Total	\$214,163,597	\$50,689,967	\$43,512,190	\$32,690,838
Low Range -30%	\$149,914,518	\$35,482,977	\$30,458,533	\$22,883,587
High Range +30%	\$278,412,676	\$65,896,957	\$56,565,847	\$42,498,090
Units per Subarea	1,003	245	151	148
Cost per Unit	\$213,523	\$206,898	\$288,160	\$220,884

¹Capacity increase of the existing Toliver Road roundabout may be required. This will require a determination by ODOT. Potential costs are not well understood and are excluded.

Note: Care must be taken in assessing total costs for various combinations of subareas. Direct addition of adjacent subareas would result in double counting the regional facility costs.

City of Molalla
Preliminary Project Estimate
Summary of Unit Costs

UGB Goal 14 Public Facilities Review
6/22/2026

Description	Unit	Unit Cost	Assumptions
Transportation System	Transportation linear footage as per preliminary system drawings.		
Arterial	LF	\$1,297	
Major Collector	LF	\$1,297	
Major Collector - Molalla Forest Road (concrete)	LF	\$2,240	
Minor Collector	LF	\$1,109	
Neighborhood Street	LF	\$871	
Local Street	LF	\$871	
County Rd Widening - Full Development to City Major Arterial	LF	\$1,206	
County Rd Widening - 3/4 Development to City Major Arterial	LF	\$996	
County Rd Improvement - Vick Rd county segment widening	LF	\$547	
Cul-de-Sac	EA	\$125,000	
Wastewater System	Sewer linear footage as per preliminary system drawings.		
Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	LF	\$230	Includes Manhole every 250 LF
Sanitary Sewer Trunk Main Line - 8-12+"Ø PVC-3034	LF	\$230	Includes Manhole every 250 LF
Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	LF	\$300	Includes Manhole every 250 LF
Service Laterals	EA	\$5,000	Equal to # of dwelling units in subarea
Water System	Waterline footage assumed equal to street centerline footage within each subarea plus any required offsite improvements.		
Water Lines - 8"-10"Ø Class 900 PVC	LF	\$185	Includes valve every 200 LF, Hydrant Assembly every 400 LF + \$20/LF in misc fittings
Water Lines - 12+"Ø Class 900 PVC	LF	\$220	Includes valve every 200 LF, Hydrant Assembly every 400 LF + \$20/LF in misc fittings
Water Services	EA	\$5,000	Equal to # of dwelling units in subarea

Description	Unit	Unit Cost	Assumptions
Stormwater System	Stormwater piping footage assumed equal to the sanitary sewer footage within each subarea with outlets to existing drainage ways.		
Storm Sewer Line - 12" Ø PVC-3034	LF	\$235	Includes 2x Catch Basins per 200 LF and Manhole every 250 LF
Molalla Forest Road Storm Sewer Line - 18" Ø PVC-3034	LF	\$275	Includes 2x Catch Basins per 200 LF and Manhole every 250 LF
24"Ø Culvert	EA	\$10,000	Typical road culvert. Existing road culverts assumed to require replacement. Large diameter crossings and box culverts were developed as separate line items as needed.
Outfall	EA	\$25,000	
Environmental			
Wetland Mitigation	ACRE	\$425,000	Based on the Garret Creek Mitigation Bank's 2023 unit cost of \$390,000/acre plus 3 years of annual inflation at 3%.
Water Work Temporary Management	LS	\$100,000	Applies to year-round waterways. Seasonal waterways are excluded. Includes any construction measures required by water work permitting such as sediment control, bypass pumping, turbidity monitoring, bank restoration, etc. The cost of the permanent facility being installed (i.e. box culvert, utility crossing) is included in its relevant system.

City of Molalla
Preliminary Project Estimate
Summary of Transportation System Plan Projects - Costs Updated with ENR Index

UGB Goal 14 Public Facilities Review
6/22/2026

SOUTH REGION					
TSP Project No.	Location	Type	Priority	2018 TSP Cost	2026 Cost
P8	S Molalla Ave	Sidewalk infill, both sides	M	\$ 955,000	\$ 1,233,691
P17 & B15	Mathias Road	New sidewalks and bicycle lanes, both sides	M	\$ 1,405,000	\$ 1,815,012
B11	S Molalla Ave	Bicycle lanes, both sides	M	\$ 520,000	\$ 671,748
B44	S Molalla Ave / 5th Street	Enhanced Bicycle Crossing	M	\$ 15,000	\$ 19,377
M8	Mathias Road	Widen Mathias Rd and provide a continuous 3-lane cross section	L	\$ 1,065,000	\$ 1,375,792
P43 & M18	Molalla Forest Road	Reconstruct & widen Molalla Forest Rd and provide a continuous 3-lane cross section and a multi-use path	L	\$ 10,740,000	\$ 13,874,180
M31	S Molalla Ave / Molalla Forest Road	Roundabout	L	\$ 2,500,000	\$ 3,229,558
Subtotal				\$ 19,850,000	\$ 25,642,689

NORTH REGION					
TSP Project No.	Location	Type	Priority	2018 TSP Cost	2026 Cost
P1	OR 213 (N of 211)	Sidewalk infill	H	\$ 1,240,000	\$ 1,601,861
P26 & B35	OR 213 / Meadow Drive	Enhanced Pedestrian and Bicycle Crossings	M	\$ 175,000	\$ 226,069
M1	OR 213 (N of 211)	Widen	M	\$ 8,825,000	\$ 11,400,339
M19	OR 213 / Meadow Road	Reconfigure to provide a continuous 3-lane cross section	M	\$ -	\$ -
Subtotal				\$ 10,390,000	\$ 13,422,042

No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$3,780,458	\$3,780,458
2	S	Temporary Protection and Direction of Traffic	1	LS	\$1,512,183	\$1,512,183
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$1,814,620	\$1,814,620
General Construction Expenses Subtotal						\$7,107,262
Transportation System						
	S	New Local Street	3,340	LF	\$871	\$2,909,140
	S	New Local Cul-De-Sac	1	EA	\$125,000	\$125,000
	S	Rebuild/Widen Major Collector - Mathias Rd (Subarea 2 frontage)	467	LF	\$996	\$465,132
	S, CIP, R (2, 3, 4)	Rebuild Major Collector - Molalla Forest Road (Subarea 2 frontage, TSP P43 & M18)	1,380	LF	\$2,240	\$3,091,200
	CIP, R (2, 3, 4)	Rebuild Major Collector - Molalla Forest Road (West connection to S Molalla Ave, TSP P43 & M18)	2,330	LF	\$2,240	\$5,219,200
	S	Rebuild/Widen Neighborhood Street - Mathias Rd & Eves Rd (Subarea 2 frontage)	2,051	LF	\$871	\$1,786,421
	CIP	TSP Project M8 - Widen S Mathias Rd	1	EA	\$1,375,792	\$1,375,792
	CIP	TSP Projects P17 & B15 - Mathias Rd Sidewalks & Bicycle Lanes	1	EA	\$1,815,012	\$1,815,012
Transportation System Subtotal						\$16,786,896
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	4,897	LF	\$230	\$1,126,310
	R	Sanitary Sewer Trunk Main Line - 8-12"Ø PVC-3034	10,710	LF	\$230	\$2,463,300
	R (2-9)	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	5,360	LF	\$300	\$1,608,000
	S	Sanitary Sewer Force Main - 4"Ø C900 PVC	200	LF	\$180	\$36,000
	S	Service Laterals	116	EA	\$5,000	\$580,000
Wastewater System Subtotal						\$5,813,610
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	3,340	LF	\$185	\$617,900
	R(2,4)	Water Lines - 8"-10"Ø Class 900 PVC	1,312	LF	\$185	\$242,720
	R(2,3,4)	Water Lines - 12+"Ø Class 900 PVC	5,948	LF	\$220	\$1,308,560
	S	Water Services	116	EA	\$5,000	\$580,000
Water System Subtotal						\$2,749,180
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	4,897	LF	\$235	\$1,150,795
	R	Molalla Forest Road Storm Sewer Line - 18" Ø PVC-3034	10,710	LF	\$275	\$2,945,250
	S	Mathias Rd Bear Creek New Box Culverts	1	EA	\$600,000	\$600,000
	S	24"Ø Culvert	3	EA	\$10,000	\$30,000
Stormwater System Subtotal						\$4,726,045
Environmental						
	S	Wetland Mitigation	0.16	ACRE	\$425,000	\$67,936
	S	Water Work Temporary Management	1	LS	\$100,000	\$100,000
Environmental Subtotal						\$167,936
Total Construction Estimate						\$37,350,928
Contingency (15%)						\$5,602,639
Engineering (20%)						\$7,470,186
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$50,483,753

¹Category Codes:

S = Subarea-Specific. System costs within or fronting this subarea.

R = Regional. System costs required to serve this subarea which area also required to serve other subareas. Installation should be performed by whichever subarea develops first. Straight addition of these costs across subareas would result in double-counting.

CIP = Capital Improvement Projects. Projects identified in one of the master plans which would be triggered by the development.

No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$3,433,923	\$3,433,923
2	S	Temporary Protection and Direction of Traffic	1	LS	\$1,373,569	\$1,373,569
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$1,648,283	\$1,648,283
		General Construction Expenses Subtotal				\$6,455,774
Transportation System						
	S	New Local Street	3,558	LF	\$871	\$3,099,018
	S	New Local Cul-De-Sac	1	EA	\$125,000	\$125,000
	R (3, 5)	Widen Arterial - S Molalla Ave (Subarea 3 frontage)	1,297	LF	\$1,206	\$1,564,182
	S, CIP, R (2, 3, 4)	Rebuild Major Collector - Molalla Forest Road (Subarea 3 frontage, TSP P43 & M18)	2,330	LF	\$2,240	\$5,219,200
	CIP, R (2, 3, 4)	Rebuild Major Collector - Molalla Forest Road (East connection to Mathias Rd, TSP P43 & M18)	1,380	LF	\$2,240	\$3,091,200
	CIP, R (3, 4, 5)	TSP Projects P8 - S Molalla Ave sidewalk infill	1	EA	\$1,233,691	\$1,233,691
	CIP, R (3, 4, 5)	TSP Projects B11 - S Molalla Ave bicycle lanes	1	EA	\$671,748	\$671,748
		Transportation System Subtotal				\$15,004,039
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	3,078	LF	\$230	\$707,940
	S	Sanitary Sewer Force Main - 6"Ø Class 900 PVC	703	LF	\$180	\$126,540
	R	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	9,332	LF	\$300	\$2,799,600
	R (2-9)	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	5,360	LF	\$300	\$1,608,000
	S	Service Laterals	106	EA	\$5,000	\$530,000
	S	New Sanitary Sewer Pump Station	1	EA	\$750,000	\$750,000
		Wastewater System Subtotal				\$6,522,080
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	3,558	LF	\$185	\$658,230
	R(2,3,4)	Water Lines - 12+"Ø Class 900 PVC	3,735	LF	\$220	\$821,700
	S	Water Services	106	EA	\$5,000	\$530,000
		Water System Subtotal				\$2,009,930
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	3,078	LF	\$235	\$723,330
	R	Molalla Forest Road Storm Sewer Line - 18" Ø PVC-3034	9,332	LF	\$275	\$2,566,300
	S	24"Ø Culvert	7	EA	\$10,000	\$70,000
		Stormwater System Subtotal				\$3,359,630
Environmental						
		Wetland Mitigation	1.4	ACRE	\$425,000	\$575,701
		Water Work Temporary Management	0	LS	\$100,000	\$0
		Environmental Subtotal				\$575,701
Total Construction Estimate						\$33,927,155
Contingency (15%)						\$5,089,073
Engineering (20%)						\$6,785,431
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$45,861,659

¹Category Codes:

S = Subarea-Specific. System costs within or fronting this subarea.

R = Regional. System costs required to serve this subarea which area also required to serve other subareas. Installation should be performed by whichever subarea develops first. Straight addition of these costs across subareas would result in double-counting.

CIP = Capital Improvement Projects. Projects identified in one of the master plans which would be triggered by the development.

No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$6,642,453	\$6,642,453
2	S	Temporary Protection and Direction of Traffic	1	LS	\$2,656,981	\$2,656,981
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$3,188,377	\$3,188,377
General Construction Expenses Subtotal						\$12,487,812
Transportation System						
	S	Neighborhood Street	4,338	LF	\$871	\$3,778,398
	S	New Local Street	11,835	LF	\$871	\$10,308,285
	R (4, 5)	New Local Street	434	LF	\$871	\$378,014
	S	New Local Cul-De-Sac	1	EA	\$125,000	\$125,000
	R (4, 6)	Widen Arterial - S Molalla Ave (Subarea 4 frontage)	848	LF	\$1,206	\$1,022,688
	R (4, 5, 6)	Widen Arterial - S Molalla Ave (North connection to MFR)	854	LF	\$1,206	\$1,029,924
	S, CIP, R (2, 3, 4)	Rebuild Major Collector - Molalla Forest Road (Subarea 4 frontage, TSP P43 & M18)	1,729	LF	\$2,240	\$3,872,960
	CIP, R (3, 4, 5)	Rebuild Major Collector - Molalla Forest Road (West connection to S Molalla Ave, TSP P43 & M18)	601	LF	\$2,240	\$1,346,240
	CIP, R (3, 4)	Rebuild Major Collector - Molalla Forest Road (East connection to Mathias Rd, TSP P43 & M18)	1,381	LF	\$2,240	\$3,093,440
	S	Rebuild/Widen Neighborhood Street - Eves Rd	694	LF	\$871	\$604,474
	S	Rebuild/Widen County Road to 3/4 Minor Arterial - Sawtell Rd	2,358	LF	\$996	\$2,348,568
	CIP, R (3, 4, 5)	TSP Project P8 - S Molalla Ave sidewalk infill	1	EA	\$1,233,691	\$1,233,691
	CIP, R (3, 4, 5)	TSP Project B11 - S Molalla Ave bicycle lanes	1	EA	\$671,748	\$671,748
	CIP, R (4, 5, 6)	TSP Project M31 - S Molalla Ave/Molalla Forest Rd roundabout	1	EA	\$3,229,558	\$3,229,558
Transportation System Subtotal						\$33,042,988
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	13,327	LF	\$230	\$3,065,210
	R	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	9,332	LF	\$300	\$2,799,600
	R (2-9)	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	5,360	LF	\$300	\$1,608,000
	S	Service Laterals	289	EA	\$5,000	\$1,445,000
Wastewater System Subtotal						\$8,917,810
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	15,422	LF	\$185	\$2,853,070
	R(2,4,6)	Water Lines - 8"-10"Ø Class 900 PVC	2,971	LF	\$185	\$549,635
	R(2,3,4)	Water Lines - 12+"Ø Class 900 PVC	1,893	LF	\$220	\$416,460
	S	Water Services	289	EA	\$5,000	\$1,445,000
Water System Subtotal						\$5,264,165
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	13,327	LF	\$235	\$3,131,845
	R	Molalla Forest Road Storm Sewer Line - 18" Ø PVC-3034	9,332	LF	\$275	\$2,566,300
	S	24"Ø Culvert	2	EA	\$10,000	\$20,000
	S	Outfall	1	EA	\$25,000	\$25,000
Stormwater System Subtotal						\$5,743,145
Environmental						
		Wetland Mitigation	0.17	ACRE	\$425,000	\$71,516
		Water Work Temporary Management	1	LS	\$100,000	\$100,000
Environmental Subtotal						\$171,516
Total Construction Estimate						\$65,627,436
Contingency (15%)						\$9,844,115
Engineering (20%)						\$13,125,487
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$88,657,039

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No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$6,047,817	\$6,047,817
2	S	Temporary Protection and Direction of Traffic	1	LS	\$2,419,127	\$2,419,127
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$2,902,952	\$2,902,952
		General Construction Expenses Subtotal				\$11,369,896
Transportation System						
	S	New Neighborhood Street	1,247	LF	\$871	\$1,086,137
	S	New Local Street	8,086	LF	\$871	\$7,042,906
	R (4, 5)	New Local Street	434	LF	\$871	\$378,014
	R (5, 7)	New Local Street - Subarea 5-7 interface	511	LF	\$871	\$445,081
	S	New Local Cul-De-Sac	3	EA	\$125,000	\$375,000
	S, R (4, 5, 6)	Widen Arterial - S Molalla Ave (Subarea 5 W frontage)	854	LF	\$1,206	\$1,029,924
	S, CIP, R (3, 4, 5)	Rebuild Major Collector - Molalla Forest Road (Subarea 5 E frontage, TSP P43 & M18)	601	LF	\$500	\$300,500
	S, CIP, R (5, 7, 8)	Rebuild Major Collector - Molalla Forest Road (Subarea 5 frontage, TSP P43 & M18)	2,144	LF	\$2,240	\$4,802,560
	CIP, R (5, 7, 8)	Rebuild Major Collector - Molalla Forest Road (West connection to Ona Way, TSP P43 & M18)	3,479	LF	\$2,240	\$7,792,960
	R (5, 6)	Rebuild/Widen Minor Collector - Warrick Rd	2,300	LF	\$1,109	\$2,550,700
	CIP, R (3, 4, 5)	TSP Projects P8 - S Molalla Ave sidewalk infill	1	EA	\$1,233,691	\$1,233,691
	CIP, R (3, 4, 5)	TSP Projects B11 - S Molalla Ave bicycle lanes	1	EA	\$671,748	\$671,748
	CIP, R (4, 5, 6)	TSP Project M31 - S Molalla Ave/Molalla Forest Rd roundabout	1	EA	\$3,229,558	\$3,229,558
		Transportation System Subtotal				\$30,938,779
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	8,736	LF	\$230	\$2,009,280
	R	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	7,603	LF	\$300	\$2,280,900
	R (2-9)	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	5,360	LF	\$300	\$1,608,000
	S	Service Laterals	235	EA	\$5,000	\$1,175,000
		Wastewater System Subtotal				\$7,073,180
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	9,822	LF	\$185	\$1,817,070
	R(5,6)	Water Lines - 8"-10"Ø Class 900 PVC	2,555	LF	\$185	\$472,675
	R(5,7,8)	Water Lines - 12+"Ø Class 900 PVC	7,222	LF	\$220	\$1,588,840
	S	Water Services	235	EA	\$5,000	\$1,175,000
		Water System Subtotal				\$5,053,585
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	8,736	LF	\$235	\$2,052,960
	R	Molalla Forest Road Storm Sewer Line - 18" Ø PVC-3034	7,603	LF	\$275	\$2,090,825
	S	24"Ø Culvert	4	EA	\$10,000	\$40,000
		Stormwater System Subtotal				\$4,183,785
Environmental						
		Wetland Mitigation	2.7	ACRE	\$425,000	\$1,133,206
		Water Work Temporary Management	0	LS	\$100,000	\$0
		Environmental Subtotal				\$1,133,206
Total Construction Estimate						\$59,752,431
Contingency (15%)						\$8,962,865
Engineering (20%)						\$11,950,486
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$80,725,782

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No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$4,404,236	\$4,404,236
2	S	Temporary Protection and Direction of Traffic	1	LS	\$1,761,694	\$1,761,694
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$2,114,033	\$2,114,033
		General Construction Expenses Subtotal				\$8,279,964
Transportation System						
	S	New Neighborhood Street	3,217	LF	\$871	\$2,802,007
	S	New Local Street	8,930	LF	\$871	\$7,778,030
	S	New Local Cul-De-Sac	3	EA	\$125,000	\$375,000
	R (4, 6)	Rebuild/Widen Arterial - S Molalla Ave (Subarea 6 frontage)	848	LF	\$1,297	\$1,099,856
	S	Rebuild/Widen County Road to 3/4 Major Arterial - S Molalla Ave (Subarea 6 frontage)	641	LF	\$996	\$638,436
	R (4, 5, 6)	Rebuild/Widen Arterial - S Molalla Ave (North connection to MFR)	854	LF	\$1,297	\$1,107,638
	R (5, 6)	Rebuild/Widen Minor Collector - Warrick Rd	2,300	LF	\$1,109	\$2,550,700
	R (6, 7)	Rebuild/Widen Minor Collector - Warrick Rd	229	LF	\$871	\$199,459
	CIP, R (4, 5, 6)	TSP Project M31 - S Molalla Ave/Molalla Forest Rd roundabout	1	EA	\$3,229,558	\$3,229,558
		Transportation System Subtotal				\$19,780,684
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	12,226	LF	\$230	\$2,811,980
	R (5,6,7)	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	1,188	LF	\$230	\$273,240
	R	Sanitary Sewer Trunk Main Line - 15+Ø PVC-3034	4,654	LF	\$300	\$1,396,200
	R (2-9)	Sanitary Sewer Trunk Main Line - 15+Ø PVC-3034	5,360	LF	\$300	\$1,608,000
	S	Service Laterals	215	EA	\$5,000	\$1,075,000
		Wastewater System Subtotal				\$7,164,420
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	9,822	LF	\$185	\$1,817,070
	R(5,6)	Water Lines - 8"-10"Ø Class 900 PVC	2,555	LF	\$185	\$472,675
	R(4,5,6)	Water Lines - 12+Ø Class 900 PVC	1,894	LF	\$220	\$416,680
	S	Water Services	215	EA	\$5,000	\$1,075,000
		Water System Subtotal				\$3,781,425
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	13,414	LF	\$235	\$3,152,290
	R	Molalla Forest Road Storm Sewer Line - 18" Ø PVC-3034	4,654	LF	\$275	\$1,279,850
	S	24"Ø Culvert	6	EA	\$10,000	\$60,000
		Stormwater System Subtotal				\$4,492,140
Environmental						
		Wetland Mitigation	0.04	ACRE	\$425,000	\$15,220
		Water Work Temporary Management	0	LS	\$100,000	\$0
		Environmental Subtotal				\$15,220
Total Construction Estimate						\$43,513,853
Contingency (15%)						\$6,527,078
Engineering (20%)						\$8,702,771
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$58,803,702

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No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$5,699,969	\$5,699,969
2	S	Temporary Protection and Direction of Traffic	1	LS	\$2,279,988	\$2,279,988
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$2,735,985	\$2,735,985
General Construction Expenses Subtotal						\$10,715,943
Transportation System						
	S	New Minor Collector - W Warrick Rd extension (Subarea 7 frontage)	1,655	LF	\$1,109	\$1,835,395
	R (7, 8)	New Minor Collector - W Warrick Rd extension (W connection to Ona Way)	800	LF	\$1,109	\$887,200
	R (7, 8)	New Neighborhood Street - W connection to Ona Way	920	LF	\$871	\$801,320
	S	New Local Street	8,595	LF	\$871	\$7,486,245
	R (5, 7)	New Local Street - Subarea 5-7 interface	511	LF	\$871	\$445,081
	S	New Local Street	772	LF	\$871	\$672,412
	R (7, 8)	New Local Street - Subarea 7-8 interface	820	LF	\$871	\$714,220
	S	New Local Cul-De-Sac	5	EA	\$125,000	\$625,000
	S, CIP, R (5, 7, 8)	Rebuild Major Collector - Molalla Forest Road (Subarea 7 frontage, TSP P43 & M18)	2,660	LF	\$2,240	\$5,958,400
	CIP, R (5, 7, 8)	Rebuild Major Collector - Molalla Forest Road (West connection to Ona Way, TSP P43 & M18)	819	LF	\$2,240	\$1,834,560
	CIP, R (5, 7)	Rebuild Major Collector - Molalla Forest Road (East connection to S Molalla Ave, TSP P43 & M18)	854	LF	\$2,240	\$1,912,960
	R (6, 7)	Rebuild/Widen Minor Collector - E Warrick Rd	229	LF	\$547	\$125,263
	CIP, R (7, 8, 9)	TSP project M16 - Improve Molalla Forest Rd - from Ona Way to Main St	1,353	LF	\$2,240	\$3,030,720
	CIP, R (7, 8, 9)	Ona Way/Molalla Forest Rd roundabout (Alternative to TSP Project M16, 5-way intersection)	1	EA	\$3,229,558	\$3,229,558
Transportation System Subtotal						\$29,558,334
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	9,755	LF	\$230	\$2,243,650
	R	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	4,859	LF	\$300	\$1,457,700
	R (2-9)	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	5,360	LF	\$300	\$1,608,000
	S	Service Laterals	266	EA	\$5,000	\$1,330,000
Wastewater System Subtotal						\$6,639,350
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	7,463	LF	\$185	\$1,380,655
	R(6,7)	Water Lines - 8"-10"Ø Class 900 PVC	1,656	LF	\$185	\$306,360
	R(5,7,8)	Water Lines - 12+"Ø Class 900 PVC	5,664	LF	\$220	\$1,246,080
	S	Water Services	266	EA	\$5,000	\$1,330,000
Water System Subtotal						\$4,263,095
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	9,755	LF	\$235	\$2,292,425
	R	Molalla Forest Road Storm Sewer Line - 18" Ø PVC-3034	4,859	LF	\$275	\$1,336,225
	S	24"Ø Culvert	6	EA	\$10,000	\$60,000
Stormwater System Subtotal						\$3,688,650
Environmental						
		Wetland Mitigation	3.4	ACRE	\$425,000	\$1,450,327
		Water Work Temporary Management	0	LS	\$100,000	\$0
Environmental Subtotal						\$1,450,327
Total Construction Estimate						\$56,315,699
Contingency (15%)						\$8,447,355
Engineering (20%)						\$11,263,140
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$76,086,193

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No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$4,087,041	\$4,087,041
2	S	Temporary Protection and Direction of Traffic	1	LS	\$1,634,816	\$1,634,816
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$1,961,780	\$1,961,780
		General Construction Expenses Subtotal				\$7,683,637
Transportation System						
	S, R (8, 9)	New Minor Collector - Ona Way (Subarea 8 frontage)	2,768	LF	\$1,109	\$3,069,712
	S, R (7, 8)	New Minor Collector - Warrick Rd extension (Subarea 8 frontage)	800	LF	\$1,109	\$887,200
	S, R (7, 8)	New Neighborhood Street	920	LF	\$871	\$801,320
	S	New Local Street	7,007	LF	\$871	\$6,103,097
	R (7, 8)	New Local Street - Subarea 7-8 interface	820	LF	\$871	\$714,220
	S	New Local Cul-De-Sac	2	EA	\$125,000	\$250,000
	S, CIP, R (5, 7, 8)	Rebuild Major Collector - Molalla Forest Road (Subarea 8 frontage, TSP P43 & M18)	819	LF	\$2,240	\$1,834,560
	R (8, 9)	Rebuild Minor Collector - Ona Way (North connection to Main St)	1,236	LF	\$1,109	\$1,370,724
	CIP, R (7, 8, 9)	TSP project M16 - Improve Molalla Forest Rd - from Ona Way to Main St	1,353	LF	\$2,240	\$3,030,720
	CIP, R (7, 8, 9)	Ona Way/Molalla Forest Rd roundabout (Alternative to TSP Project M16, 5-way intersection)	1	EA	\$3,229,558	\$3,229,558
		Transportation System Subtotal				\$21,291,111
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	9,084	LF	\$230	\$2,089,320
	R	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	2,198	LF	\$300	\$659,400
	R (2-9)	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	5,360	LF	\$300	\$1,608,000
	S	Service Laterals	171	EA	\$5,000	\$855,000
		Wastewater System Subtotal				\$5,211,720
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	8,297	LF	\$185	\$1,534,945
	R(8,9)	Water Lines - 8"-10"Ø Class 900 PVC	3,419	LF	\$185	\$632,515
	R(7,8)	Water Lines - 12+"Ø Class 900 PVC	967	LF	\$220	\$212,740
	S	Water Services	171	EA	\$5,000	\$855,000
		Water System Subtotal				\$3,235,200
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	9,084	LF	\$235	\$2,134,740
	R	Molalla Forest Road Storm Sewer Line - 18" Ø PVC-3034	2,198	LF	\$275	\$604,450
	S	24"Ø Culvert	4	EA	\$10,000	\$40,000
		Stormwater System Subtotal				\$2,779,190
Environmental						
		Wetland Mitigation	0.42	ACRE	\$425,000	\$179,108
		Water Work Temporary Management	0	LS	\$100,000	\$0
		Environmental Subtotal				\$179,108
Total Construction Estimate						\$40,379,966
Contingency (15%)						\$6,056,995
Engineering (20%)						\$8,075,993
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$54,572,954

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No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$4,355,370	\$4,355,370
2	S	Temporary Protection and Direction of Traffic	1	LS	\$1,742,148	\$1,742,148
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$2,090,578	\$2,090,578
		General Construction Expenses Subtotal				\$8,188,095
Transportation System						
	R (8, 9)	New Minor Collector - Ona Way (Subarea 9 frontage)	2,768	LF	\$1,109	\$3,069,712
	S	New Neighborhood Street	4,005	LF	\$871	\$3,488,355
	S	New Local Street	9,317	LF	\$871	\$8,115,107
	S	New Local Cul-De-Sac	1	EA	\$125,000	\$125,000
	R (8, 9)	Rebuild Minor Collector - Ona Way (North connection to Main St)	1,236	LF	\$1,109	\$1,370,724
	CIP, R (7, 8, 9)	TSP project M16 - Improve Molalla Forest Rd - from Ona Way to Main St	1,353	LF	\$1,297	\$1,754,841
	CIP, R (7, 8, 9)	Ona Way/Molalla Forest Rd roundabout (Alternative to TSP Project M16, 5-way intersection)	1	EA	\$3,229,558	\$3,229,558
		Transportation System Subtotal				\$21,153,297
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	11,745	LF	\$230	\$2,701,350
	R	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	1,381	LF	\$300	\$414,300
	R (2-9)	Sanitary Sewer Trunk Main Line - 15+"Ø PVC-3034	5,360	LF	\$300	\$1,608,000
	S	Service Laterals	318	EA	\$5,000	\$1,590,000
		Wastewater System Subtotal				\$6,313,650
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	11,040	LF	\$185	\$2,042,400
	R(8,9)	Water Lines - 8"-10"Ø Class 900 PVC	2,629	LF	\$185	\$486,365
	S	Water Services	318	EA	\$5,000	\$1,590,000
		Water System Subtotal				\$4,118,765
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	11,745	LF	\$235	\$2,760,075
	R	Molalla Forest Road Storm Sewer Line - 18" Ø PVC-3034	1,381	LF	\$275	\$379,775
	S	24"Ø Culvert	8	EA	\$10,000	\$80,000
		Stormwater System Subtotal				\$3,219,850
Environmental						
		Wetland Mitigation	0.09	ACRE	\$425,000	\$37,397
		Water Work Temporary Management	0	LS	\$100,000	\$0
		Environmental Subtotal				\$37,397
Total Construction Estimate						\$43,031,055
Contingency (15%)						\$6,454,658
Engineering (20%)						\$8,606,211
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$58,151,924

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No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$16,052,152	\$16,052,152
2	S	Temporary Protection and Direction of Traffic	1	LS	\$6,420,861	\$6,420,861
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$7,705,033	\$7,705,033
		General Construction Expenses Subtotal				\$30,178,045
Transportation System²						
	S	New Major Collector	903	LF	\$1,297	\$1,171,191
	S	New Minor Collector	9,575	LF	\$1,109	\$10,618,675
	S	New Neighborhood Street	6,597	LF	\$871	\$5,745,987
	S	New Local Street	29,212	LF	\$871	\$25,443,652
	S	New Local Cul-De-Sac	12	EA	\$125,000	\$1,500,000
	S	Rebuild/Widen County Road to Major Arterial - Toliver Rd	10,620	LF	\$1,206	\$12,807,720
	S, CIP	Highway Frontage Improvements & TSP Project M1 - OR 213 widening	11,082	LF	\$ 2,346	\$25,998,372
	CIP	TSP Projects P26 & B35 - OR 213 enhanced bike/ped crossings	1	EA	\$226,069	\$226,069
	S, CIP	TSP Project P1 - OR 213 sidewalk infill	1	EA	\$1,601,861	\$1,601,861
		Transportation System Subtotal				\$85,113,527
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	39,626	LF	\$230	\$9,113,980
	S	Sanitary Sewer Main Line - 15"Ø PVC-3034	1,631	LF	\$300	\$489,300
	S	Sanitary Sewer Force Main - 6"Ø C900 PVC	1,211	LF	\$180	\$217,980
	S	Sanitary Sewer Force Main - 12"Ø C900 PVC	2,200	LF	\$300	\$660,000
	S	Service Laterals	1,003	EA	\$5,000	\$5,015,000
	S	New Sanitary Sewer Pump Station North (0.42 mgd)	1	EA	\$500,000	\$500,000
	S	New Sanitary Sewer Pump Station South (1.68 mgd)	1	EA	\$1,750,000	\$1,750,000
		Wastewater System Subtotal				\$17,746,260
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	46,914	LF	\$185	\$8,679,090
	R (13,14)	Water Lines - 8"-10"Ø Class 900 PVC	2,700	LF	\$185	\$499,500
	S	Water Services	1,003	EA	\$5,000	\$5,015,000
		Water System Subtotal				\$14,193,590
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	41,257	LF	\$235	\$9,695,395
	S	OR 213 Storm Sewer Line - 18" Ø PVC-3034	3,340	LF	\$275	\$918,500
	S	24"Ø Culvert	12	EA	\$10,000	\$120,000
	S	Outfall	1	EA	\$25,000	\$25,000
		Stormwater System Subtotal				\$10,758,895
Environmental						
		Wetland Mitigation	0.95	ACRE	\$425,000	\$404,940
		Water Work Temporary Management	1	LS	\$200,000	\$200,000
		Environmental Subtotal				\$604,940
Total Construction Estimate						\$158,595,257
Contingency (15%)						\$23,789,289
Engineering (20%)						\$31,719,051
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$214,163,597

¹Category Codes:

S = Subarea-Specific. System costs within or fronting this subarea.

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CIP = Capital Improvement Projects. Projects identified in one of the master plans which would be triggered by the development.

²Capacity increase of the existing Toliver Road roundabout may be required. This will require a determination by ODOT. Potential costs are not well understood and are excluded.

No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$3,795,919	\$3,795,919
2	S	Temporary Protection and Direction of Traffic	1	LS	\$1,518,368	\$1,518,368
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$1,822,041	\$1,822,041
		General Construction Expenses Subtotal				\$7,136,328
Transportation System²						
	S	New Minor Collector	2,256	LF	\$1,109	\$2,501,904
	S	New Neighborhood Street	2,569	LF	\$871	\$2,237,599
	R (14, 15)	New Neighborhood Street - June Dr to Vick Rd - Subarea 14-15 interface	1,465	LF	\$871	\$1,276,015
	S	New Local Street	5,637	LF	\$871	\$4,909,827
	S	New Local Cul-De-Sac	1	EA	\$125,000	\$125,000
	S, R (14, 15)	Rebuild/Widen County Road to 3/4 Major Arterial - Vick Rd (Subarea 14 frontage)	2,040	LF	\$996	\$2,031,840
	CIP	TSP Project P1 - OR213 sidewalk infill	1	EA	\$1,601,861	\$1,601,861
	CIP	TSP Projects P26 & B35 - OR 213 enhanced bike/ped crossings	1	EA	\$226,069	\$226,069
	S, CIP	Highway Frontage Improvements & TSP Project M1 - OR 213 widening	1,362	LF	\$ 2,346.00	\$3,195,252
		Transportation System Subtotal				\$18,105,367
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	7,850	LF	\$230	\$1,805,500
	R (14,15)	Sanitary Sewer Trunk Main Line - 8"-12"Ø PVC-3034	2,095	LF	\$230	\$481,850
	R (14,15,16)	Sanitary Sewer Trunk Main Line - 15"-18"Ø PVC-3034	3,540	LF	\$300	\$1,062,000
	R (14,15,16)	Sanitary Sewer Force Main - 4"Ø Class 900 PVC	924	LF	\$180	\$166,320
	S	Service Laterals	245	EA	\$5,000	\$1,225,000
	R (14,15,16)	New Sanitary Sewer Pump Station (0.3 mgd)	1	EA	\$500,000	\$500,000
		Wastewater System Subtotal				\$5,240,670
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	12,274	LF	\$185	\$2,270,690
	R (13,14)	Water Lines - 8"-10"Ø Class 900 PVC	2,700	LF	\$185	\$499,500
	R (14,15)	Water Lines - 8"-10"Ø Class 900 PVC	1,794	LF	\$185	\$331,890
	S	Water Services	245	EA	\$5,000	\$1,225,000
		Water System Subtotal				\$4,327,080
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	7,850	LF	\$235	\$1,844,750
	S	Creamery Creek Culvert - 2x48"Ø	3	EA	\$50,000	\$150,000
	S	OR 213 Storm Sewer Line - 18" Ø PVC-3034	1,400	LF	\$275	\$385,000
	R (14,15,16)	Creamery Creek Culvert - Vick Rd & 213 - 2x60"Ø	2	EA	\$50,000	\$100,000
		Stormwater System Subtotal				\$2,479,750
Environmental						
		Wetland Mitigation	0.27	ACRE	\$425,000	\$114,485
		Water Work Temporary Management	1	LS	\$100,000	\$100,000
		Environmental Subtotal				\$214,485
Total Construction Estimate						\$37,503,679
Contingency (15%)						\$5,625,552
Engineering (20%)						\$7,500,736
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$50,689,967

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CIP = Capital Improvement Projects. Projects identified in one of the master plans which would be triggered by the development.

²Capacity increase of the existing Toliver Road roundabout may be required. This will require a determination by ODOT. Potential costs are not well understood and are excluded.

No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$3,257,774	\$3,257,774
2	S	Temporary Protection and Direction of Traffic	1	LS	\$1,303,110	\$1,303,110
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$1,563,732	\$1,563,732
		General Construction Expenses Subtotal				\$6,124,615
Transportation System						
	S	New Minor Collector	1,498	LF	\$2,240	\$3,355,520
	R (15, 16)	New Minor Collector	1,196	LF	\$2,240	\$2,679,040
	S	New Neighborhood Street	1,291	LF	\$871	\$1,124,461
	R (14, 15)	New Neighborhood Street - June Dr to Vick Rd - Subarea 14-15 interface	1,465	LF	\$871	\$1,276,015
	S	New Local Street	3,469	LF	\$871	\$3,021,499
	S	New Local Cul-De-Sac	0	EA	\$125,000	\$0
	S	Rebuild/Widen County Road to 3/4 Major Arterial - Vick Rd (Subarea 15 frontage)	3,126	LF	\$996	\$3,113,496
	R (14, 15)	Rebuild/Widen County Road to 3/4 Major Arterial - Vick Rd (Subarea 14 frontage)	2,040	LF	\$996	\$2,031,840
		Transportation System Subtotal				\$16,601,871
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	6,617	LF	\$230	\$1,521,910
	R (14, 15, 16)	Sanitary Sewer Trunk Main Line - 8"-12"Ø PVC-3034	3,110	LF	\$230	\$715,300
	R (14, 15, 16)	Sanitary Sewer Trunk Main Line - 15"-18"Ø PVC-3034	3,540	LF	\$300	\$1,062,000
	R (14, 15, 16)	Sanitary Sewer Force Main - 6"Ø Class 900 PVC	924	LF	\$180	\$166,320
	S	Service Laterals	151	EA	\$5,000	\$755,000
	R (14, 15, 16)	New Sanitary Sewer Pump Station	1	EA	\$500,000	\$500,000
		Wastewater System Subtotal				\$4,720,530
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	7,343	LF	\$185	\$1,358,455
	R (14, 15)	Water Lines - 8"-10"Ø Class 900 PVC	2,700	LF	\$185	\$499,500
	R (15, 16)	Water Lines - 8"-10"Ø Class 900 PVC	1,007	LF	\$185	\$186,295
	S	Water Services	151	EA	\$5,000	\$755,000
		Water System Subtotal				\$2,799,250
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	6,617	LF	\$235	\$1,554,995
	S	Creamery Creek Culvert - 2x48"Ø	2	EA	\$50,000	\$100,000
	R (14, 15, 16)	Creamery Creek Culvert - Vick Rd & 213 - 2x60"Ø	2	EA	\$50,000	\$100,000
		Stormwater System Subtotal				\$1,754,995
Environmental						
		Wetland Mitigation	0.20	ACRE	\$425,000	\$85,546
		Water Work Temporary Management	1	LS	\$100,000	\$100,000
		Environmental Subtotal				\$185,546
Total Construction Estimate						\$32,186,808
Contingency (15%)						\$4,828,021
Engineering (20%)						\$6,437,362
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$43,512,190

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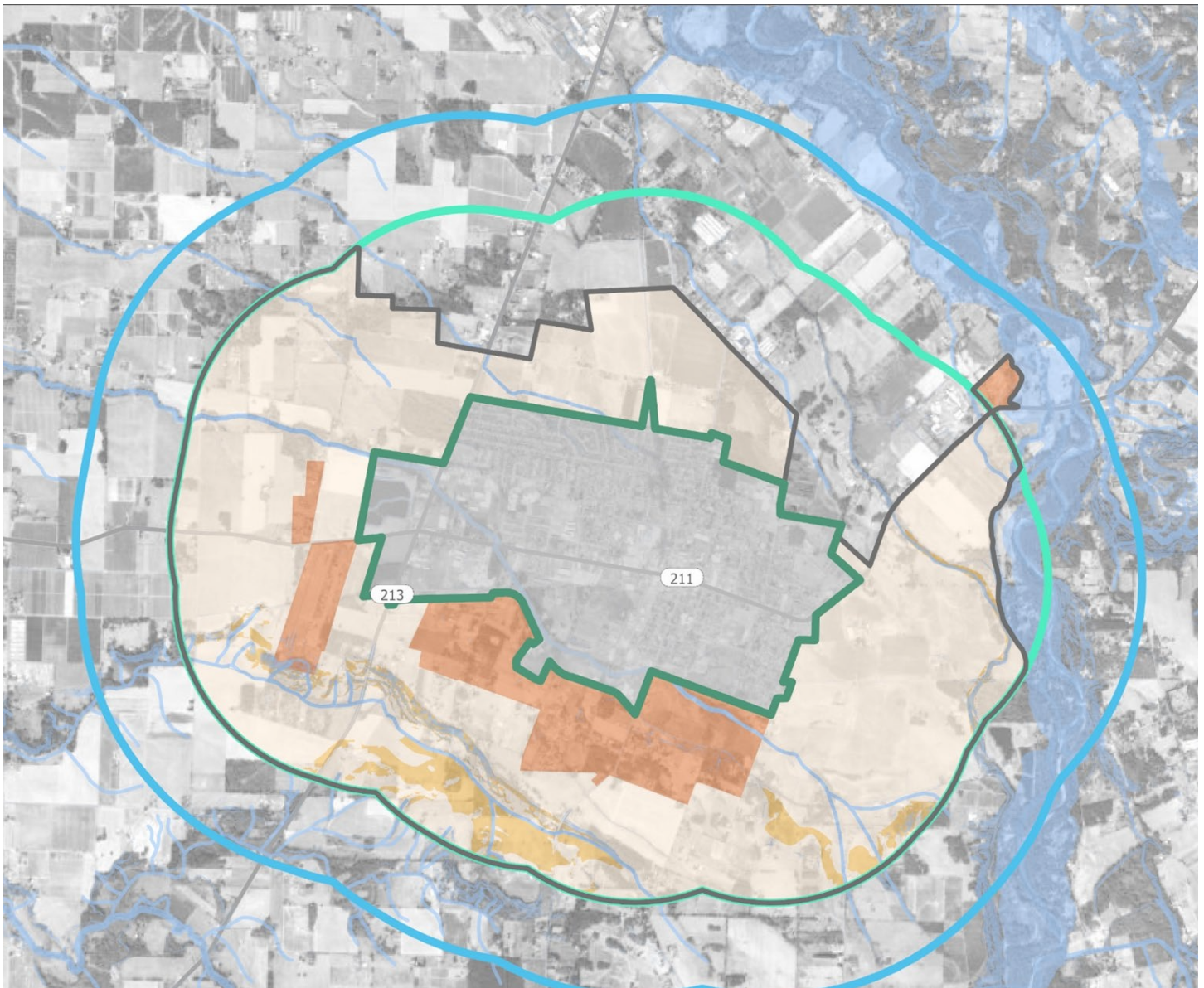
No.	Category ¹	Description	Qty	Unit	Unit Cost	Total Cost
General Construction Expenses						
1	S	Construction Facilities & Temporary Controls	1	LS	\$2,446,457	\$2,446,457
2	S	Temporary Protection and Direction of Traffic	1	LS	\$978,583	\$978,583
3	S	Miscellaneous Demolition & Site Preparation	1	LS	\$1,174,299	\$1,174,299
General Construction Expenses Subtotal						\$4,599,338
Transportation System						
	S	New Minor Collector	1,154	LF	\$1,109	\$1,279,786
	S	New Neighborhood Street	1,334	LF	\$871	\$1,161,914
	S	New Local Street	5,616	LF	\$871	\$4,891,536
	S	New Local Cul-De-Sac	0	EA	\$125,000	\$0
	S	Rebuild/Widen County Road to 3/4 Major Arterial - Vick Rd (Subarea 16 frontage)	1,520	LF	\$996	\$1,513,920
	S	Widening - Vick Rd undeveloped county segment - E connection to N Molalla Ave	1,986	LF	\$547	\$1,086,342
Transportation System Subtotal						\$9,933,498
Wastewater System						
	S	Sanitary Sewer Main Line - 8"-12"Ø PVC-3034	6,612	LF	\$230	\$1,520,760
	R (14,15,16)	Sanitary Sewer Trunk Main Line - 8"-12"Ø PVC-3034	4,638	LF	\$230	\$1,066,740
	R (14,15,16)	Sanitary Sewer Main Line - 15"-18"Ø PVC-3034	3,540	LF	\$300	\$1,062,000
	R (14,15,16)	Sanitary Sewer Force Main - 6"Ø Class 900 PVC	924	LF	\$180	\$166,320
	S	Service Laterals	148	EA	\$5,000	\$740,000
	R (14,15,16)	New Sanitary Sewer Pump Station	1	EA	\$500,000	\$500,000
Wastewater System Subtotal						\$5,055,820
Water System						
	S	Water Lines - 8"-10"Ø Class 900 PVC	11,019	LF	\$185	\$2,038,515
	S	Water Services	148	EA	\$5,000	\$740,000
Water System Subtotal						\$2,778,515
Stormwater System						
	S	Storm Sewer Line - 12" Ø PVC-3034	6,612	LF	\$235	\$1,553,820
	S	Creamery Creek Culvert - 2x48"Ø	1	EA	\$50,000	\$50,000
	R (14,15,16)	Creamery Creek Culvert - Vick Rd & 213 - 2x60"Ø	2	EA	\$50,000	\$100,000
Stormwater System Subtotal						\$1,703,820
Environmental						
		Wetland Mitigation	0	ACRE	\$425,000	\$0
		Water Work Temporary Management	1	LS	\$100,000	\$100,000
Environmental Subtotal						\$100,000
Total Construction Estimate						\$24,170,991
Contingency (15%)						\$3,625,649
Engineering (20%)						\$4,834,198
Wetland Delineation & Environmental Permitting						\$60,000
Project Total						\$32,690,838

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CIP = Capital Improvement Projects. Projects identified in one of the master plans which would be triggered by the development.



Urban Growth Boundary Goal 14 Analysis

City of Molalla: June 2025 Draft

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Executive Summary

The City of Molalla has experienced consistent population growth over the last twenty years, prompting the need to identify economic and residential growth trends and opportunities as required by state law. These are documented by the 2025 Molalla Economic Opportunity Analysis (EOA), presented with a Buildable Lands Inventory (BLI) included as an appendix to the EOA, and the 2023 Molalla Housing Needs Analysis (HNA). These documents identify a land deficit to accommodate 20-years of growth within the current Urban Growth Boundary (UGB).

The HNA found a deficit of 1,996 housing units by 2042. Completion of high-density pipeline developments and recent rezoning efforts brought that deficit down to **929 housing units** or approximately **182.29 acres** for predominantly low density (R1) and some medium density (R2) housing units.

In addition, the EOA found:

- *While there is surplus of industrial land measured in gross acres, this land is mostly found in fragmented smaller sites. This means that there is a finding of need for additional industrial land and sites to meet the identified community goals. There is a need for additional sites of 5+, 10+ and 20+ acres for commercial users, and 10+, 20+ and 30+ acres for industrial users. (pg. 45)*
- **Molalla needs 23 sites across 121 acres of employment land.**

Calculating the total land needed for UGB expansion includes a 25% allocation of land added to the residential land need for infrastructure, including roadway and utility easements and parks. For Molalla, 45.57 additional acres will be needed for infrastructure, resulting in a total expansion of **227.86 acres** for residential and approximately 121 acres of industrial to accommodate twenty years of growth.

In accordance with the policy framework adopted by the State of Oregon, Molalla excluded appropriate lands from the Preliminary Study Area and identified land considered first priority for inclusion into an expansion of the UGB. First priority lands include non-resource and exception lands that are not designated as rural reserves. Molalla has approximately 580 acres of first priority exception land adjacent to the southern border of the existing UGB boundary.

The community in Molalla values farmland as an important resource in the region and an asset of great significance within the state. Oregon rules require that cities engaging in UGB expansions of this scale follow detailed instructions to prioritize land to be included within the UGB and thus removed from exclusive farming protections. Rules include soil types and capability classes and require a wide-ranging analysis on the urbanization of land. Capability classes group soils based on general suitability for the uses common on farms and ranches. UGB analysis considers the existing uses and the suitability of future uses of land.

The urbanization analysis, known as the Goal 14 Boundary Location Factors in Statewide Planning Goal 14, determine the following:

- How efficient will the accommodation of identified land be?



- How orderly and economically sound will the provision of public facilities and services be to meet the land need?
- What are the comparative environmental, energy, economic, and social consequences to meet the land need?
- How compatible is the urbanization of land with surrounding and nearby agricultural and forest activities?

Apart from the need for 2 industrial parcels over 20 acres each, the entire land deficit can be satisfied within the first priority exception land to the south, identified in this report as Subareas 1-7.

If the city finds that the 2 remaining large industrial parcels cannot be made by combining adjacent parcels with shared ownership within the remaining first priority land, Molalla may elect to expand the UGB to include two parcels of fourth priority land, identified in this report as Subareas 8-19, based on a specific site characteristic of parcel size under OAR 660-024-0065(3), in accordance with the Goal 14 Location Factors applied in this report, and with an obligation to maintain the parcel characteristics making these parcels suitable for the industrial development considered in the EOA (parcel size). ¹

1. Introduction

From 2000-2020, Molalla's growth rate (nearly 80%) far exceeded the county and state at large (25%). Molalla has continued to grow since 2020 with the development of multi-family housing likely putting current population around 11,000 people. As such, growth has been roughly tripling that seen in the county and state at large. Population growth is driving the urgency to bring land into the UGB that can develop quickly to ease current economic pressures on Molalla's housing market, which is outpacing surrounding areas and threatening housing affordability in Molalla.

. According to Portland State University's Population Research Center (PRC), the trend will continue. The 2022 PRC forecast for Molalla shows the population within Molalla's Urban Growth Boundary (UGB) increasing by approximately 5,400 new residents by the year 2042, bringing the total to just over 15,600.

¹OAR 660-024-0065 Establishment of Study Area to Evaluate Land for Inclusion in the UGB **(3)**When the primary purpose for expansion of the UGB is to accommodate a particular industrial use that requires specific site characteristics, or to accommodate a public facility that requires specific site characteristics, and the site characteristics may be found in only a small number of locations, the preliminary study area may be limited to those locations within the distance described in section (1) or (2), whichever is appropriate, that have or could be improved to provide the required site characteristics. For purposes of this section:(a)The definition of "site characteristics" in OAR 660-009-0005 (Definitions)(11) applies for purposes of identifying a particular industrial use. OAR 660-009-005(11) "Site Characteristics" means the attributes of a site necessary for a particular industrial or other employment use to operate. Site characteristics include, but are not limited to, a minimum acreage or site configuration including shape and topography, visibility, specific types or levels of public facilities, services or energy infrastructure, or proximity to a particular transportation or freight facility such as rail, marine ports and airports, multimodal freight or transshipment facilities, and major transportation routes.



The City's Housing Needs Analysis (HNA) identifies a need for 1,996 housing units (289 acres²), not including land for infrastructure, schools, parks, and other public facilities. Since the HNA was drafted, 287 units of high density units have been completed, lowering the overall number of housing units needed. Rezoning undeveloped industrial land to primarily R2, with small amounts of both R1 and R3 land, has created 42.6 additional acres of residential land and expanded the capacity for residential development within the existing UGB.³

The BLI attached to the EOA calculated housing capacity based on the Safe Harbor assumption of 7 units per residential acre. Those figures were recalculated based on average density by zone to assess the true impact of the city's rezoning efforts. Calculations are attached here as **Appendix A**.

The resulting land need includes the following:

- 894 R1 units (223.57 acres) and
- 34 R2 units (4.29 acres), including land for infrastructure.

Molalla's 2025 Economic Opportunities Analysis (EOA) identifies a deficit of large industrial parcels to meet employment land needs through 2043. The City is seeking to include:

- 2 sites over 20 acres each,
- 4 sites in the 10-20 acre range, and
- 4 sites in the 5-10 acre range.

Policy Framework

Statewide Planning Goal 14: Urbanization guides UGB expansions in Oregon. The purpose of Goal 14 is "to provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities."

To amend an urban growth boundary, a city must complete a boundary location analysis, comparing alternative locations and considering which addition to the UGB will result in the most accommodating and cost-effective boundary, while creating the fewest conflicts with neighboring land uses, and causing the fewest negative environmental and economic impacts.

Oregon Administrative Rule (OAR) 660-024 regulates how to establish a study area to evaluate land for inclusion in the UGB and the priority of land for inclusion in the UGB. In addition, the four boundary location factors of Goal 14 must be applied. Molalla has also enrolled in the Sequential Method for UGB expansions. Oregon Administrative Rule (OAR) 660-025-0185 and Oregon Revised Statutes (ORS) 197.626(3) govern the Sequential Method.

² HNA allocated need between residential zones R1 (1,098 units at 5 units an acre or 220 acres), R2 (499 units at 10 units per acre or 50 acres), and R3 (399 units at 20 units per acre or 20 acres).

³ The BLI attached to the EOA calculated capacity based on the Safe Harbor assumption of 7 units per residential acre without regard for density by zone and was recalculated



The Clackamas County – City of Molalla Urban Growth Management Agreement (UGMA) establishes a site-specific Urban Growth Management Boundary (UGMB) that includes unincorporated land within Molalla's UGB, and procedures for city and county governance of the unincorporated areas within the UGMB. The UGMA does not stipulate any specific procedure for amending the UGMA and/or the UGMB other than a general description of planning and coordination responsibilities.

The Molalla Comprehensive Plan was initially adopted in 1980, and the amendments in 2014, 2023, and 2024, based on economic analysis from 2009 and a buildable lands inventory from 2007. While timber has historically been a driving industry in Molalla with five mills previously active, that industry has declined steadily since the 1980's. Only one mill remains, and it is operating at reduced capacity. This shift has impacted development patterns within Molalla since the Comprehensive Plan was first adopted. It governs UGB expansions and implements the UGMA and addresses the issue with the following:

- *Molalla's **Urban Growth Boundary** was established in 1981 to provide a 20-year supply of land. It is now nearly 30 years later, and the City has not updated its UGB. Substantial analysis indicates that Molalla currently does not contain an adequate supply of residential, commercial, industrial, or public land to meet the needs of the City.*
- ***Jurisdictional Boundaries and Urban Growth Management** The Molalla Urban Growth Boundary (UGB) contains land under both City and County jurisdiction. The establishment and change of the UGB is a joint process that requires approval from both the Molalla City Council and the Clackamas County Board of Commissioners. To ensure consistency, the City and County coordinate efforts to manage all lands within these boundaries. The policy document used for this purpose is the "Urban Growth Management Agreement." Molalla has land use decision making authority within the Molalla City Limits. Annexation to the City is required to access urban services necessary to support urban levels of development. The City's intent is to maintain an adequate supply of buildable and serviceable land within the City Limits to ensure that there are choices in type, location, and density or intensity of residential, commercial, industrial and public facilities development.*
- ***Economic Development Goal:** To expand the economic base to increase the economic independence of the area – through expansion and retention of existing businesses and recruitment of new businesses. Economic Development Policies (6.) The UGB may need to be expanded to ensure adequate lands for commercial and industrial development through 2034.*
- ***Industrial Development Goal:** To develop a diverse industrial base offering an increasing number of employment opportunities. Industrial Development Policies (4.) To minimize impacts on Clackamas County's agricultural land base, Class I agricultural soils shall be preserved outside the UGB. At the same time, it is important that industrial lands be located in relatively flat areas, which have suitable soils and that are free from flooding dangers.(11.) The UGB may be expanded to ensure adequate lands for industrial development through 2034. (21.) Molalla shall provide a suitable site within its UGB to allow large scale agricultural or nursery processing industries to locate within the City*
- ***Housing Mix:** Molalla intends to use the safe harbor for housing mix provided in OAR 660-024a Table 1 should it forecast UGB needs. The relationship between housing mix and zoning changes would be detailed in any future UGB analysis.*
- ***GOAL 14: URBANIZATION Agricultural and Forest Lands Protection** Molalla is a rural community with farmland located near the City in all directions. One of the factors considered in location of the Urban Growth Boundary was the preservation of that agricultural land and buffering between agricultural*



and urban uses. Large agricultural areas remain in all directions of the City outside the existing growth boundary. There is a large residential exception area directly to the south of the existing UGB. If the City should ever expand its current Urban Growth Boundary, consideration will be given to agriculture and forest land to minimize impacts on such lands as required by the priorities for urban growth boundary expansion in ORS 197.298. Statewide Planning Goals 3 (Agricultural Lands) and 4 (Forest Lands) do not apply within Molalla Urban Growth Boundary (UGB) because there are no lands designated for farm or forest use within the UGB. Impacts on agricultural and forest land were considered when the UGB was adopted and acknowledged by the Land Conservation and Development Commission (LCDC) in 1981 and will be considered further during any UGB amendment process. Goals 3 and 4 will continue to protect agricultural and forest land outside the UGB.

- **Urbanization Goals:**

- *To adopt an urban growth boundary (UGB) which assures that adequate vacant buildable land is available for all uses to the year 2034.*
- *To coordinate with Clackamas County in order to manage the urban growth boundary and the conversion of land within the boundary for urban uses.*
- *To provide for the orderly and efficient provision of public facilities and services.*
- *To encourage development in areas already served by major public facilities before extending services to unserved areas*
- *To plan for future growth opportunities recognizing the limitations imposed by farm and forest land immediately outside the existing UGB.*

A proposed UGB amendment must be approved by the City of Molalla and Clackamas County and ultimately acknowledged by DLCD and/or the Land Conservation and Development Commission (LCDC).

Process Overview

This UGB Expansion project commenced in late Fall 2021, in response to the housing land deficit demonstrated in the 2023 Molalla HNA. Concurrently, Molalla initiated the updated EOA, which also demonstrated a land need.

Committees

A Project Advisory Committee (PAC) convened to guide the process and make recommendations for Planning Commission and City Council consideration. The Technical Advisory Committee (TAC) consisted of city staff, county staff, and state agency representatives, as well as members of other relevant organizations, such as utilities and emergency services. The TAC and the PAC have met three times to specifically discuss various phases of the UGB expansion, including the Goal 14 analysis included in this report.



The committees were made up of the following representatives:

Project Advisory Committee

Alec Lambert
Amanda St. Clair-Estrada
Clint Ancell
Daniel Haun
Darrel Sandquist
Jeffrey Bivens
Lance Eves
Leah Fisher
Rae-Lynn Botsford
Ravin Lopez

Technical Advisory Committee

Martha Fritzie, Clackamas County
Glen Bolen, ODOT
Kelly Reid, DLCD
Syringa Volk, PGE
Vince Stafford, Molalla Fire
Trevor Griffiths, DSL
Jevra Brown, DSL
Troy Klein, NW Natural
Ryan Quigley, Dyer Partnerships
Jim Gilbert, CPO
Tony Mann, Molalla River School District

Planning Commission and City Council received one briefing each on the policy framework of the UGB expansion process and the study area analysis and another briefing on the Goal 14 analysis included in this report.

Community Summits

A Community Summit occurred on April 22, 2025, to garner feedback from community members. The information presented included the policy framework for expansion and known opportunities and constraints of land within city limits and the Urban Growth Boundary (UGB) Expansion study area. Mailers informed all residents within and abutting the exception land of the event and it was announced on Molalla Current, Molalla's Facebook page, and in the local newspaper.

Turnout for the event was very high, with approximately 100 community members in attendance and the event ran over the two hours allotted with a robust question and answer period engaged between members and staff.

Online Questionnaire

An online component was offered in connection with the Community Summit to offer those unable to attend an opportunity to get information about the project and to provide meaningful feedback. All materials from the meeting were included online and an online survey allowed members to provide the same written feedback that was collected at the event. The online survey garnered 41 responses. Feedback from those responses, as well as the discussion at the event, contributed to the details contained in this report.

2. Establish Land Need

This chapter details the steps taken to establish Molalla's land need:

- Analyze population growth forecast



- Identify residential land need
- Identify other land need, including parks, schools, and public facilities
- Identify employment land need
- Identify site characteristics of needed land

This analysis focuses on estimating the acres needed to accommodate the 20-year population forecast as set by Portland State University's Population Research Center. It addresses housing, employment, and additional factors including livability, parks, public facilities, and land and parcel suitability.

Population Growth Forecast

The land needed to accommodate the projected growth of residential and employment uses in the 20-year planning horizon is based on the official population forecast, housing type mix and employment land needs identified in the City's adopted 2023 HNA and adopted 2025 EOA. These two studies used the 2022 population forecast prepared by Portland State University's Population Research Center (PRC).

Forecasted population for Molalla in 2042 is 15,660, which is an increase of 5,432 people, which translates to 1,996 net new dwelling units based on an assumed vacancy rate of 4% and 2.83 persons per household.

- The HNA was adopted by the City of Molalla in July 2023.
- The EOA was adopted by City Council in March 2025.

Land Need: Residential and Public Facilities

The 2023 HNA states that population growth will require the addition of 1,996 new dwelling units between 2022 and 2042. The findings of the 2023 HNA included the following:

Future demand anticipates a greater share of medium and high-density housing compared to the current inventory:

- *Single family detached homes (includes manufactured homes): 55% (1,098 units)*
- *Medium density housing (townhouses, plexes): 25% (499 units)*
- *High density housing (multi-family apartments): 20% (399 units)*

The relationship between housing mix and zoning changes is detailed for the UGB analysis as follows:

- 1,996 units needed at average units per acre by residential density requirements:
 - 1,098 low density units - avg 5 units per acre = 219.6
 - 499 medium density units - avg 10 units per acre = 49.9 acres
 - 399 high density units- avg 20 units per acre = 20 acres

These findings result in an overall residential UGB deficiency in Molalla of 289.4 acres, including right-of-way for roads and public facilities. The forecasted housing need was partially addressed by 287 units which were in the development pipeline during the HNA and have since been completed and zoned R3. Molalla's Current Zoning Map is below as Figure 1, with map changes included as Figure 2.



As illustrated in the calculations attached as **Appendix A**, recent rezoning provided 42.6 additional buildable acres of residential, mostly R2 and R3, that will accommodate 22% of the remaining need. As described above, the City of Molalla chose to apply the density approach based on an average unit per acre by residential zoning in calculating acres needed by zone, instead of the Safe Harbor approach of assuming 7 units per acre across housing types which was applied previously in the HNA/BLI.

The remaining buildable residential land need to accommodate anticipated growth over the next twenty years is:

- 894 R1 units (223.57 acres) and
- 34 R2 units (4.29 acres), including land for infrastructure.
- 929 total new housing units (227.79 acres).

Molalla's 2025 Economic Opportunities Analysis (EOA) identifies a deficit of large industrial parcels to meet employment land needs through 2043. The City is seeking to include:

- 2 sites over 20 acres each,
- 4 sites in the 10-20 acre range, and
- 4 sites in the 5-10 acre range.



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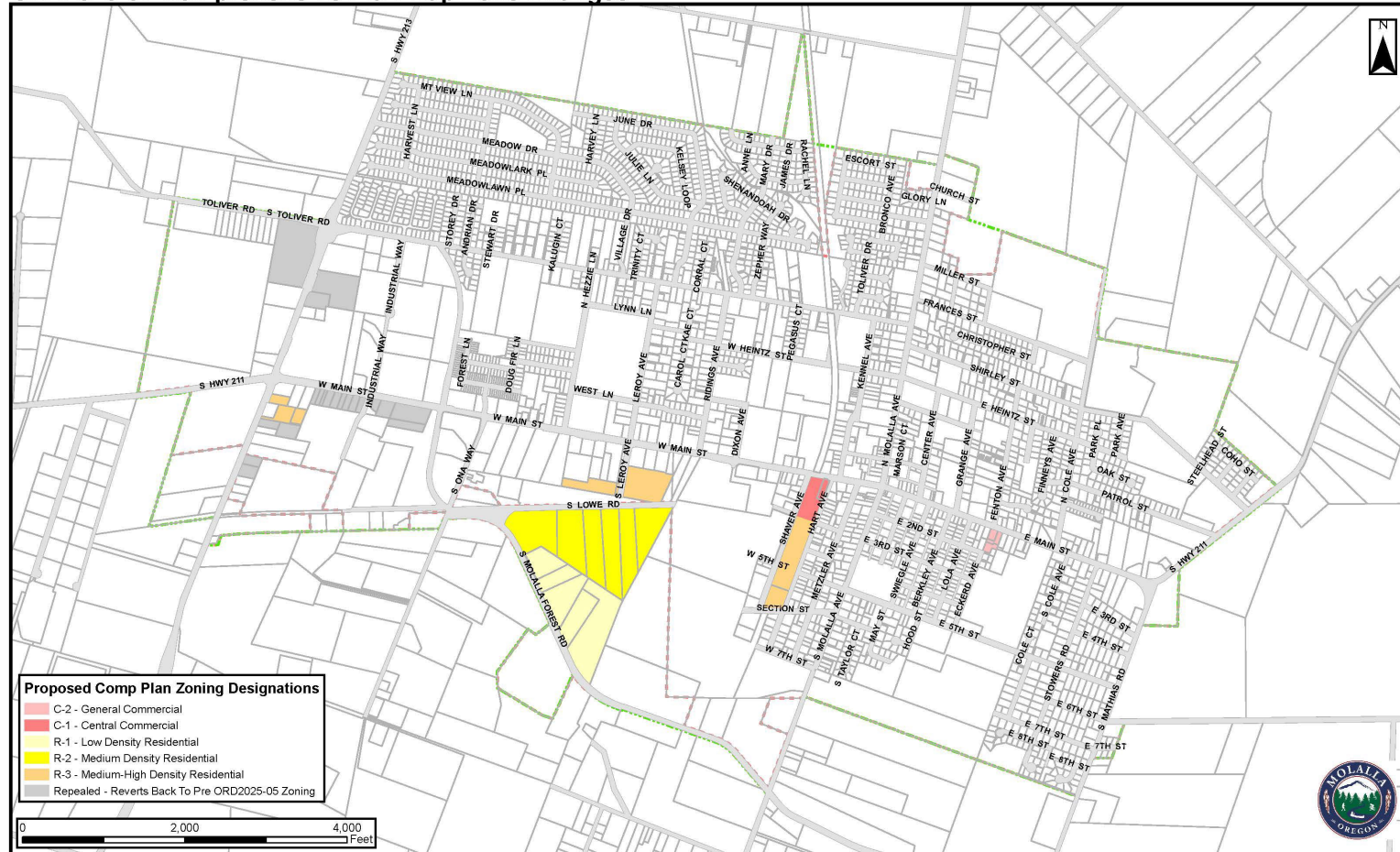
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0 875 1,750 Feet

Figure 2. Molalla Comprehensive Plan Map Zone Changes

ORD2025-07 Comprehensive Plan Map Zone Changes



Source: City of Molalla, GIS

Land Need and Site Characteristics: Employment and Public Facilities

The 2025 Molalla EOA estimates future employment land need including the number of sites required and typical site characteristics based on expected land uses (Statewide Planning Goal 9). EOA on the Adequacy of Employment Land Supply:

- *The Buildable Land Inventory (BLI) of employment lands completed in conjunction with the EOA found a total of 221 net buildable acres in Commercial and Industrial zones.*
- *The projected 20-year need for Commercial land trails the supply, with an estimated 55 acres of commercial land remaining to meet a projected need for 70 acres. This indicates a deficit of 16 acres of Commercial land.*
- *There is a projected supply of 166 acres of Industrial land to meet the forecasted need of 78 acres. This indicates a surplus of 88 acres of Industrial land.*
- *The total estimated surplus of employment land is 73 gross acres.*

However, the EOA found a deficit of larger parcels appropriate to industrial use, which is the focus of this expansion for employment land.

Table 1. Summary of Total Forecasted Site Needs with Estimated Acreage from EOA

Site Size	# of Needed Sites	Total Acres
<5 acres	11	11
5-10 acres	6	30
10-20 acres	4	40
>20 acres	2	40
Total	23 sites	121 acres

Source Calculations based on Figure 7.9 from the EOA calculated by Johnson Economics LLC and figures from the City of Molalla and the Oregon Employment Department prior to rezoning efforts.

Examine Sites within Existing UGB

Prior to pursuing UGB expansion, the city must demonstrate that the land needs cannot reasonably be accommodated on land already inside the UGB. The city is required to evaluate opportunities to provide efficient development of residential land within the existing UGB.

“Land use efficiency measures” increase the capacity for growth within the existing UGB thus reducing the need for UGB expansion. Molalla recently adopted important efficiency measures that provide additional housing production opportunities including:

As described above, Molalla has implemented several zoning and code changes to efficiently use land within the existing UGB to address housing needs and to promote affordability while ensuring compliance with development standards. Both residential and employment land need remains.

Here is an overview of the city's initiatives:

Establishing Minimum Density Standards

Molalla’s development code includes minimum density standards to guide residential development effectively. The lowest allowable density in the R-1 residential zone is set at four units per acre, ensuring

efficient land use in this zone. This standard is codified through the city's lot and development standards, as outlined in the municipal code.

Encouraging Lower-Cost Housing Types

Molalla's development code permits various affordable housing types across all residential zones without differentiating between manufactured and stick-built homes. Examples include common-wall developments, cottage clusters, and accessory dwelling units (ADUs). Additionally, ADUs and second-story apartments are allowed in commercial zones, offering flexibility and affordability in housing options.

Expanding the Definition of Housing Units

Molalla accommodates Single Room Occupancy (SRO) units in residential zones, provided they meet building codes. This inclusive approach ensures that SROs are treated similarly to other housing types under the city's development code.

High-Density Requirements for Annexed Land

The city has established unit mix requirements for annexed land, targeting a composition of 55% low-density, 25% medium-density, and 20% high-density housing. These targets align with the Housing Needs Analysis (HNA) and support diverse housing options in newly incorporated areas.

Mixed Housing Types in Planned Unit Developments (PUDs)

Molalla's PUD code facilitates the inclusion of various housing types within planned developments, allowing for greater flexibility and diversity in residential design.

Reducing Regulatory Impediments

Molalla has taken steps to streamline regulatory processes and reduce barriers to development:

- **Parking Requirements:** Minimum parking standards are flexible, allowing applicants to propose alternative standards based on engineered parking demand assessments during design review. The downtown C-1 district has no minimum parking requirement, and other reductions can be approved through the design review process.
- **Streamlining Permitting:** The city offers a comprehensive pre-application process involving outside agency partners to guide projects from conception to completion. Additionally, the transition to an online permitting platform is underway, further enhancing efficiency.
- **Accessory Dwelling Units (ADUs):** The city has changed ADUs to a Type I review from a Type II review.

Promoting a Pro-Housing Agenda

While Molalla's agenda is neutral in tone, its development code reflects a commitment to diverse housing options and non-discrimination against affordable housing types. This approach fosters a more inclusive housing environment.



Supporting Active Transportation

Bike parking requirements for multifamily developments align with DLCD recommendations, requiring 0.5 stalls per unit. This standard is consistent with actual usage patterns and promotes active transportation options.

Addressing NIMBYism

Molalla mitigates opposition to affordable housing by emphasizing adherence to substantive criteria in code language. Regular training for new Planning Commissioners ensures consistent rulings based on established criteria, and quasi-judicial hearing procedures reinforce these principles. This approach has led to decisions that are less likely to be appealed.

Additional Efforts

Molalla has introduced a sidewalk improvement grant program, offering up to \$10,400 in funding to enhance pedestrian infrastructure, further supporting accessible and connected neighborhoods.

3. Establish Study Area

This chapter establishes and evaluates the Molalla UGB Expansion Study Area to satisfy the land needs identified in Chapter 2. The process of establishing and evaluating the Study Area is dictated by Oregon Administrative Rules, and includes the following:

- Create Preliminary Study Area
- Exclusion of Lands from Preliminary Study Area
- Create Study Area

Create Preliminary Study Area

Defining the area to be considered for expansion, known as the Preliminary Study Area, is dictated by OAR 660-024-0065. The provisions of the administrative rule state that the Preliminary Study Area must include all lands in the city's acknowledged urban reserves and land that is within a certain distance from the acknowledged UGB: one-half mile for jurisdictions of less than 10,000 and one mile for jurisdictions of more than 10,000, or land beyond specified distances at the discretion of the jurisdiction.

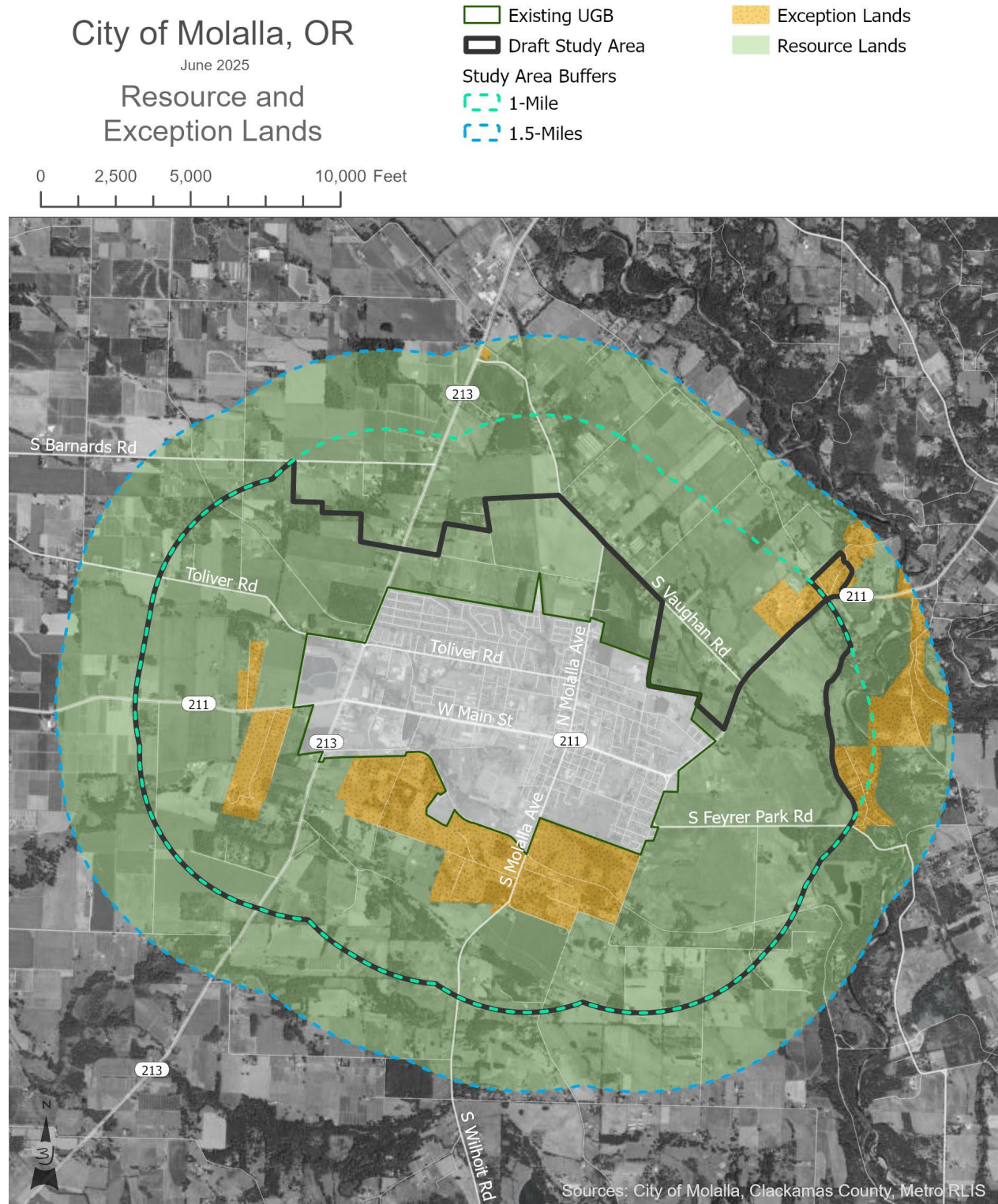
As of the 2020 PSU Population Research Center estimates from July 1, 2020, the City of Molalla has a population of 10,298 residents.⁴ This population count was used in both the City of Molalla Housing Needs Analysis, and City of Molalla Economic Opportunities Analysis. Therefore, the City considered land within one mile of the current UGB, known as the "one mile buffer" for the Preliminary Study Area.

⁴ "2020 ANNUAL OREGON POPULATION REPORT TABLES," Population Research Center, Portland State University, April 15, 2023, <https://www.pdx.edu/population-research/sites/populationresearch.web.wdt.pdx.edu/files/2023-04/2022%20Annual%20Population%20Report%20Tables%20.pdf>.



The City of Molalla has no urban reserves and is surrounded by a combination of exception and resource lands, as illustrated in Figure 3.

Figure 3. Preliminary Study Area with Resource and Exception Lands



Exception Lands include lands that have been allowed to develop with primarily residential uses based on existing county zoning designations:

- Rural Residential Farm Forest 5-Acre (RRFF5);
- Rural Area Residential 2-Acre (RA2); and/or
- Rural Industrial (RI).

Exception areas are rural lands that have the physical properties that make it suitable for farm or forest use but have been previously approved by a county with an "exception" to zone the land for urban uses. Exception areas are lands that are either "physically developed" or "irrevocably committed" to non-farm and non-forest uses and have the appropriate corresponding county zoning.⁵

In determining the Preliminary Study Area, OAR 660-024-0065(1)(c) directs cities to include exception areas within the one-mile buffer, and to also include exception areas within one and one-half miles from the current UGB for exception areas that are contiguous to an exception area in the one-mile buffer.

The Preliminary Study Area for Molalla contains exception areas within the established one-mile buffer that extend contiguously beyond that one mile. A secondary buffer was added to the Preliminary Study Area to demonstrate the additional half mile in accordance with OAR 660-024-0065(1)(c).

Exclusion Of Lands From The Preliminary Study Area

The City of Molalla determined that certain areas within the Preliminary Study Area meet the exclusion criteria of OAR 660-024-0065(4)(a & b), which may be excluded and no longer considered for expansion of the UGB. After completing an exclusion analysis, the city determined that some areas have overlapping criteria that meet the threshold for exclusion. The specific reasons for each exclusion and how these lands meet the thresholds for exclusion in OAR 660-024-0065(4)(a-c) and OAR 660-024-0065(7)(a-c) is discussed in further detail below.

Exclusion of Rural Reserves:

The rural reserves that surround the existing Molalla UGB cannot be included in any UGB amendments pursuant to OAR 660-027-0040(4), which states:

(4) Neither Metro nor a local government may amend a UGB to include land designated as rural reserves during the period described in section (2) or (3) of this rule, whichever is applicable.

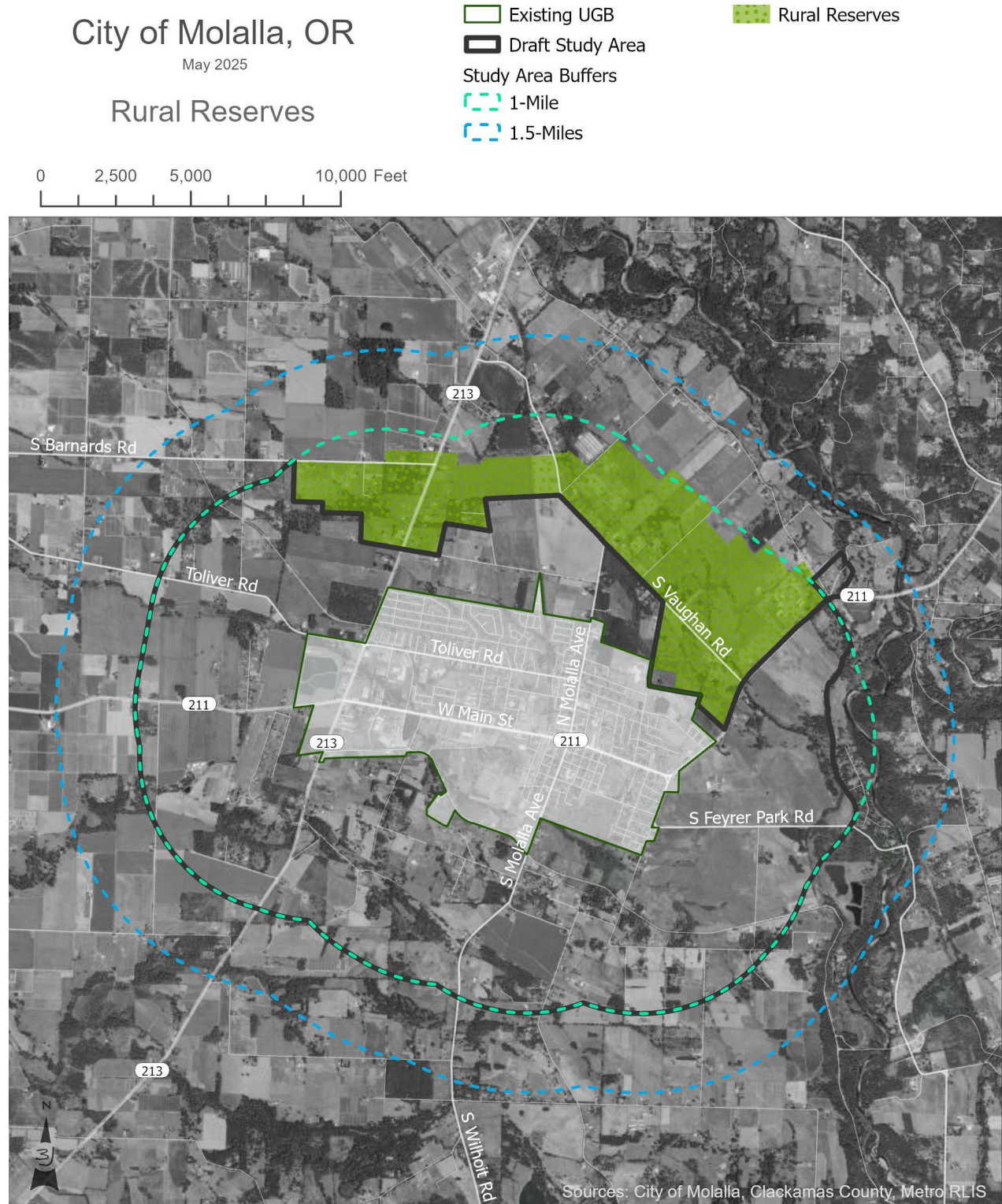
Some of the contiguous exception lands that are included in the Preliminary Study Area within the additional half mile buffer are designated as Rural Reserves. Rural reserves are intended to provide long-term protection for large blocks of agricultural land, forest land, and other important natural landscape features that limit urban development.⁶ The excluded area described is illustrated in Figure 4.

⁵ "Exception Areas," Department of Land Conservation and Development: Rural Planning and Development: State of Oregon, accessed November 1, 2023, <https://www.oregon.gov/lcd/rp/pages/index.aspx#:~:text=In%20some%20cases%2C%20a%20county,farm%20and%20non%2Dforest%20uses.>

⁶ "UGBs and Urban/Rural Reserves," Department of Land Conservation and Development: State of Oregon, accessed November 1, 2023, <https://www.oregon.gov/lcd/up/pages/ugbs-and-urbanrural-reserves.aspx>.



Figure 4. Preliminary Study Area with Rural Reserves



The rules for establishing the Study Area allow for certain lands to be excluded from the Preliminary Study Area, as established in OAR 660-024-0065(4). The reasons for exclusion of lands from the Preliminary Study Area include:

- Lands are impracticable to provide necessary public facilities and services to;
- Lands are subject to natural hazards (flooding); or
- Lands contain specific scenic, natural, cultural or recreational resources.

Exclusion of Land Impracticable to Provide Services

Additional lands are excluded from the Preliminary Study Area based on the impracticability of providing them with necessary public facilities or services. In accordance with OAR 660-024-0065(4)(a), lands that are impracticable to provide necessary public facilities or services to the land may be excluded from the Preliminary Study Area. OAR 660-024-0065(7) describes several criteria for impracticability.

Subsection (b) identifies land that is isolated from existing service networks such that it is impracticable to provide the necessary services. Major rivers or other water bodies that would require a new bridge crossing to serve planned urban development are included as an example of “impediments to service provision” in OAR 660-024-0065(7)(c).

National Wetland Inventory and major rivers and streams are illustrated below in Figure 5.

Exclusion of Natural Hazard: Flooding

Lands may be excluded from the Preliminary Study Area if the City determines that there are significant development hazards due to a risk of flooding including inundation during storm surges. Hydric soils are indicative wetlands but are not an existing constraint on development unless those wetlands are later determined to be locally significant wetlands pursuant to an inventory. Inventories occur during concept planning stage after land has been brought into the UGB.

Stream buffers are illustrated below in Figure 6. The community reported in the online survey that some areas in the study area flood in heavy rains.

Figure 5. Molalla National Wetland Inventory

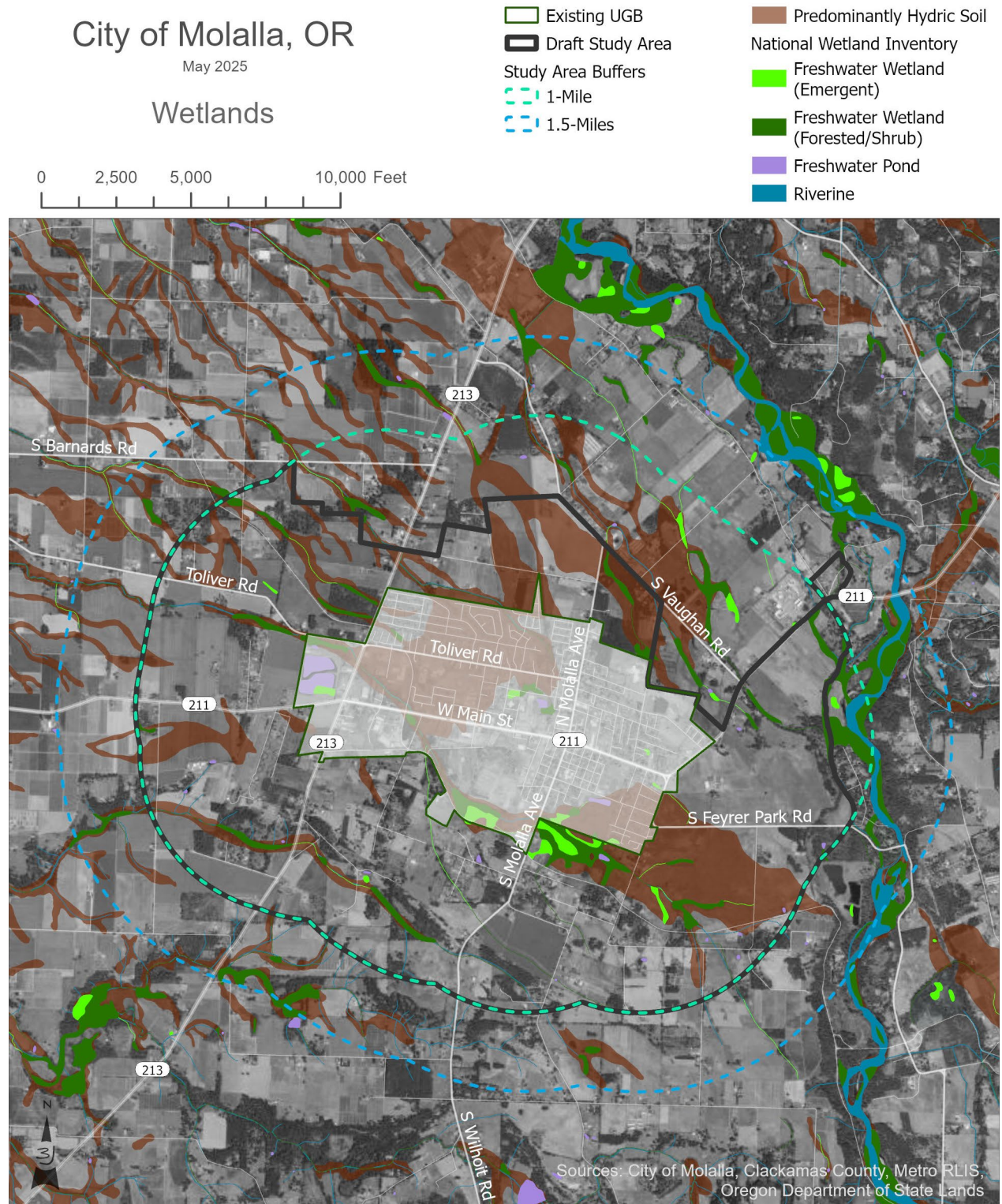
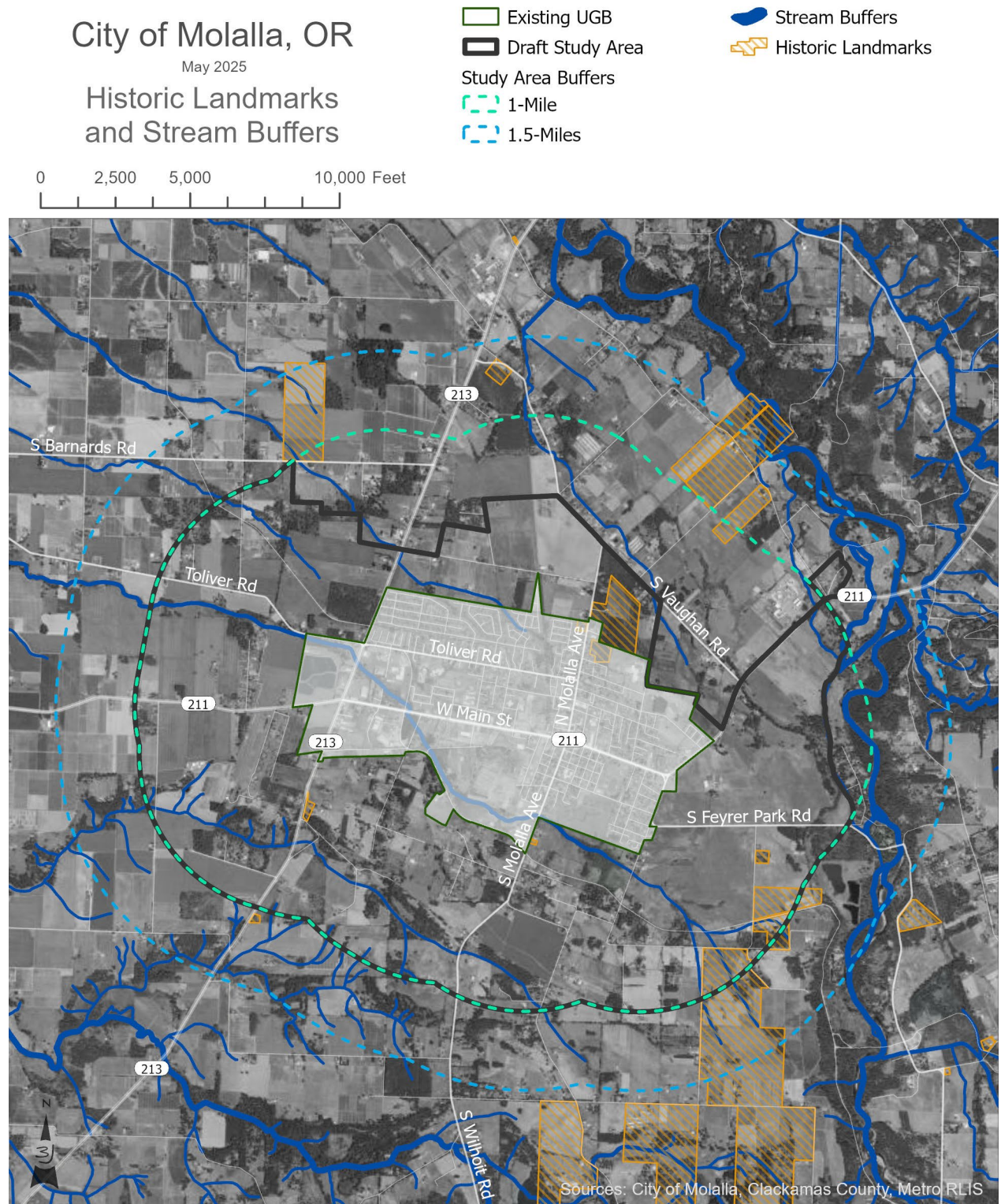


Figure 6. Molalla Stream Buffers and Historic Landmarks

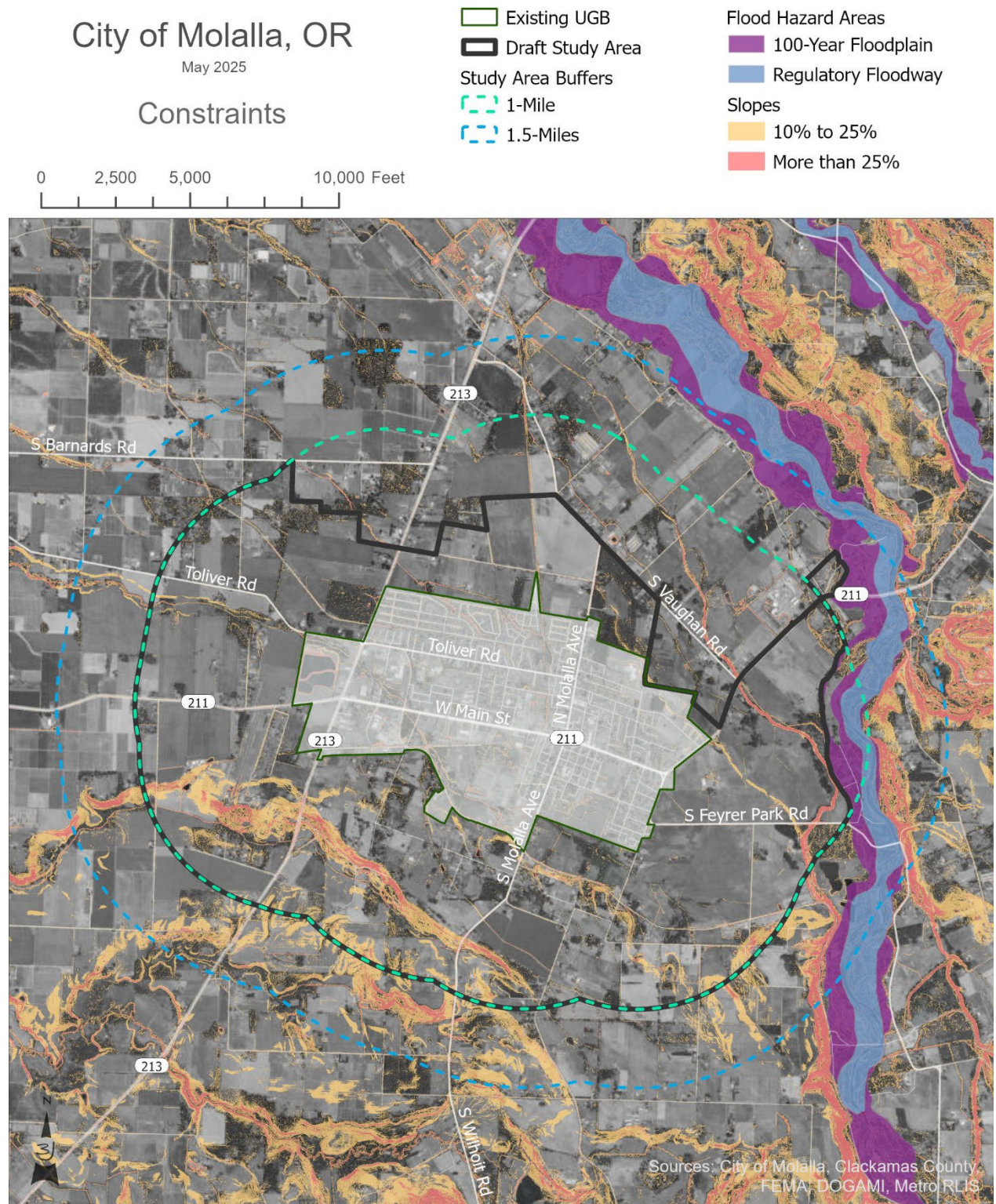


Exclusion of Lands contain specific scenic, natural, cultural or recreational resources

In addition to the determination above based on existing steep slopes, impediments to service provisions based on the likely amount of development that could occur; and the likely cost of facilities and services; properties considered Goal 5 resources as they are listed with a National Register of Historic Places designation are excluded. These are illustrated above in Figure 6. A portion of the exception lands to the west along Hwy 211 is occupied by an active airfield and unlikely to develop, some additional lands surrounding and associated with the working airfield, have also been excluded, along with adjacent land that is not contiguous with the UGB and subject to height restrictions and noise.

Also excluded from the Preliminary Study Area are some of the lands identified as within the Special Flood Hazard Area (SFHA) identified on the Flood Insurance Rate Map (FIRM). Figure 7 below includes Flood Hazard Areas and steep slopes.

Figure 7. Exclusion of Flood Hazard Areas and Steep Slopes



Exclusion Areas Conclusion

In summary, lands from the Preliminary Study Area were excluded using the exclusion provisions allowed in OAR 660-024-0065. All excluded lands are shown in the above figures. Upon exclusion of these lands, several locations that are inside the one-and-a-half-mile buffer establishing the Preliminary Study Area are now physically separated from the existing UGB. Lands that are physically separated through the above exclusions are no longer considered for inclusion into the UGB as there would be no contiguous boundary. Providing services to non-contiguous areas within the study area is impracticable.

There are no further adjustments or exclusions to the Preliminary Study Area.

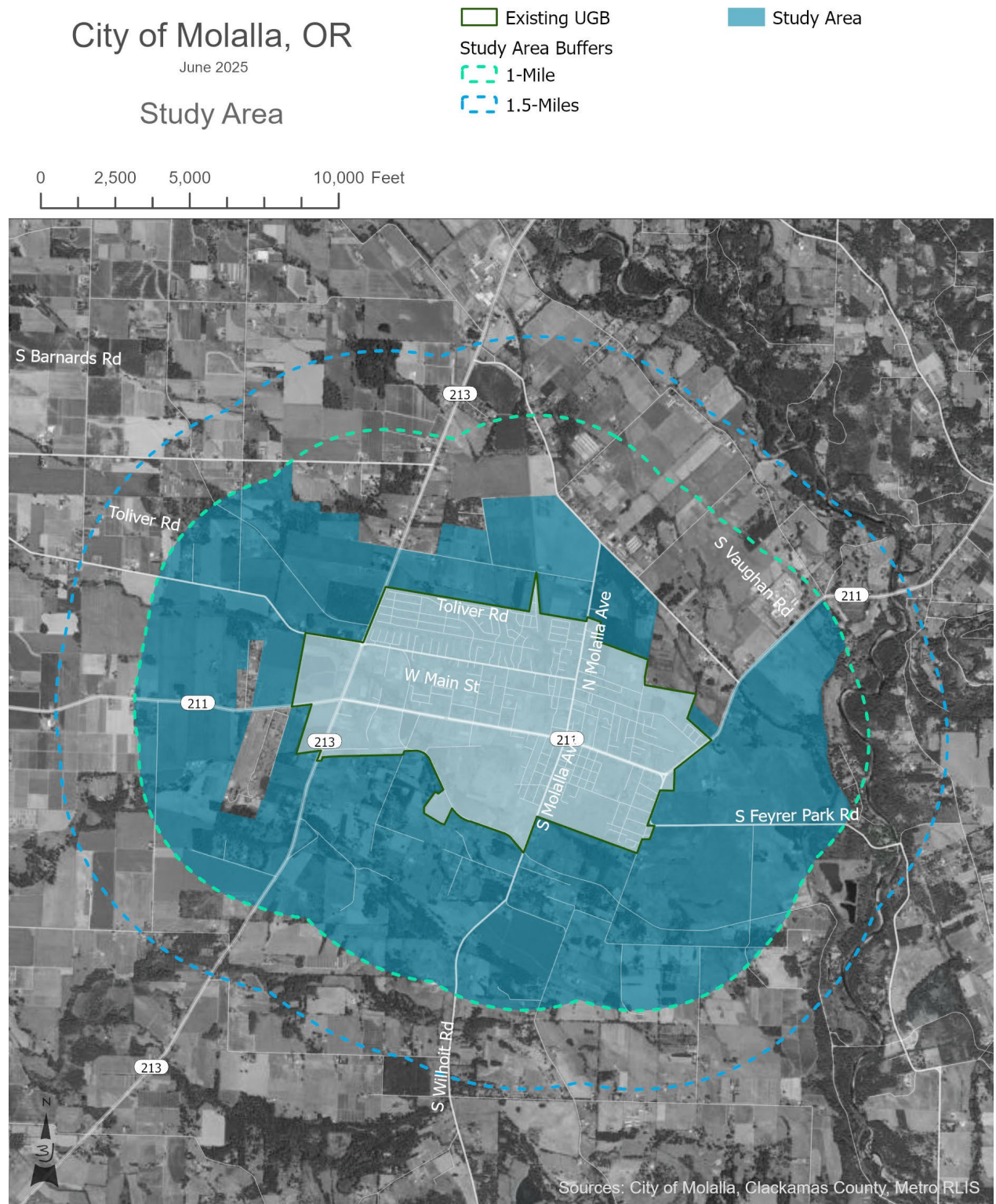
Create Study Area

OAR 660-024-0065(5) requires that the Study Area contains at least twice the amount of land needed for the deficiency determined in OAR 660-024-0050(4) and described above. The amount of land in the Study Area meets this threshold. The land need after applying efficiency measures, as determined above, is 227.79 total residential acres, plus 10 parcels of roughly 120 acres of industrial land. The total acreage (1813.20 acres) in the finalized Study Area is more than twice the land needed.

Figure 8 illustrates the Study Area. The Study Area consists only of undesignated lands that currently have Clackamas County zoning designations of Rural Residential Farm Forest 5-Acre (RRFF5) or Exclusive Farm Use (EFU).

The city finds that the Study Area shown in Figure 8 complies with the requirements of OAR 660-024-0065 by establishing a Study Area to evaluate land for inclusion to a UGB.

Figure 8. Molalla UGB Expansion Study Area



4. Prioritize Study Area

The process for evaluating and prioritizing land for inclusion in the UGB is described in OAR-660-024-0067. The highest priority land for inclusion is analyzed for suitability to meet the deficiency for both the employment and residential land need. Surrounding the current UGB the highest priority lands in the Study Area are the exception lands. If there is no excess of suitable first priority land established, those lands are established as areas for inclusion into the UGB. If a deficiency of land still exists after the highest priority suitable lands are established for inclusion, the next highest priority of land is analyzed for suitability.

Establish Priority for Inclusion in the UGB (OAR 660-024-0067(2))

This section determines the prioritization of lands for inclusion into the Molalla UGB. After determining priority, lands are assessed to ensure that they are suitable to satisfy the land need. If the amount of suitable land does not meet the land need identified above, then the next highest priority land for inclusion is evaluated for suitability until the land need is met. If there is an excess of suitable land in a particular priority category, the City will choose which lands in that priority to include into the UGB by applying the boundary location factors of Goal 14. The Goal 14 boundary factors are used to compare alternative locations and determine which of the excess lands in a particular priority category are most suitable for inclusion into the UGB. Lands in the Study Area are evaluated by the priorities set by OAR 660-024-0067(2).

First Priority Suitability Criteria

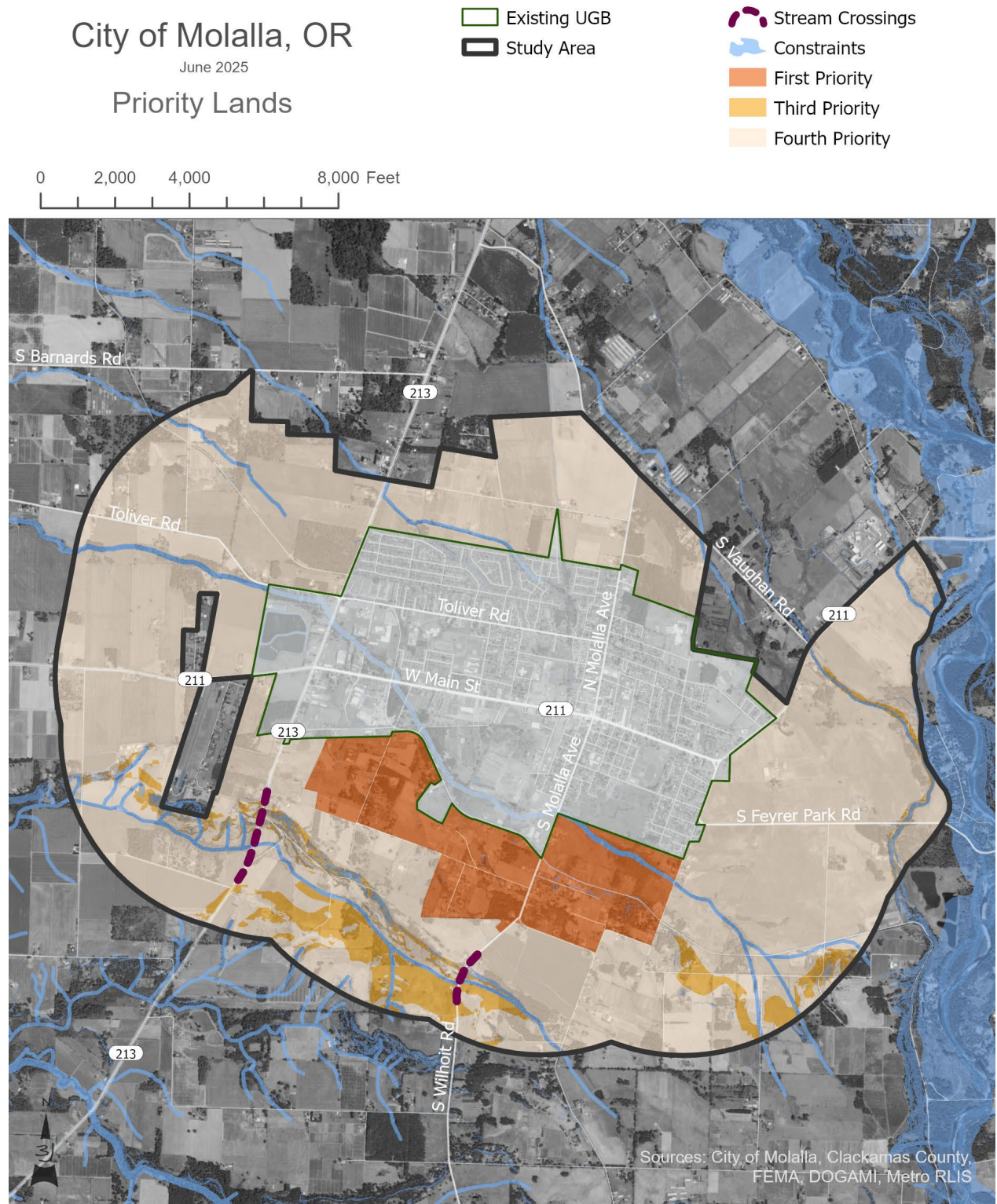
The First Priority includes urban reserves, exception lands, and nonresource lands. Molalla does not have any acknowledged urban reserves. The Study Area contains areas of exception lands and nonresource lands.

There is a gross total of 580 acres of exception land in the Study Area, all with existing County zoning designation of Rural Residential Farm Forest 5-Acre (RRFF5). The exception lands are grouped into subareas determined primarily by their county zoning designations. Consideration was also given to existing tax lot boundaries, existing rights-of-way, and soil types when determining the separate exception land subareas.

Other exception lands that are within the one mile, and one and one-half mile buffers were previously excluded as described above, using the exclusion criteria of OAR 660-024-0065.

In accordance with OAR 660-024-0067(2)(a), these land areas are the highest priority for inclusion into the UGB. With respect to the suitability criteria of OAR 660-024-0067(5-6) the City determined how much of that land is suitable to meet the need deficiency.

Figure 9. Study Area and Priority Lands



As established, the exception lands in the Study Area are the highest priority for inclusion due to their nonresource Clackamas County zoning designation.

Because there is an excess of first priority lands, the exception land will be analyzed with the Goal 14 Location Factors pursuant to OAR 660-024-0067(1)(c) to determine which areas are best suited for inclusion into the UGB to satisfy the remaining land need.

5. Analyze Study Area

The process for evaluating and prioritizing land for inclusion in the UGB is described in OAR-660-024-0067. The highest priority land for inclusion is analyzed for suitability to meet the deficiency for both the employment and residential land need. Surrounding the current UGB the highest priority lands in the Study Area are the exception lands. If there is no excess of suitable first priority land established, those lands are established as areas for inclusion into the UGB. If a deficiency of land still exists after the highest priority suitable lands are established for inclusion, the next highest priority of land is analyzed for suitability.

Establish Subareas

This section provides details about soils and other boundary related considerations to describe the basis for establishing subareas within the Study Area. The subareas and their size in acres are demonstrated in Table 2.

Table 2. Subareas with Acreage and Priority

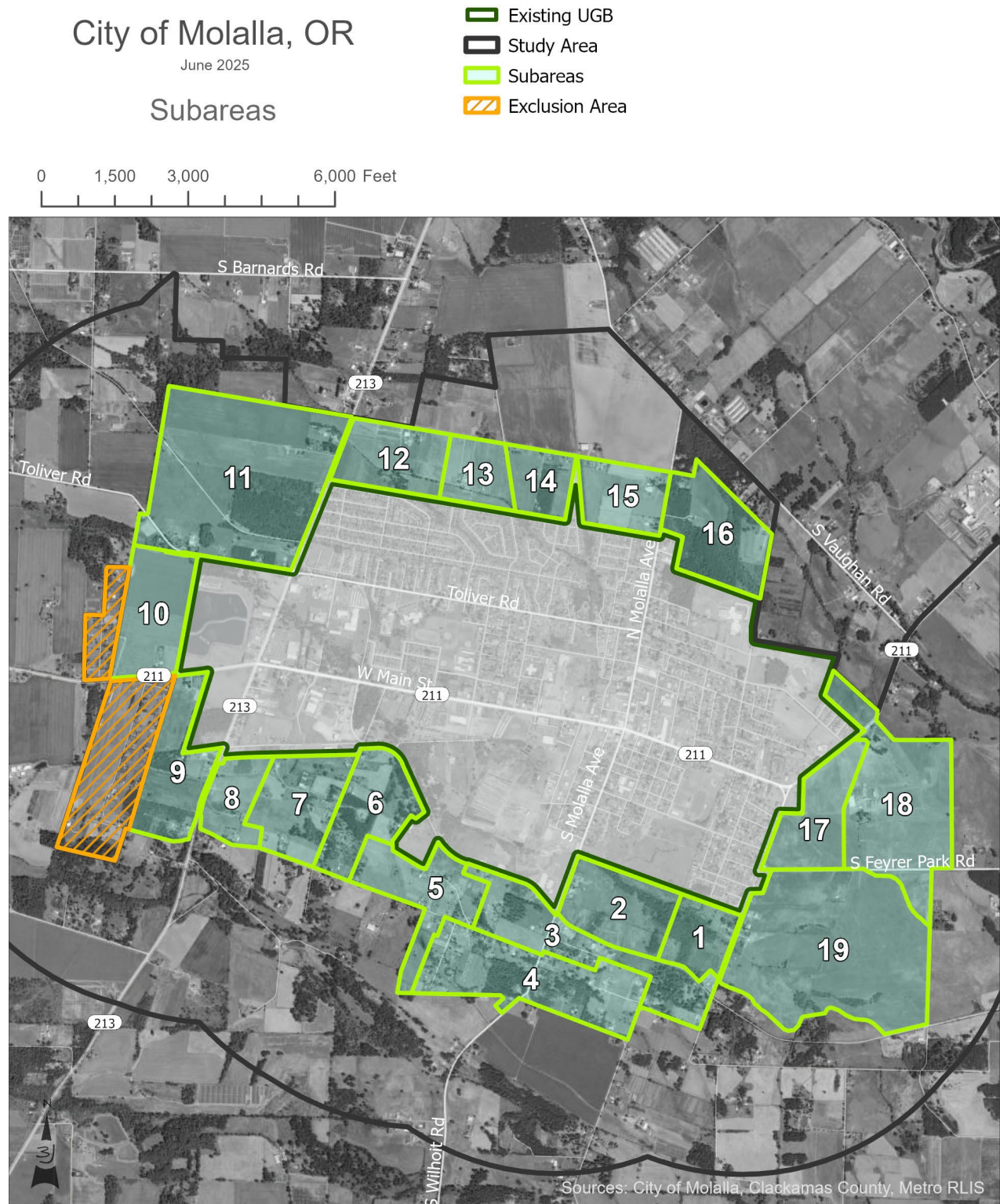
<i>Subarea</i>	Number of parcels	Total Acres (Gross)	Buildable Acres	Priority
1	1	50.8	13.2	First
2	12	74.0	27.0	First
3	19	90.7	89.7	First
4	57	130.2	129.1	First
5	16	75.0	74.0	First
6	16	69.6	69.0	First
7	13	76.1	76.1	First
8	3	42.3	42.2	Fourth
9	7	76.9	76.9	Fourth
10	5	78.4	75.7	Fourth
11	18	262.6	246.8	Fourth
12	1	64.9	58.7	Fourth
13	2	39.8	36.1	Fourth
14	9	39.2	39.0	Fourth
15	7	52.0	52.0	Fourth
16	7	95.3	86.1	Fourth
17	2	66.5	65.9	Fourth
18	5	128.3	128.3	Fourth
19	10	300.5	281.4	Fourth
Total	210	1813.2	1667.2	

The boundaries of the subareas are determined by the existing edges of undesignated lands, exception lands, tax lots, and soil types. For non-exception lands, soil types and classifications are considered so that areas of predominantly higher capability soils are not grouped together with areas of soils predominantly of lower capability. The subareas do not contain a mix of exception land and resource lands, and do not include any land designated as rural reserves.

Figure 10 below shows the subareas within the Study Area. The land deficit established above, apart from the need for two industrial parcels over 20 acres each, can be satisfied through an expansion of a large portion of the first priority land, identified in this report as Subareas 1-7.

Figure 10 below illustrates all subareas being considered in this report.

Figure 10. Subareas with Total Acres



Goal 14 Location Factors: Overview

Boundary location analysis is governed by Goal 14 and ORS 197A.285 and with consideration of the following factors:

1. Efficient Accommodation of Need:
 - Proximity to existing UGB,
 - Parcel size, and
 - Amount of buildable land
2. Orderly and Economic Provision of Public Facilities and Services:
 - Water,
 - Sewer,
 - Transportation, and
 - Stormwater
3. Environmental, Economic, Social & Energy Consequences
 - Economic: Cost of land/transportation facilities/utilities/services, Parcel size, and Development potential
 - Social: Ease of access to services and amenities, such as schools, parks, library, commercial services, and Compatible nearby uses
 - Environmental: Hazard Risk (slope, floodplain) and Goal 5 resources present
 - Energy: Amount of travel required to and from daily services and amenities, Infrastructure improvements needed to serve development, such as road construction/improvements, pipe upsizing, and water or wastewater pumps
4. Agricultural & Forest Compatibility:
 - Increased traffic,
 - Conflicts with water availability and delivery,
 - Flooding,
 - Introduction of weeds or pests,
 - Damage to crops or livestock,
 - Trespassing,
 - Litter (including harmful pet waste), and
 - Vandalism

A boundary location analysis compares alternative locations and considers which addition to the UGB will result in the most accommodating and cost-effective boundary, while creating the fewest conflicts with neighboring land uses, and causing the least amount of negative environmental, economic, social, and energy consequences. The remainder of this section is dedicated to an overview of each subarea comprised of first priority land being considered for development and including details from each of the four location factors. See Figures 11-16 below.

In the sections following, each location factor is considered sequentially and weighed equally to form a balanced Goal 14 analysis of the first priority lands available for UGB expansion. The analyses do not provide definitive conclusions as to where the UGB should expand but rather provide data necessary for an informed decision about how the city should grow in the future.

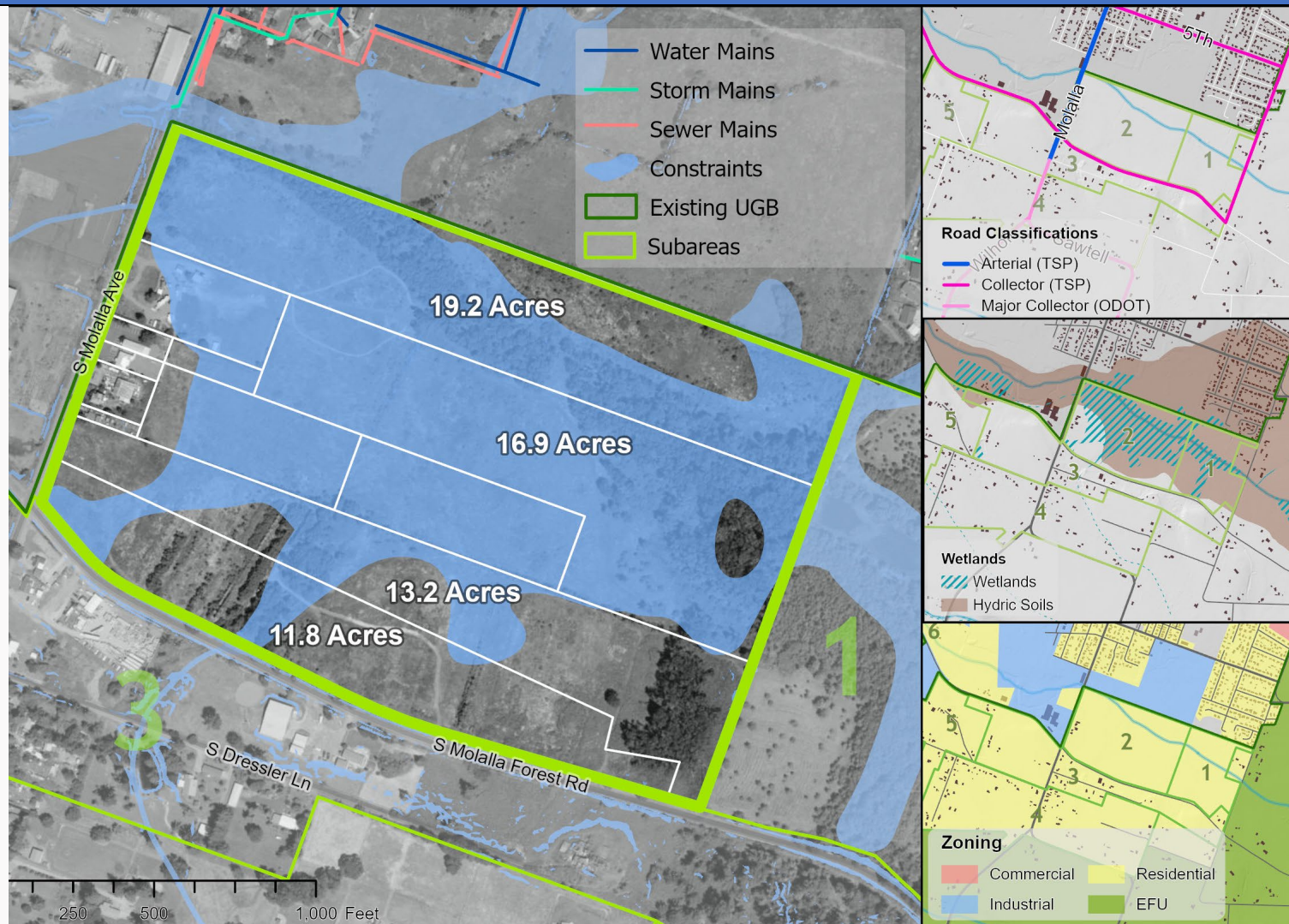


FIGURE 11 SUBAREA 2 GOAL 14 LOCATION FACTOR OVERVIEW

Factor 1: Adjacent to existing UGB in northern and western portions. Large lots near existing industrial uses and transportation.

Factor 2 - Transportation: Close proximity to existing streets and transit. But underdeveloped with high improvement costs due to wetland, creek, and slopes.

Factor 2 – Utilities: Close proximity to new 12" water main, but sewer would require extension, upsize, upgrade, and a new lift station. No stormwater infrastructure in the area.



Factor 3: Costs to develop this area are high due to undersized, outdated, and non-existent infrastructure. The area contains large parcels that would be likely to develop and has industrial zoned lands to the north and west, with county zoning to the south and east. Hydric soils could be locally significant wetlands that would limit development potential. VMT would increase due to an extended distance to services and amenities.

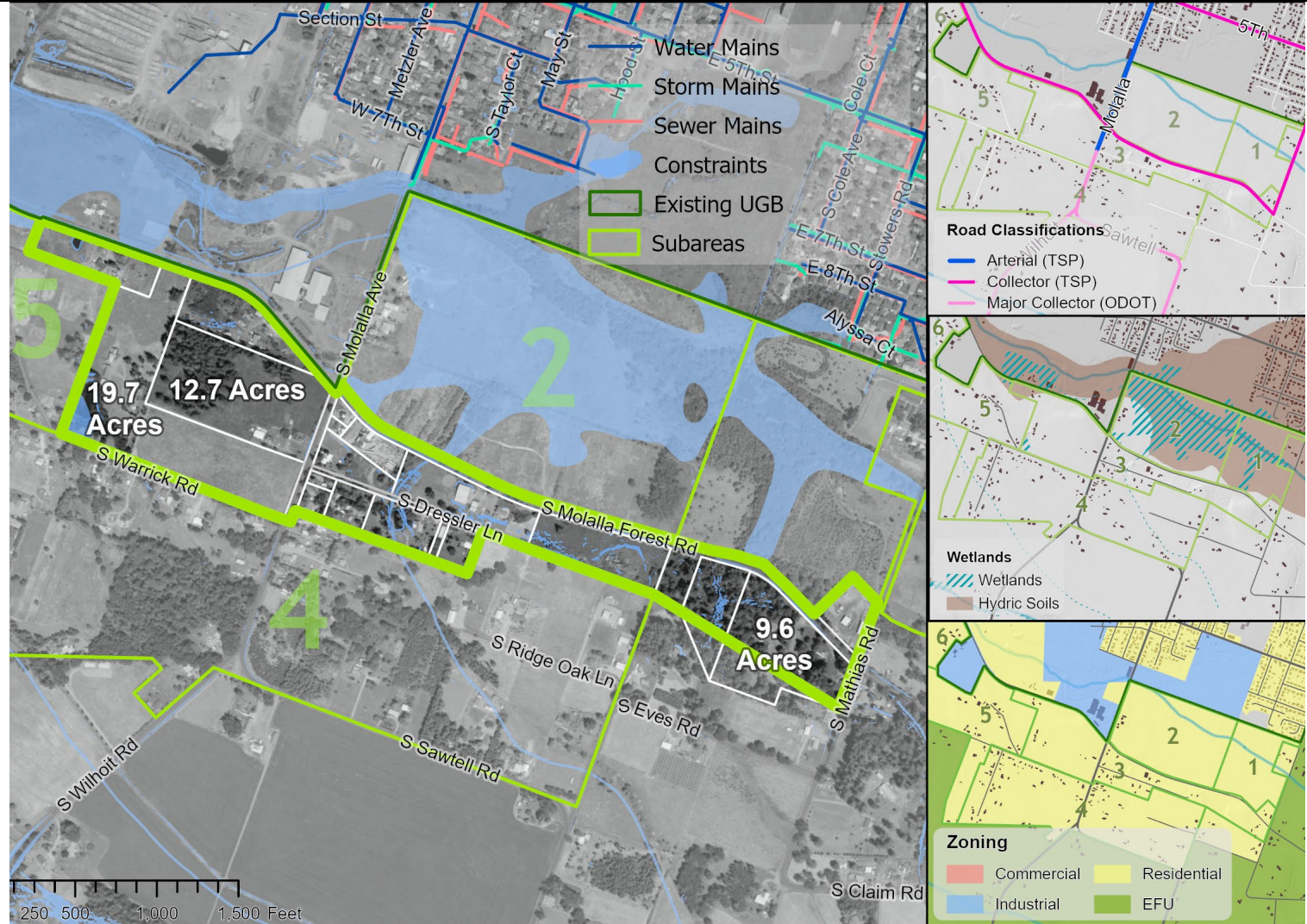
Factor 4: Parcels along S Molalla Ave are across from existing industrial within the UGB, but parcels to the east border Ivor Davis nature park and open space.

Figure 12 Subarea 3 Goal 14 Location Factor Overview

Factor 1: Western portion
abuts existing UGB with
access to S Molalla Ave
and S Warrick Road.

Factor 2 - Transportation:
Close proximity to
existing streets but
underdeveloped with no
bike lane or sidewalks.
High improvement costs
due to wetland, creek,
and slopes.

Factor 2 – Utilities:
Requires extension of
services down S Molalla
Ave, S Dressler Ln, and S
Warrick Rd. Will also
require upgrades to
existing services and a
new lift station for
wastewater.



Factor 3: Costs to develop and to serve existing development in this subarea are high due to undersized, outdated, and non-existent infrastructure. Existing parcelized residential uses are not close to services. Flooding during heavy rains reported. Increased VMT due to extended distance to services and amenities.

Factor 4: No direct border with existing agricultural or forest land

FIGURE 13. SUBAREA 4 GOAL 14 LOCATION FACTOR OVERVIEW

Factor 1: There are no lots contiguous with the existing UGB. Heavily parcelized with high number of existing homes.

Factor 2 - Transportation: Close proximity to existing streets but underdeveloped with no sidewalks and bike lanes. High improvement costs due to wetland, creek, slopes and distance from city limits.

Factor 2 – Utilities: Requires extension of services along S Molalla Ave, S Sawtell Rd, and S Warrick Rd. Also requires upsize and upgrade of existing infrastructure, and a new sewer lift station. There is no stormwater infrastructure in the area.



Factor 3: Costs to develop and to serve existing development in this subarea are high due to undersized, outdated, and non-existent infrastructure, as well as the overall distance from existing infrastructure. Parcelization limits opportunities for economy of scale. Flooding during heavy rains reported. Increased VMT due to extended distance to services and amenities.

Factor 4: Borders active agricultural land to the south and east with shared limited access along S Wilhoit Rd

FIGURE 14. SUBAREA 5 GOAL 14 LOCATION FACTOR OVERVIEW

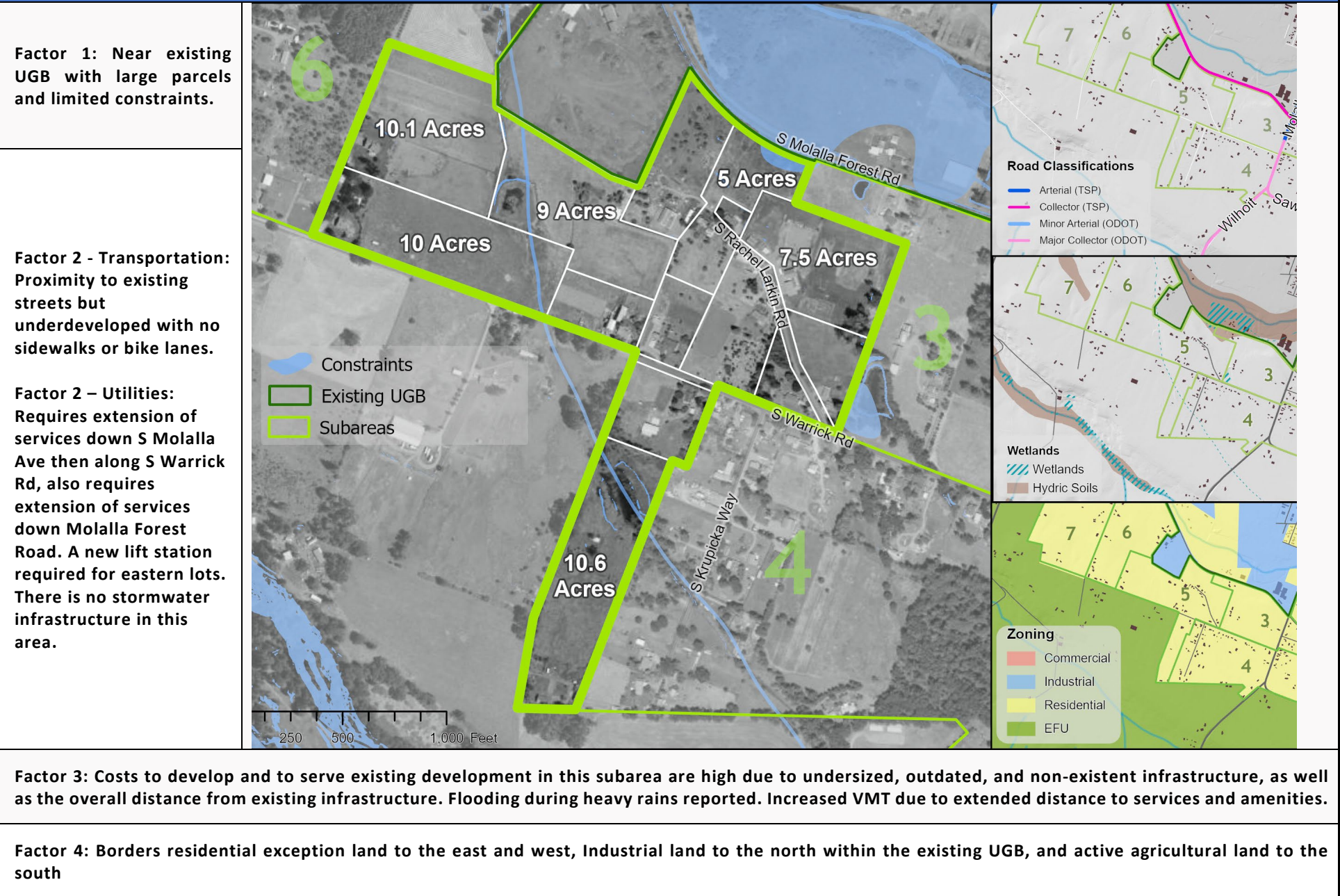


FIGURE 15. SUBAREA 6 GOAL 14 LOCATION FACTOR OVERVIEW

Factor 1: Northern and Northeastern portions are contiguous with the existing UGB. Several large lots with minimal constraints.

Factor 2 - Transportation: Proximity to existing streets but underdeveloped with no sidewalks or bike lanes. Extension of S Ona Way required, and upgrade of Molalla Forest Road required.

Factor 2 – Utilities: Extension of services down Ona Way and Molalla Forest Road required. A new sewer lift station would also be required. Stormwater system adjacent to the northwest would need extension into the area.



Factor 3: Larger parcels with access along S Ona Way and Molalla Forest Road. Closer to larger grocery options and restaurants along Hwy 211. Bus stop located within 1/3 mile of the northernmost property. Some hydric soils and creek adjacent flooding that is buffered by Molalla Forest Road.

Factor 4: Surrounded by residential land both within the UGB and within the exception land

FIGURE 16. SUBAREA 7 GOAL 14 LOCATION FACTOR OVERVIEW

Factor 1: Northern portion contiguous with existing UGB. Large parcels with minimal constraints.

Factor 2 - Transportation: Proximity to existing streets but underdeveloped with no sidewalks or bike lanes. Extension of S Ona Way required, and upgrade of Molalla Forest Road required.

Factor 2 – Utilities: Water and sewer adjacent to the North. Sewer upsizing would likely be required. Stormwater facilities to the north would need extension to the area.



Factor 3: Larger parcels with access along S Ona Way. Closer to larger grocery options and restaurants along Hwy 211. Bus stop is located within 1/3 mile of the northernmost property. Hydric soils could be locally significant wetlands. Buffering from industrial uses adjacent to the north would be necessary for residential uses.

Factor 4: Mix of residential and industrial to the north within the existing UGB, residential exception land to the east, and remaining EFU land to the west along Hwy 213 and to the south

Location Factor 1

The efficiency of a subarea, in whole or in part, includes consideration of the proximity to the existing UGB and city center, average parcel size, and the amount of the overall acreage that is buildable for needed uses.

Proximity

Land adjacent to the existing UGB offers multiple benefits:

- Leverages prior infrastructure investments,
- Provides access to current services and amenities,
- Supports downtown businesses,
- Reduces VMT and supports active modes of transportation (walking and biking),
- Increases housing choice and promotes affordability, and
- Preserves valuable agriculture and forest land

An ideal expansion area is directly adjacent to a current UGB free of major barriers to development and with all land within ¼ mile of the UGB. “Leapfrog” development is growth that bypasses closer available land, relies on new infrastructure investments, increases car-dependency, and results in greater overall land consumption.

Parcel Size

Large tracts tend to offer a higher rate of return on investment for developers and smaller parcels often need to be consolidated before development can occur. For Molalla, the EOA identifies large lots for industrial in the land need. Diversity of tract sizes can also be advantageous for residential and neighborhood-scale commercial land need. Parcel size is also used in calculating the capacity of each subarea to supply new residential units. Calculations attached as **Appendix B**.

Buildable Land

Buildable land reflects the amount of available land and is calculated as the gross acres minus existing structures and environmental constraints. Land free of these constraints is better suited to future development.



Table 3 Location Factor 1 for Subareas 2-7

Subarea	Proximity	Capacity for Development	Parcels >5 acres	Constrained by Slopes or Wetlands
1		Existing city owned park with no potential for development.	0	74%
2	All parcels within ¼ mile of UGB, 8 are contiguous.	Total Lots: 12 Median lot size: 3.3 acres Housing Capacity: 95 R1, 2 R2	4	Gross Acres: 74 acres Buildable Acres: 27 acres 64% Constrained
3	60% of parcels within ¼ mile of UGB, 5 are contiguous.	Total Lots: 20 Median lot size: 2.3 acres Housing Capacity: 246 R1, 5 R2	6	Gross Acres: 90.7 Buildable: 89.7 1% Constrained
4	7 small parcels within ¼ mile of UGB, 0 are contiguous.	Total Lots: 57 Median lot size: 1.3 Housing Capacity: 330 R1, 7 R2	11	Gross Acres: 130.2 Buildable: 129.1 1% Constrained
5	80% of parcels within ¼ mile of UGB, 4 are contiguous.	Total Lots: 14 Median lot size: 4.2 Housing Capacity: 259 R1, 5 R2	6	Gross Acres: 75 Buildable: 74 1% Constrained
6	70% of parcels within ¼ mile of the UGB, 3 are contiguous.	Total Lots: 16 Median lot size: 2.1 Housing Capacity: 226 R1, 5 R2	11	Gross Acres: 69.6 Buildable: 69.0 1% Constrained
7	All parcels within ¼ mile of the UGB, 2 are contiguous.	Total Lots: 11 Median lot size: 5.1 acres Housing Capacity: 273 R1, 6 R2	8	Gross Acres: 76 Buildable: 76 0% Constrained

Findings

Contiguousness with existing city limits/UGB is the most practical and efficient means for expansion. Subareas 2, 3, 5, 6, and 7 are all contiguous with the existing boundary. Subarea 4 is contiguous with exception land and would be contiguous if subarea 3 was brought into the UGB.

The 441 acres of unconstrained land in subareas 3, 4, 5, 6, and 7 are the best candidates for residential expansion due to their location. Several subareas are good candidates for industrial expansion given proximity to the existing UGB and the presence of large parcels, even though the amount of buildable land

is lower due to some environmental constraints. Of these options, subareas 3, 5, and 7 have the highest median parcel size to aid in the likelihood of efficient and affordable development.

Location Factor 2

Factor 2 requires the City to consider opportunities for orderly and economic provision of public facilities and services. This section focuses on provision of roads, water, sanitary, and wastewater services and evaluates the advantages and disadvantages for expansion for each subarea for these services.

Transportation

The following transportation evaluation criteria were used to assess the subareas considered for potential UGB expansion against Factor 2 for transportation:

- **Fiscal Responsibility:** Allows for a transportation system that maximizes assets, minimizes costs, and enhances the surrounding community through right sized infrastructure.
- **Reliability and Efficiency:** Allows for an integrated and connected system of roadways, transit and bicycle and pedestrian facilities.
- **Accessibility and Connectivity:** Has proximity to convenient and accessible transportation facilities.
- **Safety and Security:** Has safe and convenient access for people of all ages and abilities through various modes of transportation.
- **Health:** Allows for new multi-modal facilities that protect the natural environment and encourage healthy and active living.
- **Equity:** Allows new facilities that aid in eliminating transportation related disparities and barriers and are affordable for all users.

Table 4. Location Factor 2 for Subareas 2-7: Transportation

<i>Subarea</i>	Advantages	Disadvantages
2	Fiscal Responsibility and Accessibility. • Close proximity to S Molalla Avenue (arterial) and Molalla Forest Road (collector) are advantageous for industrial purposes due to lack of residential type amenities (sidewalks and bike lanes). • There is a bus stop at 5th St and S Molalla Ave, so proximity to mass transit is a positive.	Safety, Security, Health, and Fiscal Responsibility. • No sidewalks or bike lanes are constructed on the adjacent streets and cost to construct them would be very high due to an elevated street through wetland area, a need to cross Bear Creek, and the need to support heavy truck traffic. • No stormwater in/under existing streets, retrofit would be required.
3	Fiscal Responsibility and Accessibility. • Close proximity to S Molalla Avenue (arterial), Molalla Forest Road (collector), and S Warrick Rd (local – county) are advantageous for industrial purposes due to lack of residential type amenities (sidewalks and bike lanes). • There is a bus stop at 5th St and S Molalla Ave, so proximity to mass transit is a positive.	Safety, Security, Health, and Fiscal Responsibility. • No sidewalks or bike lanes are constructed on the adjacent streets and cost to construct them would be very high due to an elevated street through wetland area, a need to cross Bear Creek, and the need to support heavy truck traffic. • No stormwater in/under existing streets, retrofit would be required.
4	Fiscal Responsibility and Accessibility	Safety, Security, Health, and Fiscal Responsibility.



Subarea	Advantages	Disadvantages
	• Close proximity to S Molalla Ave (arterial) and S Warrick Rd. (local – county).	• No sidewalks or bike lanes are constructed on the adjacent streets and cost to construct them would be very high due to an elevated street through wetland area, a need to cross Bear Creek, and the need to support heavy truck traffic. • No stormwater in/under existing streets, retrofit would be required. • Approximately ¾ mile from nearest mass transit at the closest for this subarea.
5	Fiscal Responsibility and Accessibility • Close proximity to Molalla Forest Road (collector).	Safety, Security, Health, and Fiscal Responsibility • No sidewalks or bike lanes are constructed on Molalla Forest Road, which has been gated for some 30-years. • Limited access to the existing road. • No stormwater in/under existing streets, retrofit would be required.
6	Fiscal Responsibility, Safety, Reliability, and Accessibility • Close proximity to Molalla Forest Road (collector) and Ona Way (local). • Ona Way fully built out within 800 feet, including sidewalk and bike lanes. • OR-211 (arterial) is located within 1,000 feet and accessible via Ona Way and Molalla Forest Road.	Safety, Security, Health, and Fiscal Responsibility • Upgrades required on S Ona Way, relatively minimal. • Upgrades required on Molalla Forest Road are substantial due to it being underdeveloped and gated for many years. No sidewalk, and no bike lanes currently to support residential growth. • Stormwater system is adjacent to the northmost property in the subarea.
7	Fiscal Responsibility, Safety, Reliability, and Accessibility • Close proximity to Molalla Forest Road (collector) and Ona Way (local). • Ona Way fully built out within 800 feet, including sidewalk and bike lanes. • OR-211 (arterial) is located within 1,000 feet and accessible via Ona Way and Molalla Forest Road.	Safety, Security, Health, and Fiscal Responsibility • Upgrades required on S Ona Way, relatively minimal. • Stormwater system is adjacent to the northmost property in the subarea.

Utilities

Utility service needs of the UGB expansion areas were evaluated based on the following criteria.

Water Service

- Does the subarea have existing water infrastructure to support development?
- Does the subarea have planned water infrastructure upgrades to support development?
- Is a mainline extension required to serve the subarea?
- Are there any identified deficiencies within or adjacent to the subarea?
- What is the relative cost to provide service?

Sanitary Sewer Service

- Does the subarea have existing sanitary infrastructure to support development
- Does the subarea have planned sanitary infrastructure upgrades to support development?
- Is a mainline extension required to serve the subarea?
- Are there any identified deficiencies within or adjacent to the subarea?
- What is the relative cost to provide service?

Stormwater Service.

- Does the subarea have existing storm infrastructure to support development?
- Does the subarea have planned storm infrastructure upgrades to support development?
- Is a mainline extension required to serve the subarea?
- Are there any identified deficiencies within or adjacent to the subarea?
- What is the relative cost to provide service?

Table 5. Location Factor 2 for Subareas 2-7: Utilities

<i>Subarea</i>	<i>Advantages</i>	<i>Disadvantages</i>
2	<i>Water</i> • Existing 12" water main, installed in 2024, runs along S Molalla Ave. to the SW corner of the subarea. <i>Storm</i> • Close proximity to Bear Creek will reduce distance to stormwater discharge.	<i>Sewer</i> • Existing 8" concrete sewer main, installed in 1954, runs along S Molalla Ave to the NW corner of the subarea. • Sewer main is drastically outdated and undersized; replacement and upsizing would be required all the way to OR-211. • Extension of main would also be required to serve the location. • A new sewage lift station would be required to serve this location. <i>Storm</i> • No storm infrastructure in this area; study, plan, and construction would be required.
3	<i>Water</i> • Existing 12" water main, installed in 2024, runs along S Molalla Ave. to the NE corner of the subarea.	<i>Water</i> • Existing 12" water main would require extension down S Molalla Ave and Molalla Forest Road. <i>Sewer</i> • Sewer Main extension of approximately 1-mile required to serve western portion. Sewer Main replacement and upsizing for approximately 1-mile and sewer main extension of approximately ½ mile required to serve eastern portion. • A new sewage lift station would be required to serve this location. <i>Storm</i> • No storm infrastructure in this area; study, plan, and construction would be required.

<i>Subarea</i>	<i>Advantages</i>	<i>Disadvantages</i>
4		<i>Water</i> • No water service is available until S Molalla Ave & Molalla Forest Road intersection. A main extension of approximately ¾ mile would be required at the closest point. <i>Sewer</i> • Sewer Main extension of more than 1.25 miles required to serve this subarea. • Replacement and upsizing of existing 8" concrete mains, where tie-in would occur, required. • A new sewage lift station would be required to serve this location. <i>Storm</i> • No storm infrastructure in this area; study, plan, and construction would be required
5		<i>Water</i> • Approximately ½ mile main extension required. <i>Sewer</i> • Sewer Main extension of approximately ½ mile required. • Replacement and upsizing of existing 8" main, where tie-in would occur, required. • A new sewage lift station would be required to serve this location. <i>Storm</i> • No storm infrastructure in this area; study, plan, and construction would be required.
6	<i>Water</i> • 8" water main, installed in 1996, and a 6" water main installed in 2006 are available adjacent to northmost property. <i>Sewer</i> • 2 x 8" sewer mains located in the vicinity of the northern most property in the subarea. <i>Storm</i> • Storm system located in the vicinity of the northernmost property in the subarea.	<i>Sewer</i> • A lift station over Bear Creek and force-main along S Ona WY would be required.
7	<i>Water</i> • 8" water main, installed in 1996, and a 6" water main installed in 2006 are available adjacent to northmost property. <i>Sewer</i>	<i>Sewer</i> • Sewer ends ~135ft N of the city limits. Potential gravity connection with extensive upsizing and extension of sewer.

Subarea	Advantages	Disadvantages
	• 2 x 8" sewer mains located in the vicinity of the northern most property in the subarea. <i>Storm</i> • Storm system located in the vicinity of the northernmost property in the subarea.	

Findings

Parcels along Molalla Avenue, Mathias Rd, or Molalla Forest Road would be the most cost effective to serve in the short term.

Location Factor 3

Location Factor 3 requires research of the Economic, Social, Environmental, and Energy (ESEE) consequences of development in proposed subareas. ESEE consequences determine potential positive or negative impacts of development.

Economic

The economic consequences of developing each subarea include:

- Cost of land/transportation facilities/utilities/services
- Parcel size (employment- specific uses)
- Development potential (i.e., existing uses)
- Balancing residential and employment priorities for a diversified tax base

Social

The social consequences of developing each subarea include:

- Ease of access to services such as schools, parks, library, commercial services
- Community health indicators such as increased physical activity via active transportation and recreational offerings
- Compatible nearby uses
- Cost of construction (i.e., cost of land and utility provision per unit or lot)
- Balancing residential and employment priorities to reverse the bedroom community

Environmental

The environmental consequences of developing each subarea include:

- Hazard Risk (slope, floodplain)
- Goal 5 resources present

Energy

The energy consequences of developing each subarea include:

- Ability to reduce VMT of development
- Alternate modes of transportation are feasible
- Heating/cooling of structures (i.e., existing large trees)

Figure 17. Location Factor 3: Access to Community and Services

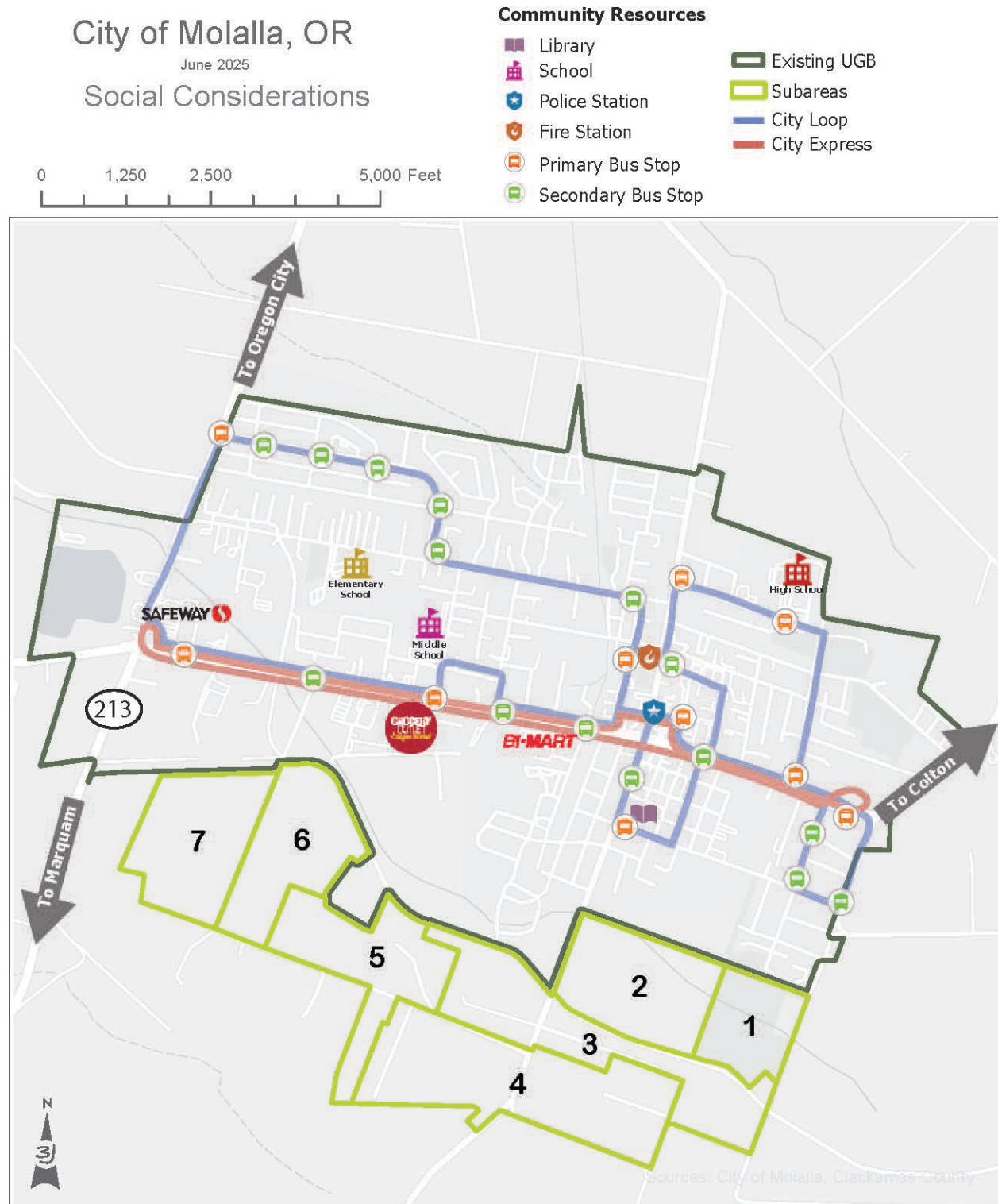


Table 6. Location Factor 3 for Subareas 2-7

Subarea	Economic, Social, Environmental, Energy
2	Expanding the UGB to subarea 2 is not positive for residential uses but is generally positive for industrial uses. • Costs to develop this area are high due to the need for a sewer lift station, upgraded and upsized sewer main all the way back to OR-211, a total lack of existing stormwater infrastructure, an underdeveloped (gravel) street to the south and an elevated street to the west through riparian and wetland areas with no sidewalks or bike lanes. • The area contains large parcels that would be likely to develop and has industrial zoned lands to the north and west, with county zoning to the south and east. • Hydric soils could be locally significant wetlands that would limit development potential. • VMT would increase due to an extended distance to services and amenities. • 75% of the land is under a single owner who also owns the industrial parcels inside the UGB and adjacent to the north.
3	Expanding the UGB to subarea 3 is not positive for residential or industrial uses. However, the parcels closest to Moalla Avenue provide some positive attributes. • Costs to develop and to serve existing development in this subarea are high due to the need for a sewer lift station, 2 main extensions of about a mile, upgraded and upsized sewer piping, an underdeveloped transportation system with no sidewalks or bike lanes, and a total lack of stormwater infrastructure. • Existing parcelized residential uses are not close to services. • Flooding during heavy rains reported. • Increased VMT due to extended distance to services and amenities.
4	Expanding the UGB to subarea 4 is not positive for residential or industrial uses. • Cost to develop and to serve existing development in this subarea are high due to the area being buffered from the UGB by subareas 3 and 5 creating a necessity for even longer water and sewer main extensions, upgraded and upsized sewer piping, the need for a lift station, an underdeveloped transportation system with no sidewalks or bike lanes, and a total lack of stormwater infrastructure. • No opportunities for economy of scale. • Flooding during heavy rains reported. • Increased VMT due to extended distance to services and amenities.
5	Expanding the UGB to subarea 5 is overall not positive for residential or industrial uses. However, the parcels closest to Molalla Forest Road provide some positive attributes. • Costs to develop and to serve existing development in this subarea are high due to the need for a sewer lift station, 2 main extensions of about ½ mile, upgraded and upsized sewer piping, an underdeveloped transportation system with no sidewalks or bike lanes, and a total lack of stormwater infrastructure. • Existing parcelized residential uses are not close to services. • Flooding during heavy rains reported. • Increased VMT due to extended distance to services and amenities.
6	Expanding the UGB to subarea 6 would be positive for residential uses in the northern and eastern portions of the subarea, but none of the property would be positive for industrial uses. • Larger parcels with access along S Ona Way and Molalla Forest Road. • Closer to larger grocery options and restaurants along Hwy 211. • Bus stop located within 1/3 mile of the northernmost properties. • Some hydric soils and creek adjacent flooding that is buffered by Molalla Forest Road.

Subarea	Economic, Social, Environmental, Energy
7	Expanding the UGB to subarea 7 would be positive for residential uses, but not for industrial uses. • Larger parcels with access along S Ona Way. • Closer to larger grocery options and restaurants along Hwy 211 • Bus stop located within 1/3 mile of the northernmost properties. • Hydric soils could be locally significant wetland. • Buffering from industrial uses adjacent to the north would be necessary for residential uses.

Findings

Parcels closer to the economic and commercial center along Hwy 213 and the Molalla Loop and Molalla Express routes of the South Clackamas Transportation District shuttle service provide the greatest economic, social, and energy benefits to the UGB expansion. According to 2022 Census data reported by On-The-Map, 3,849 Molalla residents commute out of the city for work with the highest percentage (40%) heading north to either Portland Metro, Oregon City, or Canby on Hwy 213, with fewer traveling South to Salem (2%). Based on the same data, 1,769 people travel into Molalla for work with 14% coming from listed locations to the north and 9% from those to the south.⁷

Development on land that has a high likelihood of being found to be a locally significant wetland once a wetlands inventory is completed as part of concept planning would have the highest negative environmental consequences.

Location Factor 4

Goal 14 Location Factor 4 considers the compatibility of the proposed expansion with nearby agricultural and forest activities around each subarea.

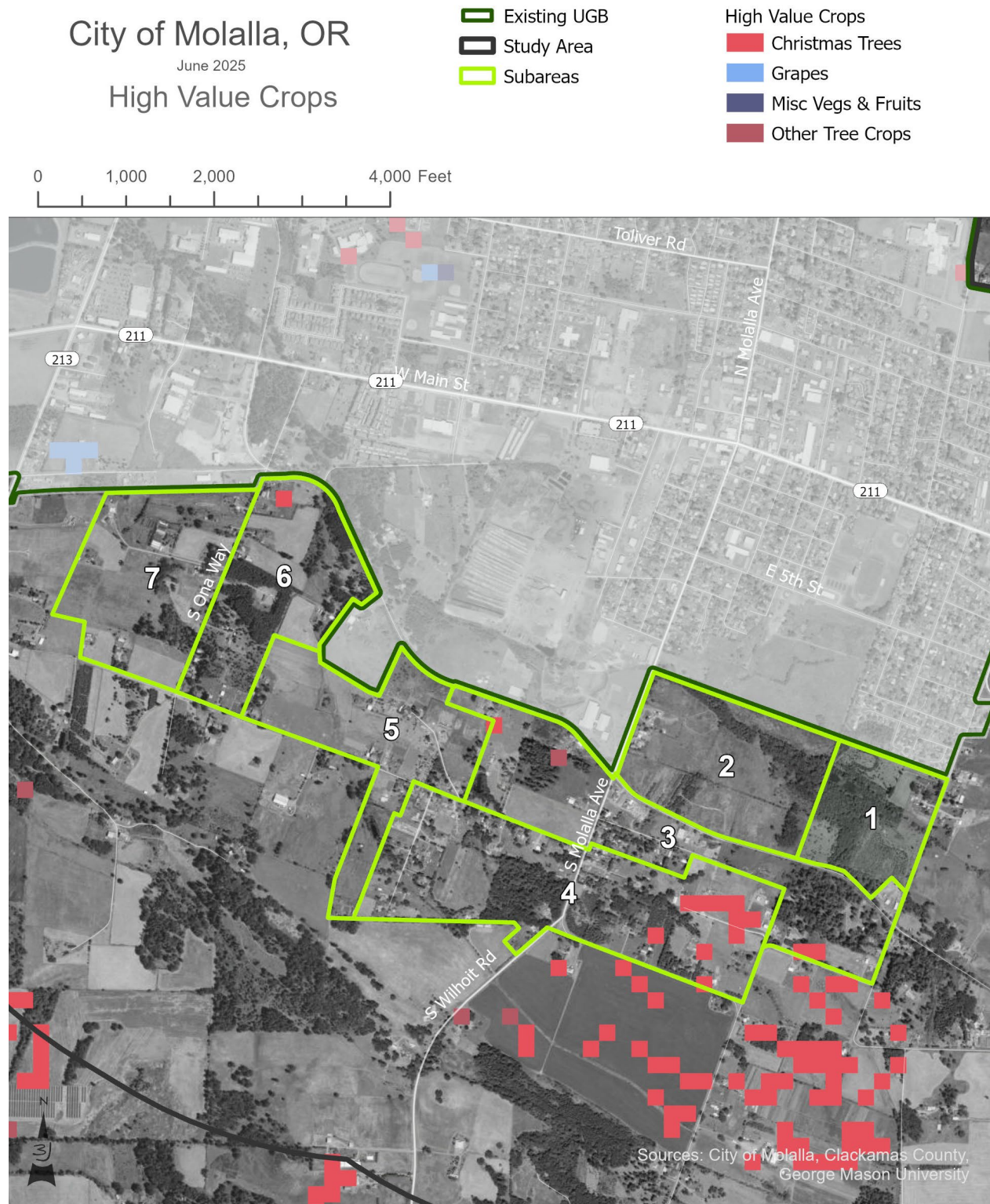
⁷ Source: U.S.Census Bureau, Center for Economic Studies, LEHD, accessed via On The Map reporting data from 2022 <https://onthemap.ces.census.gov/>.



Table 7. Location Factor 4 for Subareas 2-7

Subarea	Advantages	Disadvantages
2	Industrial uses would be buffered by the existing development patterns. The land is bordered to the north and west by existing industrial lands. Bordered to the south by Molalla Forest Road. Bordered to the east by Ivor Davies Nature Park and Disc Golf Course.	Residential uses would require buffering and create a patchwork of intermixed industrial and residential land, thus driving up infrastructure costs which drives up housing costs.
3	Near city park and rural residential	Industrial uses would need buffering
4	Near existing rural residential	Near some farm use
5	Near existing rural residential	Near some farm use
6	- Buffered from nearby industrial uses to the northwest by Ona Way/Molalla Forest Road. - Residential land to the east and northeast. - Near existing rural residential	Near some farm use
7	Near existing rural residential	Adjacent to industrial development and zoning to the north.

Figure 18 High Value Crops



Findings

Subareas near Christmas tree farms have a greater compatibility than farms growing produce. Though none of the EFU land currently reports growing produce, the city should continue contact with local farmers to discuss compatibility in more detail as expansion occurs.

As mentioned, and illustrated above, Subareas 2 and 3 are adjacent to industrial land within the UGB and rural agricultural lands to the south. Subareas 4, 5, 6, and 7 have residential land to the north and rural agricultural lands to the south. There are no forest activities near the exception lands.

6. Remaining Land Need

The process of evaluating and prioritizing evaluates the advantages and disadvantages of expansion for each subarea for these services.

OAR 660-024-0065(3) Establishment of Study Area to Evaluate Land for Inclusion in the UGB: When the primary purpose for expansion of the UGB is to accommodate a particular industrial use that requires specific site characteristics, or to accommodate a public facility that requires specific site characteristics, and the site characteristics may be found in only a small number of locations, the preliminary study area may be limited to those locations within the distance described in section (1) or (2), whichever is appropriate, that have or could be improved to provide the required site characteristics. For purposes of this section:

- (a) The definition of “site characteristics” in OAR 660-009-0005(11) applies for purposes of identifying a particular industrial use.

Figure 19. Subareas 1-7 with Industrial Lot Size

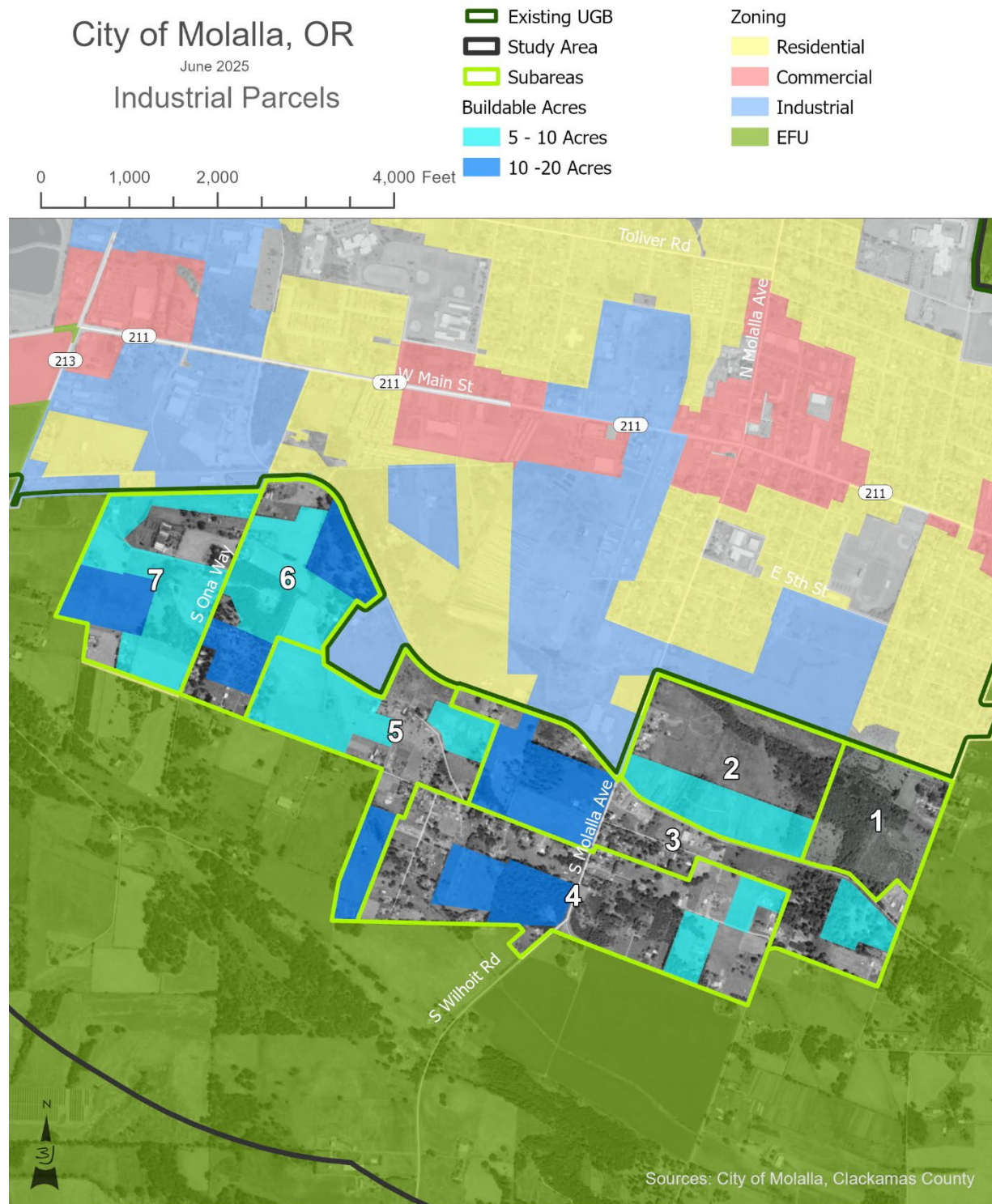


Figure 20. Subareas 8-19 with Industrial Lot Size

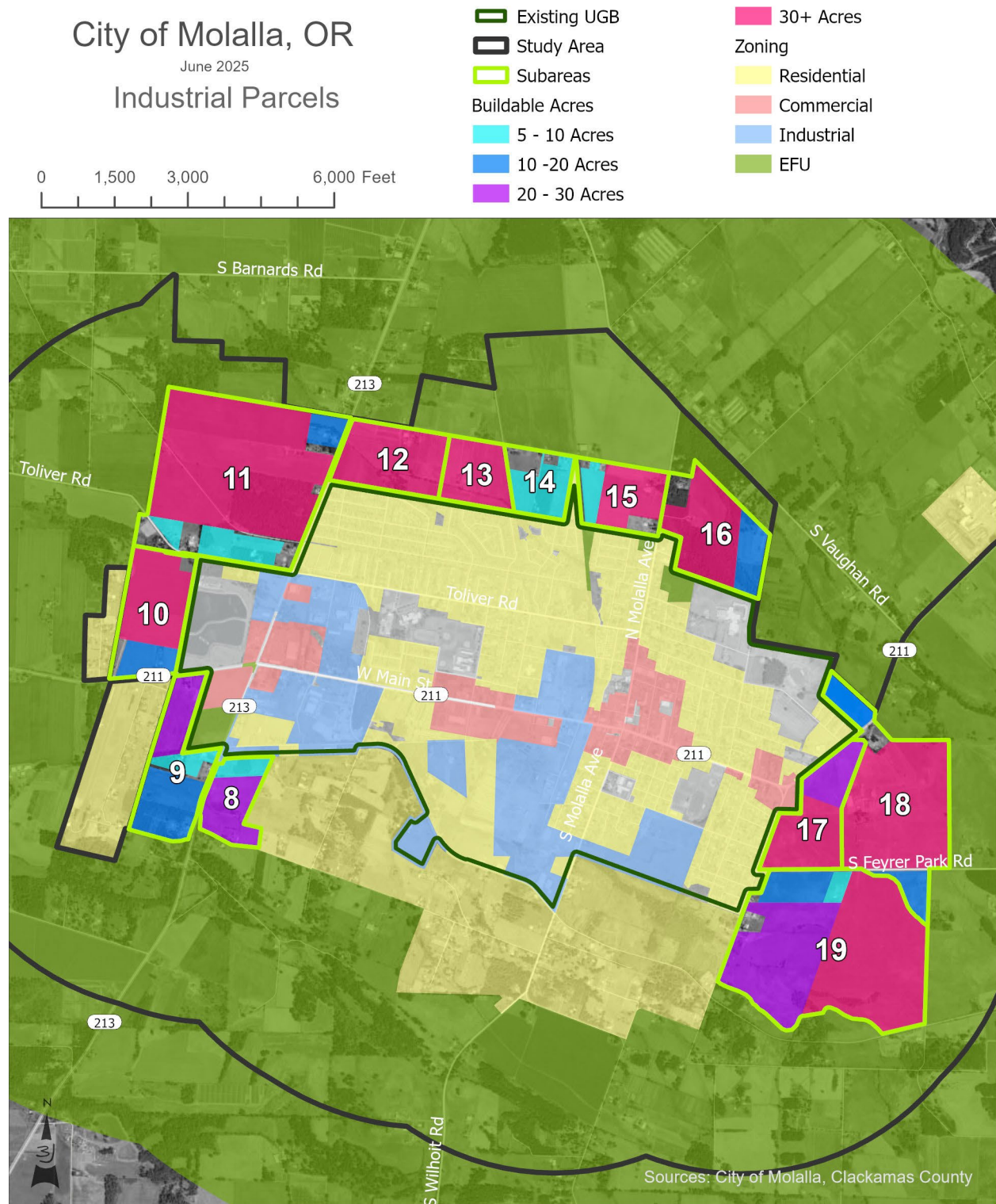


Table 8. Fourth Priority Subareas (8-19) and Capacity for Large Parcel Industrial Land Need

Subarea	Advantages	Disadvantages
9	Relatively easy connections to existing water/sewer in OR 213. Proximity to HWY is good for comm development. Subarea is composed of two larger parcels to meet industrial and/or commercial needs.	Existing solar farm and other agricultural uses on portions of the 32+ acre parcel may preclude this subarea from consideration.
10	Relatively easy connections to existing water/sewer in OR 213. Proximity to HWY is good for comm development. Subarea is composed of two larger parcels to meet industrial and/or commercial needs.	Parcels just a hair smaller than the 20+ acre size recommended for industrial development. Current age uses on properties.
11	immediate proximity to wastewater treatment plant. 12" Water in OR-213 and Toliver RD. Parcels of size to accommodate industrial and commercial large parcel needs.	Existing agricultural uses. Proximity to agricultural uses.
12	Very large parcels that could meet industrial, commercial, and some residential needs. OR-213 and Toliver RD are arterial and major collector access points respectively. Abundant options for utility connections on OR-213 and Toliver RD. Limited upsizing, if any, needed. Close proximity to wastewater treatment plant.	Existing agricultural uses. Proximity to agricultural uses.
13	Proximity to OR-213 and Vick RD for access. Potential connectivity to existing residential development. Utilities in OR-213 could be extended for gravity sewer and water service.	Proximity to residential and agricultural uses across Vick RD makes these parcels less suitable for industrial uses. Creamery Creek runs through the middle of the property which makes the property less contiguous for development.
14	Proximity to Vick RD. More removed from utilities but this parcel would serve as a logical extension of subarea 12 if it were brought in. Utility connections from OR-213 or Wingfield DR and Sarah LN.	Proximity to residential and agricultural uses across Vick RD makes these parcels less suitable for industrial uses. Creamery Creek runs through the southern portion of the property which makes the property less contiguous for development.
15	Proximity to Vick RD. Even more removed from utilities but this parcel would serve as a logical extension of subareas 12 and 13 if they were brought in. Potential road and utility connections to Wingfield DR and Sarah LN	Proximity to residential and agricultural uses across Vick RD makes these parcels less suitable for industrial uses. Smaller parcels along Vick RD.
16	Proximity to water/sewer on N Molalla Ave. A few large parcels.	Extensive runout to utilities. Proximity to residential areas is not ideal for industrial.
17	Proximity to water/sewer on N Molalla Ave. A few large parcels.	Majority of this subarea is a heritage farm on the historic registry. Proximity to residential areas is not ideal for industrial.
18	Close utility connections from OR-211 and S Mathias RD. Relatively large parcels. 14" and 20" water mains adjacent to sites.	Existing agricultural uses as rangeland for cattle. All of this subarea is used for recycling water by the City. Potential for large upsizing project as sewerage lines are close to capacity. Proximity to scenic Molalla River.
19	Close utility connections from OR-211 and S Mathias RD. Relatively large parcels. 14" and 20" water mains adjacent to sites from Feyrer Park RD. 13 acre parcel on the north side of OR 211 is not used for recycled water.	Existing agricultural uses as rangeland for cattle. All of this subarea is used for recycling water by the City except for the 13 acre parcel north of OR-211. Potential for large upsizing project as sewerage lines are close to capacity. Proximity to scenic Molalla River.
19	Relatively large parcels. 14" and 20" water mains adjacent to sites from Feyrer Park RD.	Existing agricultural uses as rangeland for cattle and elk farm. Majority of this subarea is used for recycling water by the City. Potential for large upsizing project as sewerage lines are close to capacity. Proximity to scenic Molalla River.

Figure List

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2. Molalla Comprehensive Plan Map Zone Changes
3. Preliminary Study Area with Resource and Exception Lands
4. Preliminary Study Area with Rural Reserves
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4. Location Factor 2 for Subareas 2-7: Transportation
5. Location Factor 2 for Subareas 2-7: Utilities
6. Location Factor 3 for Subareas 2-7
7. Location Factor 4 for Subareas 1-7
8. Fourth Priority Subareas (8-19) and Capacity for Large Parcel Industrial Land Need

Appendix List

- A. Calculation of BLI & Rezoning within UGB with Impact on Residential Land Need
- B. Calculation of Housing Capacity by Subarea

Appendix A

Step 1: Calculate gross vacant acres by plan designation, including classifications for fully vacant and partially vacant (infill potential) parcels. Per Exhibit 3: 32.99 acres of residential land is further broken down as follows:

R1	15.78	R-1 Low Density Residential	9.93	25.71
R2	5.99	R-2 Medium Density Residential	25.52	31.51
R3	11.22	R-3 Medium-High Density Residential	7.15	18.37
Total	32.99		42.6	75.59

Step 2: Calculate net buildable vacant acres by plan designation by subtracting land that is constrained from future development, such as existing public right-of-way, parks and open space, steep lots, and floodplains. For the purposes of this analysis, it was assumed that a 25% reduction in land area adequately accounts for open space, right-of-way, parks, and constrained lands.

R1	3.95	R-1 Low Density Residential	2.48	6.43
R2	1.50	R-2 Medium Density Residential	6.38	7.88
R3	2.81	R-3 Medium-High Density Residential	1.79	4.59
Total	8.25		10.65	18.90

Step 3: Calculate net buildable vacant acres by plan designation by subtracting future public facilities such as roads, schools, parks, and gross buildable vacant acres.

R1	11.84	R-1 Low Density Residential	7.45	19.28
R2	4.49	R-2 Medium Density Residential	19.14	23.63
R3	8.42	R-3 Medium-High Density Residential	5.36	13.78
Total	24.74		31.95	56.69

Step 4: Determine total net buildable acres by plan designation by adding partially vacant acres to net buildable vacant acres. The basic calculations for redevelopable properties were completed by Molalla City Staff utilizing current GIS data and visual inspection of properties. Total net redevelopable properties by plan:

			Total Acres	Total Capacity
R1	21.42	R-1 Low Density Residential	40.70	204
R2	0.57	R-2 Medium Density Residential	24.20	242
R3	14.10	R-3 Medium-High Density Residential	27.88	558
Total	36.09		92.78	1,003
		R3 Pipeline Completed		287

Total HNA Land Need	Unmet Need after BLI & Rezoning	Adjusted Need for R3 surplus	Acres Needed
1,098	894	894	178.90
499	257	34	3.42
399	(446)		
1,996			
	Total for Expansion	929	182.32
	with 25% Infrastructure		227.90

Appendix B

Subarea	Total Buildable Acres	DU <1 acre	DU >1 and <2	# of Vacant Lots <1 acre	# of Vacant Lots >1 and <2	Remaining Acres of Buildable Land
1	-	-	-	-	-	-
2	26.95	4.00	-	1.00	-	25.16
3	99.07	5.00	4.00	2.00	-	80.72
4	129.44	17.00	18.00	3.00	-	84.08
5	76.05	1.00	1.00	-	-	69.73
6	70.26	4.00	3.00	1.00	-	59.69
7	76.58	-	-	-	-	73.69
8	41.56	-	-	-	-	41.23
9	76.52	-	-	-	-	67.60
10	75.65	-	-	-	-	74.00
11	247.91	2.00	1.00	-	-	237.12
12	58.72	-	-	-	-	55.88
13	37.29	-	-	-	-	36.24
14	37.89	1.00	1.00	1.00	-	33.13
15	53.35	4.00	-	-	-	45.36
16	77.99	-	-	-	3.00	75.54
17	65.93	-	-	-	-	65.93
18	156.57	-	-	-	-	140.85
19	237.36	1.00	-	1.00	-	231.66

Subarea	Existing Homes on Lots <2	New Home on Dev Lots <2 acres	New Home on Vacant Lot <1 acre	New Homes on Vacant Lot >1 and <2 acres	Housing Capacity for Parcels <2	Housing Capacity for Parcels >2	Total Housing Capacity (Gross)	Housing Capacity with 25% Infrastructure Offset	Industrial Lots >5	Industrial Buildable Acres
1	-	-	-	-	-	-	-	-	0	0.00
2	4	-	1	-	1	128	129	97	4	23.72
3	9	4	2	-	6	411	417	313	6	47.01
4	35	18	3	-	21	428	449	337	11	66.81
5	2	1	-	-	1	355	356	267	5	44.23
6	7	3	1	-	4	304	308	231	6	53.54
7	-	-	-	-	-	375	375	282	8	56.41
8	-	-	-	-	-	210	210	158	2	37.34
9	-	-	-	-	-	344	344	258	4	58.70
10	-	-	-	-	-	377	377	283	2	70.88
11	3	1	-	-	1	1,208	1,209	907	10	232.97
12	-	-	-	-	-	285	285	213	1	55.88
13	-	-	-	-	-	185	185	138	1	36.24
14	2	1	1	-	2	169	171	128	3	26.98
15	4	-	-	-	-	231	231	173	2	41.55
16	-	-	3	-	3	385	388	291	2	68.63
17	-	-	-	-	-	336	336	252	2	65.93
18	-	-	-	-	-	718	718	538	3	133.64
19	1	-	1	-	1	1,180	1,181	886	6	229.00

Density Approach	HNA Overall Units Needed	HNA Expected Average Density	HNA Acres of Deficit Housing Need	(Calculated) HNA Percentage of Need	(Calculated) HNA Deficit in Units	Housing Need Offset for >2 acres
R1	894	5.00	178.86	98%	894	894
R2	34	10.00	3.43	2%	34	33
R3	-	20.00	-	0%	-	(6)
Total	929		182.2875	100%	929	922

Subarea 1	Subarea 2	Subarea 3	Subarea 4	Subarea 5	Subarea 6	Subarea 7	Total
0	96	307	330	262	226	276	1496
0	2	6	7	5	5	6	31
0	0	0	0	0	0	0	0
-	97	313	337	267	231	282	1526



August 19, 2026



City of Molalla

Mac Corthell, Assistant City Manager

Dan Zinder, Planning Manager

Sent via email

RE: Required Timeline and Applicable Rules for Molalla's UGB amendment

Dear Mr. Corthell and Mr. Zinder,

The Department of Land Conservation and Development (DLCD, or the Department) has received the notice of upcoming hearings for a UGB amendment greater than 50 acres from the City of Molalla, which will fulfill the City's approved Sequential UGB work program. This letter explains the applicable rule sets, the role of Clackamas County, the meaning of "submit," and the deadline for submission.

Statutory Language

House Bill 2889 (2023), effective July 18, 2023, described as the technical "clean-up bill" to HB 2001 (2023), known as the Oregon Housing Needs Analysis bill, amended Oregon Revised Statute¹ as follows: "To avoid interference with current planning activities or to avoid unjust or surprising results, the Land Conservation and Development Commission may postpone, for cities specified by the commission, the applicability of section 13, 21, 22 or 23, chapter 13, Oregon Laws 2023 (Enrolled House Bill 2001), and the amendments to ORS 197.286, 197.290, 197.296, 197.297 and 197.303 by sections 12 and 25 to 28, chapter 13, Oregon Laws 2023 (Enrolled House Bill 2001), until a date that is not later than January 1, 2027."

This provision allows LCDC to delay the applicability of certain sections of the OHNA Bill, including "13 [197A.210], 21 [197A.280], 22 [197A.270] or 23 [197A.018], chapter 13, Oregon Laws 2023, and the amendments to ORS 197.286, 197.290, 197.296 [renumbered 197A.350], 197.297 [renumbered 197A.335] and 197.303 [renumbered 197A.348] by

¹ HB 2001, section 9(4) (2023), was amended by HB 2889 (2023), and temporarily compiled as a note after ORS 197A.025 (2023).

sections 12 and 25 to 28, chapter 13, Oregon Laws 2023, until a date that is not later than January 1, 2027.

Temporary Rule Adoption

Accordingly, the Land Conservation and Development Commission (LCDC or commission) adopted a temporary rule package at its June 2026 meeting. The temporary rules, as adopted by the commission, provide that any legislative amendment submitted to DLCD for review on or before January 1, 2027, may apply the versions of OAR chapter 660, divisions 8, 21, and 24 that were in effect prior to the OHNA rule amendments. This is an option for cities like Molalla already working on major planning efforts to complete their work under the pre-OHNA rule set.

Meaning of “Submit” Under OAR 660-018-0040 and 660-025-0130/0140

For purposes of the January 1, 2027 deadline, “submit” means that the city (and county, where applicable) has completed local adoption and transmitted the adopted amendment to DLCD under OAR 660-018-0040 or OAR 660-025-0130 to 0140. A complete submittal under OAR 660-025-0130 includes the Notice of Decision required by OAR 660-025-0140(1), the adopted ordinance or ordinances, findings and supporting materials, maps and exhibits, the list of participants required by OAR 660-025-0130(1), and the local record or indexed record consistent with OAR 660-025-0130(3). A project is not considered submitted if it is still in local hearings, has been adopted locally but not transmitted, or if only draft materials have been sent. DLCD must receive the adopted amendment package on or before January 1, 2027.

After the city or county adopts a final decision on a UGB amendment or other work task, the local government must send a Notice of Decision to DLCD and to all participants. The date DLCD receives the Notice of Decision package is the operative “submittal” date for purposes of the temporary rules.

County Adoption Requirements

Because the city’s UGB amendment involves land outside the city limits, Clackamas County must also adopt the amendments before they can be submitted to DLCD. The required sequence is that the city first adopts the UGB amendment; the county then adopts the UGB amendment, and the city and county jointly submit the adopted amendments to DLCD under OAR 660-025-0130 to 0140. The January 1, 2027 deadline applies to the final, county-inclusive submittal.

Notice and Objection Process (OAR 660-025-0140)

The Notice of Decision initiates a 21-day objection period during which any person who participated orally or in writing may file an objection with DLCD. If no valid objections are

filed, the Director reviews the submittal. If objections are filed, the DLCD Director reviews the submittal and the objections, addressing the issues raised by the objectors. In either case, the Director has 90 days from the date of submittal to issue a decision.

Components of the Coordinated Package and Applicable Rule Sets

If the city elects to use the pre-OHNA rules under the temporary rules as adopted by the commission, the components of the coordinated package may be reviewed under the pre-OHNA versions Division 24, provided the complete package is submitted to DLCD on or before January 1, 2027.

Consequences of Missing the Deadline

While there is no case law about this topic, the statute could be interpreted to mean that any component submitted after January 1, 2027 must use, as applicable, the most current version of Divisions 8 and 24 and the state OHNA housing allocation. This would require the city to redo its HCA, land need analysis, and UGB justification under the OHNA framework.

Summary

To guarantee legal use of the pre-OHNA rule set, Molalla must complete local and county adoption and submit the UGB amendment to DLCD on or before January 1, 2027. "Submit" means DLCD receives the adopted amendment under OAR 660-018-0040 or OAR 660-025-0130 to 0140.

If you have any questions or need further assistance, please contact me at [503-302-0937](tel:503-302-0937), ethan.stuckmayer@dlcd.oregon.gov or DLCD Regional Representative Kelly Reid at (971) 345-1987 or kelly.reid@dlcd.oregon.gov.

Sincerely,



Ethan Stuckmayer
Manager, Housing Division
CC:
Brenda Bateman, DLCD
Kirstin Greene, DLCD
Alexis Hammer, DLCD
Kevin Young, DLCD
Kelly Reid, DLCD

Eric R. Davenport
30637 S. Hwy 213
Molalla, Oregon 97038
503/806-2177: ericrdavenport@gmail.com

July 2, 2026

The Honorable Scott Keyser, Mayor
City of Molalla
Molalla, Oregon

RE: Property Inclusion Request into the Urban Growth Boundary (UGB)

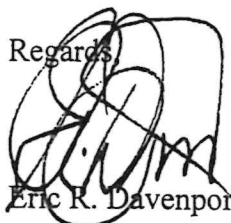
As the sole owner of the property 30637 S Hwy 213, Molalla, Oregon, I request consideration for inclusion in the upcoming expansion of the City of Molalla's UGB.

The Tax Lot identification number for this parcel is MAP 52E06 02300.

This property is a single parcel of 11.33 acres presently zoned Exclusive Farm Use per Clackamas County Zoning designations. No change in zoning designation is being requested at this time.

Please advise if further documentation for action is required from me to effect inclusion within the revised UGB.

Regards,



Eric R. Davenport

Cc: Dan Zinder, Planning Manager

The Faulhabors

30681 S. Hwy 213
Molalla, Oregon 97038
503/970-6266: ronnsandy@hotmail.com

July 2, 2026

The Honorable Scott Keyser, Mayor
City of Molalla
Molalla, Oregon

RE: Property Inclusion Request into the Urban Growth Boundary (UGB)

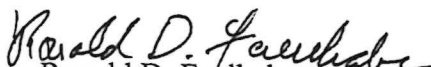
We are the sole owners of the property 30681 S Hwy 213, Molalla, Oregon, and request consideration for inclusion in the upcoming expansion of the City of Molalla's UGB.

The Tax Lot identification number for this parcel is MAP 52E06 02301.

This property is a single parcel zoned Exclusive Farm Use (EFU) per Clackamas County Zoning designation. No change in zoning designation is being requested at this time.

Please advise if further documentation for action is required from us to effect inclusion within the revised UGB.

Regards,


Ronald D. Faulhaber


Sandra L Faulhaber

✓ Cc: Dan Zinder, Planning Manager