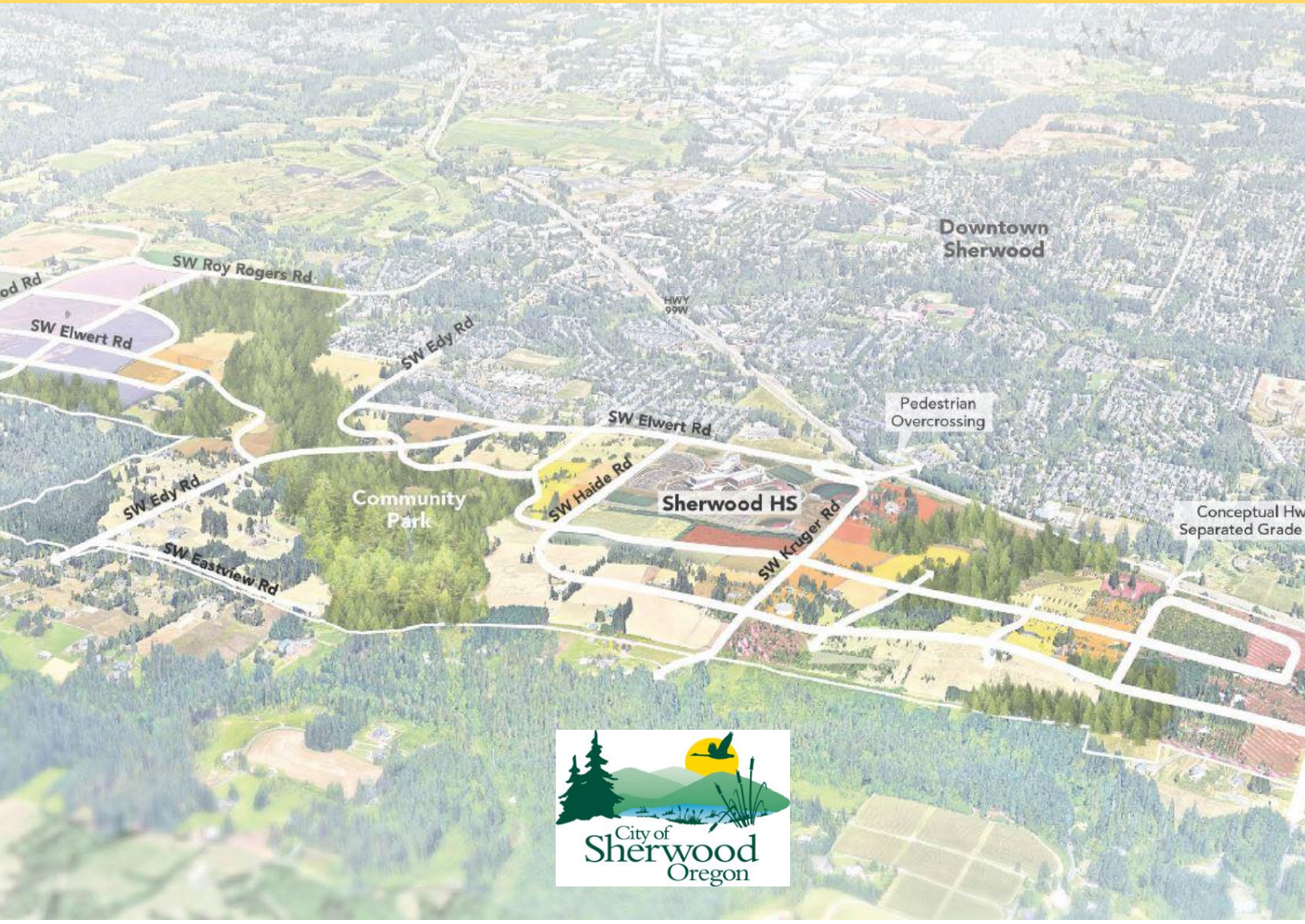
SHERWOOD WEST CONCEPT PLAN

Attachment C1

Concept Plan Appendices



APPENDIX A

Future Development Timeline

Sherwood West Concept Plan

Why are we Planning for Sherwood West?

The City of Sherwood is taking a second look at the 2016 Concept Plan for Sherwood West. The updated Concept Plan addresses many factors including state rules and opportunities for housing and employment. The updated plan supports the city's newly adopted Comprehensive Plan. Oregon Law requires a 20-year land supply for housing and employment uses within cities. Sherwood has a deficient of housing units to meet projected future growth. If Metro decides the regional Urban Growth Boundary (UGB) needs to be expanded it will need to decide where to expand. If Sherwood West, or a portion thereof, is brought into the UGB our community's concept plan for the area ensures that it will grow in a way that we all love. **For more information: www.SherwoodOregon.gov, Email: PalmerE@Sherwoodoregon.gov, Phone: 503-625-4208**

Potential Sherwood West Planning and Development Process 2022-2065

Sherwood West Concept Plan

The City received a Grant to Update the 2016 Sherwood West Preliminary Concept Plan, in 2021. A Community Advisory Committee was appointed to update the plan. It is anticipated that public hearings will be held before the Planning Commission and City Council for acceptance of the plan in 2022

Metro Decision to Expand UGB

Every six years, the Metro Council must review and report on the 20-year land supply in the Urban Growth Boundary (UGB). If necessary Metro adjusts the UGB to meet land needs for that 20-year period. Oregon law requires Metro to maintain a 20-year land supply within the UGB. Metro's next review of the land supply will occur in 2024

Repeats at least every 6 years

This decision of Metro is required at least every 6 years

Sherwood Decision to Expand UGB

If the Metro Council decides the UGB needs to be expanded, it will decide where to expand. There are currently 27 Urban Reserve Areas in the Metro region. Metro would need to decide that Sherwood West is an appropriate area for expansion

This decision typically takes a year

Refinement Planning Process & Adoption

Once any part of the Sherwood West area is brought into the UGB, the City will begin a more refined comprehensive planning process by working with property owners and residents to identify appropriate zoning designations, and amendments to the development code, and transportation plan.

This process typically takes 1.5 to 3+ years

Annexation

After completion and adoption of a Refinement Plan for the area, property owners who want to annex into the City must file an an annexation request and meet the city's, Metro and state annexation criteria.

Repeats for every property or group of properties requesting to annex

This process typically takes 6+ months

Land Use Applications & Public Hearings

After annexation, property owners must submit a land use application before developing their property after public notice and a public hearing.

Repeats for each development

This process typically takes up to 8 - 12+ months

Public Improvements Construction

If a land use application is approved, the applicant is required to construct pubic improvements (typically utility and transportation improvements) prior to any construction.

Repeats for each development

This process typically takes 6 - 12+ months

Construction Residents and Businesses Move In

After public improvements are completed, a developer can get permits to begin construction.

If Metro expands the UGB to include any part of Sherwood West; if refinement planning is approved by the community and City Council; if property owners annex into the city; and if the public and the City support land use applications, the earliest new residents/businesses could move in is 2029

This process typically takes 3 - 12+ months and repeats for every project

Timing of annexation and development varies based on property owner desires, public support, and market conditions

APPENDIX B

Housing Policy Implications Memo

HOUSING POLICY IMPLICATIONS

Sherwood West Preliminary Concept Plan, Comprehensive Plan Update, and Oregon House Bill 2001

TO:	Community Advisory Committee
FROM:	Erika Palmer, Planning Manager
CC:	Angelo Planning Group
DATE:	April 27, 2021

Introduction

The purpose of this memorandum is to summarize the future of housing to help inform discussions on this topic during this re-look of the Preliminary Sherwood West Concept Plan. This memorandum provides a brief overview of housing and neighborhoods described in the 2016 Sherwood West Preliminary Concept Plan, the draft housing goals and policies in the updated Comprehensive Plan, and implementation of Oregon House Bill 2001: Housing Choices (HB 2001).

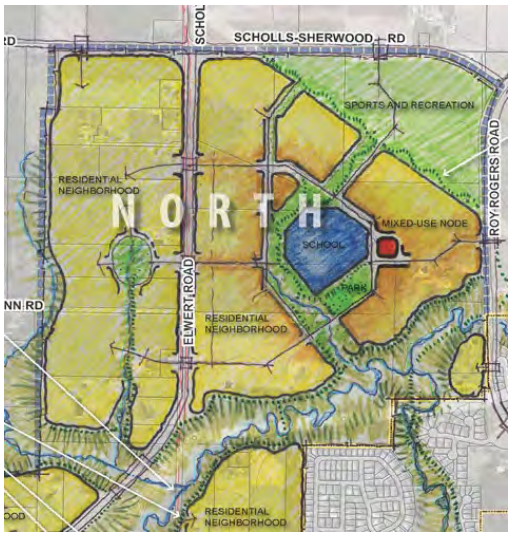
SHERWOOD WEST PRELIMINARY CONCEPT PLAN

Sherwood West is the regional Urban Reserve Area 5B, which is approximately 1,291 acres. This area, designated by Metro in coordination with its partner cities and counties, identifies land that will be considered for addition to the region's Urban Growth Boundary (UGB) for urbanization over a 50 year period. Sherwood West is the largest urban reserve area adjacent to Sherwood, and given the location of existing utilities, the area is logically the best direction for the City to consider growth in the future.

The 2016 Preliminary Sherwood West Concept Plan recognized that Sherwood has a shortage of land available for housing and the plan was envisioned to help address this need. The understanding was that If we don't add more land for new housing, people will still move here, housing prices will rise, and the community will experience more pressure for infill development at higher densities. The Preliminary Concept Plan did not speak to urban densities or the design of a particular area within Sherwood West. The Plan was intended to be a tool for residents and decision-makers to rely on as they make decisions about growth expansions, knowing that community values and needs may shift, tastes in housing may change, and densities and neighborhood form would be shaped through future refinement processes.

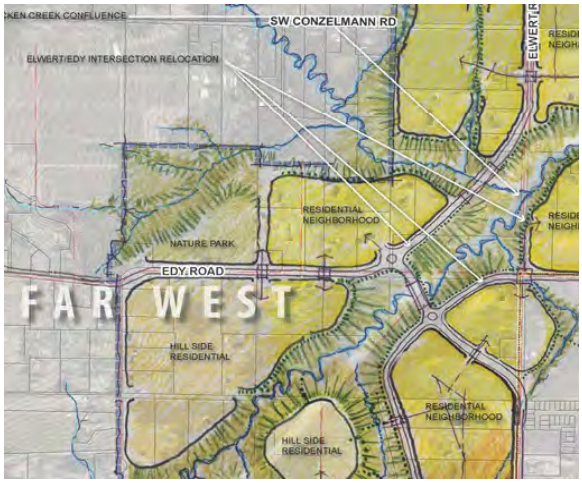
The Sherwood West Preliminary Concept Plan preferred alternative recognized four distinct subareas: the North District, the West District, the Far West District and the Southwest District. All four subareas were intended to provide a mix of housing.

The North District is a mixed-housing neighborhood organized around a new school, neighborhood park, and mixed-use node. Residential intensities transition from center to edge of the neighborhood. Residential housing is oriented towards the collective open space. West of Elwert Road, residences are organized around a smaller neighborhood park that marks the high point of a topographic ridge.



The West District is a mixed-housing district organized around a new school (Sherwood High School), neighborhood park, and mixed-use center. A new neighborhood connector street paralleling Elwert serves the neighborhood from the west side. The road follows the break in topography to create an area for residential development that is anchored by the school site. Housing intensities transition out from this mixed-use center (high to low) with hillside residential on the higher and steeper slopes.

The Far West District includes a mixed residential neighborhood, with the higher and steeper elevations envisioned to be hillside residential.



The Southwest District is a primarily residential neighborhood with varying intensities and hillside residential on the higher and steeper elevation slopes.

Land uses identified in the Sherwood West Preliminary Concept Plan are primarily residential, with varying degrees of intensity based on topography, natural features, proximity, and transition out from mixed-use centers (high to low).

Subsequent to the completion of the Preliminary Concept Plan, city staff prepared preliminary estimates of the housing capacity provided by the Plan. In 2018, staff provided a housing analysis of a proposed expansion on roughly 586 gross acres of the Sherwood West area out of the approximately 1,291 acres. The net developable acreage, after excluding roads, natural resource areas, land designated for parks

and open space, and an existing church, came to roughly 452 acres. Of the 452 developable acres, roughly 425 acres are designated Residential Neighborhood, Residential Hillside, and Residential Mixed-Use. These 452 acres should be thought of as two area types. The first type, an urban area, suitable for medium and higher density development. The second, a hillside area, which its topography makes it suitable for lower density development. It was envisioned residential intensity transitioning out from mixed-use centers (high to low) with hillside residential on the higher and steeper sloped areas. The overall assumed average residential density of the 452 acres was 8.5 dwelling units per acre. The 8.5 average residential density in the 452 developable acres would accommodate roughly 3,800 new housing units.

SHERWOOD'S COMPREHENSIVE PLAN UPDATE

The following section focuses on the City of Sherwood's 2019-2039 Housing Needs Analysis (HNA) adopted by Ordinance 2020-018 and the draft 'Housing' goals and policies developed through the city's comprehensive planning work. The goals and policies have not been adopted and may be refined during the adoption process scheduled for Spring/Summer 2021.

Sherwood Housing Needs Analysis

As part of the City's process to update its 1990 Comprehensive Plan, a Housing Needs Analysis (HNA) was conducted in March 2019. The Housing Needs Analysis provides Sherwood with a factual basis to support future planning efforts related to housing, including Concept Planning for Sherwood West, and prepares *the City* for updates and revisions to *its* Housing Comprehensive Plan policies. Understanding growth in terms of population, demographic, and development trend shifts is crucial for determining future housing needs.

How Has Sherwood's Population Changed In Recent Years?

Sherwood's population grew relatively fast in recent years from 3,000 people in 1990 to nearly 18,600 people in 2013, averaging 8% annual growth. Sherwood's fastest period of growth was during the 1990s, consistent with statewide trends. Between 2000-2013, Sherwood grew by 6,600 people, at an average rate of nearly 3.5% per year. For comparison, Washington County grew at 2.5% annually between 1990-2013 and the Portland Region grew at 1.6% per year.

Sherwood's population is aging. People aged 45 years and older were the fastest-growing age group in Sherwood between 2000 and 2010, which is consistent with state and national trends. By 2035, people 60 years and older will account for 24% of the population in Washington County (up from 18% in 2015) and 25% in the Portland Region (up from 19% in 2015). It is reasonable to assume that the share of people 60 years and older will grow relatively quickly in Sherwood as well.

Sherwood is attracting younger people and more households with children. In 2010, the median age in Sherwood was 34.3 years old, compared to Washington County's median age of 35.3 years and the State median of 38.4. Sherwood has a larger share of households with children (47% of households), compared with Washington County (33%) or the Portland Region (29%). The Millennial generation—people born roughly between 1980 to 2000—are the largest age group in Oregon and will account for the majority of household growth in Sherwood over the next 20 years.

Sherwood's population is becoming more ethnically diverse. About 6% of Sherwood's population is Latino, an increase from 4.7% in 2000. In comparison to Washington County and the Portland Region, Sherwood is less ethnically diverse. In the 2009-2013 period, 16% of Washington County residents, and 12% Portland Region residents, were Latino.

What Factors May Affect Future Growth In Sherwood?

If these trends continue they will result in changes in the types and amount of housing demanded or "needed" in Sherwood in the future.

The aging of the population is likely to result in increased demand for smaller single-family housing, multifamily housing, and housing for seniors. People over 65 years old will make a variety of housing choices, including: remaining in their homes as long as they are able, downsizing to smaller single-family homes (detached and attached) or multifamily units, or moving into group housing (such as assisted living facilities or nursing homes) as they continue to age.

The growth of younger and diversified households is likely to result in increased demand for a wider variety of affordable housing appropriate for families with children, such as small single-family housing, townhouses, duplexes, and multifamily housing. If Sherwood continues to attract young residents, then it will continue to have demand for housing for families, especially housing affordable to younger families with moderate incomes. Growth in this population will result in growth in demand for both ownership and rental opportunities, with an emphasis on housing that is comparatively affordable.

Changes in commuting patterns could affect future growth in Sherwood. Sherwood is part of a complex, interconnected regional economy. Demand for housing by workers at businesses in Sherwood may change with significant fluctuations in fuel and commuting costs, as well as substantial decreases in the capacity of highways to accommodate commuting.

Sherwood households have relatively high income, which affects the type of housing that is affordable. Income is a key determinant of housing choice. Sherwood's median household income ($78,400) is more than 20% higher than Washington County's median household income ($64,200). In addition, Sherwood has a smaller share of population below the federal poverty line (7.6%) than the averages of Washington County (11.4%) and the Portland Region (13.9%).

What Are The Characteristics of Sherwood's Housing Market?

The existing housing stock in Sherwood, homeownership patterns, and existing housing costs will shape changes in Sherwood's housing market in the future.

Sherwood's housing stock is predominantly single-family detached. About 75% of Sherwood's housing stock is single-family detached, 8% is single-family attached (such as townhomes), and 18% is multifamily (such as duplexes or apartments). 69% of new housing permitted in Sherwood between 2000 and 2014 was single-family detached housing.

Almost three quarters of Sherwood's residents own their homes. Homeownership rates in Sherwood are above Washington County (54%), the Portland Region (60%), and Oregon (62%) averages.

Homeownership costs increased in Sherwood, consistent with national trends. Median sales prices for homes in Sherwood increased by about 30% between 2004 and 2014, from about $245,000 to $316,500. The median home value in Sherwood is 3.8 times the median household income, up from 2.9 times the median household income in 2000.

Housing sales prices are higher in Sherwood than the regional averages. As of January 2015, median sales price in Sherwood was $316,500, which is higher than the Washington County ($281,700), the Portland MSA ($269,900), and Oregon ($237,300) median sales prices. Median sales prices were higher in Sherwood than in other Portland westside communities such as Tigard, Tualatin, and Beaverton, but lower than Wilsonville or West Linn.

Rental costs are higher overall in Sherwood than the regional averages, with a slightly lower-rental cost on a cost per square foot basis. The median rent in Sherwood was $1,064, compared to Washington County's average of $852. Average rent in the Tigard/Tualatin/Sherwood area submarket was $1.13 per square foot in Fall 2014, lower than the regional average of $1.22 per square foot. Between Spring 2010 and Spring 2013, average rent in Tigard/Tualatin/Sherwood area increased by 38%, consistent with the regional increase of 36%.

More than one-third of Sherwood's households are cost-burdened. Thirty-eight percent of Sherwood's households were cost-burdened (i.e., paid more than 30% of their income on rent or homeownership costs). Renters were more likely to be cost-burdened (40% of renters were cost-burdened), compared to homeowners (35% were cost-burdened) in Sherwood. These levels of cost burden are consistent with regional averages. In Washington County in the 2009-2013 period, 38% of households were cost burdened, compared to 41% in the Portland Region.

Future housing affordability will depend on the relationship between income and housing price. The key question is whether housing prices will continue to outpace income growth. Answering this question is difficult because of the complexity of the factors that affect both income growth and housing prices. However, Sherwood will need to provide the opportunity for development of a wider variety of housing, including housing affordable to low- and moderate-income households because the City is short over 500 units for people whose income range is less than $55,520.

Sherwood's Housing Growth Forecast And Can That Growth Be Accommodated in Sherwood?

Sherwood is forecast to add 1,728 new households between 2019 and 2039. Of these, 700 new households are anticipated to be developed inside the existing city limits; and 1,029 new households will be added in areas that are currently outside city limits but inside the UGB (the Brookman area). Recently, three new subdivisions in Brookman have approved which will provide 232 new lots for development.

Sherwood's land base can accommodate most of the forecast for growth. Vacant and partially vacant land in the Sherwood Planning Area (all land within the city limits and the Brookman area) has capacity to accommodate 1,121 new dwelling units. Sherwood can accommodate about 65% of the forecast for new housing in its Planning Area.

Sherwood has a deficit of land for housing. Sherwood has a projected deficit of land for 608 dwelling units, which includes the Brookman area. The largest deficits are in Medium Density Residential-Low (154 dwelling units), Medium Density Residential-High (252 dwelling units), and High Density Residential (145 dwelling units).

To provide adequate land supply, Sherwood will need to continue to annex the Brookman area. Without the Brookman area developing, the City has a projected deficit of about 1,155 dwelling units. Sherwood will need to continue to annex the Brookman area in order to accommodate the City's forecast of residential growth.

What If Sherwood Grows Faster?

The forecast for growth in Sherwood is considerably below historical growth rates. Metro's forecast for new housing in Sherwood shows that households will grow at an average annual growth rate of 1.1% per year. In comparison, Sherwood's population grew at 3.4% per year between 2000 and 2013 and 8% per year between 1990 and 2013. If Sherwood grows faster than Metro's forecast during the 2019 to 2039 period, then Sherwood will have a larger deficit of land needed to accommodate growth.

At faster growth rates, Sherwood's land base has enough capacity for several years of growth. At growth rates between 2% to 4% of growth annually, land inside the Sherwood city limits can accommodate two to five years of growth. With capacity in the Brookman Area, Sherwood can accommodate four to ten years of growth at these growth rates.

Additional housing growth in Sherwood depends on the availability of development-ready land. The amount of growth likely to happen in Sherwood over the next few years is largely dependent on when the Brookman Area is fully annexed, when the Sherwood West area is brought into the urban growth boundary and annexed, and when urban services (such as roads, water, and sanitary sewer) are developed in each area.

What Are the Implications For Sherwood's Housing Policies?

Sherwood will need to either add additional land for residential purposes or increase the densities within the existing city limits to accommodate future growth beyond the existing city limits and Brookman area. The growth rate of Metro's forecast for household growth (1.1% average annual growth) is considerably lower than the City's historical population growth rate over the last two decades (8% average annual growth). Metro's forecast includes growth that can be generally accommodated within the Sherwood city limits and Brookman. Given the limited supply of buildable land within Sherwood, it is likely that the City's residential growth will slow until Sherwood West is made development-ready.

Sherwood has a relatively limited supply of land for moderate- and higher-density multifamily housing. The limited supply of land in these zones is a barrier to development of townhouses and multifamily housing, which are needed to meet housing demand resulting from growth of people over 65, young families, and moderate-income households.

The Housing Needs Analysis highlights questions for the update of the City's Comprehensive Plan and the Concept Planning of Sherwood West.

- Providing housing opportunities for first time home buyers and community elders (who prefer to age in place or downsize their housing) will require a wider range of housing types. Examples of these housing types include: single family homes on smaller lots, clustered housing, cottages or townhomes, duplexes, tri-plexes, four-plexes, garden apartments, or mid-rise apartments. Where should Sherwood consider providing a wider range of housing types? What types of housing should Sherwood plan for?
- Changes in demographics and income for Sherwood and residents in the Metro area will require accommodating a wider range of housing types. How many of Sherwood's needed units should the City plan to accommodate within the city limits? How much of Sherwood's needed units should be accommodated in the Brookman Area and in Sherwood West?
- What design features and greenspaces would be important to consider for new housing?
- What other design standards would be needed to keep Sherwood "Sherwood"?
- What is the appropriate mix of residential land and employment land in the City to balance the City's tax base?
- What is the mix of residential zones that reflect Sherwood's character?
- COVID-19 has changed how people live and work. What are some of the long-term impacts of the pandemic on residential housing trends and needs?
- The need to consider recent state legislation of House Bill 2001 to review and analyze density expectations assumed to result from the provision of middle housing that meets regulatory requirements.

Sherwood's Comprehensive Plan Update – Draft Housing Goals & Policies

The Comprehensive Plan is a planning document that directs all activities related to land use and the future of natural and man-made systems and services in Sherwood. The Plan helps manage expected population and employment growth through a set of goals, policies and implementation measures that align with the community's vision. City leaders use the Comprehensive Plan to coordinate public investments and make decisions about new development, existing neighborhoods, transportation, and various other topics. Given Sherwood's dramatic growth over the past 20 years, the 1990 Comprehensive Plan no longer represents the vision and values of today's residents and businesses.

The main components of the Comprehensive Plan include a vision, goals, policies, and objectives. The vision and goals describe what the community wants to be in the future. Policies and objectives are based on the vision and direct land use decisions and public investments. For example, the housing policies are the backbone that informs new development code language to achieve the community's goals and vision. The City is nearly finished with a multi-year comprehensive update to the Comprehensive Plan and the goals and policies identified below reflect the outcome from the housing block of that project. It should be noted, however that, at this time the City Council has not adopted the updated comprehensive plan goals, policies and objectives.

Adopted Vision for Attractive and Attainable Housing In Sherwood

"In 2040, Sherwood has a range of housing choices for a diversity of ages and income levels, providing community members the ability to live in Sherwood throughout all stages of life."

Draft Housing Goals

1. Provide the opportunity for a variety of housing types in locations and at price points that meet the needs of current and future residents.
2. Preserve and enhance the character of existing neighborhoods.
3. Plan new residential developments to integrate with existing Sherwood as complete neighborhoods where community members can live, learn, shop, and recreate.

Draft Housing Policies

Policy 1. Plan for a 20-year supply of suitable land for Sherwood to meet housing needs.

Objective 1.1 Identify opportunities to address land deficits shown in the Housing Needs Analysis within the existing city limits.

Objective 1.2 Accommodate future growth through annexation of areas within the Metro UGB and work with Metro to bring urban reserve areas into the Metro UGB as needed.

Objective 1.3 Ensure that the City has enough land to accommodate Sherwood's projected share of regional household growth, through regular monitoring and adjustments of available land in the Buildable Lands Inventory.

Objective 1.4 Maintain a minimum overall density of six (6) dwelling units a net acre, per the Metropolitan Housing Rule.

Policy 2. Plan for infrastructure development to support residential development.

Objective 2.1 Continue to coordinate capital improvement planning to ensure infrastructure availability on residential land and continue to pursue funding for needed infrastructure to support housing growth.

Objective 2.2 Coordinate with regional partners to develop infrastructure across the City to support housing growth across the City, ensuring availability of water and wastewater service and improving transportation access to the broader Portland Region.

Objective 2.3 Coordinate population, residential growth and infrastructure planning with the Sherwood School District to ensure that land is available for new schools as needed and that utilities can efficiently be provided to new school sites.

Policy 3. Maintain the quality of existing neighborhoods and ensure that new neighborhoods fit with Sherwood's character.

Objective 3.1 Encourage that existing neighborhoods benefit from access and connections to trails, parks, open space and neighborhood amenities as they are built in new neighborhoods.

Objective 3.2 Encourage infill residential development in areas near shopping, parks, transit and other major public facilities and services, with a focus on opportunities in the Old Town District.

Objective 3.3 Encourage housing is of a design and quality compatible with the neighborhood in which it is located.

Objective 3.4 Reduce the negative impacts of traffic, noise, parking, lack of privacy, and negative visual aesthetics, through compatible site and building design and buffering techniques, such varying densities and types of residential use and design features.

Policy 4. Foster complete neighborhoods that provide housing choice, serve daily needs, and are walkable, connected, safe and integrated with the natural landscape.

Objective 4.1 Utilize concept planning, master planning and the planned unit development (PUD) technique to foster flexibility, creativity and innovation in the division of land, siting of buildings and provision of community amenities such as trails and open space.

Objective 4.2 Encourage neighborhoods are designed in a manner that incorporates the following principles:

(a) Cultivate a mix of housing types that are designed in a way to enhance neighborhood character.

(b) Create walkable neighborhoods that respond to their surrounding landscape.

(c) Provide safe and effortless connectivity to schools, parks, and commercial centers for pedestrians, cyclists, and cars.

(d) Enhance existing natural assets and integrate greenspaces and parks into new development.

(e) Enhance Sherwood's small-town character and historic core through architectural balance and design that is accessible and inviting to all.

Objective 4.3 Make use of density transfer as a means of preserving open space and developing recreational areas within a single development.

Objective 4.4 Promote housing and site design that supports the conservation, enhancement, and continued vitality of areas with special historic, architectural, or cultural value.

Policy 5. Provide opportunities for the development of a range of housing types that are attainable to current and future households at all income levels, as described in the Sherwood Housing Needs Analysis, to maintain Sherwood's high quality of life.

Objective 5.1 Identify opportunities to increase residential development to balance the housing supply. Ensure the housing supply includes a mix of housing types and unit sizes at a range of housing prices and amenities throughout the City.

Objective 5.2 Support a variety of housing types such as, but not limited to, townhomes, cottages, courtyard housing, accessory dwelling units, single story units, and extended family and multi-generational housing.

Objective 5.3 Support housing affordable to Sherwood's residents and workers at businesses in Sherwood, including housing options for first-time homebuyers, new families, the elderly, and persons with disabilities.

Objective 5.4 Support homeownership opportunities in multi-dwelling housing by encouraging the creation of condominiums, cooperative housing, and limited equity cooperatives.

Objective 5.5 Collaborate with nonprofit organizations to provide opportunities for development of low-income housing such as rent-subsidized housing and other low-income housing in areas that have access to jobs, transportation, open spaces, schools, and supportive services and amenities.

OREGON HOUSE BILL 2001: HOUSING CHOICES

In 2019, the Oregon State Legislature adopted HB 2001, Housing Choices. By June 30, 2022 cities in the Portland Metro region and Oregon's other largest dozen cities (those over 25,000 population) must allow people to build duplexes, triplexes, fourplexes, cottage clusters, and townhouses in residential areas. The rational for the new rules is that these houses can be more attainable and meet the housing needs of many younger people, older people, and people who work but can't afford a large single-family detached house of their own.

People can still build detached single-family homes, and we expect most homes in residential areas to be built as such. Many cities already allow some of these housing types in certain areas. Not many have been built. Local knowledge of how to build these housing types will grow over time, and how many are developed will depend on local housing markets. Cities can set clear and objective siting and design requirements for these housing types (often called "middle housing" types), but these standards must apply to *all* housing, include single-family housing.

For more information on HB 2001 please visit the Department of Land Conservation and Development public overview webpage: https://www.oregon.gov/lcd/UP/Documents/HB2001OverviewPublic.pdf

City of Sherwood Residential Design Standards Code Update and Implementation of HB 2001

The City of Sherwood is undertaking a development code audit and needed development code amendments to support a range of community housing choices. The development code audit project aims to understand the existing barriers and future solutions to promote a larger supply of housing options for the community. Future amendments to the development code will provide an opportunity for a variety of housing types at various price points community for members at different stages of life; from recent college students to empty nesters, and retirees.

It is anticipated that new Residential Design Standards will be adopted and incorporated into the City's development code in 2021 for *all* housing types. Additional housing choices (duplexes, triplexes, fourplexes, and cottage clusters) with development standards (lot areas, dimensions, setbacks, landscaping, etc.) are expected to be adopted prior to June 30, 2022, compliant with the requirements of HB 2001.

For more information on this project, please visit the City's project page: https://www.sherwoodoregon.gov/planning/page/residential-design-standards-code-update-and-implementation-house-bill-2001-housing

How does Oregon House Bill 2001 affect Sherwood West?

The Oregon Land Conservation and Development Commission (LCDC) adopted Administrative Rules to help implement HB 2001. These administrative rules help prescribe standards guiding the development of new types (plexes, townhomes, cottage clusters) and establish minimum standards related to the siting and design. Sherwood West meets the definition for a "Master Planned Community" as a site area added to a Large City's UGB after January 1, 2021 for which the Large City proposes to adopt, by resolution or ordinance, a master plan or a plan that functions in the same manner as a master plan. Sherwood West will need to plan for infrastructure to accommodate twenty (20) units per acre; however, the overall density of Sherwood West is not determined and ultimately could be less than twenty (20) units per acre. The overall density of Sherwood West will be identified through this Concept Planning process and set through Metro's ordinance incorporating this area into the regional UGB.

APPENDIX C

Public Engagement Plan

PUBLIC ENGAGEMENT PLAN

DRAFT | May 14, 2021

Prepared by:
Angelo Planning Group
City of Sherwood

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Project Overview

The purpose of this project is to prepare a concept plan for the 1,291-acre Sherwood West area by updating the Sherwood West Preliminary Concept Plan. The Preliminary Plan was approved by the Sherwood City Council in 2016. It was developed as a long-range planning tool to help guide future community discussions and decisions about the City's long-term growth. However, there have been significant changes in Sherwood and surrounding areas since the Preliminary Concept Plan's local approval: the Sherwood School District constructed a new 350,000 square foot high school on 73 acres inside the Sherwood West area; Washington County completed its Urban Reserve Transportation Study (URTS), which provides detailed transportation impact information to help with future planning in urban reserve areas; and the City is nearing completion on a major update to its Comprehensive Plan, which has not been updated since 1990. In addition, the State of Oregon adopted House Bill 2001 in 2019, which allows for the development of middle housing types within areas zoned single-family residential. This Concept Plan project will take another look at the Sherwood West area to address new land use and growth patterns, new transportation plans, new State rules related to housing, and new opportunities for employment and economic growth. The outcome of this "re-look" will be a Sherwood West Concept Plan that is compliant with Metro Title 11, Planning for New Urban Areas.

Goals and Outcomes

Outreach will be an integral part of this project, both for specific details of the Concept Plan and as part of the community's broader ongoing conversation about housing, employment, transportation, and cost of services. Community members who live and/or seek future annexation and development opportunities in the Sherwood West area will be most affected by the project's outcomes. Other key stakeholders are expected to include area neighbors, local business owners, property owners, students at the new Sherwood High School, and community members from historically-underserved populations. **The City of Sherwood is committed to an inclusive and transparent planning process. Community engagement is crucial to guide the development of a representative, sustainable plan.** The goals of the public engagement process for this project are to:

- Communicate complete, accurate, understandable, and timely information to the greater Sherwood community throughout the course of the project.

- Help participants in the process understand the benefits and challenges of planning issues and alternatives for Sherwood West.
- Actively seek input from individuals, businesses, and organizations who are most likely to be impacted by the outcomes of the planning process.
- Intentionally engage culturally-diverse community members and those whose voices have been historically under-represented in previous planning processes.
- Provide meaningful opportunities for all community members to provide input into the plan, and clearly demonstrate how that input has influenced the process.

The outcome of this public engagement process will be a Concept Plan that reflects the community's vision and desires for the Sherwood West area, balance the diverse interests of project stakeholders, and is feels true to Sherwood.

A NOTE ABOUT THE COVID-19 PANDEMIC

Due to the ongoing COVID-19 pandemic, the majority of public engagement activities are expected to occur virtually. The project team will continue to monitor the situation and will resume in-person events and meetings if and when it becomes safe to do so. We hope to see you in person soon!

Key Messages

The City will be the key point of contact for all communications with the public regarding this project. The City will also be the lead for notifications, emailing lists, media contact, and event logistics. The following key messages summarize the **what, where, why, when**, **who,** and **how** of the project, and constitute the basic talking points when communicating with the public about the planning process.

- **What:** The City of Sherwood is taking a second look at Sherwood West to prepare a Concept Plan for the area. The Concept Plan will address new land use and growth patterns, new transportation plans, new State rules related to housing, and new opportunities for employment and economic growth in Sherwood. This plan is not starting from scratch; it will build from the Sherwood West Preliminary Concept Plan, which was adopted in 2016.
- **Where:** Sherwood West is a 1,291-acre area located west of the existing city limits and outside the Urban Growth Boundary (UGB). It is bound by SW Lebeau Road to the north and SW Chapman Road to the south. Sherwood West is a designated Metro urban reserve (Urban Reserve Area 5b) and is the largest of Sherwood's three future growth areas.
- **Why:** Sherwood has seen significant changes since the adoption of the Preliminary Concept Plan in 2016, both on-the-ground and in the regulatory and planning context. In 2018 the Sherwood School District annexed a portion of the Sherwood West area into city limits and constructed a new 350,000 square foot high school, which was completed in 2020 and is expected to open to students in 2021. The State of Oregon adopted new housing rules (House Bill 2001) in 2019, which allow for the development of middle housing types within areas zoned single-family residential. In 2020

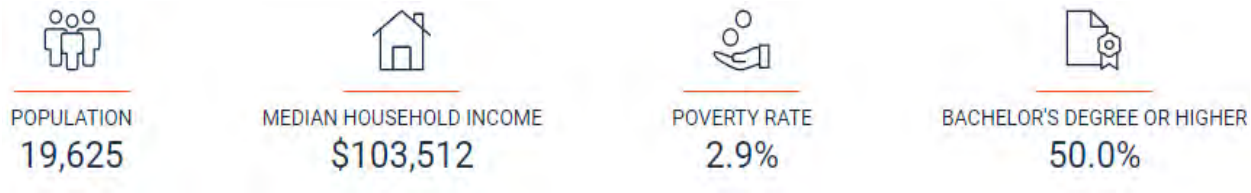
Washington County completed its Urban Reserve Transportation Study (URTS), which provides detailed transportation impact information to help with future planning in urban reserve areas such as Sherwood West. In addition, the City is nearing completion of a three-year planning and visioning process to update its citywide Comprehensive Plan, with adoption of the new plan expected to occur in summer 2021.

- **When:** This project will kick-off in May 2021 and will take approximately 15 months to complete.
- **Who:** The Concept Plan project team includes staff from Sherwood's Community Development Department, supported by a team of consultants led by Angelo Planning Group that includes Walker Macy (urban design), Leland Consulting Group (economics), and DKS Associates (transportation). The process will be guided by input from two advisory committees. The Community Advisory Committee (CAC) is made up of community members who live or own property within the City and Sherwood West, and representatives from the City's Parks Board, Planning Commission, City Council, Police Advisory Board, and the Sherwood School District. The Technical Advisory Committee (TAC) will be comprised of public service provider representatives: City Public Works, Engineering, Community Services, the Police department, Clean Water Services, Oregon Department of Transportation, and regional economic and housing development professionals.
- **How:** As this project gets underway, the Sherwood community will see articles in local community newsletters; city social media posts to Facebook, Twitter, Nextdoor; public meeting notices online and flyers; 'pop-up' engagement at local community events (consistent with COVID-19 protocols); online surveys; engagement with Sherwood High School students and families; and Frequently Asked Questions sheets. In addition to these opportunities, feedback is always welcome via email at any point in the process.

  If you would like to submit a comment or question to the project team, or you are interested in subscribing to the Sherwood West Re-look Email Interested Parties list, please send an email to: palmere@SherwoodOregon.gov

Sherwood Demographics

The following demographic profile is a snapshot of Sherwood today.



Source: 2019 American Community Survey 5-Year Estimates

According to estimates from the American Community Survey (ACS), the population of Sherwood in 2019 was 19,625. Around 89 percent of Sherwood residents identify as White, and nearly six percent identify as Hispanic or Latinx. Over five percent of residents identify as Asian (alone or with some other race), almost two percent identify as American Indian or Alaskan Native (alone or with some other race), one percent identify as Black or African American (alone or with some other race), and less than one

percent identify as Native Hawaiian and Pacific Islander (alone or with some other race).[1] ACS data also indicates that nearly 90 percent of Sherwood residents speak English at home, and nearly four percent speak Spanish at home.

In addition to these demographics, recent trends identified in the City's 2019 Housing Needs Analysis indicate that:

- **Sherwood's population is growing.** Sherwood grew by 6,600 people between 2000 and 2013, at a rate of nearly 3.5% per year—well above the regional average.
- **Sherwood's population is aging.** People aged 45 years and older were the fastest-growing age group in Sherwood between 2000 and 2010.
- **Sherwood is attracting younger people and more households with children.** Nearly 50% of Sherwood households have children, which is significantly higher than in Washington County or the Portland region generally.
- **Sherwood's population is becoming more ethnically diverse.** Sherwood's percentage of people who identify as Hispanic or Latinx grew from 4.7% in 2000 to about 6% in 2019.

Communications and Outreach Tools

The City is committed to equitably engaging the public on this project and is employing multiple types of communication and outreach tools in order to engage the full range of Sherwood community members. The following table includes informational tools and activities that will be used throughout the project to inform a broader public audience and solicit input related to needs and possible planning concepts. Where possible, project materials developed as part of these tools and activities should be made available in both English and Spanish.

Tool/Activity	Description	Audience	Timing
Community Advisory Committee (CAC)	The CAC will be made up of community members who live or own property within the City and Sherwood West, and representatives from the City's Parks Board, Planning Commission, City Council, Police Advisory Board, and the Sherwood School District. The City Council will appoint CAC members through an open application process. CAC meetings will be open to the public, and each meeting will include dedicated time for non-CAC members to provide input.	General Public	May 2021 through May 2022(7 meetings total)
Technical Advisory Committee (TAC)	The Technical Advisory Committee (TAC) will be composed of public service provider representatives: City Public Works, Engineering, Community Services, the Police department, Clean	Agency Partners & Service Providers	May 2021 through May 2022

[1] 2019 American Community Survey 5-Year Estimates

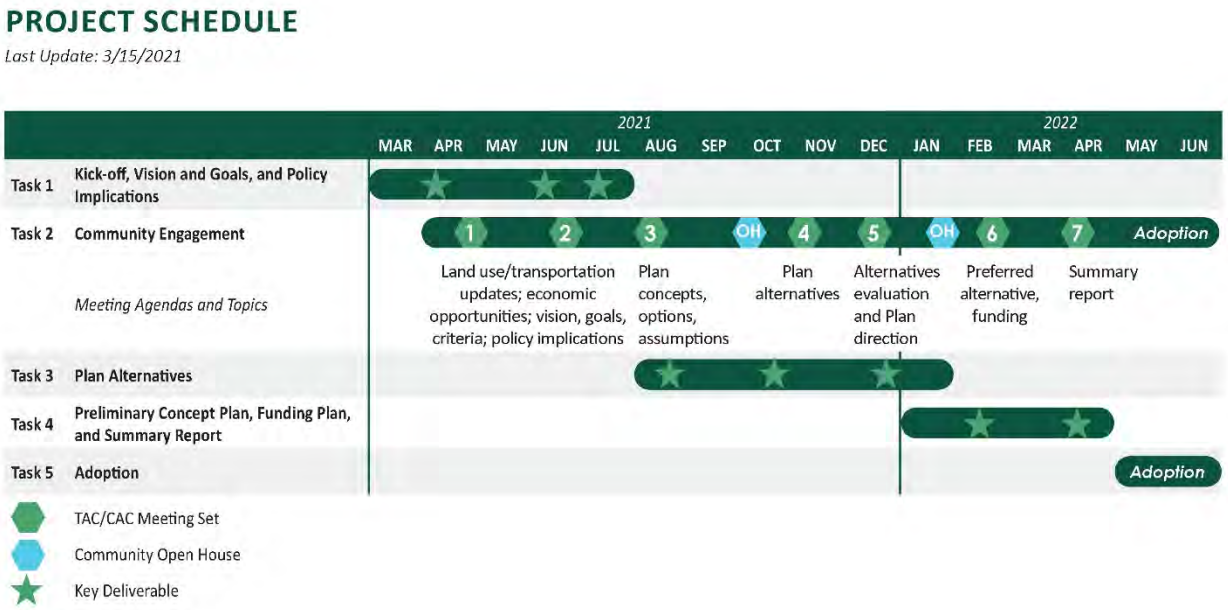
Tool/Activity	Description	Audience	Timing
	Water Services, Oregon Department of Transportation, regional economic and housing development professionals will also provide input into this work. City staff will lead the recruitment of TAC members.		(7 meetings total)
Community Open Houses and Surveys	Two community open houses will be held at key points in the planning process. These community-wide events are intended to engage the greater Sherwood community and provide opportunities for a diverse range of community members to review and comment on issues, alternative approaches, and draft recommendations. They are expected to include a combination of live events (either online or in-person, depending on the status of the COVID-19 pandemic) and will also include an online survey component that will remain open for several weeks to gather additional feedback from community members who were unable to attend the live event. Community members will be notified about upcoming open house events through the use of social media posts, emails, postcards, newsletter advertisements, and website banners.	General Public	Fall 2021 and early Spring 2022
Stakeholder Interviews	As part of the project team's research on economic opportunities and potential challenges, Leland Consulting Group will conduct five interviews with local and regional economic development officials to explore how technology, health care, office, hospitality including farm to table concepts, retail, and other employment uses might evolve in Sherwood West.	Economic Development Officials	June 2021
Project Website	A project website hosted by the City's will be used as the main repository of project information, including draft and final deliverables, upcoming meeting announcements, and contact information for project staff. The website will be updated frequently over the course of the project to keep interested parties up to date on current information and opportunities to be involved. https://www.sherwoodoregon.gov/planning/page/sherwood-west-preliminary-concept-plan-re-look	General Public	Ongoing
Interested Parties Email List	The City will maintain a database that includes email addresses for interested parties and important	General Public	Ongoing

Tool/Activity	Description	Audience	Timing
	stakeholder groups in the project area. The database will be updated as the project progresses and will track individuals and groups who express interest in the project. The database will be used for notification of upcoming engagement opportunities and communicating project progress, draft deliverables, and key milestones.		
Local Newsletter	Articles with project information will be included as part of the City's e-newsletter and will be shared with past and current subscribers to share information, increase project awareness, and provide additional avenues for community input.	General Public	Ongoing
Social Media	The City's social media accounts will be used to share information, increase project awareness, and provide avenues for community input.	General Public	Ongoing
Pop-Up Events	The City anticipates conducting several pop-up engagement events at planned local events such as farmers markets, fairs, or festivals. Specific dates or events have not yet been identified. Any engagement that occurs as part of these events will be conducted in accordance with current COVID-19 social distancing protocols.	General Public	Ongoing, beginning in summer 2021
Property Owner Mailings	To ensure that all property owners and residents in the Sherwood West area are aware of the project and process, the team will send postcards and/or pamphlets with project information via mail at key points in the process, including at the outset of the project, prior to community-wide events, and prior to the final CAC/TAC meeting.	Area Property Owners and Residents	Ongoing
Project Snapshots/FAQs	The project team will prepare public-friendly summaries of project progress, findings, alternatives, and conclusions at key points in the process. These "snapshots" are intended to capture and distill project information and in a fun and easily-digestible way for consumption by the greater Sherwood community.	General Public	Ongoing
Printed Materials	The project team will develop eye-catching graphic posters, postcards, flyers, and/or brochures with project information to display at local businesses, community centers, parks, grocery stores, and other locations frequented by community members. These materials will include links to the project	General Public	Ongoing

Tool/Activity	Description	Audience	Timing
	website, information about upcoming opportunities to engage, updates on project milestones, and contact information for project staff.		

Project Schedule

The following schedule outlines the tasks and key deliverables, as well as preliminary timing for TAC/CAC meetings and community open houses. This schedule is preliminary and subject to change; it may be updated over the course of the project.



APPENDIX D

Open House #1 (Online) Summary

OPEN HOUSE #1 SUMMARY

TO: Sherwood West Community Advisory Committee and Technical Advisory Committee
FROM: Kyra Haggart and Joe Dills, Angelo Planning Group
DATE: April 28, 2023

Introduction

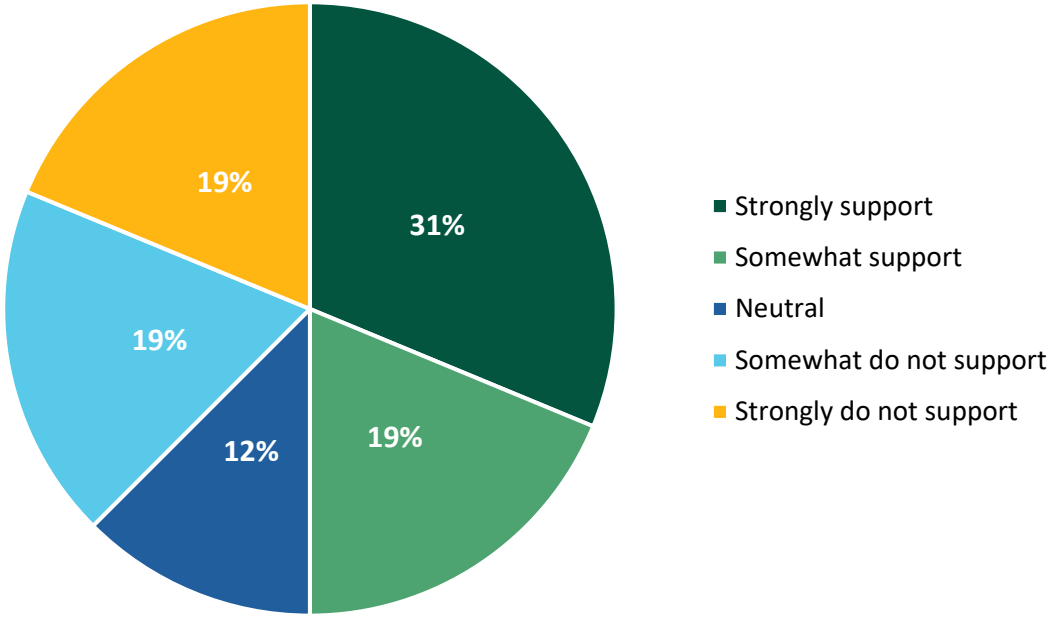
This memorandum provides a summary of the results from the Sherwood West Concept Plan Online Open House #1. The Online Open House survey questions were available from Wednesday, October 6 through Sunday, October 24, 2021. A link to the Online Open House was posted to the project website and the City's social media accounts (Facebook, Twitter, and Nextdoor), sent to the project's interested parties email list and all City boards and commissions email lists, included on flyers posted in five downtown sign monuments, and at Sherwood High School for student engagement. Open house participants were invited to enter into a drawing for one of five $10 gift cards to local businesses as a thank you for their participation. The Online Open House received 135 responses to the survey questions.

The Online Open House provided some background about Sherwood West; presented the project vision, goals, and evaluation criteria; and shared a summary of each of the six Plan Concepts. Because of the breadth of information covered in the open house, participants were invited to select explore any topics that interested them from a menu of pages.

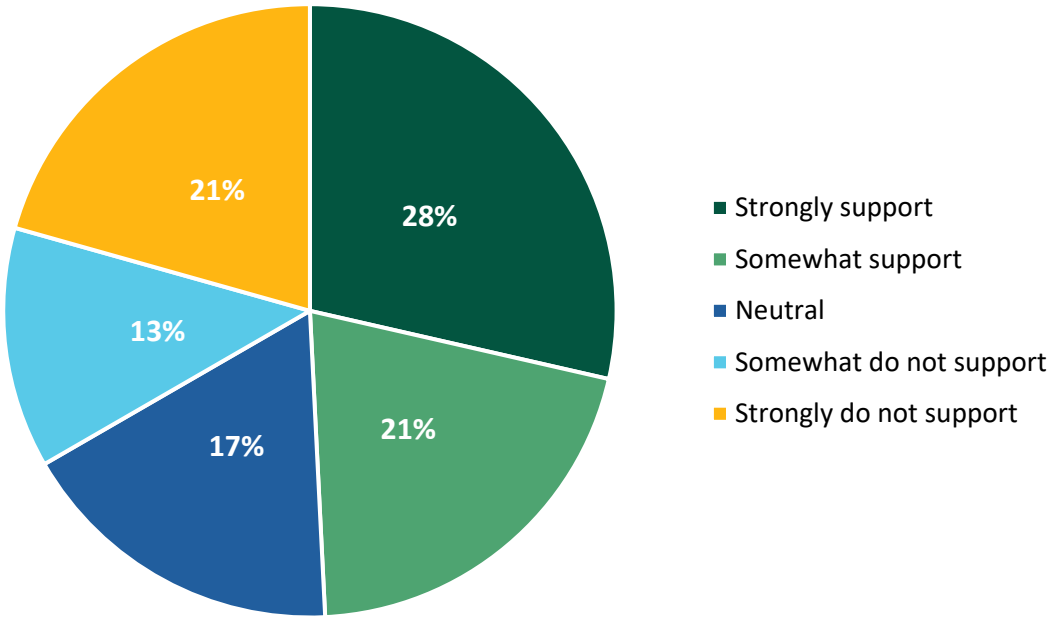
Survey Results

VISION, GOALS, AND EVALUATION CRITERIA

What is your level of support for the vision statement?



What is your level of support for the goals and evaluation criteria?



Do you think that the vision and goals represent the values of the greater Sherwood community? Why or why not?

- Yes, the vision and goals reflect the values of the greater Sherwood Community. Please make certain that in the aggregate considering all new development in Sherwood West well provide a well-balanced and fully functioning community that continues to be attractive and well serve all current and future residents and businesses.
- There is no need for added business/industrial development in this area. Actually, even residential should be put on hold until all current land within the Sherwood boundaries are fully explored and subsequently developed.
- Not the values of keeping Sherwood a small town with neighborly feel. These designed areas with added business and industry just turn Sherwood into more and more of a cookie cutter suburb with more traffic and more hustle and bustle.
- Sherwood West is a pipe dream. The infrastructure in Sherwood is a joke. There is a strong need to drive from pt A to pt B, but it takes soooo long to traverse those points. The increase in tax base only seems to drive an increase in taxes, I don't understand how that works. Sherwood has lost it's identity and the reason people decided to move here in the first place. It's no longer affordable and now we're only adding to the issue. Are we going to become the next Hillsboro? Growth is inevitable, but do it smartly; this is just outright a simple money grab and politicians trying to make a name for themselves.
- Yes, great job!
- I don't think there should be industrial or office development on this side of town. Everything else looks great.
- The vision and goals represent Sherwood which is essentially to continue what was created with the development of the Woodhaven neighborhood. A neighborhood that is connected and can be walked.
- Expanding Sherwood’s borders will only bring increased traffic and property taxes. The new development will not pay for itself, so please don’t tell me that my already high taxes won’t go up. Bringing MAX to Sherwood would give homelessness, drugs and increased crime to the area. Hillsboro is an excellent example of this. This proposal will only benefit a handful of people, namely the landowners and developers. The citizenry of Sherwood will see a decreased quality of life
- I appreciate the focus on preserving existing greenways and habitat. On the topic of walkable communities, it would be great to see Sherwood utilize more multi-use building developments (retail space, office space, and apartments) to improve density.
- As long as it doesn't turn into what is on Roy Rogers and Scholls Ferry, I support the vision and goals. High density/medium density housing doesn't fit with Sherwood's look and feel. Sherwood has a small town atmosphere and it should stay that way. It is one of the many reasons people move to Sherwood.
- yes.... bring more commerce to sherwood - while keeping the small town feel - and quality of life.

- I do not believe now is the time to look at a project with such a huge impact on the city. We are dealing with very uncertain times and adding to an already strained infrastructure. As a 25 year plus resident I see allot of industrial add especially along Tualatin/Sherwood Rd that has made traffic along that route ineffective to say the least. As these projects are submitted and approved who bears the burden of the roadway strain, the traffic increase, the environmental impact? I don't see anything the vison or goals that places that responsibility directly on those who stand to make the most profit from the project.
- Seems like a fair representation.
- Continuing the small town feel (I live in Old Town), keeping natural environments clean, and "ignoring" the dividing 99 highway
- Yes. Sherwood is a friendly, welcoming town. These goals and vision would promote growth that is aligned with that lifestyle.
- No. No neighborhood values. Trees, walkable streets. Schools.
- In some ways yes and in some ways no. In my mind, goal #2 of attracting large employers and developers stands in stark contrast to the maintaining the heritage and small town feel of Sherwood, as described in goal #1. Furthermore, I'm very alarmed with warehouse after warehouse that's consuming every commercial lot coming down Tualatin Sherwood Rd. Those buildings destroy sense of community, design esthetic and/or of a master plan. Business parks should look more like the Nike campus or like those in North Hillsboro, of which many are leased by Nike as satellite offices. High berms, nice landscaping, variety of sizes, different assistance, limited entry, etc. I'd love to see more stringent/cohesive criteria for all new commercial building construction such as architecture, area improvements, landscaping requirements, etc. to make sure Sherwood continues to feel and look like Sherwood, even though it'll be "bigger."
- Many businesses are looking to escape the violent climate of downtown Portland. This helps attract small businesses to leave Portland for a better and safer community.
- Yes, the vision and goals seek to grow our community while maintaining a connection to our beautiful natural Oregon resources, preserving our small town feel, and creating opportunities to diversify our community.
- Although many of the goals and considerations are on target and thoughtful, and could be used as models in planning for communities across our country, the underlying concept that Sherwood needs to increase is population is disturbing. More residents, more traffic, more congestion should not be goals. Improving the lives of existing residents should be the focus. We moved here to escape the rampant growth of population and traffic and congestion of our previous community. We really do not want to face that condition yet again. Keep our growth at a maximum of 1 1/2 percent per year, not an iota more.
- While the vision and goals may represent the values of the Sherwood community, I don't believe it. This area, like previous expansion of Sherwood will just turn into a bedroom community while developers cash out and fails gt benefit Sherwood as a whole. Increase the strength of statements for large employers and reduce the dependence on residential.

- Housing (both affordable and other) continues to be a challenge for the area. Designing a neighborhood around the new high school makes sense to anchor the community.
- No I think its a tax grab and doesnt serve the community. One of the things that makes Sherwood unique (and why people live here) is the small town feel with the rural surroundings. Youre taking that away just to create more suburbia. I think your goals would be FAR FAR better served by investing that money into upgrading transportation, upgrading the employment near and around highway 99 and by investing more into parks and schools. This is a bedroom community not a big employment hotspot. Youre going to devalue peoples property, lower values of home and ruin a sense of community if you keep going. This isnt Tigard. If we wanted sprawling excess growth we would live there instead.
- Yes, I think the vision and goals are well written and make sense. I feel that protection of our natural resources and areas should be one of the highest priorities. As cities expand and developers move in to lobby for that expansion, the natural areas and transportation are the first things that become "too expensive" to make the investment. Sherwood should make sure that these portions of the plan are well protected to avoid future government from bypassing them in haste for more tax money. also, transportation of people will likely be much different in the future, maybe everyone won't own a car, but limited parking is also an eyesore and issue because developers cant sell parking spots. So the streets that were meant for transportation turn into parking lots. They also cant sell bike paths, or sidewalks so those also get removed. These should all be thoroughly protected.
- yes, somewhat
- Yes: neighborhoods, walkability, and greenspace mixed with local jobs.
- We want to keep Sherwood the existing size that if currently is
- NO, Let the rest of metro become a traffic mess, the current Tualitan Sherwood Road plan is joke and will be at capacity the moment it is opened...
- We are witnessing the poor traffic planning that was done with the new high school as we have School Administration on top the building in the early fall trying to figure out how to alleviate the massive morning and afternoon congestion.
- Sherwood West of course will Not have enough parking and the streets will be filled with cars. Initially it looks fine but as the area ages the families grow older the kids need cars and the quantity of cars increases. The developer is long gone and the city streets are his parking plan. (See Villebois, Wilsonville, Langer Parkway Sherwood, Woodhaven Sherwood) If you can limit on street parking and make the a realistic assessment of the parking issues and mandate a real world number of spaces then I would be more supportive. (See Wilsonville Charbonneau area) somewhat. not sure the longtime residents are being heard that live outside the current city limits.no
- Concerned that long time residents that live outside the current city limits are being heard.
- "The greater Sherwood community lives here, because we are not in favor of housing density and instead appreciate the country and generous lot sizes. We want to be able to move freely about. Traffic is already a huge problem, and packing more people in here, whether it's to live or work here,

will further reduce our quality of life. Instead of chasing after more and more property tax revenue, why don't you prioritize existing Sherwood residents who are your voting constituents? You heard the outcry from Sherwood residents a few years ago - what makes you think we've changed our minds?

- This plan of growth will put further strain on Sherwood's water supply. Residents have already been urged to limit their water usage, so what's going to happen when thousands more users are added?"
- No not at all, what makes Sherwood Sherwood is it being and staying small... the size that it is period.
- NO. We have development & building background. Okay with thoughtful housing but not crowded subdivisions, and most certainly, NOT THE BLIGHT THAT IS SOUTH HILLSBORO AND THAT UNSIGHTLY RIVER TERRACE SUBDIVISIONS.
- The size of Sherwood is great the way it is, the majority of residents are here for the smaller town that it is, it's already gotten way bigger, we're done with the growth. End of story
- Yes, enjoy the goal to support the small town feel. Walkability is something that is a challenge for some of the outlying areas of Sherwood so it is nice to see that as a focus to improve and have as a goal for this expansion plan.
- No! You are planning on taking valuable farm land and wet lands and turn it into high density housing. The wet lands at the intersection on Elwert and Edy are not conducive to building and would ruin the habitat for many native animals and plants. I don't think the current community wants high density housing ruining our beautiful natural and farm areas. If your looking for tax revenue take back land bought by Metro (baker creek area) and get that back on the tax base.
- No one is asking for Sherwood to grow except for the money hungry developers and builders and if it's the Mayor too we'll get him replaced... a group of us are going to organize and fight this just as much and more..as you are pushing this on our community
- No, I believe it supports money hungry politicians who are trying to make a name for themselves. Please why not leave the land alone and let the farmers make a living and have places of natural habitat rather than constantly and continually destroying the lands. Sherwood is big enough as it is and all you are doing is taking away the livelihoods of many generational farmers who provide product for the rest of us. It is time to stop the expansions and start putting your monies into remodeling and redesigning existing areas, especially those where we have closed buildings or empty houses that are run down and eye sores!
- Is it being developed too quick then any road development? How about improve/build more ""roads"" first before start to do any more development? Currently 99 and Sunset traffics were bad enough, not even talk about Edy road and Elmer.
- What you have here sounds just like the horror of building that has happened along Scholls Ferry and Roy Rodgers. You say transportation and neighborhoods will be connected, fine, but what about actually getting to this area? The traffic density all around the area will increase and it's already awful during many parts of the day. You need to look at the bigger picture of quality of life for everyone in Sherwood, not just your new project. This is not a good idea.

- Being 'complementary' to other expansion is your problem. You should strive to be better, much better. What's been happening nearby is awful. It sucks the life out of people. It's depressing.

Is there anything else you'd like to tell us about the vision, goals, or evaluation criteria?

- We are particularly interested in the economic development and employment center aspects of the Vision and Goals which will need to be carefully integrated and connected with the residential and commercial aspects centered on multi-modal transportation goals. Then, Sherwood will become great destination for living and working into the future.
- Sherwood West is mostly agricultural land at present, as well as wild undeveloped land. It would be great if this were to remain untouched by major development.
- "preserve the community's heritage and small-town feel" mentioned in goal #1 is not possible when we keep cramming in high-density housing, increasing the town population by leaps and bounds. Sherwood used to be a small town, but now feels like it is just another suburb.
- We need a 55and up single level home neighborhood, smaller homes, 1800-2200.
- To create this vision the whole Sherwood West Area will most likely need to be brought into the UGB at the same time in order for land developers to work together with the city to build out the plan. Bringing in portions of the area into the UBG over different periods of time would threaten the ability to fulfill the plan.
- you have no mention of maintaining housing values of the boarding homes. How you develop Edy Road will make or break family's livelihoods.
- I currently live in the Woodhaven neighborhood and absolutely love the abundance of nature trails. This feels like a unique characteristic of Sherwood and love to see this tradition continue with newer developments.
- I'm not really in favor of large employers or industrial/technology parks in Sherwood West. I would rather see smaller businesses, retailers, etc, and keep the larger employers in the existing Sherwood/Tualatin/Tigard industrial areas. I am strongly in favor of preserving our natural spaces and would love to see a network of walking trails, paths, and parks included in the Sherwood West plan.
- With the changes we are facing as a greater region, Sherwood has a chance to be a leader in developing criteria based off more that the short term tax base gain. As far as employment opportunities, currently our local businesses are hard pressed to have enough staff to keep their doors open! If the city is not looking at the immediate and long term impact any project has on power consumption, projected water use, impact on traffic patterns, and long term environmental impact, then I can only assume we are a for profit managed city and if so need to look at my ongoing residency of Sherwood, a city I have loved to be part of for over 25 years and as a lifetime Oregonian and resident of the greater Portland metro all my life I have seen managed growth and for profit growth in many areas, the difference is easy to see with time. I want to know there is enough water to put out a house fire and generate electricity for many generations to come.

- Transportation vision within Sherwood West is great. But with the potential for thousands of new jobs and residents within the area how do those that don't live in Sherwood get to those jobs and those that live in the area but work elsewhere reliably get to those places of work. Existing infrastructure, even with widening of Tualatin-Sherwood Road will certainly not meet the growing demand. Southern arterial plan should instead be Southern Expressway with dedicated transit lanes/express lanes in order to adequately connect Sherwood West and the rest of Sherwood to I-5.
- Greater emphasis should be placed on safe biking and walking routes since there is already a major highway bisecting the town that is unsafe to cross at times.
- I will say that if we can incorporate an area as well thought out and designed as Wilsonville's Villebois area, people would come in droves. The area is beautifully landscaped, has lots of elevation changes (roads, buildings, etc.), different building plans (so they don't look cookie cutter), common/recreational areas, etc. They have a great mix of high, medium, and low density design plans to attract buyers of all incomes and budgets.
- Traffic management and road surface quality must be a top priority. Tualatin-Sherwood Rd must be improved and accommodate the businesses newly placed on SW Olds Place/ SW Arrow.
- A few goals I would like to see are:
  - Multiple public charging stations for electric vehicles
  - A noise abatement program to get the noisy vehicles refitted with appropriate sound muffling equipment. Traffic cameras cannot detect and remedy ""glass pack syndrome"" We need regulations with specific maximums on db level, and then enforcement of same.
  - The more development continues, the smaller our wonderful downtown area becomes in proportion. I think this is lost in the above planning. If we choose not to grow, we will not need to do all this expensive planning. *However, we could be spending the energy developing plans and programs to improve and upgrade many of the residential and retail structures that are in disrepair or just need updating. Also putting in place and enforcing minimum landscaping requirements, especially on rental units. "
- I just want to ask everyone involved in this Sherwood West Concept Plan to completely think through what we want Sherwood to look like in the future. Let me just reference one current project. This is the home building project on Brookman Rd. I don't live on Brookman Road, but I drive on it occasionally. There will be a lot of homes that will be built and I fear that the traffic could be hazardous. The road somehow needs to be widened and the S-curve on the east end of Brookman Road needs to be straightened. What I don't understand was why Sherwood was forced to incorporate that parcel of land into the city limits. As I remember it, the citizens of Sherwood voted three times to reject adding that land to the city. When I contacted Kim Thatcher, she said that state law required us to incorporate the land. Let me be clear and say I am not against growth. That will come. What we need to do, and hopefully you agree, is the growth needs to be planned and managed. Good Luck
- While I recognize the vision statement is mostly an aspirational statement, I feel the wording of "High Paying Jobs" will cause problems. How will that be measured? Does that mean that restaurants will be excluded? Certainly some of those jobs are not high paying. I think using "Well

Paying Jobs" is more ambiguous and allows more wiggle room as we measure success against the vision.

- I am concerned about the special interest groups pushing industrial and commercial near that high school. I do not think that is in the best interest of the Sherwood community. The Tualatin Sherwood Road area is already an established and growing industrial and commercial zone. There is no reason to plant industrial and commercial zoning around or near the high school.
- Instead of worrying about ""complementing"" the growth on Urban Boundary's western edge, why not protect the rural feel we have and instead build better roads, expand them and help revitalize downtown? I think if you asked the citizens you would find most have no desire for Sherwood to get bigger. That abomination of homes on Roy Rogers and Scholls Ferry drives taxes I am sure but not a single person I have talked to thinks it improves Tigard in any meaningful way. Its one of the reason I left that city. All money, no heart. Sounds like Sherwood is headed that way too. The vision is misguided. Goals are better served investing in the community at hand.
- Include a focus on wine and food oriented hospitality.
- It would be nice to see more hospitality industry along the 99 corridor to accommodate wine tourism - hotel, restaurant, etc.
- It's bad enough seeing all the development and farm land taken away at the end of Roy Roger's and Scholls ferry... we don't want it continued down to us in Sherwood.
- Without a West Side bypass this plan is a Mess. With the massive development to the North, South Beaverton, the massive King City project and lack of long term transportation network this is going to be a mess. No major manufacturing or distribution company is going be land locked from a major highway system i.e. I-5,217,26. The idea that we crowd the roads to the point of misery to get people out of their cars is not and will not be a effective plan, just wishful thinking and piss poor planning.
- There is already an epidemic of clear cutting trees on rural lots, and I don't want to see it get any worse. Your statement: "Existing mature trees and areas of dense tree canopy are preserved WHERE FEASIBLE" means that developers like Metropolitan Land Group and Randy Sebastian of Renaissance Homes don't have to bother - it's cheaper for them to destroy all of the trees so their heavy equipment can roll through faster and their profits add up faster too (to them, it's not feasible to save any trees). Frankly, I don't care about their profits - I care about my community. It happens over and over again. The little tiny trees they commit to planting in their developments are not equivalent to the 100-year-old fir trees that provide shade & oxygen, and rid C02 from our environment. These monstrous developments, like Metropolitan Land Group's River Terrace 1 & 2, are speeding up global warming. I urge you to stop this plan.
- Reverse the sale...give the developer/ builder all who is involved money wise... give them their money back!
- PLEASE DON'T LET IT HAPPEN
- It is a very delicate balance to keep small town feel and walkability with transportation growth and integration of nearby urbanizing areas. The inevitable compromises that come with these projects

will need to be anchored by this vision to maintain the proper balance, no easy feat! The map so far in this presentation has not shown the proposed boundaries for business/residential/recreation, but I'm sure that will come later in the presentation. That is where the balance will be key.

- Think about what this area looks like now and what you would be leaving for future generations by putting in high density housing. the steepness of the terrain would create nothing but water run off and erosion issues into Chicken creek thus destroying even more habitat for native species.
- It is a shame that our elected officials find it necessary to destroy our lands, our farms, and our history all for the sake of making money and using funds which need to be directed to protect the lands and current farms. We are tired of the takeover and the fact that you do not allow people to vote on these projects before you begin the work. People should have a say as to what they want done with the land prior to your posting documentation such as above. A simple vote as to asking the people do you want the land developed or left as is, that is all you need to do. If the people say leave as is, then go find something else to do and stop the moving forward. YOU NEED TO ASK THE PEOPLE WHAT THEY WANT..IT IS NOT UP TO A FEW OF YOU TO MAKE THESE DECISIONS FOR THE MASSES.
- I bought a house here because I loved the privacy and view of my back yard. But it is no more. All trees were gone now. I will see my ""neighbors"" after a year or two. I ""disapprove/hate"" it but I could not do anything about it. As people said money did talk. I bet no city leaders even live in here or they may have big properties and not care about regular residents.
- You paint a rosy picture of this perfect community you want to create. The reality is that you will create more congestion, more ordinary ugly houses and another area demonstrating that the dollar is really the driving force of development and not innovative vision and imagination. It will cater to the lowest common denominator and be another development blight on our landscape.
- Wake up and try to be really innovative and different. Don't cater to the bare minimum. Have the courage to really be imaginative and do something different and exciting. Yet another cookie cutter neighborhood isn't needed or wanted.

MIXED EMPLOYMENT AREAS

Think about the map of potential mixed employment areas. Do these areas look about right to you? Do you have any comments or suggestions?

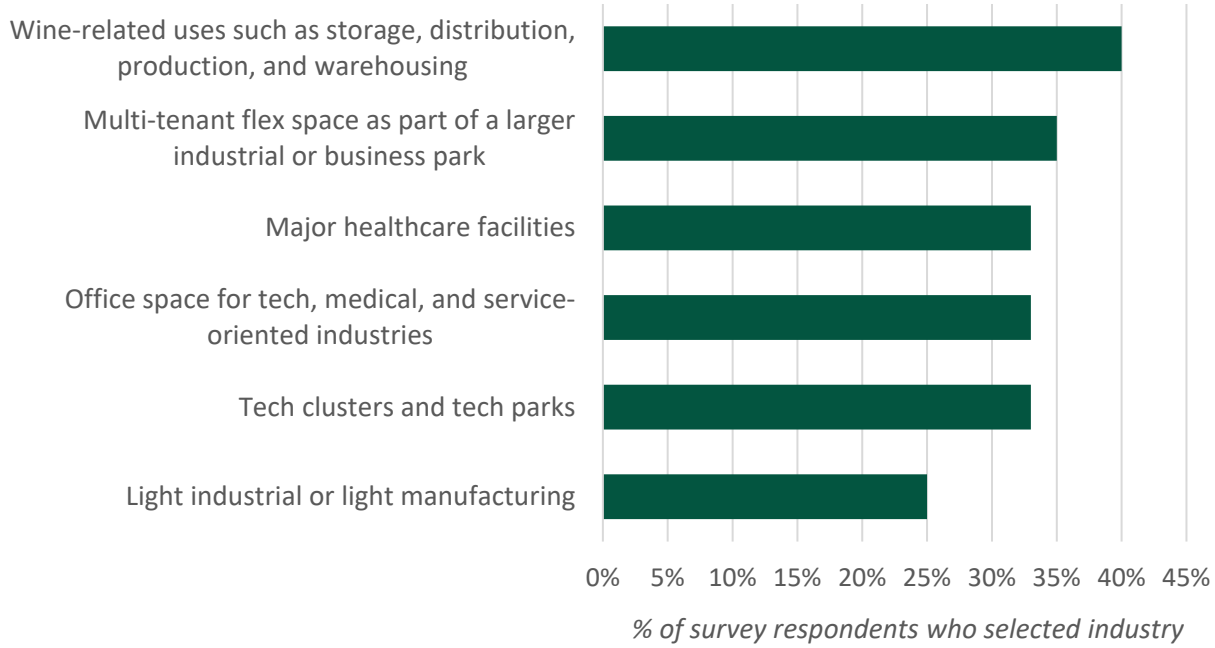
- No, no, no! There are many "For Lease" signs all around Sherwood in industrial sites and strip malls. This means that there is a great deal of unused business real estate at present, and so there is no need to develop more business land/properties. Use the current vacant properties first, and only once we have 100% occupancy should we consider more development. We should not carry on with the assumption that development is good in and of itself. We are a small town - let's keep it that way!
- Yes, transportation infrastructure including multi-modal is most important for the success of each area. Yes, about right as long as the re-looked "concept" can have a level of flexibility that allows creative and attractive mixed uses on the fringes of each transitioning to multi-family and single family residential uses.

- Area #2 seems poor for transportation flow to High School. So many of these small commercial corners are difficult for businesses to stay afloat.
- We have too many giant, industrial buildings arising between Sherwood and Tualatin. Do we really need more on the west side of town as well???
- Area 3 really needs to have at least one grocery store.
- i don't think putting commercial or industrial next to the high school makes any sense at all. Why wouldnt we want nice residential neighborhoods right next to the school/ i cant think of another recently built school that has anything but residential next to it .
- Yay! More traffic for our already over burdened roads.
- They generally look right to me. I think the emphasis on mixed employment is good. I think retail locations need to be minimized along 99W. I don't want 99W in Sherwood to look like 99W in Tigard which is a visual and traffic abomination.
- Don’t do it. Period.
- I agree with areas 3 and 4 because of their proximity to Hwy 99 and visibility. There would also be less impact to existing residential areas
- Area one is too big and appears to completely disregard the creeks through the middle of it. Looks like no consideration for green space.
- With the extreme growth already existing and in progress by off Scholls and Roy Rogers, near the Mountainside High School, I fear the level of traffic and congestion is already past the threshold of livability. More development in this area is a bad idea. When the plan sites a need for more employment, it does not specify how many sherwood residents are currently employed, nor does it state a specific goal for how many residents should be employed. Nor does it give any specific target for existing average pay nor goals for such. This all seems like good intentions, but how do we gauge success? Is it providing jobs for one percent more of our residents, is it raising the mean average wages by two percent? Of the new jobs created in Sherwood, what percentage will be Sherwood residents, and what percentage will be new commuters, clogging our existing infrastructure. I don't see anything in place to measure the success of these plans.
- "One of the goals is for ""Neighborhood retail nodes provide residents with walkable
- access to goods and services"". Given the map, the only way to accomplish this is to have mixed commercial/residential development, similar to what has transpired in Orenco and Villebois. The committee should review the success of these ventures prior to finalizing the document.
- It looks good. I am fine with this.
- Area 1 is problematic, depending on Roy Rogers for transportation will be a disaster, it already is a problem. There are also significant woodland resources in this area that would be destroyed by industrial parks.
- As someone who lives off of Lebeau Rd. I am disappointed but not surprised to see Area #1 as priority development land. This was slated as sports fields and potentially a school in the 2016 plan. I hate to say I imagine large box buildings like what is along Tualatin Sherwood road placed here,

rather than something more like a more open Langer's Farm development but with a business park (similar to Mohawk or Kruse Way).

- Would area 3 be a possible location for hospitality, food and wine oriented development?
- All except 2. I'm not sure I'd want to see commercial space there
- Looks ok.
- Area #2. Traffic at Elwert and Haide is a mess at the start of the school day. Putting businesses in that area would add to the congestion.
- "Traffic! Elwert Road cannot handle any more traffic, as there has already been a noticeable increase in traffic and accidents, including rollover crashes, since new housing developments and the high school have gone in. It was never intended for semi-truck traffic, and that is exactly what industrial and manufacturing businesses will bring. Please don't expand this country road to a 4-lane highway – these are ecologically sensitive areas with creeks and wildlife. Let's not put more wear and tear on the roads and diesel exhaust in the air.
- 99W also has problematic traffic congestion, and ODOT and Metro have listed it as a ""Tier 2"" priority level, not Tier 1. Apparently, they don't think there is a problem. With more development, it will only get worse.
- Area #2 is certain NOT ""mostly flat"". Have you traveled up Edy Road?
- No none of it looks right, we have empty retail space that has been empty for years... and the existing business have reduced hours now because they can't hire workers... no one wants to work. Sherwood is great the way it is...
- Agree with these areas being along the busy main roads and seems to be the best areas for the required business tax base to sustain the city's growth. As a resident near Edy/Elwert I have concern over the North/South traffic plan, but assume that will be addressed later in the presentation. I would hope there will be some architectural standards in these areas to emphasize the inviting and higher class the images of existing business represent and that these areas do not just become large flat front buildings with no character or charm. Sherwood's shopping centers and standalone offices have done a fairly good job with this, but I worry about the more industrial setting of zone 1.
- On Area 3 you say "some slopes" it is steep!!! Take a walk and look at it. what isn't steep is a wet land area. Get out of the office and take a look at the areas! Not the place for Mixed employment areas. There are High Voltage lines that run thru the area too and building is not permitted under those anyway.
- I don't understand why the creek space/green space in area 1 is not protected??

Which of the target industries would you like to see developed in Sherwood West?



Are there any other employment uses that you think would be a good fit for Sherwood West?

- Clean industry Corporate Headquarters uses which is somewhat inherent in the "tech park" but without being limited to "tech" uses. Need more definition. Will read the above reports.
- small, locally owned businesses
- I dont support employment uses for Sherwood West. That should all be on the eastern side of town where there is tons of new industrial lands being developed.
- restaurants
- Absolutely not
- Restaurant space and grocery
- We need more local businesses, and a locally operated grocery store. If I see one more big box chain store in Sherwood I will cry into my Symposium coffee. This town is incredibly family friendly-what about a decent space for more childcare centers or a children's museum? You mention centers for high-paying jobs, but we won't be a filling those jobs if people don't have childcare.
- For area four, I could see wine related business development, but what would make this a big win for Sherwood, is if we had a significant ""Sherwood, Gateway to WV Wine Country "" statement piece [sculpture or ???] similar to what we see entering Napa Valley Wine Country in California. It is an iconic landmark. Sherwood could really benefit from this. And this area 4 could be successful with upscale wine themed restaurants, as Napa put in place as their wine region was developing early on.
- Could use another grocery store on the south end of Sherwood.

- A Wine Country hotel and restaurant would be great. The view of Mt Hood and the valley would be a draw for visitors. Don't waste the green hillside and creeks on industrial uses.
- Maybe more recreation.
- Consider options for a more integrated design of civic uses. housing, employment, food and beverage, retail etc., not strictly segregated into separate zones. Encourage enough density to create the body heat needed to give the location a sense of identity and community.
- Farms!
- No none
- The list created seems to be thought-out and comprehensive. With carbon initiatives set out by state and regions it may be worth pulling renewable energy out of "tech & light manufacturing" to be its own category.
- None. Put it on the East where the infrastructure is already there.
- I think there should be a library on this side of 99 and that a focus should be making the area walkable like the other side of the highway all connects to downtown. This side of the highway feels excluded from what Sherwood has to offer. Repeat what you did on the other side.

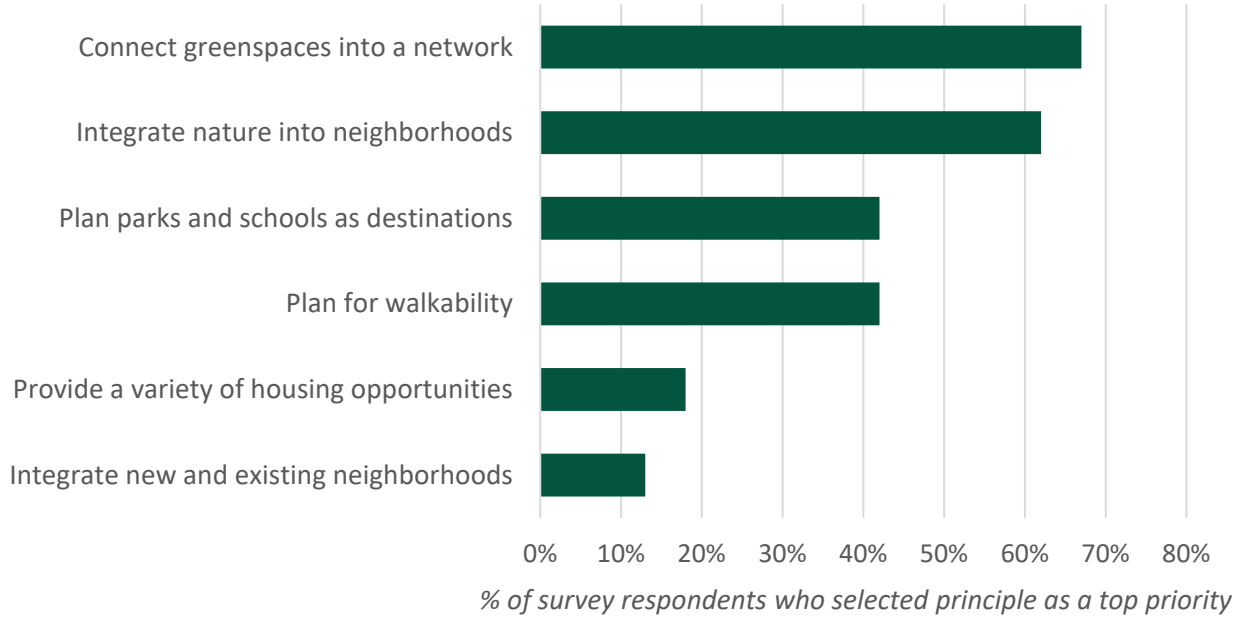
Is there anything else you would like to tell us about mixed employment in Sherwood West?

- See my Comment #1 above.
- The City needs to ultimately establish the right balance between local jobs and housing (and commercial) with the focus on limiting the length and number of daily trips now that many of us are working out of homes which appears to be the trend for the foreseeable future.
- Sherwood was a nice place to live as a "bedroom" community. Let's not bring a bunch of large industrial buildings to town. Support local business owners, even if they are smaller.
- it doesnt make sense at all
- Terrible idea
- Please build the trails that benefit existing residents FIRST.
- I can see the Kruger rd / Elwert rd circle traffic overload with area 3.
- Please stop building the 'strip mall' style mixed use business parks. They are soulless, and do not add to the beauty of our town.
- Maybe instead of looking for new mixed employment structures, the city would be better served working with consultants and developers to improve the existing business areas, be they strip malls, mini business parks that look tired and run down. Funny how reimagining what we already have can be so much more productive, And in the process, if the goal is to employ more city residents, get a commitment from these businesses that we help update their locations and in exchange they give preference to hiring locally.
- Not enough.

- Keep it green and visually appealing. We need clean air and solar powered buildings. No tall buildings or unsightly manufacturing, please. Low to moderate traffic is better.
- I feel like the big industrial parks are covered with all that are going in on Tualatin Sherwood rd.
- Please don't do it.
- Understand that most residential folks don't want business in their backyard, but without the business tax base their community suffers. The balance of easy to access businesses with keeping traffic low in neighborhoods is one of those key balance points that will be hard to maintain here. It looks like this plan may have a path to success here once we get further into transportation to see how roads are directed north/south.

GREAT NEIGHBORHOODS

Which great neighborhood principles are the most important to you?



% of survey respondents who selected principle as a top priority

Are there any other principles that you think are important to consider when planning new neighborhoods?

- Traffic congestion is a major concern. This development will create a terrible mess on the existing roads, which are already crowded. I live off of Edy Road near to the intersection with Elwert. There are already too many cars, driving way too fast, and more neighborhoods will mean a tremendous increase in road traffic. This is not good.
- Put the houses further apart. As close as they put the new ones together, they might as well be apartments or townhouses.
- Cul de sacs, wide streets, minimal street parking
- Affordability is vitally important and because developers always have to pass their costs onto the consumer, one important aspect of affordability is infrastructure costs. We do not want Sherwood

West to create spaces that are so upscale as to be unattainable financially. Affordability will drive diversity will enhance the lives of all who desire to make Sherwood West their home and work destinations.

- Yes, I would select Integrate nature into neighborhoods as well.
- On site parking for any apartments or townhouses, with guest parking too. Creekview Crossing residents use Handley for their parking. Cannery Row apartments use residents use surrounding streets as their free parking. Sunfield Lakes residents use Century Blvd as their parking lot. At least one car garages and driveways big enough to park a car / SUV with out blocking sidewalks
- Impact on school crowding
- BIKING!
- NO HIGH DENSITY HOUSING. Focus primarily on single family dwelling. The traffic impact is terrible otherwise.
- plenty of travel lanes to get in and out of the neighborhoods to 99W and Tualatin Sherwood Rd
- The travel lanes that support the neighborhoods needs to be efficient and in good condition.
- Plan for them to be in other cities, not Sherwood. We have more than enough residents. The photos examples shown here are pretty much all tasteful and could be used for cities that need go grow. However how about we use these principles in reimagining and refreshing our existing dwellings? More is not necessarily better.
- Stick to single family residence as much as possible.
- Dont ruin the current property value, dont ruin the look and feel of neighborhoods, don't ruin the sense of connectedness with nature. That said, all of these do that. Every single one.
- A variety of housing opportunities, but the existing parts of Sherwood should be prioritized for conversion especially closer to facilities and transportation along Hwy 99.
- Maximize housing being close to schools so to minimize traffic issues. Be respectful of existing homesites.
- Stop new developments! We don't need them or want them. Once the country is erased, you can never get it back.
- Parking for anywhere that has multi family living. That it will not spill over into surrounding living which is a problem in other parts of Sherwood.
- No new neighborhoods!!!
- Traffic patterns
- Think about what the high density house will do to the countryside.
- There needs to be better, safer pedestrian crossings at multiple places on Edy and Elwert.
- Single story homes primarily for elderly would be welcome.

Think about the map of walkable neighborhood areas. Do these neighborhood areas look about right to you? Do you have any comments or suggestions?

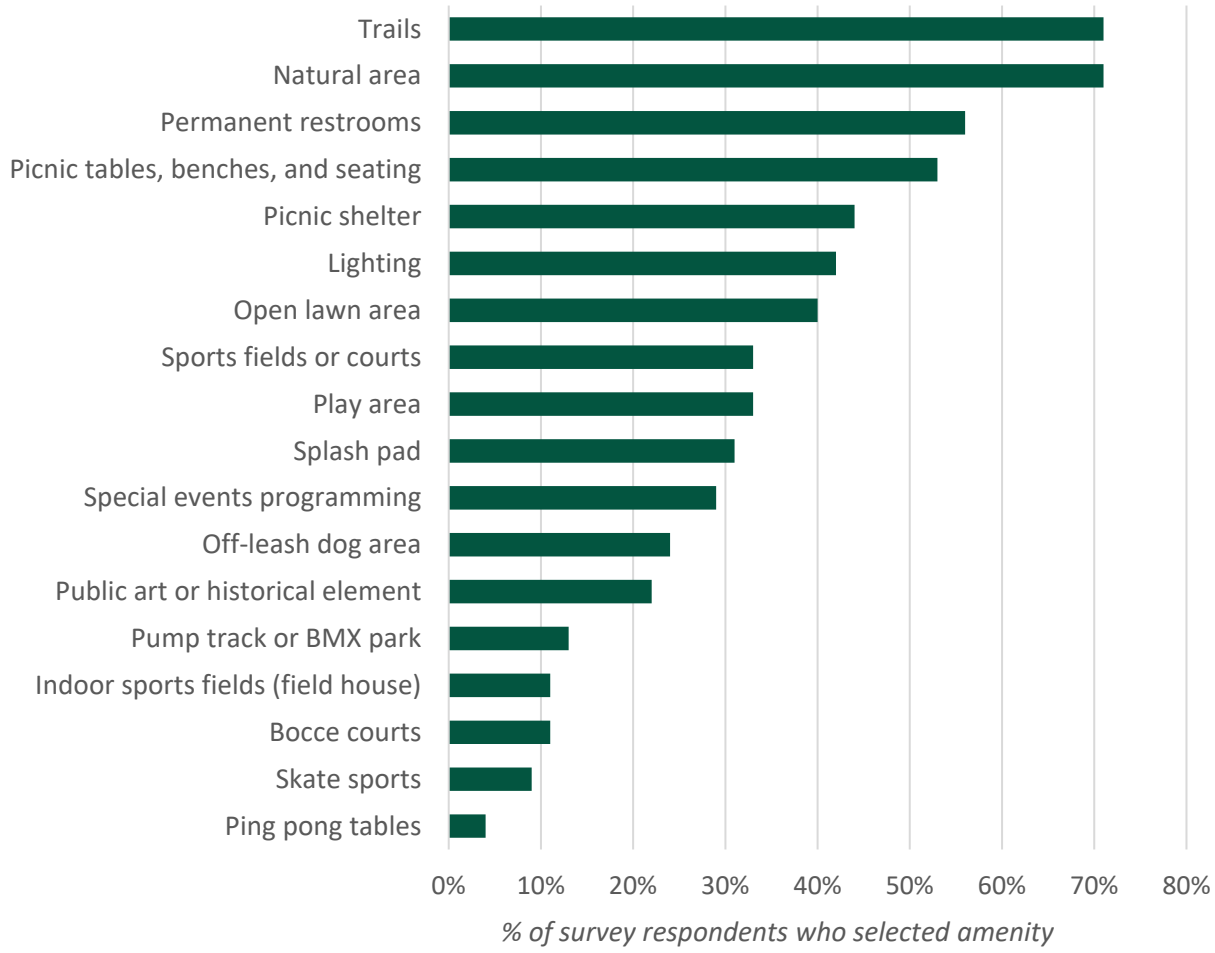
- Let's fully occupy, or even build up, existing land within Sherwood before expanding into this western area. Looking at item #4 below: Why does Sherwood need to grow? ""If you build it, they will come."" This will prove true. The opposite also holds: Don't build and the town remains small - which I view as a good thing.
- Give kids more space to play in larger yards with houses further apart!
- Yes, related to the above statements, we notice that the above referenced maps are still showing the very expensive reconfiguration of the Elwert/Edy Road intersection and related configurations, which now appear to conceptually show a minimum of two bridges across Chicken Creek and one of its tributaries as well as an apparent east-west overpass (?) of Edy over Elwert. More to study and discuss and to comment on when we address transportation infrastructure in more detail. Improving the existing intersection with its existing natural resource crossings with the addition of ped/bike crossings will be less expensive and impactful on Chicken Creek and on affordability and neighborhoods and parks in that area. Please provide several alternative development scenarios for multi-modal transportation with real costs and impact analyses to each of the several alternatives and let the Sherwood community comment and decide which works best.
- they look pretty good
- Don’t do it
- I am not familiar enough to offer specific insights.
- Need a plan for walking to commercial/retail, or revise the goals.
- I like this look alot.
- I have a hard time understanding what the goal is. I really want to be constructive but these are all just awful and short sighted and illogical.
- There should be a trail from Lebeau down the west side of the North Development Area. You could probably get BPA to move their transmission line to make that land more contiguous.
- Mixed feelings but overall concept looks reasonable.
- Don't do it. Leave the farms and nature and the existing large country residential plots.
- Good network of multiuse trails. Like the connection to schools and existing trails
- At the Intersection of Elwert and Edy the road (Edy) goes up steeply. there would be nobody walking that hill anyway. So it would be wasted to put anything there.
- I like the concept, but concerned about the reality of even more kids needing to cross or walk on roads that don’t have sidewalks or safe crossing areas.
- Looks good.

What housing types do you think will be most important to build in Sherwood West’s neighborhoods to help meet the City’s goals related to housing?

Order below represents results of survey participants ranking types from most to least important

1. Small Single-Family Detached
2. Standard Single-Family Detached
3. Cottage Cluster
4. Townhouse
5. Duplex
6. Live-Work Unit
7. Triplex
8. Accessory Dwelling Unit (ADU)
9. Courtyard Apartments
10. Mixed Use Building
11. Fourplex
12. Apartments

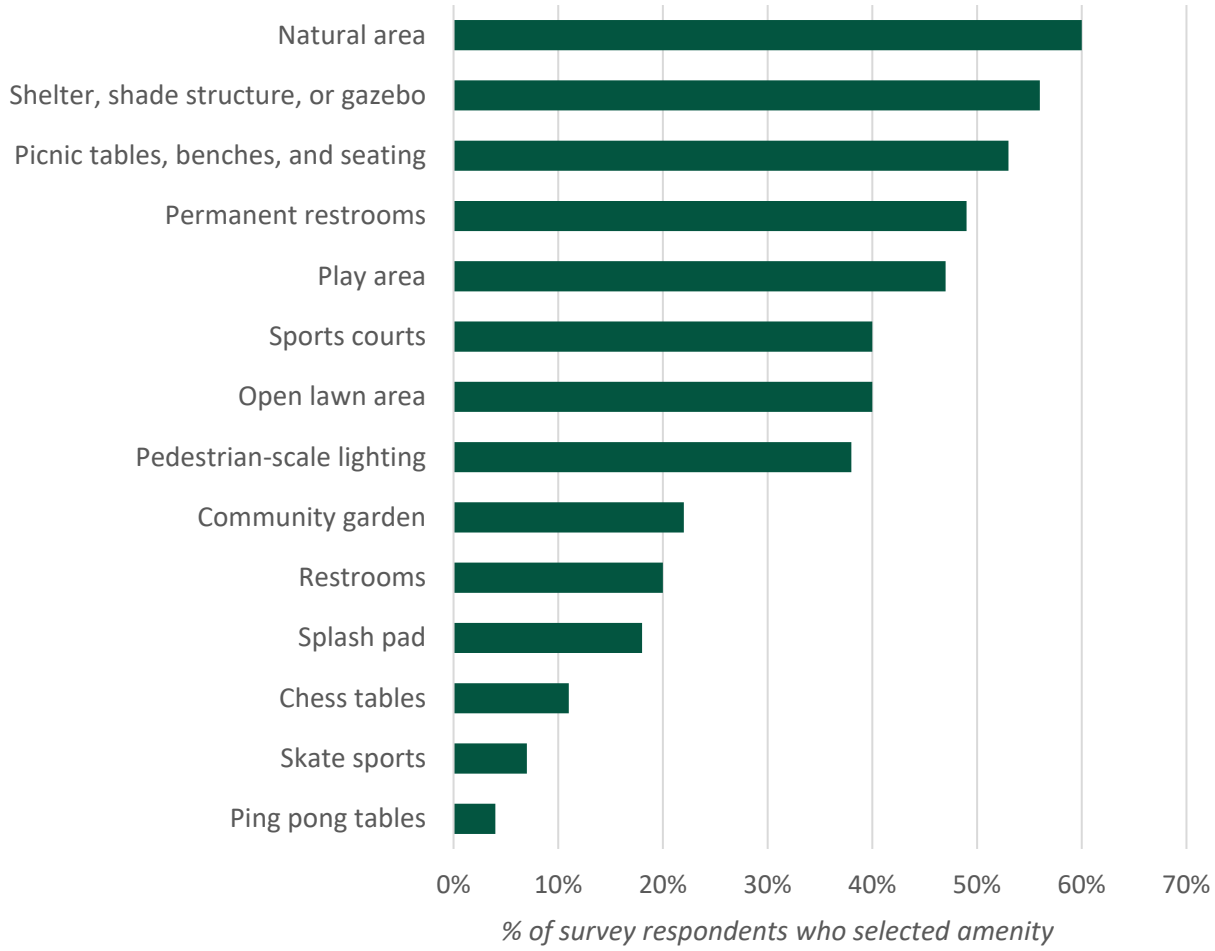
What types of activities and resources would you like to see at a future community park in Sherwood West?



Other:

- Pickle Ball, Par Course, Practice putting greens
- I would like to see nothing done on the west side. wrong place for it.

What types of resources would you like to see at future neighborhood parks in Sherwood West?



Other:

- Par Course, practice putting greens, pickle ball courts
- None. Parks invite the homeless to "camp"

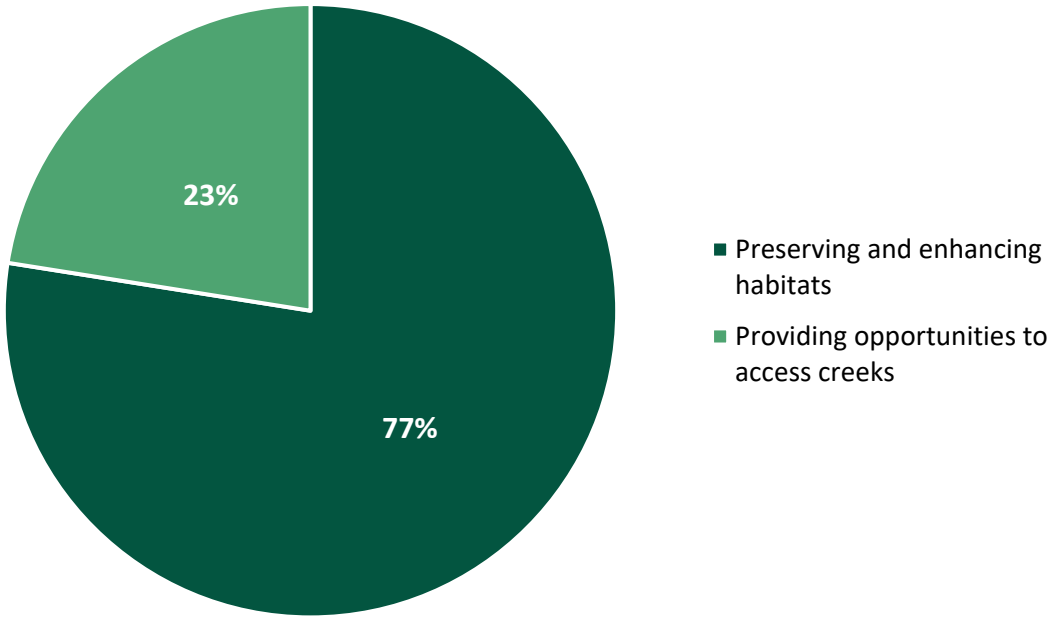
Is there anything else you'd like to tell us about creating great neighborhoods in Sherwood West?

- Please do not expand into the Sherwood West area at all!
- Please please please help muffle the sound of Roy Roger's and even Elwert and Edy.

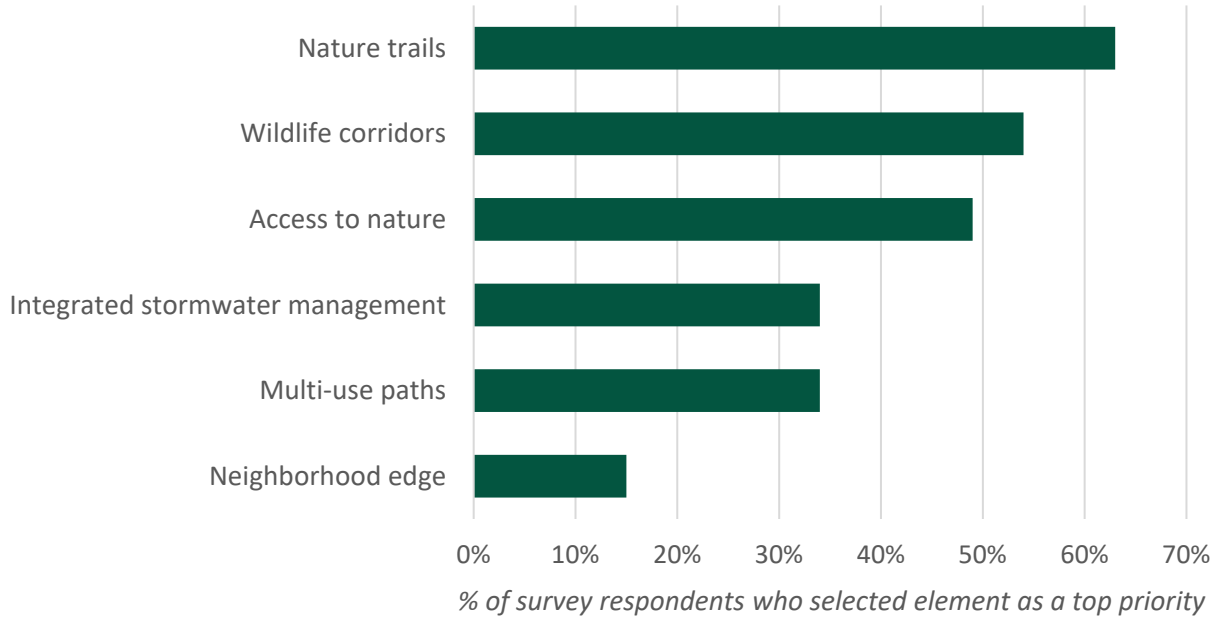
- Middle housing and attainable housing is a must. Better opportunities to purchase, Mixed neighborhoods are needed.
- Walkability and natural areas Sherwood and Joe Dills and his team have got down, but multi-modal connections between neighborhoods and all other uses in Sherwood West need to be carefully planned and safe for all.
- A variety of housing includes a variety of lot sizes. Setbacks need to be increased - house footprint to lot size is too small in Sherwood!
- Create areas for parks BEFORE planning for housing.
- Dont build them there. Sherwood West is a bad idea.
- I thought the plan showed there was enough land within existing Sherwood. I'll have to go look at it again.
- I wouldn't like to see any increased housing or parks in Sherwood West. Please don't do it.
- You said it here... the city does not have enough land to accommodate... so the question has been answered. No land! no building anything!
- Understand the housing report showing not enough land. I am tired of small lots with houses on top of each other. So if there is opportunity to have high density housing near the business sectors, but keep some larger (1/4, 1/3, 1/2 acre) lots on the edges to help blend from high density city centers to more open feel near the edges that blend with surrounding farmland
- Keep it on the east side where there is infrastructure.
- Many people who purchased homes on this side of 99 did so because of the open space. Please maintain open and green space.
- The type of housing ranking in this Survey DID NOT WORK! Apartments always showed up second and could not be changed.

CHICKEN CREEK GREENWAY

What do you think is most important: providing more opportunities to access the creek corridors, or preserving and enhancing creek corridor habitats?



Which greenway elements are most important to you?



In addition to Chicken Creek, are there any other natural areas in Sherwood West that you think should be protected as part of a greenspace network?

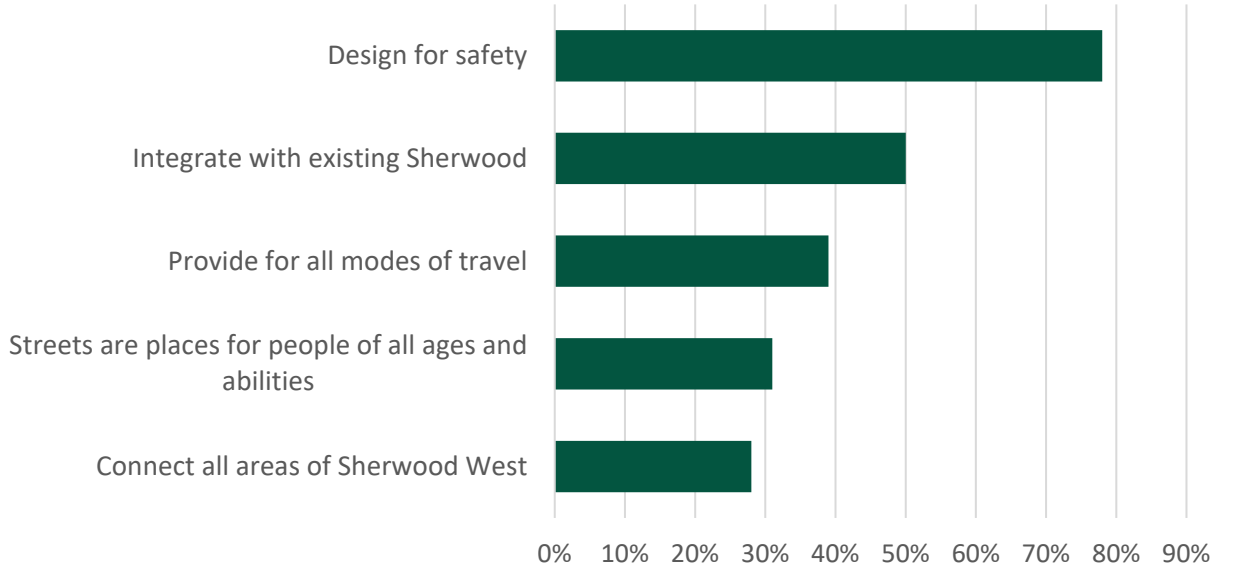
- As much of the forest as possible.
- No, great job!
- cedar creek
- No
- Sherwood is just a very sad story. Our family is looking to move out towards McMinnville. All you see everywhere in Sherwood is destruction. Tualatin Sherwood, every little piece of land going to development. And this shooting range... My god, this is ridiculous. It's just a little piece of red America. Oh well, I guess we had good memories while it lasted.
- Cedar creek
- This sounds good: "The Sherwood West Concept Plan offers an opportunity to preserve and enhance these natural corridors, provide wildlife crossings, incorporate stormwater management practices, and provide access to nature through a network of connected walking trails." But better would be to leave the land as is. The pictures provided above as models show how much "development" has replaced nature.
- All that are not yet developed
- Cedar and Goose Creaks
- Cedar and Goose Creeks
- the entire thing
- Existing habitat areas should not be fragmented. The continuity and contiguousness of the existing areas should be preserved and this aspect should be noted and be made a priority for preservation. It doesn't matter if you have 100 acres of green space if the are all 1/4 acre parcels that are not interconnected. The greenway is not just for humans it is also a path for wildlife.
- No.
- I think all of the existing natural areas should remain untouched by your plan.
- Yes all of it should be protected... don't touch anything!
- North of the Chicken Creek and Cedar Creek intersection, inside of the proposed business zone. I'm not proposing full protection here, but some element of drainage retention within the business park where an element of nature makes a good gathering place for lunchtime walks and having your lunch outdoors by a nature pond that helps filter drainage from the industrial area before flowing into Chicken/Cedar creeks. Similar comment at Goose Creek - not full protection but some element of nature in the business park
- the whole west side around Chicken creek
- Cedar Creek pathway constructed from Stella Olson Park to chicken creek with bike and pedestrian access

Is there anything else you would like to tell us about Chicken Creek Greenway or other greenspaces in Sherwood West?

- This is where my house is. Keep the are as it is; keep it safe for existing homes and existing wildlife.
- As we move into the Community Planning Stage for Sherwood West, the less impactful balance will be required between the affordable and efficient provision of the gravity sanitary and storm sewer systems and the natural resources areas, which typically recover quickly with careful regrading and replanting of indigenous native plant species. These public systems along with water and transportation too should be carefully planned and developed to keep costs down and development affordable which results in enhancing the general overarching goal of affordability for all residents and businesses. If what we build is too expensive, then the goal of diversity of development and opportunity for all will suffer.
- this is a very important part of the livability of Sherwood and i support this part of the plan
- I live in the Sherwood school district, on Baker Road outside of the city limits. The sprawl north of Sherwood is discouraging and it is discouraging that Sherwood's elected leaders want more of the same here.
- I like all of the photo examples that appear here. The more we can do to provide for this, the better
- Dont build near it.
- Good job with the keeping the road plan from 2016 that minimized impacts to the creek and slows traffic on Elwert.
- Please don't mess up a good thing. It is great as it is, please leave it be.
- Sherwood does not want to be Beaverton or like any other town..
- Have you looked or walked on the Fanno creek trail? it is filled with homeless camps. it's not even safe to walk this trail anymore. is that what you want for Sherwood?
- Connect Cedar Creek trail

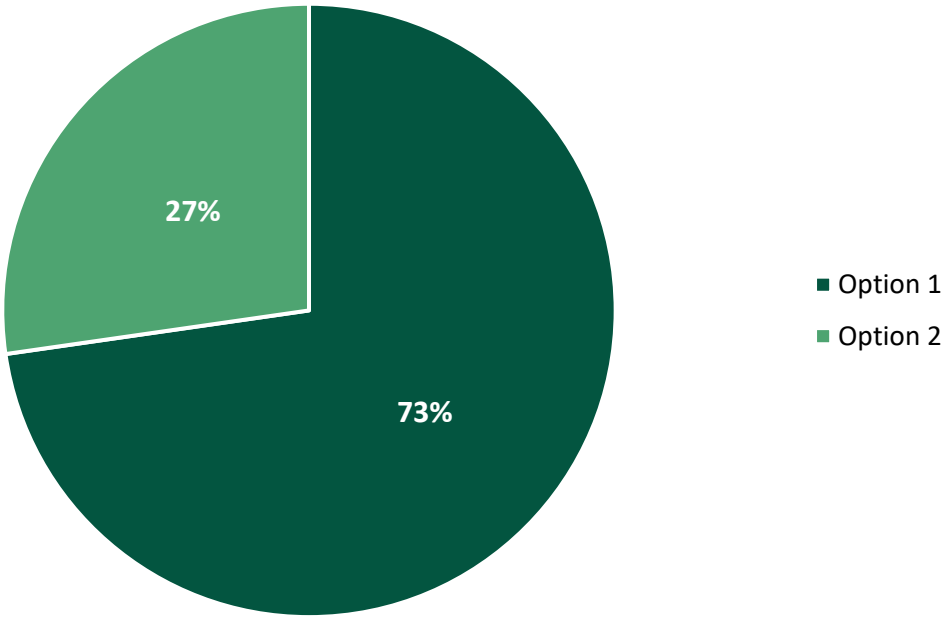
LIVABLE AND CONNECTED STREETS

Which livable & connected streets principles are the most important to you?



% of survey respondents who selected principle as a top priority

Which of the two street options do you think will best serve Sherwood West?



Looking at the rest of the street plan, are there any specific roads or intersections you would like to comment on?

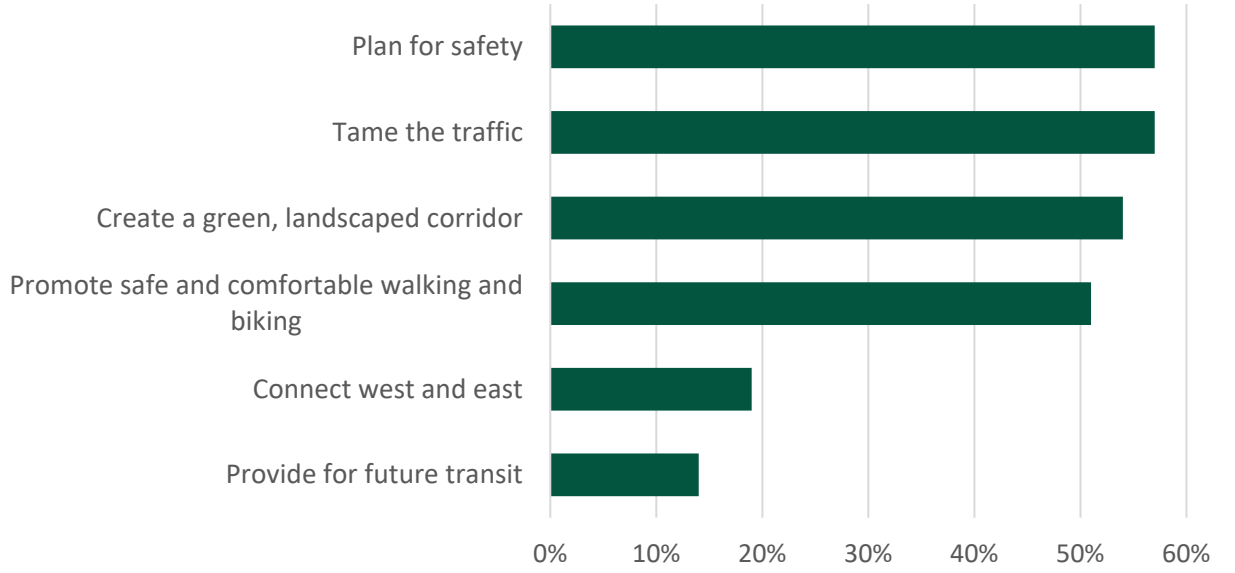
- Edy & Elwert intersection, in its current form, is extremely dangerous. Option 1 is far better than Option 2. Also, Edy Road should be repaved. The current asphalt is rough and creates very loud road noise. A smoother surface is needed for this road.
- We like the idea of developing as many of the new minor collector roads as shown linking the neighborhoods serving the north side of Area 3, the west sides of Areas 3 and 4, and the south side of Area 5 as Sunset Blvd type street section (treed with planter strip and adequate left turn refuges. With the expectation that significant traffic will continue to be a problem for all existing major collectors (Elwert and Edy as well as Kruger and Chapman), they should all be developed as generous ROW width boulevards with center planter strips and two travel lanes both directions with generous left and right turn refuges, maybe including Haide to the rear of the HS and the final approach to 99W on Chapman. Obviously, Sherwood working with the County will be generous on the arterials of Roy Rogers and Scholls Sherwood Roads. We want to avoid the problems associated with Tualatin Sherwood Road when originally planned and developed.
- There needs to be a light at Chapman and 99
- Edy and Elwart intersection. Needs to be rerouted for safety.
- Elwert Road needs to be upgraded so that it is no longer seen as a Sherwood bypass
- No, as I have not spent any significant amount of time in the area at question.
- If this plan is developed, the current Edy Road will become the primary East/West traffic path. Edy Road is not anywhere near capable of handling the load that will transpire. It should get a similar makeover as anticipated for Elwert, namely 3 lanes including a turn lane, sidewalks and bike paths on both sides, and the same level of amenities as exist on Sunset Blvd.
- Option 2 destroys my home/property. It would be devastating for me and my family to be forced to move from our home because you would build a road right through it. I am at 16365 SW Sherwood road. McConnell family.
- Brookman - Chapman Road will be required to have a stop light controlled intersection.
- Elwert is going to at least quadruple in usage if you build sherwood west. Go ahead and make it at least as busy as Tualatin Sherwood/Roy Rogers. If you go ahead with this plan, itll need to be 4 lanes.
- I'd have to spend a lot more time to study this. Trusting that the people on the CAC did that.
- Does Option 2 keep Elwert two lanes and no turning lanes?
- What are you planning to do with all of the existing homeowners in that space? People have farms, vineyards, stables, and homes that have been around for years. It is unconscionable to displace these residents.
- Leave them all alone. Enough is enough
- There should be a roundabout at the Scholls-Sherwood, Lebeau, Elwert Intersection.

Is there anything else you would like to tell us about livable and connected streets in Sherwood West?

- the need to be wide enough for traffic and parking
- I worry about the increased traffic in general. None of the existing roads are designed to handle increased traffic. Edy and Elwert are already over used today. I cannot imagine the quality of life (I life off of Edy road in the Oregon Trail HOA neighborhood) if this Sherwood West development goes forward. I will probably sell (at a nice profit!) and move away - far away.
- Yes, but only as it relates to site specific development which can be addressed at the Community Planning level of analysis, which we expect will occur soon after this Re-Look process.
- i dont think industrial buildings as those that seem to be contemplated here and "livable neighborhoods' can be in the same concept. It doesn't make sense
- more bike and pedestrian friendly
- Will Elwert rd become bogged down with stops, or continue thru ?
- Not just "mitigating impacts of regional through-traffic' but mitigating the mentality that we can continue to add local traffic onto our streets without it having a negative effect on the quality of life for our existing residents. To think otherwise is to deny reality.
- Please go with option 1. My wife and I want to retire in our current home and option 2 would force us out.
- Roy Rogers is going to become a disaster.
- None of these are really viable unless there is massive street expansion
- Provide access from HWY 99 to Wine Country Gateway development with hospitality, food and beverage, retail, etc.
- Please consider cars. We aren’t giving them up, so please accommodate for them
- Plan 1 eliminates access to several properties.
- Provide pedestrian and bike paths.
- Scrap the Sherwood West plan. It will mess up a beautiful area that people don't want changed.
- Very strong preference for #1
- the intersection of Elwert and Edy is a wet land. In the last year a traffic light has been installed and I have personally had two close calls where people run the red light on Elwert. There will be a fatality here at this intersection and putting more housing is only going to make it worse.

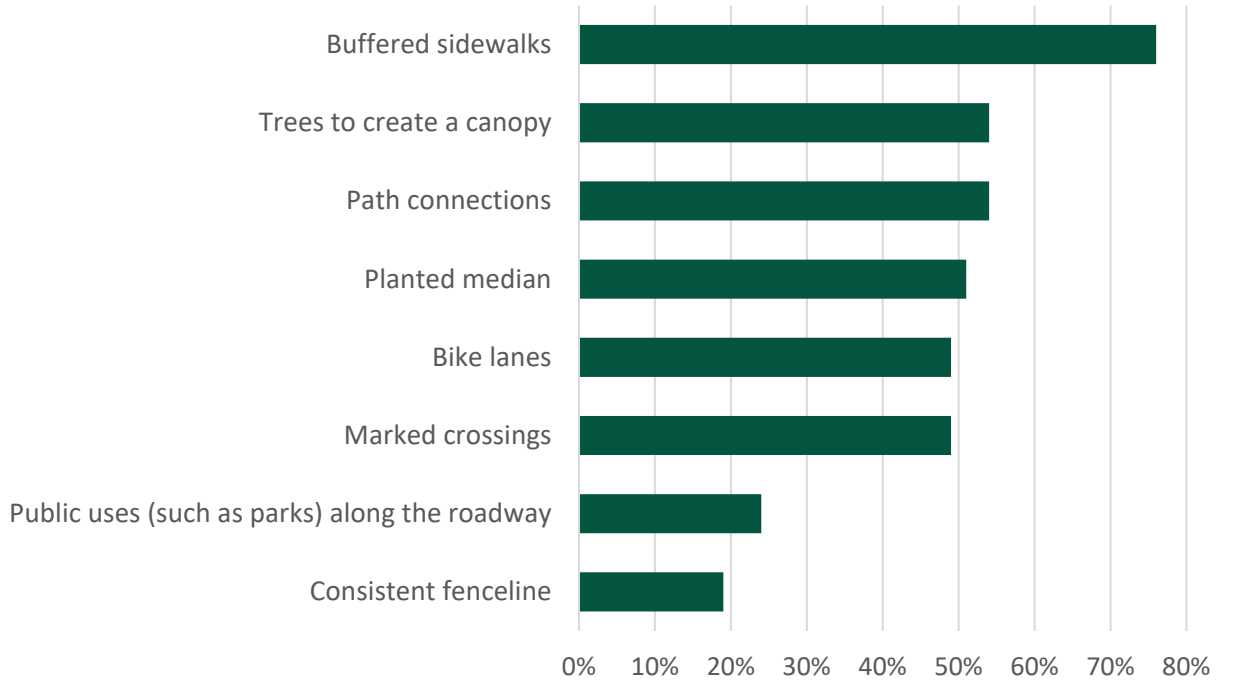
ELWERT ROAD DESIGN CONCEPT

Which of the following principles are the most important to you regarding the future design of SW Elwert Road?



% of survey respondents who selected principle as a top priority

Which of the design elements would you most want to see on SW Elwert Road?



% of survey respondents who selected element as a top priority

Other:

- you have trees to create a canopy. we have that now before you destroy it.
- Fewer cars than we already have. The impact we see today as a result of the new high school is already a mess.

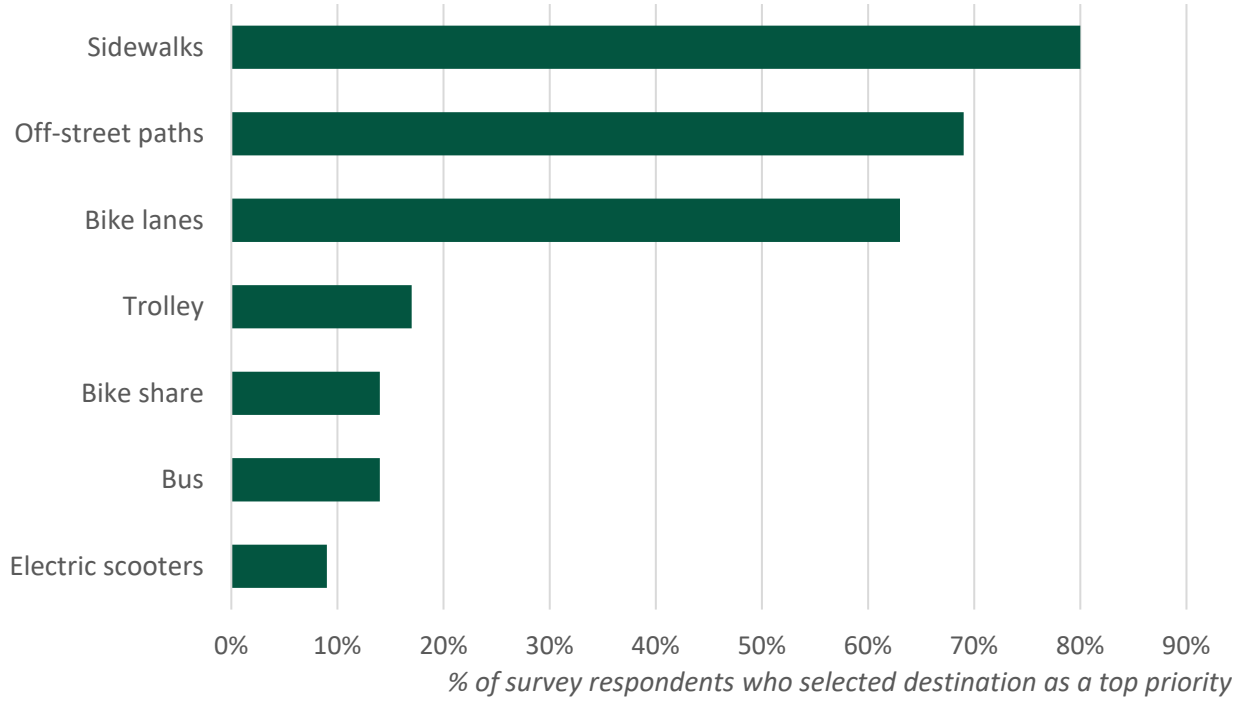
Is there anything else you would like to tell us about the design of SW Elwert Road?

- Elwert is a rural road at present. It would be nice to keep it that way.
- As above, Option 2 should be the new preferred alternative based on affordability issues and less impact on the existing Chicken Creek natural resource areas. Redeveloping the existing Elwert and Edy intersection can be done in a manner that could even provide for a larger roundabout located in the NE and/or SW quadrant which appears to be partially developed and farmed upland areas to protect the existing riparian and natural habitat areas along the Creek. Enhanced wildlife crossings will have to be developed in those areas to which wildlife has already been displaced by the existing traffic problems. Developing wildlife crossings and mitigating the impacts of Option 2 should be significantly more affordable than the substantial realignment and infrastructure improvements planned for Option 1. Given the current state of affairs in our City, State and Country, we owe it to our citizens to plan for efficient and cost effective development at every level.
- Edy and Elwart's intersection needs to be moved west.
- need to connect pedestrian/bike the rest of the way to Edy SOON. it is used and is so much more dangerous now with increased HS traffic.
- it carries about 9,000 average daily trips today and is forecast to carry 14,000 average daily trips in 2035". In traffic analysis, the effect of moving from 9 to 14 K trips will be more like tripling the congestion. I think only a minority of people looking at these options realize that the congestion grows exponentially, not linearly. And the more lanes we build, the more cars will be attracted to use those lanes. It is a vicious cycle, and if we do not realize that upfront, we will continue to spend more and more on street widening projects and just get more and more frustrated with the results. The same treatment needs to be applied to Edy Road.
- Its going to have to expand massively. The traffic is so bad on 99 and Roy Rogers, if you build Sherwood West youre going to have at least 14,000 visitors right away (not 2035) becuase you create a faster way to get through. right now its more difficult for people to access because its single lane but when you make it the ONLY choice for more people, its going to be a mess.
- Does it remain only two lanes with mini minimal turning lanes?
- Connect into regional bike pats
- There are high-voltage towers and lines that run in that area. It is not suitable to place homes near them. Please don't built in Sherwood West - I'm begging you.
- With no further growth is fine the way it is so nothing needs to be done.
- Why do you have pictures here that are over a year old? The intersection has a traffic signal light at it now. Again get out of the office and look at what is existing.
- Traffic circles work

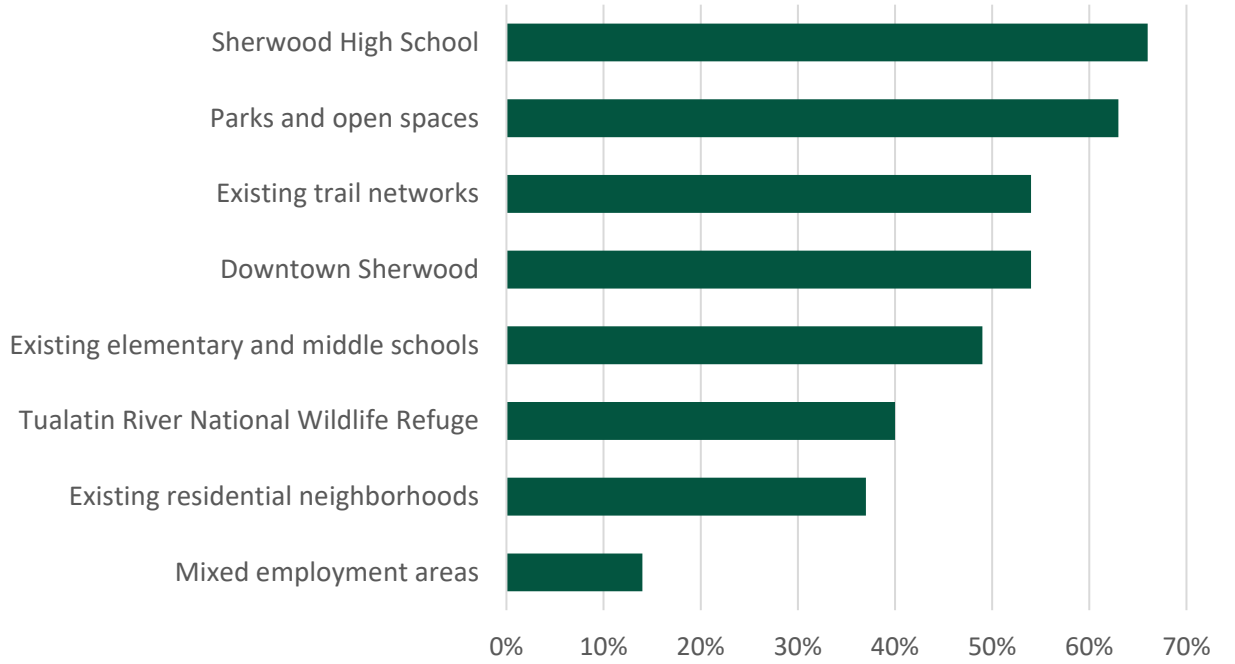
- Better foot paths to the High School - over passes potentially so traffic is not impaired and can accommodate the high influx and exodus of traffic to and from the High School.

ACTIVE TRANSPORTATION

What destinations do you think are the most important to connect Sherwood West's future neighborhoods to by walking and biking?



What types of active transportation infrastructure or programs would you like to see in Sherwood West?



% of survey respondents who selected destination as a top priority

Other:

- There are no bike lanes all the way up Edy and it is heavily travelled by bikes. someone is going to get hit here eventually.

Is there anything else you would like to tell us about active transportation in Sherwood West?

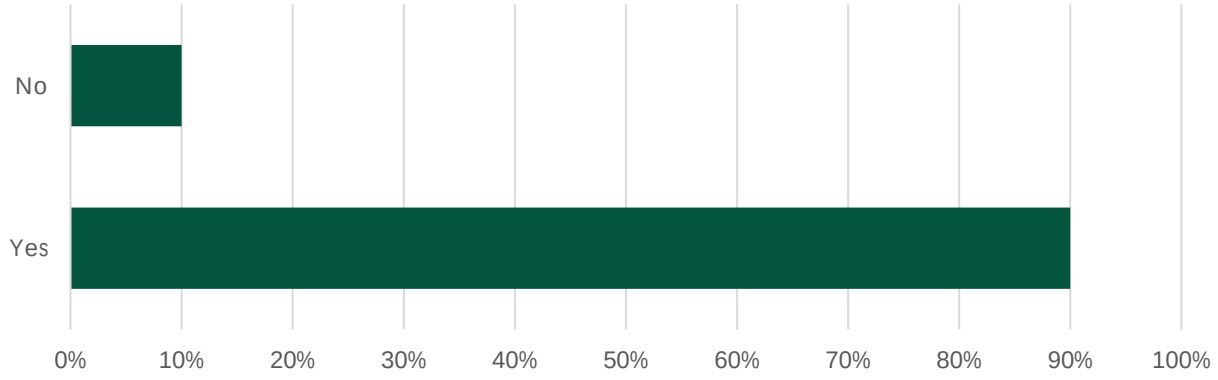
- We like the idea of the Chicken Creek Greenway and active transportation and trail system as conceptually planned. We like the idea of affordable bus service through Sherwood West and believe that the Elwert/Edy Option 2 plan with roundabout in upland areas in the SW and/or NE of that intersection would provide the best and most direct transit service between the new employment areas and neighborhoods, connecting to 99W and Downtown and existing neighborhoods.
- Transportation here has to be about safety, families and kids
- Address the 99w traffic that cuts thru Elwert to Roy Rodgers rd. Also traffic that uses Sunset as a bypass around the 'six corners' intersection.
- I'm absolutely against bus, shared bikes and scooters. Especially a bus on sunset or going through Woodhaven. It will ruin the quality of life for all that live off of it. Scooters have been a disaster in Portland. It's asking for trouble. I don't want bikes and scooters tossed and left sitting wherever. I'd

like to keep a more urban/suburban feel. Please don't open us up to being crowded like Beaverton and Portland.

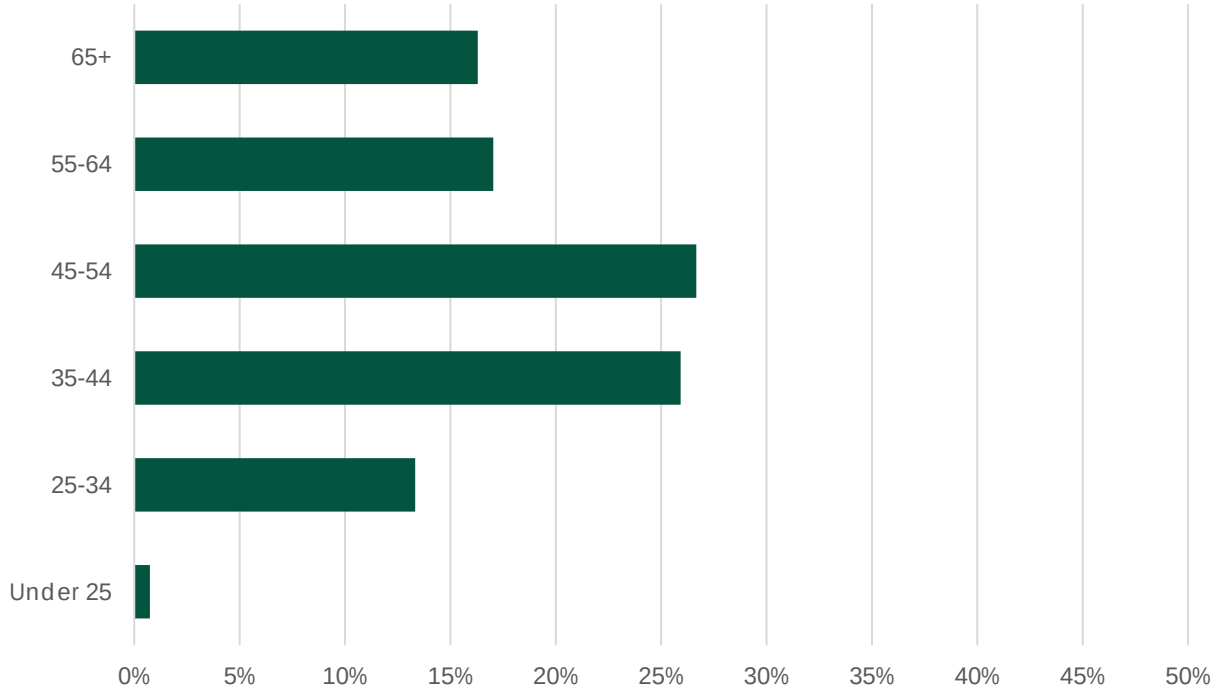
- Connect Sherwood to regional bike paths. I would like to safely bike across Sherwood but bing able to safely connect to other communities is important too.
- There are better places to bike and walk. I don't want the environment changed to accommodate bikers, pedestrians, more homes, and businesses. There are plenty of other options, and we don't need any more residential construction in Sherwood. Period.
- No one is asking for Sherwood to grow except for the money hungry developers and builders and if it's the Mayor too. We'll
- Are off-street Paths (multiuse- pedestrian & bike), if so I like that more than bike lanes on the roads. Sherwood has many young families and having the ability for small children to ride away from the road with parents and older siblings is important for supporting the family friendly draw of Sherwood.
- with all the upgrades to the roads that are needed who is going to pay for it? Not fair to make the existing community pay for these upgrades to the roads that are just fine for our use now. if they develop a ton of houses make the developer pay for the infrastructure upgrades.
- Please do not put electric scooters in. They have not legitimate purpose and we will just have scooters strewn about this side of town.
- There should be a trail that connects further up Lebeau at the northwest corner.

Survey Respondent Demographics

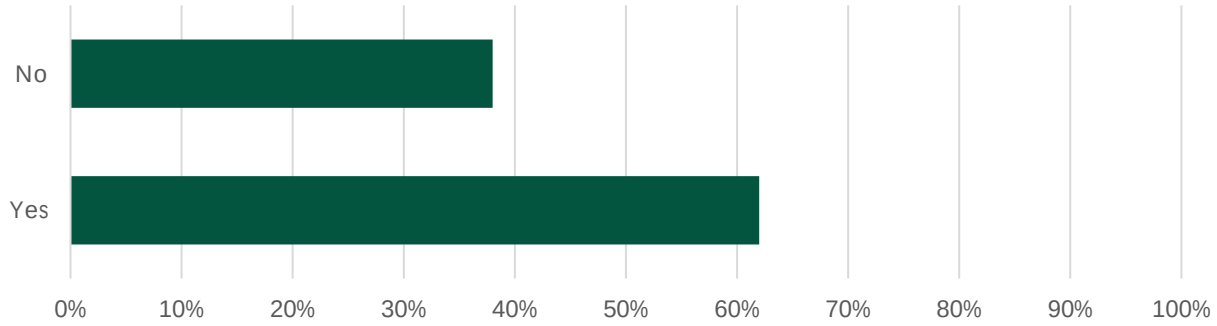
Are you a resident of Sherwood?



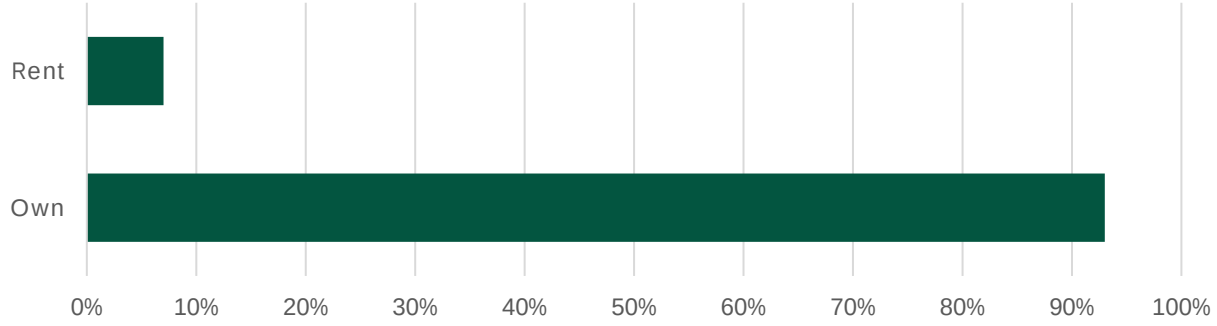
What is your age?



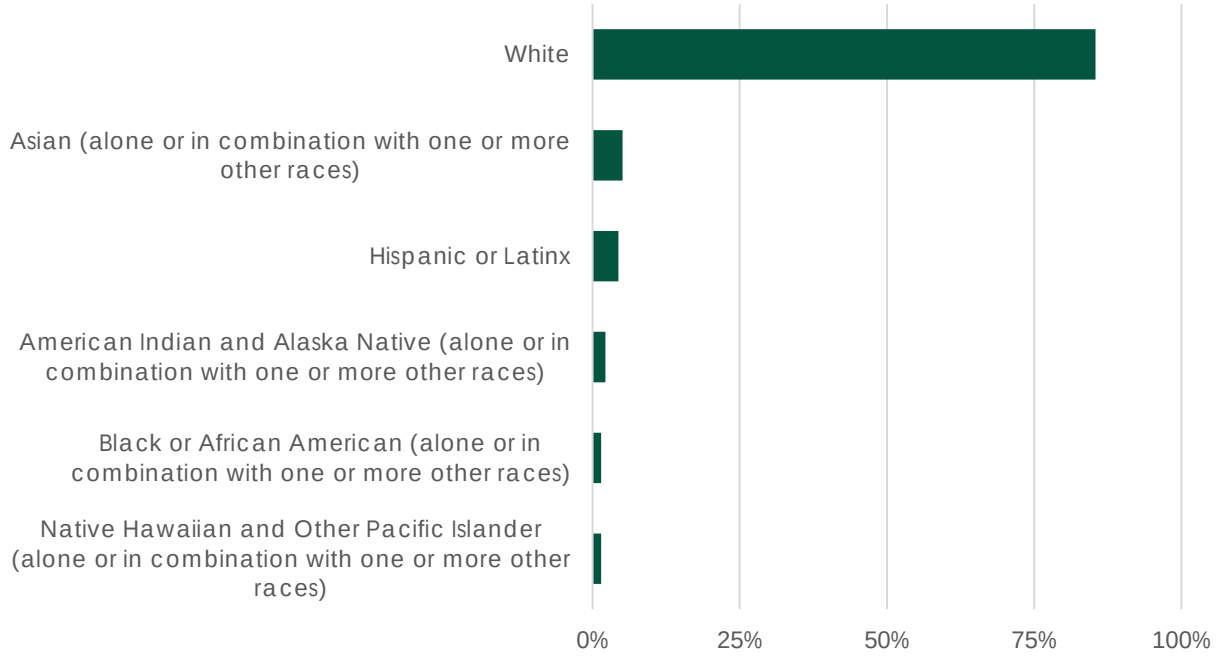
Are there children in your household?



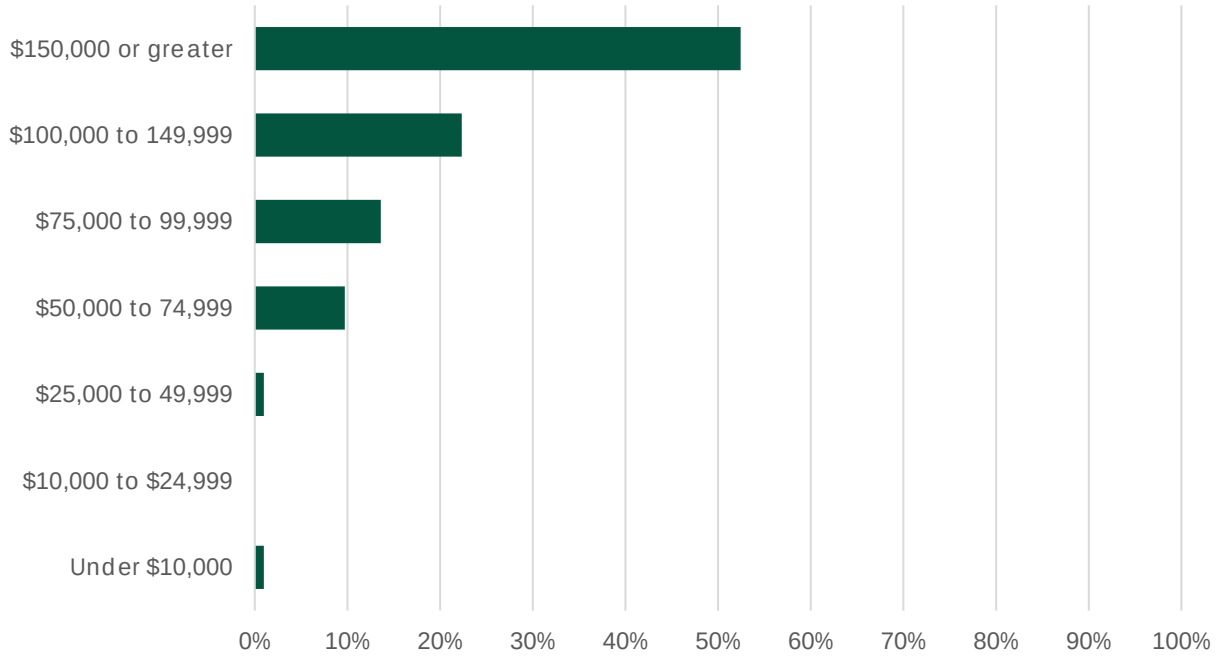
Do you rent or own your home?



How do you identify your race or ethnicity?



What is your annual household income?



APPENDIX E

Open House #2 and Survey Summary

OPEN HOUSE #2 SUMMARY

TO: Sherwood West Community Advisory Committee and Technical Advisory Committee
FROM: Sherwood West Project Team
DATE: November 10, 2022

Introduction

This memorandum provides a summary of the results from the Sherwood West Concept Plan Open House #2, which included both in-person and online participation options.

Open House

The in-person open house took place at Ridges Elementary School on October 20, 2022, from 5:30-7:30 PM. The open house was advertised through a mailed postcard to all Sherwood West property owners, the project's interested parties email list, all City boards and commissions email lists, the City's utility email billing list, the City's social media accounts (Facebook, Twitter, and Nextdoor), and a printed flyer and the City's reader board. A total of 60 people signed in at the event, and an additional 20 to 30 people attended without signing in.

The open house provided an opportunity for attendees to review presentation boards and other information and ask questions of the project team. The presentation boards provided the following information:

- **Background and Overview** – Project purpose, vision/goals, and timeline.
- **Plan Concepts** – These boards summarized concepts related to trails, the Chicken Creek Greenway, Elwert Road design, housing choices, and mixed employment areas.
- **Land Use Alternatives** – These boards provided information about three alternative ways that land uses could be arranged in Sherwood West. The alternatives were presented and compared by subdistrict—North, Far West, West, and Southwest.
- **Transportation Concepts** – These boards provided a map and information about several key transportation improvements that are being studied through the Concept Plan Re-Look process.

Copies of the Land Use Alternatives posters were also placed on tables and attendees were encouraged to rank the alternatives in order of preference by placing dot stickers (labeled 1, 2, and 3). Participants could also write comments on the posters. See Attachment A for a summary and photos of the results of this exercise. Conclusions from the results of this activity are as follows:

- North District – Alternatives 1 and 2 are tied for most 1st choice votes; however Alternative 1 has more 2nd choice votes.
- Far West District – Alternative 1 has most support.

- West District – Alternative 1 has most support.
- Southwest District – Alternative 2 has most support.

In addition, hard copy questionnaires provided another opportunity to weigh in on the land use alternatives and transportation concepts. The questionnaire asked the same questions as in the online survey (see below). Four questionnaires were submitted—see Attachment B.

Online Open House / Survey

An Online Open House provided similar information as was presented at the in-person open house—it is still available online at this link: https://arcg.is/044vDW. Because of the breadth of information covered in the open house, participants were invited to select and explore any topics that interested them from a menu of pages. The open house also included a link to an online survey, which was available from October 20 through November 3, 2022. A link to the Online Open House was posted to the project website and promoted through the same digital outlets as the in-person open house. The survey received a total of 104 responses.

The main purpose of the survey was to solicit input on the three land use alternatives. The survey presented information about each alternative and, for each district, asked respondents to rank them in order of preference (or to select "none of the above"). For each district, respondents were also asked:

- What do you like in the alternatives?
- What do you not like in the alternatives, or what would you change?
- If you selected "None of the above", please tell us why and what you think the long term plan should be for this area.

The survey then presented a "Bonus Topic" of Key Transportation Improvements Under Study--similar to what was presented at the in-person open house. The five potential transportation improvements include:

- Elwert Design Concept
- Elwert Realignment
- Overpass Connection to Brookman Area
- Pedestrian Overcrossing
- Conceptual North-South Connector

For each improvement concept, the survey asked if respondents had any comments or questions.

Lastly, the survey asked a set of demographic questions to get a sense of who took the survey.

Survey Results – Land Use Alternatives

Below are the results from respondents' ranking of land use alternatives for each district. The first, more detailed, chart indicates what percentage of respondents ranked each alternative as Rank 1, 2, 3, or 4. The second chart indicates a weighted average score for each selection—these charts give a sense of which alternatives were generally favored over others.

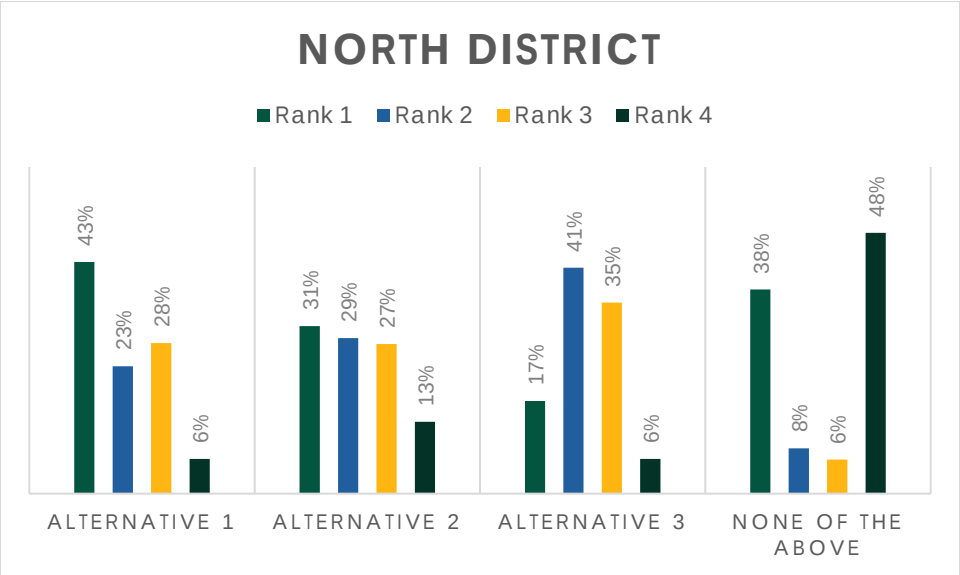
Following each chart is a summary of the key themes from the written responses (what did you like/not like, etc.). A full survey report with all individual written responses is included as Attachment C.

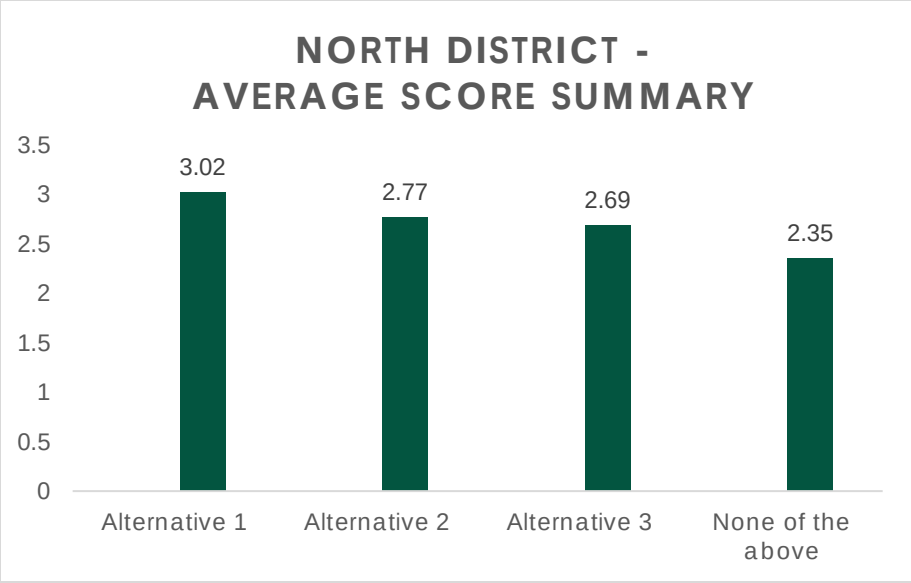
[NOTE: This is not a scientific survey. The online open house was intended as an additional way for people to get information and participate, but it does not reflect a representative sample of Sherwood resident's opinions about Sherwood West.]

NORTH DISTRICT

If the City were to choose to grow into the North District in the future, how should the Concept Plan guide that growth? Rank your preferences among the three land use alternatives for the North District. (If you do not like any of the alternatives, rank "none of the above" as #1.)

[102 answered; 2 skipped]





Themes from Written Responses:

Likes:

- Parks
  - Some specifically mentioned parks at Edy Rd
  - Greenspace around Chicken Creek
  - Parks near multi-family
- Employment focus
  - Jobs compatible to Sherwood for people to live and work in community
  - Employment on the edge near transportation corridors (Scholls Sherwood/Roy Rogers)
- Housing
  - Medium density housing/multi-family near employment
  - Keeping employment buffered from housing
  - Good balance of housing and employment/commercial uses
    - Some specifically mentioned Alternative 2 best mix of uses
  - Cottage clusters near Chicken Creek

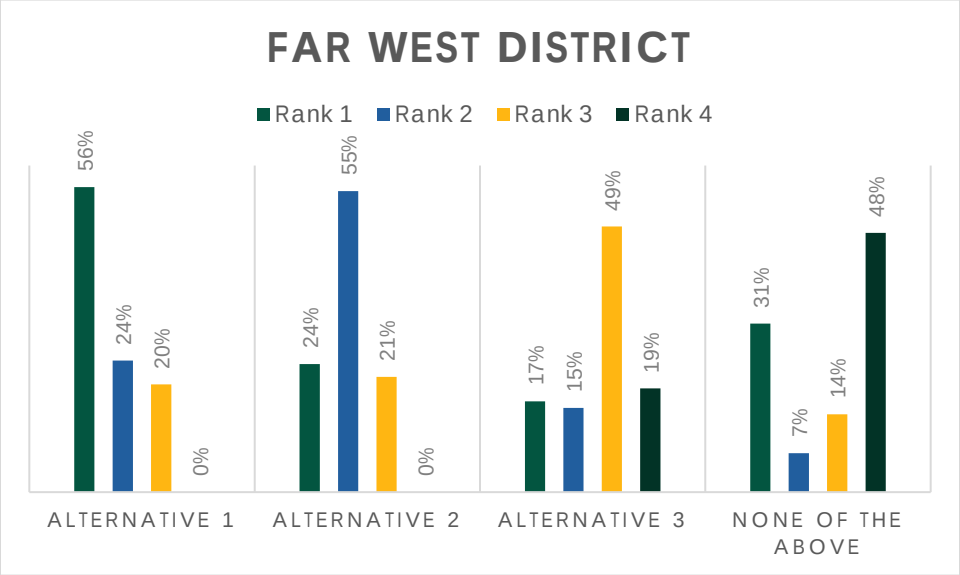
Changes:

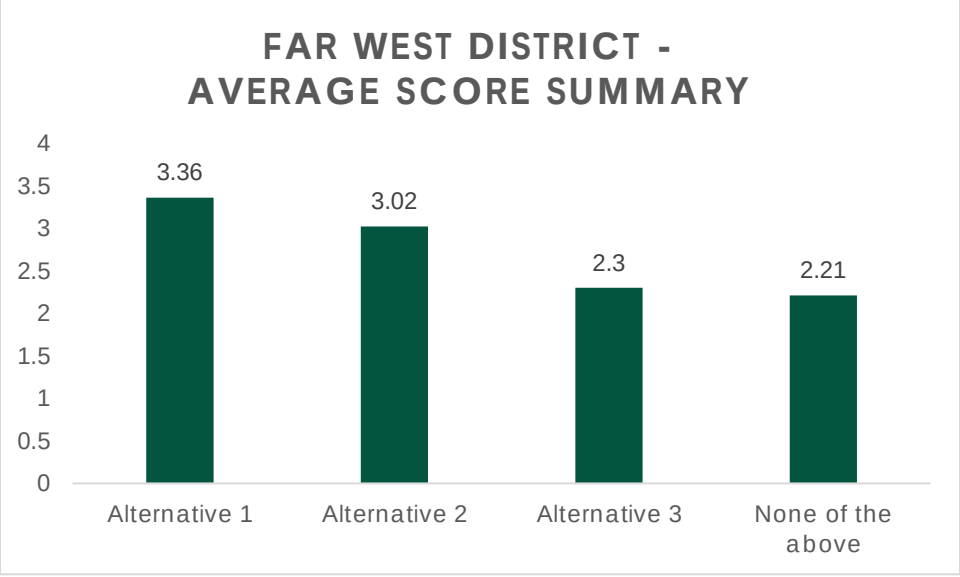
- Area too focused on employment
- Employment near Chicken Creek
- Medium density housing near Edy/Elwert intersection – The amount of traffic existing on Edy/Elwert
- Place housing east of Elwert on Edy near existing subdivisions (Oregon Trail, Mandel Farms)
- Hybrid of Alternative 1 and 2
- Traffic congestion on roadways with new development

FAR WEST DISTRICT

If the City were to choose to grow into the Far West District in the future, how should the Concept Plan guide that growth? Rank your preferences among the three land use alternatives for the Far West District. (If you do not like any of the alternatives, rank "none of the above" as #1.)

[98 answered; 6 skipped]





Themes from Written Responses:

Likes:

- Parks
  - Balance of open space and housing

  - Access and protection of the Chicken Creek Corridor
  - Parks in neighborhoods and access to trails
- Housing
  - Low and Medium density housing
  - Cottage cluster housing

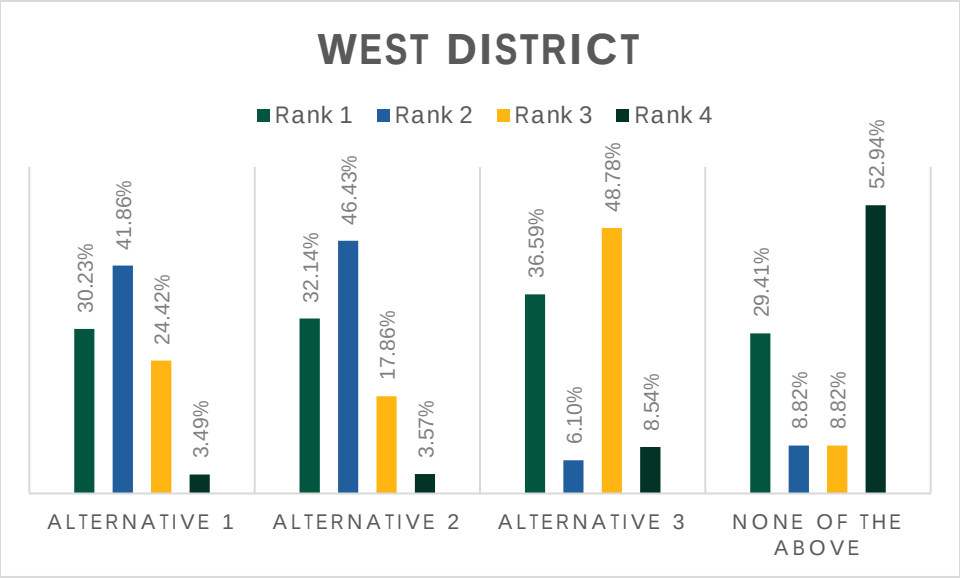
Changes:

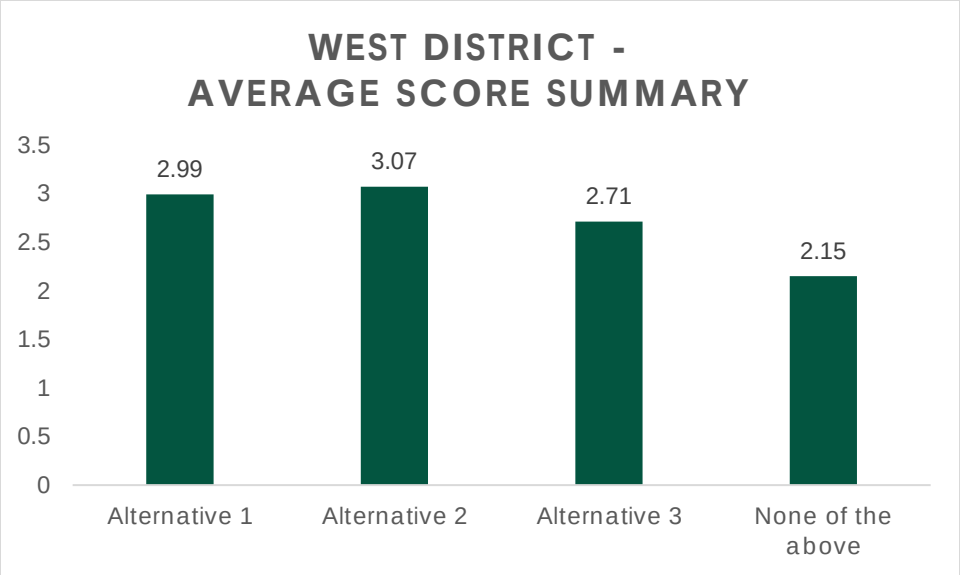
- Lesser density housing in areas of steeper slopes
- Impacts to existing Eastview neighborhood – proposed road connection
- Intersection at Edy/Elwert is dangerous
- Traffic impacts in the area with additional housing

WEST DISTRICT

If the City were to choose to grow into the West District in the future, how should the Concept Plan guide that growth? Rank your preferences among the three land use alternatives for the West District. (If you do not like any of the alternatives, rank "none of the above" as #1.)

[94 answered; 10 skipped]





Themes from Written Responses:

Likes:

- Parks
  - Large park and trails
  - Access to Chicken Creek Corridor
- Housing
  - Housing near high school – kids can walk to walk/bike to activities
  - Higher density and mix of housing and uses near the high school
  - Cottage Cluster housing
- Mixed Use
  - Mix of uses near high school
  - Smaller commercial/retail uses and eateries
  - A neighborhood anchor development –inspiration Orenco type of concept

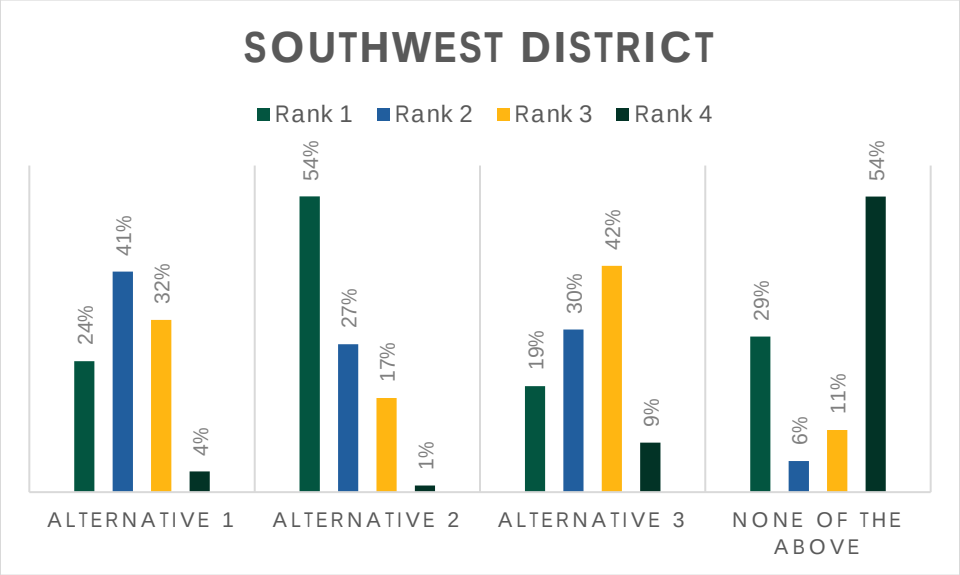
Changes:

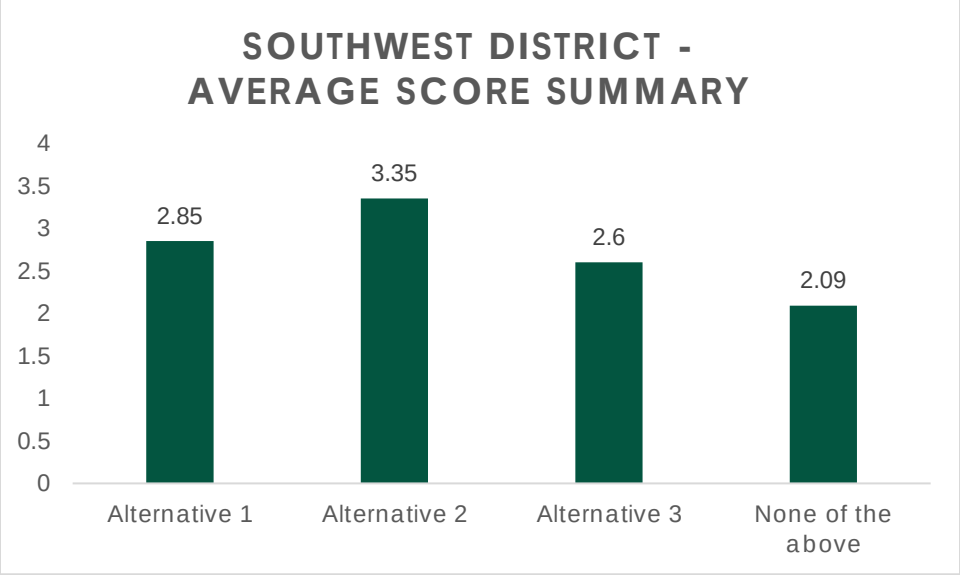
- Increase of traffic
- Edy/Elwert intersection is dangerous
- Extension of Eastview Rd is not practical
- Cottage cluster housing near high school – less likely to have children going to school
- Relocation of Elwert
- Too much high density and cottage cluster housing
- More employment commercial will impact traffic

SOUTHWEST DISTRICT

If the City were to choose to grow into the Southwest District in the future, how should the Concept Plan guide that growth? Rank your preferences among the three land use alternatives for the Southwest District. (If you do not like any of the alternatives, rank "none of the above" as #1.)

[91 answered; 13 skipped]





Themes from Written Responses:

Likes:

- Park
  - Some specifically liked the large park in Alternative 2

- Mixed Uses
- Hospitality uses and commercial along Highway 99W
  - Some specifically called out hospitality and employment areas in Alternative 1 and 2
  - Some specifically called out Alternative 3 that clusters uses together (e.g. employment and housing)
  - Additional restaurants, possible new grocery store
- Gateway to wine country theme

Changes:

- Roads to accommodate additional traffic impacts
- More employment near Highway 99W
- What is hospitality area (unclear)
- More parks and trails in this area

Survey Results – Transportation Improvements

Below is a summary of key themes from the written responses for each potential transportation improvement.

Do you have any questions or comments about the Elwert Design concept?

- Likes – buffered sidewalks, median plantings and street trees, similar to Sunset

Do you have any questions or comments about the Elwert Realignment concept?

- Maintain existing Elwert alignment but look for ways to slow it down and create neighborhood feel
- What is the cost of improving Elwert with two crossings over Chicken Creek?
- Traffic circles will not improve traffic flow
- The realignment of Elwert will increase safety, slow down traffic
- Lower the speed on Elwert to 25 mph
- Roads should be built prior to development

Do you have any questions or comments about the Overpass Connection to the Brookman Area?

- If the overpass connects to existing arterial (Elwert) it would be reasonable. It should not connect to proposed n/s connector road.
- Why would you need an overpass if intersection of Chapman/Brookman is signalized?
- Seems expensive
- Work with ODOT to reclassify Highway 99W in Sherwood; 35 mph within Sherwood City Limits
- Why does the overpass not connect Chapman/Brookman intersections?

Do you have any questions or comments about the planned Pedestrian Overcrossing?

- Pedestrian overcrossing is needed
- Why was it not built with new high school?

- Seems unnecessary

Do you have any questions or comments about the conceptual North-South Connector?

- This road is not viable due to unsafe grades, environmental impacts and safety hazards
- What traffic would use this road?
- Elwert Road needs to be widened, focus on improving Elwert Road
- The second alignment, running parallel to Chicken Creek is better option, as it impacts less homes
- A new road will negatively impact Chicken Creek
- Keep studying this as a long-term option
- An expensive idea

Survey Respondent Demographics

See Attachment C for a summary of respondent demographics.

APPENDIX F

Development Trends and Implications Memo

Sherwood West Concept Plan

Development Trends and Implications

Date July 18, 2021

To Joe Dills, Kyra Haggart
Angelo Planning Group

From Sam Brookham, Chris Zahas
Leland Consulting Group

Note: The City of Sherwood adopted an updated Economic Opportunities Analysis (EOA) in June 2023, after this document was completed. The adopted EOA includes updated information about employment land needs in Sherwood and is available on the City's website: https://www.sherwoodoregon.gov/planning/page/2023-economic-opportunities-analysis-update

Executive Summary

Introduction

This Development Trends and Implications memo is intended to highlight a variety of key trends that will be explored in more detail in another memo to determine the specific opportunities for Sherwood West. It is not intended to answer the question of what Sherwood West can be; instead, it serves to provide a baseline summary of high-level findings from existing City of Sherwood planning documents and the current land use, transportation, and development conditions in the greater Sherwood area.

The Economic Opportunities and Challenges memo that will follow this memo will provide more specific information about assets, opportunities, constraints, economic development strategies, options for long-term job creation, and recommended land uses in Sherwood West.

This memo is organized as follows.

- **Planning Document Summary.** The memo includes summaries of two existing City of Sherwood planning documents: the Housing Needs Analysis (HNA) and Economic Opportunities Analysis (EOA). The HNA and EOA[1] provide information about supply and demand for residential, commercial, and employment lands in the City of Sherwood over 20 years. As both documents are policy-oriented and based on regional growth rates, there may be additional or different opportunities for Sherwood West that will be discussed in the Economic Opportunities and Challenges memo that follows. The summary of these documents in this memo, therefore, reflects just one perspective that may require an updated assessment.
- **Development Trends.** It also summarizes the team's evaluation of recent land use, transportation, and development conditions that impact Sherwood West, including new/pending developments in King City West, River Terrace, and Cooper Mountain, residential and employment growth areas in Sherwood (Brookman and Tonquin), and other development trends in Sherwood.

The key findings from this memo include the past development trends that offer insights into future development prospects for various land uses in Sherwood West, the key takeaways from the HNA and EOA.

Past Development Trends

The development trends of the past can provide an insight into the current and emerging opportunities for new growth. Relative to many other cities in the Portland metropolitan region, Sherwood's building stock is quite new, with most of the buildings constructed during the mid-to-late 1990s and early 2000s. During this time, construction activity was

[1] The 2018 EOA was not adopted by City Council. It is simply included in this memo to highlight baseline conditions.

dominated by single-family residential homes, industrial, and retail. While single-family residential construction declined significantly going into and since the recession of 2007-2008, construction activity for industrial and retail space has remained relatively high. Multifamily construction has been limited but consistent over the past three decades. And construction activity for office, healthcare, and hospitality space has been very limited, although new and emerging trends may result in growth opportunities, particularly for Sherwood West.

ES-1. City of Sherwood Residential Units and Square Feet of Development by Decade Built

Year Built	SFR Units	Multifamily Units	Industrial	Office	Retail	Health Care	Hospitality
Pre-90s	672	225	177,139	29,319	164,187	0	0
'90 to '00	2,844	256	709,574	38,265	107,812	52,893	0
'00 to '10	1,655	261	332,881	127,036	402,803	0	0
'10 to '20	349	249	626,206	20,000	327,462	0	70,993
Total			**1,668,661**	**185,301**	**838,077**	**52,893**	**70,993**

Source: Costar, Metro RLIS (SFR Data)

Below is a summary of the trends relating to each real estate development sector.

- **Employment (office, industrial).** The industrial sector has generally been shielded from the worst effects of the COVID-19 pandemic, and rapid growth in demand for distribution facilities has spurred significant new investment activity. There are trends and opportunities on which Sherwood may capitalize, including automation, shifting consumer behaviors (e.g., ecommerce), the emergence of the "hub and spoke" offices, and the electrification of vehicles. Sherwood's office market is locally oriented, and construction and absorption have been limited. It has been more than 10 years since an office project was delivered and the pandemic remains a major disrupter to the economy at large and creates uncertainty in the development and investment community. The Tonquin Employment Area (TEA) is Sherwood's primary growth area for new employment. Several industrial buildings totaling 535,000 square feet are in various phases of planning and development at the T-S Corporate Park—the first project since the creation of the concept plan in 2010. Other projects are in the early stages of planning in the TEA, per the City, including plans for multi-tenant industrial buildings totaling 900,000 square feet on 60 acres and project interest on 30 acres that was recently annexed and an adjacent 20 acres. Between these prospects and additional interest in new development in the TEA, there is reason to believe that most of the 200 acres of usable land in the TEA will be accounted for sooner than was originally anticipated in the 2018 EOA.
- **Retail/Commercial.** New construction has averaged approximately 50,000 square feet annually over the past five years, although nothing has been built in the past year since the COVID-19 pandemic began. Except for Parkway Village South (described below), there is very little new development in the pipeline and Sherwood does not appear to face a burgeoning wave of development supply pressure. With that said, investment in new retail typically follows household growth; in the southwest Portland metropolitan region, there are several large growth areas expected to generate significant demand for new retail services and amenities. Sherwood West may capitalize on this increased demand and capture a portion through new development.
- **Residential.** Significant growth in the population aged 55 and over has given rise to the growing demand for certain housing types, including apartments, assisted living facilities, and small-format single-family detached and attached residential. Sherwood's owner-occupied housing market is considered competitive, with a sale-to-list price ratio of around 101.3 percent and averaging less than 20 days on the market before going pending. Apartment occupancy is currently at 95.9 percent—close to the five-year high—indicating demand for new development.

Sherwood West is one of several planned expansions in the southwest metro region. Others include Tigard River Terrace, Beaverton Cooper Mountain, and King City West. How and when these areas develop will directly impact the market and compete with the study area. However, it is expected that these areas will be predominately residential with limited commercial and employment development. As Sherwood West develops, there may be increasing opportunities for it to be a sub-regional hub for employment. There may also be opportunities to add retail services, but we expect the primary trade area for these other southwestern growth areas to be oriented to the north and east, rather than to Sherwood.

The following table summarizes the scale of planned development in each of these expansion areas.

ES-3. Summary of Planned Development in SW Metro Region Expansion Areas

Expansion Area	Planned Commercial / Employment	Planned Residential
Tigard River Terrace 1.0	25,000 to 40,000 sq. ft. (building area)	2,587 units (about 1,200 units built to date)
Tigard River Terrace 2.0	10 to 30+ gross acres of employment and/or commercial uses	Up to 4,500 total units
Cooper Mountain (CM), Beaverton	10-acre main street commercial Est. 80,000 to 120,000 sq. ft. (building area)	South CM: 3,430 units; Urban Reserve Area: 3,760 units; North CM: 300 units
King City West	Est. 54,000 to 85,000 sq. ft. (building area)	3,576 units

Planning Document Summary

The table below highlights the strengths, weaknesses, opportunities, and land supply and demand considerations described in Sherwood's EOA and HNA. These documents offer a potentially conservative depiction of the supply and demand factors for employment and residential growth in the City of Sherwood over the next 20 years.

While this information is helpful context, it is important to recognize that the documents reflect conditions at a certain point in time that are based primarily on an agreed-upon projected growth rate. Given that Sherwood is a relatively small city compared to most others in the Portland metropolitan region, modest developments can have significant impacts on employment and household growth. Growth could be further impacted by a proactive approach by the City, causing businesses and developers to locate in planned employment centers in Sherwood West beyond what was forecasted in each document.

There are, therefore, limitations to these documents which necessitate a fresh look at opportunities for Sherwood West. Because both the EOA and HNA are policy-based documents that follow a required framework, neither provides a discussion of emerging trends that may serve as opportunities for Sherwood West, nor do they include a complete depiction of the development pipeline in Sherwood, particularly for industrial projects. The remainder of this memorandum, as well as the next Economic Opportunities and Constraints memo, will revisit this baseline information and explore more specific opportunities and constraints for Sherwood West.

Table 1. Summary of Key Planning Documents

	Economic Opportunities Analysis	Housing Needs Analysis
Economic Strengths	• Suitable attributes for attracting new business. • Proximity of new residential growth areas. • High quality of life.	• Strong residential growth, particularly in younger families and senior populations. • Relatively high incomes compared with the rest of the Metro region.
Economic Weaknesses	• Congestion and the distance from I-5 hinder both industrial and residential prospects. • Lack of infrastructure in new growth areas. • Reliance on Tonquin Employment Area for meeting industrial land needs.	• Relatively high proportion of single-family detached housing relative to other housing types • Reliance on development of the Brookman Area for meeting residential land needs.
Opportunities	• Citywide growth potential in the industries of manufacturing, professional and business services, wholesale, and visitor and resident services. • Population growth will drive growth in retail businesses.	• Ageing population driving demand for smaller single-family housing, multifamily housing, and housing for seniors. • The growth of younger and diversified households is likely to result in increased demand for a wider variety of housing.
Land Supply & Demand	• Sherwood had 242 acres of unconstrained employment land in 2018, of which half is in the Tonquin Employment Area (TEA). • Employment growth is projected to drive demand for 86 gross acres of industrial land and 85 gross acres of commercial land. • Sherwood has a 24 gross acre surplus of industrial land and a 57 gross acre deficit of commercial land. The surplus is, in reality, much less given the new development coming online.	• Land base can accommodate 65 percent of forecasted population growth. • Limited supply of land for moderate- and higher-density multifamily housing, causing a barrier to the development of townhouses and multifamily housing, which are needed to meet housing demand resulting from the population growth of seniors, young families, and moderate-income households.

Source: City of Sherwood

Economic Opportunities Analysis

The 2018 EOA is "an analysis of the community's economic patterns, potentialities, strengths, and deficiencies as they relate to state and national trends."

The primary goals of the EOA are to:

(1) project the amount of land needed to accommodate the future employment growth within the Sherwood City Limits and employment land areas in the Urban Growth Boundary (UGB), namely Tonquin Employment Area and Brookman Annexation Area, between 2019 and 2039;
(2) evaluate the existing employment land supply within Sherwood to determine if it is adequate to meet that need; and
(3) fulfill state planning requirements for a twenty-year supply of employment land.

While the EOA provides an indication of the strengths and weaknesses for job creation and highlights specific opportunities for Sherwood West, it is important to note that the Sherwood City Council decided not to adopt the 2018 EOA and to make updates closer to the adoption of the Comprehensive Plan. The reasoning for not doing so was primarily due to discrepancies between the rate of employment growth projected in the EOA and by Metro. Other

information provided in the EOA, such as broader economic trends and land availability, are still relevant and are discussed here.

The key points of the 2018 EOA are as follow. It is important to emphasize that this section simply summarizes what the EOA indicates, rather than a comprehensive discussion of the specific opportunities for Sherwood West.

Land Supply and Demand

The EOA included a discussion of land supply for employment and commercial development. Key findings are listed below (all findings are as of 2018).

- In 2018, Sherwood had 242 acres of unconstrained land[2], 141 of which is vacant and 101 of which is potentially redevelopable (i.e., underutilized but not vacant sites). Nearly 60 percent of the vacant land (and 40 percent of the redevelopable land) is in the Tonquin Employment Area (TEA). Most were sites less than five acres, nine sites were between five and 10 acres, and three were larger than 10 acres, including just one 50+ acre site in the TEA and two 12-acre industrial sites. Small industrial sites are considered an issue by the City and its economic development partners; the Metro Employment Land Site Readiness Tool Kit describes smaller sites with multiple owners and limited infrastructure as a regionwide issue in the Portland metropolitan area.
- While there has been little new development since the 2018 assessment for the EOA, anecdotal evidence from the City of Sherwood indicates a more constrained land supply than what is portrayed in the EOA. Sherwood West has a potential opportunity to capitalize on regional demand for large industrial sites, particularly given the aforementioned regionwide shortage.
- Sherwood's employment base was 8,340 jobs in 2018. The EOA forecasts 11,785 jobs by 2039, an increase of 3,446 that is projected to result in the demand for 86 gross acres of industrial land and 85 gross acres of commercial land.
- **Industrial.** Most of the buildable vacant employment land in Sherwood is designated as industrial as opposed to commercial, retail, or other types of employment. Sherwood has a supply of 110 acres of suitable land designated for industrial uses, which is a forecasted surplus of 24 gross acres over 20 years, per the analysis conducted for the EOA. There is a greater surplus with the addition of the TEA and the Brookman Addition.
- **Commercial.** Sherwood has 28 acres of land designated for commercial uses. The employment forecast projects demand for 85 acres of commercial land. Sherwood has less commercial land than the City is projected to need over 20 years, with a deficit of 57 gross acres of commercial land.
- **Future Development.** Sherwood has 172 acres of land designated for employment uses in future development designations in the Tonquin Employment Area and Brookman Annexation Area. In total, this land is likely to sufficiently meet both industrial and commercial demand over the next 20 years. However, if the rate of development increases as expected beyond what was forecast in the EOA, there will likely be a shortage of appropriate sites—particularly sites in excess of 10 acres—for employment growth in the City of Sherwood, thereby creating development opportunities in Sherwood West. These opportunities will be further explored in the Economic Opportunities and Constraints memo.

Sherwood's Economic Strengths and Weaknesses

The EOA included several strengths and weaknesses that affect Sherwood's ability to attract and accommodate job growth. A summary is provided below.

[2] The physical constraints used in the Sherwood buildable lands inventory includes areas subject to landslides, areas with slopes greater than 25%, lands within the 100-year flood plain, Metro's Title 3 land (including Water Resource Conservation Areas), lands within Metro's Title 13 Habitat Conservation Areas (Class I and II, A and B), Wetlands, and public facilities.

Strengths

- Sherwood's attributes that may attract businesses are its location along Highway 99; quality of public facilities and services; general availability of vacant land serviced by utilities[3]; quality of schools; and overall quality of life.
- Proximity to new residential growth areas—including the areas along the Roy Rogers Corridor north of Sherwood West—may increase demand for services and employment for new nearby residents. The growth expected in these areas is summarized later in this memo.
- High quality of life due to the Tualatin River National Wildlife Refuge, cultural amenities and events, and access to high-quality education and medical care, among other factors.
- The region's high-quality natural resources present economic growth opportunities for Sherwood, ranging from agriculture and wineries to amenities that attract visitors and contribute to the region's high quality of life. Proximity to Wine Country offers potential opportunities for manufacturing, hospitality, commercial, and other uses.

Weaknesses

- The current transportation network is considered a disadvantage for both residents commuting to jobs (both in and out of Sherwood) as well as businesses that need a distribution route to access the region. Several transportation projects, including the widening of Roy Rogers Road and Tualatin-Sherwood Road, may improve the prospects of attracting new industrial, technology, and commercial users to Sherwood. These opportunities will be explored more in the Economic Opportunities and Constraints memo.
- Distance from I-5 is a disadvantage for attracting some types of businesses, such as warehouses and distribution or manufacturers that need close access to I-5 for heavy freight.
- There is a lack of infrastructure needed to support employment growth on large vacant sites.

Opportunities for Sherwood West

The EOA describes several economic trends and opportunities that could apply to the Sherwood West area. These are described below.

- Growth in population in Sherwood will drive modest growth in retail businesses, including commercial centers and neighborhood retail. It should be noted that the 2018 EOA did not specifically reference the potential opportunities and the new market dynamics that will arise as a result of the substantial new household growth along the Roy Rogers Corridor to the north. While this new growth is unlikely to increase demand for retail businesses in Sherwood, there are likely to be opportunities for additional employment development that capitalizes on Sherwood West's proximity to this sizeable talent base.
- Approximately 1,719 new jobs (83.5 percent of total new jobs) in Sherwood are expected to require vacant or partially vacant land. The forecasted growth of 1,719 new employees will result in the following demand for employment land: 61 gross acres of industrial, nine gross acres of retail commercial, and 41 acres for office and commercial services.
- Approximately 16.5 percent of jobs in Sherwood are located in residential plan designations, including 12 percent of industrial, 15 percent of retail, and 21 percent of office and commercial service employment. Over 20 years it is expected that the proportion of employment located in residential areas will remain the same. These

[3] Anecdotal information provided by the City of Sherwood indicates that utility service throughout the City is inconsistent, with some existing industrial parks and infill location lacking the necessary utility services. The constrained capacity of existing services can be a barrier to economic growth and detrimental to development prospects.

jobs include home offices for industrial employment, such as construction companies and office and commercial medical offices, or small personal service businesses such as banks or hair stylists.

- The industries identified as having potential for growth in Sherwood include manufacturing, professional and business services, wholesale, and services for visitors and residents.
    - **Manufacturing.** Sherwood's attributes may attract manufacturing firms, such as Technology and Advanced Manufacturing, Machinery Manufacturing (Metals and Machinery), and Clean Tech.
    - **Professional and business services.** Sherwood's high quality of life, access to quality schools, existing population and business base, and location within the Portland region may attract professional and business services that prefer to locate in a smaller city like Sherwood, such as Software and Media, Clean Tech, Athletics and Outdoors, and other services.
    - **Wholesale.** Sherwood's access to Highway 99 may make the city attractive to the continued growth of wholesale businesses.
    - **Services for visitors.** Growth in tourism, especially related to agriculture and wineries, will drive demand for services for visitors such as specialty retail, wine tasting rooms, restaurants, and hotels.
    - **Services for residents.** Growth in population in and around Sherwood will drive the growth of businesses that serve residents, such as medical services, legal services, financial services, retail, personal services (e.g., barbers), and restaurants.

The following table is also from the 2018 EOA and shows the concentration of Sherwood's existing businesses by industry. The **bolded** industries have a high location quotient[4] (i.e., highly specialized compared to national employment in the industry), high employment (i.e., have more than 200 employees in Sherwood), and higher than average wages in Sherwood. These industries have the highest growth potential, given existing businesses and the higher concentration of employment.

With that being said, the table is a summary of Sherwood in 2018 and does not reflect an exploration of potential growth industries. Sherwood has up to now been attractive to certain types of industries, yet there is an opportunity to encourage the growth of industries that may not currently exist but see Sherwood as a competitive location in the Portland metropolitan region. For example, while most economic growth is due to the expansion of existing businesses, the City may be able to capitalize on the demand for large sites in excess of 50 acres that are in short supply in the region.

[4] Location quotients are ratios that allow an area's distribution of employment by industry, ownership, and size class to be compared to a reference area's distribution. If an LQ is equal to 1.0, then the industry has the same share of its area employment as it does in the nation. An LQ greater than 1 indicates an industry with a greater share of the local area employment than is the case nationwide.

Table 2. Concentration of Industries and Employment, City of Sherwood, 2016

	High Employment	Low Employment
High Location Quotient	• **Waste management and remediation services** • **Specialty trade contractors** • **Heavy and civil engineering construction** • **Machinery manufacturing** • **Merchant wholesalers, durable goods** • Building material and garden equipment and supplies dealers • Amusement, gambling, and recreation industries • General merchandise stores • Food and beverage stores • Food services and drinking places	• Construction of buildings • Real estate • Wholesale electronics markets and agents and brokers • Plastics and rubber products manufacturing • Personal and laundry services
Low Location Quotient	• Merchant wholesalers, nondurable goods • Miscellaneous store retailers • Truck transportation	• Professional, scientific, and technical services • Ambulatory health care services • Utilities • Administration and support services • Nursing and residential care facilities • Social assistance

Source: Oregon Employment Department, QCEW, 2016 (Table recreated from EOA)

Housing Needs Analysis

Sherwood's HNA provides a factual basis to support future planning efforts related to housing, including concept planning for Sherwood West and the update and revision of the City's Comprehensive Plan policies. The most recently completed HNA for the City of Sherwood provides analysis through twenty years from 2019 – 2039.

Demographics

According to the HNA, Sherwood has experienced rapid population growth since 1990, reflecting its situation as a major growth area on the edge of the Portland metro. Growth has consistently outpaced Washington County and the Portland Metro region. While the population is aging on average, Sherwood has started to attract a greater proportion of younger people and more households with children. The population is also becoming more ethnically diverse.

The aging of the population is likely to result in increased demand for smaller single-family housing, multifamily housing, and housing for seniors. The growth of younger and diversified households is likely to result in increased demand for a wider variety of affordable housing appropriate for families with children, such as small single-family housing, townhouses, duplexes, and multifamily housing.

Sherwood households also have relatively high incomes compared to the rest of the Metro region, which affects the type of housing that is affordable. Income is a key determinant of housing choice.

Housing Stock

Sherwood's housing stock is predominantly single-family detached, which accounts for about 75 percent, with single-family attached accounting for eight percent, and multifamily accounting for 18 percent. Approximately 69 percent of new housing permitted in Sherwood between 2000 and 2014 was single-family detached housing.

Projections.

Sherwood is forecast to add 1,728 new households between 2019 and 2039. Of these, 700 new households will be inside the existing city limits; 1,029 new households will be outside the current city limits in the Brookman Area.

According to the HNA, the forecast for growth in Sherwood is considerably below historical growth rates. Metro's forecast for new housing in Sherwood shows that households will grow at an average annual growth rate of 1.1 percent per year. In comparison, Sherwood's population grew at 3.4 percent per year between 2000 and 2013 and 8.0 percent per year between 1990 and 2013.

Land Supply. Sherwood's land base can only accommodate 65 percent of the forecasted population growth. Vacant and partially vacant land in the Sherwood Planning Area can accommodate 1,121 new dwelling units of the forecasted need for 1,728 units, leaving a deficit of land for 608 units. If Sherwood grows faster than Metro's forecast during the 2019 to 2039 period, then Sherwood will have a larger deficit of land needed to accommodate growth.

The largest deficits are in Medium Density Residential-Low (154 dwelling units), Medium Density Residential-High (252 dwelling units), and High-Density Residential (145 dwelling units).

At faster growth rates, Sherwood's land base has enough capacity for several years of growth. At growth rates between 2.0 to 4.0 percent of growth annually, the land inside the Sherwood city limits can accommodate two to five years of growth. With capacity in the Brookman Area, Sherwood can accommodate four to 10 years of growth at these growth rates.

Additional housing growth in Sherwood depends on the availability of development-ready land. The amount of growth likely to happen in Sherwood over the next few years is largely dependent on when the Brookman Area is developed, when the Sherwood West area is brought into the UGB and annexed, and when urban services (such as roads, water, and sanitary sewer) are developed in each area.

Sherwood has a relatively limited supply of land for moderate- and higher-density multifamily housing. The limited supply of land in these zones is a barrier to the development of townhouses and multifamily housing, which are needed to meet housing demand resulting from the population growth of people over 65, young families, and moderate-income households.

Development Trends

This section describes the general development trends for residential, commercial, and employment development in and around Sherwood, including a discussion of planned development in each of the nearby UGB expansion areas of King City West, Tigard River Terrace, and Beaverton's Cooper Mountain.

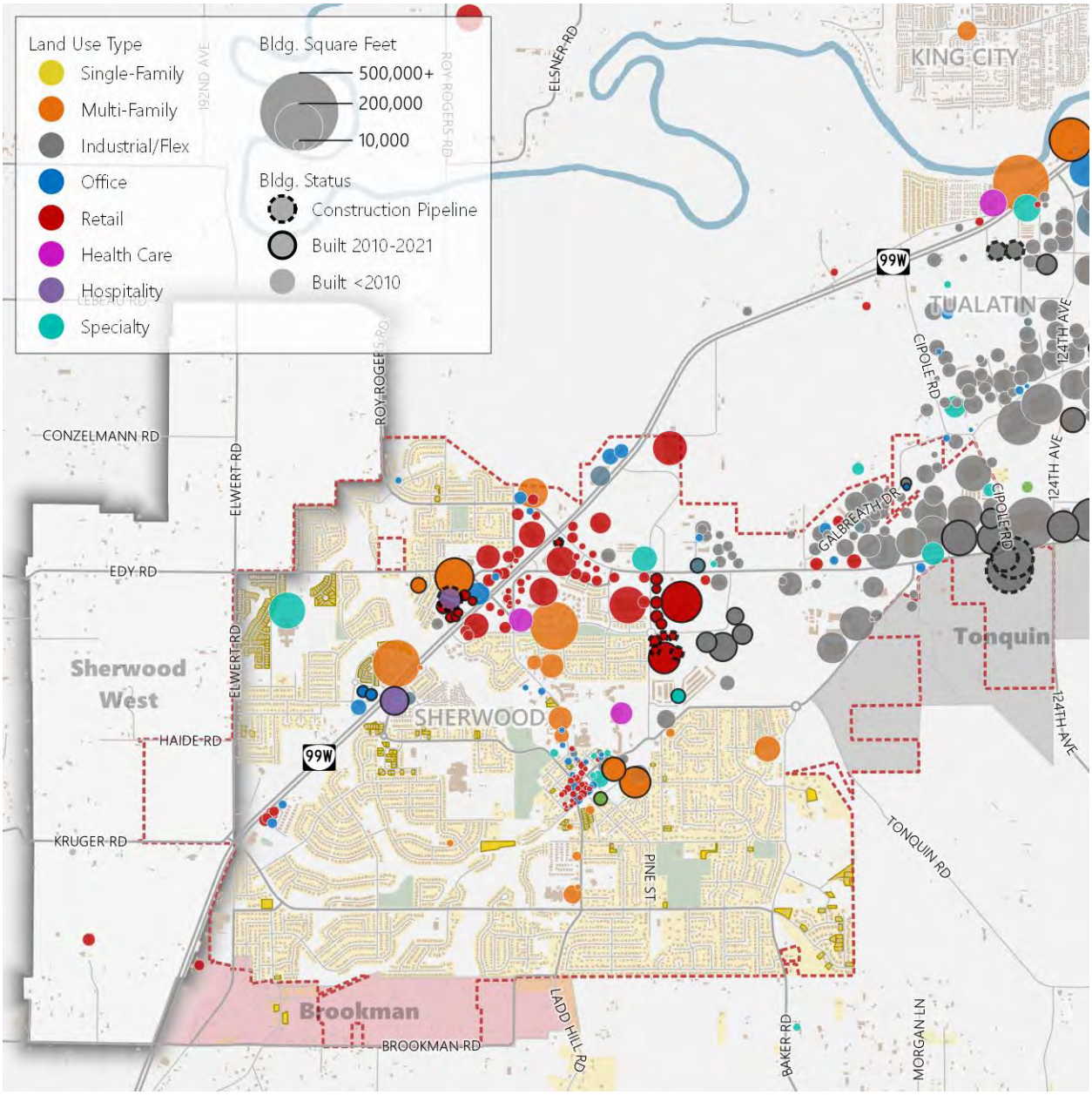
Sherwood Overview by Land Use Sector

Sherwood is experiencing strong growth in all development sectors. The map below provides the location, size, and type of new and existing development in and around the City. Most of the newer (built since 2010—symbolized with the bolded outline in the map) single-family/owner-occupied housing development has occurred on the City periphery where most of the vacant land exists. Industrial has largely clustered in east Sherwood along Tualatin-Sherwood Road. Commercial (retail, office, specialty, other) and multifamily residential development are more centralized, clustering along major arterials (Highway 99W and Tualatin-Sherwood Road) and in Old Town.

Industrial users tend to cluster near other users for a myriad of reasons, and so as long as there is developable land that meets that user's needs, the TEA and the surrounding area are likely to remain the most attractive location for new industrial users. Sherwest West may attract industrial users in select locations, especially as land availability diminishes elsewhere. Office users, while currently one of the most impacted land use sectors by the Covid-19 pandemic, might

consider Sherwood West an attractive location, especially if it develops in a way that offers a variety of amenities, services, and housing options (both in and near the area).

Figure 1. Development Overview by Land Use, Size, and Building Status

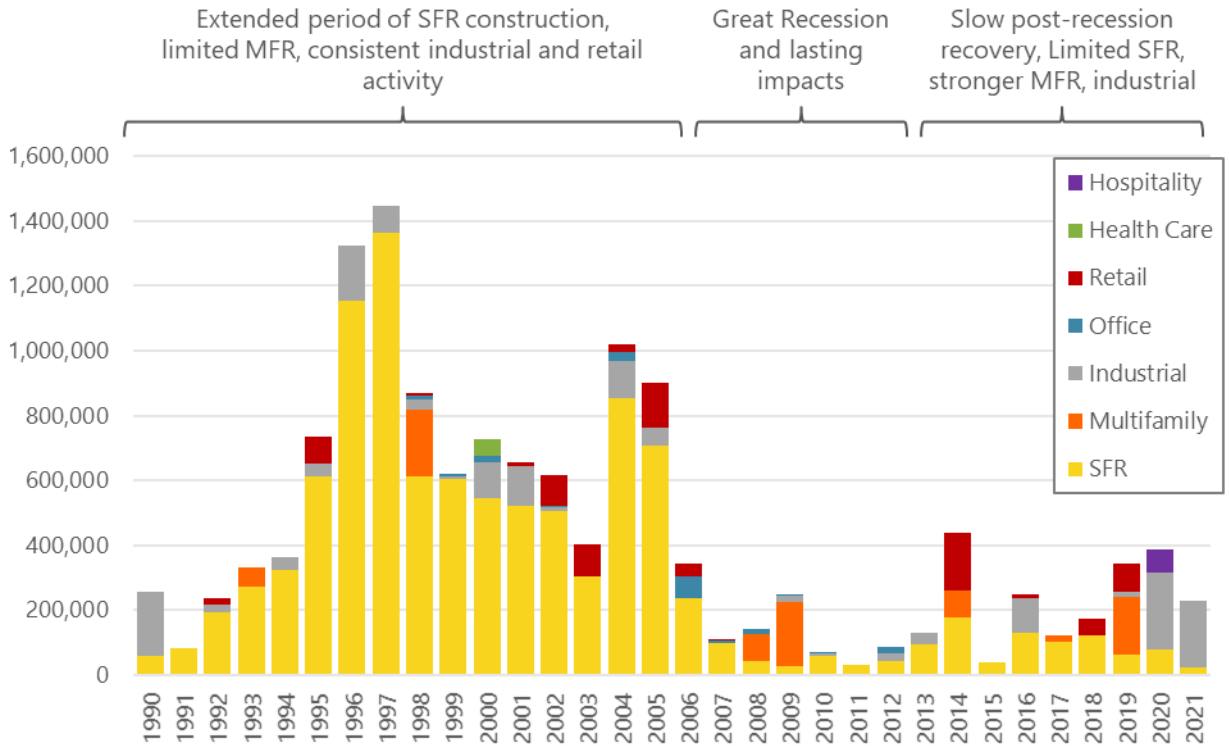


Source: Costar, Metro RLIS (SFR Data), City of Sherwood, LCG

The chart below and the table that follows show total development by year built for the City of Sherwood. There was a significant decline in residential construction activity going into and since the recession of 2007-2008. Multifamily construction has been consistent over the past three decades, averaging almost 26 units or 30,000 square feet per year. Industrial activity has increased again in the past decade following a relative hiatus between 2000 and 2010. Office activity has been very limited, as has healthcare and hospitality, although is likely growth opportunities for Sherwood West that capitalize on several emerging trends, including hub and spoke office development, proximity to Wine Country, proximity to major household growth areas, population growth of all age demographics, and the localization of

healthcare, among other trends that will be further explored in following documents. Retail development activity increased in the 2000s following strong residential growth in the previous decade and has continued into the past decade.

Figure 2. City of Sherwood Square Feet of Development by Year, 1990-2021



Source: Costar, Metro RLIS (SFR Data), LCG

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Total			**1,668,661**	**185,301**	**838,077**	**52,893**	**70,993**

Source: Costar, Metro RLIS (SFR Data)

Industrial

The Sherwood industrial submarket contains around 1.7 million square feet of industrial space and can be considered a midsized submarket. The industrial sector has generally been shielded from the worst effects of the COVID-19 pandemic, and rapid growth in demand for distribution facilities—largely due to ecommerce—has spurred significant new investment activity. There is potential to capitalize on these opportunities in Sherwood given the proximity to Highway 99W.

Vacancies have increased significantly over the past year to 13.0 percent, up from 5.1 percent at this time last year, which, in turn, was slightly lower than the five-year average of 5.4 percent. However, this appears largely because of the three new buildings in the Cipole Industrial Park (TEA) completed in 2020 that total about 240,000 square feet and are yet to be fully occupied. According to Costar, leasable available industrial space totals 290,000 square feet of a total inventory of 2.2 million. According to the City of Sherwood, approximately 34,000 square feet in one new building is being sold to a manufacturer and an unknown additional amount of square is likely to get sold to an Australian company for their North American headquarters. The higher vacancy rate should not, therefore, be considered an indication of weak demand.

Net absorption came in at 18,000 square feet over the past year, slightly above the five-year average of 14,400 square feet. Rents grew by 6.1 percent over the past 12 months, in line with the five-year average but lower than this time last year.

New development supply pressures on vacancy or rent are generally limited to the Tonquin Employment Area (described below) in the near term, although few other places in Sherwood could accommodate significant new development projects without larger tracts of additional land being planned for employment uses, such as in Sherwood West. As indicated previously, the EOA indicated a surplus of industrial land, but most of it was small, challenging to develop sites.

Leland Consulting Group understands that there is significant interest in Sherwood from industrial users that is likely to continue the considerable construction activity seen in Sherwood over the past three years. Between 2018 and 2020, approximately 250,000 square feet of industrial space was delivered to market, representing a 12.8 percent cumulative expansion of the inventory. As this recent inventory expansion is absorbed by new or expanding users in the area and the available land supply diminishes, there may be a slowdown in industrial construction in the near term (approximately 2-5 years) until additional land is planned for industrial expansion opportunities. As one of only a handful of new growth areas in the metro, Sherwood West may capitalize on this and other several pertinent trends over a longer timeframe, including:

- Increasing automation of the manufacturing industry will decrease company's needs to locate near large population clusters and potentially result in companies seeking land on the urban periphery.
- Rapidly shifting consumer behaviors, such as ecommerce growth, will continue to enhance demand for distribution and land-mile warehousing facilities.
- Electrification and automation of vehicles will continue to require distributors to locate near major transportation routes.

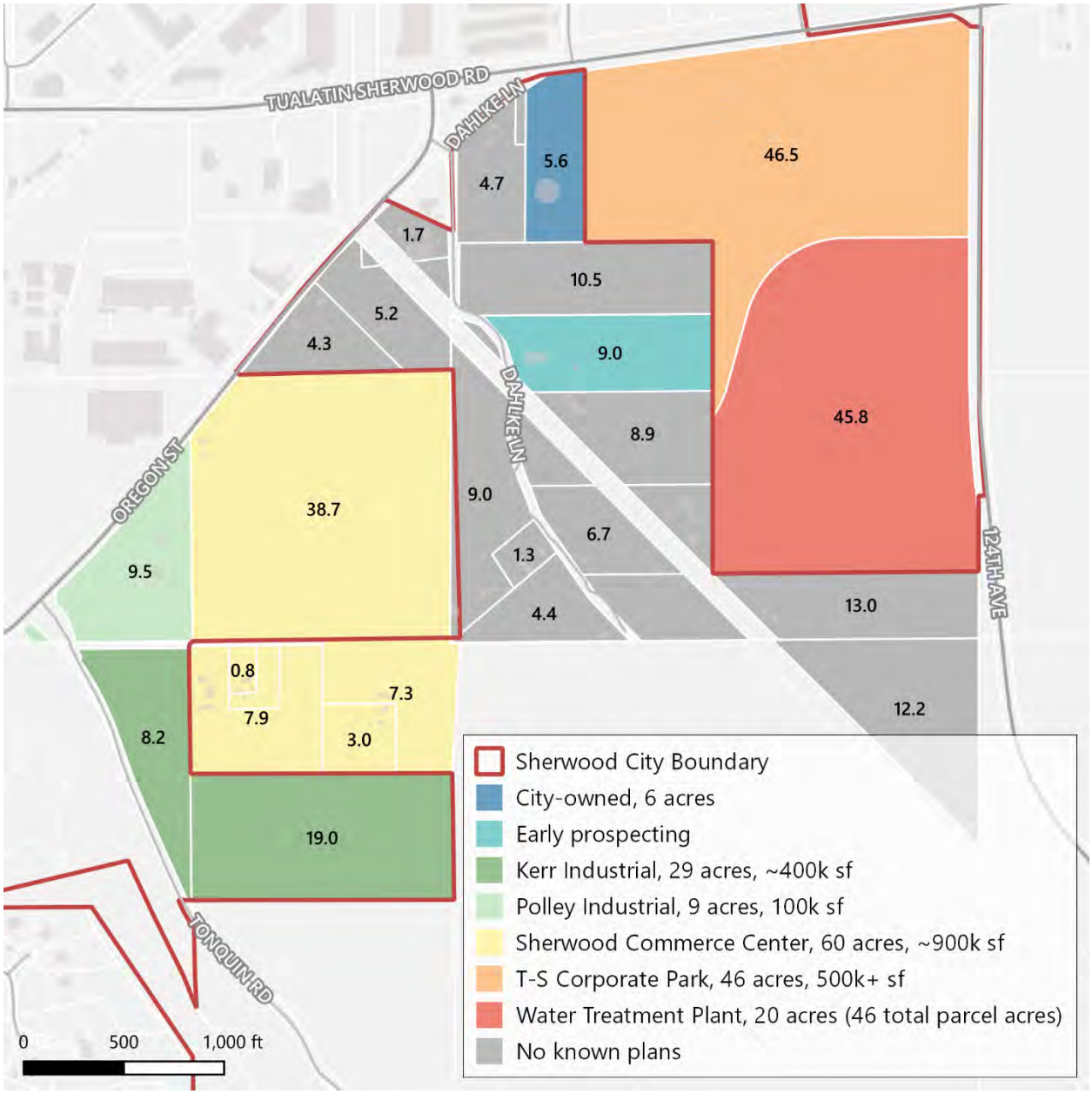
Tonquin Employment Area. The Tonquin Employment Area (TEA) was brought into the region's UGB by Metro in 2004 and the City of Sherwood completed a concept plan for the area in 2010. The TEA vision is of industry supporting high-tech manufacturing and traded sector jobs. Properties within the Tonquin Employment Area will be annexed into the City of Sherwood upon request by the property owners. Upon annexation, the properties will be zoned Employment Industrial (EI).

There has not yet been a completed project within the TEA since the adoption of the concept plan, but the development pipeline indicates that most of the land is already accounted for, with several projects at various planning and development stages.

- Most notably, a large multi-phase project called the T-S Corporate Park, which involves five industrial buildings on 46.53 acres, is underway at 12822 SW Tualatin Sherwood Road. Two buildings totaling about 144,000 square feet are underway and a third 183,000 square foot building is proposed for 2022, per Costar data and the City of Sherwood. Upon completion of all five buildings, T-S Corporate Park is expected to contain approximately 535,000 square feet of space for warehousing and industrial uses. At an estimated employment density of 1,000 square feet per employee, the T-S Corporate Park would employ around 535 people. According to the City of Sherwood, there is strong interest from a variety of companies, including tech, advanced manufacturing, and ecommerce occupiers. It was also indicated that there is more interest than the site can accommodate.

- South of the T-S Corporate Park, the Willamette Water Supply Program will begin construction of a statteof-the-art water treatment plant on two acres of 46 total site acres beginning in late 2021-early 2022. The treatment plant improvements will include the construction of a portion of Orr Drive, an important east-west connection within the TEA.
- Multiple parcels totaling approximately 60 total acres with frontage on SW Oregon Street are controlled by a major investment company. Two-thirds of the site is currently annexed and the remainder is likely to be annexed soon, with plans for a 900,000 square foot industrial park with multitenant buildings known as the Sherwood Commerce Center.
- Two parcels containing 38.7 acres fronting onto SW Tonquin Road were annexed in early 2021. According to the City, the property owner has indicated plans to develop approximately 400,000 square feet of new industrial space on the property.
- A 9.2-acre property with frontage on SW Oregon Street and SW Tonquin Road was annexed in early 2021. There is a pre-application submittal for over 100,000 square feet of new industrial space.
- There was previously interest in developing a 4.6-acre site frontage SW Oregon Street, but the owner has indicated holding off until there is more information about the proposed east-west industrial collector road through the TEA.
- Other properties in the TEA are generally accessible by Dahlke Lane, but development challenges include the quality of the road, the location of the major Bonneville Power Authority and PGE transmission lines, incompatible existing development requiring redevelopment, limited quality access, and various topographical and environmental barriers. It is expected that these properties will develop last in the TEA.
- The proposed 2021 URA will provide funds for infrastructure for the TEA and for various sites/projects along 99W.

Figure 3. TEA Development Project Pipeline



Source: LCG, City of Sherwood

Office

Sherwood's office submarket is locally oriented with roughly 200,000 square feet of office space. The vacancy rate has risen somewhat over the past 12 months as of 2021 Q2, but at 2.3 percent, the rate was well below the 10-year average of 6.1 percent.

Annual net absorption for the past year is negative 2,700 square feet, reflecting an increase in vacancies that were likely induced by the COVID-19 pandemic. Over five years, net annual absorption has averaged 1,100 square feet. Despite the rising vacancies and challenges of the last year, average rents increased by 1.7 percent over the past year—slightly lower than the 3.0 percent average change over the past decade—to a 10-year high of $24.61 per square foot.

There are no development supply pressures on vacancy or rent in the near term, as there is no new known office construction in the pipeline. This lack of construction extends a prolonged hiatus from new development in the Sherwood area; it has been more than 10 years since an office project was delivered. The Economic Challenges and Constraints memo that follows this document will provide additional details about specific opportunities to include office space as a component of employment-oriented land development.

The pandemic remains a major disrupter to the economy at large and creates uncertainty in the development and investment community. Looking ahead, the effect of the pandemic has the potential to redefine the use of office space, as employers reevaluate the safety and health of workers. As the office sector emerges from the COVID-19 pandemic, there may be pent-up demand for new leasing opportunities, particularly offices in suburban locations that offer more space at more affordable rates than premier office locations like the Portland CBD.

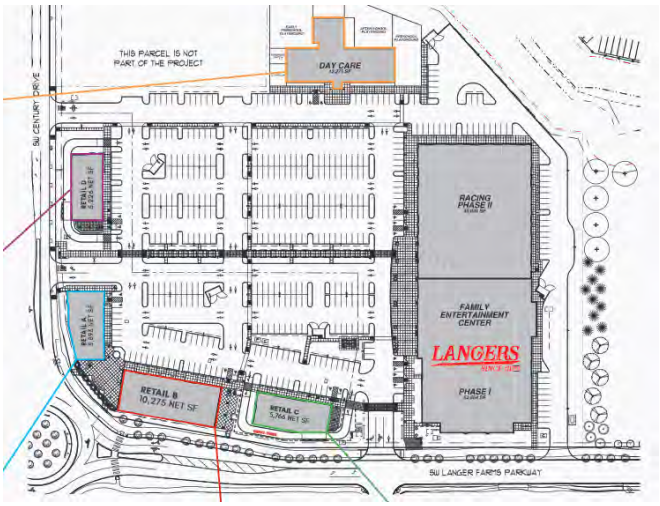
Retail

Retail vacancies in Sherwood, at 2.7 percent, are lower than the five-year average of 5.0 percent, albeit higher than this time last year. The rate is also significantly lower than the region's average. Meanwhile, rents have increased by four percent in the past year, slightly lower than the five-year average of 4.2 percent.

New construction has averaged approximately 50,000 square feet annually over the past five years, although nothing has been built in the past year since the COVID-19 pandemic began. Except for Parkway Village South (described below), there is very little new development in the pipeline and Sherwood does not appear to face a burgeoning wave of development supply pressure. Retail investors are also reasonably active in Sherwood and pricing is above the region's average.

The commercial real estate environment, and particularly the retail sector, remains uncertain due to the pandemic and the increasing demand for ecommerce. Even with vaccines, it is probable that retailers will continue to face turbulence in the coming quarters. Those effects will likely linger for the foreseeable future, impacting demand, rent growth, and the capital markets in the process. However, as household growth occurs in Sherwood and in nearby areas (including the competing UGB expansion areas to Sherwood West that are described later in this memo), there will be increased demand for new retail development. Retail in Sherwood is likely to draw most of its customers from within the City and from areas to the south, rather than from areas to the north and east where there are preexisting retail and commercial clusters. That being said, unique regional drawers or major destinations will likely have a much larger trade area from which to pull customers than convenience-based retail.

Parkway South. There is a substantial new development under construction in Sherwood called Parkway South on the area bounded by SW Langer Farms Parkway and SW Century Drive.



At 132,000 square feet of gross leasable area (GLA), Parkway South is anchored by a 53,000 square foot family entertainment center—the only building currently built. Among the other proposed buildings are a 12,275 square foot daycare facility and a 40,000 square foot indoor racing facility. Approximately 27,000 square feet of in-line tenants on "pad" sites make up the remaining buildings.

The fact that the only new major commercial center planned for this part of the metropolitan region is primarily non-retail is telling and reflects the changing composition of commercial development and a desire for differentiation in an often saturated retail market.

Rental Residential

Sherwood shares a multifamily/apartment submarket with Tualatin and is conveniently located between major employers in the Sunset Corridor and Wilsonville. Vacancies generally trend below the regional Metro area rate, but can be volatile as there are only 3,888 total units (1.9 percent of the regional market), so small changes in new inventory or absorption can make significant impacts. Regardless, occupancy is currently at 95.9 percent—close to the five-year high—indicating strong and consistent demand for new development.

Annual rent growth 6.0 percent in the past year, up from an annual average of 3.3 percent over the past five years. Rent growth in 2019 was triple Portland's overall average, ranking near the top of all apartment submarkets in the region, but slowed in 2020 due to the coronavirus pandemic.

Only four new developments were delivered to the market in the past decade, representing about 320 total units, and no additional projects are in the pipeline. Though few multifamily sales have occurred since 2017, the submarket occasionally sees sizable institutional investment.

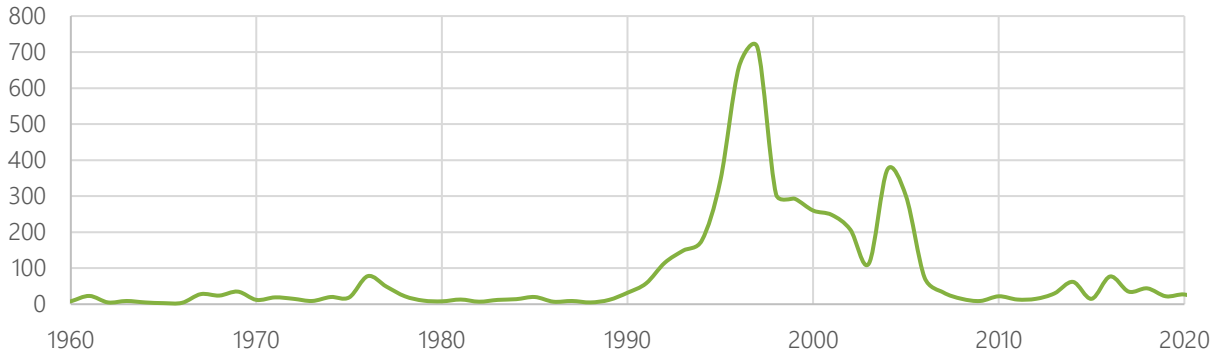
Significant growth in the population aged 55 and over has given rise to the growing demand for certain housing types, including apartments, assisted living facilities, and small-format single-family detached and attached residential.

Ownership Residential

Sherwood's owner-occupied housing market is considered competitive, with a sale-to-list price ratio of around 101.3 percent and averaging less than 20 days on the market before going pending.

Sherwood's housing stock is relatively new compared with the rest of the Portland Metro region. Almost half of all Sherwood single-family homes were built in the 1990s, averaging 284 new units built per year, with another third built in the 2000s, averaging 150 new units built per year. Construction slowed since 2010, with new construction averaging 32 units per year, impacted by both the lasting effects of the Great Recession and the diminishing availability of buildable residential land (not including the Brookman area). Upon annexation of additional residential land in the Brookman area, single-family residential construction is expected to pick up again. The city has annexed roughly 65 acres to date and three new subdivisions have been approved with a total of 232 lots. These households will generate demand for both nearby commercial amenities and services and employment opportunities.

Figure 4. Single-family Homes by Year Built



Source: Metro RLIS

In March 2021, Sherwood home prices were down 5.9 percent compared to last year, selling for a median price of $585,000. On average, homes in Sherwood sell after 16 days on the market compared to 22 days last year. There were 37 homes sold in March this year, up from 22 last year.

Hospitality

While the hotel industry has been among the most significantly impacted real estate sectors by the COVID-19 pandemic, it is now seeing buyers flock to distressed properties. Sales have surged nationwide; a clear signal some commercial real estate investors are ready to act while others may still be waiting for similar action in other sectors such as office or retail.

Sherwood's only hotel—a 73-room, 71,000 square foot Hampton by Hilton—was built recently in 2020 along Highway 99W, reflecting a highly limited market.

The hotel industry appears poised for recovery as people begin to travel once more. However, future disruptions in the near term (0-2 years), such as new waves of coronavirus infections, continuing competition from Airbnb and similar models, too few hotel workers and patrons vaccinated, a glut of supply, and continued reduced business travel may continue to dampen hotel prospects. That being said, there are most likely opportunities that can capitalize on Sherwood's proximity to Wine Country and an increasing number of prominent companies in the area, among other emerging trends. These opportunities will be further explored in later tasks.

Southwest Metro Region Expansion Areas

Sherwood is part of the Metro region. All cities in Metro share one regional UGB. This boundary is the line between urban and rural/resource uses and development. The following map shows the location of Sherwood West relative to the current location of Metro's urban and rural reserves, denoted in blue and green, respectively. Understanding the timing of the development in both of these areas is critical to determining the extent of the demand for various uses in Sherwood West in the near- and mid-term, as well as how much land will be needed to serve longer-term growth.

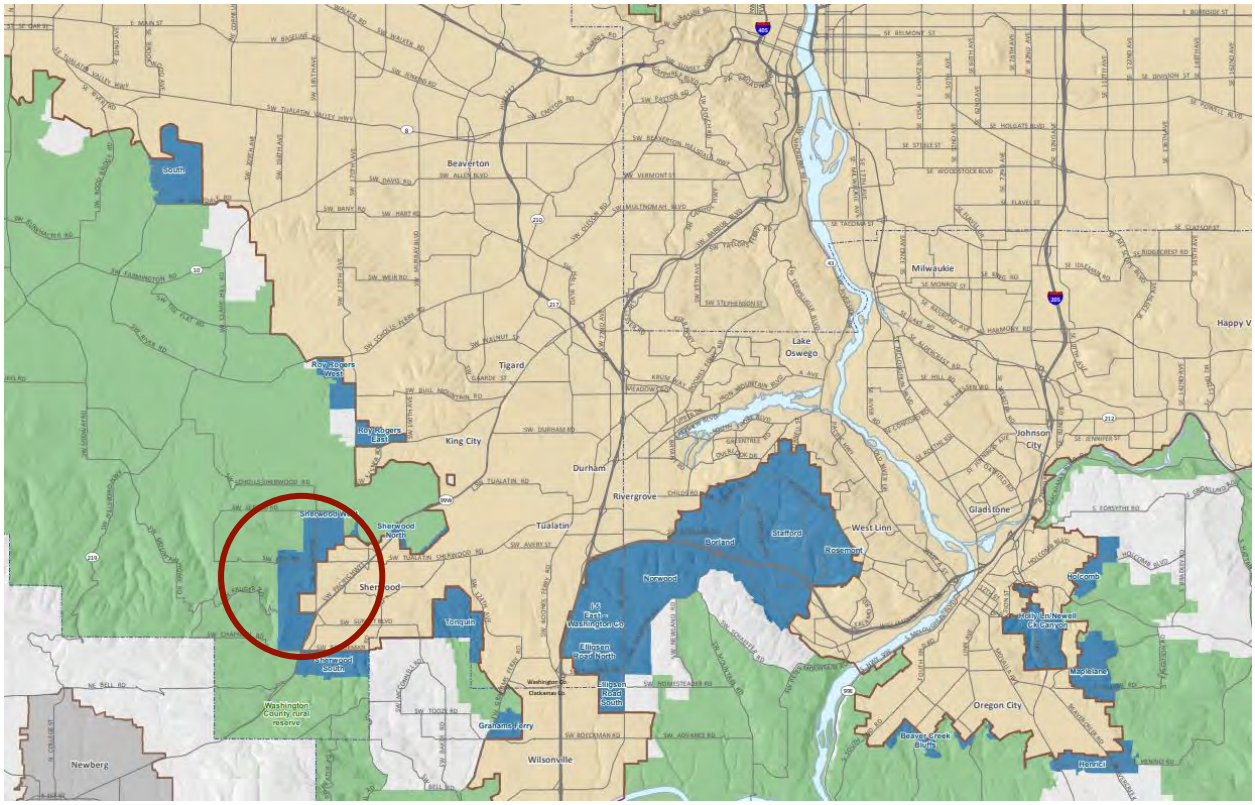
The reserves designated by Metro represent the region's policy regarding land supply needed over the next 50 years. However, the Portland metropolitan region has experienced higher-than-expected economic growth and housing construction, resulting in a quickly diminishing availability of developable land since the designations. A reassessment of land needs, therefore, is likely to be triggered sooner than expected.

In short, it is safe to assume that areas to the west and south will be developed at some point. This analysis, therefore, takes a phased approach to assessing development potential in Sherwood West. In the near term (0-10 years), Sherwood West will continue to be an edge location. As development occurs over the longer-term (20+ years), it will become increasingly central to surrounding neighborhoods. Thus, it is important to identify short-term opportunities based on the current market while maintaining a long-term outlook, particularly if the City's vision for economic development does not align with what the current market allows.

Sherwood West is one of several planned expansions in the southwest metro region. Others include Tigard River Terrace, Beaverton Cooper Mountain, and King City West. How and when these areas develop will directly impact the market and compete with the study area.

Other expansion areas exist along the I-5 and I-205 corridors. These areas are in various stages of planning but are likely to serve a different market area and, therefore, not directly compete with Sherwood West. For major employment uses, there might be some level of competition at the regional level, but Leland Consulting Group anticipates sufficient demand for these uses. A myriad of other challenges also pose barriers to developing these areas, including topography and political hurdles.

Figure 5. Metro Urban and Rural Reserves



Source: Metro

The following table summarizes the scale of planned development in each of these expansion areas.

Table 4. Planned Development Summary

Expansion Area	Commercial / Employment	Residential	Additional Notes
River Terrace 1.0	25,000 to 40,000 sq. ft. (building area)	2,587 units; 75% Single-family, 25% Multifamily (about 1,200 units built to date)	Residential Development is currently underway and is expected to finish in the next several years. Construction of commercial space is expected in late 2021.
Tigard River Terrace 2.0	10 to 30+ gross acres of employment and/or commercial uses	Approximately 3,100 to 4,500 total residential units,	A mix of SFR detached and attached and MFR apartments are expected. Employment uses are desired by the City.
Cooper Mountain (CM), Beaverton	10-acre main street commercial Est. 80,000 to 120,000 sq. ft. (building area)	South CM: 3,430 units Urban Reserve Area: 3,760 units North CM: 300 units	Residential Development currently underway, existing high school, future development at North Cooper Mountain. Limited competition.
URA 6D King City (King City West)	Est. 54,000 to 85,000 sq. ft. (building area)	3,576 units, including a mix of single-family and multi-family homes.	Limited existing household support and physical barriers limit market area, this area is the most removed from centers of population and employment.

Source: LCG

The UGB expansion areas are expected to get built out in the following order.

- River Terrace 1.0
- South Cooper Mountain
- King City West (URA 6D)
- River Terrace 2.0

King City 6D

King City Urban Reserve Area 6D is a 528-acre expansion area to the west of the existing city limits. SW Beef Bend Road and SW Roy Rogers Road border the area on the north and west, respectively. The south boundary is formed primarily by the southern segment of SW Elsner Road and the Tualatin River.

According to the 2018 concept plan, the area could accommodate as many as 3,576 housing units, including 1,222 multifamily units, 560 single-family attached, and 1,794 single-family detached. The 2017 King City Market Study estimated 500 to 950 housing units could be absorbed within the first 10 years of construction.

King City is looking to develop a town center, which is likely to serve these new residents. Development is likely to compete with River Terrace 2.0 or be part of a compatible commercial/employment cluster near Beef Bend Road.

Tigard River Terrace

River Terrace 1.0 is a 500-acre area on Tigard's westernmost edge. It was added to the region's Urban Growth Boundary in 2002 and 2011 to accommodate future housing needs. Approximately 1,200 units are currently built in the area, about three-quarters of which have been built since 2016 (233 were built between 2000 and 2015). Continued build-out of

Tigard River Terrace 1.0 (excluding the River Terrace 2.0 West and South study areas) will result in a total of 2,600 residential units (single-family and multifamily), approximately 25 percent of which will be multifamily.

The River Terrace Town Center is also proposed in the area, a "Main Street" development type that will include 350 residential rental units and 25,000 to 40,000 square feet of neighborhood-serving commercial, likely involving a small format or specialty grocer, medical or professional/financial offices, and food service and drinking establishments. Development is expected to start in late 2021.

River Terrace 2.0 is the next phase of planning in this area. Two urban reserves are totaling over 500 acres to the west and south of the current River Terrace (1.0). River Terrace 2.0 is expected to feature a wider variety of housing options (with average residential densities of 16 to 24 units per acre), recreation, and employment areas. River Terrace 2.0 is expected to add between 3,100 to 4,546 units at full project built out.

Between 10 and 30 or more acres have been identified for commercial and employment uses. It remains too early in the planning process to describe these plans in more detail.

Collectively, the River Terrace areas may include more than 11,000 new residential units and substantial land planned for commercial and employment growth.

Beaverton Cooper Mountain

The Beaverton Cooper Mountain Community Plan is a multi-year effort to plan for the 1,232-acre Cooper Mountain area, which was added to the region's urban growth boundary in 2018. The Cooper Mountain Community Plan will establish a long-term vision for the area's growth and development to support welcoming, walkable neighborhoods that honor the unique landscape and ensure a legacy of natural resource protection and connection. The Cooper Mountain area is located southwest of Beaverton outside the current city limits.

The Cooper Mountain area consists of three areas: a 510-acre area to that north that is inside the UGB but still in unincorporated Washington County; a 544-acre area to the south that was annexed into the city in 2012 (South Cooper Mountain); and a 1,232-acre urban reserve area in-between.

Urban Reserve Area. Current Washington County zoning is primarily Agricultural and Farmland and Rural Residential zones; however, Beaverton will apply its own zoning to the area once properties are brought inside city limits and the area is anticipated to provide at least 3,760 future homes, including a mix of single-family, multi-family, and middle housing types such as townhomes, duplexes, triplexes, and fourplexes. The City anticipates completing the Community Plan in December 2022, after which it will begin accepting owner-initiated applications for annexation and development.

South Cooper Mountain. Due to its proximity to Sherwood and location on Scholls Ferry Road and near Roy Rodgers (providing north-south access to Sherwood), the 554-acre South Cooper Mountain is expected to be the primary competition for new development in Sherwood West out of the three Cooper Mountain areas. The South Cooper Mountain Plan shows that the area could support up to 3,430 housing units and between 47,000 and 142,000 square feet of new commercial space, which would primarily be driven by demand from new residents. South Cooper Mountain is expected to be nearly built out as early as 2024. There is also a new high school that will hold up to 2,200 students and 200 staff.

North Cooper Mountain is slated to support another 300 housing units if new zoning is adopted in the northern portion of the area; utilities are made available; and, properties annex to the City of Beaverton.

Transportation

The regional transportation network serving Sherwood West and surrounding areas is planned for a number of updates and improvements that will be needed to serve future residential and employment growth and changing land use

patterns. Washington County recently completed an Urban Reserves Transportation Study (URTS) project, which is intended to inform concept planning in the urban reserves (including Sherwood West), help ensure that the County meets mobility and capacity standards on area roadways, and provide a roadmap to funding transportation system improvements as the urban reserves develop in the future. Notable projects in the vicinity of Sherwood West include:

- **Roy Rogers Road:** Washington County plans to widen Roy Rogers Road between Scholls Ferry Road and 2,500 feet south of Bull Mountain Road to five lanes with bike lanes and sidewalks. This project is expected to be completed in December 2021.
- **Tualatin Sherwood Road/Roy Rogers Road:** Washington County plans to widen Tualatin-Sherwood Road/Roy Rogers Road, between Borchers Drive and Langer Farms Parkway, to five lanes with bike lanes and sidewalks and additional turn lanes at Highway 99W. The project is expected to begin in Fall 2021.
- **SW Brookman Road:** When the Sherwood West area annexes to the City, SW Brookman Road (SW Chapman Road) will be upgraded to an urban facility with facilities for bicycling and walking, and the City is exploring crossing solutions at Highway 99W.

APPENDIX G

Economic Opportunities Memo

Sherwood West Concept Plan

Economic Opportunities and Challenges

Date June 15, 2021

To Joe Dills, Kyra Haggart
Angelo Planning Group

From Sam Brookham, Chris Zahas
Leland Consulting Group

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Executive summary

Stakeholder Interview Takeaways

- **Employment Land.** There is a limited supply of high-quality buildable employment land in the region and increasing demand, particularly for large sites. Stakeholders believe that demand is strong enough to absorb whatever amount of land the City sets aside for employment in Sherwood West.
- **Development types.** Developers are mostly building multitenant flex space (as part of larger industrial or business parks), warehouses, and distribution facilities (both speculative and build-to-suit). The transportation network is considered prohibitive for the latter two in Sherwood West. Opportunities for build-to-suit single-user buildings may also arise sporadically.
- **Limited Infrastructure Funding Availability.** While this concept plan is expected to address some of the challenges associated with infrastructure phasing and funding in Sherwood West, developers want to see a clear plan for infrastructure improvements before committing to a site.
- **Land needs** range from 40 to 50 acres per "center" or "park" allowing for buildings averaging 50,000 square feet on five to six acres, although a larger-than-average business park or campus-style development may require more than 100 acres. Total demand is likely sufficiently strong to support a number of these developments, creating a healthier jobs/housing/fiscal balance for Sherwood. Sherwood should target two to three areas of Sherwood West with the largest and flattest (less than 3.0 percent slopes) contiguous tracts of land for these developments. Possible locations for this appear limited to the northern section of Sherwood West, particularly in the area bounded by Elwert Road, Roy Rogers Road, Scholls Sherwood Road, and Conzelmann Road, along Highway 99W and potentially near Haide Road and Kruger Road. Most of the inland areas along the western half of Sherwood West are unlikely to be suitable for mixed employment (industrial, flex, office) given the topographical and access constraints.
- **The wine industry** is an important part of the local and regional economy which may dovetail with industrial, retail, and hospitality uses, but it is unlikely to solely support the growth of any of these land use sectors. A diversified economy and additional employment are necessary.

- **Land aggregation** is critical because of the number of different property owners in Sherwood West.
- Developers want **transparency and certainty** for land, zoning, and infrastructure. This is now considered more important than a shorter development timeline.
- **Office prospects** are questionable, and the market may not return to normal for many years. Campus-style development may be possible but there are few local examples and the market is unproven.
- **Zoning flexibility** is critical. It is not recommended the City dictates uses, but simply provides limitations on undesirable uses.

Opportunities for Sherwood West

- **Industrial.** The industrial market is hot and unlikely to cool within the next 10 years. Sherwood is beginning to see interest from existing tech companies in Hillsboro and elsewhere. As the west and southwest parts of the metro region develop, the gap between Sherwood and existing tech and other industry clusters will likely decrease, creating a critical mass of employment with access along the Roy Rogers corridor.
- **Target tenants** are wide-ranging, including service providers, contractors, tech companies, logistics, light manufacturers, designers, healthcare users, etc. Other users in the City's target industry list—including advanced manufacturing, life sciences, R&D, software/media design, professional and business services, food products, outdoor wear design, etc.—are also appropriate.
- **Tech Clusters.** Sherwood is centrally located between existing tech clusters in Wilsonville and the Sunset Corridor. These clusters have historically dominated the tech-oriented employment landscape, but these markets are now understood to be softening, with developers looking for opportunities elsewhere in the Portland metro. The Sherwood area is beginning to draw existing businesses from Hillsboro, as well as serving as an attractive location for new businesses to the metro region.
- **Hotels**—particularly mid-range, independent, and boutique hotels—are in demand. However, Sherwood cannot expect to support new hotel development based entirely on its proximity to wine country as other cities to the south are better positioned for an immersive wine country experience. Instead, new hotels in Sherwood will likely be feasible as a follow-on use once employment growth occurs, and the market is proven.
- Similarly, new **retail development** will come in a later phase after residential and employment growth.
- **Office space** is likely to be part of mixed-use developments, commercial centers, or larger employment centers. Target tenants include tech, medical, and service-oriented office space with some "hub and spoke" or satellite office.
- **Retail.** New growth will drive demand for new space, but the growth of ecommerce and declining retail footprints may dampen the impact. Sherwood should focus on convenience-based retail, such as grocery and health and personal care, as well as neighborhood-serving retail, such as foodservice and drinking places, either as neighborhood-centers or main street corridor approach that diversifies the retail mix and supports the growth independent retailers and restauranters.
- **Healthcare.** Because major healthcare facilities depend on large nearby population bases and visibility and access along highways and major transportation corridors, such a facility may be unlikely in the next 10 or 20 years. Attracting such a user would require time, effort, and deliberate planning and policy on the part of the City. Smaller-scale healthcare facilities are likely to be part of centers or larger developments.

Strategies/Recommendations

- **Be Flexible.** Maintain as much flexibility (zoning, land, tools, approach) as possible in planning for employment growth as market cycles and trends over the next 20 years are unclear. This means maintaining large, contiguous sites but not mandating large-lot sites.

- **Plan for Mixed Employment.** Most of the opportunities for long-term job creation will likely require a mixed employment approach—namely industrial, flex, and office. Mixed Employment in centers/parks of 20-100 acres is the strongest market.
- **Plan for Multitenant Space** that can be scaled up or down and is highly divisible (e.g., to 2,500 square feet) allows for business expansion and the flexibility to accommodate various sized flex, office, commercial, or light industrial users.
- **Compile a Toolkit** of incentives and tools that can be packaged together to encourage desired development types.
- **Be Both Proactive and Patient.** Depending on the market cycle and the opportunities at any given time, certain land uses will develop faster than others. This will require a phased development approach in Sherwood West. Industrial and residential uses are likely to dominate in the near term, followed by retail, hospitality, office, and healthcare.
- **Ensure that Buildable Shovel-ready Land is Available for Employment.** The land must be zoned for employment development. The zoning and building codes should require an appropriate level of development quality, but not make unrealistic requirements, for example, around low parking ratios, mixed-use, etc. For certain sites, the City may want to use the State's "Certified Shovel Ready" process to document that environmental, archeological, title, wetland, and topographical issues do not preclude development. Flat sites with slopes of less than 3.0 percent are limited and should be reserved for mixed employment and industrial users.
- **Invest in Talent and Quality of Place**. The underpinnings of traded sector office site selection are simple: Locate where the talent is. Therefore, cities must attract talented people, by providing high-quality cities and neighborhoods where people want to live. The Sherwood West Concept Plan, which integrates residential, employment, and commercial development with parks and open spaces, is an important step; building out the plan is another.
- **Increase Accessibility and Visibility** via the regional transportation network. Large employers have historically needed to bring large numbers of employees to their campuses, and this requires robust auto, transit, bicycle, and pedestrian transportation infrastructure.
- **Consider Land Acquisitions.** Site ownership can put the City in a strong position to recruit employers; it can also be expensive, risky, and politically contentious. If the City is considering land acquisitions, LCG recommends that the City work with a broker with experience executing deals that have resulted in employment land and building development in Washington County, in order to clearly understand costs and benefits.
- **Target 99W and North Sherwood West** for transportation-dependent uses and larger-scale employment development, respectively. There is little frontage on 99W so it should be retained for certain users. Similarly, the largest tract of flat land (100+ acres) in Sherwood West is located to the north. Other areas may be feasible, but developers of industrial and, to a slightly lesser extent, office projects typically require regularly-shaped tracts of flat land with slopes of less than 3.0 percent. A campus-style development may be able to accommodate a greater variety of topographical conditions. Further analysis of the topographical and other physical conditions is necessary to determine the extent of these opportunities.

Introduction

This Economic Opportunities and Challenges memo provides an evaluation of Sherwood West's assets and constraints; summarizes input from interviews with developers, stakeholder, and leading economists; and provides insights on the economic future of Sherwood West as a part of a growing Sherwood. It is intended to highlight opportunities for economic development strategies and non-residential land uses that could produce jobs and tax base as part of the overall mix of land uses in Sherwood West over the next 20 years and beyond. It also explores creative options for long-term job creation that reflect Sherwood West's location at the urban edge and that optimize its ability to evolve as the region matures and economic changes occur.

In preparing the memo, Leland Consulting Group (LCG) conducted interviews with key stakeholders to explore how technology, health care, office, hospitality, retail, and other employment uses might evolve in Sherwood West's unique location. These stakeholders included local and regional industrial, office, mixed-use, retail, and hotel developers, brokers, and specific industry representatives (such as the wine industry). The anecdotal takeaways from these interviews are intermixed within the narrative of this memorandum.

Sherwood should not attempt to compete against other employment centers that may have better locational attributes such as proximity to I-5 or existing clusters of technology employment. Accordingly, we have identified opportunities that play to Sherwood West's unique attributes. These opportunities build upon the area's proximity to the wine country, long-term changes to office dynamics as a result of COVID-19, evolving changes to the retail landscape, and other factors.

The memo includes a shortlist of employment land uses that could realistically be supported in Sherwood West, with projections for development over time.

Constraints and Challenges

Based on key takeaways from feedback received during the stakeholder interviews, most of the opportunities for long-term job creation in Sherwood West will likely require a mixed employment approach—namely industrial, flex, and office. This approach is consistent with both recent development in the Tonquin Employment Area and other examples of peripheral employment development clusters in the region. Of these mixed employment uses, industrial development, which typically includes warehousing, logistics, distribution, and manufacturing, has the narrowest framework of site selection criteria. While demand-related factors are generally expected to largely overcome potential challenges related to site conditions, it is important to highlight these selection criteria as the industrial market may not remain as strong as it currently is over the next 20 years.

Site selection criteria for industrial development typically includes:

- **Access to major transportation routes.** Industrial users typically need access to major transportation routes so that products can be quickly and easily delivered and shipped, and to maximize the employment catchment area. The closest industrial development in the past 20 years has been in Tualatin and Sherwood along I-5 and Highway 99W—both major freight and transportation routes.
- **Separation from residential uses.** Due to the propensity of industrial users to generate noise, pollution, and vehicular traffic, development is not typically located next to residential uses. This sometimes also applies to other uses that attract pedestrian activity, such as main street retail and hospitality.
- **Low-cost land.** Of all land use types, industrial fetches the lowest rents and sale prices. Comparatively, high-density residential and commercial uses fetch the highest rents and sale prices. Typically, the cost of land reflects these trends.
- **Large, uniform sites.** Industrial development is low-density (typically one or two stories) and requires plentiful space for circulation, storage, and parking, particularly for freight operators.

- **Flat sites.** Due to the cost of grading, combined with the low value of industrial development, industrial users require sites with less than 3.0 percent slopes.

With these selection criteria in mind, there are several major constraints or barriers to commercial and employment-focused development in Sherwood West and the immediate surrounding area. We have highlighted these below.

- **Location.** Sherwood West is located in the southwestern corner of the Portland Metro region and lacks easy access to the I-5 corridor. In the near term, this edge location creates a one-sided market area, limiting the employment catchment area. Further, the travel time to or from Portland International Airport[1] is double the average tract in the Portland metro. As we will discuss in the following pages, strong regional demand and a limited supply of employment lands mitigate these challenges in the near term, and long-term residential and job growth is expected to soften these impacts as time goes on.
- **Regional Competition.** As noted in the previous Development Trends and Implications memo, the southwest Portland metro region will see significant growth over the next 20 years, primarily because of the development of Sherwood West and several other nearby UGB expansion areas—including Tigard River Terrace, King City West, and Beaverton Cooper Mountain—as well as local annexation areas like Brookman and Tonquin. Most of these future growth areas are expected to include some level of commercial (and to a leser extent, employment) space that will compete with new development in Sherwood West. Closer cities within the Portland metropolitan region also have existing industry and business clusters that will continue to grow in the coming years. However, these central-area opportunities are expected to be fully built out or have limited land availability (particularly for larger sites), pushing the focus of substantial new developments to outer locations like Sherwood West.
- **Local Competition.** More locally, there are existing and emerging clusters of development within Sherwood that may be seen by developers and businesses as more attractive for new development. Locally serving retailers, such as restaurateurs, may prefer the established location and charm of Old Town. A hotel developer may have similar sentiments. For larger-scale retail, which is facing an uncertain future due to shifting consumer behaviors and the rise of ecommerce, Sherwood West's southeastern boundary fronting Highway 99W may be a favorable location because of access and visibility, as might the Roy Rogers corridor after its planned expansion. The Tonquin Employment Area (TEA) and the surrounding areas in Tualatin are currently seen as better locations for industrial and office development but vacant land is quickly being developed, which is likely to push the focus further west to places like Sherwood West.
- **Multiple Property Owners.** With 126 properties and 110 property owners, there are few locations that would not require land aggregation and assemblage for a larger (20+ acre) development. Developers tend to prefer large sites with single ownership in order to avoid the significant delays and hurdles associated with assembling enough land from multiple parcels. Further, property owners are rarely on the same page regarding long-term plans and it is difficult to predict if, when, and why private property owners will sell or develop their land. The City may implement a strategic program for property acquisition to meet economic objectives, either in partnership with other public agencies, by soliciting a qualified broker, or by other means.
- **Limited Infrastructure Funding Availability.** While this concept plan is expected to address some of the challenges associated with infrastructure phasing and funding in Sherwood West, developers want to see a clear plan for infrastructure improvements before committing to a site. Infrastructure needs often include enhanced water delivery systems (particularly for tech), enhanced electricity (e.g., green energy), and high speed internet.

[1] Access to other closer municipal airports, such as Hillsboro, also play a role in economic opportunities for Sherwood West, albeit to a lesser extent that Portland Airport. Corporate executives and prospectors often utilize these other airports with private or corporate planes.

- **Topography.** Substantial employment-oriented development, such as a business park, campus, or large-scale industrial or office space, typically requires relatively flat land with slopes under five percent (under three is preferable for industrial). Locations with these topographical conditions are limited in Sherwood West. Sloped sites require grading, which can be prohibitively expensive for developers, particularly if the soil conditions are challenging.[2]
- **Lack of existing rooftops.** While new residential growth is expected over the next 10+ years, the lower density of households and jobs within a five-mile radius of Sherwood West currently limits demand for new retail space and also limits the employment catchment area for new businesses. The density of rooftops in a given location is a critical site selection criterion for new developments. During the recent round of interviews, one stakeholder shared an example where a developer chose to develop in Salem rather than Woodburn due to this issue. With this being said, the lead time for new development to occur will likely align with this growth, which necessitaes proactive planning for new development. Further, Sherwood benefits from its proximity to the Portland metro and is the heart of the triangle formed by Hillsboro, Beaverton, and Wilsonville, with existing undeveloped "gaps" in this area expected to fill in over the next 20 years, increasing the total number of jobs and people.
- **Uncertain/softened Office Market.** The COVID-19 pandemic created much uncertainty regarding the future of office uses. The suburban office market has fared relatively better than the Portland Central Business District (CBD), likely because of the suburb's propensity for "essential" or neighborhood-serving offices like medical, banks, finance and insurance, etc. rather than industries that typically cluster in downtown settings (e.g., professional services).
- **Land Use Application and Permitting.** Some stakeholders interviewed considered Sherwood's application process to be arduous relative to other cities, particularly for industrial development. Suggestions to improve and streamline this process include pushing elements of the initial application to later in the process and being clear about timeframes for various types of permits.

Opportunities

Industrial

The industrial market is considered the hottest of all land use sectors. Ecommerce has surged during the course of the pandemic, with online shopping now considered a norm and capturing more than one-quarter of the total retail market. Further, for every one percent of new retail sales, ecommerce creates demand for 38 million square feet of new warehouse space, and is expected to continue to increase. Other trends benefitting industrial prospects in Sherwood West include the increasing popularity of satellite facilities, which appears to be aligned with residents' desire to work close to their homes. Several other key opportunities related to industrial development in Sherwood West are highlighted below.

Strong Demand. Stakeholders consistently pointed out the increasing difficulties in finding sites in the Portland area, especially large, contiguous, developable sites. As high-quality industrial sites become increasingly scarce in the Portland region, rental rates for industrial space have surged.

Land Needs. In terms of the rate of development, the Tonquin Employment Area (TEA) is considered a relatively accurate depiction of what could be seen in Sherwood West. While Sherwood West is less likely to see as many users that are highly dependent on major transportation routes, the pace of development in the TEA is indicative of the

[2] Basalt is common in soils throughout the Portland area; Sherwood may experience similar challenges, although that bedrock around Sherwood West is understand to be relatively deep, making grading less of a challenge than in some other parts of the region.

strength of the market, and this is unlikely to subside for at least 10 years. In fact, some developers would not consider a 100-acre designation "long-term planning" and several stakeholders suggested that the 108-acre area in the north of Sherwood West is considered a "drop in the bucket" that would be accounted for within two weeks if it were development-ready today. Additionally, institutional developers are generally purchasing 40- to 50-acre sites in order to phase development over time, with the main focus on five to six-acre developments with around 50,000 square feet of multitenant, mixed employment space. There is also new investment nearby in the Tonquin Employment Area (TEA) for larger buildings (upwards of 200,000 square feet), albeit to a lesser extent than the aforementioned product type, that can be either single user or multitenant. The larger the development, however, the greater the need for flat, unencumbered sites that become increasingly challenging to find.

The City of Sherwood could, therefore, plan for substantial industrial-focused employment growth over the next 20 years. Development types include mixed-use employment with a focus on tech, manufacturing, and warehousing. Despite the regional need for large lot industrial, the City should avoid mandating large lot industrial and instead maintain as much contiguous developable land as possible in order to accommodate phasing. While providing an estimate for the total amount that could be designated for employment lands or the specific product types that should be planned for is challenging, we recommend a flexible approach that can accommodate a range of development programs and types. Larger sites may be developed in full or subdivided by a developer.

Residential Growth. Nearby residential growth will benefit industrial prospects—mainly for smaller multitenant spaces—as people continue to value shorter commutes and quality spaces.

Competition. One of Sherwood's primary competitors for new industrial-focused employment land development is Wilsonville. The Coffee Creek area is considered a comparable location to Sherwood West. However, Wilsonville's sites are also considered challenging to develop because there are few sites in excess of 10 acres and there is limited city-provided infrastructure (water, sewer, roads); stakeholders agree that larger sites are needed to achieve an adequate return on investment, especially if infrastructure investments are expected from the developer. Wilsonville is also seen as challenging to work with due to overly restrictive zoning and a challenging permitting process. Of note, the City of Wilsonville has formed an urban renewal district as part of its strategy to support development in the Coffee Creek area.

Low Vacancies. Of the almost 10 million square feet of speculative construction in the metro region that have been delivered over the past 5 years, less than 10 percent is available and the market should be able to absorb most of the 2.1 million speculative square feet being delivered in 2020-2021. Vacancy is expected to increase to 6-8 percent within the next five years as a result of the development pipeline, bringing about more stability to the market. There are roughly four million square feet still in the pipeline, over half of which is planned to be owner-user or build-to-suit properties.

Wine-related Impacts. Outside investment is increasing in Oregon's wine industry and the Willamette Valley is quickly becoming a hotbed of new activity as investors see profit-making opportunities associated with the lower cost of land (relative to France and California) and grape production, as well as recognizing the need to diversify locations in the face of climate change. The recent acquisition of Ponzi (a Sherwood area business) by the French company Bollinger is one of the first foreign acquisitions in Oregon, but it is expected as the start of an emerging trend rather than an exception. Impacts of the wine industry on hospitality and commercial prospects are explored in later pages.

Developers see opportunities in storage, distribution (including bottling), production, and warehousing. While the former is a low-density employment type, the others pay higher wages and employ a significant number of people. Wine-focused manufacturing also aligns with existing trends in the southwest metro region which has seen food processing become a major employment sector. While industrial stakeholders see opportunities in production, wine industry experts consider it a nonstarter, with the majority of production facilities likely to remain in the immediate vicinity of the growth area. Storage and distribution may benefit from proximity to Highway 99W, but, again, developers

see areas that are more centrally located in wine country—such as McMinnville along Highway 18—as better potential locations in the short-term.

T-S Corporate Park. Cities are increasingly using zoning codes to influence development. For the T-S Corporate Park, the developers knew the zoning before it was annexed, and the plans were reactive to that zoning. The developers looked at the Koch Corporate Park to the east as a comparable example for what they could expect. Despite topographical, soil, and wetland constraints, the project is rapidly proceeding with multitenant space geared to manufacturing, food, and tech (such as bioscience).

Target Industries

During the stakeholder interviews, participants (including those throughout all stages of the development process, from high-level prospecting to tenant recruitment) generally agreed with Sherwood's target industries. These industries include:

- High Technology/Computers & Electronics
- Light Manufacturing/Advanced Manufacturing[3]
- Cleantech
- Life Sciences/Biosciences
- Research and Development (R&D)
- Software/Media Design
- Professional/Business Services
- Food Products
- Outdoor/Athletic Wear Design
- Healthcare

Other industries mentioned during the interviews included logistics and engineering. Many of the target industries above are highly water-intensive. One major competitive advantage in Oregon's favor is the availability of water. Some of Oregon's competition, including New Mexico and Arizona, are facing significant challenges due to current and expected future droughts.

These industries are primarily traded sector and provide, on average, higher-paying jobs and may be part of a campus-style development or as individual site developments (most likely multitenant mixed employment buildings). It is understood that these development types are seeing increasing levels of interest from various stakeholders. A larger campus or business/tech park will require larger tract of land in excess of 20 acres and perhaps as much as 100 or more acres.

Possible locations for this appear limited to the northern section of Sherwood West, particularly in the area bounded by Elwert Road, Roy Rogers Road, Scholls Sherwood Road, and Conzelmann Road. Other locations may be appropriate as long as land is free of development impediments, such as steep slopes and wetlands. A high-level topographical analysis of the area shows potential locations for other employment areas along Highway 99W and perhaps centrally around Haide Road and Kruger Road. Most of the inland areas along the western half of Sherwood West are unlikely to be suitable for mixed employment (industrial, flex, office) given the topographical and access constraints.

Locational Considerations

Highway Access. Approximately 0.8 miles of Sherwood West's southeastern boundary fronts onto Highway 99W (between Kruger Road and Chapman Road). This access is considered critical for industrial users that require quick and easy access to the transportation network. This location is considered the only place that warehousing and distribution users may locate. The middle section of this stretch of Sherwood West contains topography that is likely prohibitive for new development that requires flat land (especially industrial), and the northern section is made up of multiple property owners and several irregularly-shaped and smaller parcels, creating challenges for land assembly and development. Generally, high-density employment is not considered likely due to the impacts on the transportation network and

[3] One stakeholder specifically mentioned interest in aerospace components manufacturing.

probable congestion, although this could be somewhat mitigated with robust residential growth that reduces commute times.

Tech Clusters. Sherwood is centrally located between existing tech clusters in Wilsonville and the Sunset Corridor. These clusters have historically dominated the tech-oriented employment landscape, but the market is now believed to be softening, with developers looking for opportunities elsewhere in the Portland metro where there is access to new talent clusters, new homes (especially for executives), and large tracts of land available to develop (particularly lower-cost land). LCG's stakeholder interviews suggest that the Sherwood area is beginning to draw existing businesses from Hillsboro, as well as serving as an attractive location for new businesses in the metro region.

Access to Talent. Talent is critical to location decisions for employers and is the single most important factor driving urban economic success is the educational attainment of a city's population.[4] Economic development partners and employers talk about "Talent" in terms of (1) the size of the skilled labor force in the market area, (2) the size or percentage of the population with a college degree, and (3) industry composition.

Approximately 17,000 new households are planned between the three UGB expansion areas along the Roy Rogers corridor (Sherwood West, Tigard River Terrace, and King City West—all within a five-mile radius), potentially adding more than 50,000 people to the area in the next 10 to 20 years. This growth will increase the interest of developers of all land uses in and around the Sherwood area. The importance of Sherwood High School should not be understated here as a local driver of talent creation. The school district is considered a major draw to the area for residents and executives, and programs and partnerships with industry groups or businesses will likely continue to increase opportunities for localized economic development.

Infrastructure

Infrastructure is considered one of—if not the most—important elements for employment-focused development in Sherwood West. Developers desire certainty around roads and utilities, and now consider it a simple "build it and they will come" approach.

Funding Plan. Metro, the regional planning agency, also considers infrastructure essential and recommends that the City develop a clear infrastructure funding and phasing plan as part of the Sherwood West Concept Plan. If the City can prove a certain return on investment, this plan can help justify the additional investment, financing, and funding from an economic development perspective. This does not necessarily equal an expectation of the City to build all infrastructure, but developers are increasingly doing risk assessments relative to delivery, so a clear plan for getting the shovel in the ground is important—more important than being promised a quicker overall timeline.

Shovel-ready Sites. Having shovel-ready sites available is likely to offset any of the area's potential disadvantages, to a certain extent. However, we recognize that there is a risk involved in speculative infrastructure investment, especially if the requirements for new development differ from user to user. The tech industry, for example, is understood to be asking for enhanced water delivery systems, enhanced electricity (e.g., green energy), and high-speed internet. In this case, Sherwood's municipally-owned broadband is a major advantage. It is recommended that the City of Sherwood develop a defined implementation plan with readily available funding.

Office

Office prospects are questionable, and the market may not return to normal for many years. Campus-style development may be possible but there are few local examples, and the market is unproven.

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[4] https://cityobservatory.org/talent-and-prosperity/

Based on LCG's experience and other sources, employers base their decisions on where to locate office space based on the following primary criteria:

- **Attracting and retaining talent.** This is the most often cited requirement for location decisions. Businesses want to be in locations where they can draw on a large pool of highly-educated, innovative, creative, and motivated individuals. While the population size and educational attainment near Sherwood West are reasonably strong, other competitive areas still have a talent advantage, as shown in the table in the Locational Considerations section.
- **Development Clusters.** Being located in proximity to customers, collaborators, suppliers, and even competitors is critical to the success of office developments. Hence the clustering of Athletic and Outdoor businesses in the Portland metro region, and in proximity to Nike.
- **Accessibility and visibility.** Employers' workforce, customers, suppliers, and others must be able to easily get to and from the office space. Visibility is important since an attractive office space can act as a marketing tool for the company's brand.
- **Quality of place.** Since talent is the most important consideration, and highly skilled people are attracted to places with a high quality of life, quality of place is important to employers.
- **Real estate costs.** After labor costs, real estate costs like rent and other fees increase the costs of operation. Higher costs often mean tighter budgets and slower growth trajectories.
- **Regulation and tax structure.**[5] Depending on a business' perspective, it may consider the regulatory or fiscal environment as supportive or contrary to its operations. Regulations can include environmental requirements, zoning, and other elements that may restrict certain uses, development types, or businesses. Taxes, such as property and income tax, can also impact a business' ability to attract workers, but taxes play a lesser role than others mentioned here.

Regional Overview

While office prospects remain murky, it is expected to return to full strength within the next five years as economic conditions improve. The Portland CBD accounts for the vast majority of the metro's office inventory, which is unlikely to change despite trends that support a greater dispersion of the office inventory.

Total vacancy in Downtown Portland has been increasing each quarter since 2019 to its current vacancy of 16 to 18 percent and is expected to continue to increase as pipeline development comes online and if leases expire and are not renewed. A vacancy rate near or upwards of 20 percent is considered a major problem from which it is challenging to recover. Almost one million square feet of new, mostly unleased, office product was delivered to the market in 2020, and another 500,000 square feet is still in the pipeline.

After many years of office space consolidation, office users may start to value more space (spurred on by health concerns brought on by the COVID-19 pandemic), although any impacts from space expansions are likely to be dampened by the increasing normalization of the work-from-home environment.

Suburban Office

The suburban office market has generally maintained a steadier course with a vacancy rate currently around 10 percent, albeit with a substantially smaller inventory. The suburbs can provide employment opportunities closer to people's homes and often levy fewer taxes that can be seen as attractive for residents.

[5] Based on LCG experience and *Seven reasons why location is important* https://www.us.jll.com/en/views/seven-reasons-location-important

Most office developments that are part of larger planned centers as single, isolated buildings typically struggle to penetrate the market. An example of this is the nearby Pacific Financial Center in Tualatin. Despite a location on Highway 99W, the building has struggled to attract tenants and is only recently achieving a vacancy of 75 percent since its construction in 2008, with asking rents of $28 full-service advertised for currently available space. Pacific Financial Center is an ode to an outdated development model and demonstrates the need to cohesively plan for a critical mass of employment and commercial activity.

For the purpose of long-term planning of Sherwood West, the City can assume that office space will be a relatively minor part of the development program, either as mixed-employment, campus, and/or mixed-use developments. The most likely development type is surface parked projects no more than 20,000 square feet, with some smaller office space as part of mixed-use developments. Target tenants include tech, medical, and service-oriented office space with some "hub and spoke" or satellite office. With tech, it is most important for there to be a critical mass.

As with industrial, a flexible approach that accommodates these and other development types—as desired by council—is recommended. While office prospects remain dictated by the availability of flat land, it is typically a higher value development type that commands higher prices and rents than industrial, and it can therefore get built in areas with slightly more challenging site conditions (sometimes with slopes between five and 10 percent).

Office as Part of Mixed-Use Developments

Several trends in consumer behavior provide additional cause for optimism for commercial and employment uses in Sherwood West.

Remote Working Opportunities. One of the trends from the COVID-19 pandemic that is likely to continue is the rise of flexible employment and remote work. As many as 20 to 30 percent of office workers plan on not returning to the office full time. With the projected growth of anywhere from 20,000 to 30,000 new residents aged between 25 and 64 over the next 20 years within five miles of Sherwood West (above an existing baseline of 36,400), this growth may result in as many as 20,000 people working remotely. This may provide opportunities for smaller office suites (less than 1,000 square feet) and coworking spaces that could be part of a mixed-use environment.

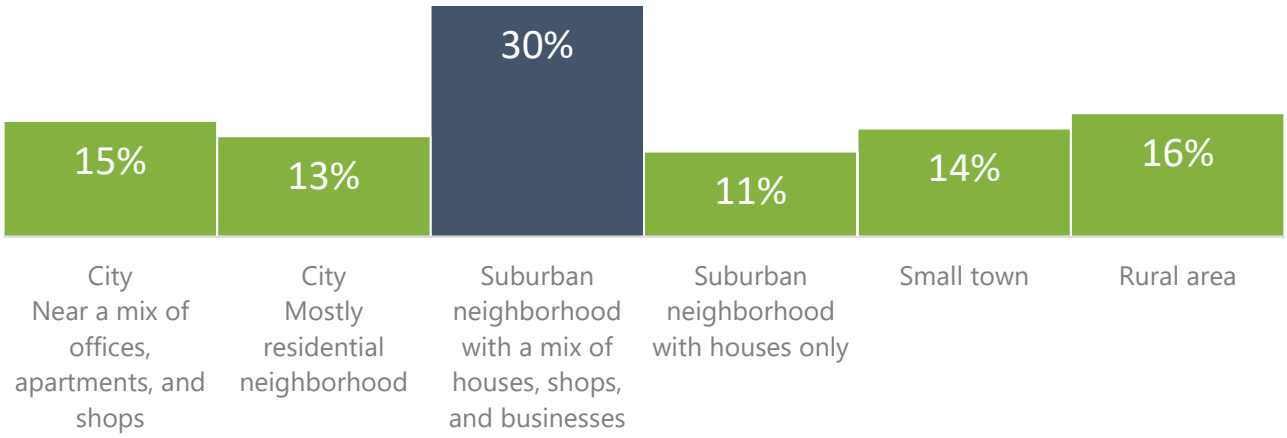
20-minute Neighborhood. One notable shift in consumer behavior is the growing demand for the **20-minute neighborhood—**the concept where one can take care of everything within a 20-minute walk. These areas have walkable access to a mix of employment and commercial services, including amenities, multimodal access, adequate sidewalks, and good street connectivity.

While it is challenging for most areas in suburban or edge locations to attract a critical mass of commercial amenities and services and employment opportunities to achieve the 20-minute neighborhood, there has long been a growing demand for suburban neighborhoods that include these elements, as shown below. Sherwood West can capitalize on these shifting preferences.

Orenco Station is a good example of this: the Hillsboro suburb is a grocery-anchored mixed-use center with retail and office uses surrounded by a variety of housing types, including single-family homes, townhouses, and apartments. Another good example is the City of Lake Oswego, which has succeeded in creating an amenity-rich environment for its office workers, resulting in an attractive, mixed-use location that drives rent premiums and supports higher density development.

These areas are attractive to younger knowledge workers who might be interested in some type of incubation space for new company creation. The new high school will help the potential growth of knowledge-related employment by anchoring and nurturing community bonds.

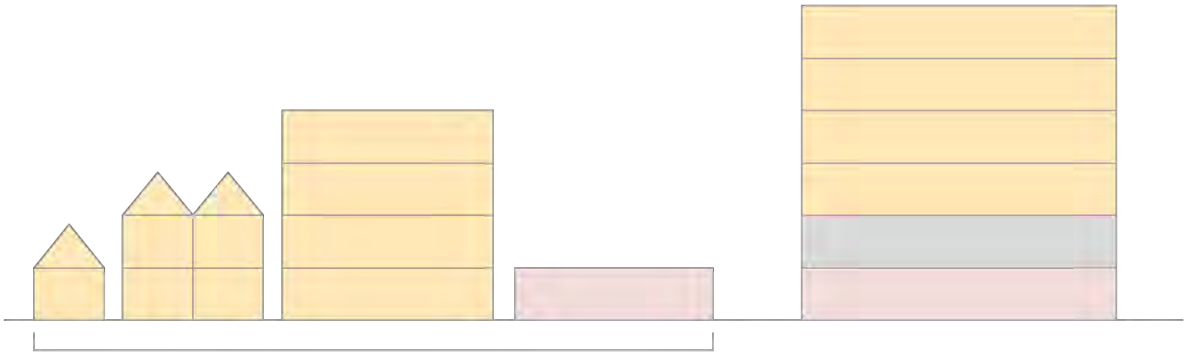
"Where Would You Most Like to Live" Survey Results



Mixed-use development has historically been limited to downtown environments, only occurring in some suburbs in hotter markets. However, it is now expected that mixed-use has a future in the suburbs, especially if it can be developed horizontally (versus vertically) and accommodated on larger sites to mitigate the higher cost of construction associated with typical vertical mixed-use development. Horizontal mixed-use typically occurs organically and, in turn, creates the market conditions to support more density.

Sherwood should pursue horizontal, rather than vertical, mixed-use development, at least in the near term. The major differences include parking (surface versus structured), construction type (wood versus concrete podium), the use of elevators, additional circulation and interior spaces, fire and safety elements, and the level of fees associated with the development.

Vertical mixed use also requires much higher rents, primarily because of the more expensive construction costs. These rents do not exist in the Sherwood area today. As such, pursuing the latter without allowing for the former may delay new development in Sherwood West.



Hospitality

New hotel development has been clustered in downtown Portland and Hillsboro, with a few isolated projects elsewhere along major arterials. There has been relatively limited hotel development in the southwest metro region, except for Sherwood's new Hampton Inn.

Some of the key inputs to hotel developers' site selection decisions are the amount of nearby employment (which drives business travel), convention center space, major tourist destinations/quality of place, and visibility from major highways/transportation corridors. There is also "background demand" that is linked to the size of the surrounding population. Hotel development, to an even greater degree than commercial development, tends to be a "following use." In other words, hospitality follows other types of development, particularly office space. Office space is a significant generator of hotel demand and makes it easier to justify the market and attract developers.

Sherwood West is likely to have competitive advantages in terms of major employment clusters, tourism draws, and transportation corridors compared to other locations. LCG considers the probability of attracting a new hotel in the area as high, particularly for a mid-range hotel. However, the City should not expect lodging development to be completed early in the lifespan of Sherwood West.

Challenges. Specific challenges related to the hotel industry for Sherwood West are listed below.

- Lack of major office employers and two of the major employers include healthcare and the school district, which doesn't reflect an adequately diversified employment base to drive hotel demand.
- Existing land availability in the heart of wine country for wine-oriented hotels in other cities such as Dundee means that Sherwood is unlikely to be competitive based on the wine industry alone.
- Hotels are generally "follow-on" investments because they are expensive to build; developers, therefore, need a proven demand before committing to development.
- Hotels require adequate "activation energy"; there is currently a lack of restaurants and other amenities in and around Sherwood West.
- Lack of local comparable examples; hotel developers need to prove that hotels can get to 70 percent occupancy in order to confidently develop. However, if the Hampton Inn negatively performs, it is not necessarily an indication of prospects as branded hotels can be a negative for certain audiences.

Opportunities. Most of these challenges can be addressed by focusing on employment growth and a greater array of commercial amenities and services. The pandemic has also increased consumer's desires for "drive-to" areas, so cities like Sherwood that are less isolated may become more resilient to future market disruptions.

Feedback from the stakeholder interviews indicated a range of hotel options for Sherwood, including mid-range and upper-range or boutique hotels. The Allison Inn and Spa in Newberg was discussed as a luxury option ($500+ a night) but is not expected to be currently feasible in Sherwood until a critical mass of high-wage employment occurs to complement Sherwood's presence as a gateway to Wine Country. An upper range or boutique option ($300-400 a night) such as McMinnville's Atticus Hotel faces similar challenges in the near term and may be best suited to Old Town Sherwood over the longer term. The recently completed 73-room Hampton Inn in Sherwood is considered a budget-friendly option (less than $150 a night).

Primary demand is for at least one mid-range hotel in the $150 to $250 a night range that fills an existing gap in the market.

Location. The most likely location for a hotel would be near a mix of uses or town center feature, or near open spaces. It is possible that lodging could be located along one of the arterials and look to build on travel to and from the wine country to the southwest, but there are most likely superior wine country lodging locations. In fact, a location on 99W would help with visibility, but the need for visible, highway-adjacent locations is declining as consumers increasingly use technology to seek lodging options and book ahead of time. A more physically attractive location will maximize Sherwood West's unique assets such as its views and open spaces. Proximity to future employment is also recommended to target business travelers and a broad spectrum of customers that may desire a different product from branded I-5 corridor hotels.

Wine tourism. While Sherwood is well positioned between the Portland metro and wine country, the City should not base its future on the wine industry. Other cities that are more centrally located in Wine Country are likely to continue expanding and experience the bulk of tourism activity, particularly for out-of-state visitors (even though Sherwood's location as a gateway to wine country is a major advantage). Local support is also strong, and new residential growth coupled with an increase in inter and intra-state tourism (particularly from TX, NY, FL, etc.) will drive demand for new facilities (e.g., satellite tasting rooms).

An Oregon Winery Visitor Profile Study Report for 2019 by Travel Oregon profiles visitors to the State's wine regions. In the Sherwood region, the average visitor is a 51-year-old woman earning $113,000 per year. These visitors average $600 in spending over the course of two days and stay an average of 1.5 nights. Compared to the Napa region, the lack of available lodging and other services and amenities is apparent, with Napa visitors staying an average of two nights with greater expenditures.

This data is consistent with information garnered during stakeholder interviews, which indicated potential opportunities for high-end and boutique hotels and white tablecloth restaurants in Sherwood. These uses would help elevate Sherwood's position as a high-end tourism destination for domestic and international visitors.

Retail/Commercial

As described previously, the retail real estate sector continues to struggle as a result of the ongoing pandemic and the growth of ecommerce. There is now significantly less new retail development being built per new resident than ever before. Big box retail prospects are also the lowest they have ever been among the development community. With that said, Sherwood's retail market is considered vibrant and healthy.

Sherwood's retail inventory is largely traditional brick-and-mortar, i.e., surface parked commercial centers or standalone buildings along transportation routes. The three types of centers include:

- **Community centers.** Often referred to as a strip mall, community centers range from 125,000 square feet to 400,000 square feet. These properties usually have a grocery store and can also have a discounter and large specialty shops mixed with convenience retailers, such as drugstores.
- **Neighborhood Centers.** A smaller version of community centers. These are typically referred to as grocery-anchored properties, along with other convenience retailers. They run up to 125,000 square feet.
- **Convenience Centers.** These are very small properties that are less than 30,000 square feet and filled with, well, convenience-based retailers, such as dry cleaners, nail salons, drug stores, and other types of shops where customers are looking for a quick purchase or service.

Spending Gap Analysis. A retail gap or leakage analysis helps identify strengths and opportunities in the retail market. Supply is determined by estimating the sales by retail establishments in the region to all consumers, regardless of where they live; sales to businesses are excluded. Demand is determined by estimating the expected amount spent by consumers that live in the region at all retail establishments, regardless of their location. The difference between supply (retail potential) and demand (retail sales) represents the retail gap. If the demand is greater than supply, a leakage occurs. Retail leakage refers to the amount of money that residents are spending on retail goods and services at stores located outside the community. If supply is greater than demand, a surplus occurs and indicates that retailers are selling more than is demanded within the region. This information is critical to economic developers and regional planners because it can be used to recruit appropriate retailers to the community. It is also useful to retailers already located in a community because it can guide on tapping new markets with expanded or improved product offerings.

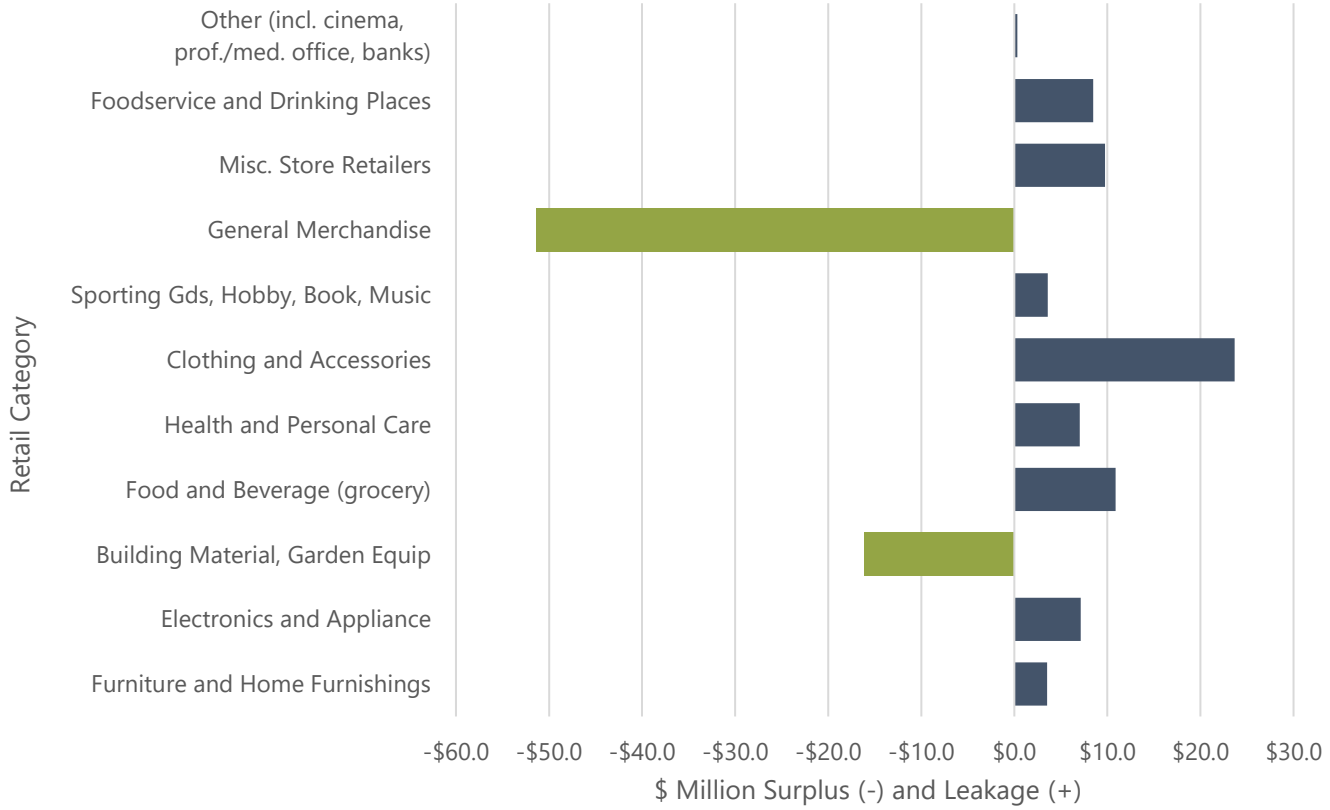
As the following chart shows, there is leakage in most retail categories. However, total retail demand is estimated at $402 million and total retail sales at $395 million, meaning there is little difference in total. Further, a huge surplus for General Merchandise (such as Target, Walmart, etc.) may account for much of the leakage in specific retail categories

like Clothing and Accessories and Miscellaneous Store Retailers. Also likely is that the Sherwood area, as the gateway to the Portland metro, is capturing spending from smaller cities in the Willamette Valley that do not have as many retail offerings. As Sherwood increases its retail offerings and the commercial landscape becomes increasingly vibrant and diverse, the retail gravity will likely draw from an increasingly large trade area to the south. If planned properly, a cluster of unique, destination-style retail offerings would likely capitalize on these opportunities.

Looking ahead, residential and employment growth will certainly drive demand for additional retail space, but the growth of ecommerce and declining retail footprints may dampen the impact. Traditional "big box" retail is also unlikely as the market is relatively saturated with this product type. Instead, Sherwood should expect to focus on convenience-based retail, such as grocery and health and personal care, as well as neighborhood-serving retail, such as foodservice and drinking places. These categories are also less prone to market disrupters. Enough leakage exists in these categories to immediately support at least one moderately-sized cluster of stores.

There is a growing desire for placemaking, entertainment, and culinary experiences. According to stakeholders, Sherwood is missing specialty markets and independent, farm to fork, and white tablecloth restaurants. Restaurants are important placemaking elements that support business retention and expansion and other economic objectives. There is a belief that opportunities exist to market Sherwood West to certain restauranteurs that may want to relocate from the central city. Similarly, individual wine-related tasting rooms or a regional wine bar may be able to capitalize on the burgeoning wine industry. While Old Town is the more likely environment for these uses, existing available spaces are limited; a nodal development cluster or main street development in Sherwood West may attract developers and tenants that recognize the market opportunity for these uses.

Current Spending Surplus (-) and Leakage(+) by Retail Category, Primary Trade Area (10-minute drive time)



Source: ESRI, LCG

Healthcare

Today's healthcare facilities are dispersed throughout the region and have spread out to serve the needs of the metro's growing population. Key healthcare demand drivers are the size of the population in the market area and the size of key populations such as seniors. Small- and medium-size healthcare facilities (particularly clinics, primary care offices, and dental offices) can easily fit into smaller commercial centers. Major healthcare facilities (e.g., hospitals and large medical office buildings) tend to locate along highways and major transportation corridors. Healthcare is an industry that has the potential to drive demand for other commercial uses and amenities, including retail, office, lodging, and, to a lesser extent, light industrial and manufacturing.

One of the hottest trends shaping healthcare real estate is the shift to delivering medical care in outpatient settings. Ultimately, this trend is being driven by three factors: an emphasis on driving down costs, the rise of the healthcare consumer, and an aging population.

This is consistent with the findings from LCG's interview with a major healthcare provider. Key findings are as follow.

- Site criteria for new healthcare facilities include drive times, ease of access, visibility, proximity to other services, and distance from competitors. A location along 99W appears the only adequate location that fits this criteria.
- With the shift to outpatient facilities, healthcare providers are unlikely to build additional in-patient facilities in Sherwood.
- Providers consider a 10-minute drive time the market area for primary care and 20-minute drive time the market area for specialty services. Existing facilities in Newberg and Beaverton are within a 20-minute drive time of Sherwood and may not compete for additional specialty services in the near future. Demand for primary care services, however, is likely to increase as the population and number of jobs increases in the immediate Sherwood area.
- Providers are increasingly partnering with developers to build facilities as part of larger mixed-use and wellness-oriented projects.
- Smaller clinics sized around 1,500 square feet may be part of mixed-use developments or in retail settings.

Sherwood West may benefit in the future from several emerging trends, including a growing acceptance and use of telehealth (driven by the COVID-19 pandemic), technological advances, and a growing desire for more convenient and accessible outpatient services. These trends are more likely to lend themselves to smaller healthcare facilities.

LCG's assessment is that it is likely that some small- or medium-size healthcare facilities will locate within one or more of the Sherwood West commercial areas. Assisted living facilities can be located within residential parts of Sherwood West.

Because major healthcare facilities depend on large nearby population bases, higher visibility, and access to highways and major transportation corridors, as well as the shift away from inpatient facilities, such a facility is unlikely to develop in Sherwood West, at least in the next 20 years. Attracting such a user would require time, effort, and deliberate planning and policy on the part of the City.

Strategies for Employment Growth

LCG recommends the following approaches and strategies for employment attraction:

- *Be Flexible.* Maintain as much flexibility (zoning, land, tools, approach) as possible in planning for employment growth as market cycles and trends over the next 20 years are unclear. This means maintaining large, contiguous sites but not mandating large-lot sites.
- *Plan for Mixed Employment.* Most of the opportunities for long-term job creation will likely require a mixed employment approach—namely industrial, flex, and office. Mixed Employment in centers/parks of 20-100 acres is the strongest market.

- *Plan for Multitenant Space* that can be scaled up or down and is highly divisible (e.g., to 2,500 square feet) allows for business expansion and the flexibility to accommodate various sized flex, office, commercial, or light industrial users.
- *Compile a Toolkit* of incentives and tools that can be packaged together to encourage desired development types.
- *Be both proactive and patient.* The City will need to be both *proactive*—in maintaining relationships with major employers, brokers, economic development professionals at different levels of government, and others in the employment development community and understanding their needs—and also *patient*. This means a recognition that the City will probably forgo the opportunity to see the land developed sooner with residential.
- *Ensure that buildable shovel-ready land is available for employment.* The land must be zoned for employment development. The zoning and building codes should require an appropriate level of development quality, but not make unrealistic requirements, for example, around low parking ratios, mixed-use, etc. For certain sites, the City may want to use the State's "Certified Shovel Ready" process to document that environmental, archeological, title, wetland, and topographical issues do not preclude development.
- *Invest in talent and quality of place.* The underpinnings of traded sector office site selection are simple: Locate where the talent is. Therefore, cities must attract talented people, by providing high-quality cities and neighborhoods where people want to live. The Sherwood West Concept Plan, which integrates residential, employment, and commercial development with parks and open spaces, is an important step; building out the plan is another. More broadly, the City should work to ensure that its workforce is well educated and trained to fill jobs within the City and regional industry clusters. It should also focus on supporting the development of a diverse array of suitable housing types, promoting placemaking as a core economic development strategy that prioritizes amenities, services, connection to Old Town, and open space. Doing so will likely draw a greater connection between Sherwood's existing high quality of life and well-skilled/educated workforce to encourage talent retention/tech business incubation and grow the community tech "ecosystem" etc. in Sherwood West.
- *Increase accessibility and visibility via the regional transportation network.* Large employers have historically needed to bring large numbers of employees to their campuses, and this requires robust auto, transit, bicycle, and pedestrian transportation infrastructure. In the near term, most employees are most likely to commute to work in cars they own; over the long term, automated vehicles, ride-sharing, and non-auto modes may increase. In any case, this will require the City to work closely with other cities, Washington County, and Metro.
- *Consider land acquisitions.* Site ownership can put the City in a strong position to recruit employers; it can also be expensive, risky, and politically contentious. If the City is considering land acquisitions, LCG recommends that the City work with a broker with experience executing deals that have resulted in employment land and building development in Washington County, in order to clearly understand costs and benefits.

Tools

The market is currently favorable for new employment-oriented development, yet tools and incentives may be necessary if the City desires a certain type of use the market doesn't support or it wishes to accelerate the timing of new development. The City may achieve this using an array of tools, including:

- Enterprise zones
- Zoning
- Incentive programs (tax abatements, development assistance)
- Fee waivers
- Marketing[6], developer outreach/solicitation

[6] An element of marketing may be necessary. The City's municipally-owned broadband service is a unique differentiator in the region and should be promoted.

- Public-private partnerships
- Strategic public partnerships (e.g., with GPI)
- Local improvement districts
- Urban renewal areas

Phasing

Developers are already interested in Sherwood West, particularly developers of industrial and mixed-employment uses. Despite the 20-year planning horizon of this Concept Plan, the timeline for bringing land into the UGB is potentially much quicker. The next legislative ask is 2024 and it is recommended the City move quickly to ensure development can occur within the next 10 years.

Industrial development has historically been about cost and infrastructure; now, it is about speed to market and feasibility. Most major industrial developers are likely operating within a five to 10-year timeline. It is also important to note that infrastructure provisions—or at least a clear implementation plan—available land to develop (without development encumbrances or multiple property owners), and adequate zoning are all critical elements for attracting employment-focused development.

Zoning

Zoning is one of the most critical pieces to get right. Flexibility is critical and the balance should be just prescriptive enough without dictating the uses in order to encourage desired development types while accommodating future growth and emerging trends like robotics and changing delivery systems. Restrictions should be limited to uses that have very low employment densities, such as storage. The zoning in the Tonquin Employment Area is considered a good example of employment-focused zoning.

Parking and environmental standards are two of the more challenging elements of the development code. It is important to keep these standards up to date with industry best practices and user needs and not have overly cumbersome standards.

APPENDIX H

Transportation Issues Memo

DKS 720 SW WASHINGTON STREET, SUITE 500, PORTLAND, OR 97205 • 503.243.3500 • DKSASSOCIATES.COM

TRANSPORTATION ISSUES MEMO

DATE: April 29, 2021

TO: Joe Dills and Kyra Haggart | Angelo Planning Group

FROM: Carl Springer | DKS Associates

SUBJECT: Sherwood West Concept Plan Re-Look, Transportation Issues Project #21057-000

PURPOSE

The Sherwood West Concept Plan Re-Look will update the land uses and community plan envisioned in the Sherwood West Preliminary Concept Plan, which will influence the transportation systems that serve it. This memorandum highlights key transportation considerations, including what has changed since Preliminary Concept Plan was completed in 2016 to inform strategic transportation system choices for Sherwood West.

The purpose of this memorandum is to summarize the key transportation issues and projects that will be addressed through this Concept Plan update. It is recognized that transportation system planning works best when it responds to the existing and future needs of its users, which are represented by how land use plans are organized. The transportation plan must also respect the environmental and topographical constraints that are present within Sherwood West.

LAND USE ISSUES

This update is expected to take a new approach in the land use plan which has a direct impact on transportation systems. Studies completed since 2015 indicate greater community needs for employment and mixed-use commercial areas to help Sherwood better balance the mix of jobs and housing that are accessible to the community. This kind of change will affect the travel patterns during commute hours and have some influence on the kinds of services and public amenities that are suitable to support this area. Also, recent state land use regulations have modified single-family zoning requirements to encourage a mix of housing types within each new neighborhood (HB 2001). This is expected to yield higher residential densities than was previously reflected in the preliminary concept plan.

In addition, the new Sherwood High School campus will be reflected in this plan, which was not a part of the prior work. The transportation demands of a high school campus represent a significant change, in terms of the intensity of travel in this area; the reliance on safe and comfortable

walking and bicycling systems in Sherwood West; and, the ability to provide north-south connectivity on the west side of SW Elwert Road. Several major new street improvement projects have already been constructed to support the new school. However, in developing the rest of the concept plan's transportation system, these unique school-related travel needs will be considered to ensure a consistent and connected service to all neighborhoods that are expected to utilize this campus.

Outside of the City of Sherwood, new growth along the Roy Rogers Road corridor now has better plans or updated information that was not available five years ago. Growth in these areas will influence regional travel conditions, which could include local routes within Sherwood West like SW Elwert Road. These new external growth areas include Cooper Mountain in Beaverton, expansions to River Terrace in Tigard, and Kingston Terrace, the new western expansion of King City extending to Roy Rogers Road. Taken together, these nearby growth areas will add thousands of additional families that will rely on the same regional transportation system that serves the Sherwood West community, and they need to be considered in assessing the travel conditions for the Sherwood West Concept Plan.

TRANSPORTATION SYSTEM ISSUES AND PROJECTS

This section provides a review of pending regional transportation system improvement projects and also highlights several previous street elements within the plan boundary that will be revisited through this process.

ROY ROGERS ROAD

Washington County plans to expand SW Roy Rogers Road to a five-lane arterial (two travel lanes in either direction plus a center turn lane) south into Sherwood through to Highway 99W. The final southerly extent of this improvement will be from Chicken Creek to Borchers Drive. The estimated $14 million project is funded by the County's MSTIP program, and it is planned for completion by Spring 2024. This regional corridor connects SW Scholls Ferry Road to Highway 99W and connects between job centers in Hillsboro, Beaverton and housing areas in Sherwood, Wilsonville, and western Clackamas County. Horizon year (2040) travel forecasts are roughly 40,000 vehicles on an average weekday, which is similar to levels observed today on Highway 99W between Tigard and Tualatin. This high level of travel demands may influence the type and location of potential development along the SW Roy Rogers Road corridor, specifically making it more attractive for retail and mixed-use development.

BROOKMAN ROAD

The SW Brookman Road extension ultimately will define a new southern edge of Sherwood. When properties in the Brookman Addition area annex to the City, SW Brookman Road will be upgraded to a full urban arterial facility and its current intersection with Highway 99W will be upgraded to comply with Washington County and ODOT standards for driving, bicycling, and walking. The recent update to the Brookman Addition Concept Plan recommended an interim 3-lane arterial cross-section on Brookman Road until such a time as a 5-lane section is required. The scope and character of the 99W crossing is still under discussion, and the City has stated a desire to explore

an overcrossing roadway rather than at-grade intersection to provide a more convenient and safer route east-west. The SW Brookman Road extension west of Highway 99W (via SW Chapman Road) will also serve as the southern edge of the greater Sherwood West planning area and provides important connections to planned north-south routes that lead up to SW Krueger Road. Ultimately, the timing of the Brookman Road upgrade is tied to land use actions to bring this area into the City of Sherwood. At this time, the County has not programmed funding for these improvements.

HIGHWAY 99W

This state facility is a primary north-south regional highway serving Sherwood. The high speeds, crossing width, and limited crossing opportunities make it a significant barrier for intra-city travel within Sherwood, especially for walking and bicycling travelers. At the time the new high school campus was considered by the City in 2017, a potential solution was identified that would provide a new highway overcrossing for walking and bicycling near the southern end of the campus. Initial feasibility studies have been done to provide a non-motor vehicle crossing just north of SW Sunset Boulevard that extends over Highway 99W to the far side of SW Elwert Road. This connection should be considered as part of the Sherwood West planning process.

ELWERT ROAD

SW Elwert Road is a direct north-south route between SW Scholls-Sherwood Road and SW Krueger Road. It spans a significant portion of the Sherwood West Planning area and is a common alternative route to Highway 99W for local and diverted regional travel. It will be important to strike a balance between local connectivity and regional travel needs when developing the ultimate design of this facility as it is upgraded to urban standards. Several aspects of this route that should be considered include:

- **Intersection with SW Scholls-Sherwood Road** – This intersection will likely need upgraded traffic controls and a more defined intersection area as the adjoining farmlands are developed.
- **Intersection with Elwert Road at Edy Road** – This intersection is adjacent to Chicken Creek and significant environmentally constrained lands. The prior plan recommended a double roundabout solution to minimize environmental impacts and to discourage attractiveness of regional through traffic.
- **Intersection with Elwert Road at Kruger Road** – This intersection was recently improved to a larger roundabout and road re-alignments as part of the high school campus project to address chronic congestion and safety concerns. As the remaining lands to the south are planned for development, the adequacy of this improvement will be re-evaluated.
- **Parallel routes to Elwert Road** – As the preliminary concept plan is revised, the consultant team will seek out opportunities for parallel routes further to the west that can provide local travelers with more north-south options, particularly for access to the high school campus area.

MULTIMODAL TRAVEL OPTIONS

A key component of the transportation network for Sherwood West will be to incorporate safe and convenient walking and bicycling facilities into the higher classification street facilities. All of the local arterial and collector

class streets will have these elements added to the cross-sections for planned improvements. In addition, the natural areas and varied terrain offer opportunities for a separate trail system to promote non-motorized travel away from the roadway network. Transit does not currently serve the immediate Sherwood West area. The closest TriMet service is Route 94 which connects to Portland along Highway 99W. The nearest stop is over a mile away. The concept plan should explore how to make the area "transit-ready" with transit-supportive land use and sufficient connectivity of the street system. In addition, consideration should be given to micromobility solutions like scooters and bike-sharing to help address first/last mile challenges.

APPENDIX I

Plan Concepts

- Livable and Connected Streets
- Elwert Road Design Concept
- Active Transportation
- Great Neighborhoods
- Mixed Employment Areas
- Chicken Creek Greenway

These Plan Concepts were developed early in the development of the Sherwood West Concept Plan. Ideas from these Plan Concepts were refined and revised for the final Concept Plan.

DRAFT PLAN CONCEPTS

LIVABLE & CONNECTED STREETS

SHERWOOD WEST CONCEPT PLAN

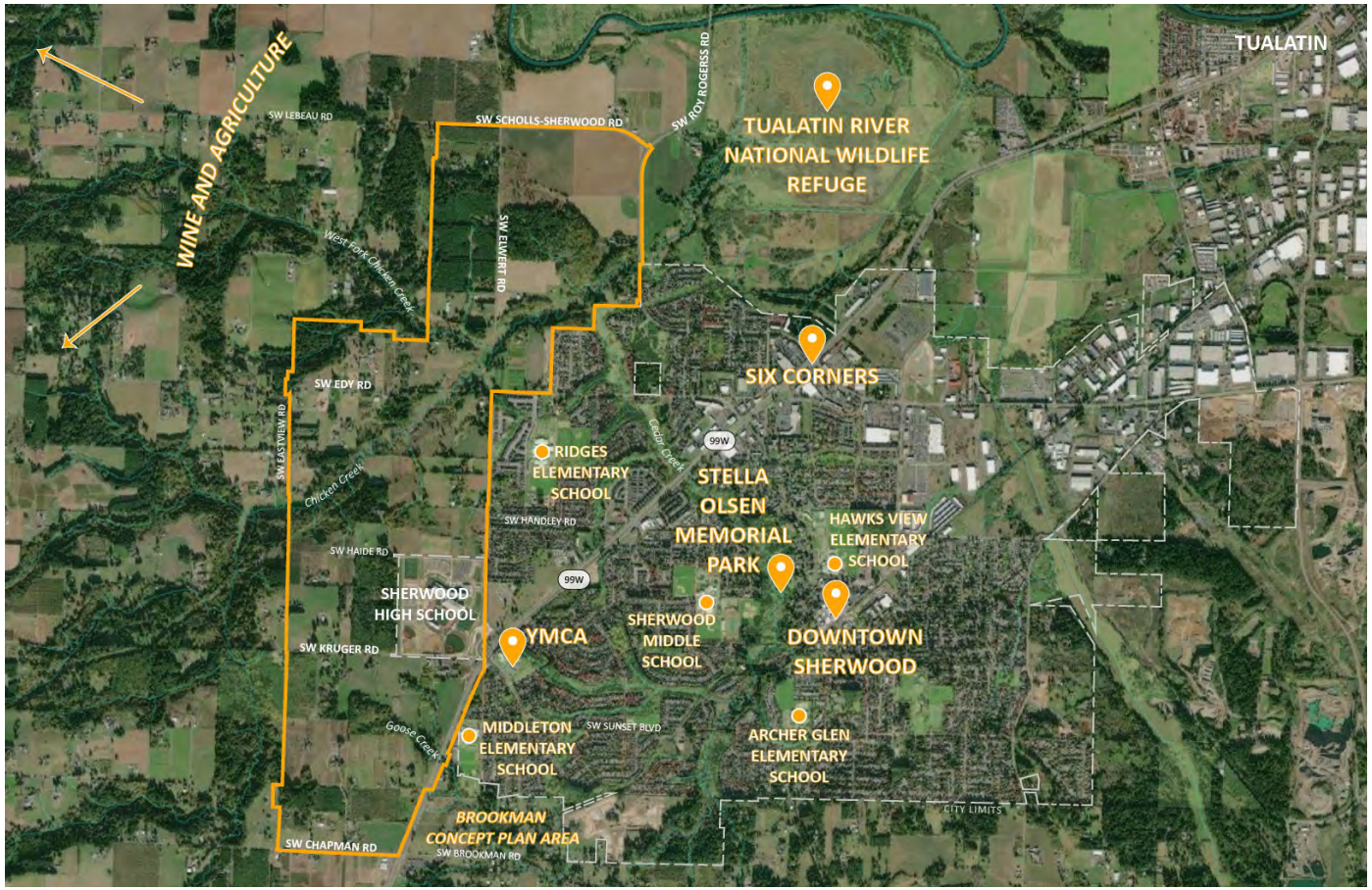
The Sherwood West area is adjacent to and a part of Sherwood's network of streets that carry both local and regional traffic. As the City of Sherwood grows, a well-designed and connected network of streets in Sherwood West should focus on safety, knitting the existing and new growth together, creating livable and walkable neighborhoods, and mitigating impacts of regional through-traffic.

PRINCIPLES

- Design for safety
- Integrate with existing Sherwood
- Connect all areas of Sherwood West
- Streets are places for people of all ages and abilities
- Provide for all modes of travel

INTEGRATED STREET NETWORK

This map shows important local and regional destinations. It will be important to ensure that the future street network in Sherwood West is integrated with existing Sherwood, providing connections to these destinations.



A FRAMEWORK OF LIVABLE AND CONNECTED STREETS: 0PTION 1

This diagram shows a draft framework of streets for Sherwood West. This option implements the realignment of SW Elwert Rd and SW Edy Rd that was studied in the Preliminary Concept Plan. Street locations and alignments are conceptual and approximate. Additional local streets will be built between the framework streets, depending on land uses.

North of Chicken Creek, the street framework is designed to serve Mixed Employment land uses. There are continuous parallel routes to SW Elwert so that local trips can move freely and turning movements on SW Elwert Road are minimized.

The Elwert-Edy Road intersection is realigned as described in the Preliminary Concept Plan.

A neighborhood street connects from SW Handley to SW Haide and south to SW Chapman Road. This street connects multiple neighborhoods and the central and southern employment areas.

A north-south "hilltop" route provides additional north-south access and a second continuous north-south route for emergency access and other services.

All intersection types are to be determined through further study and coordination. The City is evaluating strategies and road alignments to minimize regional traffic through Sherwood neighborhoods. All improvements at Chicken Creek subject to potential State/Federal permitting.

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A FRAMEWORK OF LIVABLE AND CONNECTED STREETS: 0PTION 2

This diagram shows a second option for the street framework in Sherwood West. In this option, the existing alignment of SW Elwert Rd and SW Edy Rd is retained, with the intersection rebuilt. Option 2 would require raising the intersection and road approaches approximately 10 to 20 feet in elevation in order to correct for topography, floodplain issues, and the existing unsafe sight-distance visibility. Street locations and alignments are conceptual and approximate. Additional local streets will be built between the framework streets, depending on land uses.

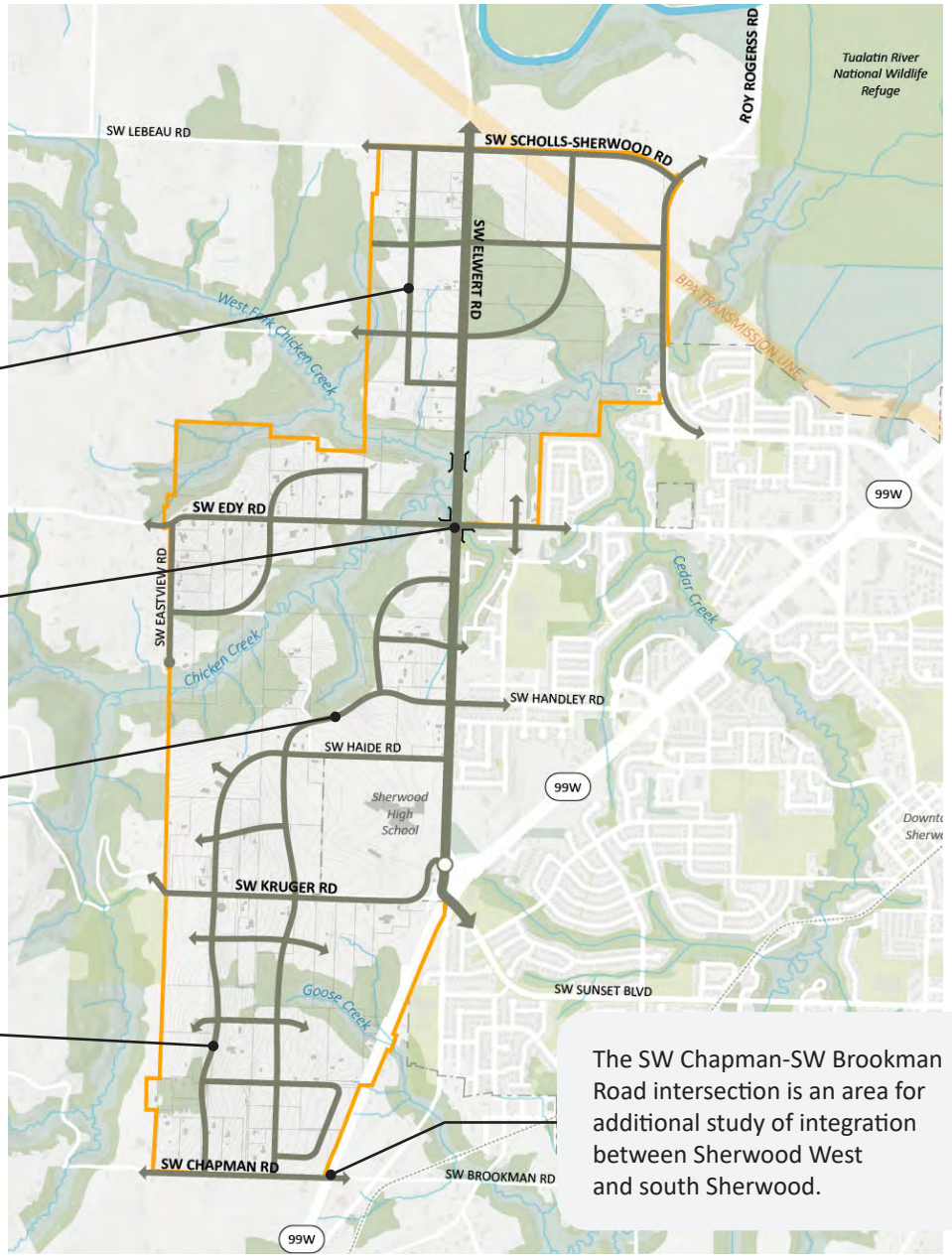
North of Chicken Creek, the street framework is designed to serve Mixed Employment land uses. There are continuous parallel routes to SW Elwert Road so that local trips can move freely and turning movements on SW Elwert Road are minimized.

The existing Elwert-Edy Road intersection is retained and significantly rebuilt.

A neighborhood street connects from SW Handley to SW Haide and south to SW Chapman Road. This street connects multiple neighborhoods and the central and southern employment areas.

A north-south "hilltop" route provides additional north-south access and a second continuous north-south route for emergency access and other services.

All intersection types are to be determined through further study and coordination. The City is evaluating strategies and road alignments to minimize regional traffic through Sherwood neighborhoods. All improvements at Chicken Creek subject to potential State/Federal permitting.



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DRAFT PLAN CONCEPTS

SW ELWERT ROAD DESIGN CONCEPT

SHERWOOD WEST CONCEPT PLAN

SW Elwert Road is an important opportunity for Sherwood West. A County-designated arterial street (south of SW Edy Road), it carries about 9,000 average daily trips today and is forecast to carry 14,000 average daily trips in 2035. How can it be designed to be a livable and positive addition to the growth of Sherwood West and the adjacent neighborhoods on its east side? This document provides ideas to achieve that goal.

PRINCIPLES

- Connect west and east
- Tame the traffic
- Promote safe and comfortable walking and biking
- Create a green, landscaped corridor
- Provide for future transit
- Plan for safety

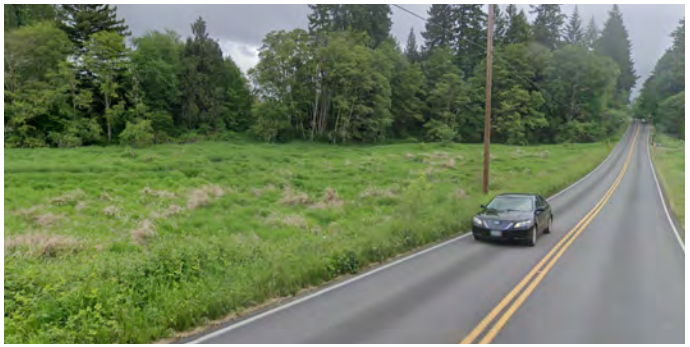
ELWERT ROAD TODAY

Distinctive landscape character

Opportunity to improve east-west integration, add sidewalks and bike lanes

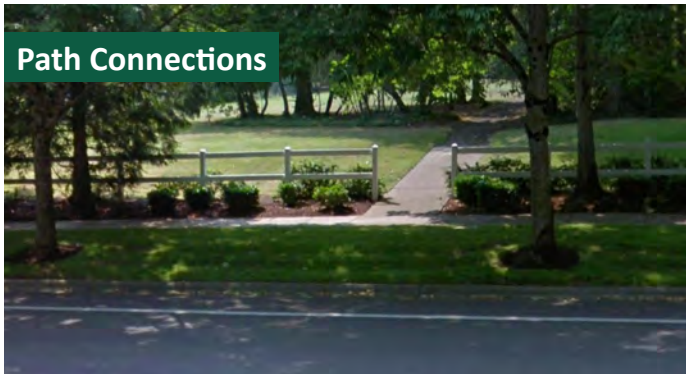
SW Edy & SW Elwert intersection
(Significant improvements are needed)

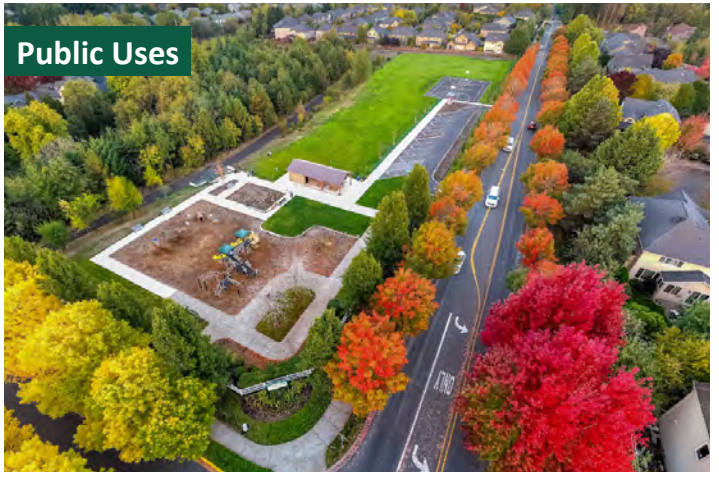
Southern Gateway to Sherwood West, High School provides likely destination for future transit

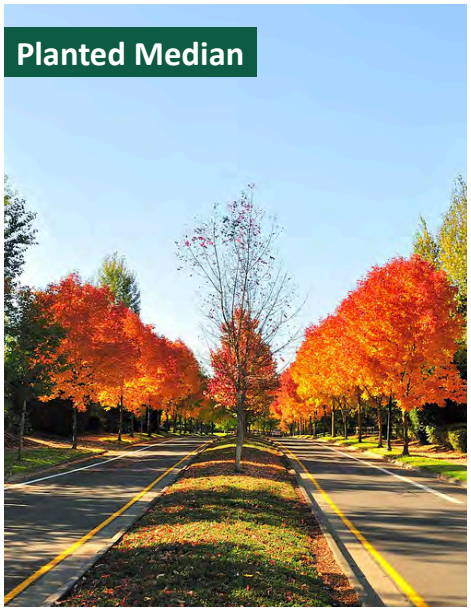


Potential Chicken Creek crossing viewed from SW Elwert

DESIGN IDEAS: LEARNING FROM SW SUNSET BOULEVARD







DESIGN IDEAS: A DISTINCTIVE, CONTEXT-SENSITIVE SW ELWERT ROAD

Employment Area Parkway

- Distinct street tree character
- Sherwood 'visual corridor' design
- Fewer curb cuts, continuous white fence
- Truck-turning considerations
- Large parcels with space for pathways linked to trails

Residential Boulevard

- Consistent street tree canopy, median
- Consistent white fence
- Safe crosswalks
- Protected bike lanes
- Access paths to residential areas
- Adjacent homes with side 'frontage'

Green Crossings

- Street tree choices informed by natural area proximity
- Narrower ROW to reduce footprint in ecologically-sensitive areas
- Trails and wildlife passage underneath
- Bridges as public view points, with art, educational signage

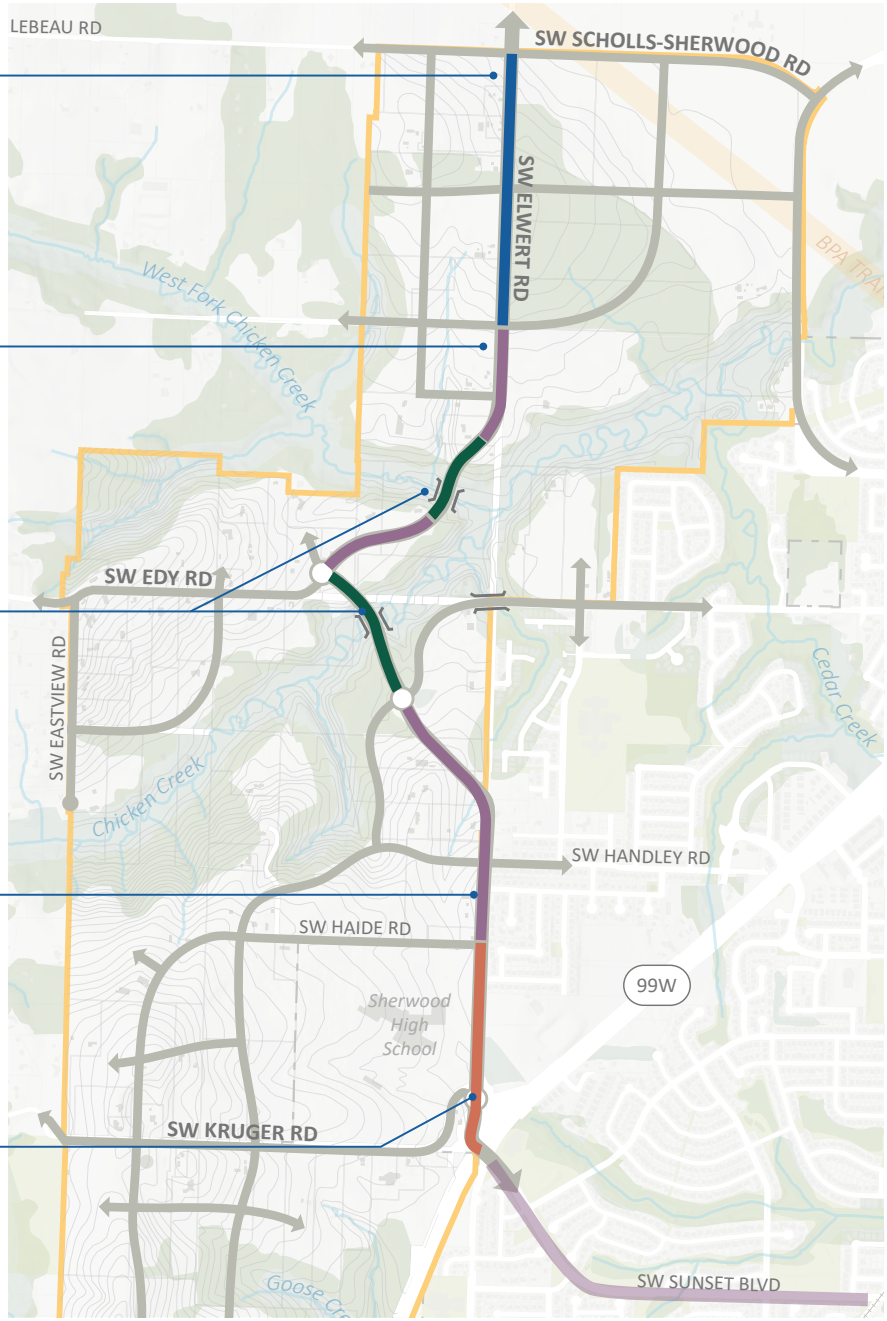
Residential Boulevard

See above, and...

- Between Haide and Handley, consider existing neighborhoods to east in design and ROW availability
- Continue multi-use path from High School
- Consider matching white fence on Sunset

High School Edge/Gateway

- Recently-rebuilt
- Generous multi-use path on west edge should extend north



DRAFT PLAN CONCEPTS

ACTIVE TRANSPORTATION

SHERWOOD WEST CONCEPT PLAN

Trails, cycling routes, transit, "micromobility", and other ways of getting around without a car can be designed into Sherwood West. These active transportation facilities will help to meet the Sherwood 2040 Comprehensive Plan goal of **coordinated and connected infrastructure:**

> ***"In 2040, the city's transportation system is efficient, safe and provides transportation options. The town has an active and connected transportation network where residents enjoy walking and bicycle paths between neighborhoods, parks, schools, the Tualatin National Wildlife Refuge and Old Town."***

Sherwood West's streets will be an important part of providing active transportation options, along with off-street trails and the location of parks, schools, and community gathering spaces.

WHAT COULD ACTIVE TRANSPORTATION LOOK LIKE IN SHERWOOD WEST?

Within the Sherwood West area, trails that connect between local parks, green spaces, schools, neighborhoods and employment areas will help to encourage walking, rolling, and biking. There is an opportunity to pre-plan key connections between new growth in Sherwood West and existing areas of Sherwood. There is also an opportunity to ensure future transit can be as successful as possible.

Chicken Creek is an important natural feature in Sherwood West, and offers the opportunity to develop a greenway trail along the edge of multiple neighborhoods and employment areas. The Chicken Creek Greenway could serve as the backbone for a robust trail network that connects Sherwood West to surrounding destinations such as Old Town (via the Cedar Creek trail), Sherwood High School, and the Tualatin River National Wildlife Refuge.

INTERCONNECTING FUTURE TRAILS - INITIAL CONCEPTS

This map shows initial ideas for trails in Sherwood West, ranging from larger regional trails to smaller community trails. Future trails in the Sherwood West area should prioritize connections to existing and planned trail networks. The land uses shown on the map are from the Preliminary Concept Plan – they will be revised and updated as part of this concept plan process. The local trails noted on this map are conceptual ideas for community feedback. A local trail network will be prepared in concert with the land use plan, following these concepts.

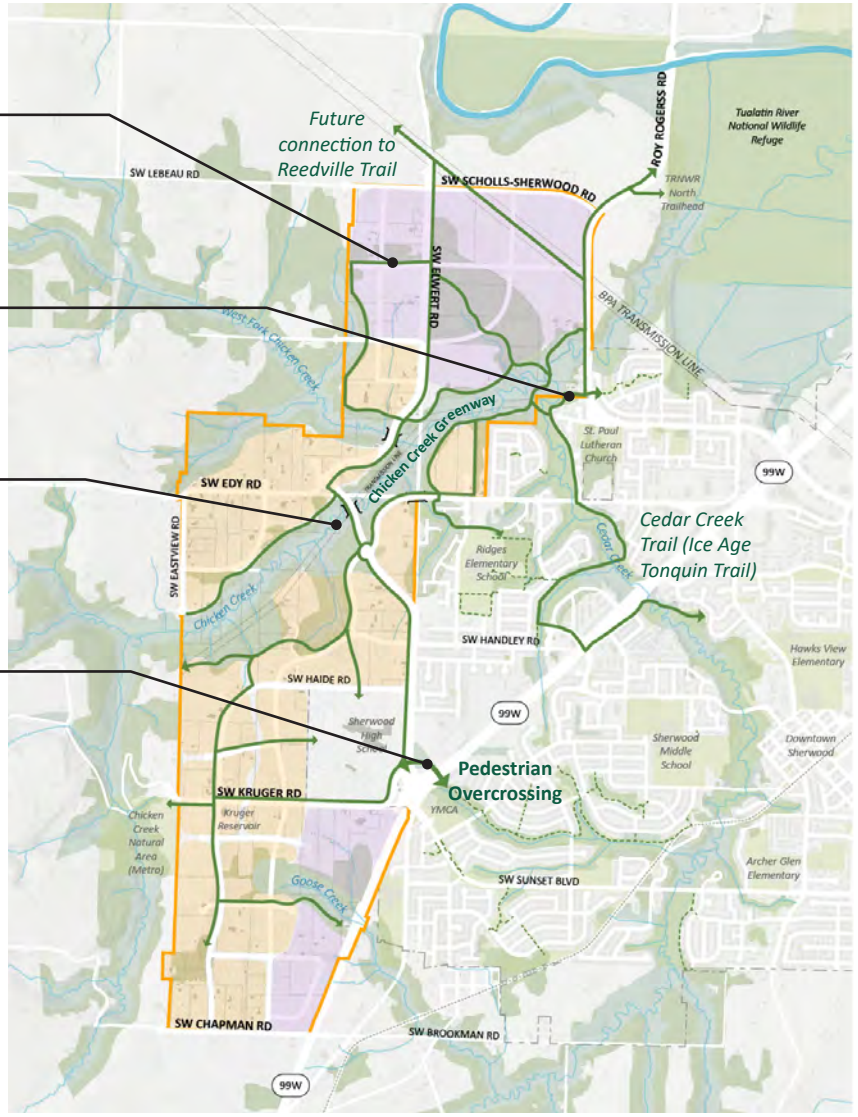
Parks, schools, employment areas, and other local destinations should be well connected by trails or wide sidwalks and bike lanes through neighborhoods in order to create a healthy and walkable environment for all ages.

Key connections to existing or planned trails should be prioritized, such as future connections to the Reedville Trail, the Tualatin River National Wildlife Refuge trails, Ice Age Tonquin Trail/Cedar Creek Trail, and the future Highway 99 pedestrian overcrossing.

A new Chicken Creek Greenway could take advantage of the existing natural creek corridor to connect to the Cedar Creek Trail and other regional trail networks.

A new Highway 99 pedestrian overcrossing is planned in the vicinity of the new Sherwood High School. The new overcrossing will address the major barrier that the highway presents for pedestrians today. It would also help connect the high school, the YMCA, and the greater Sherwood West area with existing trails and destinations on the east side of the highway.

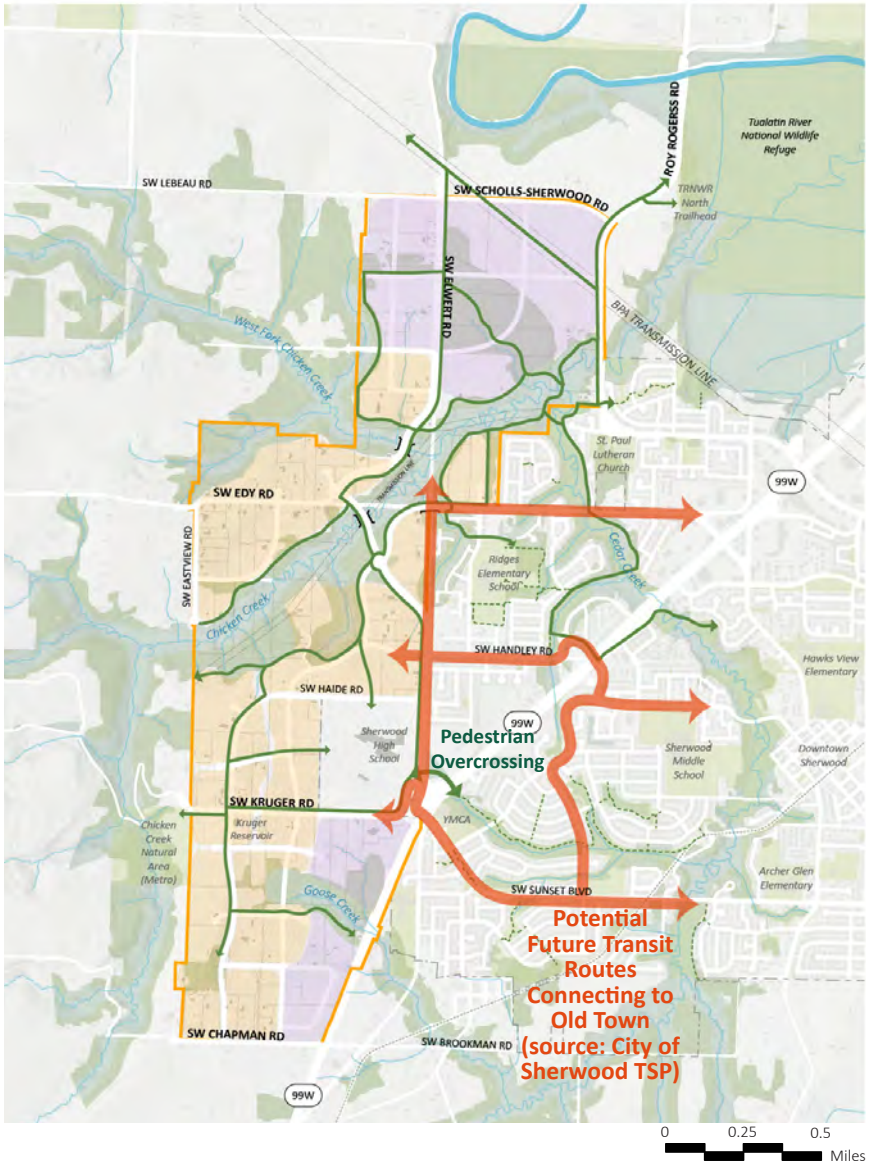
Local trails can connect to schools, parks, employment areas and other destinations, with viewpoints along the way.



FUTURE TRANSIT, MICROMOBILITY, AND THE "FIRST AND LAST MILE"

Trimet does not currently provide transit service to the Sherwood West area, but it is directly adjacent to Trimet's current service boundary. The closest bus stops are about a mile away in Old Town (served by lines 93 and 94). Sherwood West's opportunity is to be "transit-ready" by planning land uses, key streets, and trails to accommodate and support future transit service. The diagram at right shows potential future transit routes in orange as conceptually noted in the City of Sherwood Transportation System Plan (TSP).

In addition, the inclusion of "micromobility" services, like bike-sharing and scooters, can help people to get around more easily without a car. Micromobility stations could be included at schools, employment and commercial areas, and near existing transit stops to help fill gaps in transit access (the "first and last mile" of a trip) and to provide options for getting to and from school, work, and leisure activities.



DRAFT PLAN CONCEPTS

GREAT NEIGHBORHOODS

SHERWOOD WEST CONCEPT PLAN

City of Sherwood Oregon

What will make great neighborhoods in Sherwood West? The vision statement provides guidance in its citation of "families… well-connected streets… walkable… variety of well-designed housing… natural extension of Sherwood's neighborhoods… natural landscape… network of natural areas, parks, and trails." This document provides ideas for how those visions can be turned into reality. It focuses on neighborhood form and key issues for the Concept Plan. Using this guidance, the next step will be to identify land use alternatives.

PRINCIPLES

- Plan for walkability
- Provide a variety of housing opportunities
- Integrate new and existing neighborhoods
- Plan parks and schools as destinations
- Provide adequate parking
- Connect greenspaces into a network
- Integrate nature into neighborhoods

WALKABLE NEIGHBORHOODS: SHAPED BY THE LAND

This diagram is a study of "walkable" areas within Sherwood West. The colored areas show a combination of factors that influence walkability: ¼ to ½ mile of distance (a 5-10 minute walk); natural features such as Chicken Creek; slopes; and existing development. These subareas within are useful for identifying areas of cohesive character and where various land uses might be located and connected. The edges of some areas are clear and very intuitive. The edges of other areas are approximate.

West Elwert: Potential addition to the northern Mixed Employment area

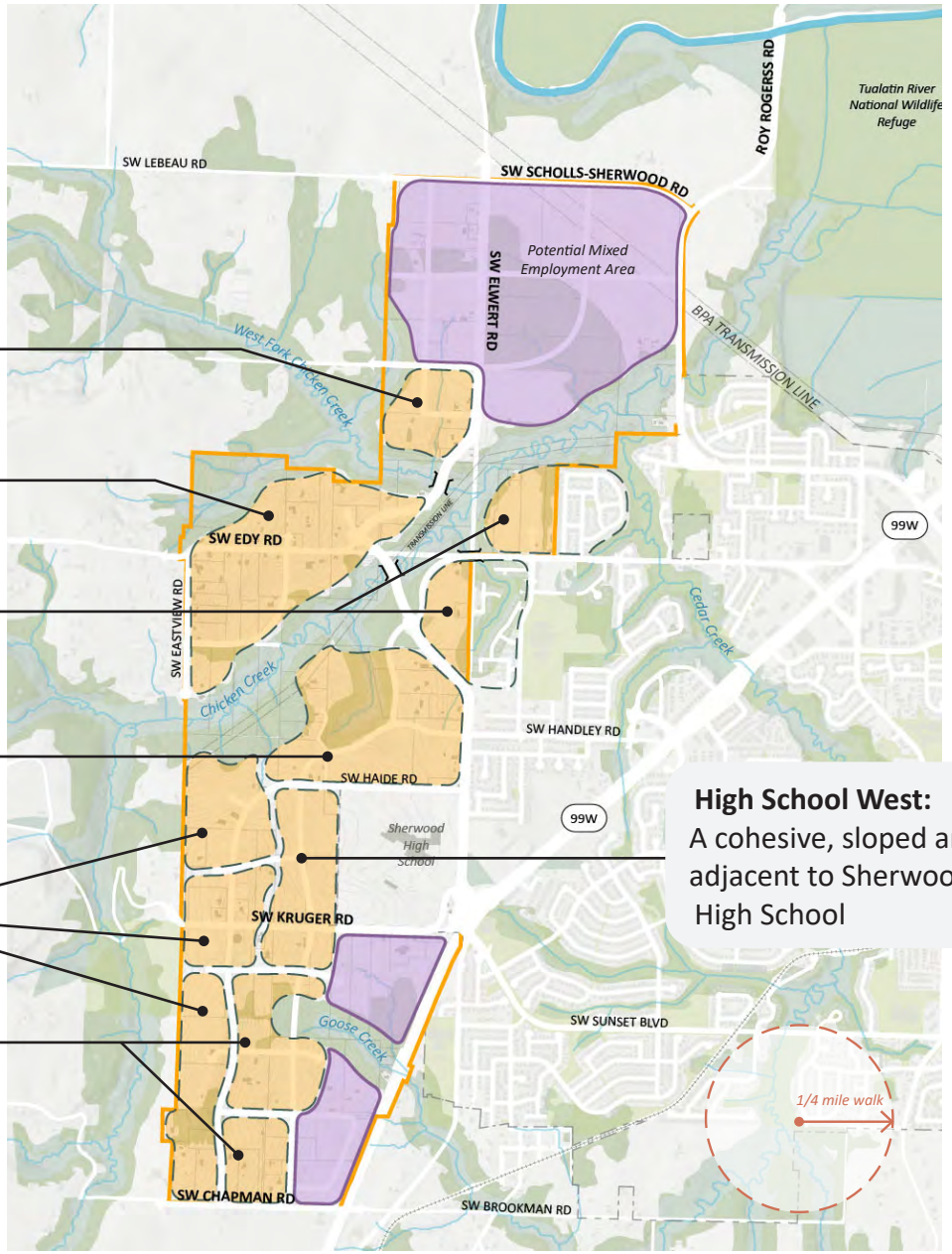
West Edy: A cohesive area from Chicken Creek to the Eastview Road ridgeline

Edy South and East: Close proximity to existing neighborhoods and Ridges Elementary School

Haide North: A fairly large "flat" area with an easy walk from center to edge and some slopes toward Chicken Creek

Hilltop and Ridgeline: Sherwood West's view properties; includes areas facing west

Goose Creek and East Slope: Hillside areas that face east and close to Mixed Employment areas



High School West: A cohesive, sloped area adjacent to Sherwood High School

DRAFT 9/27/2021

0 0.25 0.5 Miles

CONNECTED PARKS, SCHOOLS, AND GREENSPACES

This diagram is a study of how neighborhood and community parks might be part of a network of connected greenspaces and community connections. The number and locations of potential parks is preliminary and intended to show ideas, not recommendations.

Community Parks provide opportunities for active recreation and organized play in a location that can accommodate increased traffic and demand, while also serving as a neighborhood park for nearby residents.

Minimum size: 10 acres

Neighborhood Parks provide close-to-home recreation opportunities for nearby residents, who typically live within walking and bicycling distance (.5 miles) of the park in a residential setting.

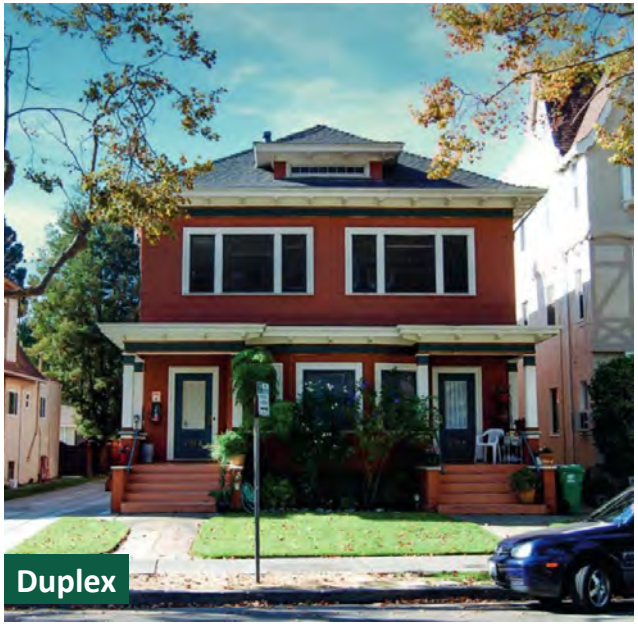
Minimum size: 1.5 acres

DRAFT 9/27/2021

HOUSING TYPES

Sherwood West's zoning will allow for a wide range of housing types, guided by Sherwood's design guidelines and standards. Here are some examples of the potential housing types.

Accessory Dwelling Unit (ADU)


Duplex

Townhouse

Standard Single-Family Detached

Cottage Cluster

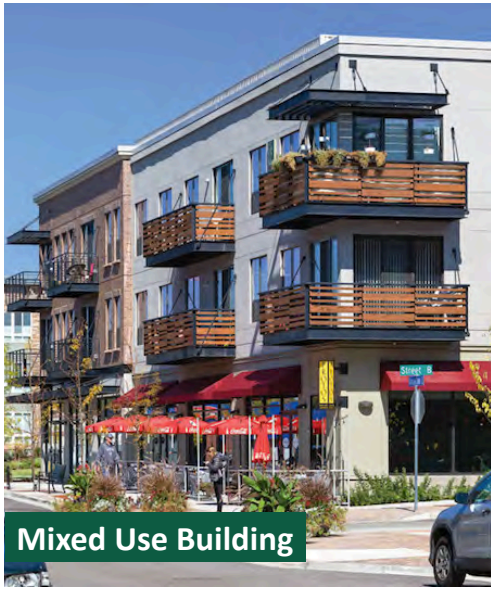
Small Single-Family Detached

Triplex

Fourplex

Apartments

Live-Work Unit



Mixed Use Building

Courtyard Apartment

DRAFT PLAN CONCEPTS

MIXED EMPLOYMENT AREAS

Sherwood wants and needs more jobs. Expanding existing businesses and attracting new employment to Sherwood—particularly the right kind of jobs in the right places—will: provide opportunities for industrial and commercial development with higher wage jobs; help diversify and balance the City's tax base; and build a self-sustaining and vibrant local economy.

A **thriving and diversified economy** is one of the six core areas of the Sherwood 2040 Comprehensive Plan. Over the past few years, the City has engaged hundreds of community members in conversations about what makes Sherwood special, and what Sherwood will look like in the future. Their voices helped to craft the following vision statement:

> ***"In 2040, the Sherwood economy has grown to include a variety of businesses big and small that offer stable employment opportunities, higher-wage jobs, and expand the tax base to protect and maintain Sherwood's quality of life. Sherwood provides great destinations and experiences for both residents and visitors."***

WHAT IS MIXED EMPLOYMENT?

Mixed Employment is where there is a mix of office, light industrial, and flex space[1] uses in the same development or area of the city. This type of development typically requires large sites (at least 40-50 acres), flat topography, and larger ownerships.

1 Flex space is generally defined as a building that provides for a combination of uses, typically including a mix of warehouse, light industrial, office, and/or retail space.

MIXED EMPLOYMENT: A RECIPE FOR SUCCESS

As part of the Sherwood West Concept Plan process, the project team studied regional development trends; evaluated Sherwood West's unique assets and constraints; and provided insights on the economic future of Sherwood West as a part of a growing Sherwood. The following components will be essential to the success of mixed employment in Sherwood West:

A MIX OF EMPLOYMENT USES

Candidate industries and employment uses for Sherwood West include:

- Multi-tenant flex space as part of a larger industrial or business park
- Tech clusters and tech parks
- Office space for tech, medical, and service-oriented industries
- Major healthcare facilities
- Wine-related uses such as storage, distribution, production, and warehousing
- Light industrial or light manufacturing

SITING REQUIREMENTS

There is a limited regional supply of high-quality buildable employment land. Ideal sites for this type of development will be:

- At least 40-50 acres for employment-park-style development; larger campus-style developments may require more than 100 acres
- Contiguous flat areas with less than 3-5% slopes
- Single ownerships are preferred to avoid delays associated with assembling land with multiple property owners

TRANSPORTATION ACCESS

Transportation considerations for Sherwood West include:

- Many employment uses—including warehousing, distribution, and major healthcare facilities—will require quick and easy access to Highway 99W
- Retail and commercial will require locations with higher visibility from major transportation routes
- Large employers tend to require robust auto, transit, bicycle, and pedestrian transportation infrastructure for their employees

MIXED EMPLOYMENT IN SHERWOOD WEST: AREAS FOR FUTURE STUDY

These following generalized areas have characteristics that meet the basic requirements for successful mixed use development. They are intended for future study and refinement as part of the concept planning process.

Approximate Acres: 285

Characteristics: large area, mostly flat, large parcels, good transportation access to Roy Rogers

Opportunities: large employment or business park; multi-tenant flex space; tech park

Approximate Acres: 6

Characteristics: high visibility along Highway 99, mostly flat, proximity to High School and existing

Opportunities: mixed-use node with retail

Approximate Acres: 55

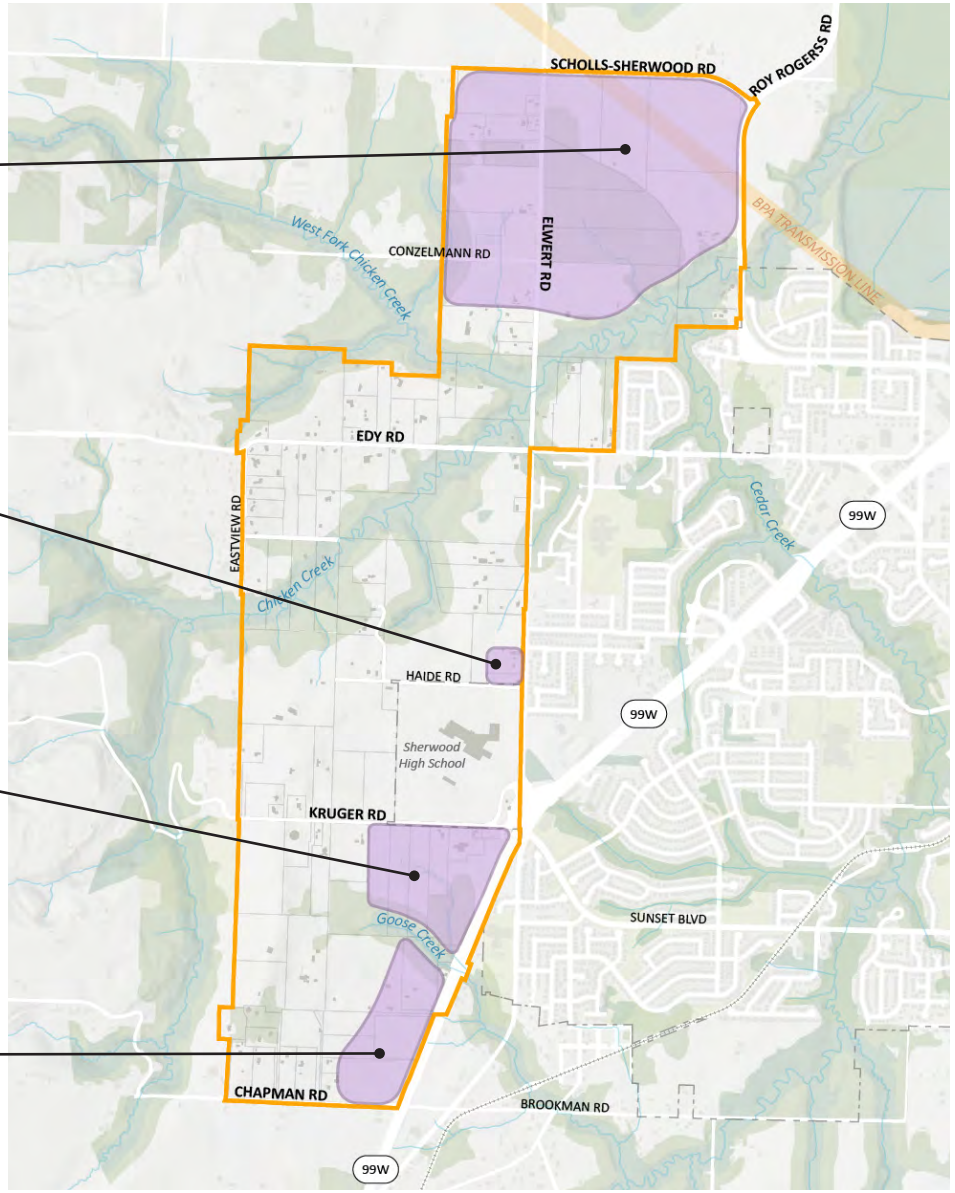
Characteristics: high visibility, good transportation access to Highway 99 at Kruger, some slopes and natural resource areas

Opportunities: multi-tenant flex space; healthcare or clinic; some retail or commercial; light industrial or manufacturing

Approximate Acres: 43

Characteristics: high visibility, good transportation access to Highway 99 at Chapman, mostly flat

Opportunities: multi-tenant flex space; possible warehousing or distribution, particularly for wine-related uses



DRAFT PLAN CONCEPTS

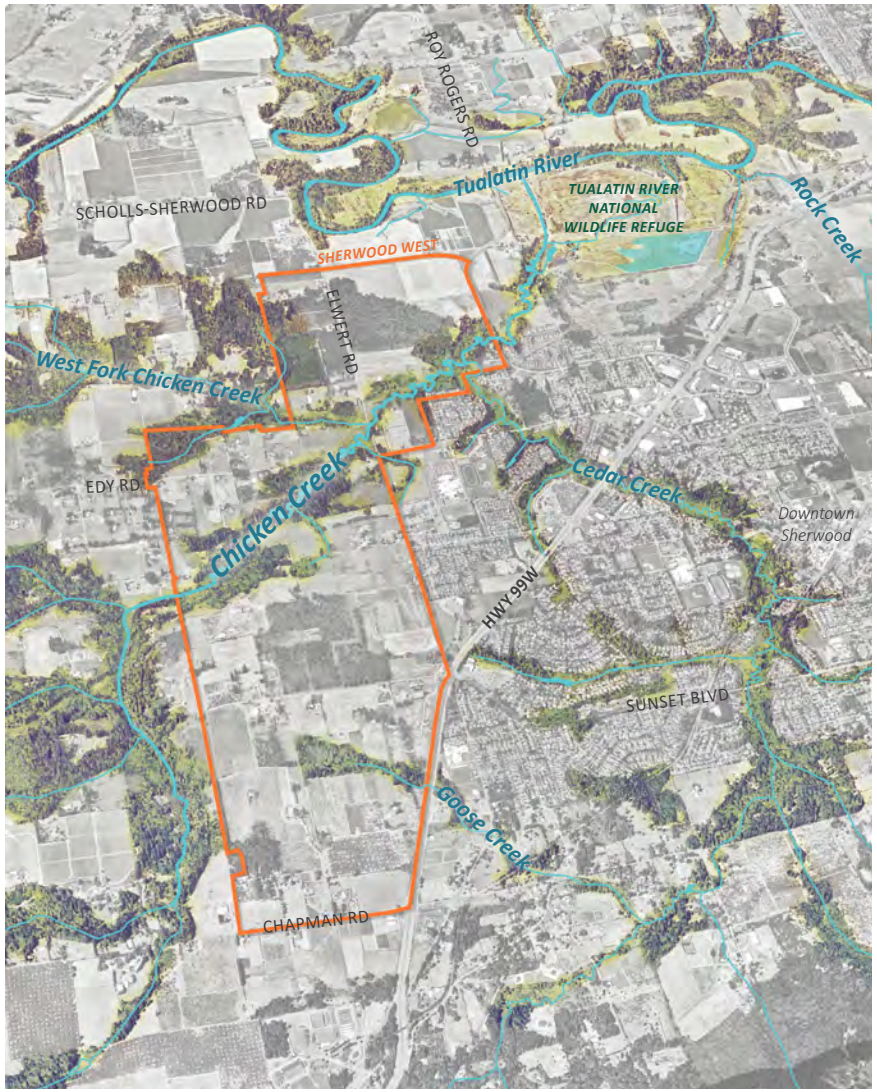
CHICKEN CREEK GREENWAY

A vital component of Sherwood's livability is its access to nature and open spaces. Sherwood's landscape is defined by the creek corridors that flow through the city and drain to the Tualatin River at the Tualatin River National Wildlife Refuge.

In Sherwood West, Chicken Creek forms a natural greenway through the area, flowing southwest to northeast and eventually draining into the Tualatin River. The Cedar Creek greenway, which passes through Sherwood just west of downtown, feeds into Chicken Creek in the northeast part of the study area. Several smaller channels—Goose Creek and West Fork Chicken Creek—also feed into Chicken Creek in the southeast and central portions of Sherwood West, respectively.

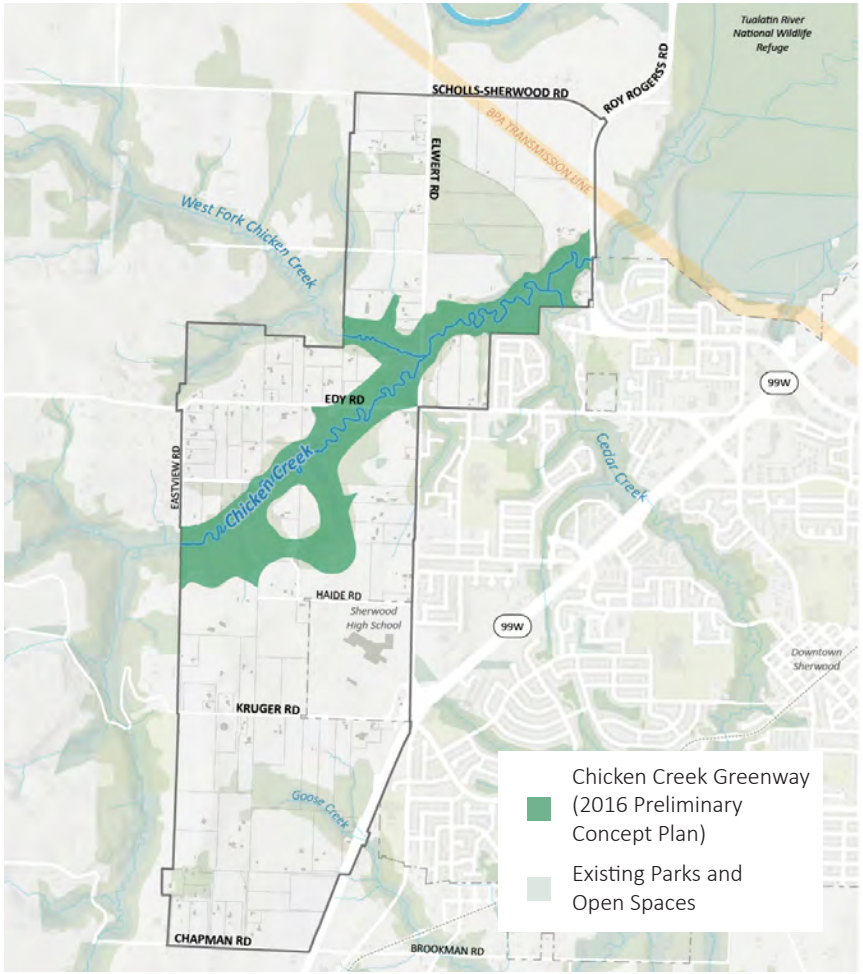
The Sherwood West Concept Plan offers an opportunity to preserve and enhance these natural corridors, provide wildlife crossings, incorporate stormwater management practices, and provide access to nature through a network of connected walking trails.

Fanno Creek / Photo Credit: Tree for All

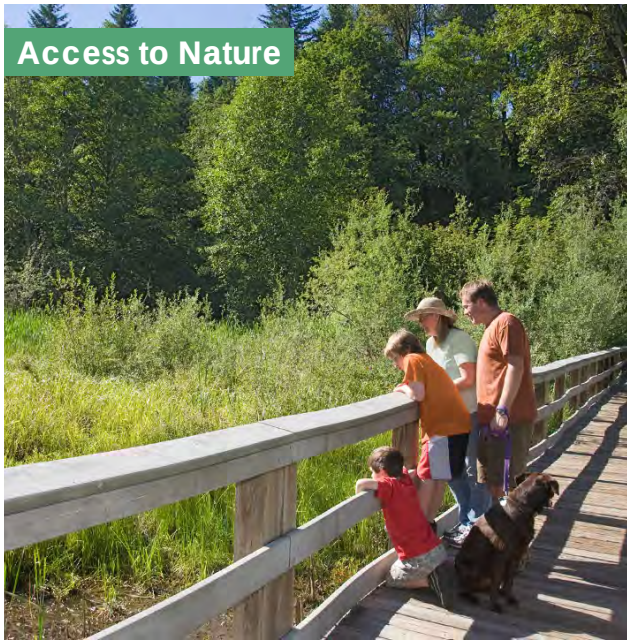


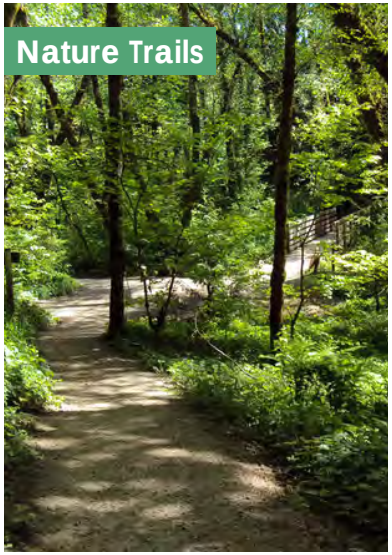
CHICKEN CREEK GREENWAY

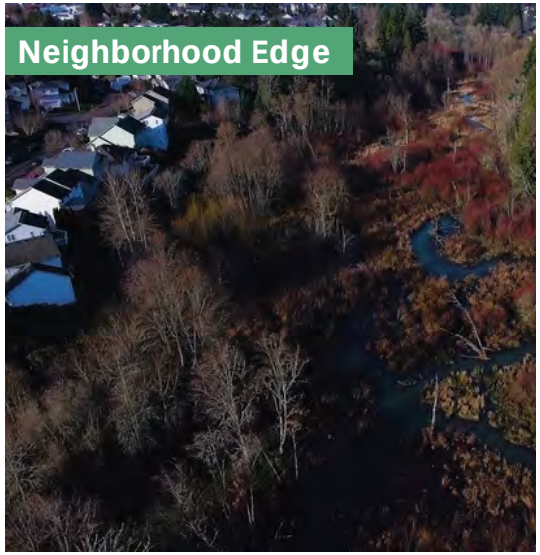
The 2016 Preliminary Concept Plan identified the Chicken Creek corridor as a key green space element of the plan. This concept planning process offers the opportunity to refine the 2016 vision for this area as the **Chicken Creek Greenway**. A greenway is a collection of natural areas, parks, and trails connected by a linear green corridor, often surrounding a creek. The Chicken Creek Greenway will incorporate the creek corridor as well as the surrounding riparian and upland habitat areas shown below. The Chicken Creek Greenway would be one part of Sherwood West's greenspaces. Other examples of greenspaces include: tree and tree canopy protected by Sherwood's code; West Fork Chicken Creek, Goose Creek, Cedar Creek, and their habitat areas; stormwater facilities; neighborhood parks, community parks, and school fields; and trail corridors. Neighborhood and community parks are addressed as part of the Great Neighborhoods plan concept.

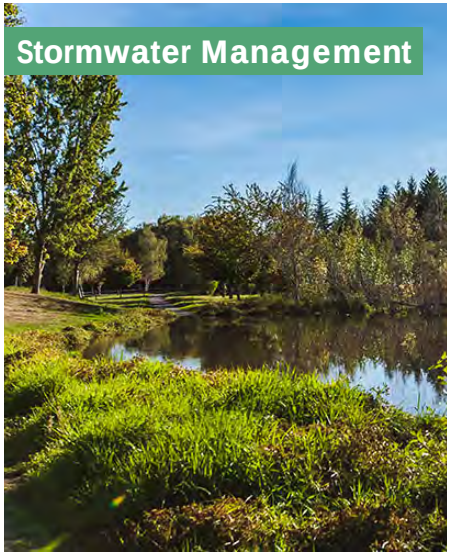


ELEMENTS OF A GREENWAY









GREENWAY PRECEDENTS

Location: Beaverton, OR

Amenities: paved trails, creek boardwalk, habitat restoration site, Moshofsky Woods Natural Area, regional trail connections

Location: Bethany, Washington County, OR

Amenities: paved trail, creek boardwalk, regional trail connections, wildlife habitat and viewing opportunities

Location: Beaverton, OR

Amenities: paved trails, benches, parking, wetlands, wildlife habitat and viewing opportunities, regional trail connections

APPENDIX J

Alternatives Evaluation Memo

ALTERNATIVES EVALUATION

TO: Sherwood West Community Advisory Committee and Technical Advisory Committee
FROM: Sherwood West Concept Plan Project Team
DATE: November 10, 2022

Introduction

This memorandum compares the three Concept Plan alternatives using the project goals and evaluation criteria. It is one part of five evaluation methods for the Concept Plan alternatives:

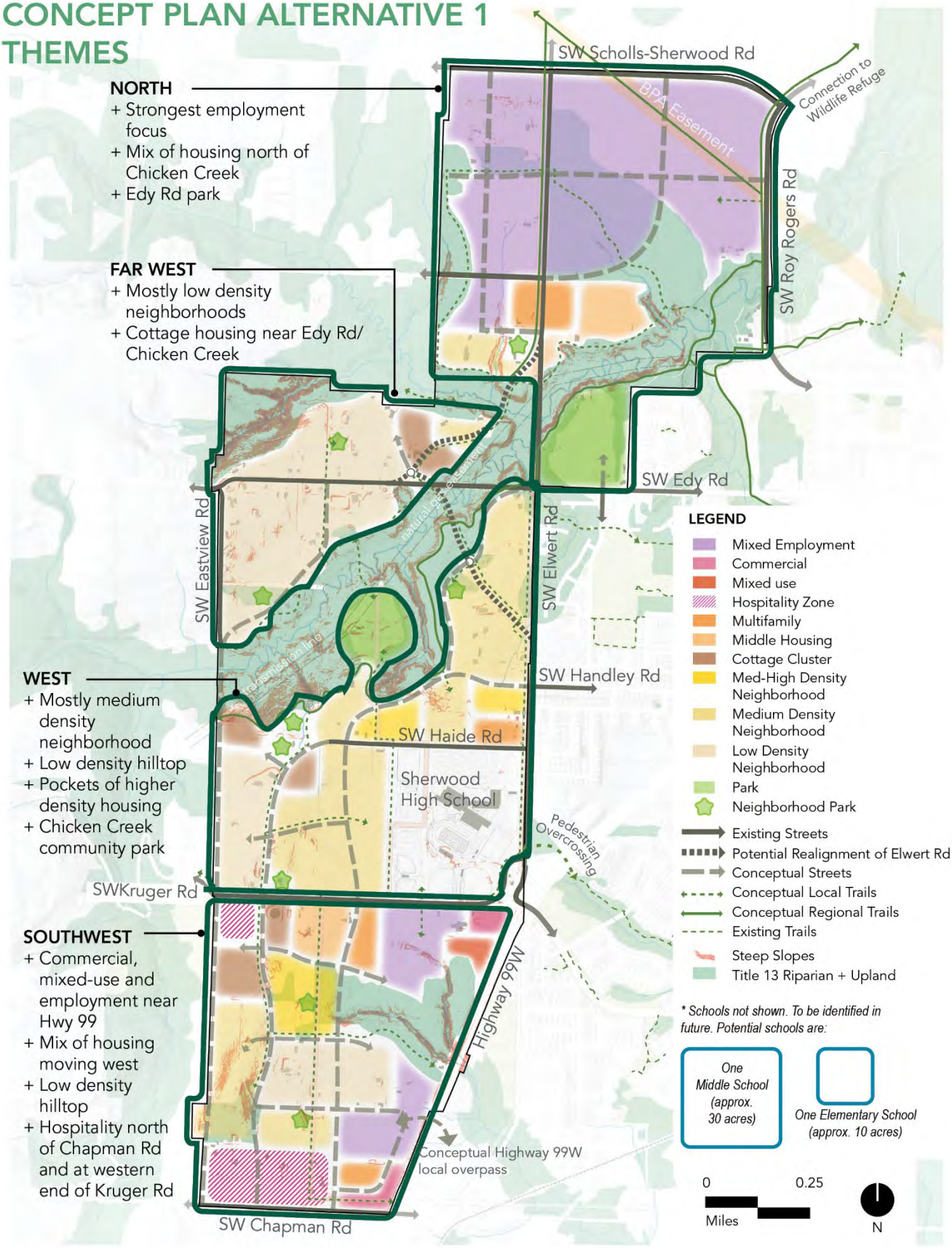
- Alternatives evaluation (this memo)
- Community feedback from Open House #2
- Community feedback from the online Open House #2
- Developer feedback from the Employment Opportunities tour and meeting
- Traffic impact analysis

Vision Statement

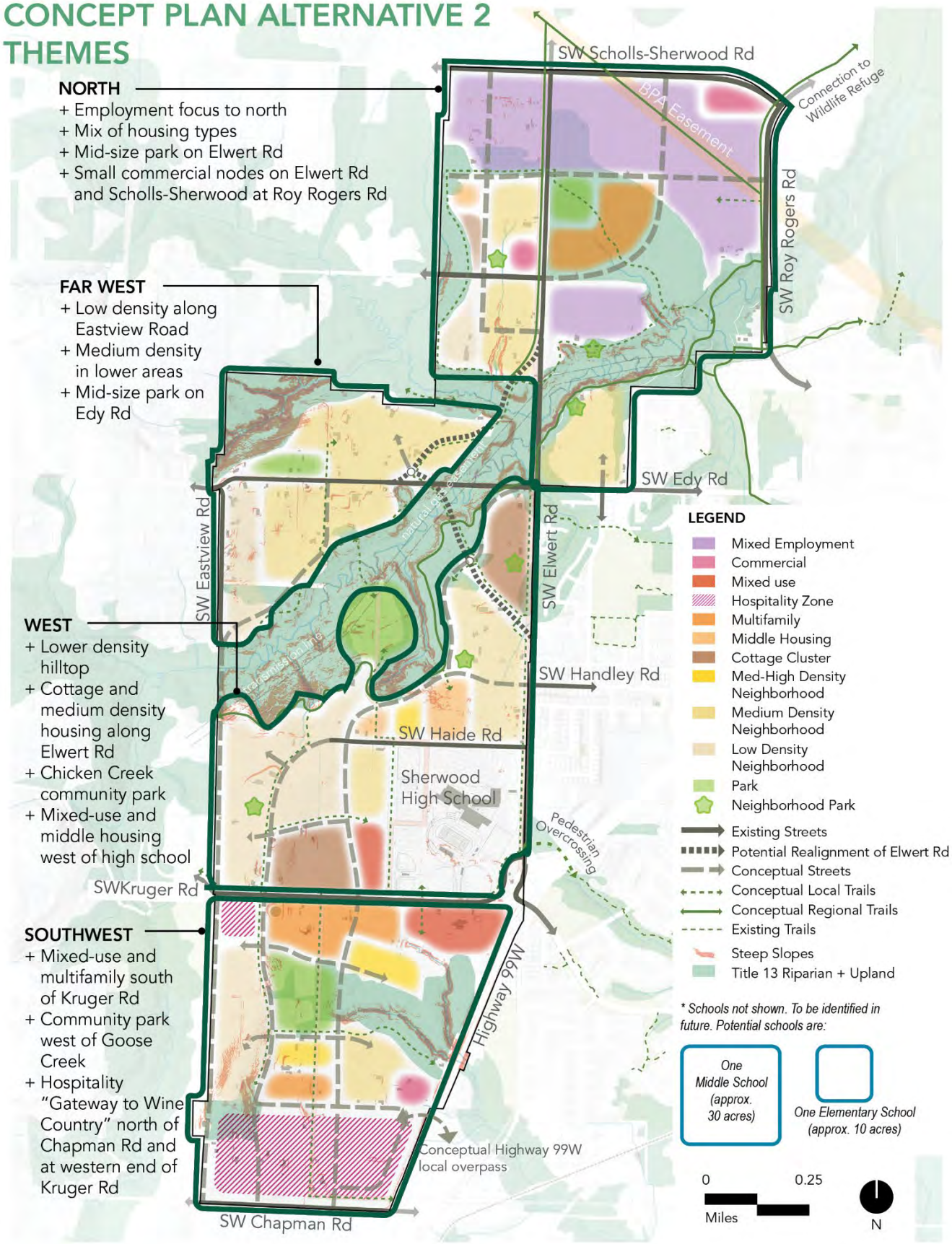
Sherwood West is a walkable community with a balanced mix of employment, residential, commercial, and greenspace land uses—it is a place where families can safely live, work, shop, and play. Sherwood West is home to a variety of businesses that offer stable, high-paying jobs and those employment opportunities have helped satisfy the City's need for an expanded tax base to protect and maintain Sherwood's great quality of life. Sherwood West is attractive to employers and residents because of its well-planned infrastructure, well-connected streets, walkable neighborhoods, and variety of well-designed housing choices. The area feels like a natural extension of Sherwood's existing neighborhoods, and it is integrated with other nearby urbanizing areas and regional destinations such as the Tualatin River National Wildlife Refuge. Sherwood West's natural landscape is anchored by the Chicken Creek Greenway, which protects the creek corridor and connects the area's neighborhoods through a network of natural areas, parks, and trails.

Concept Plan Alternatives (next pages)

CONCEPT PLAN ALTERNATIVE 1 THEMES

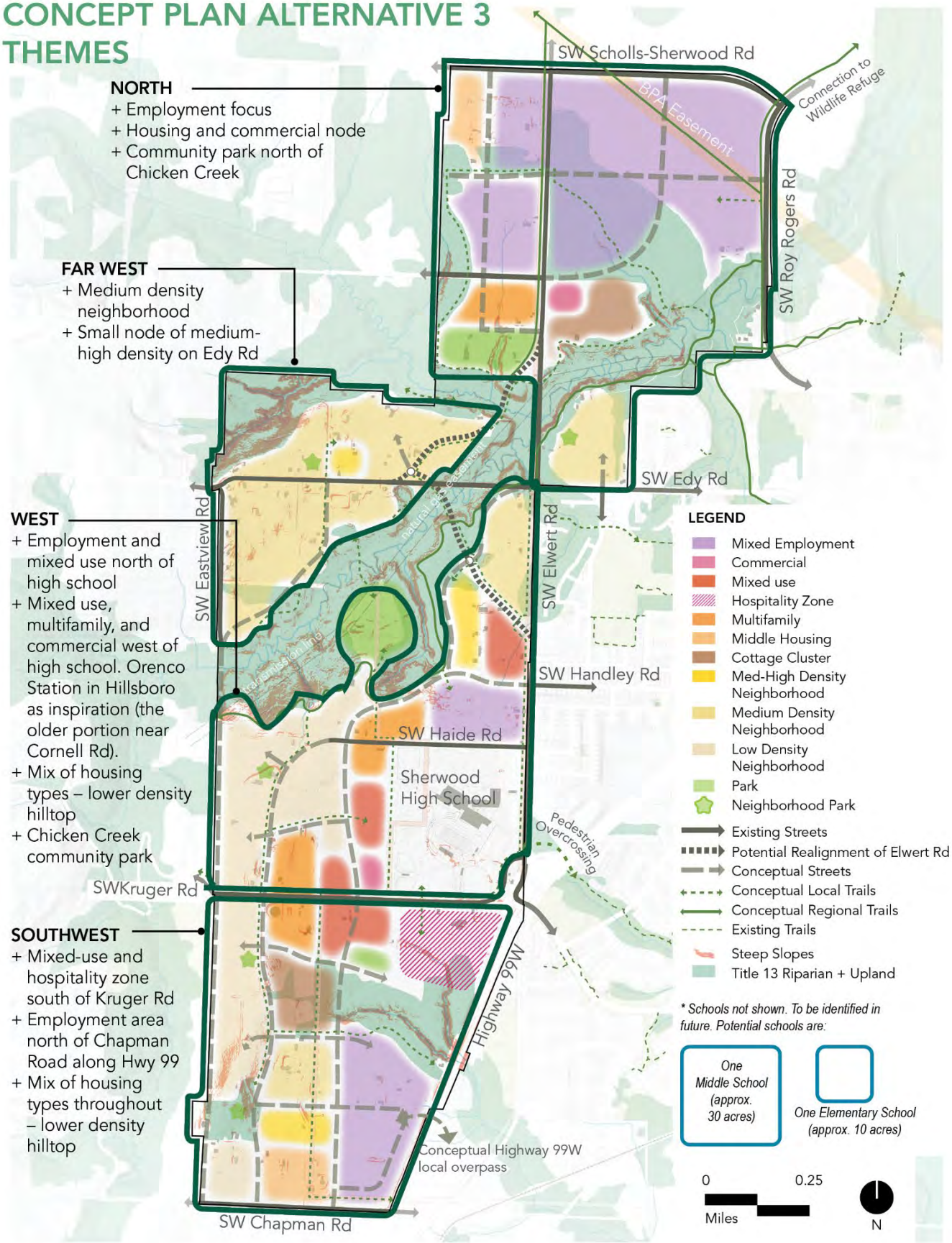


CONCEPT PLAN ALTERNATIVE 2 THEMES



SHERWOOD WEST CONCEPT PLAN

CONCEPT PLAN ALTERNATIVE 3 THEMES



Land Use Metrics

HOUSING ESTIMATES

The tables below present estimated housing units and densities based on the three land use alternatives. The acreages for each residential zone are based on acreage calculations from the maps. The assumptions regarding residential densities are consistent with previous housing metrics reviewed with the TAC/CAC, and are based on existing zone densities in the Sherwood Development Code. The tables present a range of potential housing unit outcomes, depending on how much middle housing is developed in the Neighborhood Zones (0-50%). *[NOTE: The "average density with open space" calculations assume an open space set-aside of 15%, integrated into development.]*

Alternative 1

	Density Range (Net)	Total Acres (Net)	*% of Residential Acres*	Total Housing Units (with % of Middle Housing in Neighborhood Zones) 0% MH	10% MH	20% MH	50% MH
Multi-Family	16.8 to 24	24	*7%*	585	585	585	585
Middle Housing Zone	5.5 to 11	22	*6%*	245	245	245	245
Cottage Zone	12.8 to 16	26	*7%*	421	421	421	421
Med/High Density Nbhd	5.5 to 11	31	*9%*	338	380	423	552
Medium-Density Nbhd	5.6 to 8	134	*38%*	1,068	1,295	1,522	2,203
Low-Density Nbhd	3.5 to 5	115	*33%*	574	804	1,033	1,722
TOTAL		**352**	***100%***	**3,231**	**3,730**	**4,230**	**5,728**
Total Average Density				*9.2*	*10.6*	*12.0*	*16.3*
Total Average Density with Open Space				*7.8*	*9.0*	*10.2*	*13.8*

Alternative 2

	Density Range (Net)	Total Acres (Net)	*% of Residential Acres*	Total Housing Units (with % of Middle Housing in Neighborhood Zones) 0% MH	10% MH	20% MH	50% MH
Multi-Family	16.8 to 24	44	*13%*	1,066	1,066	1,066	1,066
Middle Housing Zone	5.5 to 11	10	*3%*	113	113	113	113
Cottage Zone	12.8 to 16	33	*10%*	524	524	524	524
Med/High Density Nbhd	5.5 to 11	19	*6%*	214	241	268	350
Medium-Density Nbhd	5.6 to 8	107	*32%*	857	1,039	1,221	1,767
Low-Density Nbhd	3.5 to 5	123	*36%*	615	861	1,107	1,845
TOTAL		**337**	***100%***	**3,390**	**3,845**	**4,300**	**5,666**
Total Average Density				*10.1*	*11.4*	*12.8*	*16.8*
Total Average Density with Open Space				*8.5*	*9.7*	*10.8*	*14.3*

Alternative 3

	Density Range (Net)	Total Acres (Net)	*% of Residential Acres*	Total Housing Units (with % of Middle Housing in Neighborhood Zones) 0% MH	10% MH	20% MH	50% MH
Multi-Family	16.8 to 24	32	*10%*	776	776	776	776
Middle Housing Zone	5.5 to 11	20	*6%*	217	217	217	217
Cottage Zone	12.8 to 16	32	*10%*	505	505	505	505
Med/High Density Nbhd	5.5 to 11	21	*6%*	235	241	268	350
Medium-Density Nbhd	5.6 to 8	114	*35%*	913	1,039	1,221	1,767
Low-Density Nbhd	3.5 to 5	110	*33%*	550	861	1,107	1,845
TOTAL		**329**	***100%***	**3,196**	**3,639**	**4,095**	**5,461**
Total Average Density				*9.7*	*11.1*	*12.4*	*16.6*
Total Average Density with Open Space				*8.3*	*9.4*	*10.6*	*14.1*

EMPLOYMENT ESTIMATES

The tables below present estimated employment potential in Sherwood West, and associated jobs-to-housing ratios, based on the three land use alternatives. As in previous employment metrics calculations, the jobs-per-acre estimates are sourced from the Metro 2014 Urban Growth Report and from the scenario planning software Urban Footprint. The jobs-housing ratios are based on three potential housing scenarios, depending on how much middle housing is developed in the Neighborhood Zones (0%, 10% or 50%).

Alternative 1

	Total Acres (Net)	Jobs / Net Acre (est.)	Total Jobs	Percent of Jobs	% of Employment Acres
Mixed Employment	165	18	3,037	71%	66%
Commercial	10	36	366	9%	4%
Mixed Use	4	25	111	3%	2%
Hospitality	31	15	469	11%	12%
Schools	40	8	314	7%	16%
TOTAL	**251**		**4,297**	**100%**	**100%**

Alternative 1

	Middle Housing Scenario 0% MH	10% MH	50% MH
Total housing units	3,231	3,730	5,728
Total jobs	4,297	4,297	4,297
Jobs-Housing Ratio	**1.3**	**1.2**	**0.8**

Alternative 2

	Total Acres (Net)	Jobs / Net Acre (est.)	Total Jobs	Percent of Jobs	% of Employment Acres
Mixed Employment	111	18	2,050	45%	43%
Commercial	19	36	672	15%	7%
Mixed Use	25	25	638	14%	10%
Hospitality	63	15	938	20%	24%
Schools	39	8	306	7%	15%
TOTAL	**257**		**4,602**	**100%**	**100%**

Alternative 2

	Middle Housing Scenario		
	0% MH	10% MH	50% MH
Total housing units	3,390	3,845	5,666
Total jobs	4,602	4,602	4,602
Jobs-Housing Ratio	**1.4**	**1.2**	**0.8**

Alternative 3

	Total Acres (Net)	Jobs / Net Acre (est.)	Total Jobs	Percent of Jobs	% of Employment Acres
Mixed Employment	183	18	3,364	67%	65%
Commercial	8	36	278	6%	3%
Mixed Use	29	25	729	15%	10%
Hospitality	22	15	334	7%	8%
Schools	40	8	311	6%	14%
TOTAL	**281**		**5,017**	**100%**	**100%**

Alternative 3

	Middle Housing Scenario		
	0% MH	10% MH	50% MH
Total housing units	3,516	3,639	6,301
Total jobs	5,017	5,017	5,017
Jobs-Housing Ratio	**1.4**	**1.4**	**0.8**

Qualitative Evaluation

The tables on the next pages provide a qualitative evaluation of the three land use alternatives, using the evaluation criteria identified earlier in the concept planning process. The tables indicate the extent to which each alternative meets each criterion. The evaluation also assigns scores for each criterion using the rating system described below.

Score	Description
●	The alternative clearly supports the project objectives and/or is the best performing alternative if all alternatives support the objectives
◒	The alternative partially supports the project objectives and/or is the second-best choice if all alternatives support the objectives
○	The alternative does not support the project objectives or is the third-best choice if all alternatives support the objectives (i.e., it provides only a baseline level of performance)
N/A	The objective has no effect or does not apply

Goals, Criteria, and Evaluation

GOAL 1	EVALUATION CRITERIA
The area is designed as a natural extension of Sherwood and is integrated into the existing pattern of growth in order to preserve the community's heritage and small-town feel.	• *There is a balanced mix of office, industrial, commercial, and residential land uses and open spaces* • *A variety of housing options accommodates a diverse range of family structures, income levels, and lifestyles* • *Neighborhood retail nodes provide residents with walkable access to goods and services* • *Housing density and implementation is pragmatic* • *View corridors and separation from other cities contribute to Sherwood's unique identity*
All Alternatives	• All alternatives provide a variety of housing options. • All alternatives have significant new emphasis on jobs and a mixed use area near Kruger Road. • All alternatives provide about 70% of net residential acres in the lowest density categories (MDR and LDR) and the same approximate number of units, about 2000, in those zones (10% of which is assumed as middle housing). • Housing in the Middle Housing Zone is relatively low at 3-6 percent of residential land and 3-7 percent of total units. • View corridors and separation from Newberg and King City are the same for all alternatives.
Alternative 1 Score ●	• Mix of land uses – Alternative 1 has relatively large areas of the same or similar land use, except in the Southwest district. • Alternative 1 has the lowest number of Multi-family units at 585. • Alternative 1 has the highest number of Med/High Neighborhood Zone units at 380. • Two retail nodes: Kruger Road and Chapman (none north of Kruger). • Average density is 10.6 du/acre (9.0 with open space), assuming 10% middle housing in single dwelling zones.

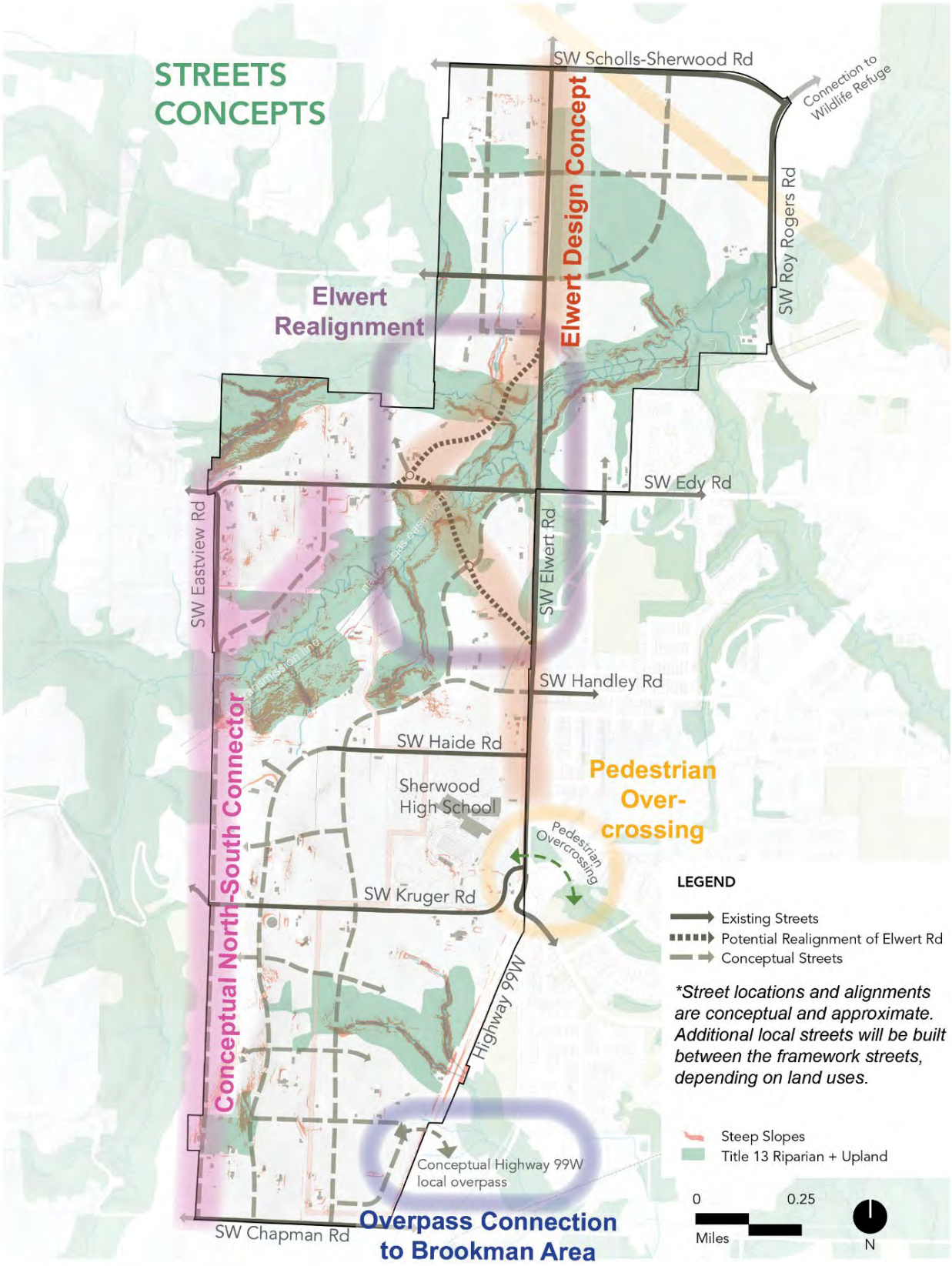
GOAL 1	EVALUATION CRITERIA
Alternative 2 Score ◒	• Mix of land uses – Alternative 2 has a greater mix of land uses is introduced into the North and West districts as compared to Alternative 1. • Alternative 2 has the highest number of Multi-family units at 1066. • Alternative 2 has the lowest number of Middle Housing Zone units at 113. • Alternative 2 has the highest number of Cottage Zone units at 524. • Three retail nodes: in the North, West, South districts. • Average density is 11.4 du/ac (9.7 with open space), assuming 10% middle housing in single dwelling zones.
Alternative 3 Score ◒	• Mix of land uses – Alternative 3 has a relatively high degree of mix, especially in the West district and Kruger Road area. • The mixed use and employment north of the High School is different from Alternatives 1 and 2, which have residential uses in that area. • Alternative 3 is in the middle of the range for Multi-family units at 776. • Alternative 3 has relatively high amount of Cottage Zone units at 505. • Three retail nodes: North, West (Handley Road), West/Southwest (Kruger Road). • Average density is 11.3 du/ac (9.4 with open space), assuming 10% middle housing in single dwelling zones.
Summary	The main difference for this criterion is the mix and variety of land use across the alternatives. Alternative 1 is the most similar to existing Sherwood due to prevalence of residential uses and slightly lower density. Alternative 2 can be seen as a plan for an evolving Sherwood, where residential land use is dominant, more housing choices are introduced over the next 10-40 years, and neighborhood character is guided by design regulations. Alternative 3 has the most marked differences from existing Sherwood. The percentage of Multi-family housing is also a key variable, ranging from 585 units (Alt 1) to 776 units (Alt 2) to 1066 units (Alt 3). The full circle score for Alternative 1 is based on it being most similar to existing Sherwood, per the goal. Alternatives 2 and 3 provide more housing types and choice.

GOAL 2	EVALUATION CRITERIA
The area attracts a variety of businesses and employment opportunities, which help satisfy the City's need for an expanded tax base.	• *Infrastructure is well-planned to make Sherwood West attractive to developers and large employers* • *There are large low-impact employment areas available for the growth of technology parks and other higher-wage jobs* • *There are opportunities to leverage the area's unique location for destination retail, hospitality, and visitor-related uses*
All Alternatives	• Infrastructure planning is similar for all three alternatives. • Per the City's initial analysis, the West subdistrict is the most readily served with infrastructure. However, the City could prioritize infrastructure funding to serve other land sooner. Further analysis is required. • All alternatives would add significant amounts of new employment lands to the City of Sherwood, including larger sites for technology parks in the North district. • All alternatives include land designated for a new Hospitality Zone, with the intent to leverage the area's unique location for destination retail, hospitality and visitor-related uses.
Alternative 1 Score ●	• Alternative 1 has the second highest amount of Mixed Employment land, 163 acres, focused in the North District. • Commercial, Mixed-Use, and Hospitality lands total 86 acres. • The Hospitality Zone lands are in upland properties with scenic views along Chapman Road and the west end of Kruger Road.
Alternative 2 Score ●	• Alternative 2 has significantly less Mixed Employment land, 111 acres, focused in the northern area of the North district. • Commercial, Mixed-Use, and Hospitality lands total 146 acres – highest of the alternatives. • The Hospitality Zone lands along Chapman Road have visibility from Hwy 99 and continue west to upper, scenic view properties.

GOAL 2	EVALUATION CRITERIA
Alternative 3 Score ●	• Alternative 3 has the largest amount of Mixed Employment land, 183 acres, focused in the North district and Southwest district along Hwy 99. • Commercial, Mixed-Use, and Hospitality lands total 98 acres – slightly higher than Alternative 1. Employment uses are located on the west and north side of the High School, which is unique to this alternative. • The Hospitality Zone is focused at the Kruger/Hwy 99 node and there are no Hospitality Zone lands at Chapman Road as there are with the other alternatives.
Summary	All three alternatives support the Goal 2 and would significantly increase the employment land supply in Sherwood. At 250-280 total acres, employment lands comprise about 40% of the net buildable land supply in Sherwood West. The alternatives have different locational emphasis for different employment sectors. Alternatives 1 and 3 emphasize use of the North district for Mixed Employment. All alternatives include mixed use and other commercial opportunities along Kruger Road, with Alternative 3 extending that concept around the High School. A focus on Hospitality land along Chapman Road is in Alternatives 1 and 2. The equal scoring above is based on excellent fulfillment of the goal by all alternatives - the alternatives simply achieve that outcome in different ways. The differences between the alternatives are related more to land use compatibility, how much Mixed-Use and Commercial lands could be supported, and preferences for the location of the Hospitality Zone.

GOAL 3	EVALUATION CRITERIA
Transportation facilities serve to connect, rather than divide, neighborhoods.	• *A network of streets provides north-south connections to and through the area* • *The Concept Plan helps realize the opportunity for a Highway 99 pedestrian crossing* • *Streets are designed to balance accommodating vehicle traffic and parking while also being welcoming places for people*

GOAL 3	EVALUATION CRITERIA
	• *Streets are designed with consideration for safety and emergency response vehicles* • *Sherwood is "transit-ready" for future transit service*
All Alternatives	*Note: A traffic impact analysis is being prepared and will provide information needed for assessment of this goal. Initial results from the analysis will be presented at the TAC and CAC meetings.* • The same street network is common to all alternatives (see map on next page). • All alternatives support the future opportunity for a Highway 99 pedestrian crossing. • The alternatives all emphasize the same priority for safety, managing traffic, and making streets places for people. • Transit routing is an unknown at this point. From a land use perspective, Alternative 3 may be the most transit supportive due to the land use patterns in the West district.
Summary	This evaluation is unscored because the transportation recommendations are the same for all alternatives and a traffic impact analysis is underway.

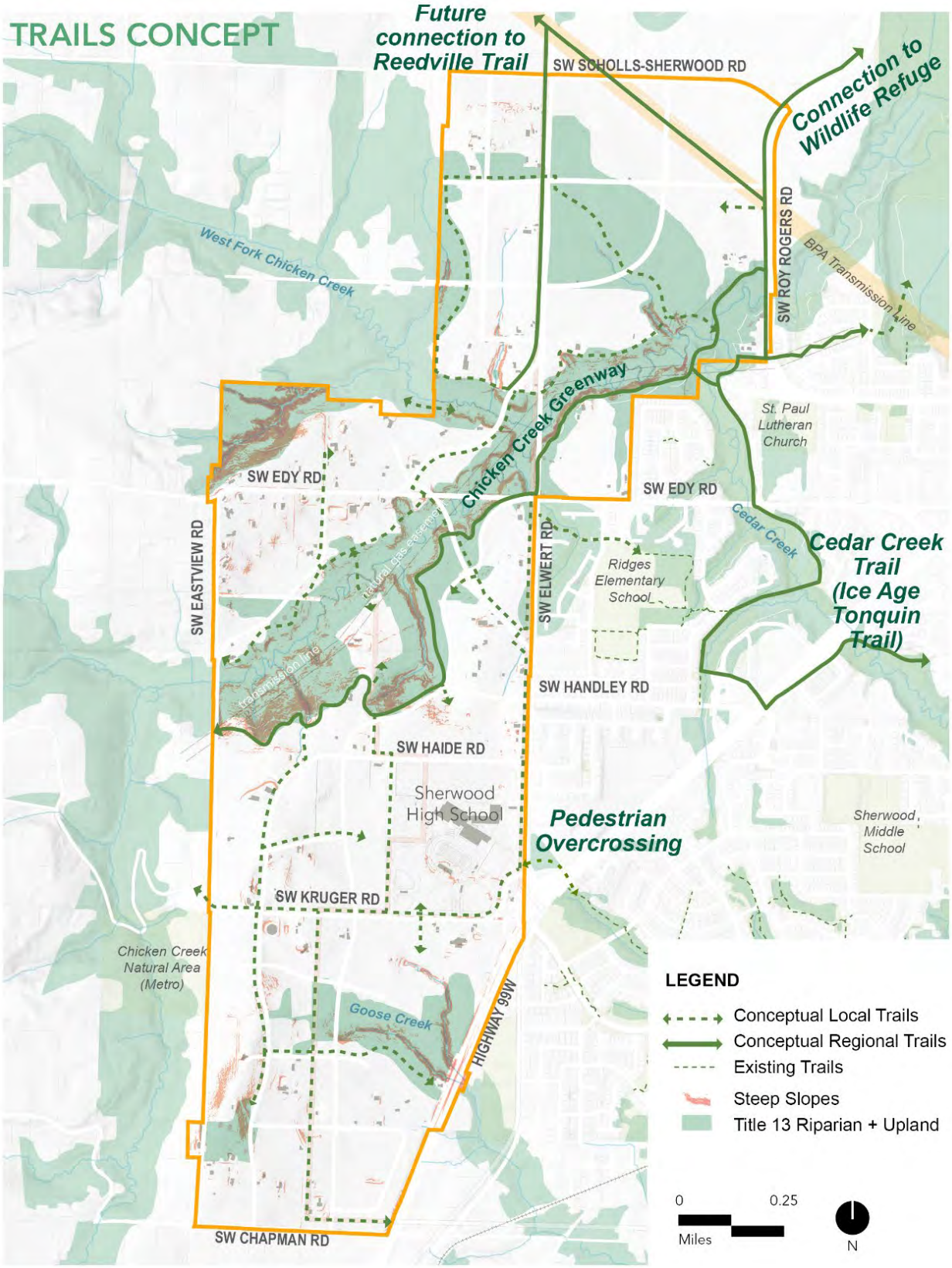


SHERWOOD WEST CONCEPT PLAN

GOAL 4	EVALUATION CRITERIA
Residents have access to a variety of parks and natural areas, anchored by the Chicken Creek Greenway.	• *The Chicken Creek corridor is protected* • *Creek connections to the Tualatin River National Wildlife Refuge are preserved and, where possible, enhanced* • *Residents have access to nature through a network of multi-use and soft-surface trails* • *Parks and natural areas serve as places where families and community members can gather together* • *Existing mature trees and areas of dense tree canopy are preserved where feasible*
All Alternatives	• Protection of the creek corridor and riparian/upland habitat areas is built into all three land use alternatives. The Chicken Creek Greenway is one of the key plan concepts for Sherwood West and will provide access to nature and trail connections for future residents and visitors. • The proposed realignment of Elwert and Edy Roads will reduce the impact of infrastructure improvements (road widening) on sensitive creek confluences. The realigned roadway will cross two Chicken Creek tributary streams at the narrowest points in order to reduce or eliminate wetland mitigation issues. The realignment also eliminates the excessive fills within the SW Elwert/SW Edy Road intersection and follows the existing terrain. This will require construction of structural bridging and acquisition of right-of-way. • The trails concept is the same for all three alternatives (see page 18). This includes a regional trail connection to the Tualatin River National Wildlife Refuge. It also includes a conceptual network of local trails, multi-use paths, sidewalks, and bike lanes through neighborhoods to connect residents with parks, schools, employment areas, and other local destinations. • All three alternatives include two community parks (10-20 acres each) as well as neighborhood parks (2-5 acres) integrated throughout Sherwood West neighborhoods. Future parks will be consistent with policies and guidelines in the recently-updated Sherwood Parks & Recreation Master Plan. Natural areas and open space dedicated through development will provide additional green space. • Existing mature trees and tree canopies will be preserved through Metro Title 13 habitat protections and through application of the Sherwood Development Code's tree preservation standards.

GOAL 4	EVALUATION CRITERIA
Alternative 1 Score ◒	• Alternative 1 has an estimated 43 total acres of parks (community and neighborhood parks).
Alternative 2 Score ●	• Alternative 2 has the most park acreage, with an estimated 55 total acres.
Alternative 3 Score ◒	• Alternative 3 has the least park acreage, with an estimated 37 total acres.
Summary	All three alternatives provide strong support for these evaluation criteria by emphasizing preservation of natural areas and access to parks and nature. The three alternatives each locate one community park in the area south of Chicken Creek, surrounded by resource land. The main distinguishing features between the alternatives are the locations of the second community park and total park acreage. Alternative 2 was given the highest score because it provides the most park acreage—thereby providing the greatest access to recreation, nature, and community gathering space for residents.

GOAL 5	EVALUATION CRITERIA
The area is served by a robust network of active transportation options that are integrated into Sherwood's existing network.	• *Residents can easily walk or bike to access local destinations such as schools, parks, employment areas, and shopping centers* • *Active transportation facilities connect to existing Sherwood neighborhoods and nearby regional destinations* • *Students have safe options to walk or bike to school*
All Alternatives ●	• The trails concept is the same for all three alternatives (see next page). This includes a conceptual network of local trails, multi-use paths, sidewalks, and bike lanes through neighborhoods to connect residents with parks, schools, employment areas, and other local destinations. Trails connecting to local destinations will help to encourage walking, rolling, and biking. • The trails concept includes key connections between new growth in Sherwood West and existing areas of Sherwood—such as such as future connections to the Reedville Trail, the Tualatin River National Wildlife Refuge trails, Ice Age Tonquin Trail/Cedar Creek Trail, and the future Highway 99 pedestrian overcrossing. • School locations are not identified in the alternatives maps. However, safe routes to school will be an important consideration in the siting of future schools in Sherwood West, and in planning trail and sidewalk connections between neighborhoods and schools.
Alternative 1 Score	• N/A
Alternative 2 Score	• N/A
Alternative 3 Score	• N/A
Summary	All alternatives support these criteria equally, as described above.



SHERWOOD WEST CONCEPT PLAN

GOAL 6	EVALUATION CRITERIA
Growth and development are well-planned and implementation of the area is pragmatic.	• *The extension of public facilities and services are phased and coordinated with development* • *Land uses serve Sherwood's needs and are complementary to other expansion areas along the western Urban Growth Boundary*
All Alternatives	• Extension of public facilities is a critical issue for Sherwood West regardless of the land use alternative. • Infrastructure phasing and funding will be further explored after a preferred land use alternative is selected. • Considering the capability of extending existing public facilities and constructing needed new infrastructure to serve the Sherwood West area, areas north and south of the high school and close to SW Elwert Road, are the most logical areas for development to occur first. • The City may consider new annexation policies based on a phasing plan for development within Sherwood West. The annexation policies could consider priority areas to provide an orderly and efficient transition from rural to urban land uses to ensure public infrastructure needs are met to provide homes and jobs in Sherwood West. These ideas will be further fleshed out in the infrastructure phasing/funding task.
Alternative 1 Score ●	• Alternative 1's land uses generally serve Sherwood's needs by providing a mix of housing, employment, and commercial uses. • The Hospitality Zone concept is a new idea for Sherwood and would provide intentional locations for uses such as hotels/motels, restaurants, wineries, and similar uses. Because it is untested, it is unknown how effective it will be in serving Sherwood's needs. Alternative 1 has a moderate amount of Hospitality zoning (roughly 31 acres) located on Chapman Rd and at the west end of Kruger Rd. • Land uses in the Southwest district closest to the Brookman expansion area include a mix of commercial, mixed employment, and multi-family zoning. This complements the planned commercial, office and light industrial zoning for the western portion of the Brookman area.

GOAL 6	EVALUATION CRITERIA
Alternative 2 Score ◒	• Alternative 2's land uses also serve Sherwood's needs by providing a mix of housing, employment, and commercial uses. • Alternative 2 has the greatest amount of Hospitality zoning (roughly 63 acres), occupying about a third of the Southwest district. • Land uses in the Southwest district closest to the Brookman area include commercial and hospitality uses. These uses are relatively compatible with the planned zoning for the western portion of the Brookman area.
Alternative 3 Score ●	• Alternative 3's land uses also serve Sherwood's needs by providing a mix of housing, employment, and commercial uses. • Alternative 3 has the most modest amount of Hospitality zoning (roughly 63 acres), located at the intersection of Highway 99 and Kruger Rd. • The eastern portion of the Southwest district closest to the Brookman area is exclusively designated as mixed employment. This use may be the most complementary to the planned zoning for the western portion of the Brookman area.
Summary	All three alternatives will extend public facilities as part of development and will be phased primarily based on different areas' proximity to existing facilities. All three alternatives include land uses that serve Sherwood's needs. However, the Hospitality Zone is the newest concept, and its practicality is not yet known. Therefore, alternatives that de-emphasize hospitality zoning (Alternatives 1 and 3) may be more pragmatic for implementation, consistent with the goal. The conclusion is very subjective – the City should continue to study the Hospitality Zone concept and include it in its economic development efforts.

APPENDIX K

Developer Tour Summary

Sherwood West Re-Look

Developer Tour Notes

Date	October 26, 2022
To	Erika Palmer, City of Sherwood
From	Chris Zahas, Leland Consulting Group
CC	Joe Dills, MIG

On October 24, 2022, the City of Sherwood hosted a driving tour of the Sherwood West Concept Plan area with invited guests from the development and brokerage community. The purpose was to gather insights about the area and the draft plan concepts from development practitioners and to provide implementation advice as the plan moves toward completion. The tour route included a loop through the main existing arterials in the study area with stops to discuss key opportunity areas such as the planned industrial zone at the north end and the mixed-use commercial area near the high school. Following the tour, the group met at Sherwood City Hall to debrief and discuss implications.

The tour included the following participants:

- Erika Palmer, Planning Manager, City of Sherwood
- Bruce Coleman, Economic Development Manager, City of Sherwood
- Joy Chang, Planner, City of Sherwood
- Chris Zahas, Managing Principal, Leland Consulting Group
- Stu Peterson, Broker, Macadam Forbes
- Eric Sporre, Vice President, PacTrust
- Kirk Olsen, Principal, Trammell Crow
- Matt Grady, Vice President, Gramor Development

Following is a summary of the key comments heard during the tour, organized into general themes.

Zoning and Land Use

- Sherwood's E-I zone is a good one. It's flexible and doesn't restrict by tenant use unlike some zones in neighboring cities. Avoid the types of use restrictions found in Tualatin's Basalt Creek industrial zone.
- Office development is unlikely in Sherwood West.
- The region is virtually out of industrial land today. New inventory is needed as soon as possible to accommodate job growth.
- Industrial development at the north end of Sherwood West could be developed as soon as the land is brought into the UGB and utilities are available.
- Likely industrial uses would be multi-tenant buildings in the 50,000-70,000 square foot range. Given the distance to I-5, it is not likely that large distribution facilities would consider this area, but there are plenty of smaller miscellaneous industrial users who would be attracted to it.
- Some support retail would make sense in this area, but zoning requirements that the retail be in direct support of the industrial use can be a challenge to work with. Typically, a developer would need a minimum of 35,000 square feet of retail to make a center viable.
- The hospitality zone needs a destination use to make it viable if it's not visible from or directly located in 99W.
- A wine-themed destination would best be built off of an existing working winery, although offsite tasting rooms are becoming popular.

- Sloped sites or sites at a higher grade than the adjacent street lend themselves better to housing than retail uses.
- Structured parking is necessary to get true commercial density and can be viable with parking rates at $2 per hour.

Infrastructure

- Roads with utilities are critical to setting the stage for private development. Consider it backbone infrastructure that is a prerequisite to getting development underway.
- Get a wetlands inventory done soon so that potential issues are known early on.
- The high school is not yet on sewer, but when it is installed in 2025, that part of the study area will open up for development.

Implementation and Funding

- It is a challenge for developers to front load all infrastructure when they do not always get credit for it and/or they may not get reimbursed by future developers before they expire.
- A detailed infrastructure funding strategy is needed.
- Urban renewal can be a very good tool for funding infrastructure.
- Sherwood has a good brand image, and employers are attracted to the small-town image, good schools, and quality of life.
- Locating a public facility like city offices or a police or fire station in the study area could jumpstart development.

APPENDIX L

Transportation Impact Analysis

DKS 720 SW WASHINGTON STREET, SUITE 500, PORTLAND, OR 97205 • 503.243.3500 • DKSASSOCIATES.COM

TRANSPORTATION IMPACT ANALYSIS MEMO

DATE: January 5, 2023

TO: Joe Dills, Kate Rogers | MIG
Erika Palmer, Joy Chang | City of Sherwood

FROM: Carl Springer, Amanda Deering, Alex Haag | DKS Associates

SUBJECT: Sherwood West Concept Plan Traffic Impact Analysis Project #21057-000

INTRODUCTION

The Sherwood West Re-Look project will prepare a concept plan for the 1,291-acre Sherwood West area by updating the Sherwood West Preliminary Concept Plan. The Preliminary Plan, which was approved by the Sherwood City Council in 2016, was developed as a long-range planning tool to help guide future community discussions and decisions about the City's long-term growth. The purpose of the Sherwood West Re-Look project is to take another look at the Sherwood West area to address new land use and growth patterns, new transportation plans, new State rules related to housing, and new opportunities for employment and economic growth.

This memorandum summarizes the preliminary findings regarding the transportation impacts of the Sherwood West Concept Plan (Concept Plan) project and transportation network upgrades contemplated for the Plan Area. This memorandum includes:

- Estimated trip generation of the three land use alternatives
- Discussion of potential transportation network changes being contemplated in the Concept Plan, including the realignment of Elwert Road and evaluation of a parallel north-south connector route from Chapman Road to Edy Road.

  Note: the north-south connector is not a site-specific proposal. It is a connectivity concept for further study. The memorandum is an initial evaluation of a conceptual connection between Chapman Road and Edy Road.
- Discussion of expected traffic growth in Plan Area
- Initial system performance review on major roadways and at two key study intersections

STUDY AREA AND LAND USE ALTERNATIVES

The Concept Plan Area, illustrated in **Figure 1**, is bounded by Scholls-Sherwood Road to the north, Roy Rogers Road and OR 99W to the east, Chapman Road to the south, and Eastview Road to the west.

Three land use alternatives for the Concept Plan Area are being developed as part of the Concept Plan Re-Look (**Appendix A**). Land use Alternative 1 has the highest proportion of medium/high-density neighborhood land use of the three alternatives and less cottage zoning and multifamily than the other alternatives. Alternative 2 has the highest proportion of multifamily land use and less middle housing zone than the other two alternatives. In terms of employment acres, Alternative 1 has fewer mixed-use acres than the other two alternatives. In comparison, Alternative 2 has fewer mixed-employment acres but more commercial and hospitality land-use acres than the other two alternatives.

A breakdown of the total jobs and housing units for the three alternatives is summarized in **Table 1**. While the alternatives vary regarding the proportion and location of housing types, all three offer a comparable number of total housing units. For total jobs, Alternative 3 provides the highest number of total jobs, and Alternative 2 provides the least.

TABLE 1: HOUSING METRICS AND JOBS SUMMARY

CATEGORY	CONCEPT PLAN ALTERNATIVES		
	ALT 1	ALT 2	ALT 3
TOTAL HOUSING UNITS	3,730	3,845	3,635
TOTAL JOBS	5,245	4,600	5,020

Note: values rounded to the nearest multiple of 5

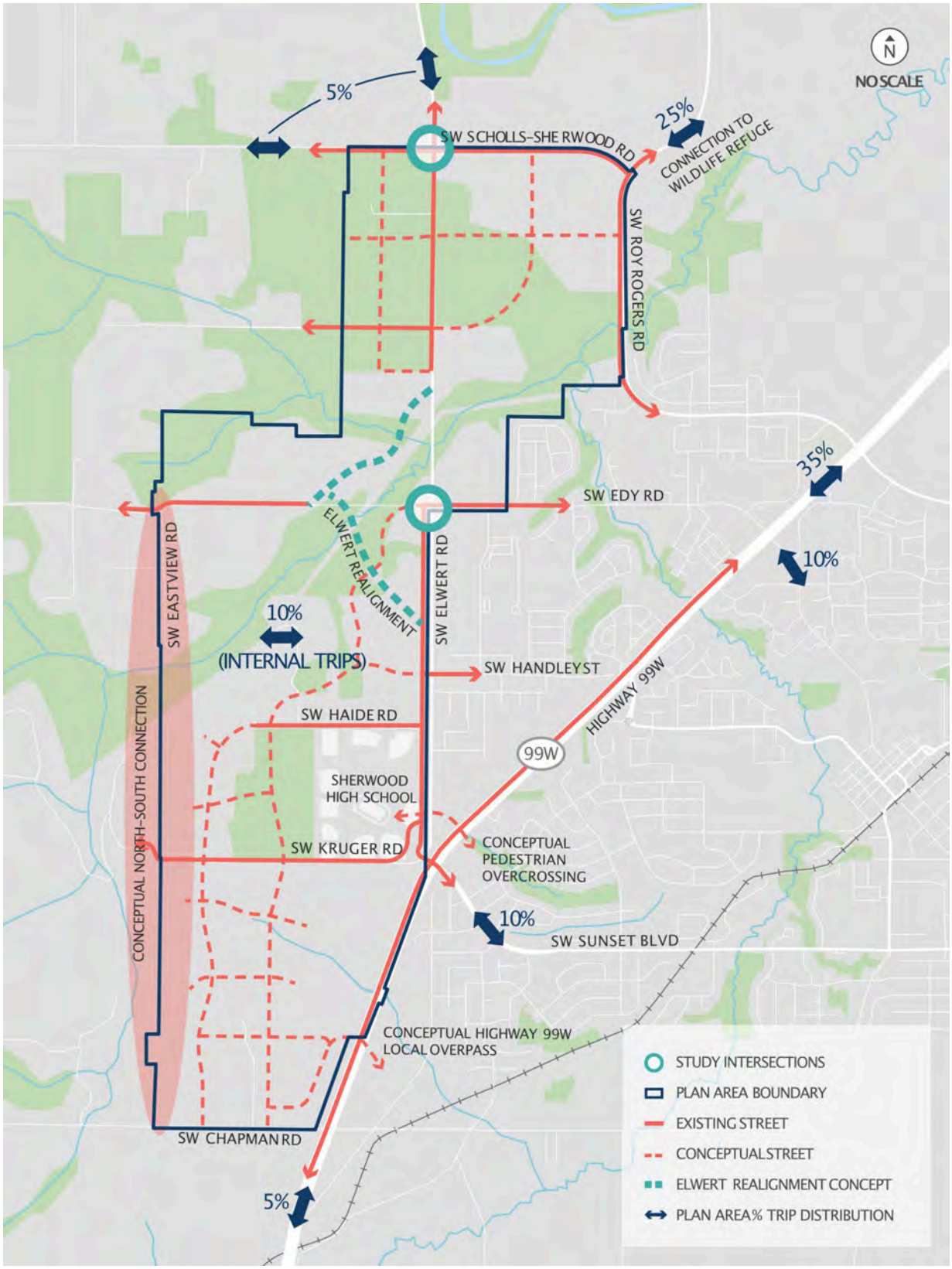


FIGURE 1: PLAN AREA AND TRIP DISTRIBUTION

PLAN AREA TRAVEL FORECAST

VEHICLE TRIP GROWTH ESTIMATE

Trip generation for the three land use alternatives is estimated based on the Westside Travel Demand Model and the number of the expected housing units and jobs provided by each alternative. Summarized in **Table 2**, all three land use alternatives are expected to generate a similar number of vehicle trips when the area is fully developed. The values reported in **Table 2** are total vehicle trips during the 2-hour PM peak period. The magnitude of vehicle trips is comparable to the number of anticipated trips estimated by the previously completed Urban Reserve Transportation Study (URTS) for this area. By way of comparison, the URTS assumed land uses included a higher level of households (6,495) and minimal jobs (545) within the planning area.

TABLE 2: VEHICLE TRIPS DURING 2-HOUR PM PEAK PERIOD

	ALT 1	ALT 2	ALT 3	URBAN RESERVE TRANSPORTATION STUDY
TOTAL VEHICLE TRIPS (2-HOUR PM PEAK)	6,040	6,725	6,780	6,470

Note: values rounded to the nearest multiple of 5

REGIONAL TRIP PATTERNS

Regional trip patterns for the Plan Area were estimated using the Westside Travel Demand Model to help understand the primary travel directions for trips that start or end in Sherwood West. As shown in **Figure 1**, most Plan Area travel demand is to/from the northeast of the Plan Area, either on Roy Rogers Road, OR 99W, and to/from the east on Tualatin-Sherwood Highway. Approximately 60% of vehicle traffic that begins or ends within the planning area will use these three routes. About 30% of travel demand crosses OR 99W to/from the rest of the City of Sherwood, while only 5% is to/from south of the Plan Area via OR 99W, and 5% is to/from northwest of the Plan Area on Lebeau Road and Scholls Sherwood Road. The analysis also showed that about 10% of traffic remains internal to the Plan Area, meaning that the trips start and end within the planning area.

STREET NETWORK AND CONCEPTUAL STREET ALTERNATIVES

Several transportation network improvements were considered as part of the Preliminary Sherwood West Concept Plan and others as part of this subsequent analysis, including:

- The realignment of Elwert Road west of Chicken Creek.
- A conceptual north-south connection between Chapman Road and Edy Road.
- A new pedestrian over crossing near OR 99W at Sunset.
- A new multimodal overcrossing at OR 99W north of Brookman Chapman Road; and

- Several new internal local and connector roadways.

The conceptual locations of these upgrades are illustrated in **Figure 1**. All future facilities would meet current City multimodal street and trail facility standards. Major roadways generally would have one travel lane in each direction with center turn lanes (Scholls-Sherwood Road, Elwert Road, Edy Road, and Kruger Road), while local streets would be one lane in each direction. As noted above, the north-south connector is not a site-specific alignment. For this analysis, a two-lane road is assumed.

ELWERT ROAD RE-ALIGNMENT CONCEPT

Elwert Road from OR 99W to Scholls-Sherwood Road is a two-lane rural arterial. Washington County and the City of Sherwood's Transportation System Plan identify the future build-out condition of Elwert Road as a 3-lane arterial, including sidewalks and bike lanes on both sides of the road. According to the County's Road Design Standards, this type of facility requires 90 feet of road right-of-way which includes 50 feet wide pavement, 2 travel lanes, a center turn lane and 2 bike lanes, plus landscape areas and sidewalks behind the curbs. The existing Elwert Road north of Edy Road has a paved area about 24 feet wide with ditches on both sides. As described in the Preliminary Concept Plan, the existing rural condition of Elwert Road would require significant expansion and upgrading to accommodate the city's adopted roadway design standards. This would include land acquisition for road right-of-way and could include re-grading the vertical alignment to improve driver sight distance. In addition, the portions of Elwert Road constrained by the Chicken Creek watershed would further require large cut-and-fill sections and significant environmental mitigation.

As a result, the Preliminary Concept Plan identified re-aligning Elwert Road west of the creek as being more cost-effective and preferred from a constructability standpoint rather than improving the existing alignment. Re-aligning Elwert Road is a transportation recommendation that has been carried forward as part of the current Sherwood West Concept Plan Re-Look project and is analyzed in this memorandum.

As shown in **Figure 1**, this future re-alignment is preliminary and subject to further study and design. Issues to be addressed in future work should include the following:

- Full or partial closure of existing creek crossings
- Cost and constructability
- Safety for all travel modes
- Local circulation for adjacent property and neighborhood connectivity
- Natural resource impacts and permitting
- The potential for a jurisdictional transfer of SW Elwert Road from the county to the city
- Implementation of an SW Elwert Road Design Concept

This initial study did not evaluate specific designs for the re-alignment – that is left to be addressed during future studies. However, this study did confirm that the existing alignment and traffic controls at Elwert/Edy need to be improved to safely serve the expected growth, as discussed in a later section of this memo. As discussed in the next section, this study also confirms that the re-aligned Elwert Road can function effectively as a two-lane cross-section, with appropriate pedestrian-bike facilities provided and center turn lanes/median where needed.

NORTH-SOUTH CONNECTOR

The core idea of the north-south connector is to connect SW Chapman Road to the north end of Sherwood West, enhancing regional connectivity and providing an option away from neighborhoods. The specific route is conceptual, and its alignment has yet to be identified, as reflected by the wide shaded area in **Figure 1**. The City is aware of challenges – topographic, environmental, and conflicts with existing development – but seeks to continue to study this long-range transportation corridor. This connector would require approximately 1.7 miles of new roadway plus a new bridge structure across Chicken Creek.

TRAFFIC PERFORMANCE ANALYSIS

Based on the initial travel forecast for 2040, the general travel conditions were reviewed to assess the planning street system overall based on expected daily traffic volumes and a more detailed review at two key study intersections during peak hours that have historically had operational issues. After the Sherwood West Concept Plan is approved, a further detailed operational analysis will be made to identify specific geometric and traffic control improvements that will be needed at other intersections as the area develops, which will be incorporated into the capital improvement program and the City's Transportation System Plan. A prior study of the OR 99W intersection at Brookman Road-Chapman Road recommended upgrading that intersection to traffic signal controls as development continues in the south end of Sherwood.

It is recognized that Sherwood West will not be fully built out by 2040, but a horizon year 20 years from the existing conditions was selected for analysis. The analysis includes the existing (2019) and future (2040) conditions. Both horizon year scenarios assume the existing lane configurations and controls of the study intersections. Analysis has been conducted using Highway Capacity Manual (HCM) 6th Edition methodology and Synchro 11 software suite.

As all three land use alternatives are expected to generate a comparable number of total vehicle trips, analysis has been conducted for Alternative 3 since it had the highest vehicle trip estimate. Plan Area generated traffic has been assigned to the study road network based on the regional travel patterns described in the previous section.

DAILY TRAFFIC VOLUMES

The daily traffic volumes on the major roadways within the Plan Area provide a general performance indicator for road segment capacity. Depending on access management and cross-

street spacing, a 3-lane arterial or collector roadway can carry 15,000 to 20,000 vehicles daily. 2040 daily traffic volume forecasts have been reviewed within the planning area, as summarized in **Table 3**. Each roadway was shown to carry below this maximum level and will therefore provide satisfactory service. Further studies will be required during the development review to determine appropriate geometric improvements and traffic control upgrades at significant intersections.

TABLE 3: DAILY TRAFFIC FORECASTS ON SELECTED ROADWAYS

ROAD SEGMENT	2040 DAILY TRAFFIC
SCHOLLS-SHERWOOD ROAD BETWEEN ELWERT ROAD AND ROY ROGERS ROAD	13,000
ELWERT ROAD NORTH OF CHICKEN CREEK	10,000
EDY ROAD EAST OF ELWERT ROAD	9,000
EDY ROAD WEST OF CHICKEN CREEK	1,500
NORTH-SOUTH CONNECTOR ROAD	4,000*
CHAPMAN ROAD WEST OF OR 99W	9,000

Note: *The volume estimate ranged from 1,500 to 4,000 ADT on this facility.

The notable finding from this review was the expected low vehicle traffic usage on the conceptual north-south connector roadway. As shown in **Table 3**, the volumes are expected to range from a low of 1,500 to 4,000 vehicles daily, which is consistent with local street or neighborhood routes. Further study is recommended as the planning advances.

INTERSECTION OPERATIONS

Summarized in **Table 4**, the results of the traffic operations analysis indicate that the study intersections are found to be operating acceptably under existing conditions. The Elwert Road & Lebeau/Scholls-Sherwood Road intersection, which is controlled by all-way stop signs, is operating at LOS D, with the highest delays experienced by the westbound shared movement. The Elwert Road at Edy Road intersection is currently controlled by a traffic signal and shared approach lanes on all legs. It operates at overall LOS A, and LOS B or better for all individual approaches.

Results of the traffic operation analysis indicate that by 2040, conditions at Elwert Road at Lebeau/Scholls-Sherwood Road intersection would be expected to deteriorate to LOS F if no capacity improvements are made, with significant delays experienced by the westbound and southbound movements. The Elwert Road at Edy Road signalized intersection would be expected to operate acceptably at LOS C through to 2040 with existing capacity (no geometric improvements). However, as noted previously, to comply with the city's urban street design standards, this intersection requires expansion to accommodate safe walking and bicycling, which is important given the proximity of two school campuses. Refer to **Appendix B** for more details on these intersection analyses.

TABLE 4: EXISTING AND FUTURE INTERSECTION OPERATIONAL ANALYSIS SUMMARY

INTERSECTION	WORST MOVEMENTS	2019 PM		2040 PM	
		DELAY	LOS	DELAY	LOS
ELWERT ROAD & LEBEAU / SCHOLLS-SHERWOOD ROAD	Westbound Scholls-Sherwood	41.0	E	165.7	F
	Southbound Scholls-Sherwood	23.5	C	46.0	E
	OVERALL	**28.8**	**D**	**98.1**	**F**
ELWERT ROAD & EDY ROAD	Eastbound Edy	9.0	A	35.3	D
	OVERALL	**12.2**	**B**	**27.9**	**C**

Note: Worst movements noted have the highest delay for a given roadway approach. In all cases, the approach shares a single lane for all left-turning, through, and right-turning traffic. Refer to Appendix B for calculation details.

CONCLUSIONS

This memorandum summarizes the preliminary findings of the transportation impacts of the three land use concepts developed for the Plan Area as part of the Sherwood West Concept Plan Re-Look.

All three land use concepts being contemplated as part of the Re-Look have a comparable number of total proposed housing units and total jobs. Despite each alternative varying in terms of housing typology and land use layout, all three would be expected to generate a similar number of overall vehicle trips to the number estimated by the previously completed URTS for this area.

Regional travel patterns identified using the Westside Travel Demand Model indicate that most Plan Area traffic travels to or from outside the Plan Area, with only 10% of travel demand remaining internal. Most travel demand (60%) is to/from the northeast of the Plan Area, and about 30% is traveling to/from the City of Sherwood east of OR 99W. Variations in land use and layout in the three Alternatives would be expected to have a minimal impact on overall travel patterns.

The Sherwood West Concept Plan describes two road network upgrades that are being examined as part of the Re-Look: the realignment of Elwert Road and a new conceptual north-south parallel route that would connect Chapman Road to Edy Road. The realignment of Elwert Road was identified as a preferred option as part of the Preliminary Concept Plan, and this current Re-Look project, due to the required cross-sectional upgrades and the existing alignment's confluence with Chicken Creek.

Results of the intersection operational analysis indicate that conditions at Elwert Road at Lebeau/Scholls-Sherwood Road intersection would be expected to deteriorate to excessive congestion (LOS F) during peak travel hours if no capacity improvements were made. In contrast,

the intersection of Elwert Road at Edy Road would be expected to operate acceptably with its existing signalized configuration through to the 2040 horizon year. However, both locations will need to be improved to accommodate multimodal facilities as required by the county and city's urban street standards.

The Concept Plan includes urban upgrades to significant roadways within the Plan Area, such as Elwert Road, Kruger Road, Chapman Road, and Edy Road. The planned upgrades include two to three-lane cross-sections and upgrading several existing intersections to either roundabouts or traffic signals. Our initial finding is that Sherwood West Growth will be served adequately with the planned street network as described in the Concept Plan. Further study is recommended to develop a more comprehensive list of improvements and associated cost estimates as this area is made ready for urban development.

RECOMMENDATIONS

Based on the high-level findings of this memorandum, the following are recommended:

- The Elwert Road re-alignment concept be advanced with the Sherwood West Concept Plan, and further studies be conducted to determine the best alignment and intersection configurations.
- The Elwert Road corridor should adopt design themes consistent with the city's vision, as represented by the Sunset Road corridor.
- Upgrade Elwert Road to three lane cross-section with bike lanes and sidewalks take place as development occurs.
- Upgrades to the Elwert/Lebeau Road at Scholls-Sherwood Road intersection be made to provide additional capacity to adequately support traffic growth through to the 2040 horizon year. The intersection with Elwert Road will require additional study, reconfiguration, and eventual signalization or roundabout improvement as development occurs.
- Multimodal safety improvements be made to the Elwert Road and Edy Road intersection consistent with the cross-sectional upgrades to these roadways outlined in the Concept Plan. Other intersections should also be reviewed for possible multimodal safety upgrades as development occurs nearby, including the Elwert Road at Handley Road intersection, and the Elwert Road at Haide Road intersection.
- Edy Road between Elwert Road and Borchers Drive is as a 3-lane collector with bike lanes and sidewalks in the city's Transportation System Plan. This project should be included for the portion within the concept planning area.
- Edy Road west of Chicken Creek should be a two-lane collector road without on-street parking within the concept planning area.
- The north-south connector concept should be further studied to better address the cost/benefit trade-offs for this new route. Sufficient north-south connectivity should be incorporated into the growth area to provide direct north-south multimodal service parallel to SW Elwert Road.

APPENDIX M

Housing Memo

Background on Housing Needs and Consistency with State/Metro Requirements

HOUSING MEMO

Supplemental to Housing Policy Implications Memo

TO:	Community Advisory Committee
FROM:	Erika Palmer, Planning Manager
CC:	MIG|APG
DATE:	April 2023

Introduction

This memorandum provides supplemental information to the Housing Implications Memo that summarizes the future of housing in Sherwood to help inform discussions on this topic. This memorandum provides background on housing needs in Sherwood and how the Sherwood West Concept Plan is consistent with state and regional requirements.

STATE LAND USE GOAL 10, HOUSING

The purpose of Goal 10 is to provide for the housing needs of Oregonians. Goal 10 requires Sherwood to maintain and plan for an adequate land supply to accommodate at least 20 years of future growth, providing flexibility in housing location, type, and density to ensure the availability and prices of housing units are commensurate with the needs and financial capabilities of households. The City is required to meet the Metropolitan Housing Rule (OAR 660-007) that is designed to "assure opportunity for the provision of adequate numbers of needed housing units and the efficient use of land within the Metropolitan Portland (Metro) Urban Growth Boundary (UGB)." Needed housing means housing types determined to meet the need shown for housing within an urban growth boundary at particular price ranges and rent levels. The rule also specifies the mix and density of new residential construction for cities within the Metro UGB. Sherwood is required to provide the opportunity for at least 50 percent of new residential units to be attached single-family housing or multi-family housing. In addition, the rule sets specific density targets for cities in the Metro UGB. Sherwood's average density target is six dwelling units per net buildable acre.

Sherwood's housing stock is predominantly single-family detached at roughly 75% (2021 American Community Survey, US Census). Sherwood's population growth and shifting demographics affect future housing growth and shape the changes in the City's housing market. While Sherwood's population has been growing relatively fast in recent years, the population has been aging while the community continues to attract younger people and more households with children. In addition, Sherwood's population is becoming more ethnically diverse. If these trends continue, there will be changes in the types of housing demanded in the community's future.

The aging population is likely to result in increased demand for smaller single-family housing detached and attached, multi-family housing, and senior living facilities. The growth of younger and diversified households will likely result in increased demand for a wider variety of affordable and appropriate housing for families with children, such as small single-family housing, townhouses, duplexes, and multi-family housing choices. Smaller housing units such as cottage clusters can be an attractive option for a wide variety of community members including seniors, empty-nesters looking to downsize, and young adults. Cottage housing is smaller and may be more accessible than a typical single-family home. The smaller size makes it a more attainable option for first-time home buyers than a larger home due to less expensive insurance, energy, property taxes, and mortgages. The number of people living in multigenerational family households is growing due to many reasons including finances, caregiving, childcare, or a change in relationship status. Accessory Dwelling Units, plexes, cottage clusters can help provide housing types where families can live close together.

Housing prices are higher in Sherwood than regional averages, though the City's increasing homeownership costs are consistent with the upward national trend. Almost three-quarters of Sherwood's residents own their homes. Sherwood households have a relatively high income, which affects the type of housing that is affordable, particularly for young people and new families. Future housing affordability will depend on the relationship between income and housing price and whether housing prices will continue to outpace income growth.

2019-2039 Housing Needs Analysis

Sherwood's 2019-2039 Housing Needs Analysis (HNA), adopted by reference in the City's Comprehensive Plan, provides technical and factual background relating to current and future housing needs. The Oregon Department of Land Conservation and Development acknowledged the HNA and no one appealed the document to the Land Use Board of Appeals. As state law requires, the HNA examines household growth based on Metro's coordinated forecast. The forecast includes growth in both areas within the city limits and areas currently outside the city limits that the City expects to annex for residential uses (Brookman area). ***The HNA identifies an additional 1,728 new households between 2019 and 2039*****. Sherwood must provide enough land to accommodate forecasted housing needs for the next 20 years which can be met through continued annexation of the Brookman area and planning for Sherwood West.**

Sherwood's HNA includes information about the factors that could affect housing development, including historical and recent development trends; projections of new housing units needed in the next 20 years; demographic and socioeconomic factors affecting housing choice, and regional and local trends in housing cost and affordability.

The forecasted growth rate in the HNA 2019-2039 is 1.1% based on Metro's forecast. The HNA provides a forecast of housing by type and density of housing. The HNA includes a Buildable Lands Inventory (BLI) for housing within the Urban Growth Boundary. The BLI demonstrates that the current land use designations provide an adequate short- and long-term land supply for housing development, meeting existing needs and 65%, and projected growth over the next 20 years. However, Sherwood has a deficit of land for 608 dwelling units, and annexations will need to continue in Brookman to provide an adequate land supply.

The HNA analyzes existing development patterns and intensity, existing land use designations and zoning, and building constraints to determine where vacant land and/or land that is likely to be redeveloped and then compares the existing supply of land to emerging development trends and projection of needed housing units.

The HNA 2019-2039 makes the following conclusions regarding compliance with Goal 10:

- Sherwood will need to plan for enough residential land to accommodate forecasted housing needs for the next 20-years:
- Sherwood is forecast to add 1,728 new households between 2019 and 2039. Of these 700 new households are inside existing city limits; 1,029 new households are outside current city limits.
- Sherwood's land base can accommodate most of the forecast for growth. Vacant and partially vacant land in the Sherwood Planning Area has the capacity to accommodate about 65% of the forecast for new housing on areas within the city limits and the Sherwood Planning Area.
- Sherwood has a deficit of land for housing. The deficit of land is for 608 dwelling units. The largest deficits are in Medium Density Residential-Low (154 dwelling units); Medium Density Residential-High (252); and High-Density Residential (145 dwelling units).
- To provide adequate land supply, Sherwood will need to continue annexing the Brookman Area, the primary designated residential area in the Sherwood Planning Area. Without the Brookman area developing, the City has a projected deficit of 1,155 dwelling units
- Sherwood will need Sherwood West to accommodate future growth beyond the existing city limits and the UGB (Brookman area). There is a deficit of 608 dwelling units over the next 20-years in Sherwood city limits and Brookman Area. The growth rate of Metro's forecast for household growth (1.1% average annual growth) is considerably lower than the City's historical population growth rate over the last two decades (8% average annual growth). At the historic growth rate, Sherwood will be out of buildable lands for residential development within 4-10 years.
- Sherwood has a relatively limited supply of land for moderate and higher density housing. The limited supply of land in these zones is a barrier to development of townhouses and multi-family housing, which is needed to meet the housing demand for growth of people over 65, young families, and moderate-income households. Sherwood will need to plan for a greater variety of housing types.
- Sherwood will have an ongoing need for providing affordable housing to lower-income households. About 31% of households in Sherwood have incomes below 80% of the MFI. These household will need a range of housing types, such as lower-cost single family housing, townhouses, or multi-family housing. Sherwood currently has a limited supply of land available in its planning area for moderate and high-density housing.

To comply with Goal 10, the City will need to either change its policies to allow for more development on the inventory of vacant land within the City boundary (greater densities, greater building heights), request a UGB expansion from Metro, or both. An urban growth boundary expansion proposal to Metro will allow the community to accommodate needed housing and provide the opportunity for a variety of housing types in locations and at price points that meet the needs of current and future residents.

The Sherwood West Concept Plan includes land use designations that provide for a variety of housing types: single-family residential detached, single-family residential attached (townhomes), duplexes, triplexes, quadplexes, cottage clusters, accessory dwelling units, and multi-family units. The Concept Plan supports homeownership and lower-income housing opportunities with access to jobs, transportation choices, parks and open spaces, and other supportive amenities of a complete community.

Metropolitan Housing Rule: OAR 660, Division 007

The planning process for the Sherwood West Concept Plan applied the Metropolitan Housing Rule. As identified in Table 1 below, the Concept Plan provides for a variety of residential land use districts that allow for multiple housing types at a range of prices and rent levels. Table 1 presents estimated housing units and densities based on the proposed Concept Plan map. The assumptions regarding residential densities were developed in collaboration with the Community Advisory Committee and are based on existing zone densities in the Sherwood Development Code. The metrics assume that Sherwood West will build out based on recent density trends in each residential designation. Recent density trends in Sherwood show that developments are utilizing the maximum densities per acre allowed in each zone.

In each of the "Neighborhood" designations, middle housing will be permitted along with single-family detached housing. Table 1 includes a range of total housing units depending on how much middle housing is built in these areas, showing 0, 10, 20, or 50 percent middle housing scenarios. The range shows 3,117 units on the low end to a high of 5,582 units if 50 percent of middle housing was constructed in the neighborhood designations. The density ranges from 9.2 units per net buildable acre with 0 percent middle housing to 16.4 units per net buildable acre if 50 percent of middle housing was constructed in the neighborhood designations.

Table 1. Sherwood West Housing Estimates

	Density Range (Net)	Total Acres (Net)	*% of Residential Acres*	Total Housing Units (with % of Middle Housing in Neighborhood areas) 0% MH	10% MH	20% MH	50% MH
Multi-Family	16.8 to 24	33	*10%*	798	798	798	798
Middle Housing	5.5 to 11	16	*5%*	173	173	173	173
Cottage Cluster	12.8 to 16	23	*7%*	362	362	362	362
Med/High Density Nbhd	5.5 to 11	23	*7%*	248	279	311	406
Medium-Density Nbhd	5.6 to 8	102	*30%*	816	990	1,163	1,683
Low-Density Nbhd	3.5 to 5	144	*42%*	720	1,008	1,296	2,160
TOTAL		**340**	***100%***	**3,117**	**3,610**	**4,103**	**5,582**
Total Average Density				*9.2*	*10.6*	*12.1*	*16.4*
Total Average Density with Open Space				*7.8*	*9.0*	*10.3*	*13.9*

The Sherwood West Concept Plan has provided the opportunity for at least 50 percent of new housing types to be single-family detached and 50 percent a mix of single-family attached and multifamily. The Low and Medium neighborhood designations provide the opportunity for a range of single-family

detached and by law allow the full range of middle housing types (attached housing) with design standards. The Middle Housing, Cottage Cluster, and Medium/High designations allow the opportunity for attached single-family units (cottages, plexes, townhomes). The Multi-Family designation allows for multi-family units. As described below in Table 2, even if zero percent middle housing is produced in the Low and Medium Density Neighborhoods, there is an opportunity for 50 percent attached housing. Table 2 identifies the estimated allocation of housing units to residential designations in Sherwood West.

Table 2. An estimated allocation of housing units to residential designations in Sherwood West

	Estimated Dwelling Units	% of Units	Housing Units by Mix	
Multi-Family	798	26%	Multifamily	25%
Middle Housing	173	6%	Attached	25%
Cottage Cluster	362	12%	SFD	50%
Med/High Density	248	8%		
Medium Density	816	26%		
Low Density	720	23%		
Total	3,117			

METRO URBAN GROWTH MANAGEMENT FUNCTIONAL PLAN

TITLE 11 – PLANNING FOR NEW URBAN AREAS

The Regional Framework Plan calls for long-range planning to ensure that areas brought into the UGB are urbanized efficiently and become or contribute to mixed-use, walkable, transit-friendly communities. It is the purpose of Title 11 to guide such long-range planning for urban reserves and areas added to the UGB.

UGMFP 3.07.110(b)(1)(C)

(b) A local government, in creating a concept plan to comply with this section, shall consider actions necessary to achieve the following outcomes:

(1) If the plan proposes a mix of residential and employment uses:

(C) A range of housing of different types, tenure, and prices addressing the housing needs in the prospective UGB expansion area in the context of the housing needs of the governing city, the county, and the region if data on regional housing needs are available, in order to help create economically and socially vital and complete neighborhoods and cities and avoiding the concentration of poverty and the isolation of families and people of modest means;

The City of Sherwood is experiencing a housing shortage, as with other cities within Washington County, the Portland Metro region, and the state of Oregon. It is estimated that between 2020-2040 the Portland

Metro region will need almost 295,000 housing units. [1] The ongoing undersupply of housing is one factor in the rapidly rising home prices and rent increases throughout the metro area and other cities and counties throughout the state.

According to the Case-Schiller price index, home prices in the Portland MSA have more than doubled in the past 15 years.[2] The strong housing market during the pandemic resulted in higher rents and home prices. Seasonally adjusted home prices are down about 4% for the Portland metro region this past year (2022), but only 19% of the Portland area households are estimated to afford the monthly payment on the median home sold. This is a decline of 131,000 households since the start of 2022.[3] Housing affordability has two components: housing costs and household income. Affordability is the ratio of the two. As such, a growing economy with more-plentiful and better-paying job opportunities does help housing affordability, at least insofar as incomes rise faster than housing costs do.[4] Housing cost burdens create impacts. Households that spend a higher proportion of their income on housing will have fewer resources for other basic needs. In addition, high rents lead to a lower rate of savings which can lead to economic instability if there is a loss of employment, an emergency, or an unexpected expense.

Sherwood's population growth and shifting demographics affect future housing growth and shape city housing market changes. While Sherwood's populations have been growing relatively fast in recent years, the population has been aging while the community continues to attract younger people and more households with children. In addition, Sherwood's population is becoming more diverse. If all these trends continue, there will likely be changes in the types of housing demanded in Sherwood in the future.

The aging of the population is likely to result in increased demand for smaller single-family housing, multifamily housing, and senior living. The growth of younger and diversified households will likely result in increased demand for a wider variety of affordable and appropriate housing for families with children, such as small single-family housing, townhouses, duplexes, and multifamily units.

Currently, Sherwood's housing stock is predominantly single-family detached. Housing prices in Sherwood are higher than the regional averages, though the City's increasing homeownership costs are consistent with the upward national trend. Almost three-quarters of Sherwood's residents own their homes and households have a relatively high income, which affects the affordable housing type, particularly for young people and new families.

The City's most recent Housing Needs Analysis (HNA) for the 2019-2039 period provides Sherwood with a factual basis to support future planning efforts related to housing. It is used to help develop

[1] Oregon Department of Land Conservation and Development Regional Housing Needs Analysis Presentation, Washington County Coordinating Committee, December 14, 2020.

[2] https://fred.stlouisfed.org/series/POXRSA

[3] https://oregoneconomicanalysis.com/2022/12/09/oregon-homeownership-affordability-november-2022/

[4]https://oregoneconomicanalysis.com/2022/02/15/construction-housing-supply-and-affordability/

Comprehensive Plan goals and policies that are consistent with the HNA while reflecting City priorities and strategies.

As required by state law, Sherwood's Housing Needs Analysis examines household growth based on Metro's coordinated forecast. The forecast includes growth in both areas within the city limits and areas currently outside the city limits that the city expects to annex for residential uses. The HNA identifies an additional 1,728 new households between 2019 and 2039. Sherwood must provide enough land to accommodate forecasted housing needs for the next 20 years which can be met through continued annexation of the Brookman area and planning for Sherwood West. Sherwood can accommodate about 65% of the forecast for new housing within city limits and the Brookman area. Sherwood has a deficit of 608 dwelling units in all residential zones (low, medium, and high). Without the Brookman area developing, the City has a greater projected deficit of 1,155 dwelling units.

The City of Sherwood has implemented a number of policies over the last couple of years to meet the Comprehensive Plan goal to "Provide the opportunity for a variety of housing types in locations and at price points that meet the needs of current and future residents."

Some of the policies include:

- Allowing for middle housing types in all residential zones
- Implementing clear and objective standards for all housing types
- Eliminating off-street parking requirements for accessory dwelling units (per Oregon House Bill 2001) and reducing parking requirements for multi-family housing per Oregon Climate-Friendly and Equitable Communities (CFEC) rules adopted by the Oregon Land Conservation and Development Commission in July 2022.

In addition, the City's Comprehensive Plan sets out policies relating to attractive and attainable housing within the community including:

> Policy 3.2 Identify opportunities to support the city's housing mix, to ensure the housing supply includes a variety of housing types and unit sizes that support a range of housing prices
>
> Policy 3.3 Support a variety of housing types such as but not limited to, townhomes, cottages, courtyard housing, accessory dwelling units, single-story units, and extended family and multi-generational housing.
>
> Policy 3.4 Support housing affordable to Sherwood's residents and workers at businesses in Sherwood, including housing options for first-time homebuyers, new families, the elderly, and persons with disabilities.
>
> Policy 3.5 Support homeownership opportunities for all housing types by encouraging condominiums, cooperative housing, and other types of ownership methods
>
> Policy 3.6 Collaborate with organizations to provide opportunities for the development of lower-cost housing and housing development incentives In areas with access to jobs, transportation, open spaces, schools, and supportive services and amenities.

The Sherwood West Concept Plan proposes a mix of housing types, leading to different tenures and price points. The Sherwood West Concept Plan provides a variety of housing types: single-family

residential detached, single-family residential attached (townhomes), duplexes, triplexes, quadplexes, cottage clusters, accessory dwellings, and multi-family units. A proposed middle housing designation comprised of apartments, condominiums, townhomes, and plexes, and a cottage cluster designation provides more options for homeownership as compared to single-family detached housing on large lots.

As discussed above, the Concept Plan also ensures that the density and mix of housing types for new residential units are planned for the opportunity of at least 50 percent single-family detached and 50% attached and multi-family housing units.

There are six residential designations, which will allow multiple housing types and varying lot sizes within Sherwood West. As described above, the Concept Plan includes a range of housing estimates for the "Neighborhood" (single-family) designations – depending on how much middle housing could potentially be built (including scenarios from 0-50%). Based on current development trends and consultation with developers in the region and housing economists, the City believes that a realistic estimate is that somewhere in the range of 5-10% of single-family areas will be developed with middle housing.

Two residential designations (Middle Housing and Cottage Cluster) will solely allow for middle housing types and are responsive to many voices in the Concept Plan process who have advocated for housing for young families and people in Sherwood who would like to age in place. The Concept Plan provides housing types that are needed for the community while allowing for a transition to lower urban densities adjacent to the rural reserve in the hillier areas of Sherwood West.

There is a need for both housing and employment opportunities in Sherwood. The most recent Economic Opportunities Analysis indicates Sherwood has a deficit of roughly 277 buildable acres of employment land. The Sherwood West Concept Plan proposes 265 net buildable acres of employment land. The mixed employment areas are anticipated to provide a mix of office, light industrial, and flex space uses for target industries such as clean tech and advanced manufacturing identified in the city's Economic Opportunities Analysis. It is estimated that 4,524 jobs can be accommodated and the employment-to-housing ratio for the plan area is estimated at 1.3 (but would depend on the middle housing scenarios described above). The Concept Plan is anticipated to meet the projected community housing needs and employment needs to create a walkable community with a balance of employment, residential, commercial, and greenspace land uses – to be place where families can safely live, work, shop and play.

APPENDIX N

Infrastructure and Phasing Analysis

INFRASTRUCTURE & PHASING ANALYSIS

TO:	Sherwood West Technical & Community Advisory Committees
FROM:	Erika Palmer, Planning Manager and Jason Waters, City Engineer
REVISED BY:	Eric Rutledge, Community Development Director
CC:	APG; Kate Rogers, MIG/APG
REVISED DATE:	February 13, 2024

Purpose

This memorandum outlines the following:

1. Existing infrastructure conditions in Sherwood West (including water, sanitary sewer, stormwater, and transportation); and
2. The opportunities and constraints in Sherwood West for the provision of extending public facilities and services, and potential future phasing.

WATER SYSTEM

Existing Conditions

The current Water System Master Plan was adopted in May 2015. The Master Plan considers all areas within city limits, the urban growth boundary, and the West Urban Reserve (Sherwood West study area). The City's primary water supply is from the Wilsonville Water Treatment Plant, supplemented by groundwater wells. The City maintains an emergency connection and transmission piping to the Tualatin-Portland supply main. The City's distribution system includes three service zones supplied by three storage reservoirs and two pumping stations. The majority of Sherwood customers are served from the 380 Pressure Zone, which is supplied by gravity from the City's Sunset Reservoirs. The 535 Pressure Zone serves the area around the Sunset Reservoirs, supplied with constant pressure by the Sunset Pump Station, and the 455 Pressure Zone serves higher elevation customers on the City's western edge by gravity from the Kruger Reservoir.

Opportunities and Constraints in Sherwood West

Existing water facilities in or near the study area include a water reservoir, a supply line, and distribution lines. The Kruger Reservoir is a 3.0 MG reservoir located inside the study area, south of SW Kruger Road and approximately one-half mile west of Hwy 99W. The Kruger Reservoir serves the 455 pressure zone. An 18-inch transmission line is located in SW Kruger Road between the reservoir and Hwy 99W.

The area south of SW Handley Street is split between the Future 455 West and Future 630 West zones. The area north of SW Handley Street falls primarily within the Future 380 West pressure zone.

An 18-inch water main from the Kruger Reservoir extends north in SW Elwert Road for approximately 800 feet. The line then reduces to a 12-inch line and continues north to SW Handley Street. In addition, a short segment of a 12-inch waterline has been constructed in Elwert Road in the vicinity of Derby Terrace. A 16-inch water main located in SW Copper Terrace terminates at SW Edy Rd, approximately 840 feet east of the study area.

Initial anticipated growth in Sherwood West will be served by extending the existing 380 and 455 Zone distribution mains. Future customers along the ridge north and south of the existing Kruger Reservoir will be served by constant pressure from the proposed Kruger Pump Station at the existing reservoir site. This proposed closed zone is referred to as the 630 West Zone. Some future customers in Sherwood West at the interface between the 630 West and 455 Zones may need to be served through a PRV-controlled sub-zone or through individual PRVs on each service in order to maintain required service pressures. This area is referred to as the 630 West PRV Zone.

A small area on the western edge of the West Urban Reserve along Edy Road near Eastview Road is too high in elevation to receive adequate service pressure from the adjacent 380 Zone. This area will be served as part of the closed 475 West Zone by constant pressure from the proposed Edy Road Pump Station. Large diameter mains will be needed to expand the City's water service area to supply Sherwood West as development occurs.

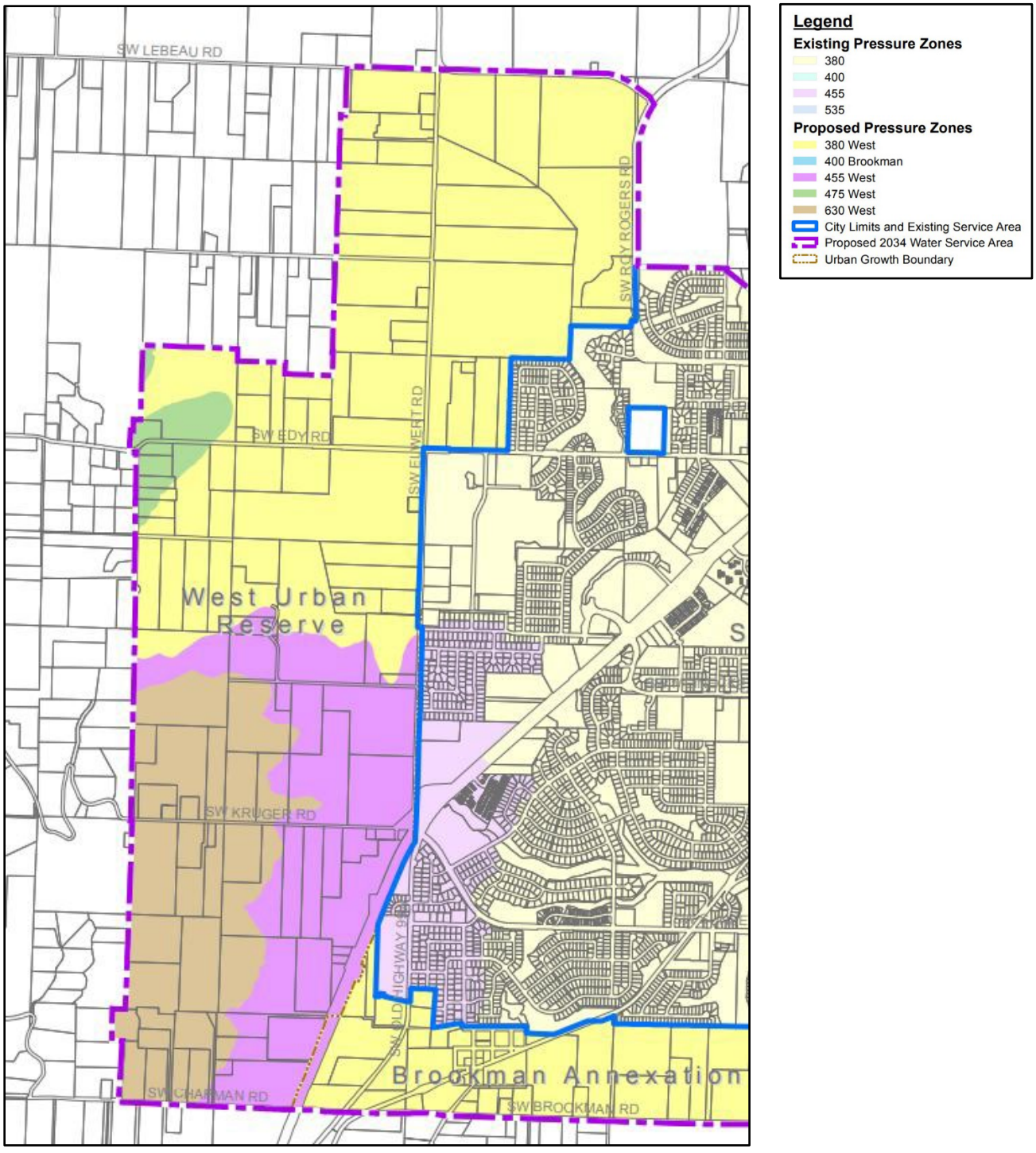


Figure 2-1 of the Water Master Plan (2015) – Existing and Future Pressure Zones

Implications for Water Facilities on Phasing

The West and Southwest districts in Sherwood West have the opportunity to be served with water infrastructure in the near future. A new 12" water main was extended along SW Edy Rd. to the intersection with SW Elwert Rd. This line is immediately available to serve the medium density residential neighborhood north of Edy and east of Elwert within Sherwood West. Water infrastructure will need to be extended east to west to serve the residential hillsides as development occurs.

The North District will be served by extending new 12" water lines within Elwert, Scholls-Sherwood, and Roy Rogers creating a looped system. Partial development of the North District's mixed-employment zone can occur prior to the entire main-line loop being constructed. A redundant looping system through local streets can allow immediate development along SW Roy Rogers's road. The 12" water main size is expected to be sufficient for most industrial users; however, high-demand users could require higher peak flors and larger mains than are currently planned.

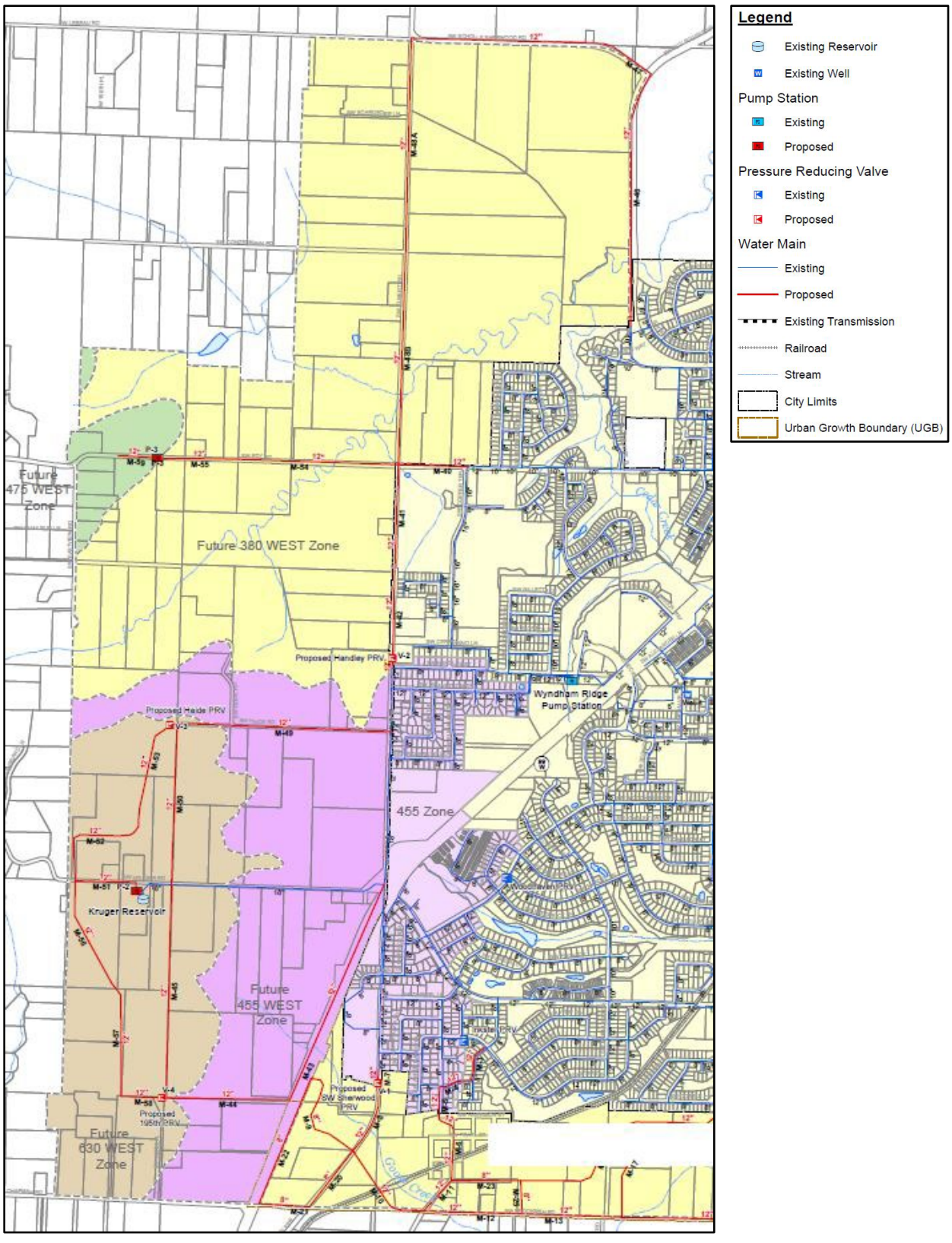
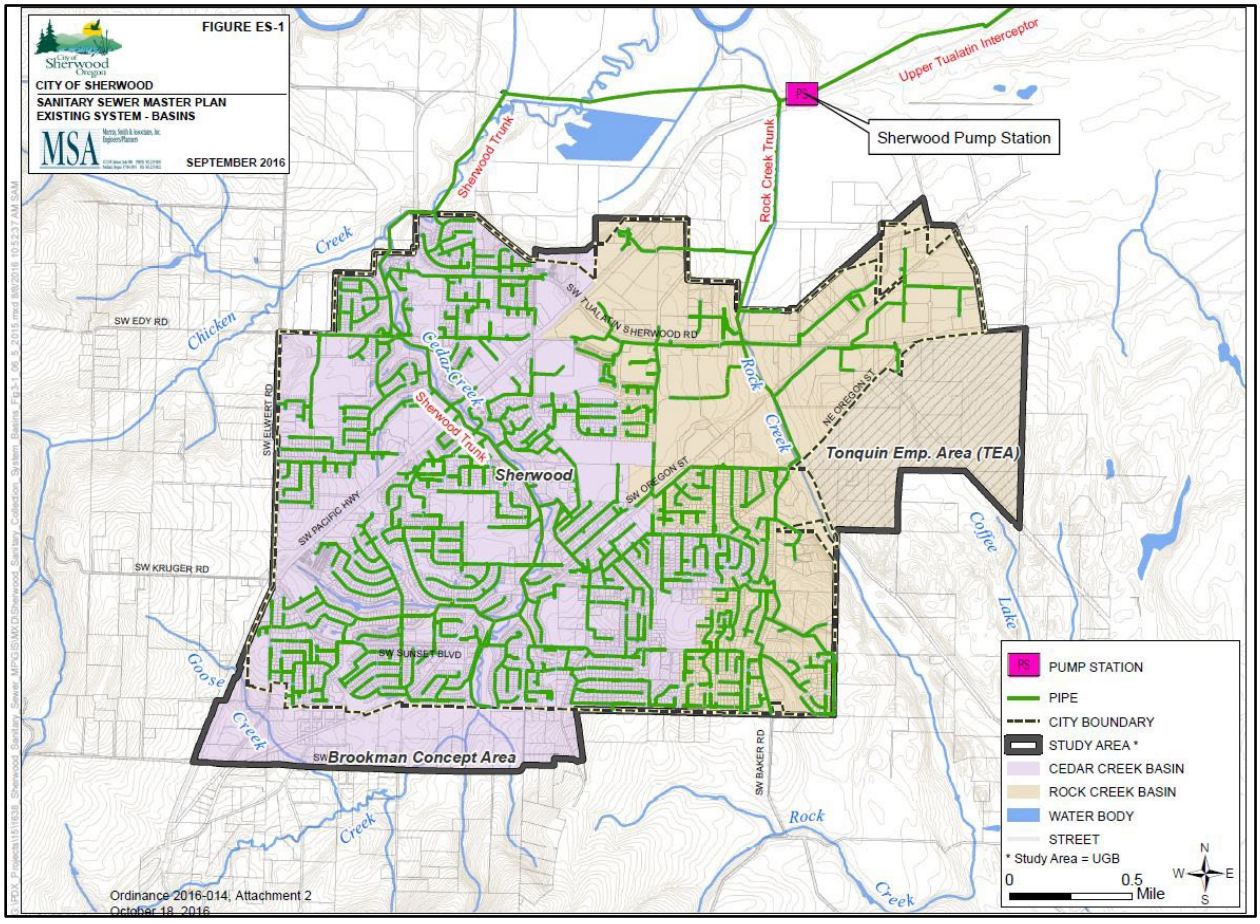


Plate 1 of the Water Master Plan (2015) – Water System Map

SANITARY SEWER SYSTEM

Existing Conditions

The current Sanitary Sewer Master Plan was completed in 2016. The Master Plan considers all areas within the city limits and the urban growth boundary. The Sherwood West Concept Plan study area is outside the urban growth boundary and was not included in the Master Plan. Two sanitary sewer trunk lines serve the City of Sherwood, the Sherwood Trunk (24-inch), which conveys sewage from the Cedar Creek sewage collection basin, and the Rock Creek Trunk (18-inch), which conveys sewage from the Rock Creek sewage collection basin. Both trunk lines convey flows to the Sherwood Pump Station, owned by Clean Water Services (CWS), which sends sewage to the Durham Advanced Wastewater Treatment Plant via the Upper Tualatin Interceptor, also owned by Clean Water Services (CWS).



City of Sherwood Sewer Master Plan (2016) - Figure ES-1 Existing Systems

Opportunities and Constraints in Sherwood West

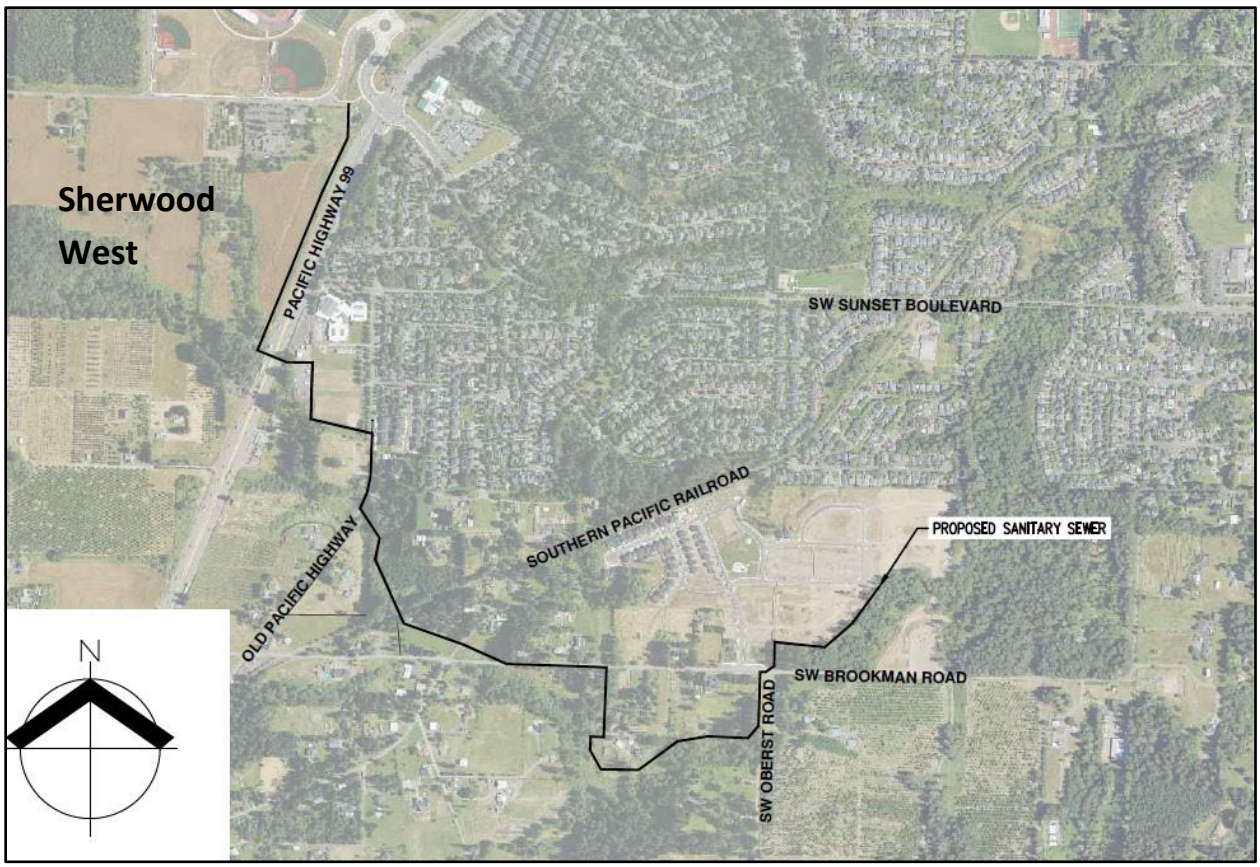
Sherwood West contains two primary sewage drainage basins, the Chicken Creek basin and the Cedar Creek basin. SW Haide Rd. serves as the approximate boundary between the two basins, with land to the south being part of the Cedar Creek basin and land to the north being part by the Chicken Creek basin. Development north of Haide Rd. is expected to be served by the proposed Chicken Creek Pump Station and Force Main while development to the south of Haide Rd. is expected to be served by the Sherwood Trunk line via the Brookman Trunk line.

Brookman Trunk Line Extension

The Brookman Sewer Trunk line is an extension of the Sherwood Trunk line that runs along Cedar Creek. This line has already been partially extended through the Brookman Addition as part of residential subdivisions occurring in the area. The City of Sherwood and Clean Water Services will extend the trunk line from its current terminus in the Brookman Addition to the recently constructed Sherwood High School, located within the Sherwood West boundary. This new trunk line will serve the southern portion of Sherwood West from its southern boundary at SW Chapman Rd. to approximately Haide St. in the north. The trunk line will range from 21" where it connects to the Sherwood Trunk line to 18" near the Sherwood High School. The Brookman Trunk line project will go to bid in Spring 2024 and is expected to be completed by Summer 2025.

The Brookman Trunk line is planned to cross Highway 99W and enter the Sherwood West boundary within the Goose Creek tributary. Land west of the highway and north of Goose Creek within the West District will have immediate access to the trunk line, although downstream capacity upgrades are required prior to service. Dry sewer lines were also installed within SW Elwert Rd. and SW Kruger Rd. as part of the Sherwood High School construction, and land to the immedate east, west, and south of the High School will have access to sewer service once the Brookman Trunk line project is completed.

In order for properties in Sherwood West to take advantage of the new Brookman Trunk Line, downstream improvements are required to the Sherwood Trunk Line, which is reaching capacity. The CWS East Basin Master Plan – Conveyance Implementation Plan identifies a need to upgrade the existing 24" Sherwood Trunk Line to a 30" – 36" line in certain locations in order to serve Sherwood West. These upgrades are scheduled for construction in 2028 – 2029. As noted in the Future Development Timeline (Appendix A), the Comprehensive Planning stage following a UGB expansion can take 3 or more years. This would result in Comprehensive Planning being completed in 2028 to coincide with the sewer line upgrades. Annexation and land use approvals will take an additional 12 – 18 months prior to development in Sherwood West being able to occur.



Brookman Trunk Line Site Map and Approximate Alignment – 90% Design (12/21/23)

Chicken Creek Pump Station and Force Main

The northern portion of Sherwood West is expected to be served by the Chicken Creek Pump Station and Force Main. The force main will bypass the existing Sherwood Trunk Line and Sherwood Pump Station to reserve capacity within those facilities. The Chicken Creek Force Main will run along Roy Rogers Rd. to Highway 99W and ultimately to the Durham Wastewater Treatment Plant. Construction on the 30" force main is already underway and will be installed within Roy Rogers Rd. between the Chicken Creek and Highway 99W. The sanitary work will coincide with the widening of SW Roy Rogers Rd., a Washington County project, and will be installed no later than September 2024. A new pump station is also being planned by CWS in the vicinity of Chicken Creek. A city-owned property within Sherwood West adjacent to Chicken Creek is being evaluated for the pump station siting.

An extension of the force main within the Highway 99W right-of-way to approximately the intersection of SW Hazelbrook Rd. in Tualatin will be required to serve development in Sherwood West. The CWS East Basin Master Plan – Conveyance Implementation Plan the main line within Highway 99W as 24" diameter pipe to be constructed in 2027-2028.

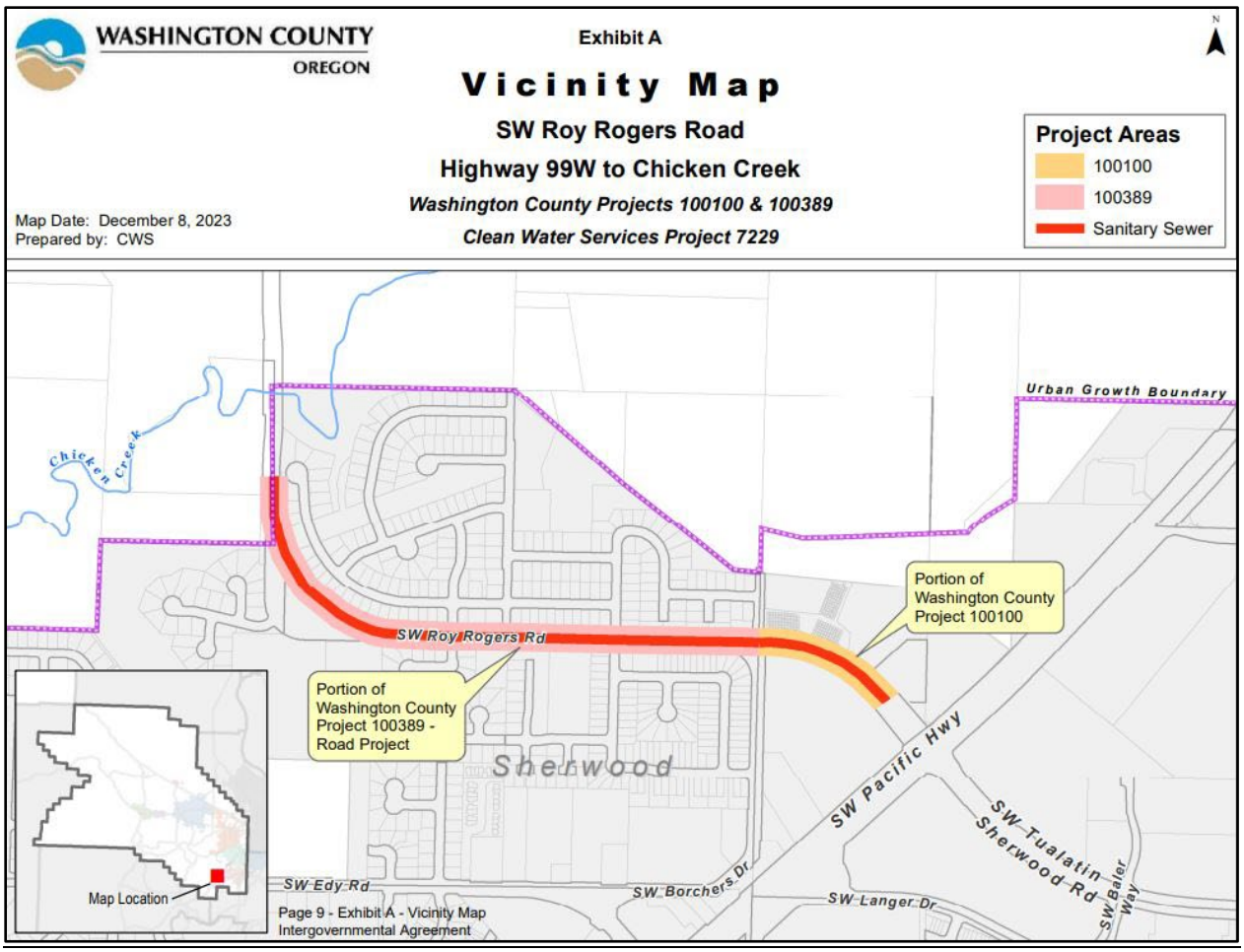


Exhibit A from CWS MO 24-5 (January 23, 2024) – Proposed Chicken Creek Force Main within SW Roy Rogers Rd.

Implications for Sanitary Sewer Facilities on Phasing

As discussed above, key sewer infrastructure projects serving Sherwood West are underway. The southern portion of Sherwood West will be served by the Brookman Trunk Line while the northern portion of Sherwood West will be served by the Chicken Creek Force Main. Additional investments in regional sewer infrastructure are required to serve this area, including the force main within Highway 99W.

STORMWATER SYSTEM

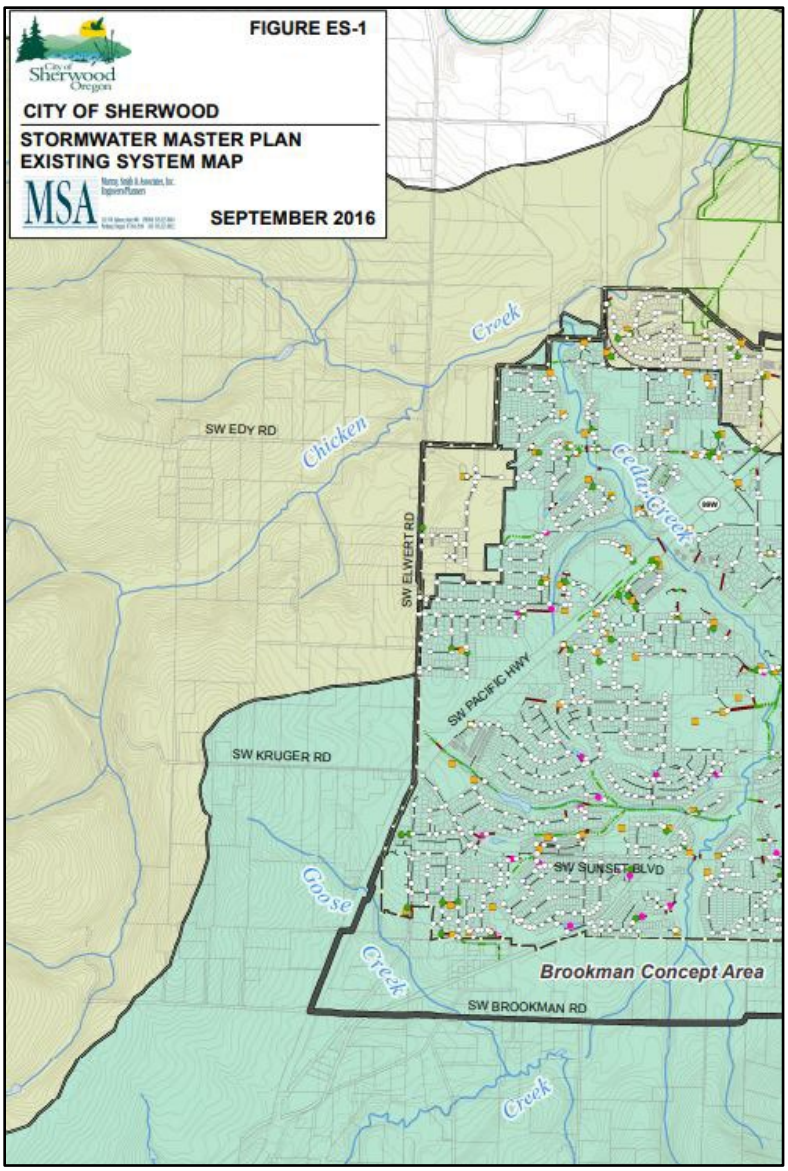
Existing Conditions

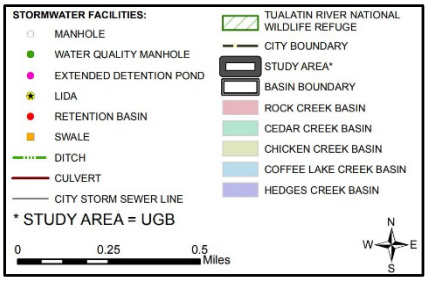
The current Stormwater System Master Plan was updated in 2017. The Master Plan considers all areas within the city limits and the urban growth boundary. The Sherwood West Concept Plan area is outside the urban growth boundary and was not included in the Master Plan.

The Sherwood West Concept Plan area lies primarily within the Chicken Creek Drainage Basin. The basin flows north and northeast along Chicken Creek, which bisects the plan area. Cedar Creek flows into Chicken Creek at the northeast corner of the plan area, west of SW Roy Rogers Road. The West Fork of Chicken Creek enters the plan area near the northwest boundary and flows east into Chicken Creek.

A small portion of the plan area in the southeastern area is part of the Cedar Creek Drainage Basin (i.e. Goose Creek Sub-Basin). On-site runoff enters Goose Creek, which flows from west to east, crossing Highway 99W and reaching Cedar Creek. The Stormwater Master Plan notes that Chicken and Cedar Creeks have been identified by the Environmental Protection Agency (EPA) as providing habitat for anadromous fish listed as threatened under the Federal Endangered Species Act.

According to the Storm Water Master Plan, on-site soils fall primarily in Hydrologic Soils Group C, with small areas of Groups B and D. The areas near Chicken and Cedar Creeks and their tributaries have been designated by Metro as riparian corridors, upland wildlife habitat, and aquatic impact areas. Some areas within the riparian corridors are also shown on the National Wetland Inventory.





Stormwater Master Plan (2016) – Figure ES-1 Existing Systems Map

Opportunities and Constraints in Sherwood West

Sherwood West is undeveloped, and as such, there is no existing stormwater infrastructure. As development occurs in the future, stormwater would likely be discharged onto the floodplain of the adjacent creeks and tributaries. The City of Sherwood requires that all stormwater facilities meet the requirements of Clean Water Services Design and Construction Standards for conveyance, water quality treatment, and water quantity treatment. Regional stormwater facilities within Sherwood West are the City's preferred method for handling stormwater.

Implications for Stormwater Facilities on Phasing

All areas within Sherwood West can handle stormwater with required infrastructure improvements as development occurs. The West and Southwest Districts in Sherwood West may be the easiest to serve.

TRANSPORTATION SYSTEM

Existing Conditions

The current Transportation Systems Plan (TSP) was updated in 2014. The TSP considered all areas within the city limits and the urban growth boundary. The Sherwood West Concept Plan area is outside the urban growth boundary and was not included in the Plan.

Elwert Road from Highway 99W to Scholls-Sherwood Road is currently functioning as a two-lane rural arterial. Elwert Road historically was a rural road used primarily for providing transportation access for farm equipment and rural residents. Over time, Elwert Road has become a secondary route for commuter traffic (through trips) traveling between Highway 99W and Scholls-Sherwood Road and Roy Rogers Road, avoiding the intersection signals along the Highway 99W route.

Elwert Road's physical characteristics consist of two 11-foot paved lanes, a straight horizontal alignment, and a vertical alignment consisting of rolling hills that include acute vertical sags and crests, which result in poor vertical sight distances, and intersection sight distances. Access points onto Elwert Road include several private driveways and seven street intersections (both local and collector). The intersecting streets and their proposed classifications are listed below.

- Kruger Road – Collector
- Orchard Hill Road – Local
- Edy Road – Collector
- Schroeder Road – Local
- Haide Road – Local
- Handley Road – Collector
- Conzelmann Road – Local
- Lebeau Road - Local

The City's TSP and Washington County's TSPs identify the future build-out condition of Elwert Road as a 3-lane arterial, including sidewalks and bike lanes on both sides of the road. Both Edy and Chapman roads are classified as collectors within Washington County TSP. Edy Road, within the current City boundary, is also designated a collector street within the City's TSP.

Given the terrain, the presence of significant natural areas, and the current parcelization of the area, there are likely to be significant costs and challenges with constructing and connecting roadways within the study area.

Opportunities and Constraints in Sherwood West

Elwert

Two options for the design of Elwert were included in the 2016 Preliminary Concept Plan. The City Engineer provided a Transportation Options Alternative Analysis Report that is included in the appendices of the 2016 Preliminary Concept Plan and is described below.

SW Elwert Road is classified as an arterial road with a future 3-lane configuration with; two 12-foot travel lanes, a 14-foot center turn lane, two 6-foot bike lanes, two 5-foot wide planter strips, two 8-foot wide sidewalks, and two 1-foot clear areas behind the sidewalks to the right of way line in both the City's and Washington County's Transportation System Plans (TSPs). The overall right-of-way width required with this cross section is 78 feet.

Transportation Alternative Analysis Report – Defining Options for SW Elwert Road
The major limiting condition for the transportation options analysis is the phasing break between three areas. These areas include:

- Elwert between Highway 99W and SW Handley (West District)
- Elwert between SE Handley and SW Conzelman Rd (West and North Districts); and
- Elwert between SW Conzelman Rd and the SW Lebeau/Scholls-Sherwood Intersection (North District)

Two options were analyzed with respect to constructability, construction costs, and environmental impacts.

Option 1
Option 1 consists of realigning SW Elwert Road and SW Edy Road. The realignment would cross two Chicken Creek tributary streams at the narrowest points in order to reduce or eliminate wetland mitigation issues. The realignment follows the existing terrain, eliminates the need for excessive fills, and minimizes impacts to the wetlands within the SW Elwert Road and SW Edy Road intersection. Option 1 will require the construction of structural bridging and the acquisition of right-of-way to accommodate the realignment of SW Elwert Road.

The realignment of SW Elwert Road will include the construction of roundabouts at major intersections, such as with SW Edy Road. The combination of roundabouts and curved alignments would likely discourage freight traffic usage of the road and reduce speeds of commuter traffic while still allowing significant local residential and commuter traffic flow.

Construction of this option will also allow the existing SW Elwert Road and SW Edy Road alignments and intersection to remain in use until construction of the realigned roadway is nearly complete. Analysis of the estimated construction costs indicates that this option, while expensive, is the least costly financially and to the environment, as well as the least impact on local and commuter traffic during construction.

Option 2
Option 2 consists of correcting the vertical alignment of the SW Edy Road and SW Elwert Road intersection to meet ASSHTO design standards. Specifically, raising the road elevation to reduce the adverse vertical curves and meeting stopping sight distances at intersections. This means raising the road approximately 10 to 20 feet (15 foot average) in elevation. The impacts from the intersection along SW Elwert Road from this action extend for approximately 2,050 feet, and approximately 790 feet along SW Edy Road.

By raising the road along this length, impacts to the existing right-of-way and adjacent wetlands occur due to the need for fill with a 2:1 slope ratio. It is estimated that an additional 20 to 40 feet (30-foot average) of right-of-way would be required to account for fill slope. The standard wetland/vegetated corridor mitigation requirement is approximately 2:1 (Clean Water Service, R&O 07-20, Table 3-2).

Additionally, the existing culvert crossing would most likely need to be updated to meet future Clean Water Services (CWS), Environmental Protection Agency (EPA), United States Army Corps of Engineers (USACE), and Oregon Department of Fish and Wildlife (ODFW) requirements. Reconstruction of SW Elwert Road would require the closure of the roadway to through traffic until roadway construction completion. This would have a definite negative impact on local and commuter traffic during the expected 1 to 2-year construction cycle.

Early analysis of the estimated construction costs indicates that this option is the most expensive financially due to mitigating environmental impacts to the Chicken Creek corridor environment and has the greatest impact on local and commuter traffic during construction.

Highway 99W

Highway 99W is a state-designated freight corridor and limited-access highway and is identified as a principal arterial in Washington County and the City of Sherwood TSPs. Access to Highway 99W would be coordinated with the Oregon Department of Transportation. The intersection of Highway 99W with SW Chapman and SW Brookman roads is planned as a future signalized intersection with pedestrian and bicycle enhancements.

- Pedestrian Grade Separated Crossing of Highway 99W – the City is constructing a new pedestrian and active transportation bridge over Highway 99W at Elwert. The bridge will connect the Sherwood Family YMCA site with the new Sherwood High School and provide a safe crossing of the highway for youth and families. Long-term the bridge will connect to the regional pedestrian system within Sherwood West, providing a critical pedestrian connection between existing City limits and Sherwood West.

- Vehicle Grade Separated Crossing over Highway 99W - An alternative crossing study between the Brookman Area and Sherwood West was recently completed and will require additional study. The preferred crossing approach is a grade-separated crossing to serve local access (no interchanges from Highway 99W) between the Brookman and Sherwood West areas. The proposed location would be north of the SW Chapman and SW Brookman intersection. Access to an overcrossing over Highway 99W would be from a local street connection from Old Highway 99W in Brookman to a new street in Sherwood West crossing over Highway 99W.

Plan view rendering of the Highway 99W Pedestrian Bridge

The Kruger/Elwert/Sunset Boulevard/Highway 99W intersection

This intersection was recently reconstructed with a roundabout. This is intended to alleviate a current condition of inadequate stacking distance and restricted traffic by-pass flow off Highway 99W towards Scholls-Sherwood Road.

Scholls-Sherwood Road

Scholls-Sherwood is designated as an arterial within the Washington County TSP. According to Washington County, rural arterials serve a mix of rural-to-urban and farm-to-market traffic. In some cases rural arterials, especially in rural/urban fringe areas, accommodate significant amounts of urban-to-urban through-traffic during peak commuting time periods. This is not the intended function of the rural arterial designation and is often the result of congestion on urban arterials. Rather, arterials are intended to provide freight movement in support of principal arterials. Arterials have strong access control for cross streets and driveways. Scholls-Sherwood Road will need to be improved to urban standards on the south side and along Roy Rogers Road. There are two intersections along Scholls-Sherwood Road within the study area. The intersection with Elwert Road will require additional study, reconfiguration, and possible signalization as Sherwood West is developed. The intersection of Roy Rogers Road was recently reconfigured and signalized as a Washington County transportation improvement. Per the City's current TSP standards for arterial roads, new access should be spaced between 600 to 1,000 feet apart.

Remaining Streets within Sherwood West

The remaining transportation network will be local neighborhood streets. While local streets are not intended to serve through traffic, the aggregate effect of local street design can impact the effectiveness of the arterial and collector system when local trips are forced onto the arterial street network due to a lack of adequate local street connectivity.

Implications for Transportation Facilities Phasing

Given the terrain, the presence of significant natural areas, and the current parcelization of the area, there are likely to be significant costs and challenges with constructing and connecting roadways within Sherwood West. The finance of urban services is a significant conversation in all urban boundary expansion areas. The City may want to develop specific policies focusing on infrastructure financing and the feasibility and timing of the extension of public facilities, including implementing financing strategies for transportation systems in Sherwood West.

We have heard from Sherwood stakeholders that new development should pay for its own infrastructure. Development-derived tools include system development charges and Washington County's transportation development tax (TDT). Other tools may need to be considered to support transportation improvements, such as new taxing districts, Local Improvement Districts (LIDs), county funding sources, and supplemental system development charges.

PHASING AND NEXT STEPS

Considering the capability of extending existing public facilities and constructing needed new infrastructure to serve the Sherwood West area, the West, Southwest, and North Districts are the most logical for development to occur first. Additional planning, design, and construction projects will be required to Sherwood West.

APPENDIX O

Preliminary Infrastructure Funding Strategy

Sherwood West Concept Plan

Preliminary Infrastructure Funding Strategy

Date March 10, 2023

To Kate Rogers and Darci Rudzinski, MIG|APG

From Ellen Bini, Leland Consulting Group
Chris Zahas, AICP, Leland Consulting Group

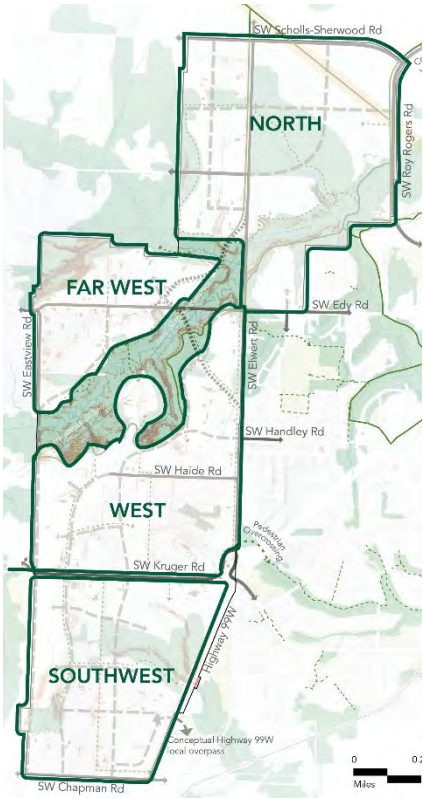
CC Erika Palmer, City of Sherwood

Introduction

This Infrastructure Funding Strategy memorandum accompanies the Sherwood West Preliminary Concept Plan Re-Look by providing a high-level estimate of infrastructure costs and potential tools for funding the development of priority districts in the Sherwood West area. It builds upon a preliminary exploration of infrastructure costs and funding tools that were developed during the 2016 Sherwood West Preliminary Concept Plan.

This memorandum is organized as follows:

- **Infrastructure Funding Gap Analysis.** We present a high-level summary of likely infrastructure costs required to make the various subdistricts of Sherwood West developable and compare them to the system development charges (SDCs) and other development impact fees that would be generated by development in Sherwood West to help pay for such infrastructure. This calculation identifies funding gaps that will need to be addressed for Sherwood West to build out. The types of infrastructure evaluated in this memorandum include water, sanitary sewer, storm water, and transportation.
- **Funding Toolkit and Strategy.** To address the anticipated funding gaps, the memo identifies potential funding tools and strategies that could supplement the baseline SDC revenues to make development feasible. This memo builds upon the tools discussed in the 2016 Sherwood West Preliminary Concept Plan and recommends those that have the most promise for filling any funding shortfalls.



In all steps of this analysis and throughout this memorandum, the focus is on regional infrastructure necessary to provide access or utility service to development parcels. For the most part, this means major arterials, collectors and trunk utility lines that will serve multiple parcels within Sherwood West. Roads and infrastructure internal to development sites is not considered here and is assumed to be a developer cost.

Catalyst Projects

Based on City priorities and existing infrastructure availability, it is anticipated that two of the four districts in the current concept planning process—North and West—will develop first. Because infrastructure costs were provided by the City for sectors ("A" through "F," aligned with the 2016 Preliminary Concept Plan Phasing boundaries), the following analysis aggregates costs for sectors "C" and

"D" as the North district, and "A," "B," and "E" for the West/Southwest districts (Southwest included with West because sector "E" spans both West and Southwest). Appendix B includes the map that engineering used to put together the estimates for the Sectors "A" through "F." Through public investment and private development, attention in these districts will help lay the foundation for the long-term evolution of Sherwood West. The analysis, therefore, takes a close look at the infrastructure that will help these two areas serve as catalysts for subsequent development elsewhere in Sherwood West.

- **North District.** The North District is best suited for employment uses that support the City's economic development goals, and the concept plan accordingly shows a future focus on mixed employment uses in this area. Serving this area with appropriate infrastructure will be a challenge—requiring additional infrastructure analysis. Below is a list of projects that collectively account for over 70% of associated "hard" costs (or those not including design, construction, and land acquisition) for infrastructure serving this area. Transportation and water projects have the highest projected costs for this district, with the Elwert Road and Scholls-Sherwood improvements collectively accounting for 30% of costs, followed by 22% of costs attributed to water improvements along Elwert, Roy Rogers, and Scholls-Sherwood roads. Storm water improvements along Elwert Road account for 16% of costs, and a sewer trunk line extension accounts for an estimated 5%. It is expected that a large proportion of transportation project costs will be paid by developers on a project-by-project basis, though the City will need to plan for capital projects serving the area (e.g., the Elwert and Scholls-Sherwood intersection).

  Table 1. North District Catalyst Project Cost Estimates

Project	Type	Cost	% of North District Costs
Elwert Road	Street	$7,432,500	24%
Elwert Road	Storm	$4,955,000	16%
Elwert Road	Water	$2,973,000	10%
Roy Rogers	Water	$1,836,000	6%
Scholls-Sherwood	Street	$1,830,000	6%
Scholls-Sherwood	Water	$1,830,000	6%
Trunk Line	Sewer	$1,650,000	5%
Total		**$22,506,500**	**73%**

- **West/Southwest Districts.** Development of the West District has already begun with the new high school, finished in 2021. In the current concept plan, this district is expected to be developed with a mixture of housing types and employment uses adjacent to Highway 99W. According to an infrastructure and phasing analysis prepared by City staff, this area can more readily accommodate most needed infrastructure improvements with existing water and sewer infrastructure currently being planned and constructed by Clean Water Services—but road construction and financing will pose significant costs and challenges throughout Sherwood West given the terrain, the presence of significant natural areas, and the current parcelization of the area. This finding is reflected in the list of major projects below, 39% of which are transportation-related, followed by 23% for water and 10% for storm water improvements.

Table 2. West/Southwest District Catalyst Project Cost Estimates

Project	Type	Cost	% of West/Southwest District Costs
New Collector (2-lane) in "A"	Street	$5,910,000	11%
New Collector (2-lane) in "B"	Street	$4,692,000	9%
Elwert in "A"	Street	$4,500,000	8%
Pump facility in "A"	Water	$4,500,000	8%
Finish Loop in "E"	Water	$3,440,000	6%
Highway 99 in "B"	Water	$2,520,000	5%
Elwert/Edy Intersection in "A"	Street	$2,400,000	4%
New Collector (2-lane) in "A"	Storm	$1,970,000	4%
New Collector in "A"	Water	$1,970,000	4%
Chapman Road in "E"	Street	$1,950,000	4%
Elwert in "A"	Storm	$1,800,000	3%
Chapman Road in "B"	Street	$1,695,000	3%
Total		**$37,347,000**	**69%**

Infrastructure Funding Gap Analysis

Methodology

The table below compares infrastructure costs and revenue scenarios to calculate the funding surplus (positive amounts) or gap (negative amounts) that would be generated through development fees. Some notes on the methodology used are included below, with a detailed account of the methodology found in Appendix A:

- **Revenues.** The primary revenues that will be generated by development in Sherwood West and used to fund infrastructure are system development charges (SDCs) and Washington County's Transportation Development Tax. Some additional funds may be available from other public agencies and other local funding tools, described briefly at the end of this memorandum. All revenues shown are based on a full build out of the area, and the land use programs developed during the current Sherwood West concept planning effort—with low and high scenarios for the housing estimates. The low housing scenario signifies 0% middle housing (2-4 plexes, townhomes, and cottage clusters) built in areas designated for single-family homes, and the high scenario signifies 20% middle housing built in those areas. This analysis does not take into account the timing of infrastructure costs or revenues. Additionally, low and high scenarios for sewer revenue generation for Mixed Employment and Commercial development were included given the uncertainty over the scale of development.
- **Costs.** Not included are costs internal to development projects, such as site preparation and construction, that will be paid by private developers. The City will likely also have additional costs not covered here in the development of public spaces such as parks design and development. Infrastructure costs for water, sanitary sewer, storm water, and transportation facilities were provided by the City engineering team. Low and high sewer flow count estimates for Mixed Employment and Commercial uses were also provided by the City engineering team.

Table 3. Sherwood West Infrastructure Funding Gap Analysis

Preliminary Gap Analysis: Low Density Housing (0% Middle Housing), Low-End Mixed Employment/Commercial Sewer Revenues Scenario

	Water	Sewer		Storm	Parks	Transportation	
Revenues to City of Sherwood	City SDC	City SDC	CWS RCC	City SDC	City SDC	City SDC	County TDT
North ("C" & "D")	$4,304,851	$435,991	$3,292,666	$1,849,623	$5,515,847	$6,901,574	$43,658,755
Far West ("F")	$4,674,244	$474,952	$3,504,625	$425,369	$7,933,413	$1,040,374	$5,288,942
West/Southwest ("A," "B," "E")	$15,397,353	$2,019,462	$15,355,574	$2,590,460	$28,811,193	$36,041,567	$69,719,304
Total Sources	**$24,376,448**	**$2,930,405**	**$22,152,865**	**$4,865,452**	**$42,260,453**	**$43,983,514**	**$118,667,001**
Costs to City of Sherwood							
North ("C" & "D")	$10,954,350	$3,531,250		$18,634,500	-	$20,995,625	
West/Southwest ("A," "B," "E")	$27,749,100	$3,679,350		$22,312,850	-	$46,829,175	
Far West ("F")	$7,476,000	$4,801,500		$10,447,500	-	$10,658,750	
Total Uses	**$46,179,450**	**$12,012,100**		**$51,394,850**	-	**$78,483,550**	
Funding Surplus/Gap	-$21,803,002	$13,071,171		-$46,529,398	$42,260,453	$84,166,965	

Preliminary Gap Analysis: High Density Housing (20% Middle Housing), Low-End Mixed Employment/Commercial Sewer Revenues Scenario

	Water	Sewer		Storm	Parks	Transportation	
Revenues to City of Sherwood	City SDC	City SDC	CWS RCC	City SDC	City SDC	City SDC	County TDT
North ("C" & "D")	$4,923,371	$498,839	$3,756,416	$1,905,910	$6,565,637	$6,983,934	$44,077,425
Far West ("F")	$7,475,256	$759,564	$5,604,750	$680,269	$12,687,462	$1,413,350	$7,184,919
West/Southwest ("A," "B," "E")	$20,690,117	$2,557,263	$19,323,949	$3,072,116	$37,794,396	$36,746,338	$73,301,923
Total Sources	**$33,088,744**	**$3,815,666**	**$28,685,115**	**$5,658,295**	**$57,047,495**	**$45,143,622**	**$124,564,267**
Costs to City of Sherwood							
North ("C" & "D")	$10,954,350	$3,531,250		$18,634,500	-	$20,995,625	
West/Southwest ("A," "B," "E")	$27,749,100	$3,679,350		$22,312,850	-	$46,829,175	
Far West ("F")	$7,476,000	$4,801,500		$10,447,500	-	$10,658,750	
Total Uses	**$46,179,450**	**$12,012,100**		**$51,394,850**	-	**$78,483,550**	
Funding Surplus/Gap	-$13,090,706	$20,488,681		-$45,736,555	$57,047,495	$91,224,338	

Preliminary Gap Analysis: Low Density Housing (0% Middle Housing), High-End Mixed Employment/Commercial Sewer Revenues Scenario

	Water	Sewer		Storm	Parks	Transportation	
Revenues to City of Sherwood	City SDC	City SDC	CWS RCC	City SDC	City SDC	City SDC	County TDT
North ("C" & "D")	$4,304,851	$517,882	$4,614,499	$1,849,623	$5,515,847	$6,901,574	$43,658,755
Far West ("F")	$4,674,244	$474,952	$3,504,625	$425,369	$7,933,413	$1,040,374	$5,288,942
West/Southwest ("A," "B," "E")	$15,397,353	$2,360,274	$15,914,799	$2,590,460	$28,811,193	$36,041,567	$69,719,304
Total Sources	**$24,376,448**	**$3,353,108**	**$24,033,922**	**$4,865,452**	**$42,260,453**	**$43,983,514**	**$118,667,001**
Costs to City of Sherwood							
North ("C" & "D")	$10,954,350	$3,531,250		$18,634,500	-	$20,995,625	
West/Southwest ("A," "B," "E")	$27,749,100	$3,679,350		$22,312,850	-	$46,829,175	
Far West ("F")	$7,476,000	$4,801,500		$10,447,500	-	$10,658,750	
Total Uses	**$46,179,450**	**$12,012,100**		**$51,394,850**	-	**$78,483,550**	
Funding Surplus/Gap	-$21,803,002	$15,374,930		-$46,529,398	$42,260,453	$84,166,965	

Preliminary Gap Analysis: High Density Housing (20% Middle Housing), High-End Mixed Employment/Commercial Sewer Revenues Scenario

	Water	Sewer		Storm	Parks	Transportation	
Revenues to City of Sherwood	City SDC	City SDC	CWS RCC	City SDC	City SDC	City SDC	County TDT
North ("C" & "D")	$4,923,371	$580,730	$5,078,249	$1,905,910	$6,565,637	$6,983,934	$44,077,425
Far West ("F")	$7,475,256	$759,564	$5,604,750	$680,269	$12,687,462	$1,413,350	$7,184,919
West/Southwest ("A," "B," "E")	$20,690,117	$2,898,074	$19,883,174	$3,072,116	$37,794,396	$36,746,338	$73,301,923
Total Sources	**$33,088,744**	**$4,238,368**	**$30,566,172**	**$5,658,295**	**$57,047,495**	**$45,143,622**	**$124,564,267**
Costs to City of Sherwood							
North ("C" & "D")	$10,954,350	$3,531,250		$18,634,500	-	$20,995,625	
West/Southwest ("A," "B," "E")	$27,749,100	$3,679,350		$22,312,850	-	$46,829,175	
Far West ("F")	$7,476,000	$4,801,500		$10,447,500	-	$10,658,750	
Total Uses	**$46,179,450**	**$12,012,100**		**$51,394,850**	-	**$78,483,550**	
Funding Surplus/Gap	-$13,090,706	$22,792,441		-$45,736,555	$57,047,495	$91,224,338	

Findings

Across all four scenarios, revenues generated under a full buildout of Sherwood West are sufficient to cover estimated infrastructure costs for sewer, parks, and transportation, but not water and storm infrastructure. Parks show a surplus across all scenarios because the cost of parks were not included in this analysis. Sewer and transportation show a surplus due to the inclusion of funding mechanisms in addition to City SDCs:

- **Clean Water Services (CWS) Regional Connection Charge (RCC).** Clean Water Services is a "water resources management utility" providing sewer and surface water management in Washington County.[1] This analysis assumes RCC revenue will be available for funding infrastructure expansion in Sherwood West.
- **County Transportation Development Tax (TDT).** The TDT, passed by Washington County voters in 2008, is a one-time charge on development (like an SDC) that funds transportation capital improvements designed to accommodate growth. A list of eligible projects is maintained by the County and are "generally limited to improvements on major roads (arterials and collectors) and selected transit capital projects."[2]

It is unusual to have a surplus on transportation infrastructure but that is the case here due to the sizeable TDT revenues and the fact that cost estimates assume no Chicken Creek bridge—which would represent a significant expense and cut into the transportation surplus found by this analysis. The calculation of storm water revenues assumed no CWS Regional Storm Drainage Improvement Charges were collected due to credits given for water detention and water quality projects, per City guidance. With an additional 45% reduction in assumed City storm water SDC collection (due to participation in water quality projects), the largest shortfall across all infrastructure categories—$46,529,398—is found for stormwater under both low housing scenarios.

This is a preliminary analysis and should be revisited as the City conducts additional infrastructure planning, as development is implemented, and as other aspects of development in Sherwood West change—including significant changes to costs and timing of development.

Funding Toolkit and Strategy

Recommended Funding Strategies

LCG recommendations for supplementing existing baseline funding are informed by recent development experience in the region and review of existing resources, including the Phasing and Funding Strategy prepared by ECONorthwest for the Preliminary Concept Plan in 2016 and the 2020 Washington County Infrastructure Funding Plan Toolkit (which provides guidance on funding transportation infrastructure in urban reserve areas specifically).

Supplemental SDC. Based on recent development experience in the region, especially Frog Pont West in Wilsonville, LCG recommends focusing first on Supplemental SDCs to meet any funding gaps. Supplemental SDCs are essentially additional SDCs for a sub-area of the City, paid by developers. By using the SDC tool, costs can be shared across multiple developers over time. As with standard SDCs, developers can be credited and/or reimbursed for oversized infrastructure that they construct that benefits other developers and/or the city as a whole. As with any development cost, the costs of supplemental SDCs will ultimately get passed on to homebuyers and commercial and residential tenants in the form of higher housing costs and rents. The next steps to implementing a

[1] Clean Water Services "About Us", https://cleanwaterservices.org/about/who-where/.
[2] Washington County Department of Land Use and Transportation, Transportation Development Tax Annual Reports 2009–Present.

supplemental SDC would involve the following, which should be managed by City staff with the support of a municipal finance consultant:

- Ongoing refinement of project engineering and costs;
- Outreach to property owners and developers to refine development projections and phasing and to negotiate the specifics of a potential fee;
- Financial modeling of a potential fee, including identification of specific projects that would be included in the fee and exploration of scenarios that might vary the fee in different parts of Sherwood West;
- Engagement of the Sherwood City Council and Planning Commission;
- Development of a final proposal for adoption.

Regional Sources. In addition to a supplemental SDC and other tools mentioned above, securing "outside" funding sources for needed infrastructure can help reduce costs on a dollar-for-dollar basis. Therefore, the City should seek to leverage additional existing funding through other government sources, including:

- **Major Streets Transportation Improvement Program (MSTIP).** MSTIP is a county-wide road improvement program funded by countywide property taxes. The 2023-2028 System of Countywide Interest Map identifies Elwert Road as an "eligible arterial/principal," and may receive funding through MSTIP as a major road. There is MSTIP funding for SW Roy Rogers Road, but not currently for the portion adjacent to Sherwood West.
- **Metropolitan Transportation Improvement Program (MTIP).** MTIP, overseen by Oregon Metro, "records how all federal transportation money is spent in the Portland metropolitan area" and monitors significant state and locally funded projects with an impact on air quality. MTIP follows a four-year construction schedule and is updated every two to three years. Sherwood West projects may be eligible for the next round of MTIP funds.
- **Regional Flexible Funding**. Regional flexible funding for transportation projects, administered by Oregon Metro, provides "federal funding for investments in sidewalks, trails, and roadways in communities across the region." Regional funds not already allocated for ongoing commitments may be applied for by regional jurisdictions through a project selection process. Projects for the 2025-2027 cycle were selected in October 2022, but the City can plan to submit a project proposal for the next funding cycle—which to be successful, will need to demonstrate alignment with regional investment priorities.

State Funding Sources. Business Oregon operates industrial and employment land readiness programs that may have the potential to fund infrastructure development in Sherwood West, particularly in the North District.

- **Regionally Significant Industrial Sites Program (RSIS).** RSIS is "a profit sharing economic development tool that offers state income tax reimbursements for approved industrial site readiness activities," and can cover activities such as transportation and infrastructure improvements. Local governments can apply if they own or act as a sponsor for privately-owned industrially zoned sites.
- **Emerging Opportunities.** Finally, the City should watch the state legislature, as state resources may become available to support industrial site readiness and best position the state for federal funding via new legislation, such as the CHIPS Act and Inflation Reduction Act.

Additional funding strategies

Additionally, the four funding tools identified as preferred in the Preliminary Concept Plan could also be considered, but would be a lower priority than supplemental SDCs, regional, and state sources:

- **Local Improvement District (LID).** "An LID is a special assessment district where property owners are assessed a fee to pay for capital improvements, such as streetscape enhancements, underground utilities, or shared open

space."[3] With LIDs, landowners within the district are assessed a fee based on the proportional benefits they receive from the district, established at inception. LIDs typically require the approval of 60 percent of the affected property owners in the district. Owners benefit from paying costs over time and the City's access to a lower interest rate. LIDs would have much the same impact as a supplemental SDC, therefore we recommend focusing on a supplemental SDC as the primary tool before considering using LIDs.

- **Utility fees**: Utility fees for regional infrastructure are much less common in Oregon and, while allowed, would be relatively unique and less familiar to developers than a supplemental SDC. A utility fee also would be paid by end users (homeowners and tenants) and could therefore create a timing issue where revenues aren't realized until after the infrastructure is built.
- **Property Tax (GO) Bonds**: While citywide general obligation bonds backed by a temporary increase in property tax rates are a legal option for consideration, the need for a public vote and the fact that all city residents would bear the funding burden limits the appropriateness of this tool to infrastructure projects that have a citywide benefit. Given the need for a public vote and the greater ease of implementing other tools, we do not recommend GO bonds as a funding tool for Sherwood West.

Urban Renewal was also considered in the previous Phasing and Funding Strategy, but not as a preferred tool. Nevertheless, it could potentially be used with some caveats as discussed here. Through tax increment financing, urban renewal can help pay for infrastructure through the increase in property taxes that occur in the urban renewal area over time. Urban renewal is typically implemented in existing areas of a city where revitalization is desired or there is a need to address specific infrastructure deficiencies that are barriers to new investment, and its use in new undeveloped areas of the city may face political challenges in implementation. There are also strict limits on how much of a city can be within an urban renewal district, both by taxable value and geographically. This would need to be considered since Sherwood already has two existing urban renewal areas.

Conclusion

Key findings of this preliminary infrastructure funding strategy analysis include:

- Development envisioned for the focus areas of this analysis include employment uses in the North and a mix of housing (including middle housing intermixed with low and medium-density single family development) and employment uses along Highway 99W in the West/Southwest.
- Several infrastructure projects are catalytic to making development possible in these areas. For both the North and West/Southwest districts, transportation projects are projected as the highest-cost, including the extension of Elwert Road for both areas, Scholls-Sherwood Road in the North, and a new 2-lane collector in the West/Southwest. Additional catalytic projects include extending water and storm improvements along Elwert Road in the North and expanding water service in the West/Southwest.
- Preliminary analysis shows a shortfall for water and storm and surplus for transportation, sewer, and parks when regional connection charge revenues to Clean Water Services and the Washington County TDT are included.
- Of all the potential funding strategies, a supplemental SDC would be easiest to implement to cover the gap, though the City should also aggressively seek outside funding from regional, state and federal programs to reduce the overall cost.
- Next steps involve continued refinement of projects and costs and financial modeling and discussions with developers on a potential supplemental fee.

[3] ECONorthwest, Preliminary Concept Plan Phasing and Funding Strategy.

Appendix A: Methodology

The following assumptions were made for the Sherwood West Infrastructure Funding Strategy and Action Plan revenue gap analysis:

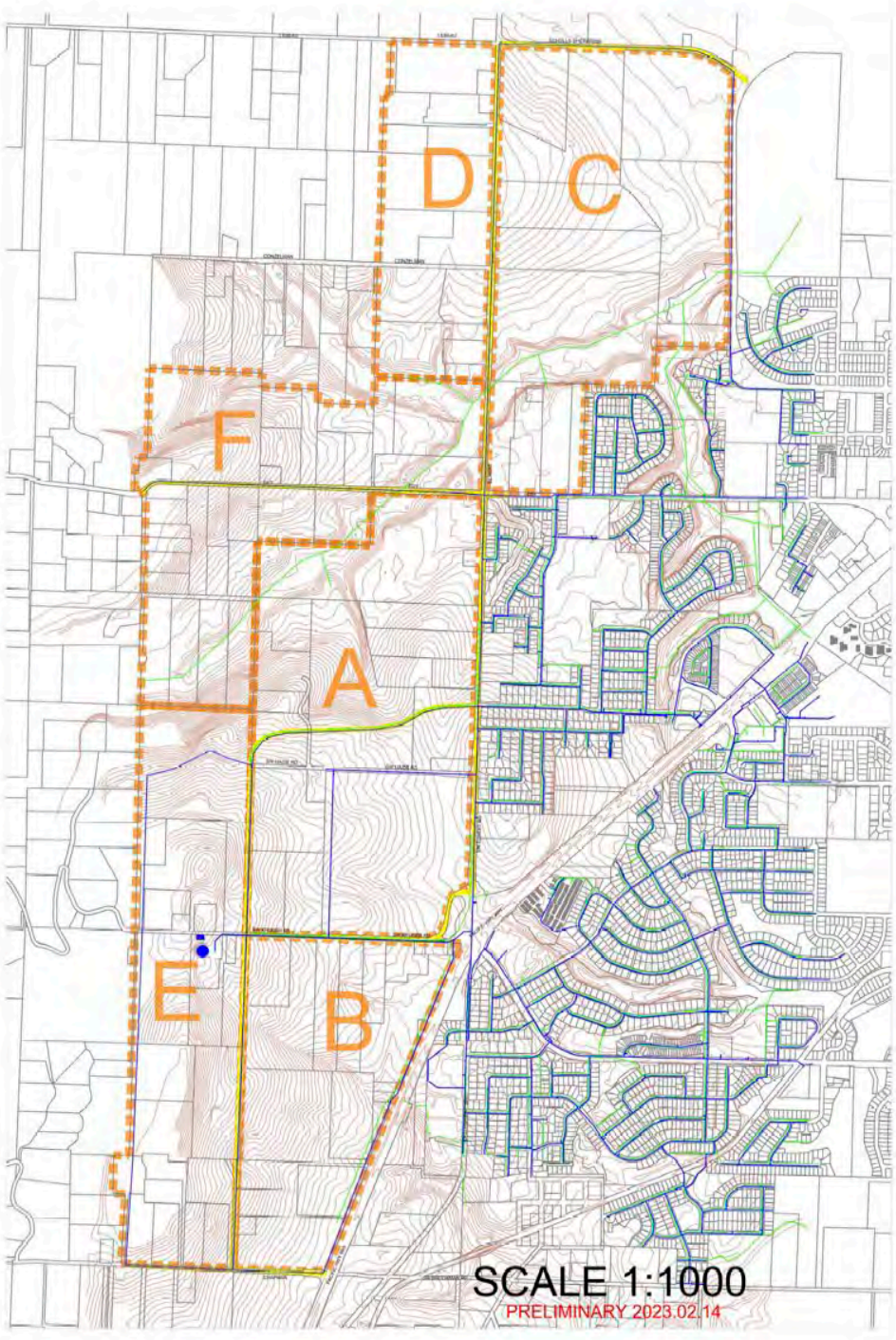
Development Programming

- To match development programming by Concept Plan "district," costs were summed as follows:
    - North ("C" & "D")
    - West/Southwest ("A," "B," "E")
    - Far West ("F")
- Mixed Use treated as Commercial, with no additional estimates for housing.

Revenue Calculation

- FAR of 0.35 was applied to programming acreage for non-residential land uses, and multifamily for water SDC revenue calculation when calculating connection charges for water, sewer, and park revenues.
- For sewer SDCs:
    - For City SDC calculation, an EDU is equivalent to 150 gallons per day. Low/high flow counts for Mixed Employment and Commercial were provided by the City and used to generate a low and high-sewer revenue scenario.
    - For CWS SDC calculation, an EDU is equivalent to 16 "fixture units." Low/high flow counts for Mixed Employment and Commercial were provided by the City and used to generate a low and high-sewer revenue scenario.
- For stormwater SDCs:
    - The CWS Regional Storm Drainage Improvement Charge was not tracked because most users have these charges waived because their projects provide water quality and water detention services.
    - As with the CWS Regional Storm Drainage Improvement Charge, it is expected that many users will receive a 45% discount for designs that support water quality (a discount for water detention is not available for the City's SDC). For this reason, in the calculation of the City of Sherwood's stormwater SDC, only 55% of the charge was included. For this SDC, one equivalent service unit (ESU) of 2,640 feet is equivalent to one single-family residence. For other uses, calculations were area based, after removing 10% of land area as estimated non-pervious surface (for Multifamily, Mixed Employment, and Commercial/Mixed Use/Hospitality uses).
- For City of Sherwood transportation SDCs, fees associated with the following non-residential "Type" were used:
    - Mixed Employment: "General Light Commercial"
    - Commercial, Mixed Use, Hospitality: "Specialty Retail"

Appendix B: Sherwood West Preliminary Concept Plan Phasing



Sherwood West Concept Plan

Preliminary Infrastructure Funding Strategy

Date February 13, 2024

To Brian Varricchione, Mackenzie

From Ellen Bini, Leland Consulting Group
Chris Zahas, AICP, Leland Consulting Group

CC Eric Rutledge, City of Sherwood

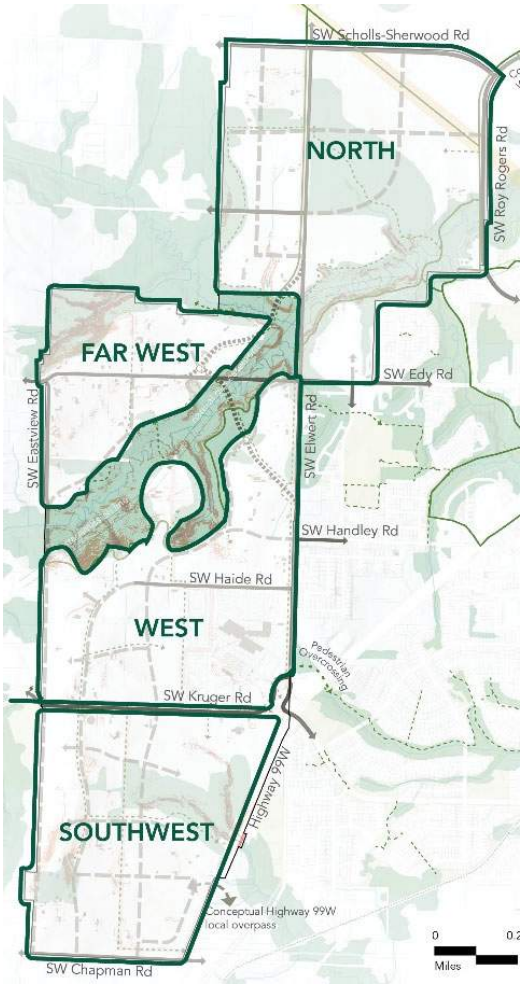
Introduction

This Infrastructure Funding Strategy memorandum accompanies the Sherwood West Concept Plan Refinement study by providing a high-level comparison of estimated infrastructure costs and revenues and by outlining potential tools for funding the development of priority districts in the Sherwood West area. It builds upon a preliminary exploration of infrastructure costs and funding tools that was developed during the 2016 Sherwood West Preliminary Concept Plan and replaces an earlier Preliminary Infrastructure Funding Strategy provided in March 2023.

This memorandum is organized as follows:

- **Infrastructure Funding Gap Analysis.** We present a high-level summary of expected infrastructure costs required to make the various subdistricts of Sherwood West developable and compare them to the system development charges (SDCs) and other development impact fees that would be generated by new development in Sherwood West to help pay for such infrastructure. This calculation identifies funding gaps that will need to be addressed for Sherwood West to build out. The types of infrastructure evaluated in this memorandum include water, sanitary sewer, storm water, parks, and transportation.
- **Funding Toolkit and Strategy.** To address the anticipated funding gaps, the memo identifies potential funding tools and strategies that could supplement the baseline SDC revenues to make development feasible. This memo builds upon the tools discussed in the 2016 Sherwood West Preliminary Concept Plan and recommends those that have the most promise for filling any funding shortfalls.

In all steps of this analysis and throughout this memorandum, the focus is on regional infrastructure necessary to provide access or utility service to development parcels. For the most part, this means major arterials, collectors and trunk utility lines that will serve multiple parcels within Sherwood West. Roads and infrastructure internal to development sites are not considered here and are assumed to be a developer cost.



Catalyst Projects

Based on City priorities and existing infrastructure availability, it is anticipated that the North, West, and Southwest districts will develop first. Through public investment and private development, attention in these districts will help lay the foundation for the long-term evolution of Sherwood West. This analysis, therefore, takes a close look at the infrastructure that will help these areas serve as catalysts for subsequent development elsewhere in Sherwood West.

Table 1. Estimated Infrastructure Costs by District and Category

	Water		Sanitary Sewer		Storm		Parks		Transportation		Total District
	Costs	%	Costs	%	Costs	%	Costs	%	Costs	%	Costs
North	$10,745,000	8%	$18,162,500	13%	$10,932,500	8%	$23,428,890	17%	$72,850,000	54%	**$136,118,890**
Far West	$8,367,000	20%	$4,801,500	11%	$2,775,000	6%	$0	0%	$26,920,000	63%	**$42,863,500**
West/Southwest	$29,164,800	19%	$10,099,350	7%	$6,177,500	4%	$23,815,610	15%	$85,787,301	55%	**$155,044,561**

- **North District.** The North District is best suited for employment uses that support the City's economic development goals, and the 2023 Concept Plan accordingly shows a future focus on mixed employment uses in this area. As in all districts, transportation projects account for the largest share—54 percent—of infrastructure costs anticipated in this district (Table 1). Park projects are the second highest-cost category in the North District, at 17 percent, followed by sanitary sewer at 13 percent. It is expected that a large proportion of transportation project costs will be paid by developers on a project-by-project basis, though the City will need to plan for capital projects serving the area (e.g., the Elwert and Scholls-Sherwood intersection). Serving this area with appropriate infrastructure will require considerable investment, as summarized in Table 1 and outlined in Mackenzie's February 2024 Sherwood West Concept Plan Refinement report.
- **West/Southwest Districts.** Development of the West District has already begun with the new high school, finished in 2021. The concept plan shows this district is expected to be developed with a mixture of housing types and employment uses adjacent to Highway 99W. The highest-cost categories for these districts include transportation (55 percent), followed by water (19 percent) and parks (15 percent). According to the City's 2023 infrastructure and phasing analysis, this area can more readily accommodate most needed infrastructure improvements relative to the North District. However, road construction and financing will pose significant costs and challenges throughout Sherwood West given the terrain, the presence of significant natural areas, and the current parcelization of the area.

A list of the highest-cost projects for both areas can be found in Table 2.

Table 2. Highest-Cost Infrastructure Projects, North and West/Southwest Districts

North District		
Park Development and Land Acquisition	$18,388,890	Park
Widen Roy Rogers Road	$10,800,000	Transportation
Widen Scholls-Sherwood Road	$8,800,000	Transportation
Southern collector street	$8,800,000	Transportation
Highway 99W Undercrossing at Cedar Creek	$8,700,000	Transportation
Northern collector street	$8,200,000	Transportation
West/Southwest Districts		
Highway 99W Pedestrian Bridge at Elwert	$14,898,401	Transportation
Park Development and Land Acquisition	$11,270,610	Park
Replacement of Fieldhouse	$8,775,000	Park
New Collector (2-lane),* Sector "A"	$7,880,000	Transportation
New Collector (2-lane),* Sector "B"	$6,256,000	Transportation
Elwert Road (Full)*	$4,500,000	Transportation
Pump Facility*	$4,500,000	Water
Regional Trails	$3,770,000	Park
Finish Loop*	$3,440,000	Water

* Project cost estimates include hard costs only, or those excluding design, construction management, and land acquisition.

Infrastructure Funding Gap Analysis

Methodology

Table 3 compares expected infrastructure costs and revenues to calculate the funding surplus (positive amounts) or gap (negative amounts) that would be generated through development fees. Some notes on the methodology used are included below, with a detailed account of the methodology found in Appendix A.

Revenues. The primary revenues that will be used to fund infrastructure in Sherwood West include the City's system development charges (SDCs) and regional development impact fees, described further below. Some additional funds may be available from other public agencies and other local funding tools, described at the end of this memorandum. All revenues shown are based on a full build out of the area, and the land use programs identified in the Land Use Plan section of the 2023 Concept Plan. A gap analysis was calculated for both low and high housing scenarios, with the low housing scenario assuming 0 percent middle housing (plexes, townhomes, and cottage clusters) built in areas designated for single-family homes, and the high scenario assuming 20 percent middle housing built in those areas. This analysis does not consider the timing of infrastructure costs or revenues.

- **City System Development Charges.** The City of Sherwood System Development Charges (SDC) are "one-time fees charged to new development to help pay a portion of the water, sewer, storm, parks and street costs associated with building infrastructure to meet needs created by growth."[1]

[1] City of Sherwood, System Development Charges, accessed February 12, 2024.

- **Clean Water Services (CWS) Regional Connection Charge (RCC).** Clean Water Services is a water resources management utility providing sanitary sewer and surface water management in Washington County. This analysis assumes RCC revenue will be available for funding sanitary sewer infrastructure expansion in Sherwood West.
- **County Transportation Development Tax (TDT).** The TDT, passed by Washington County voters in 2008, is a one-time charge on development (like an SDC) that funds transportation capital improvements designed to accommodate growth. A list of eligible projects is maintained by the County and is "generally limited to improvements on major roads (arterials and collectors) and selected transit capital projects."[2]

Costs. Infrastructure costs for water, sanitary sewer, storm water, and transportation facilities were provided by the City engineering team, with the exception of costs for the North District—which were supplied by Mackenzie. Mackenzie also provided regional trail cost estimates—tracked under the parks category—and park costs were based on estimates provided in the City's 2021 Parks and Recreation Master Plan, adjusted for inflation (see Appendix D for construction cost index values used in the inflation adjustment). A share of costs for planned capital improvement projects that will either entirely or partially be built outside of Sherwood West but still serve the area was also supplied by City engineers. Not included are costs internal to development projects, such as site preparation and construction, that will be paid by private developers. Though the findings below show a funding surplus for some utilities, if construction costs continue to increase as rapidly as they have in recent years, future market conditions may lead to a deficit.

[2] Washington County Department of Land Use and Transportation, Transportation Development Tax Annual Reports 2009–Present.

Table 3. Sherwood West Infrastructure Funding Gap Analysis

Preliminary Gap Analysis: Low Density Housing (0% Middle Housing)

	Water	Sanitary Sewer		Storm	Parks	Transportation		Total w/ all Revenues	**Total w/ City Revenues Only**
Revenues to City of Sherwood	City SDC	City SDC	CWS RCC	City SDC	City SDC	City SDC	County TDT		
North ("C" & "D")	$6,151,837	$921,150	$3,946,841	$2,070,650	$7,319,177	$2,774,549	$15,673,044	$38,857,249	$19,237,364
Far West ("F")	$5,107,450	$521,652	$3,613,308	$467,866	$8,572,248	$1,125,504	$5,612,205	$25,020,233	$15,794,720
West/Southwest ("A," "B," "E")	$18,231,546	$2,414,470	$53,942,295	$2,798,613	$39,281,132	$32,739,960	$110,090,947	$259,498,965	$95,465,722
Total Sources	**$29,490,834**	**$3,857,272**	**$61,502,444**	**$5,337,129**	**$55,172,557**	**$36,640,014**	**$131,376,197**	**$323,376,446**	**$130,497,805**
Costs to City of Sherwood									
North ("C" & "D")	$10,745,000	$18,162,500		$10,932,500	$23,428,890	$72,850,000		$136,118,890	$136,118,890
Far West ("F")	$8,367,000	$4,801,500		$2,775,000	-	$26,920,000		$42,863,500	$42,863,500
West/Southwest ("A," "B," "E")	$29,164,800	$10,099,350		$6,177,500	$23,815,610	$85,787,301		$155,044,561	$155,044,561
Total Uses	**$48,276,800**	**$33,063,350**		**$19,885,000**	**$47,244,500**	**$185,557,301**		**$334,026,951**	**$334,026,951**
Funding Surplus/Gap	-$18,785,966	$32,296,366		-$14,547,871	$7,928,057	-$17,541,090		-$10,650,505	-$203,529,146

Preliminary Gap Analysis: High Density Housing (20% Middle Housing)

	Water	Sanitary Sewer		Storm	Parks	Transportation		Total w/ all Revenues	**Total w/ City Revenues Only**
Revenues to City of Sherwood	City SDC	City SDC	CWS RCC	City SDC	City SDC	City SDC	County TDT		
North ("C" & "D")	$6,819,915	$989,057	$4,424,521	$2,131,427	$8,453,476	$2,863,323	$16,116,844	$41,798,562	$21,257,197
Far West ("F")	$8,132,886	$829,174	$5,776,516	$743,100	$13,708,998	$1,527,524	$7,621,985	$38,340,182	$24,941,681
West/Southwest ("A," "B," "E")	$23,948,378	$2,995,560	$58,029,871	$3,318,692	$48,987,484	$33,499,612	$113,888,607	$284,668,206	$112,749,727
Total Sources	**$38,901,178**	**$4,813,790**	**$68,230,908**	**$6,193,220**	**$71,149,957**	**$37,890,459**	**$137,627,437**	**$364,806,950**	**$158,948,605**
Costs to City of Sherwood									
North ("C" & "D")	$10,745,000	$18,162,500		$10,932,500	$23,428,890	$72,850,000		$136,118,890	$136,118,890
Far West ("F")	$8,367,000	$4,801,500		$2,775,000	-	$26,920,000		$42,863,500	$42,863,500
West/Southwest ("A," "B," "E")	$29,164,800	$10,099,350		$6,177,500	$23,815,610	$85,787,301		$155,044,561	$155,044,561
Total Uses	**$48,276,800**	**$33,063,350**		**$19,885,000**	**$47,244,500**	**$185,557,301**		**$334,026,951**	**$334,026,951**
Funding Surplus/Gap	-$9,375,622	$39,981,349		-$13,691,780	$23,905,457	-$10,039,405		$30,779,999	-$175,078,346

Findings

Across both scenarios, revenues generated under a full buildout of Sherwood West are sufficient to cover estimated infrastructure costs for sanitary sewer and parks, but not for water, transportation, or storm infrastructure.

The calculation of storm water revenues assumed no CWS Regional Storm Drainage Improvement Charges would be collected due to credits given for water detention and water quality projects, per City guidance. With an additional 45% reduction in assumed City storm water SDC collection (due to participation in water quality projects), a shortfall of roughly $13.7–14.5 million is found for stormwater under both housing scenarios. It is not unexpected to find a deficit for transportation infrastructure—even when including sizeable TDT revenues and excluding the Chicken Creek Bridge from the cost estimates—when considering that many local governments are challenged with funding road development and maintenance.

This is a preliminary analysis and should be revisited as the City conducts additional infrastructure planning, as development is implemented, and as other aspects of development in Sherwood West change—including any significant changes to costs or timing of development.

Funding Toolkit and Strategy

Recommended Funding Strategies

A broad range of tools can be considered for supplementing the estimated development impact fee revenues identified above. LCG's recommendations are informed by recent development experience in the region and review of existing resources, including the Phasing and Funding Strategy prepared by ECONorthwest for the Preliminary Concept Plan in 2016, and the 2020 Washington County Infrastructure Funding Plan Toolkit (which provides guidance on funding transportation infrastructure in urban reserve areas specifically).

Federal Funding Sources. Particularly for the North District, the City should keep an eye on funding opportunities offered by the Economic Development Administration for the development of employment lands, and consider partnering with regional economic development entities such as Greater Portland Inc when applying for federal funding.

State Funding Sources. Business Oregon operates industrial and employment land readiness programs that may have the potential to fund infrastructure development in Sherwood West, particularly in the North District. Additional opportunities for road construction supporting economic development as well as regional trail development are available through the Oregon Department of Transportation (ODOT), with further opportunities for funding parks and trails available through the Oregon Parks and Recreation Department.

- **Special Public Works Fund.** Business Oregon's Special Public Works Fund provides low-cost financing to eligible municipalities for planning, design, and construction of utilities and facilities essential to industrial growth, commercial enterprise, and job creation. Eligible projects include capital improvements (acquisition, preliminary and final design, & engineering) or planning projects (technical and financial feasibility studies) that assist in developing industrial lands, supporting an immediate job creation/retention/expansion opportunity, or replacement of essential community facilities. Loan funding is available for financing small to large projects with favorable interest rates and terms up to 30 years or the useful life of the project, whichever is less, for most projects.
- **Community Paths Grants.** ODOT's Oregon Community Paths Program is "dedicated to helping communities create and maintain connections through multiuse paths, with the goal of complementing and expanding existing active transportation programs across the state."[3] Grants are awarded on an annual basis, with the current round of applications due January 2025.
- **Immediate Opportunity Fund.** The purpose of this ODOT-administered fund is to support economic development through the construction and improvement of streets and roads. This fund may only be used when other sources of financial support are unavailable or insufficient.
- **Oregon Parks and Recreation Department Local Government Grant Program.** Grants of up to $1,000,000 are available to help fund park and trail planning, land acquisition, and development—and with a population under 25,000, Sherwood is not required to provide matching funds. Grants are awarded on an annual basis, with the current round of applications due starting April 2024.
- **Emerging Opportunities.** The City should watch the state legislature for additional funding opportunities and re-authorization of past funding sources. Examples include the state's Regionally Significant Industrial Sites (RSIS) program, through which local governments can receive state income tax reimbursements to help fund industrial site development, and the Semiconductor Industrial Lands Loan Program (SILL).

[3] ODOT, Oregon Community Paths Program, accessed February 12, 2024.

Regional Sources. In addition to potential state sources mentioned above, securing "outside" funding sources for needed infrastructure can help reduce costs on a dollar-for-dollar basis. Therefore, the City should seek to leverage additional existing funding through other government sources, including:

- **Major Streets Transportation Improvement Program (MSTIP).** MSTIP is a county-wide road improvement program funded by countywide property taxes. The 2023-2028 System of Countywide Interest Map identifies Elwert Road as an "eligible arterial/principal," and may receive funding through MSTIP as a major road. There is MSTIP funding for SW Roy Rogers Road, but not currently for the portion adjacent to Sherwood West.
- **Metropolitan Transportation Improvement Program (MTIP).** MTIP, overseen by Oregon Metro, "records how all federal transportation money is spent in the Portland metropolitan area" and monitors significant state and locally funded projects with an impact on air quality.[4] MTIP follows a four-year construction schedule and is updated every two to three years. Sherwood West projects may be eligible for the next round of MTIP funds.
- **Regional Flexible Funding**. Regional flexible funding for transportation projects, administered by Oregon Metro, provides "federal funding for investments in sidewalks, trails, and roadways in communities across the region." Regional funds not already allocated for ongoing commitments may be applied for by regional jurisdictions through a project selection process. Projects for the 2025-2027 cycle were selected in October 2022, but the City can plan to submit a project proposal for the next funding cycle. To be eligible for funding, the project will need to demonstrate alignment with regional investment priorities.

Supplemental SDC. Based on recent development experience in the region, especially Frog Pond West in Wilsonville, LCG recommends considering Supplemental SDCs to meet any funding gaps not closed by other sources. Supplemental SDCs are essentially additional SDCs for a sub-area of the City, paid by developers. By using the SDC tool, costs can be shared across multiple developers over time. As with standard SDCs, developers can be credited and/or reimbursed for oversized infrastructure that they construct that benefits other developers and/or the city as a whole. As with any development cost, the costs of supplemental SDCs will ultimately get passed on to homebuyers and commercial and residential tenants in the form of higher housing costs and rents. The next steps to implementing a supplemental SDC would involve the following, which should be managed by City staff with the support of a municipal finance consultant:

- Ongoing refinement of project engineering and costs;
- Outreach to property owners and developers to refine development projections and phasing and to negotiate the specifics of a potential fee;
- Financial modeling of a potential fee, including identification of specific projects that would be included in the fee and exploration of scenarios that might vary the fee in different parts of Sherwood West;
- Engagement of the Sherwood City Council and Planning Commission;
- Development of a final proposal for adoption.

Additional funding strategies

Additionally, the three funding tools identified as preferred in the Preliminary Concept Plan (in addition to supplemental SDCs) could also be considered, but would be a lower priority than supplemental SDCs, regional, and state sources:

- **Local Improvement District (LID).** "An LID is a special assessment district where property owners are assessed a fee to pay for capital improvements, such as streetscape enhancements, underground utilities, or shared open

[4] Oregon Metro, Regional Flexible Funding Allocation Overview, accessed February 12, 2024.

space."[5] With LIDs, landowners within the district are assessed a fee based on the proportional benefits they receive from the district, established at inception. LIDs typically require the approval of 60 percent of the affected property owners in the district. Owners benefit from paying costs over time and the City's access to a lower interest rate than typically available through commercial lending.[6] LIDs would have much the same impact as a supplemental SDC, therefore LCG recommends focusing on a supplemental SDC as the primary tool before considering using LIDs.

- **Utility fees**: Utility fees for regional infrastructure are much less common in Oregon and, while allowed, would be relatively unique and less familiar to developers than a supplemental SDC. A utility fee also would be paid by end users (homeowners and tenants) and could therefore create a timing issue where revenues aren't realized until after the infrastructure is built.
- **Property Tax (GO) Bonds**: While citywide general obligation (GO) bonds backed by a temporary increase in property tax rates are a legal option for consideration, the need for a public vote and the fact that all city residents would bear the funding burden limits the appropriateness of this tool to infrastructure projects that have a citywide benefit. Given the need for a public vote and the greater ease of implementing other tools, LCG does not recommend GO bonds as a funding tool for Sherwood West.

Urban Renewal was also considered in the previous Phasing and Funding Strategy, but not as a preferred tool. Nevertheless, it could potentially be used with some caveats as discussed here. Through tax increment financing, urban renewal can help pay for infrastructure through the increase in property taxes that occur in the urban renewal area over time. Urban renewal is typically implemented in existing areas of a city where revitalization is desired or there is a need to address specific infrastructure deficiencies that are barriers to new investment, and its use in new undeveloped areas of the city may face political challenges in implementation. There are also strict limits on how much of a city can be within an urban renewal district, both by taxable value and geographically. This would need to be considered since Sherwood already has two existing urban renewal areas.

Conclusion

Key findings of this preliminary infrastructure funding strategy analysis include:

- Development envisioned for the focus areas of this analysis include employment uses in the North and a mix of housing (including middle housing intermixed with low and medium-density single family development) and employment uses along Highway 99W in the West/Southwest.
- Several infrastructure projects are catalytic to making development possible in these areas. For both the North and West/Southwest districts, transportation projects are projected as the highest-cost, including the widening of Roy Rodgers and Scholls-Sherwood roads in the North, and a new 2-lane collector in the West/Southwest. Additional catalytic projects include the construction of regional trails and the 27 acres of regional parks in the North and West/Southwest districts and expanding water service in the West/Southwest.
- Preliminary analysis shows a shortfall for water, storm and transportation, and a surplus in parks and sanitary sewer when regional connection charge revenues to Clean Water Services are included.
- A range of funding tools for supplementing shortfalls exist—including regional and state sources, as well as supplemental SDCs.
- Next steps involve continued refinement of projects and costs and financial modeling and discussions with developers on a potential supplemental fee.

[5] ECONorthwest, Preliminary Concept Plan Phasing and Funding Strategy, 2016.
[6] Municipal Research and Services Center of Washington, Local Improvement Districts (LIDs), November 2023.

Appendix A: Methodology

The following assumptions were made for the Sherwood West Concept Plan Preliminary Infrastructure Funding Strategy revenue gap analysis, which compares estimated System Development Charge (SDC) revenues and other impact fees from future development to the costs of necessary infrastructure improvements for Sherwood West.

Development Programming

- Because infrastructure costs were provided by sector boundaries defined in the 2016 Concept Plan, to match development programming by Concept Plan "district," costs were summed as follows. See Appendix B for a map that city engineers used to develop sector cost estimates.
    - North District (Sectors "C" & "D")
    - West/Southwest District (Sectors "A," "B," "E")—Southwest included with West because Sector "E" spans both West and Southwest
    - Far West District (Sector "F")
- Mixed Use treated as Commercial, with no additional estimates for housing.
- Cottage clusters are categorized as single family for all SDC types, per City guidance.

Cost Calculation

- Costs were supplied by the City for areas A, B, E, and F, with costs for C and D supplied by Mackenzie—with the exception of parks costs, which were derived from estimates in the 2021 Parks and Recreation Master Plan. Park cost estimates were adjusted for inflation using the Engineering News-Record (ENR) Construction Cost Index for Seattle, using figures for April 2021 and December 2023 (see Appendix D). Regional trail cost estimates were supplied by Mackenzie and tracked under the Parks category.
- Additional cost assumptions for planned offsite capital improvement projects were attributed to the North and West/Southwest districts per City guidance.

Revenue Calculation

	Residential	Non-Residential
Water	Water SDC fees are based on the water connection size. For all residential uses: **Units # * SDC** • For single family and middle housing, a sum of reimbursement, improvement, and administrative SDC charges for the 5/8-3/4" meter size was applied per unit. • For multifamily housing, the sum of charges for the 1-1/2" meter size was applied per multifamily development. The number of multifamily developments was estimated by dividing the number of units programmed for the district by 24 units per acre (the density for all multifamily units programmed for Sherwood West).	For all employment, school, and park uses: **Net acreage * 2.05 * 5/8-3/4" meter SDC** • The 2.05 multiplier is derived from the 2015 Sherwood Water Master Plan's estimate of 437 gallons per day per buildable acre for non-residential uses, divided by the 213 gallon per day per Equivalent Residential Unit (ERU) per buildable acre estimate.

Sanitary Sewer	Sanitary sewer SDCs are based on Equivalent Dwelling Units (EDUs), equating to 150 gallons per day for the City SDC and 16 "fixture units"—or the number of fixtures (such as sinks) contributing to the sanitary sewer system for Clean Water Services' Regional Connection Charge. For all residential uses: **Units # * SDC or CWS RCC** • For City SDCs, a sum of reimbursement and improvement charges per was applied per unit. • For CWS fees, the regional connection charge (RCC) was applied for each unit. Note: Technically multifamily CWS RCC fees are calculated based on the fixture count method (described at right, under the non-residential section); though the estimated fixture units per dwelling unit—including a toilet, bath/shower, two sinks and a domestic dishwasher (see CWS rate schedule pg. 21) equate to the 16 fixture unit Dwelling Unit Equivalent, so the flat RCC was applied per multifamily unit—as with other housing types.	***City SDC*** For all employment, school and park uses, an estimated gallon per day multiplier was applied to net acreage. **Net acreage * 2.91 * SDC** • The 2.91 multiplier is derived from the 2015 Sherwood Water Master Plan's estimate of 437 gallons per day per buildable acre of water use for non-residential uses divided by the 150 gallon per day to convert to EDUs.[7] • The SDC reimbursement and improvement charge for the UGB Minus Brookman and Tonquin Employment Area was used. ***CWS RCC calculation*** CWS RCC charges for nonresidential uses are based on a fixture count method—or the number of fixtures (such as sinks) contributing to the sewage system. According to the CWS rate schedule (pg. 20), 1 Dwelling Unit Equivalent = 16 fixture units. Employment land was translated into fixture units (FU) as follows: ***Commercial Land*** **((Net acreage * FAR * 43,560)/avg SF per business) * (multiplier * RCC)** For commercial lands, an FAR assumption was applied to net acreage, and divided by average square foot for business assumptions. • Mixed Employment: FAR 0.35; 46,000 SF per business • Commercial, Mixed Use, Hospitality: FAR 1.5; 6,000 SF per business

[7] The City's 2016 Sewer Master Plan estimates 850 gallons-per-acre per day (gpad) for employment industrial and 1,000 gpad for commercial zones. However, since sewage uses are conventionally balanced with water use, the lower and more conservative water use number was used for sanitary sewage SDC revenue calculations.

		The resulting estimated business count was multiplied by the RCC charge, with a multiplier applied based on estimated sanitary sewer intensity of the business type. This multiplier was based on average fixture units for industrial and commercial businesses, using data provided by the City: • Mixed Employment: 3.1 = 50 average FU divided by 16 • Commercial/Mixed Use/Hospitality: 5.6 = 90 average FU divided by 16 ***Schools*** The RCC was multiplied by 3.5 (assuming one toilet at 6 FU, and 1 sink at 2 FU, per 30 people, divided by 16) for each school. ***Parks*** The RCC was multiplied by 0.5 (assuming one toilet at 6 FU, and 1 sink at 2 FU, divided by 16) for each park.
Stormwater	Stormwater system SDCs are based on equivalent service units (ESU), where 1 ESU = 2,640 square feet of impervious surface area. **(Impervious acres*(43,560/2,640)) * SDC** • For single family and middle housing, a discounted ESU rate was applied per dwelling unit. • For multifamily, impervious area (estimated at 80% of net acreage) was converted into ESUs, multiplied by a discounted ESU rate. • The ESU rate was discounted by 45% with the expectation that many users will receive a 45% discount for designs that support water quality. Note: the CWS Regional Storm Drainage Improvement Charge was not tracked because most users have charges waived because their projects provide water quality as well as water detention services.	Calculated the same as multifamily housing, with the following changes in assumptions for percent impervious surface, based on existing schools and parks in the city: • 55% for middle schools • 40% for elementary schools • 20% for parks

Parks	A set fee is identified for residential uses. **Units # * SDC** • The single family rate was applied for both single family and middle housing, per unit. The multifamily rate was applied per multifamily unit.	For non-residential uses, a fee per employee is charged. Number of employees was estimated based on Floor Area Ratio (FAR) assumptions and square foot per job assumptions. **(Net acreage * FAR * (43,560/SF per job)) * SDC** Floor Area Ratio (FAR) assumptions: • Mixed Employment: 0.35 • Commercial, Mixed Use, Hospitality: 1.5 • Schools: 0.20 • Parks: no FAR applied SF per job assumptions: • Mixed Employment: 1,000 SF per job (conservative assumption based on manufacturing category estimates from City data) • Commercial, Mixed Use, Hospitality: 470 SF per job (retail estimate from City data) • Schools: 1,300 SF per job, based on U.S. Energy Information Administration building energy consumption data • Parks: 416,900 SF per job, based on current parks jobs and space in the city The non-residential SDC rate was applied per job for all non-residential uses.

Transportation	Transportation SDCs are based on average weekday trip generation rates for different housing and land use types. **Units # * SDC or TDT** • For both City SDCs and the Washington County Transportation Development Tax (TDT), the respective rate for single family, middle housing ("condominium/townhouse"), or multifamily type was applied per unit.	***Commercial Land*** For both City SDCs and County TDTs on commercial and industrial lands, fees were applied per 1,000 square feet of gross floor area (TSFGFA), after applying an FAR assumption to net acreage. Estimates for schools are based on student count. **(Net acreage * FAR * (43,560/1,000)) * SDC or TDT** Floor Area Ratio (FAR) assumptions: • Mixed Employment: 0.35 • Commercial, Mixed Use, Hospitality: 1.5 SDCs and TDTs for the following "Types" were used: • Mixed Employment: average of "General Light Industrial" and "Manufacturing" rates • Commercial, Mixed Use, Hospitality: "Shopping Center" ***Schools*** For schools, rates for middle and elementary schools were applied per student, with student count estimates supplied by Washington County, based on average middle and elementary school sizes. ***Parks*** Park SDCs were applied per net acre of park development in the Concept Plan, applying the City Park rate for City SDCs, and Park rate for County TDTs.

TECHNICAL MEMORANDUM

City of Sherwood
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Mayor
Tim Rosener

Council President
Kim Young

Councilors
Renee Brouse
Taylor Giles
Keith Mays
Doug Scott
Dan Standke

City Manager Pro Tem
Craig Sheldon

Assistant City Manager
Kristen Switzer

Date: January 26th, 2024

To: Eric Rutledge, Community Development Director, City of Sherwood

From: Jason Waters, P.E., City Engineer, City of Sherwood

Project: Sherwood West UGB Expansion

Phase: Final Concept Plan, Re-Look Project (FY23-24)

Subject: Cost Estimates for Public Transportation & Utility Infrastructure

Dear Eric,

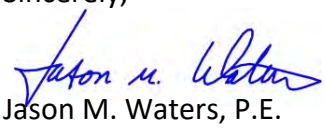
City Engineering Department staff has completed a final review of the cost estimates and made the following changes which resulted in a slight reduction in the total anticipated public infrastructure costs. Based on comments and feedback from the last TAC meeting, we revisited our estimates and increased the cost per linear foot of new collectors and arterials after comparison with more recent cost estimates prepared by Kittelson & Associates for nearby projects. We also re-evaluated the cost estimates prepared for SW Elwert Rd and made adjustment that accounted for realignment of the Edy-Elwert intersection. Lastly, we reduced storm infrastructure costs associated with regional stormwater management facilities to be constructed with adjacent private development projects and less common for the regional stormwater management facilities to be constructed by the City with the Public Improvements.

Cost estimates and bid item pricing were compared to the same cost estimating indices utilized for annual SDC rate adjustments (ENR, Seattle Index) and average bid item prices published by ODOT. Additionally, Engineering Department staff compared these costs against similar planning level cost estimates prepared by private consultants for Washington County DLUT in 2022 for the SW Edy Rd Improvements and in 2023 for the SW Ice Age Drive Improvements to ensure the cost estimates enclosed here for the Sherwood West UGB expansion area align with current industry standards and best practices.

For ease of review all of the cost estimating tables and associated maps for each of the 6 sectors have been included here (see Attachments 1 & 2). Please let me know if you

have any questions or need additional information related to the infrastructure cost estimates prepared for the Sherwood West UGB expansion area.

Sincerely,



Jason M. Waters, P.E.
City Engineer | City of Sherwood
Attachments: 1. Updated Public Transportation & Utility Infrastructure Cost Estimate Summary Tables (7 pages) and 2. Public Transportation & Utility Infrastructure Location Map (7 pages)

Cc: File, e-file, Craig Christensen (COS), City Manager's Office, Planning Manager

Attachment 1 Cost Estimate Summary Tables and Detailed Cost Estimates (7 pages total)

COST ESTIMATE TABLE 1 - ENTIRE SHERWOOD WEST STUDY AREA (SECTORS A THRU F)					
Cost Estimate for Public Infrastrucure for Sherwood West (Summary) - January 26, 2024					
Sector	Street	Storm	Sanitary	Water	Sector Total
A	$ 49,647,500.00	$ 3,402,500.00	$ 2,250,600.00	$ 14,701,500.00	$ 70,002,100.00
B	$ 16,551,400.00	$ 2,775,000.00	$ 1,428,750.00	$ 8,287,300.00	$ 29,042,450.00
C	$ 20,541,000.00	$ 4,725,000.00	$ 2,913,750.00	$ 9,469,350.00	$ 37,649,100.00
D	$ 3,570,000.00	$ -	$ 617,500.00	$ 594,000.00	$ 4,781,500.00
E	$ 4,690,000.00	$ -	$ -	$ 6,176,000.00	$ 10,866,000.00
F	$ 26,920,000.00	$ 2,775,000.00	$ 4,801,500.00	$ 8,367,000.00	$ 42,863,500.00
Total	$ 121,919,900.00	$ 13,677,500.00	$ 12,012,100.00	$ 47,595,150.00	**$ 195,204,650.00**

SECTOR A			
Public (Street) Transportation Infrastructure			
Street Segment	Length	Cost per Length	Cost
Elwert Road	1500	$ 2,000.00	$ 3,000,000.00
Elwert/Handley Signal	1	$ 1,000,000.00	$ 1,000,000.00
Elwert Road (Full)	1500	$ 3,000.00	$ 4,500,000.00
Edy Road (Full)	1500	$ 2,000.00	$ 3,000,000.00
Elwert/Edy R-A-B	1	$ 1,000,000.00	$ 1,000,000.00
Chicken Creek Crossing (No Bridge)	1	$ 2,000,000.00	$ 2,000,000.00
Remove Edy Road	1	$ 500,000.00	$ 500,000.00
New Collector (2-lane)	4925	$ 1,600.00	$ 7,880,000.00
Kruger Road (full)	875	$ 2,000.00	$ 1,750,000.00
Kruger Road (partial)	1900	$ 800.00	$ 1,520,000.00
		Subtotal	*$ 26,150,000.00*
		Design Costs	$ 5,230,000.00
		Construction Mangement	$ 5,230,000.00
		Land Acquisition	$ 6,500,000.00
		Contingency (25% of Const.)	$ 6,537,500.00
		Total	$ 49,647,500.00
Storm Improvements			
Elwert Road	0	$ 600.00	$ -
Elwert/Handley Signal	1	$ -	$ -
Elwert/Edy Intersection	1	$ 350,000.00	$ 350,000.00
New Collector (2-lane)	0	$ 400.00	$ -
Kruger Road (full)	0	$ 1,000.00	$ -
Kruger Road (partial)	0	$ 600.00	$ -
Regional Facilities	1	$ 1,500,000.00	$ 1,500,000.00
		Subtotal	*$ 1,850,000.00*
		Design Costs	$ 370,000.00
		Construction Mangement	$ 370,000.00
		Land Acquisition	$ 350,000.00
		Contingency (25% of Const.)	$ 462,500.00
		Total	$ 3,402,500.00
Sanitary Improvements			
Elwert Road	970	$ 500.00	$ 485,000.00
New Collector	2930	$ 300.00	$ 879,000.00
		Subtotal	*$ 1,364,000.00*
		Design Costs	$ 272,800.00
		Construction Mangement	$ 272,800.00
		Contingency (25% of Const.)	$ 341,000.00
		Total	$ 2,250,600.00
Water Improvements			
Elwert Road	900	$ 600.00	$ 540,000.00
Elwert Road	2500	$ 600.00	$ 1,500,000.00
Elwert Road PRV	1	$ 200,000.00	$ 200,000.00
Haide Road PRV	1	$ 200,000.00	$ 200,000.00
Pump Facility	1	$ 4,500,000.00	$ 4,500,000.00
New Collector	4925	$ 400.00	$ 1,970,000.00
		Subtotal	*$ 8,910,000.00*
Design Costs			$ 1,782,000.00
Construction Mangement			$ 1,782,000.00
Contingency (25% of Const.)			$ 2,227,500.00
		Total	$ 14,701,500.00
		Total ALL	**$ 70,002,100.00**

SECTOR B

Public (Street) Transportation Infrastructure

Street Segment	Length	Cost per Length	Cost
New Collector (2-lane)	3910	$ 1,600.00	$ 6,256,000.00
Chapman Road (full)	1130	$ 2,000.00	$ 2,260,000.00
		Subtotal	*$ 8,516,000.00*
		Design Costs	$ 1,703,200.00
		Construction Mangement	$ 1,703,200.00
		Land Acquisition	$ 2,500,000.00
		Contingency (25% of Const.)	$ 2,129,000.00
		Total	$ 16,551,400.00

Storm Improvements

New Collector (2-lane)	0	$ 400.00	$ -
Chapman Road (full)	0	$ 1,000.00	$ -
	0	$ -	$ -
Regional Facilities	1	$ 1,500,000.00	$ 1,500,000.00
		Subtotal	*$ 1,500,000.00*
		Design Costs	$ 300,000.00
		Construction Mangement	$ 300,000.00
		Land Acquisition	$ 300,000.00
		Contingency (25% of Const.)	$ 375,000.00
		Total	$ 2,775,000.00

Sanitary Improvements

Highway 99	1550	$ 500.00	$ 775,000.00
	0	$ -	$ -
		Subtotal	*$ 775,000.00*
		Design Costs	$ 155,000.00
		Construction Mangement	$ 155,000.00
		Land Acquisition	$ 150,000.00
		Contingency (25% of Const.)	$ 193,750.00
		Total	$ 1,428,750.00

Water Improvements

Highway 99	4200	$ 600.00	$ 2,520,000.00
Chapman Road	1130	$ 600.00	$ 678,000.00
Chapman Road PRV	1	$ 200,000.00	$ 200,000.00
New Collector	3910	$ 400.00	$ 1,564,000.00
		Subtotal	*$ 4,962,000.00*
		Design Costs	$ 992,400.00
		Construction Mangement	$ 992,400.00
		Land Acquisition	$ 100,000.00
		Contingency (25% of Const.)	$ 1,240,500.00
		Total	$ 8,287,300.00
		Total ALL	**$ 29,042,450.00**

SECTOR C

Public (Street) Transportation Infrastructure

Street Segment	Length	Cost per Length	Cost
Elwert Road	3500	$ 2,000.00	$ 7,000,000.00
Elwert/Chapman Intersection	1	$ 1,500,000.00	$ 1,500,000.00
Remove Elwert Road	1	$ 600,000.00	$ 600,000.00
Scholls Sherwood (partial)	3050	$ 800.00	$ 2,440,000.00
		Subtotal	*$ 11,540,000.00*
		Design Costs	$ 2,308,000.00
		Construction Mangement	$ 2,308,000.00
		Land Acquisition	$ 1,500,000.00
		Contingency (25% of Const.)	$ 2,885,000.00
		Total	$ 20,541,000.00

Storm Improvements

Extension to Chicken Creek	0	$ 500.00	$ -
Elwert Road	0	$ 1,000.00	$ -
Scholls-Sherwood (Partial)	0	$ 500.00	$ -
Scholls-Sherwood Facility	1	$ 1,250,000.00	$ 1,250,000.00
Elwert Facility	1	$ 1,250,000.00	$ 1,250,000.00
Chicken Creek Crossing	0	$ 1,000,000.00	$ -
(Assume No Bridge)			$ -
		Subtotal	*$ 2,500,000.00*
		Design Costs	$ 500,000.00
		Construction Mangement	$ 500,000.00
		Land Acquisition	$ 600,000.00
		Contingency (25% of Const.)	$ 625,000.00
		Total	$ 4,725,000.00

Sanitary Improvements

Trunk Line	2600	$ 500.00	$ 1,300,000.00
Chicken Creek Crossing	500	$ 750.00	$ 375,000.00
		Subtotal	*$ 1,675,000.00*
		Design Costs	$ 335,000.00
		Construction Mangement	$ 335,000.00
		Land Acquisition	$ 150,000.00
		Contingency (25% of Const.)	$ 418,750.00
		Total	$ 2,913,750.00

Water Improvements

Scholls-Sherwood	3050	$ 600.00	$ 1,830,000.00
Elwert Road	3455	$ 600.00	$ 2,073,000.00
Roy Rogers	3060	$ 600.00	$ 1,836,000.00
		Subtotal	*$ 5,739,000.00*
		Design Costs	$ 1,147,800.00
		Construction Mangement	$ 1,147,800.00
		Contingency (25% of Const.)	$ 1,434,750.00
		Total	$ 9,469,350.00
		Total ALL	**$ 37,649,100.00**

SECTOR D			
Public (Street) Transportation Infrastructure			
Street Segment	Length	Cost per Length	Cost
Elwert Road (Full)	600	$ 3,000.00	$ 1,800,000.00
		Subtotal	*$ 1,800,000.00*
		Design Costs	$ 360,000.00
		Construction Mangement	$ 360,000.00
		Land Acquisition	$ 600,000.00
		Contingency (25% of Const.)	$ 450,000.00
		Total	$ 3,570,000.00
Storm Improvements			
	0	$ -	$ -
	0	$ -	$ -
	0	$ -	$ -
	0	$ -	$ -
	0	$ -	$ -
	0	$ -	$ -
			$ -
		Subtotal	*$ -*
		Design Costs	$ -
		Construction Mangement	$ -
		Land Acquisition	$ -
		Contingency (25% of Const.)	$ -
		Total	$ -
Sanitary Improvements			
Trunk Line	700	$ 500.00	$ 350,000.00
		Subtotal	*$ 350,000.00*
		Design Costs	$ 70,000.00
		Construction Mangement	$ 70,000.00
		Land Acquisition	$ 40,000.00
		Contingency (25% of Const.)	$ 87,500.00
		Total	$ 617,500.00
Water Improvements			
Elwert Road	600	$ 600.00	$ 360,000.00
		$ -	$ -
		$ -	$ -
		Subtotal	*$ 360,000.00*
		Design Costs	$ 72,000.00
		Construction Mangement	$ 72,000.00
		Contingency (25% of Const.)	$ 90,000.00
		Total	$ 594,000.00
		Total ALL	**$ 4,781,500.00**

SECTOR E			
Public (Street) Transportation Infrastructure			
Street Segment	Length	Cost per Length	Cost
Chapman Road (full)	1300	$ 2,000.00	$ 2,600,000.00
		Subtotal	*$ 2,600,000.00*
		Design Costs	$ 520,000.00
		Construction Mangement	$ 520,000.00
		Land Acquisition	$ 400,000.00
		Contingency (25% of Const.)	$ 650,000.00
		Total	$ 4,690,000.00
Storm Improvements			
Chapman Road (full)	0	$ 1,000.00	$ -
	0	$ -	$ -
	0	$ -	$ -
	0	$ -	$ -
	0	$ -	$ -
	0	$ -	$ -
			$ -
		Subtotal	*$ -*
		Design Costs	$ -
		Construction Mangement	$ -
		Land Acquisition	$ -
		Contingency (25% of Const.)	$ -
		Total	$ -
Sanitary Improvements			
Trunk Line	0	$ -	$ -
		Subtotal	*$ -*
		Design Costs	$ -
		Construction Mangement	$ -
		Land Acquisition	$ -
		Contingency (25% of Const.)	$ -
		Total	$ -
Water Improvements			
Finish Loop	8600	$ 400.00	$ 3,440,000.00
		$ -	$ -
		$ -	$ -
		Subtotal	*$ 3,440,000.00*
		Design Costs	$ 688,000.00
		Construction Mangement	$ 688,000.00
		Land Acquisition	$ 500,000.00
		Contingency (25% of Const.)	$ 860,000.00
		Total	$ 6,176,000.00
		Total ALL	**$ 10,866,000.00**

SECTOR F

Public (Street) Transportation Infrastructure

Street Segment	Length	Cost per Length	Cost
Elwert Road (full)	2000	$ 3,000.00	$ 6,000,000.00
Edy Road (full)	3650	$ 2,000.00	$ 7,300,000.00
Trib. Creek Crossing (No Bridge)	1	$ 500,000.00	$ 500,000.00
Elwert /Edy R-A-B	1	$ 1,000,000.00	$ 1,000,000.00
		Subtotal	*$ 14,800,000.00*
		Design Costs	$ 2,960,000.00
		Construction Mangement	$ 2,960,000.00
		Land Acquisition	$ 2,500,000.00
		Contingency (25% of Const.)	$ 3,700,000.00
		Total	$ 26,920,000.00

Storm Improvements

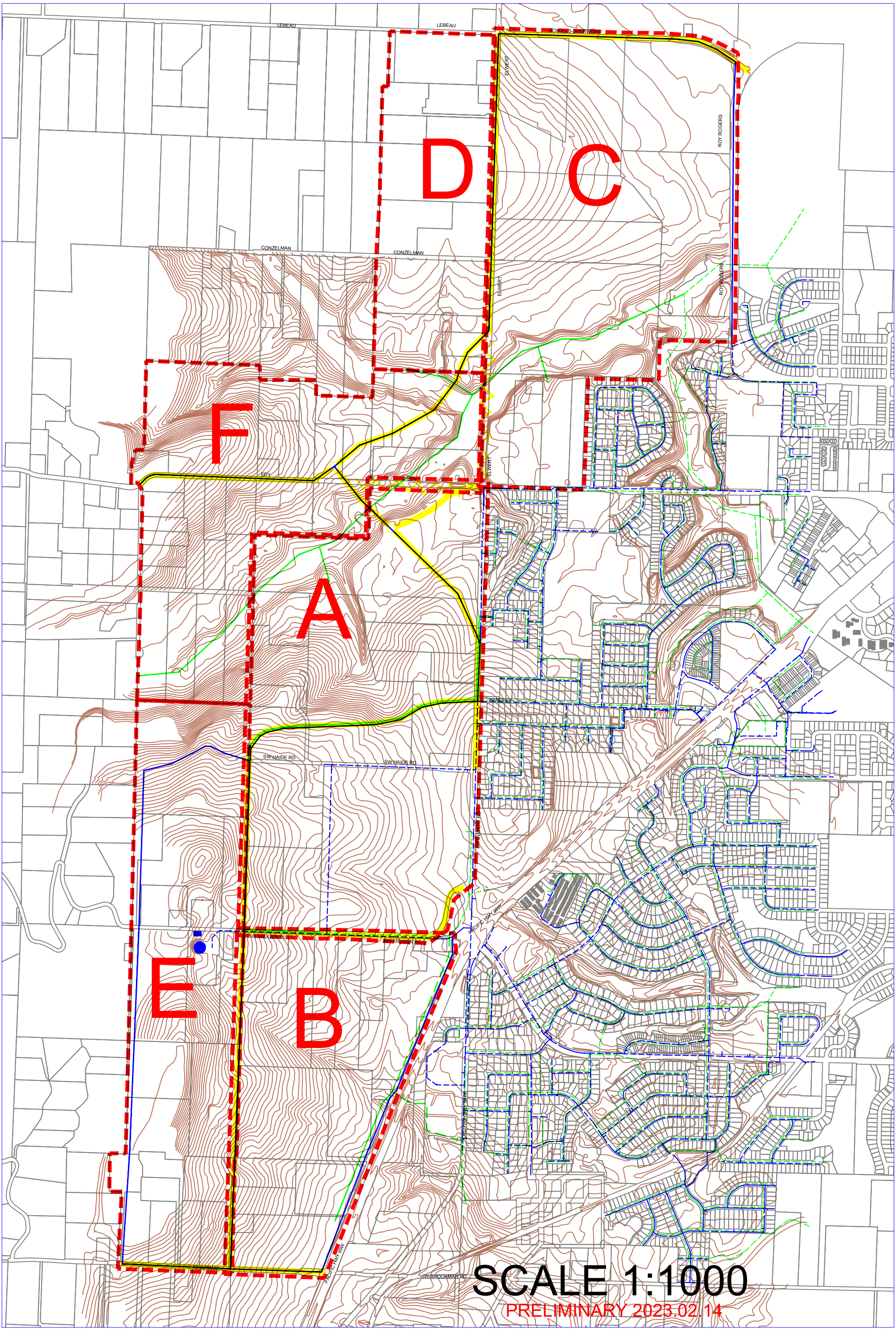
Edy Road (full)	0	$ 1,000.00	$ -
Chicken Creek Crossing	0	$ 1,000,000.00	$ -
Edy Road Facility	1	$ 1,500,000.00	$ 1,500,000.00
		Subtotal	*$ 1,500,000.00*
		Design Costs	$ 300,000.00
		Construction Mangement	$ 300,000.00
		Land Acquisition	$ 300,000.00
		Contingency (25% of Const.)	$ 375,000.00
		Total	$ 2,775,000.00

Sanitary Improvements

Trunk Line	4770	$ 500.00	$ 2,385,000.00
Chicken Creek Crossing	300	$ 750.00	$ 225,000.00
Chicken Creek Crossing	400	$ 750.00	$ 300,000.00
		Subtotal	*$ 2,910,000.00*
		Design Costs	$ 582,000.00
		Construction Mangement	$ 582,000.00
		Land Acquisition	$ -
		Contingency (25% of Const.)	$ 727,500.00
		Total	$ 4,801,500.00

Water Improvements

Edy Road	4550	$ 600.00	$ 2,730,000.00
Pump Station	1	$ 2,250,000.00	$ 2,250,000.00
		$ -	$ -
		Subtotal	*$ 4,980,000.00*
		Design Costs	$ 996,000.00
		Construction Mangement	$ 996,000.00
		Land Acquisition	$ 150,000.00
		Contingency (25% of Const.)	$ 1,245,000.00
		Total	$ 8,367,000.00
		Total ALL	**$ 42,863,500.00**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SW BROOKMAN RD
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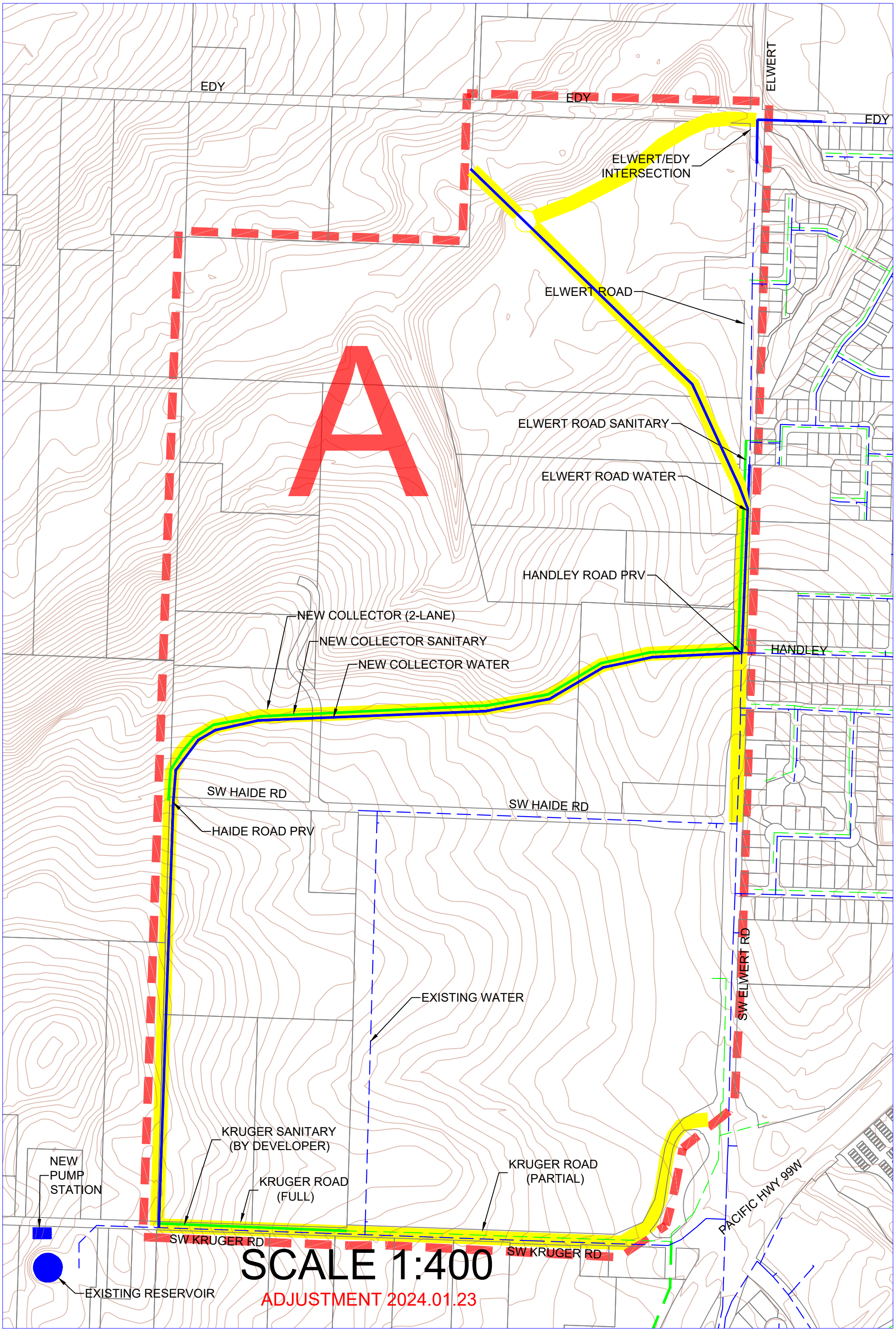
PRELIMINARY 2023.02.14


A
EDY
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INTERSECTION
ELWERT ROAD
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ELWERT ROAD WATER
HANDLEY ROAD PRV
NEW COLLECTOR (2-LANE)
NEW COLLECTOR SANITARY
NEW COLLECTOR WATER
HANDLEY
SW HAIDE RD
SW HAIDE RD
HAIDE ROAD PRV
SW ELWERT RD
EXISTING WATER
KRUGER SANITARY
(BY DEVELOPER)
KRUGER ROAD
(FULL)
KRUGER ROAD
(PARTIAL)
NEW
PUMP
STATION
SW KRUGER RD
SW KRUGER RD
PACIFIC HWY 99W
EXISTING RESERVOIR
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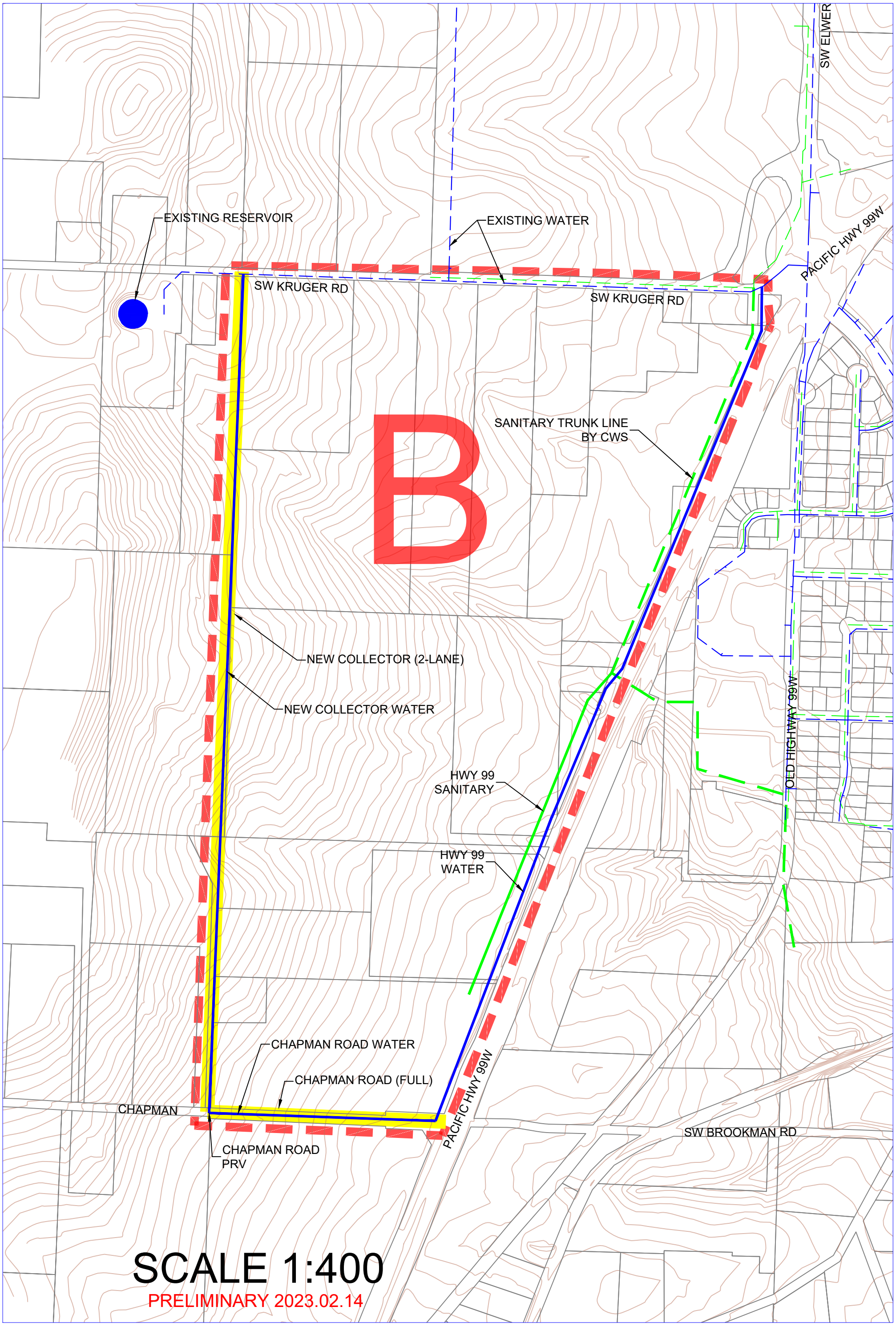
ADJUSTMENT 2024.01.23


EXISTING RESERVOIR
EXISTING WATER
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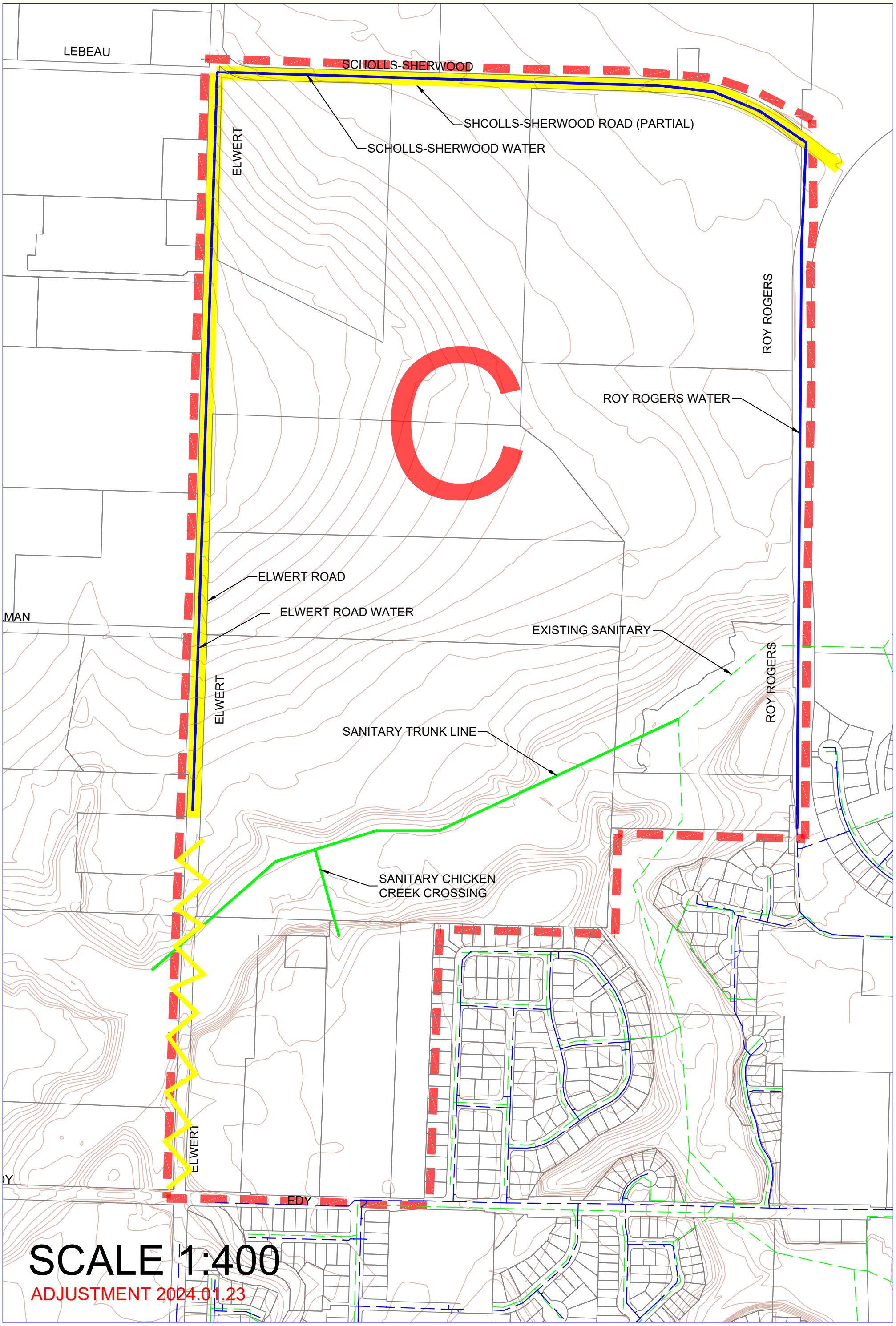
PACIFIC HWY 99W
B
SANITARY TRUNK LINE
BY CWS
NEW COLLECTOR (2-LANE)
NEW COLLECTOR WATER
HWY 99
SANITARY
HWY 99
WATER
OLD HIGHWAY 99W
CHAPMAN ROAD WATER
CHAPMAN ROAD (FULL)
CHAPMAN
CHAPMAN ROAD
PRV
PACIFIC HWY 99W
SW BROOKMAN RD
SCALE 1:400
PRELIMINARY 2023.02.14


LEBEAU
SCHOLLS-SHERWOOD
SHCOLLS-SHERWOOD ROAD (PARTIAL)
SCHOLLS-SHERWOOD WATER
ELWERT
ROY ROGERS
ROY ROGERS WATER
ELWERT ROAD
ELWERT ROAD WATER
MAN
EXISTING SANITARY
ROY ROGERS
ELWERT
SANITARY TRUNK LINE
SANITARY CHICKEN
CREEK CROSSING
ELWERT
EDY
SCALE 1:400
ADJUSTMENT 2024.01.23

LEBEAU

LEBEAU

ELWERT

SCHOLLS-SHERWOOD

ELWERT

D

CONZELMAN

CONZELMAN

ELWERT

SANITARY TRUNK LINE

SCALE 1:400

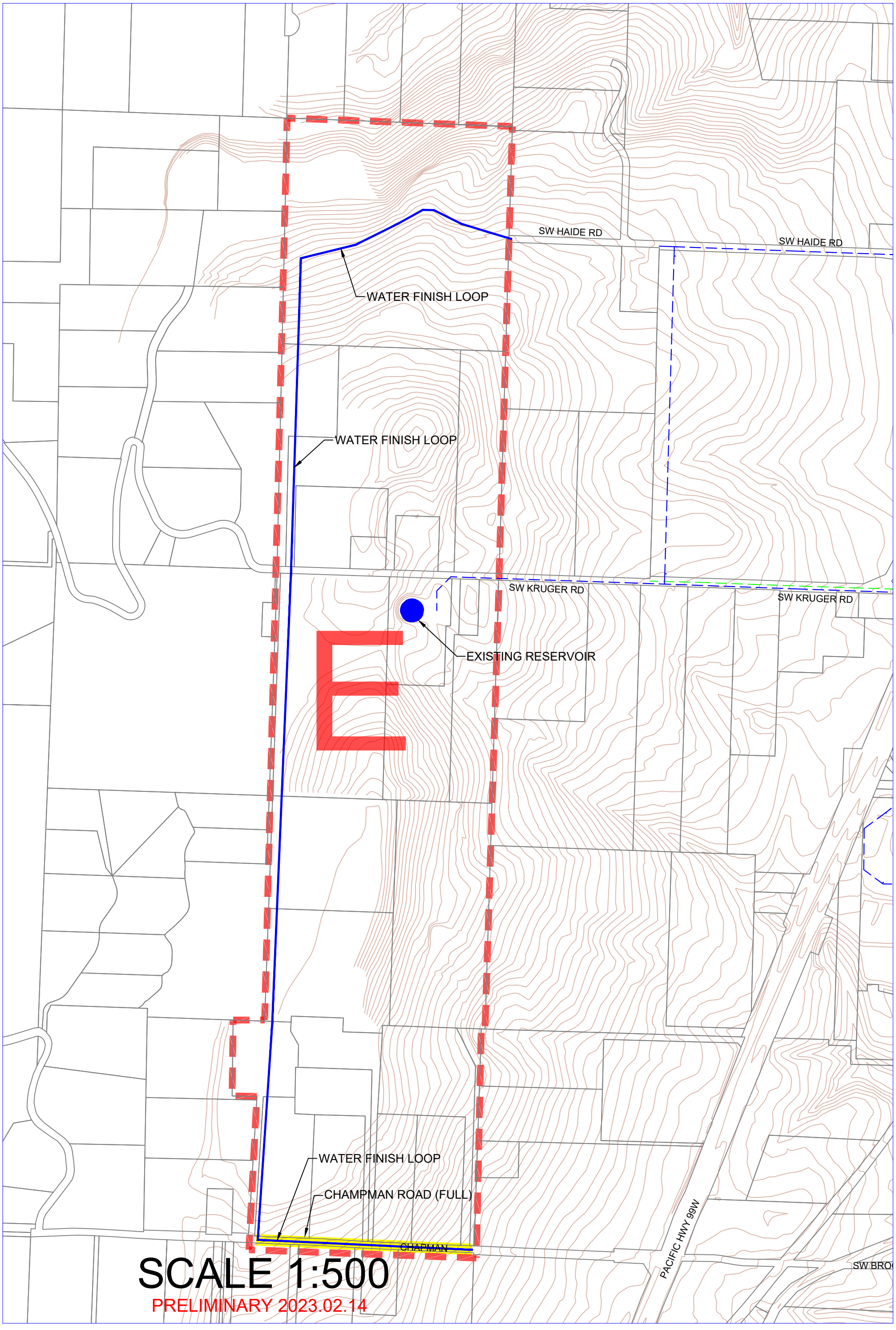
EDY

EDY

ELWERT

EDY

ADJUSTMENT 2024.01.24


SW HAIDE RD
SW HAIDE RD
WATER FINISH LOOP
WATER FINISH LOOP
SW KRUGER RD
SW KRUGER RD
EXISTING RESERVOIR
E
WATER FINISH LOOP
CHAMPMAN ROAD (FULL)
CHAPMAN
PACIFIC HWY 99W
SW BRO
SCALE 1:500
PRELIMINARY 2023.02.14

CONZELMAN

CONZELMAN

ELWERT

SANITARY CHICKEN CREEK CROSSING

EDY ROAD (FULL)

EDY

EDY ROAD WATER

EDY

ELWERT

SANITARY TRUNK LINE

SANITARY CHICKEN CREEK CROSSING

HANDLEY

SW HAIDE RD

SW HAIDE RD

SW ELWERT RD

SCALE 1:500

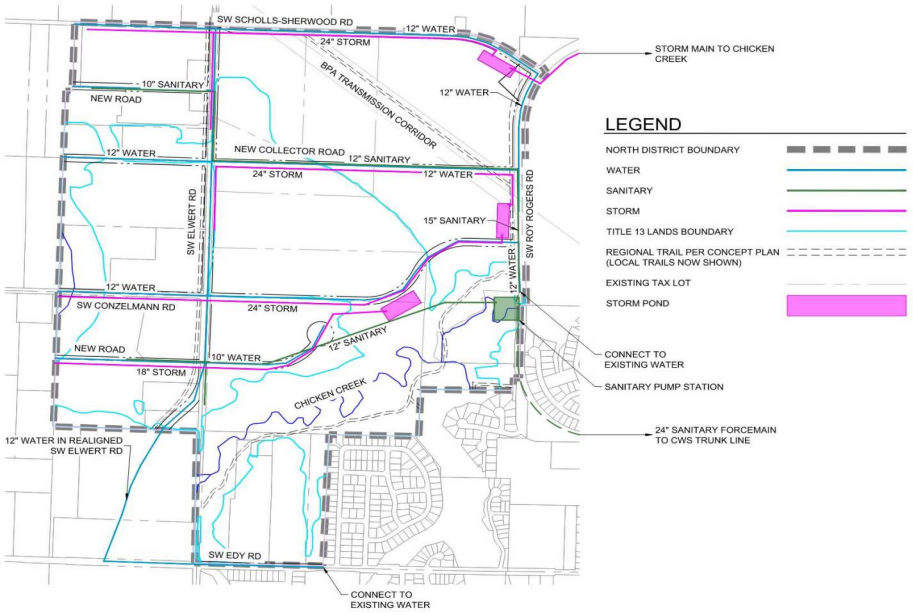
ADJUSTMENT 2024.01.23

Appendix C: Mackenzie Cost Estimates

MACKENZIE.

Sherwood West - North District

City of Sherwood
Public Infrastructure Summary



Water Distribution

Existing Water Infrastructure

Nearest Water Location: **Eastern and Southern boundaries of Sherwood West**
Water Provider: **City of Sherwood**
Water Service Area: **380 West Zone**
Distance to Site: **Adjacent to East and South**

Proposed Water Improvements

Pipe Size	Pipe Length	Unit Cost	Total Cost
10"	2,700 LF	$350	$ 945,000
12"	13,100 LF	$400	$ 5,240,000
* 12"	11,400 LF	$400	$ 4,560,000

Total Water Improvements Cost: $ 10,745,000

Other Water Notes:

* Indicates priority improvements to be constructed with or prior to initial development.

Water Design: 12 months
Water Permit / Construction: 18 months

Sanitary Sewer

Existing Sewer Infrastructure

Nearest Sewer Location: **OR-99W CWS Trunk Line**
Sewer Provider: **City of Sherwood**
Sewer Service Basin: **Cedar Creek Basin**
Distance to Site: **18,000 LF**

Proposed Sewer Improvements

Pipe Size	Pipe Length	Unit Cost	Total Cost
10"	3,000 LF	$275	$ 825,000
12"	5,500 LF	$350	$ 1,925,000
* 15"	1,200 LF	$375	$ 450,000
* 24" FM	18,000 LF	$350	$ 6,300,000
* Pump Station	10.5 MGD	$825,000	$ 8,662,500

Total Sanitary Sewer Improvements Cost: $18,162,500

Other Sewer Notes:

Forcemain to OR-99W 42" gravity main is required per CWS East Basin master plan.
Cost estimates for 24" FM and Chicken Creek pump station are from CWS master plan, project DU21C-27a.
* Indicates priority improvements to be constructed with or prior to initial development.

Sewer Design: 18 months
Sewer Permit / Construction: 24 months

Storm Drainage

Existing Storm Infrastructure

Nearest Storm Location: **Chicken Creek**
Storm Provider: **City of Sherwood**
Storm System Outfall: **Chicken Creek**
Distance to Site: **Adjacent to South**

Proposed Storm Improvements

Pipe Size	Pipe Length	Unit Cost	Total Cost
18"	3,200 LF	$400	$ 1,280,000
24"	12,300 LF	$425	$ 5,227,500
30"	2,200 LF	$500	$ 1,100,000
Pond:	9.5 ac	$350,000	$ 3,325,000

Total Storm Improvements Cost: $ 10,932,500

Other Storm Notes:

Majority of area drains to Chicken Creek. Small portion in the north drains to the Tualatin River.

* Indicates priority improvements to be constructed with or prior to initial development.

Storm Design: 12 months
Storm Permit / Construction: 18 months

Proposed Transportation Improvements

Description	Size	Length	Unit Cost	Total Cost	Design	Permitting & Construction
Widen Scholls-Sherwood Road	1 Lane 1 Frontage	4,400 ft	$2,000	$ 8,800,000	6 months	12 months
Northern collector street	2 Lanes Full Street	4,100 ft	$2,000	$ 8,200,000	12 months	12 months
Southern collector street	2 Lanes Full Street	4,400 ft	$2,000	$ 8,800,000	12 months	18 months
Neighborhood Road	2 Lanes Full Street	2,600 ft	$2,000	$ 5,200,000	9 months	9 months
NW Collector street	2 Lanes Full Street	1,300 ft	$2,000	$ 2,600,000	6 months	9 months
Elwert Road southern realignment	2 Lanes Full Street	750 ft	$3,000	$ 2,250,000	6 months	12 months
Elwert Road removal to Edy Rd	2 Lanes Removal	2,000 ft	$500	$ 1,000,000	6 months	12 months
Widen Elwert Road	1 Lane 2 Frontage	3,400 ft	$2,000	$ 6,800,000	6 months	12 months
Widen Roy Rogers Road	1 Lane 1 Frontage	5,400 ft	$2,000	$ 10,800,000	12 months	12 months
Widen Edy Road	1 Lane	1,100 ft	$2,000	$ 2,200,000	9 months	12 months
Intersection Improvements (Signals)		5 EA	$1,500,000	$ 7,500,000	6 months	12 months

Total Transportation Improvement Cost: $ 64,150,000

Note: transportation improvement construction estimates based on unit costs provided by Washington County and City of Sherwood, January 31, 2024

Mackenize Project No. 2230332.00 Revision Date: 2/9/2024

MACKENZIE.

Sherwood West - Regional Trails

City of Sherwood
Public Infrastructure Summary

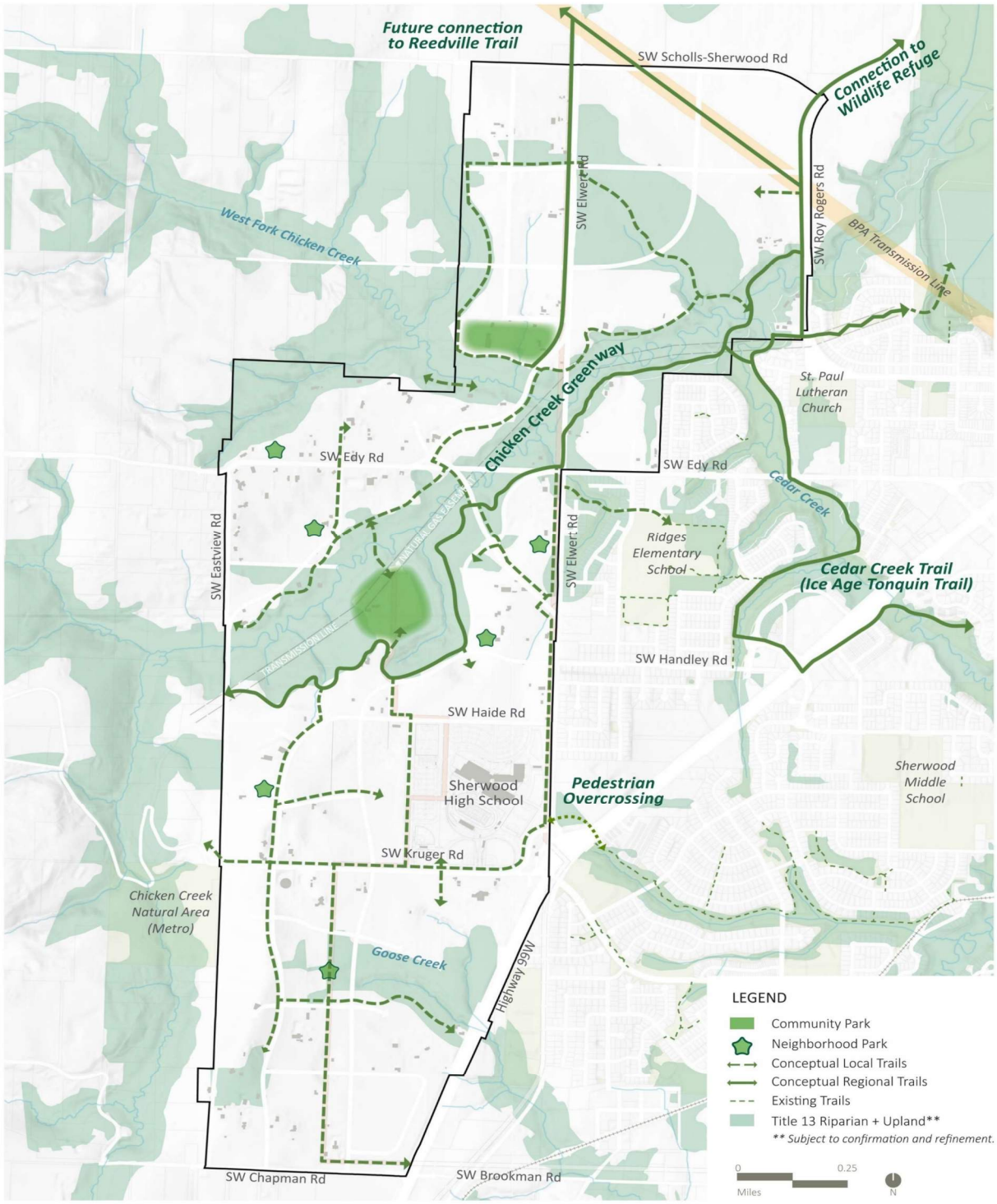


Image source: Sherwood West Concept Plan, July 2023

Proposed Regional Trail Improvements

Description	Length	Unit Cost	Total Cost	Design & Permitting	Construction
12' Regional Trail (North District)	12,600 ft	$400	$ 5,040,000	6 months	9 months
12' Regional Trail (West District)	7,700 ft	$400	$ 3,080,000	6 months	9 months
Bridge (West District)	1 EA	$300,000	$ 300,000	6 months	9 months
Boardwalk Segments (West District)	600 ft	$650	$ 390,000	6 months	9 months
Total Regional Trail Improvement Cost:			**$8,810,000**		

Mackenize Project No. 2230332.00

Revision Date: 2/9/2024

CONSTRUCTION ECONOMICS

ENR's 20-city average cost indexes, wages and material prices. Historical data and details for ENR's 20 cities can be found at ENR.com/economics

Construction Cost Index

ANNUAL INFLATION RATE

+3.8%

APR. 2021

1913=100	INDEX VALUE	MONTH	YEAR
CONSTRUCTION COST	11849.31	+0.8%	+3.8%
COMMON LABOR	24253.88	+0.4%	+1.4%
WAGE $/HR.	46.59	+0.4%	+1.4%

The Construction Cost Index's annual escalation is up 3.8%, while the monthly component rose 0.8%

Building Cost Index

ANNUAL INFLATION RATE

+6.1%

APR. 2021

1913=100	INDEX VALUE	MONTH	YEAR
BUILDING COST	6612.50	+1.0%	+6.1%
SKILLED LABOR	10805.01	0.0%	+1.7%
WAGE $/HR.	59.73	0.0%	+1.7%

The Building Cost Index is up 6.1% on an annual basis, while the monthly component increased 1.0%.

Materials Cost Index

ANNUAL INFLATION RATE

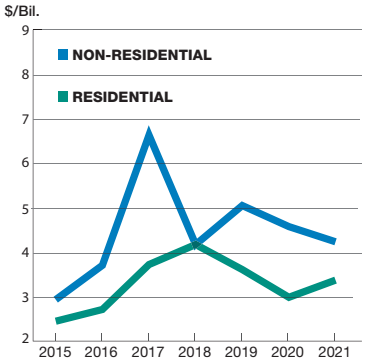
+2.6%

APR. 2021

1913=100	INDEX VALUE	MONTH	YEAR
MATERIALS COST	4018.82	+2.6%	+14.0%
CEMENT $/TON	151.10	+1.0%	+3.5%
STEEL $/CWT	58.68	+1.4%	+5.0%
LUMBER $/MBF	820.75	+5.1%	+35.4%

The MCI rose 2.6% on a monthly basis, while the annual escalation rate increased 14%.

Construction starts in the Philadelphia metro area are expected to rise 0.6% in 2021, to $7.6 billion, according to Dodge Data & Analytics. Dodge predicts a 17.5% decrease in non-residential construction, while residential work is expected to rise 13.1%. Office and warehouse construction are expected to decline, while single-family homes and hotel work will see increases.



SOURCE: DODGE DATA & ANALYTICS

ENR's Cost Indexes by City

1913=100
1967=100
R=REVISED

	CONSTRUCTION COST		BUILDING COST		COMMON LABOR		SKILLED LABOR		MATERIALS	
	APR '21: 1913	% CHG. YEAR	APR '21: 1913	% CHG. YEAR	APR '21: 1967	% CHG. YEAR	APR '21: 1967	% CHG. YEAR	APR '21: 1967	% CHG. YEAR
ATLANTA	7038.96	+4.4	4959.08	+7.8	825.83	0.0	728.97	+2.6	945.46	+13.1
BALTIMORE	9708.25	+6.5	6030.69	+12.4	1214.52	0.0	885.81	+2.3	1012.73	+25.4
BIRMINGHAM	7674.41	+2.5	4901.32	+4.3	978.68	0.0	823.99	+0.7	812.84	+8.5
BOSTON	15924.08	+7.8	8400.12	+6.1	1698.09	+6.3	1496.53	+2.1	867.67	+16.2
CHICAGO	17124.05	+1.3	8280.96	+3.8	1690.57	0.0	1442.24	+1.5	720.93	+9.8
CINCINNATI	10927.74	+7.6	5769.24	+7.7	1077.82	+4.8	907.12	+0.8	860.32	+17.9
CLEVELAND	12753.77	+2.3	6396.81	+8.0	1086.20	–0.7	949.75	+2.8	834.61	+16.9
DALLAS	6259.18	+5.0	4868.50	+6.6	742.23	0.0	738.08	0.0	829.71	+13.5
DENVER	7718.50	+1.9	5320.92	+2.8	818.18	0.0	854.73	0.0	781.93	+6.7
DETROIT	12492.27	+3.0	6798.44	+6.7	1068.28	0.0	1020.67	+1.5	785.76	+16.6
KANSAS CITY	12028.81	+4.4	6721.57	+7.3	1308.17	+0.8	1238.10	+0.7	825.13	+19.8
LOS ANGELES	12139.56	+0.7	6436.93	+0.8	1111.66	0.0	1053.90	–0.9	751.18	+4.0
MINNEAPOLIS	13389.45	+2.5	6883.33	+5.6	1339.26	0.0	1238.40	+0.9	814.96	+14.6
NEW ORLEANS	6652.07	+5.1	4632.37	+8.1	749.82	0.0	653.79	+1.2	889.10	+14.6
NEW YORK CITY	20598.65	+1.1	9894.03	+4.2	1626.07	0.0	1456.81	+2.3	848.10	+10.4
PHILADELPHIA	13971.72	+4.3	7811.75	+4.5	1538.40	+2.9	1356.72	+1.6	881.40	+11.6
PITTSBURGH	11719.00	+7.8	6681.94	+9.4	1178.28	+5.2	1027.72	+4.6	781.74	+18.4
ST. LOUIS	12763.26	+3.2	6727.43	+7.6	1096.32	0.0	1029.32	+2.2	927.99	+17.4
SAN FRANCISCO	13157.41	+2.7	7863.57	+4.5	1046.50	0.0	1091.49	0.0	1006.58	+12.9
SEATTLE	12945.18	+6.6	6870.90	+7.1	1210.11	+6.0	1195.72	+5.9	933.67	+9.5

CONSTRUCTION ECONOMICS

ENR's 20-city average cost indexes, wages and materials prices. Historical data for ENR's 20 cities can be found at ENR.com/economics

Construction Cost Index

ANNUAL INFLATION RATE

+2.6%

DEC. 2023

1913=100	INDEX VALUE	MONTH	YEAR
CONSTRUCTION COST	13514.76	0.0%	+2.6%
COMMON LABOR	25080.22	0.0%	+1.8%
WAGE $/HR.	48.30	0.0%	+1.8%

The Construction Cost Index's annual escalation rose 2.6%, while the monthly component held steady.

Building Cost Index

ANNUAL INFLATION RATE

+3.8%

DEC. 2023

1913=100	INDEX VALUE	MONTH	YEAR
BUILDING COST	8272.36	+0.1%	+3.8%
SKILLED LABOR	11697.70	0.0%	+3.4%
WAGE $/HR.	64.60	0.0%	+3.4%

The Building Cost Index was up 3.8% on an annual basis, while the monthly component rose 0.1%.

Materials Cost Index

MONTHLY INFLATION RATE

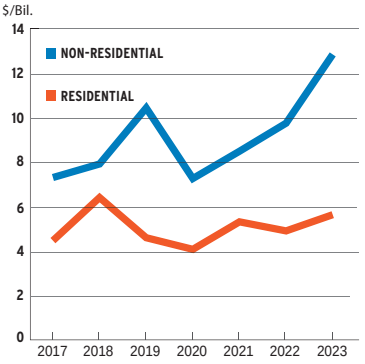
+0.1%

DEC. 2023

1913=100	INDEX VALUE	MONTH	YEAR
MATERIALS COST	6150.35	+0.1%	+4.4%
CEMENT $/TON	211.76	+2.1%	+21.6%
STEEL $/CWT	99.19	–0.6%	+7.8%
LUMBER $/MBF	1072.26	–0.1%	–2.1%

The Materials Cost Index rose 0.1% this month, while the annual escalation rate increased 4.4%.

Construction starts in the Boston metro area are expected to rise 25.5% in 2023, to $18.6 billion, according to Dodge Construction Network. Dodge predicts a 31.6% increase in non-residential starts, while residential is expected to rise 13.5%. Hotel and health care starts are expected to increase, while office work is predicted to drop.



SOURCE: DODGE CONSTRUCTION NETWORK

ENR's Cost Indexes by City

1913=100
1967=100
R=REVISED

	CONSTRUCTION COST		BUILDING COST		COMMON LABOR		SKILLED LABOR		MATERIALS	
	DEC '23: 1967	% CHG. YEAR	DEC '23: 1967	% CHG. YEAR	DEC '23: 1967	% CHG. YEAR	DEC '23: 1967	% CHG. YEAR	DEC '23: 1967	% CHG. YEAR
ATLANTA	8217.17	–4.6	6272.56	–5.4	825.83	0.0	770.13	+1.4	1380.10	–9.5
BALTIMORE	10490.51	–6.5	7143.23	–8.8	1214.52	0.0	980.21	+1.3	1283.00	–16.5
BIRMINGHAM	8653.91	–2.0	6018.33	–2.4	978.68	0.0	868.43	+0.9	1151.58	–4.9
BOSTON	17736.92	–0.4	10194.29	+0.8	1756.25	0.0	1609.60	+2.6	1318.55	–1.9
CHICAGO	20105.48	+10.3	10175.12	+6.2	1859.31	+10.0	1536.02	+3.2	1172.52	+11.4
CINCINNATI	12629.61	+4.9	7635.32	+8.9	1077.82	0.0	953.18	+1.0	1441.16	+16.2
CLEVELAND	14480.68	+5.8	8134.18	+10.9	1095.01	0.0	972.70	0.0	1378.68	+23.7
DALLAS	7757.88	+1.8	6368.27	+2.2	742.23	0.0	738.52	0.0	1320.59	+3.5
DENVER	9285.75	+7.8	7198.79	+10.6	818.18	0.0	943.19	+0.4	1310.49	+21.0
DETROIT	13673.70	–0.3	8231.00	+2.9	1078.49	0.0	1104.00	+6.5	1119.59	–1.2
KANSAS CITY	13901.25	+4.7	8212.88	+4.8	1390.03	+3.7	1300.95	+2.6	1234.35	+7.4
LOS ANGELES	15257.92	+11.7	8541.63	+7.3	1287.67	+15.8	1193.11	+13.2	1274.26	+0.6
MINNEAPOLIS	14367.74	+2.2	8328.76	+5.2	1339.26	0.0	1371.67	+2.3	1128.67	+9.4
NEW ORLEANS	7729.80	–2.6	6337.51	–2.2	749.82	0.0	848.69	+2.5	1268.13	–5.4
NEW YORK CITY	22480.00	+2.8	11824.32	+7.2	1663.39	0.0	1547.48	+2.3	1368.11	+18.8
PHILADELPHIA	15966.73	+3.0	9322.89	+6.2	1637.07	0.0	1421.38	+1.3	1335.92	+14.6
PITTSBURGH	12921.81	+3.8	8174.95	+8.2	1178.28	0.0	1099.94	+3.5	1150.19	+14.4
ST. LOUIS	13948.95	–0.2	7974.69	+0.4	1112.34	0.0	1082.07	+1.3	1293.68	–0.7
SAN FRANCISCO	15515.00	+3.6	10767.24	+11.2	1076.13	+2.8	1277.98	+17.1	1704.37	+5.2
SEATTLE	15174.36	+0.4	8591.26	+0.7	1314.48	0.0	1302.87	0.0	1444.00	+1.6

APPENDIX P

Metro Title 11 Findings

METRO URBAN GROWTH MANAGEMENT FUNCTIONAL PLAN TITLE 11 FINDINGS FOR SHERWOOD WEST

Compliance with Metro Code 3.07.1110

FROM: Eric Rutledge, Community Development Director
DATE: March 2024

INTRODUCTION

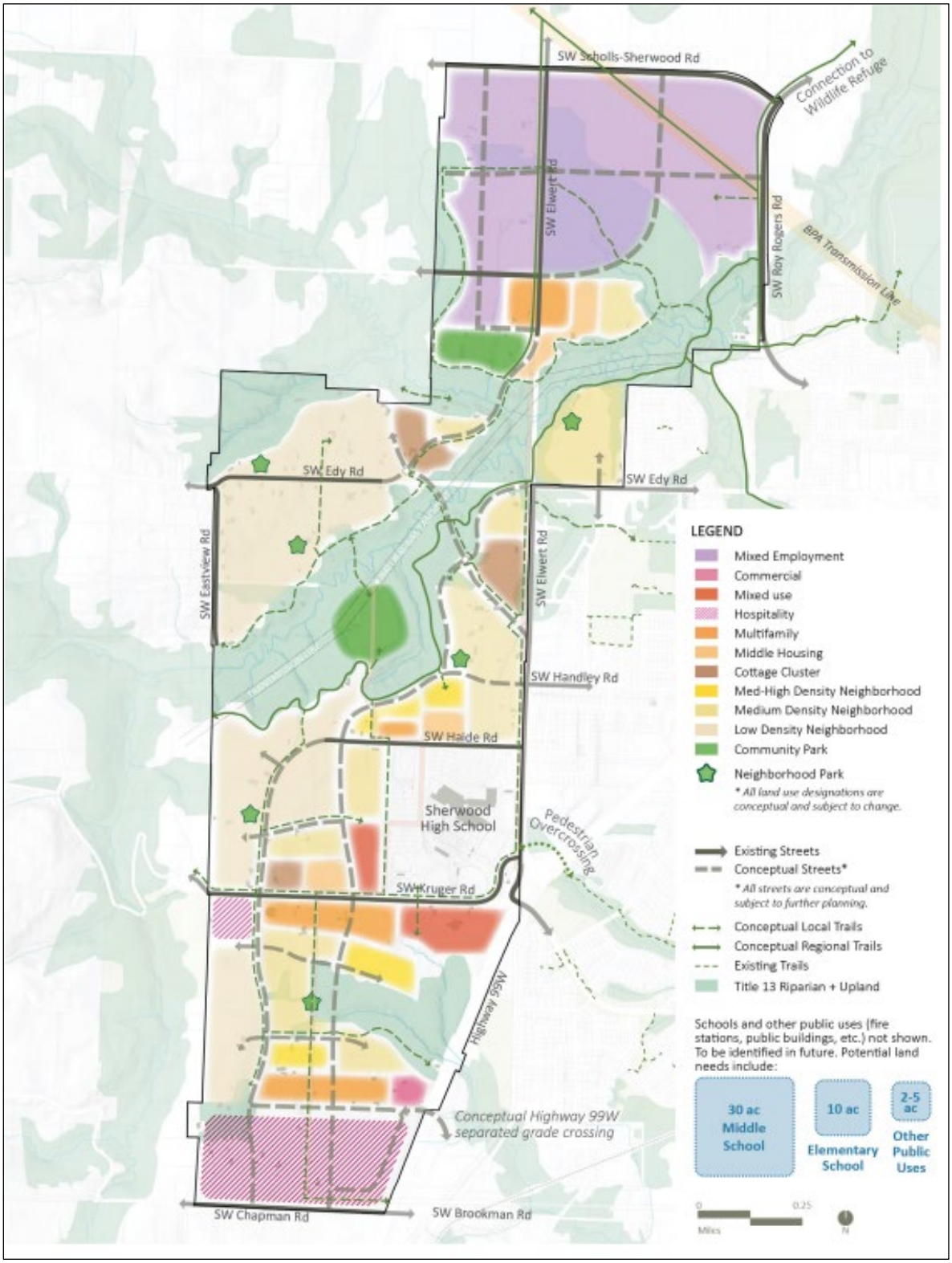
The Sherwood West Concept Plan (Concept Plan) is a long-range plan intended to guide Sherwood community members, decision makers, and staff as they make plans and decisions about future growth in Sherwood West. The Concept Plan illustrates how Sherwood West, Metro's Urban Reserve Area 5b, can be incorporated into the fabric of the city over time in a manner that builds on the strong sense of community and livable neighborhoods in Sherwood today.

The City is requesting expansion of the entire Sherwood West planning area as part of the 2024 Urban Growth Management Decision. The City acknowledges the requirements of Metro Code Section 3.07.1420 - 1425, Legislative Amendment to the UGB, and has actively participated in the growth management process being led by Metro. If a regional need for additional residential and employment land exists, the City respectfully requests Sherwood West be brought into the Urban Growth Boundary in 2024.

The findings in this memorandum demonstrate the plan's compliance with Title 11 of Metro's Urban Growth Management Functional Plan (UGMFP). Specifically, these findings address Metro Code Section 3.07.1110, Planning for Designated Urban Reserves, which are concept planning requirements. Once Sherwood West, or portions thereof, are brought into the UGB, Sherwood will begin the comprehensive planning process.

The Sherwood West Concept Plan was accepted by the Sherwood City Council on July 18, 2023 and re-accepted on March 5, 2024 to incorporate the North District Refinement Study.

Figure 1: Sherwood West Concept Plan Area



METRO TITLE 11: PLANNING FOR NEW URBAN AREAS

Section 3.07.1110 Planning for Areas Designated Urban Reserve

(a) The county responsible for land use planning for an urban reserve and any city likely to provide governance or an urban service for the area, shall, in conjunction with Metro and appropriate service districts, develop a concept plan for the urban reserve prior to its addition to the UGB pursuant to sections 3.07.1420, 3.07.1430 or 3.07.1435 of this chapter. The date for completion of a concept plan and the area of urban reserves to be planned will be jointly determined by Metro and the county and city or cities.

Response: The City of Sherwood will provide governance and most urban services in Sherwood West. The City has taken the lead on concept planning the area through a Metro Planning and Development Grant. Engaging with Sherwood residents and urban service providers was considered essential for producing a plan that reflects community values while creating a livable community with high quality public services. Metro, Washington County, and other key service districts were included in the planning process. The Sherwood West Citizen's Advisory Committee (CAC) and Technical Advisory Committee (TAC) guided staff in development of the plan over the course of 26 public meetings (13 with each committee).

The CAC was made up of 16 community members who live or own property in Sherwood city limits and Sherwood West, including city residents serving on Sherwood's Parks Board, Planning Commission, City Council, and one representative from the Sherwood School District. The TAC was comprised of representatives of urban service providers, local jurisdictions, and stakeholder groups including Metro, Washington County Department of Land Use and Transportation, City of King City, Tualatin Valley Fire and Rescue, Clean Water Services, Oregon Department of Transportation, Tualatin River National Wildlife Refuge, Home Building Association of Greater Portland and the Commercial Real Estate Development Association.

The City acknowledges the requirements of Metro Code Section 3.07.1420 – 1425 and has participated in the 2024 growth management decision process. Staff and elected officials from the City are serving on the Land Use Technical Advisory Committee (LUTAG) and Stakeholder Roundtable group.

(b) A local government, in creating a concept plan to comply with this section, shall consider actions necessary to achieve the following outcomes:

(1) If the plan proposes a mix of residential and employment uses:

(A) A mix and intensity of uses that will make efficient use of the public systems and facilities described in subsection (c);

Response: Sherwood has a history of providing high quality public services and Sherwood West has been planned to extend these systems in practical and efficient manner. Sherwood residents enjoy a high quality of life provided in part by well-maintained infrastructure (streets, water, sewer, etc.) but also a local arts center, senior center, and library. Sherwood takes an innovative and equity-oriented approach to the provision of public services by understanding the importance of high-speed broadband and offering Sherwood Broadband to residents and surrounding rural communities.

Sherwood West proposes a mixture of land uses that will continue to build on Sherwood's history of providing efficient public services. The mixture of housing and employment types is expected to result in compact development where residents can live, work, shop, and recreate within walking or biking distance to their home. The proposed land uses are also expected to complement and reinforce the 2040 Growth Concept and existing regional Town Center in Sherwood. The commercial and mixed-use zones in Sherwood West are envisioned to be neighborhood serving while the existing Town Center will offer larger format and more intense commercial and mixed-use services. A summary of the proposed land uses is provided below.

The Concept Plan Appendix N "Infrastructure and Phasing Analysis" as well as Appendix Q "Preliminary Infrastructure Funding Strategy" provide a detailed account of the location and cost of non-local infrastructure needed to serve Sherwood West, including how identified gaps in funding will be addressed.

Residential Land Use Mixture

The Concept Plan proposes a mixture of housing types including single-family attached and detached, missing middle, and multi-family. The mixture of housing responds to Sherwood's need for smaller and more affordable units. The mixture of housing types is also expected to result in efficient use of the existing and future public systems by increasing density and the opportunity for compact development.

The estimated amount of housing in Sherwood West ranges from 3,120 to 5,580 units. The housing provided depends on how much middle housing will be developed in the Neighborhood designations (see Table 2 below). The low end of the range represents no middle housing being developed in the Low-Density, Medium-Density, and Medium-High Density Neighborhood designations while the high end represents 50% of these areas being developed as middle housing at maximum allowable densities.

Based on current development trends and consultation with housing developers and economists, a realistic estimate is somewhere between 5-10% of single-family areas could be developed with middle housing for areas not developed as a Master Planned Community. Table 4 calculates estimated housing units based on a range of middle housing scenarios in the Neighborhood designations: 0%, 10%, 20%, and 50%. This results in an estimated overall density of 9.2 to 10.6 units per acre (or up to 16.4 in the 50% middle housing scenario). Average density is slightly lower factoring in the 15% open space that is required by the Sherwood Community Development Code.

The location and diversity of residential land uses, combined with the employment and mixed-use land uses in the plan, are expected to make efficient use of public services in Sherwood West.

Table 1: Residential Land Use Designations

DESIGNATION	PURPOSE AND ATTRIBUTES
	RESIDENTIAL
Multifamily	• **Purpose:** To provide intentional locations for apartments and condominiums in Sherwood West. • **Housing Types:** Apartments, condominiums, townhomes, triplexes, and quadplexes would be permitted in this designation. • **Density:** 16.8-24 dwelling units/acre (based on High Density Residential [HDR] zone).
Middle Housing	• **Purpose:** To provide intentional locations for specific middle housing choices of duplexes, townhomes, and cottage clusters. These middle housing types are most favored by the CAC and Sherwood community, and would provide different housing choices—including options for more affordable homeownership as compared to single detached dwellings. • **Housing Types:** Duplexes, townhomes, and cottage clusters would be permitted in this designation. • **Density:** 5.5-11 dwelling units/acre
Cottage Cluster	• **Purpose:** To provide intentional locations for cottage cluster housing. • **Housing Types:** This designation would only allow cottage cluster housing. Cottage clusters are groupings of relatively small homes clustered around a shared courtyard or open space. Their smaller footprints and shared amenities can make cottage cluster housing appealing to many seniors, small households, and first-time homebuyers. • **Density:** 12.8-16 dwelling units/acre
Neighborhood Designations	• **Purpose:** To provide land for a range of single and middle housing types, ensuring open space with each project. • **Housing Types:** These are the designations for single detached homes; by law, the full range of middle housing (duplexes, triplexes, quadplexes, townhouses, and cottage clusters) must also be allowed unless following a Master Planned Community pursuant to OAR 660-046-0205(2)(b). • **Densities:** See below. (Note that state law limits how cities can regulate density for middle housing.)
• Medium-High Density Neighborhood	• **5.5-11 units/acre –** This designation would likely be applied in flatter areas with larger sites where there would be more flexibility for creation of smaller lots. (Based on Medium Density Residential High [MDRH] zone.)
• Medium Density Neighborhood	• **5.6-8 units/acre –** This designation is also likely to be applied in flatter areas with larger sites. (Based on Medium Density Residential [MDRL] zone.)
• Low Density Neighborhood	• **3.5-5 units/acre –** This designation would likely be applied in hillside and hilltop areas, and in parcelized areas with existing homes, where lots would be larger and densities would be lower. This would better accommodate topography, utility access, partial development, and other features, which would typically require larger lots. (Based on Low Density Residential [LDR] zone.)

Table 2: Sherwood West Housing Estimates

	Density Range (Net)	Total Acres (Net)	*% of Residential Acres*	Total Housing Units (with % of Middle Housing in Neighborhood areas) 0% MH	10% MH	20% MH	50% MH
Multi-Family	16.8 to 24	33	*10%*	798	798	798	798
Middle Housing	5.5 to 11	16	*5%*	173	173	173	173
Cottage Cluster	12.8 to 16	23	*7%*	362	362	362	362
Med/High Density Nbhd	5.5 to 11	23	*7%*	248	279	311	406
Medium-Density Nbhd	5.6 to 8	102	*30%*	816	990	1,163	1,683
Low-Density Nbhd	3.5 to 5	144	*42%*	720	1,008	1,296	2,160
TOTAL		**340**	***100%***	**3,117**	**3,610**	**4,103**	**5,582**
Total Average Density				*9.2*	*10.6*	*12.1*	*16.4*
Total Average Density with Open Space				*7.8*	*9.0*	*10.3*	*13.9*

Employment Land Use Mixture

Economic Development is a top priority for the Sherwood City Council and the City is focused on working with public and private sector partners to develop a self-sustaining and vibrant local economy consistent with Statewide Planning Goal 9 (Economic Development). Expanding existing businesses and attracting new employment to Sherwood—particularly the right kind of jobs in the right places—will provide opportunities provide efficient public services and reduce local and regional vehicle miles traveled (VMT).

Providing additional employment land in Sherwood West is also an equity issue. In recent years Sherwood has seen strong growth in the manufacturing sector which provides for low barrier, living wage jobs consistent with local and regional equity goals. In 2020, the largest employer in Sherwood was Wal-Mart, while in 2021 the largest employer in the city was Lam Research. This shift from retail services to advanced manufacturing provides opportunities for higher wages and career advancement for many in the workforce without a college degree. Based on the City's 2023 EOA, growth in the advanced manufacturing sector is expected to continue and Sherwood may play an outsized role in providing new jobs in the region relative to other jurisdictions.

Table 3 presents the estimated employment potential for Sherwood West, based on Concept Plan Figure 13. Based on these estimates, the total employment potential in Sherwood West is roughly 4,500 jobs. When combined with the residential land uses, land uses in Sherwood West are planned at a mixture and intensity that will allow for the efficient provision of public services with an adequate tax base in the face of property tax limitations under Measure 5 and Measure 50.

The potential jobs-to-housing ratio for Sherwood West is calculated by comparing the total housing and employment estimates, see Table 4 below. The estimated ratio ranges from 0.8 to 1.5, depending on how much middle housing is built in the Neighborhood designations. A reasonable outcome is 1.3 jobs for each unit of housing.

Table 3: Sherwood West Employment Estimates

	Total Acres (Net)	Jobs / Net Acre (est.)	Total Jobs	Percent of Jobs	% of Employment Acres
Mixed Employment	130	18	2,398	53%	49%
Commercial	7	36	237	5%	2%
Mixed Use	25	25	638	14%	9%
Hospitality	63	15	938	21%	24%
Schools	40	8	314	7%	15%
TOTAL	**265**		**4,524**	**100%**	**100%**

The jobs-per-acre estimates for each land use type are rough estimates gleaned from the Metro 2014 Urban Growth Report and from the scenario planning software Urban Footprint.

Table 4: Sherwood West Jobs-to-Housing Ratio

	Middle Housing Scenario		
	0% MH	10% MH	50% MH
Total housing units	3,117	3,610	5,582
Total jobs	4,524	4,524	4,524
Jobs-Housing Ratio	**1.5**	**1.3**	**0.8**

(B) A development pattern that supports pedestrian and bicycle travel to retail, professional and civic services;

Response: The Concept Plan calls for active transportation options to connect parks, green spaces, schools, neighborhoods, and employment areas to encourage walking, rolling, and biking (see Concept Plan Figure 23).

The City has already started to invest in an active transportation system that will meet this criterion. The new Highway 99W Pedestrian Bridge will connect existing city limits to Sherwood West. The bridge will serve as a crucial grade separated crossing of the highway and serve generations of Sherwood residents to come. The bridge will connect the high density and mixed-use areas of Sherwood West with the trail friendly Woodhaven neighborhood in existing city limits. Woodhaven has ample off-street trails that connect to Old Town Sherwood and the designated Town Center. An additional off-street connection between Sherwood West and the Town Center will be provided by the Cedar Creek / Ice Age Trail.

Within Sherwood West, the location of retail and professional services will be centrally located near the new Sherwood High School and higher density residential areas. See Figures 11 and 12 of the Concept Plan (West and Southwest Districts). It is expected that all development in Sherwood West will provide sidewalks and trails to connect land uses and provide active transportation options to access commercial services.

The Concept Plan also helps Sherwood West to be "transit ready" by planning land uses, key streets, and trails to accommodate and support future transit service. The Concept Plan also proposes micromobility services, like bikesharing and scooters, that can help people to get around more easily without a car. Micromobility stations could be included at schools, employment and commercial areas, and near existing transit stops. Access to micromobility services can help people access transit and make the "first and last mile" of a trip and provides options for getting to and from school, work, and leisure activities.

(C) A range of housing of different types, tenure and prices addressing the housing needs in the prospective UGB expansion area in the context of the housing needs of the governing city, the county, and the region if data on regional housing needs are available, in order to help create economically and socially vital and complete neighborhoods and cities and avoiding the concentration of poverty and the isolation of families and people of modest means;

Response: The Portland region and state of Oregon are experiencing a housing shortage crisis. The severe shortage of housing has increased costs and reduced affordability for residents of Sherwood, the Portland region, and the state. It is estimated by 2040, the Portland Metro region will need nearly 295,000 new housing units[1]. Likewise the 2022 Oregon Housing Needs Analysis (HNA) identified a need for over 550,000 new housing units statewide through 2042[2]. At the local level, Sherwood has a need for 1,728 new housing units through 2039[3]. Based on the City's 2019-2039 HNA, 608 of the new dwelling units needed through 2039 cannot be accommodated within current city limits or the UGB. The Sherwood West Concept Plan proposes a minimum of 3,120 new housing units to address the City's current deficit of residential land and additional demand that is expected while the region and state continue to face a housing crisis.

Planning for a variety of housing choices that will meet the needs of a wide range of future residents was a key objective of the Sherwood West planning process. The City envisions a future where all residents can attain housing that is appropriate for their stage in life, from being a young family to aging in place. Providing opportunities for first-time home buyers, seniors, and low- and moderate-income households will require a wider range of housing types than has typically been provided in Sherwood.

Tables 1 and 2 above provide a summary of the residential land use designations and the estimated number of units in each designation that are intended to provide housing choices. Table 5 below describes how many units the City is short within its current UGB for each zone.

[1] DLCD Presentation on Regional Housing Needs Analysis at Washington County Coordinating Committee, December 14, 2020

[2] Oregon Housing Needs Analysis: Legislative Recommendations Report, December 2022

[3] City of Sherwood 2019-2039 Housing Needs Analysis

Table 5: Comparison of capacity of existing residential land with demand for new dwelling units (2019 HNA Table 9).

Zone	Capacity (Needed Densities)	Housing Demand	Comparison Capacity *minus* Demand (dwelling units)
Very Low Density Residential	76	95	-19
Low Density Residential	144	182	-38
Medium Density Residential-Low	382	536	-154
Medium Density Residential-High	266	518	-252
High Density Residential	253	398	-145
Total	**1,121**	**1,729**	**-608**

Source: ECONorthwest
Note: DU is dwelling unit.

Sherwood West has been planned to meet the housing land deficits shown in Table 5 above, with additional capacity to help address the region's shortage of housing at all sizes and price points. For example, Sherwood has a deficit of 145 high density units within its Urban Growth Boundary. Sherwood West is planned to accommodate approximately 800 high density units, making a significant local contribution towards the region's housing supply shortage. The Sherwood West Concept Plan proposes to supply land to meet the City's deficit for all density ranges per the 2019 HNA and more.

Maintaining Affordability and Community Character

In Sherwood West, examples of housing that are often lower cost per unit than a single-family detached home include cottage clusters, townhomes, duplexes, triplexes, fourplexes, garden apartments, and mid-rise apartments. The proposed residential designations and associated housing types have been shaped by three key issues discussed by the Sherwood Community during the Concept Plan planning process.

(1) Housing Mix - The Concept Plan proposes an innovative approach to address the missing middle housing shortage by implementing "middle housing only" zones that will not permit single-family detached units. Currently, HB 2001 only requires that cities allow for the *opportunity* for middle housing to be constructed in residential zones that also allow single-family residences. Based on current market conditions, developers are choosing to build single-family detached housing even through the right exists to build middle housing under HB 2001. This trend is demonstrated by the City's latest Annual Housing Report that showed that over 90% of new housing constructed in the Sherwood was single-family detached in 2023. The City's goal in Sherwood West is to ensure a minimum number of middle housing units are created in these custom land use designations of "Cottage Cluster" and "Middle Housing" only zone.

The Middle Housing zone provides intentional locations for specific middle housing types of duplexes, townhomes, and cottage clusters. The planning process has confirmed that these are the housing types

most appropriate for Sherwood West to provide more affordable renting and ownership opportunities. Examples of high-quality middle housing including duplexes and townhomes can be seen throughout the Southwest Metro region at Reeds Crossing in Hillsboro and Villebois in Wilsonville.

The Cottage Cluster zone provides intentional locations for cottage cluster development within Sherwood West. Cottage housing can be an attractive option for a wide variety of community members including seniors, empty nesters, and young adults because it is more accessible than a typical two-story detached home. These units are also more attainable to first time home buyers and low and moderate-income households. The ensure these middle housing only zones are successful, the City will consider incentivizing these zones through SDC reductions, expedited review timelines, and other policies that lower barriers to production.

In addition to the middle housing zones described above, Sherwood West will include a range of other residential zones with varying densities. Low density, medium density, and medium-high density zones are planned throughout the 1,291-acres. These zones will allow single-family attached / detached and duplex housing consistent with state law. They will also allow middle housing types pursuant to HB 2001 and OAR 660-046. Multi-family zoning will also be provided to ensure that a minimum number of high-density units are provided at a lower rent or purchase price than single-family and even middle housing choices.

(2) Demographic trends and market demand **-** Sherwood's housing stock is predominantly single-family detached at roughly 75%[4]. Sherwood's population growth and shifting demographics shape future needs in the city's housing market. Consistent with state and regional trends, Sherwood's median age is increasing. At the same time, Sherwood has a higher percentage of households with children compared to surrounding communities and the region. Both of these trends require more housing choices. Staff and elected officials have heard anecdotally that empty nesters are beginning to move out of Sherwood and first-time home buyers are being priced out due to the lack of smaller and more affordable housing options.

The aging population will continue to increase demand for smaller single-family housing (detached and attached), multi-family housing, and senior living facilities. The presence and growth of families with children demands a wider variety of housing at lower price points including small single-family housing (cottage), townhouses, duplexes, and multi-family. The residential designations within Sherwood West promote these housing options at varying price-points.

In addition to the housing types proposed in the Concept Plan, Sherwood West will be included as part of the City's Housing Production Strategy, which the City will be required to adopt by 2027. As part of that process, the City will consider various strategies to promote housing development in Sherwood West that provides a variety of housing choices and options and that is affordable to the full range of income levels,

[4] 2021 American Community Survey, US Census

including low- and moderate-income households. The City envisions a future where all Sherwood residents can find a home that meets their needs and is within their budget at any given time in their life.

(3) Community Character - Design standards will shape the look and feel of housing in Sherwood West. The City adopted Residential Design Standards in 2021 to ensure middle housing and other housing types fit into the City's desired neighborhood character. The standards focus on entry location and orientation, design of garage and off-street parking areas, window coverage, minimum landscaping in all residential zones, and other design details. These new standards also will apply in Sherwood West to ensure that new housing maintains the scale and design of existing development in the community.

Additional Information
The Concept Plan Appendix B "Housing Policy Implications Memo", Appendix M "Housing Memo", and Appendix Q "Master Planned Communities and Middle Housing Memo" provides additional background on housing needs in Sherwood and how the Sherwood West Concept Plan is consistent with state and regional requirements. Appendix Q is most current and takes into account HB 2001 rulemaking in 2022 for Master Planned Communities.

(D) Sufficient employment opportunities to support a healthy economy, including, for proposed employment areas, lands with characteristics, such as proximity to transportation facilities, needed by employers;

Response: One of the main goals for updating the Sherwood West Concept Plan was to plan for additional employment land identified as a need in the 2023 Economic Opportunities Analysis (EOA). The 2023 EOA recognizes that Sherwood does not have an adequate land capacity within the City or its current UGB to accommodate forecasted needs. The overall demand for industrial and employment land exceeds the available inventory by 277 acres. Adequately planning for the Sherwood's deficit of employment land will result in benefits to surrounding communities and the region. Sherwood West provides the opportunity for more Sherwood residents to live and work in the community rather than commuting elsewhere for work. This has regional benefits in terms of less traffic congestion and pollution in neighborhood communities and lower vehicle miles traveled for the region.

To understand the opportunities for economic development in Sherwood West, the project team studied the economic opportunities and development trends and evaluated the area's assets and constraints. The project team also obtained input from local industrial developers and stakeholders, economic development practitioners, and economists. This process demonstrated that opportunities exist for strong employment growth in Sherwood West to serve the City and region. To Concept Plan proposes two distinct employment areas that take advantage of their attributes and location:

The North District's Mixed-Employment Zone. The mixed-employment zone will be the primary employment area for Sherwood West and will accommodate office, light industrial, and flex employment uses. The North District offers favorable physical characteristics for siting employment land uses including the existing large lot sizes, relatively flat topography (less than 4-5% slopes), and convenient access to

major roads. The North District Refinement Study (Concept Plan Appendix R) assesses the suitability of the land within the mixed-employment zone for various industries. The study concludes that the land characteristics and planned infrastructure are appropriate for clean technology, advanced manufacturing, general manufacturing, and research and design campuses, among other uses.

The proposed mixed employment zone creates the opportunity for technology and traded sector businesses to grow in the region – providing a space for stable, high paying jobs. The mixed-employment zone has been planned with anticipation of new development occurring in the SW Roy Rogers Rd. and SW 175th Ave. corridor in Washington County. The communities of River Terrace 1.0 and 2.0, King City West, and South Cooper Mountain will all be within a short transit or bike commute to Sherwood West.

It is expected that Sherwood West and the North District will be attractive to employers because the area will be built out as a well-planned community with access to expanded transportation and transit-ready facilities and other infrastructure such as water, sewer and storm drainage facilities, extensive green spaces which are attractive to technology firms, and a large labor force.

The Southwest District's Hospitality Zone. The Hospitality Zone is approximately 80-acres and is located at the southern tip of Sherwood West at the intersection of Highway 99W and Chapman Road. The Hospitality Zone will take advantage of Sherwood's location as the gateway to wine country. The Hospitality Zone will bridge rural and urban land uses under a common theme – food and wine. Sherwood sits at the base of the Willamette Valley's Chehalem Mountains, home to some of Oregon's oldest and most celebrated wineries. The Concept Plan envisions locally driven lodging, restaurants, tasting rooms, small-scale retail, and other uses associated with wine and specialty agriculture that defines our region. As Willamette Valley is an important regional and statewide draw of leisure and tourism – there is a strong opportunity to attract unique lodging, restaurants, tasting rooms, agri-tourism, and small retail shops to this area of Sherwood West.

Land and Transportation Characteristics of Employment Areas

Mixed-Employment Zone. The mixed-employment zone is topographically flat with large parcels, and located near major arterials (Highway 99W, SW Roy Rogers Rd., and SW Tualatin-Sherwood Rd.) which connects the zone to the surrounding communities (Tigard, Beaverton, Tualatin, etc.) and to Interstate-5. Washington County is widening Roy Rogers and Tualatin-Sherwood Road to complete a continuous 5-lane arterial between Sherwood West's North District and I-5. Washington County also completed an extension of 124th Avenue as a two-lane arterial between Tualatin Sherwood Road and Grahams Ferry Road. The extension of SW 124th Avenue was identified as a critical transportation link to serve future industrial lands being planned by the cities of Tualatin, Wilsonville, and Sherwood. Employers and employees of the North District will have access to a safe, modern, and functional freight system that connects to surrounding communities and Interstate 5.

Hospitality Zone. The Hospitality Zone is located on Highway 99W and is surrounded by vineyards and tasting rooms of the northern Willamette Valley and Chehalem Mountains. The land is flat near Highway 99 and slopes up towards the west end. The average lot sizes range from 5 – 7 acres providing opportunities for single-lot or assembled development sites. The flatter areas of the zone along the Highway are suitable for a wide range of land uses and formats. The hillsides towards the west end of

hospitality zone will provide opportunities for smaller-scale restaurants, tasting rooms, and other leisure-oriented services to provide views of the surrounding mountains and Tualatin River Valley.

(E) Well-connected systems of streets, bikeways, parks, recreational trails and public transit that link to needed housing so as to reduce the combined cost of housing and transportation;

Response: Residents of Sherwood experience longer commute times and higher transportation costs than residents of more centrally located communities. Nearly half of all Sherwood residents leave the city each day for workplaces in Portland, Hillsboro, Tualatin, and other employment centers[5]. Less than 5% of residents of Sherwood have also found work in the city. A key vision of the Sherwood West Concept Plan is to create a complete community where future residents can go to work and meet their daily needs without relying on a vehicle.

To achieve this vision, the Concept Plan proposes a well-connected transportation system linking streets, trails, and greenways to housing and employment areas. Higher density housing is proposed near the employment centers to maximize opportunities for walking and biking to work. When the Highway 99W Pedestrian Bridge is completed in 2025-2026, residents of the West and Southwest Districts of Sherwood West will have walking and biking opportunities to Old Town and the Town Center for additional employment opportunities. Going in the opposite direction, residents of existing neighborhoods south of Highway 99W will have access to Sherwood High School and the planned mixed-use neighborhoods surrounding the high school.

The Concept Plan illustrates the potential for a bicycle and pedestrian network that is safe, connected, and serves all ages and abilities. Key elements include:

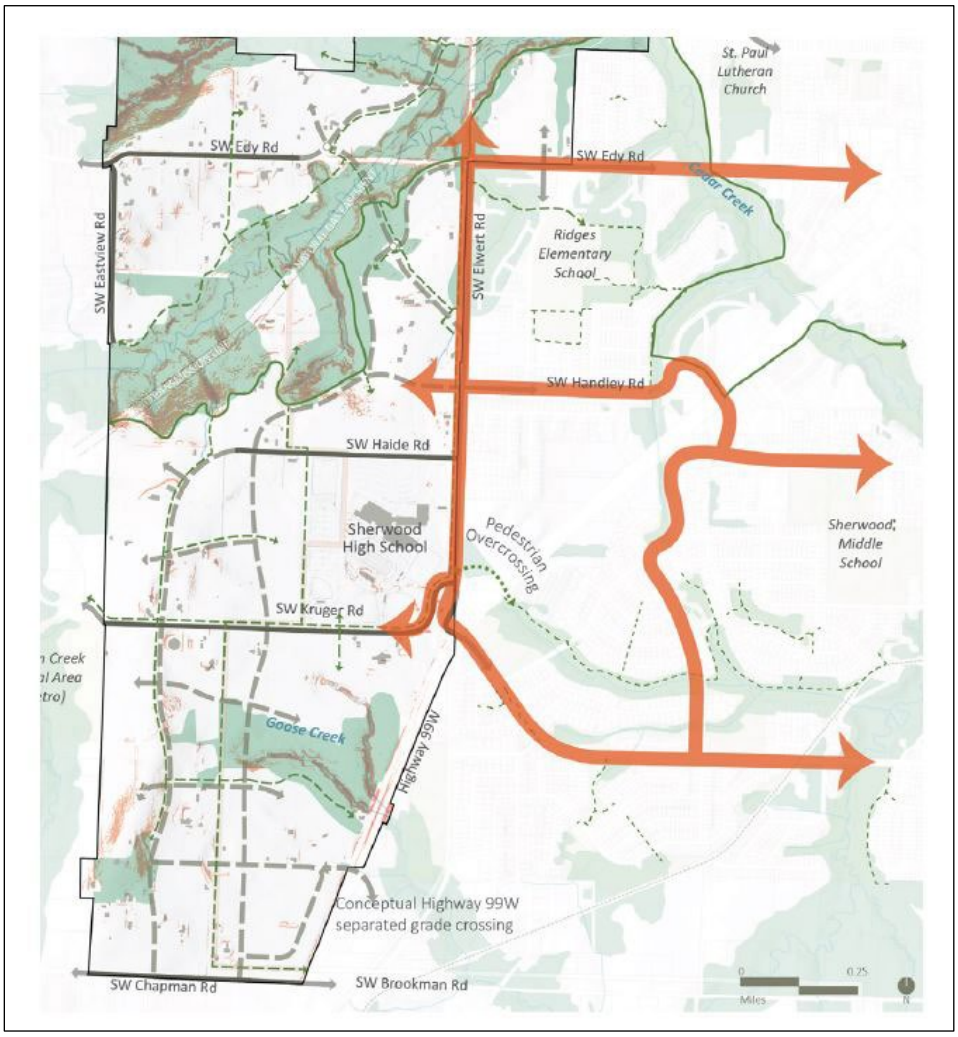
- Chicken Creek Regional Trail;
- Local trails serving every neighborhood and providing continuous routes throughout Sherwood West (north to south and east to west);
- Key connections to Sherwood at SW Edy Road, SW Chapman Road, and SW Elwert Road / SW Sunset Boulevard, with associated pedestrian and bicycle improvements;
- A pedestrian overcrossing of Highway 99W connecting to Sherwood High School; and
- Safe routes to Ridges Elementary School at SW Handley Street, SW Copper Terrace and via trail connections from SW Elwert Road and SW Edy Road.

The Concept Plan also explores how to make the Sherwood West area “transit-ready” with transit-supportive land use and sufficient connectivity of the street system. Both major employment areas are

[5] 2023 EOA – Figure 2.16 Net inflow-outflow of employees (2019)

located on arterials (Highway 99W and Roy Rogers Road) which provide opportunity for future transit service. Highway 99W is identified as a High Capacity Transit Corridor in the region's 2023 High Capacity Strategy Update.

Figure 2: Potential transit routes connecting Sherwood West with the Town Center



(F) A well-connected system of parks, natural areas and other public open spaces;

Response: Sherwood is known for its livability and access to parks, trails, and open space. Sherwood's landscape is defined by the creek corridors that flow through the city leading to the Tualatin River National Wildlife Refuge. The Concept Plan identifies the following parks, trails, natural areas, and open spaces to be provided in Sherwood West and integrated into the city's existing system parks and open space (see Concept Plan Figure 25):

- Chicken Creek Greenway Concept
- Chicken, Cedar Creek and Goose Creeks tributaries
- Two community parks (10 to 20 acres)
- Future neighborhood parks (2 to 5 acres)

- Trail/open space utilizing the regional utility easements
- Trails embedded within new residential and mixed-use developments
- Other public areas identified during the comprehensive and master Planning

One of community's desired outcomes for Sherwood West was protection of the Chicken Creek Greenway that will ultimately connect Sherwood West to the Tualatin River National Wildlife Refuge. Chicken Creek forms a natural greenway through the area, flowing southwest to northeast and eventually draining into the Tualatin River. It is fed by several other waterways including Cedar Creek, Goose Creek, and West Fork Chicken Creek. The future Chicken Creek Greenway preserves and enhances these natural corridors by providing wildlife crossings, incorporating stormwater management practices, and providing access to nature through a network of connected walking trails to the two community parks that are adjacent to the greenway. As conceptualized, the Chicken Creek Greenway will incorporate the creek corridor as well as the surrounding riparian and upland habitat areas creating a continuous system of green space throughout the corridor.

The Concept Plan also identifies conceptual locations for smaller neighborhood parks linked by the trail system. The location and alignment of parks and trails have been planned for future connection to other destinations such as the Tualatin River National Wildlife Refuge and the Town Center.

(G) Protection of natural ecological systems and important natural landscape features; and

Response: Concept Plan Figure 25 identifies natural resource areas subject to Metro Title 13 regulations, including upland and riparian habitat. Three creeks are located within the planning area (Goose Creek, Cedar Creek, and Chicken Creek) and each was an important consideration in the layout of the plan. Two community parks are located along the Chicken Creek Greenway and will conserve additional green space for passive and active recreation. As part of the next step of comprehensive planning, the City will analyze riparian and other habitat areas subject to Metro Title 13 and Statewide Planning Goal 5; make determinations about their significance; undertake an Economic, Social, Environmental and Energy (ESEE) analysis to evaluate protection programs for significant natural resources; and adopt plans for resource protection through the Sherwood Comprehensive Plan and Development Code. Through discussion with Metro staff, the City understands that the previous ESEE analysis completed by Metro in 2005 likely considered rural development in its alternatives analysis. Once brought into the UGB, the ESEE analysis completed by the City will instead consider the benefits of urban development to identify the amount of allowable habitat impact in conformance with Title 13 and Goal 5.

(H) Avoidance or minimization of adverse effects on farm and forest practices and important natural landscape features on nearby rural lands

Response: Sherwood West abuts a rural reserve designation to the west and rural property owners participated throughout the planning process. Their feedback informed the location and intensity of land uses in the Concept Plan. The western edge of Sherwood West is made up of the lowest density residential designations in the plan while the north and south ends are designated for employment. It was discussed during the planning process that employment uses in conjunction with a buffer implemented at the time

of development can minimize impacts of urban uses with adjacent farm and forestry practices and vice versa. The City is committed to crafting a development code that carefully considers land use compatibility where development will occur near the rural reserve.

The approximately 80-acre hospitality district is intended to complement the surrounding farm and forest practices by providing an employment center focused on food and wine from the northern Willamette Valley. In this regard the Concept Plan not only minimizes the adverse effects of urbanization, but actively brings urban and rural land uses and property owners together at the edge of the UGB.

(2) If the plan involves fewer than 100 acres or proposes to accommodate only residential or employment needs, depending on the need to be accommodated:

Response: This section does not apply as Sherwood West exceeds 100 acres.

(c) A concept plan shall:

(1) Show the general locations for any residential, commercial, industrial, institutional and public uses proposed for the area with sufficient detail to allow estimates of the cost of the public systems and facilities described in paragraph (2);

Response: The City of Sherwood places a high priority on well-planned, efficient land uses and public infrastructure to serve new development. Figures 8 and 13 of the Concept Plan show the proposed land use and transportation system for Sherwood West. Based on the residential and employment land designations, housing and job capacities were estimated for each category. This information was used to review and plan for the public infrastructure needed to serve the study area. The Concept Plan's Preliminary Infrastructure Funding Strategy (Concept Plan Appendix O) is consistent with City priorities and implements Concept Plan Goal #6, which states "growth and development are well-planned, and implementation of the area is pragmatic."

The Preliminary Infrastructure Funding analysis includes planning level cost estimates for non-local infrastructure projects in Sherwood West and compares those to potential revenues that will be generated under current City, County, and CWS System Development Charges (SDCs). Local infrastructure is expected to be provided by the developer. The analysis shows a revenue shortfall for water, transportation, and storm and a surplus for sanitary sewer and parks. Between all infrastructure categories, the total shortfall in funding is $10,650,505. This represents just 3.3% of the total projected revenue of $323,376,446 for non-local infrastructure. This amounts to less than $18,000 for each net acre of developable land in Sherwood West[6].

The funding gap analysis includes a wide range of options for how the City will make up the difference in revenue including supplemental SDCs specific to Sherwood West, Local Improvement Districts, and grants and loans, among other options. The cost and revenue estimates for this analysis are rough estimates and will be refined in subsequent planning phases. Please see the Infrastructure and Phasing Memo, Concept

[6] $10,650,505 deficit / 605 net developable acres = $17,604.14 deficit per acre of developable land in Sherwood West

Plan Appendix N, and the Preliminary Infrastructure Funding Strategy, Concept Plan Appendix O for full details.

(2) For proposed sewer, park and trails, water and storm water systems and transportation facilities, provide the following:

(A) The general locations of proposed sewer, park and trail, water and stormwater systems;

Response: The general locations of the facilities listed in subsection (A) above are described and depicted throughout the Concept Plan. Relevant Concept Plan Figures and Appendices include:

- Concept Plan Figure 8 Composite Concept Plan Map
- Concept Plan Figure 13 Land Use Plan Map
- Concept Plan Figure 14 Conceptual Street Framework
- Concept Plan Figure 15 Contextual Design Concepts for Elwert Rd.
- Concept Plan Figure 22 Overall Transportation Framework for Sherwood West
- Concept Plan Figure 24 Trails and Open Space Network
- Concept Plan Appendix N Infrastructure and Phasing Analysis
- Concept Plan Appendix O Preliminary Infrastructure Funding Strategy

(B) The mode, function and general location of any proposed state transportation facilities, arterial facilities, regional transit and trail facilities and freight intermodal facilities;

Response: The Conceptual Street Framework, Concept Plan Figure 14 shows the location of existing and planned roads within Sherwood West. Figure 21 shows the potential for transit to connect Sherwood West development and trip generators in the existing city limits. The Infrastructure and Phasing memo, Concept Plan Appendix N, describes the arterials and collectors in additional detail. Three transportation concepts in the plan include:

Transit Readiness: Sherwood West is planned to be transit ready. The plan helps Sherwood West be transit ready by planning land uses, streets, and trails to accommodate and support future transit service. Concept Plan Figure 22 identifies potential future transit routes connecting Sherwood West and the regional Town Center.

Elwert Rd. Design: SW Elwert Road is a Washington County street and key north-south arterial providing access to and defining urban design in Sherwood West. Design concepts for the roadway are aimed at making Elwert Rd. a livable and positive addition to Sherwood West and the existing neighborhoods on its east side. SW Elwert Rd. is proposed as a safe, connected, and attractive boulevard with buffered sidewalks, bike lanes, a planted median with canopy trees, safe crossings, and path connections to key sites and destinations.

Potential Elwert Rd. Realignment: The Concept Plan examined whether to maintain the SW Elwert Rd. / SW Edy Rd. intersection at its current location or re-align the intersection to minimize impacts to existing wetlands and natural resources. The CAC and project team recommended the realignment approach, however, further analysis including a more in-depth environmental, engineering, and cost analysis will be necessary before the decision about the road's alignment is finalized. The Implementation section of the Concept Plan provides further details regarding the needs for these analyses, including coordination with Washington County.

(C) The proposed connections of these systems and facilities, if any, to existing systems;

Response: With development of Sherwood High School, the Highway 99W / SW Elwert Rd. intersection was improved by Washington County. Frontage improvements along the high school property were also completed to urban arterial standards. In this regard, a key intersection and gateway to Sherwood West has already been improved and connects to the existing transportation system in the city.

As stated above, the City is building on these investments by improve building a new pedestrian bridge across the highway at SW Elwert Rd. The Highway 99W pedestrian bridge will connect the Woodhaven neighborhood with Sherwood West, providing a grade-separated crossing of Highway 99W for walking, bicycling, and other active transportation modes.

All proposed connections for streets and trails, including arterials and state highways, are shown on the Overall Transportation Framework map (2023 Concept Plan Figure 23). New infrastructure proposed in the plan is described in the Infrastructure and Phasing memo, Concept Plan Appendix N, as updated in the North District by the 2024 Refinement report (Appendix R).

(D) Preliminary estimates of the costs of the systems and facilities in sufficient detail to determine feasibility and allow cost comparisons with other areas;

Response: The cost and feasibility of infrastructure was a major focus of the planning process. Planning level design and cost estimates for infrastructure are included in the Preliminary Infrastructure Funding Strategy, Concept Plan Appendix O. Costs estimates were broken down by sectors A-F which coincided with the different districts (North, West, etc.) in Sherwood West. The analysis demonstrated that potential revenues generated at full buildout of Sherwood West will yield a surplus for sanitary sewer and parks and a deficit for water, transportation, and storm infrastructure. Between all infrastructure categories, the total shortfall in funding is $10,650,505. This represents just 3.3% of the total projected revenue for non-local infrastructure and less than $17,000 of deficit per net developable acre. The 3.3% shortfall is expected to be addressed through supplemental SDCs, Local Improvement Districts, Urban Renewal, grants, and other funding mechanisms. The City has a history of providing high quality public infrastructure and services and finding reliable ways to fund needed infrastructure.

Two areas in Sherwood West were identified as "catalyst" areas that when developed, would open up the opportunity for additional development. These areas are the North and portions of the West and

Southwest Districts near the high school. Through public investment and private development, attention in these districts will help lay the foundation for the long-term success of Sherwood West. Appendix O describes in detail the infrastructure that will help these areas serve as catalysts for subsequent development elsewhere in Sherwood West.

The cost and revenue estimates will be refined in subsequent planning phases. Please see the Infrastructure and Phasing Memo, Concept Plan Appendix N, and the Preliminary Infrastructure Funding Strategy, Concept Plan Appendix O for full details.

(E) Proposed methods to finance the systems and facilities; and

Response: Local infrastructure is generally provided by developers with development. Non-local infrastructure will be funded with a variety of methods. The City and Washington County collect SDCs for transportation and other urban utilities. Where existing rates of SDCs do not cover the cost of infrastructure, the Preliminary Infrastructure Funding Strategy (Appendix O) identifies potential funding sources and strategies to close the gap. These sources include:

- Federal funding sources such as the Economic Development Administration
- State Funding Sources including:
    - Special Public Works Fund
    - Community Paths Grants
    - Immediate Opportunity Fund
    - Oregon Parks and Recreation Department Local Government Grant Program
    - Emerging Opportunities within the state legislature (i.e. SB 1537; 2023)
- Regional Sources including:
    - Major Streets Transportation Improvement Program (MSTIP)
    - Metropolitan Transportation Improvement Program (MTIP)
    - Regional Flexible Funding
- Supplemental System Development Charges (SDCs), paid by developers

Additional sources of funds for infrastructure development identified as lower-priority options include:

- Local Improvement Districts (LIDs)
- Utility Fees
- Property Tax (General Obligation) Bonds
- Urban Renewal

(F) Consideration for protection of the capacity, function and safe operation of state highway interchanges, including existing and planned interchanges and planned improvements to interchanges.

Response: There are no existing or planned state highway interchanges in the Sherwood West area.

(3) If the area subject to the concept plan calls for designation of land for industrial use, include an assessment of opportunities to create and protect parcels 50 acres or larger and to cluster uses that benefit from proximity to one another;

Response: The Mixed Employment zone in the North District is envisioned as an industrial zone. This zone has favorable characteristics for siting industrial uses including large sites, relatively flat topography (less than 3-5% slopes), few property owners, and easy access to major freight routes. The North District Refinement Study evaluated opportunities to create and protect parcels greater than 50-acres (Table 6). The study concluded that opportunity exists on the east side of SW Elwert Rd. within the mixed-employment zone to create parcels larger than 50-acres. Taking into account City and County standards for streets and access, Table 6 indicates that an 83-acre net developable site can be created. Smaller parcels between 8 – 27 acres can be created on the west side of SW Elwert Rd. within the mixed-employment zone. While this criterion addresses large sites, the region is experiencing is a need for smaller industrial sites that can also be accommodated in Sherwood West.

Table 6: Mixed-employment zone parcel size analysis (Concept Plan Appendix R – Table 2)

TABLE 2: SCENARIO B POTENTIAL DEVELOPMENT SITES				
Site	**East or West of SW Elwert Road**	**Gross Area (acres)**	**Title 13 Area (acres)**	**Area outside Title 13 Area (acres)**
B1	West	15.4	0	15.4
B2	West	20.0	7.7	12.3
B3	West	35.3	7.8	27.5
B4	West	12.0	3.7	8.3
Total (West)	**West**	**82.7**	**19.2**	**63.5**
B5	East	95.8	12.7	83.1
B6	East	54.3	47.1	7.2
Total (East)	**East**	**150.1**	**59.8**	**90.3**
Total		**232.8**	**79.0**	**153.8**

Need for Large Sites

The 2023 Sherwood Economic Opportunities Analysis (EOA) indicates that the remaining employment land in the City's UGB is primarily composed of smaller lots of less than 10 acres and that there are no industrial building sites within the city or its UGB over 10 acres. The remaining small-sized parcels will not be suitable for the types of traded sector industries being targeted by the City and supported by recent state and federal initiatives (i.e. CHIPS). These include semiconductors and electronics, cleantech, advanced manufacturing, software and media, and other technology-focused companies that will create higher-paying jobs.

To accommodate the City's employment needs, the EOA indicates there is a need for 277 acres of additional land outside of the current UGB. Sherwood West represents the only viable location for the

growth of these targeted industries in the urban reserve since traded sector companies require larger, flatter sites that can be assembled for maximum flexibility and productivity. Parcel sizes within the Sherwood West's North Employment District offer the necessary parcel sizes and slopes of less than 3 percent.

Based on feedback from the Technical Advisory Committee and local real estate brokers, maintaining flexibility in lot size is valuable in making sites attractive for development by employers. Thus, the City's preference is to have Metro designate the Mixed Employment portion of the North District as an Employment Area rather than an Industrial Area or a Regionally Significant Industrial Area.

(4) If the area subject to the concept plan calls for designation of land for residential uses, the concept plan will describe the goals for meeting housing needs for the concept planning area in the context of housing needs of the governing city, the county and the region if data on regional housing needs are available. As part of this statement of objectives, the concept plan shall identify the general number, price and type of market and non-market provided housing. The concept plan shall also identify preliminary strategies, including fee-waivers, subsidies, zoning incentives and private and nonprofit partnerships, that will support the likelihood of achieving the outcomes described in subsection B of this section;

Response: The Concept Plan proposes land use designations with a variety housing types, densities, and price points. As required by state law, the Concept Plan provides the opportunity for at least 50% of new housing in Sherwood West to be single-family attached or multi-family. The estimated amount of housing in Sherwood West will range from 3,120 to 5,580 units, depending on how much middle housing is developed in the Neighborhood designations.

As described in the response to Metro Code Section 3.07.1110(b)(1)(C) above, new housing constructed in Sherwood West is expected to help address the region's housing crisis. The mixture of housing types and densities in Sherwood West will the City's projected needs in each category and will provide additional high-density housing beyond what the city needs, thus serving a regional demand.

The City will consider zoning incentives, fast-track reviews, and other policies that support housing production during the Comprehensive Planning process. Sherwood will be undertaking a Housing Production Strategy (HPS) as required under House Bill 2003 and OAR 660-008. The law requires Sherwood to evaluate a broad range of strategies to meet local housing needs—which may include policies, programs, funding tools, incentives, partnerships, and more. The City will be required to adopt its first HPS by 2027.

Outside of formal policies, the City has a track record of working productively with developers during the land use and permitting stage of development. In the last 10 years, the City has approved 100% of variance requests for housing projects.

(5) Show water quality resource areas, flood management areas and habitat conservation areas that will be subject to performance standards under Titles 3 and 13 of this chapter;

Response: Natural resources were mapped as part of the Concept Plan including those identified in Titles 3 and 13 (Concept Plan Figure 4). As part of the comprehensive planning process, the City will undertake an Economic, Social, Environmental, and Energy (ESEE) analysis to evaluate and determine protection programs for significant natural resources. Through discussion with Metro staff, the City understands that the previous ESEE analysis completed by Metro in 2005 likely considered rural development in its alternatives analysis. Once brought into the UGB, the ESEE analysis completed by the City will instead consider the benefits of urban development to identify the amount of allowable habitat impact.

(6) Be coordinated with comprehensive plans and land use regulations that apply to nearby lands already within the UGB;

Response: As described in subsections (3) and (4) above, the Concept Plan proposes land uses to address the City's shortage of residential and employment lands pursuant to the adopted HNA and EOA. In this regard, the Concept Plan is coordinated with City's Comprehensive Plan and the allowed densities and employment uses in the implementing regulations. Other coordination points include the Brookman Road Concept Plan, 2021 Parks Master Plan, 2016 Transportation System Plan, and other utility master plans. All of the adopted Master Plans, Concept Plans, and system plans were taken into consideration when planning for Sherwood West.

(7) Include an agreement between or among the county and the city or cities and service districts that preliminarily identifies which city, cities or districts will likely be the providers of urban services, as defined in Oregon Revised Statutes (ORS) 195.065(4), when the area is urbanized;

Response: The City and project team coordinated with service providers throughout the planning process. The application includes a copy of the existing Urban Planning Area Agreement between the City of Sherwood and Washington County and a new Intergovernmental Agreement between the jurisdictions. The application also includes Letters of Support from applicable urban service providers defined in ORS 195.065(4). A summary is provided below:

Table 7: Governance and Urban Services for the Sherwood West area

Urban Service	Likely Provider	Agency Coordination
Streets and Roads	City of Sherwood and Washington County	UPAA, IGA, Letter of Support
Sanitary Sewer	City of Sherwood and Clean Water Services	Letter of Support
Mass Transit	TriMet	Letter of Support
Fire Protection	Tualatin Valley Fire & Rescue	Letter of Support
Water	City of Sherwood	-

Urban Service	Likely Provider	Agency Coordination
Parks, Recreation and Open Space	City of Sherwood	-

(8) Include an agreement between or among the county and the city or cities that preliminarily identifies the local government responsible for comprehensive planning of the area, and the city or cities that will have authority to annex the area, or portions of it, following addition to the UGB;

Response: The City of Sherwood and Washington County have an existing Urban Planning Area Agreement that defines responsibilities for comprehensive planning and annexation authority in Sherwood West. The agreement has been included as part of the application. The City is responsible for long-range planning and annexation of the Urban Reserve 5b (Sherwood West).

(9) Provide that an area added to the UGB must be annexed to a city prior to, or simultaneously with, application of city land use regulation to the area intended to comply with subsection C of section 3.07.1120; and

Response: Comprehensive Planning of Sherwood West will occur after the UGB expansion is approved and will comply with Metro Code section 3.07.1120(C) including any Conditions of Approval assigned in the approval ordinance. In addition to compliance with Metro Code and any Conditions of Approval, the City's Comprehensive Plan policies will apply. The City is also considering new annexation policy that would apply to areas within the UGB.

Sherwood 2040 Comprehensive Plan

Goal 3 – Ensure that the rate, amount, type, location and cost of new development will preserve and enhance Sherwood's quality of life so that it is accessible to all community members.

POLICY 3.3: Provide for compatible, phased, and orderly transition from rural to suburban or urban uses, reflecting Sherwood's landform on adjacent land outside Sherwood city limits or the Metro urban Growth Boundary.

POLICY 3.4: Ensure annexation to the City occurs in an orderly and coordinated manner, and services are provided to support urban growth consistent with the 2040 Vision.

(10) Be coordinated with school districts, including coordination of demographic assumptions.

Response: Sherwood West will be served by the Sherwood School District. As such, a representative of the School District served on the Citizens Advisory Committee and provided input on the plan throughout the planning process. The proposed schools within Sherwood West are based on demographic

assumptions and include one new middle school and one new elementary school. The School District has provided a Letter of Support for Sherwood West which is included in the application.

APPENDIX Q

Master Planned Communities and Middle Housing Memo

MEMORANDUM

City of Sherwood
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To: Planning Commission and City Council

From: Eric Rutledge, Community Development Director and Carrie Richter, Contract Legal Counsel

Subject: Sherwood West Implementation Questions

Date: October 3, 2023

Background:
During the Sherwood West Concept Plan Re-Look ("Concept Plan") process, Planning Commission and City Council raised a number of implementation questions related to middle housing, master planning, and annexations. This memo will provide a high-level summary of the required steps between concept plan and development and then address the questions raised:

1. Can Cottage Cluster and Middle Housing only zones be created in Sherwood West?
2. What are the benefits of a City-led master plan for certain portions of Sherwood West and how is HB 2001 implemented through a master plan?
3. How can annexation agreements or policies be used to best achieve the City's desired outcomes for Sherwood West?

The following information was also requested by council during the September 5, 2023 Work Session:

- Vacant Residential Land Map (Attach 1)
- Procedural questions regarding Metro approval process (Attach 2)

Path from Concept Plan to Development
Concept Plan implementation will require that the City achieve multiple planning land use decision-making mileposts before any urban-scale development can occur. Many of the terms used to describe these various steps are similar so it is important to clarify their meaning and requirements:

Step 1: Urban Growth Boundary (UGB) Amendment: This process starts with the City issuing a Letter of Intent (LOI) indicating the City's interest in expanding the

Metro UGB and then following up with the filing of an application. During the September 5, 2023 Work Session, City Council raised a number of procedural questions related to the Metro approval process. Metro staff has provided written responses to the questions raised, included as Attachment 3 to this memo.

Step 2: Comprehensive plan and zoning code implementation: This will include creating comprehensive plan policies, amending the City facilities, utilities and transportation plans, applying zoning map designations and the adoption of development and design standards to implement the comprehensive plan. With respect to areas that are planned and zoned for residential, the City may elect to proceed with a "Master Planned Community" designation, an area that is exempt from the state middle housing rules (OAR 660-046-0205(2), if it is at least 20 acres in size and either includes either: (1) infrastructure adequate to serve 20 units per acre; (2) a variable rate system development charge (SDC) reduction for middle housing or (3) provides a mix of middle housing types. Duplexes are still required in all zones that permit single-family residences. Custom regulation of middle housing through a Master Planned Community is discussed in greater detail below. In areas where housing is allowed, the zoning regulations must include at least one clear and objective track to development. Finally, these code amendments would include any area-specific annexation policies, such as prioritized annexation arrangement, that allows for the orderly extension of urban services or the requirement for a development agreement. These may be specific to Sherwood West or generally applicable city-wide.

Step 3: Annexation with application of the newly implemented plan and zoning regulation. This step would include negotiating an annexation agreement that would outline specific obligations with respect to utilities or other infrastructure necessary to serve future development.

Step 4: Development. This is the final step where an applicant seeking to develop would file an application for a subdivision, planned unit development, or site plan review.

Moving now to respond to the specific questions asked:

1. Exclusive Cottage Cluster and Middle Housing Only Zones

As part of the Concept Plan, the City is proposing a cottage cluster-only zone and a separate middle housing-only zone within Sherwood West. At this conceptual stage, single-family detached homes are not planned to be permitted within these zones. HB 2001, and the rules implementing it, OAR 660-046, require that any zoning district that allows single-family detached homes also allow all middle housing types

within that zone, except with regard to Master Planned Communities (discussed further below). Since single-family detached homes will not be permitted in the Cottage Cluster or Middle Housing Zone, the City is not obligated to require all middle housing types within the cottage cluster or middle housing zone. The City may want to consider incentives for certain types of middle housing within these zones to ensure development occurs in a timely and efficient manner.

2. Master Planned Communities and Middle Housing Regulation

As noted above, the middle housing rules require that the City must allow for all types of middle housing (duplexes, triplexes, quadplexes, townhouses and cottage clusters) in any area zoned for single family residential uses (OAR 660-046-0205(2). However, the rule provides three alternative approaches to regulating middle housing in "Master Planned Communities." A "Master Planned Community" must be a minimum of 20-acres as defined in the rules. The city may regulate the location and design of middle housing in Master Planned Communities through implementation of one or more of the following actions:

- Plan to provide urban services to accommodate 20 units / acre within the Master Planned Community
- Variable rate SDC for middle housing within the Master Planned Community (i.e. reduced rate for middle housing units)
- Require a mix of residential types including at least two middle housing types other than duplexes within the Master Planned Community

City staff has conferred with DLCD staff regarding the answers to questions 1 and 2 above.

3. Annexation Policy and Annexation Agreements

The City is likely to adopt new annexation policy for Sherwood West in order to ensure growth occurs in an orderly, safe and efficient manner. The City can adopt new annexation policy as part of the Comprehensive Planning process. Draft annexation code is provided as Attachment 4. Annexation requires City Council approval through a Type V application.

Sherwood does not currently require annexation agreements between the city and property owners, however, such a requirement may also be considered for Sherwood West. When executed correctly, annexation agreements ensure timely delivery of infrastructure while providing certainty to property owners, the city, and the public. The draft annexation code requires an annexation agreement unless waived by the City.

SB 1573

SB 1573 (2016) requires cities to approve certain annexation applications without any voting requirements from the general electorate. While SB 1573 limits the circumstances under which the general electorate is able to vote on annexations, it does not prevent the city council from setting new annexation policy and does not prevent the city from requiring annexation agreements prior to development.

Attachments:

1. Vacant Residential Land Map
2. Metro responses to questions raised during September 5, 2023 Work Session
3. Draft Annexation Policy

APPENDIX R

Sherwood West Refinement Study

MACKENZIE.

SHERWOOD WEST NORTH DISTRICT CONCEPT PLAN REFINEMENT

To
City of Sherwood

Dated
February 13, 2024
(Revised February 19, 2024)

Project Number
2230332.00

MACKENZIE
Since 1960

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2. Notes from December 6, 2023 Technical Advisory Committee Meeting
3. Notes from January 31, 2024 Technical Advisory Committee Meeting
4. Notes from December 7, 2023 Portland General Electric Meeting
5. PGE Sherwood West Concept Plan Refinement Map, January 19, 2024
6. Business Oregon Industrial Development Competitiveness Matrix
7. Mackenzie Infrastructure Cost Estimates for North District and Regional Trails
8. Preliminary Infrastructure Funding Strategy Memo, Leland Consulting Group

I. INTRODUCTION

Project Overview and Objectives

The City of Sherwood (City) has been planning for the 1,291-acre Sherwood West area—containing one of Metro's designated urban reserves—for many years. In 2016 the City adopted a Concept Plan for the area, but due to a change in City Council policy direction, a second look at the area was initiated in 2021, with a revised Concept Plan accepted by City Council in summer 2023.

In fall 2023, the City engaged Mackenzie and Leland Consulting Group (LCG) to assist in refining the North District of the 2023 Concept Plan. This effort provides additional detail regarding the North District and its Mixed Employment zone, particularly related to Mixed Employment development potential and the costs of providing public infrastructure. Taken together, the 2023 Concept Plan and this 2024 Concept Plan Refinement report will provide information for the City Council to use as the basis for a request for Metro to expand the Urban Growth Boundary (UGB) to include Sherwood West. These reports will also provide information to be incorporated into future updates to the Transportation System Plan and utility master plans following a determination by Metro of which portions of Sherwood West may be included in the UGB.

This report documents the results of this analysis, and includes the following elements:

- Existing conditions information on the North District and prior planning efforts.
- Analysis of opportunities to create large sites (50 acres and larger) within the Mixed Employment area.
- Assessment of existing and planned transportation and infrastructure improvements.
- North District Concept Plan refinement scenarios and associated transportation and infrastructure projects and construction costs.
- Evaluation of the Mixed Employment area to accommodate target employment types.
- Discussion of Sherwood West transportation and infrastructure construction costs and funding.

Study Area Context

The Sherwood West planning area comprises approximately 1,300 acres west of downtown Sherwood and Oregon Highway 99W. Most of Sherwood West (approximately 1,205 acres) is located immediately west of the City of Sherwood, just outside the UGB, in Metro's urban reserve 5B, while the remaining approximately 85 acres are within the UGB and City limits and contain the Sherwood High School. Sherwood West is divided into multiple districts, of which the North District consists of approximately 400 acres. The North District is bounded on the north by SW Scholls-Sherwood Road and SW Lebeau Road, on the east by SW Roy Rogers Road, and on the south by SW Edy Road. The western boundary of the North District does not align with existing roadways. SW Elwert Road passes through the central portion of the North District in a north-south orientation, while SW Conzelmann Road passes through the central portion in an east-west orientation, terminating at SW Elwert Road. The southeastern edge of the North District coincides with the existing UGB and City limits. See Figure 1.

Existing land uses in the North District consists of rural residential properties, agricultural land, and forested areas. The Bonneville Power Administration (BPA) has an electrical transmission line that bisects the North District, crossing diagonally from SW Roy Rogers Road to SW Scholls-Sherwood Road. See Figure 2.

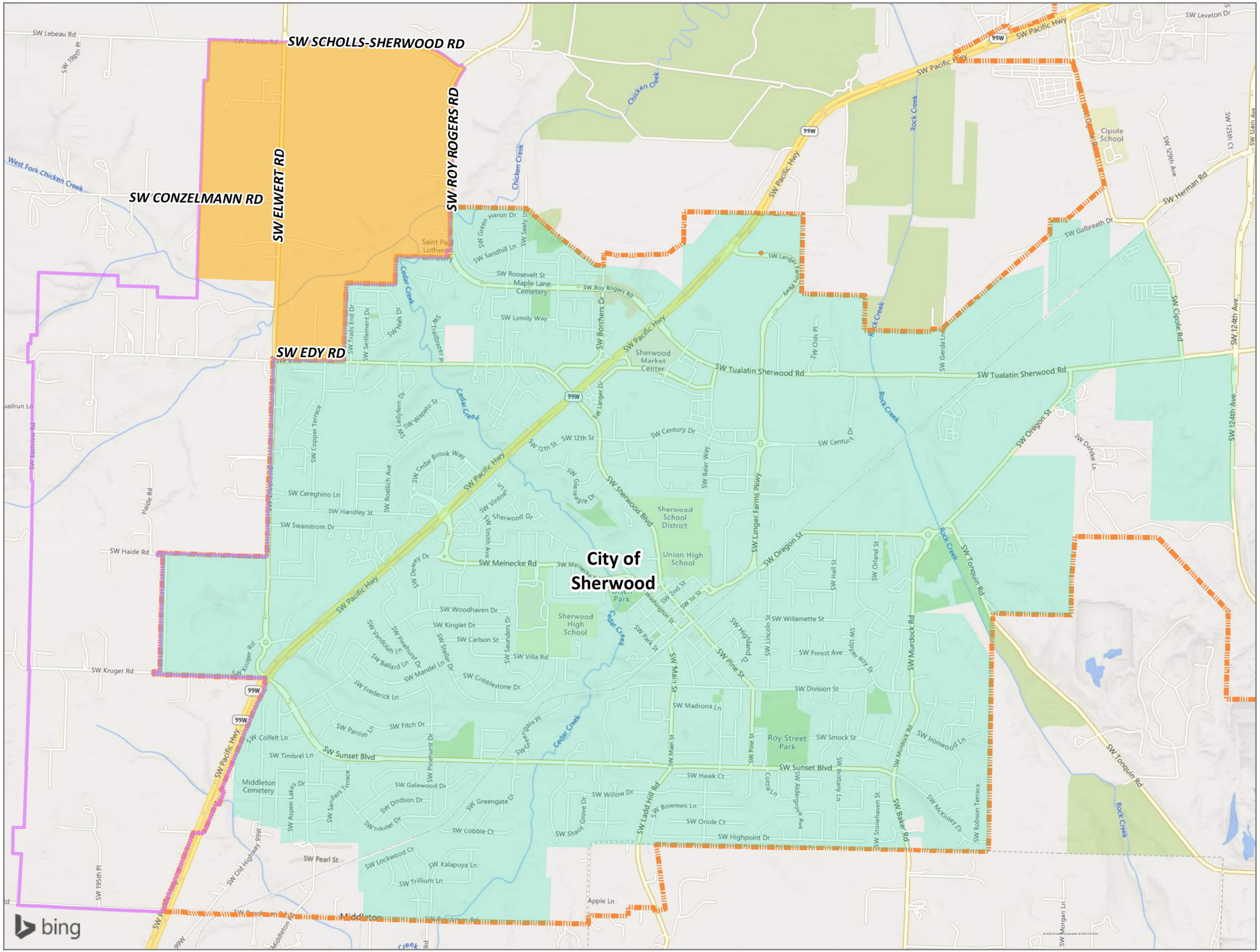


FIGURE 1
SHERWOOD WEST CONCEPT PLAN
NORTH DISTRICT CONTEXT
SHERWOOD, OREGON

LEGEND

- Urban Growth Boundary (UGB)
- Sherwood City Limits
- Sherwood West
- North District

0 750 1,500 3,000 Feet

1 inch = 1,500 feet

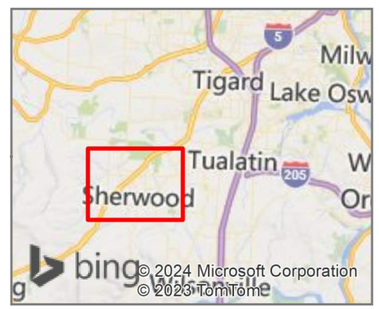
N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 2/9/2024
File: Sherwood West_North District

Map Created By: BJV
Project No: 2230332.00



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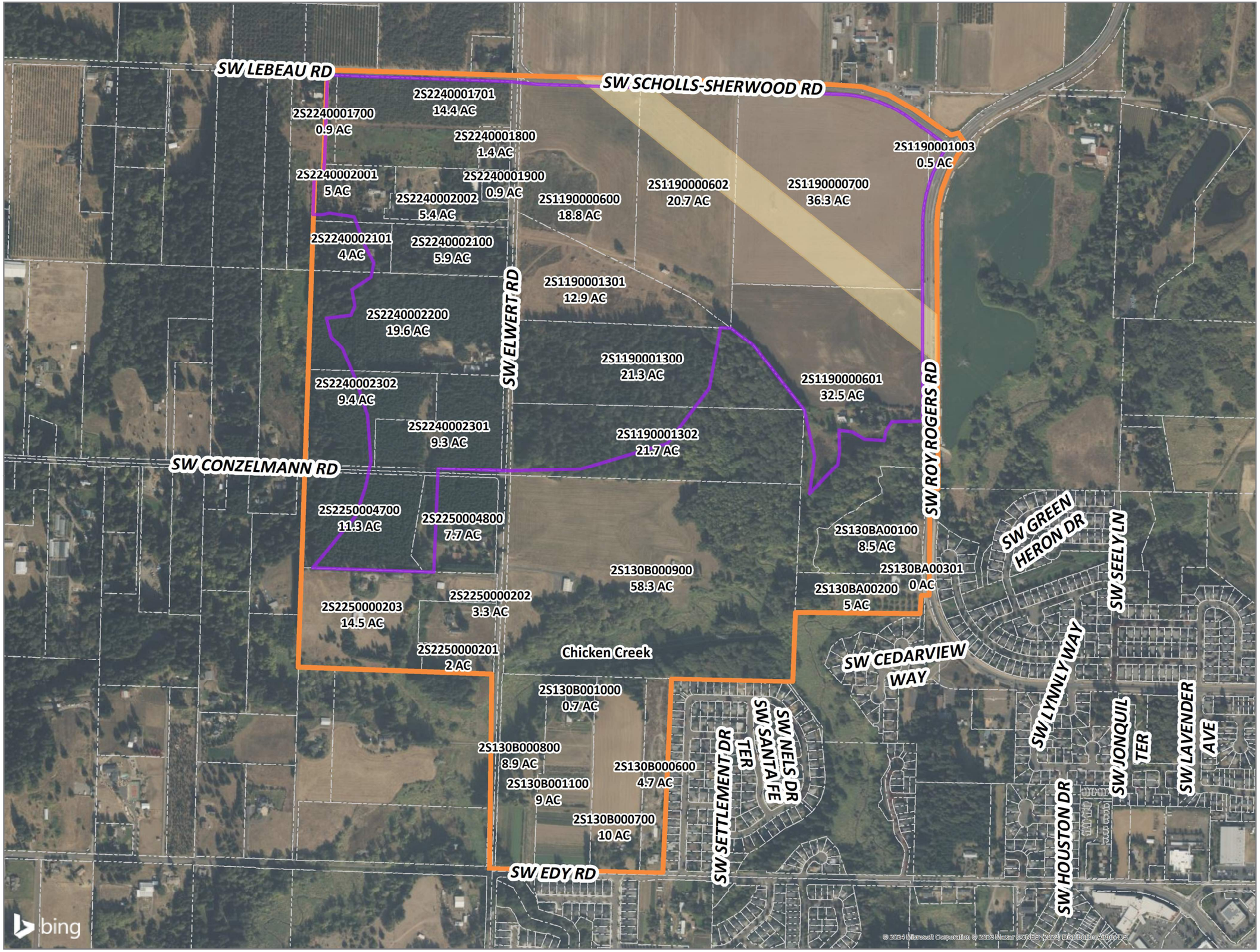

FIGURE 2
SHERWOOD WEST CONCEPT PLAN
NORTH DISTRICT
AERIAL
SHERWOOD, OREGON

LEGEND

- North District
- Mixed Employment
- Tax Lots
- BPA Transmission Corridor

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 2/9/2024
File: Aerial Taxlots_ND

Map Created By: BJV
Project No: 2230332.00

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Chicken Creek passes through the North District, entering at SW Elwert Road and flowing northeasterly toward SW Roy Rogers Road. Cedar Creek joins Chicken Creek shortly before it flows out of the North District. Both creeks have areas of Special Flood Hazard (the 1% annual chance flood, or 100-year floodplain) and regulatory floodway, as illustrated on Figure 3. Wetland areas in the vicinity of Chicken Creek are noted in Figure 4.

Based on the presence of creeks and forested areas, Metro has designated portions of the North District as Title 13 ("Nature in Neighborhoods") habitat, more specifically:

- Riparian Wildlife Habitat Class I
- Riparian Wildlife Habitat Class II
- Riparian Wildlife Habitat Class III
- Upland Wildlife Habitat Class A
- Upland Wildlife Habitat Class B

These areas are also depicted in Figure 4. A review of this map reveals that some of the designated Title 13 areas may no longer serve as habitat, such as in instances where forest cover has been reduced subsequent to the Title 13 designation.

The topography of the North District varies from a high of 280 feet above mean sea level (AMSL) in the northwestern portion to 130 feet AMSL along Chicken Creek. Figure 5 illustrates that most of the North District has slopes under 10% with pockets of areas between 10% and 25% slope and some areas exceeding 25% slope.

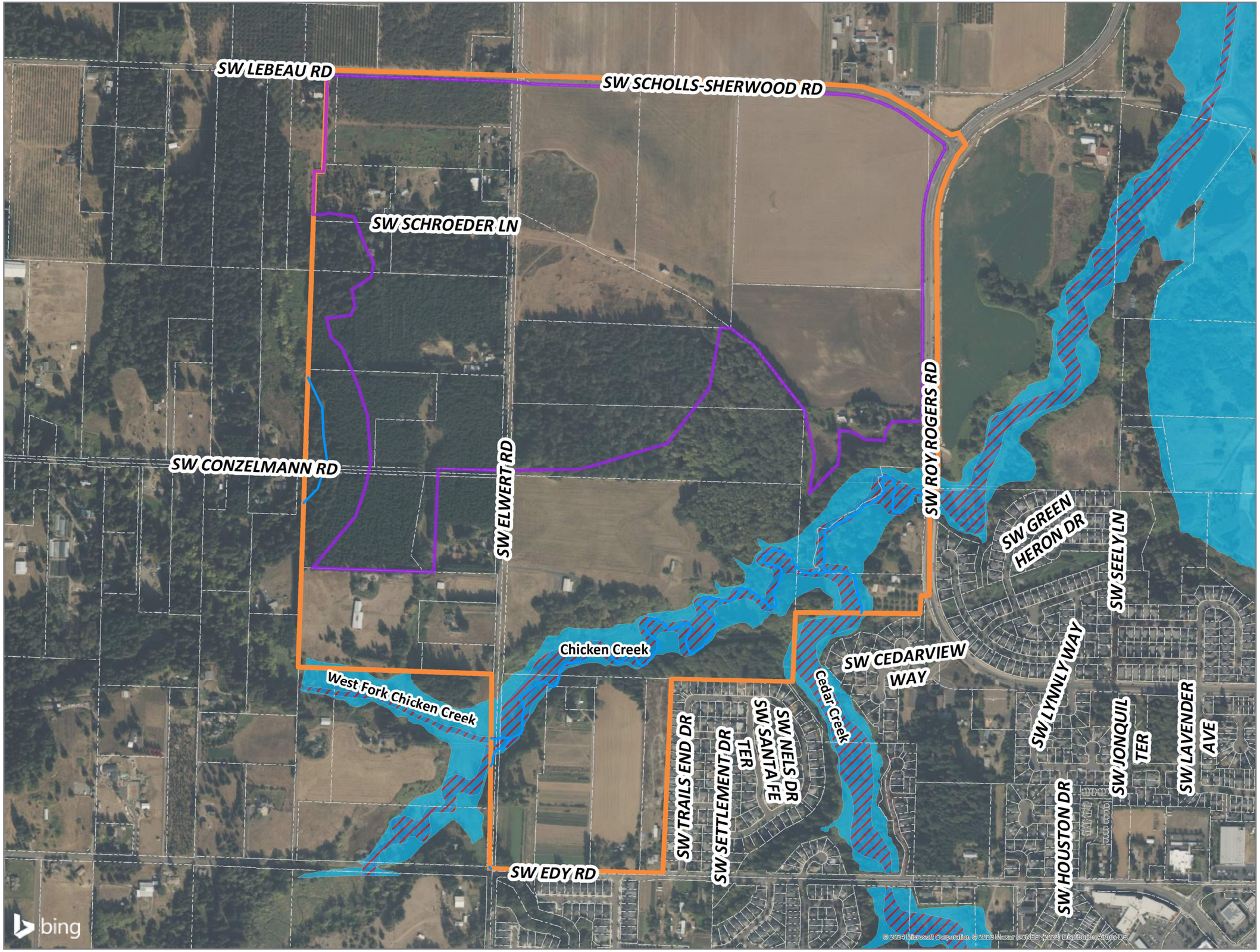

FIGURE 3
SHERWOOD WEST CONCEPT PLAN
NORTH DISTRICT
FLOODPLAIN
SHERWOOD, OREGON

LEGEND

- North District
- Mixed Employment
- Tax Lots
- Streams
- 1% Annual Chance Flood Hazard
- Regulatory Flooodway

0 300 600 1,200 Feet

N

1 inch = 600 feet

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 2/9/2024
File: Floodplain

Map Created By: BJV
Project No: 2230332.00

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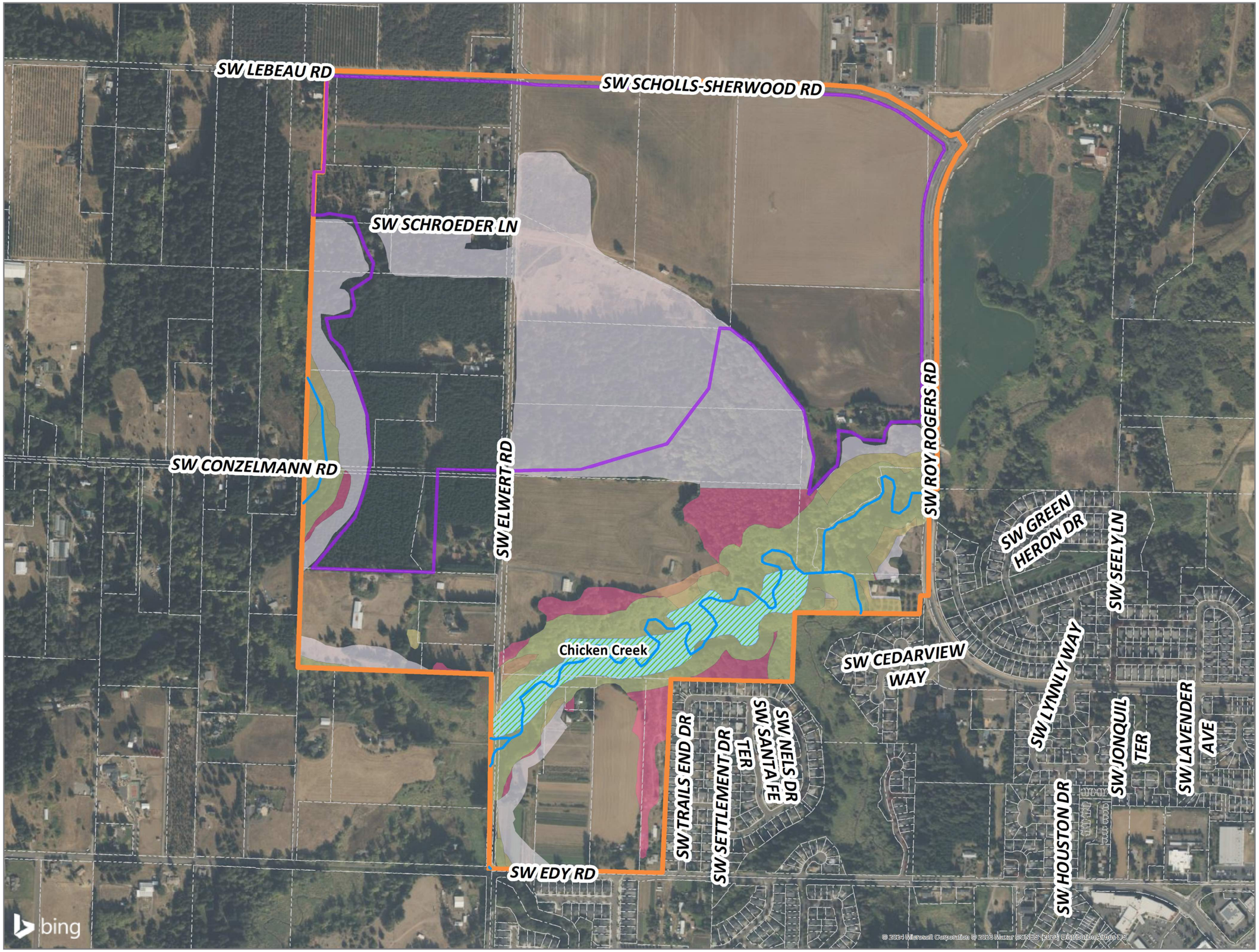

FIGURE 4
SHERWOOD WEST CONCEPT PLAN
NORTH DISTRICT
WETLANDS & TITLE 13
SHERWOOD, OREGON

LEGEND

- North District
- Tax Lots
- Mixed Employment
- Streams
- Wetland

Metro Title 13 Areas

- Riparian Wildlife Habitat Class I
- Riparian Wildlife Habitat Class II
- Riparian Wildlife Habitat Class III
- Upland Wildlife Habitat Class A
- Upland Wildlife Habitat Class B

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 2/9/2024
File: Wetlands_Title 13

Map Created By: BJV
Project No: 2230332.00

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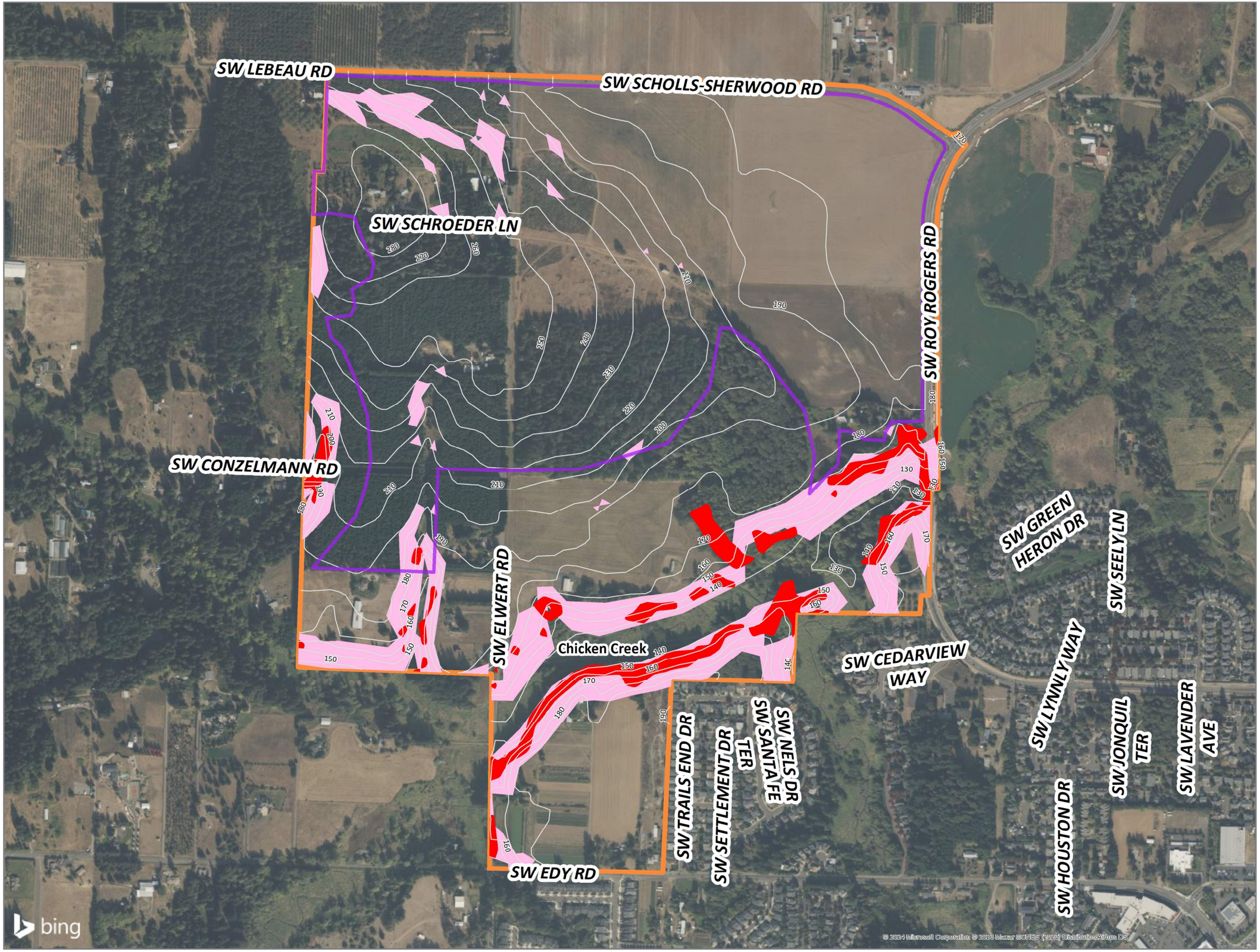
FIGURE 5
SHERWOOD WEST CONCEPT PLAN
NORTH DISTRICT
CONTOURS & SLOPE
SHERWOOD, OREGON



LEGEND

- North District
- Mixed Employment
- 10 ft Contours
- 10%-25% Slope
- Over 25% Slope

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 2/9/2024
File: Contours and Slopes_ND

Map Created By: BJV
Project No: 2230332.00

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Focus of Concept Plan Refinement Study

The City's intent in retaining Mackenzie and Leland Consulting Group for this study was to have the consulting team perform additional analysis related to the following focus areas, as an evolution of the 2023 Concept Plan:

- Determining the viability of assembling large (50 acres and larger) development sites within the Mixed Employment portion of the North District and identifying potential measures to encourage these large sites.
- Refining the North District conceptual roadway network, identifying general alignments for future public utilities, and estimating construction costs for transportation and public utility improvements (water, sewer, storm).
- Comparing transportation, public utility, regional parks, and regional trails construction costs to potential revenues from system development charges (SDCs) and the Washington County Transportation Development Tax (TDT), and identifying potential funding mechanisms to supplement available revenues where needed.

Discussion of the findings of this analysis is included in the following sections.

To assist in this evaluation, the City reconvened its 2023 Concept Plan Technical Advisory Committee (TAC) to provide input in a manner similar to the 2021-2023 Concept Planning effort. Members of the TAC included representatives from:

- Bonneville Power Administration (BPA)
- City of King City
- Clean Water Services (CWS)
- Friends of Tualatin River National Wildlife Refuge
- Home Building Association (HBA)
- Metro
- Oregon Department of Transportation (ODOT)
- Portland General Electric (PGE)
- Tualatin Valley Fire & Rescue (TVF&R)
- Washington County

Notes from the TAC meetings are provided in Appendices 2 and 3.

II. LARGE SITE CREATION WITHIN THE NORTH DISTRICT MIXED EMPLOYMENT AREA

As laid out in the 2023 Concept Plan, the 405-acre North District is envisioned to have the following mix of uses:

- Mixed Employment
- Multifamily
- Middle Housing
- Medium Density Neighborhood
- Community Park
- Metro Title 13 Riparian/Upland Habitat

These areas, and a conceptual network of existing roadways and future streets, are depicted in Figure 6.

To assess the opinions of existing property owners regarding future development of the areas identified for Mixed Employment, in November 2023, the City mailed a survey to all property owners within the North District. The results of that survey are depicted in Figure 8.[1]

Factors Affecting Developability for Mixed Employment Uses

To assess the viability of the Mixed Employment area for large scale employment development, Mackenzie reviewed the information compiled in the included maps.

- Figure 2 indicates that within the Mixed Employment area there are seven residences west of SW Elwert Road and one residence east of SW Elwert Road.
- Figure 2 demonstrates that the BPA electrical transmission corridor constrains several properties within the North District. Buildings cannot be located within the BPA's easement, though passenger vehicle parking and vehicle parking are generally allowed.
- Figure 3 demonstrates that the Mixed Employment area is not within the regulated floodway or the Special Flood Hazard Area (1% annual chance flood area).
- Figure 4 demonstrates that the Mixed Employment area has no identified wetlands, no Metro Title 13 Riparian Wildlife Habitat, and some areas of Upland Wildlife Habitat Class B. Title 13 habitat areas could restrict development locations and add permitting requirements that would extend development timelines.
- Figure 5 demonstrates that the majority of the Mixed Employment area has slopes under 10%. There are scattered regions with slopes over 10% (primarily west of SW Elwert Road) and one small pocket of slope over 25% south of SW Conzelmann Road. Slopes in excess of 10% increase the grading requirements (and associated cost) necessary to create the flat sites desired for large employers.[2]
- Figure 6 demonstrates that the existing transportation network is insufficient to serve the North District, and that additional roadways will be needed. The conceptual roadway locations shown

[1] This map only reflects information provided by property owners and their representatives and does not reflect other information sources (e.g., purchase offers by developers).

[2] As discussed in Appendix G (Economic Opportunities Memo) of the 2023 Concept Plan, "…developers of industrial and, to a slightly lesser extent, office projects typically require regularly-shaped tracts of flat land with slopes of less than 3.0 percent. A campus-style development may be able to accommodate a greater variety of topographical conditions." City and Metro GIS data grouped all slopes under 10% into a single category so identification of areas with 3-5% slopes was not performed.

in this figure (which match those from the 2023 Concept Plan) have been refined as part of this study, as described in Section IV of this report.

- Figure 7 demonstrates that existing parcel sizes in the Mixed Employment area range from approximately 0.5 acres to approximately 36 acres. In general, larger parcels are located east of SW Elwert Road. Some of the parcels are located partially inside and partially outside the Mixed Employment area.
- Figure 7 also demonstrates that there are 16 owners[3] within the Mixed Employment area, including instances where the same entity owns multiple contiguous parcels. This condition would make it easier for developers to assemble large sites by purchasing multiple parcels.
- Figure 8 shows that owners of six parcels within the Mixed Employment area are interested in developing or selling their land for employment, while owners of three parcels are interested in developing their land with residential uses. The owners of three parcels are not interested in development, and the owners of the remaining nine parcels did not respond to the City's survey. For property owners who have indicated they are not interested in developing, those parcels may eventually be developed (for instance, if there is a change in ownership), but those properties would likely not be in the first phase of annexation and development.

[3] Property ownership is counted as a distinct owner name for each parcel. In some cases, a company or person may own property under different names and the actual number of owners may be less than listed here.

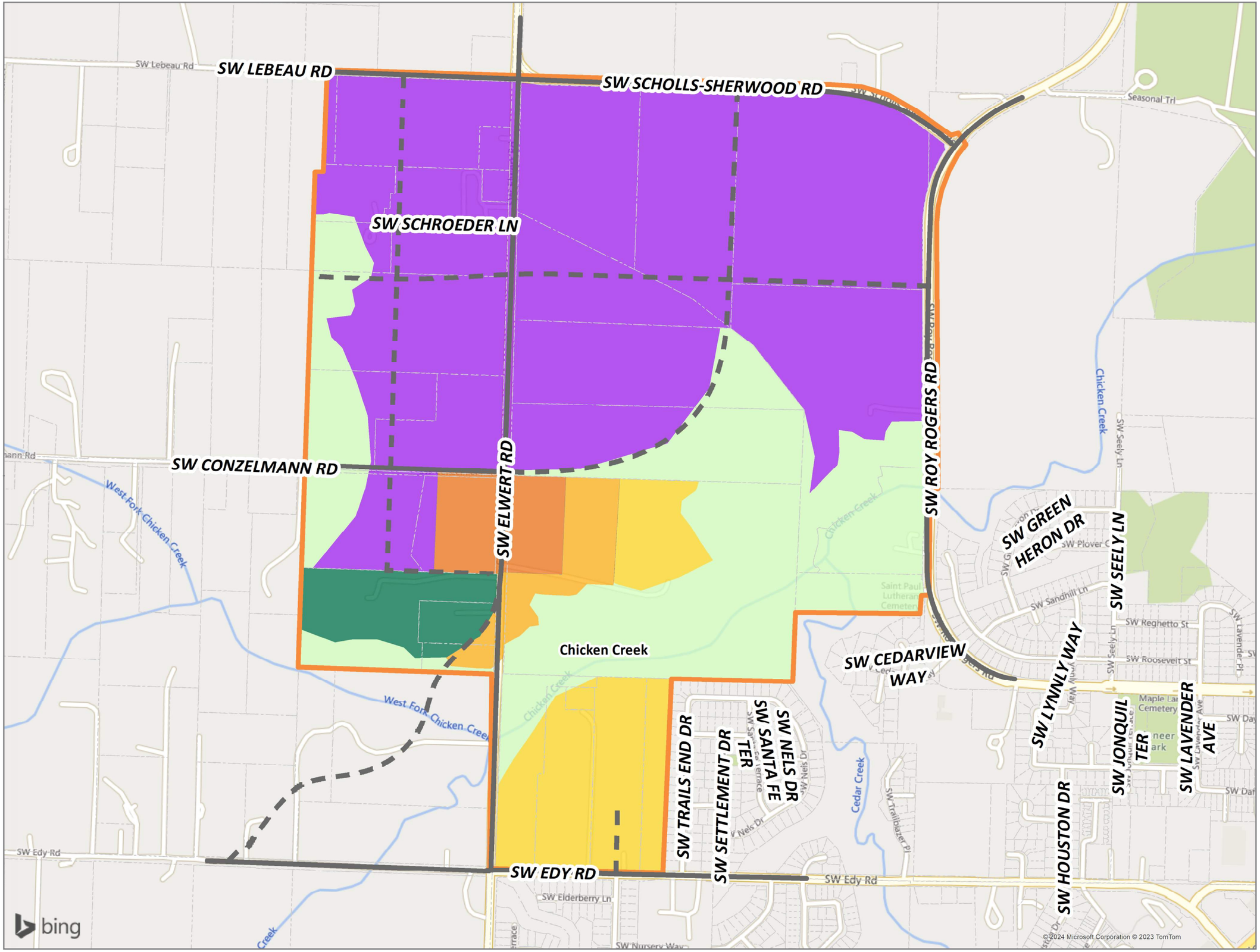

FIGURE 6
SHERWOOD WEST CONCEPT PLAN
NORTH DISTRICT
LAND USE & ROADS
SHERWOOD, OREGON

LEGEND

- North District
- Tax Lots

Land Use per 2023 Concept Plan

- Mixed Employment
- Multifamily
- Middle Housing
- Medium Density Neighborhood
- Community Park
- Title 13 Riparian/Upland

0 300 600 Feet 1,200

N

1 inch = 600 feet

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 2/9/2024
File: Land Use_ND

Map Created By: BJV
Project No: 2230332.00

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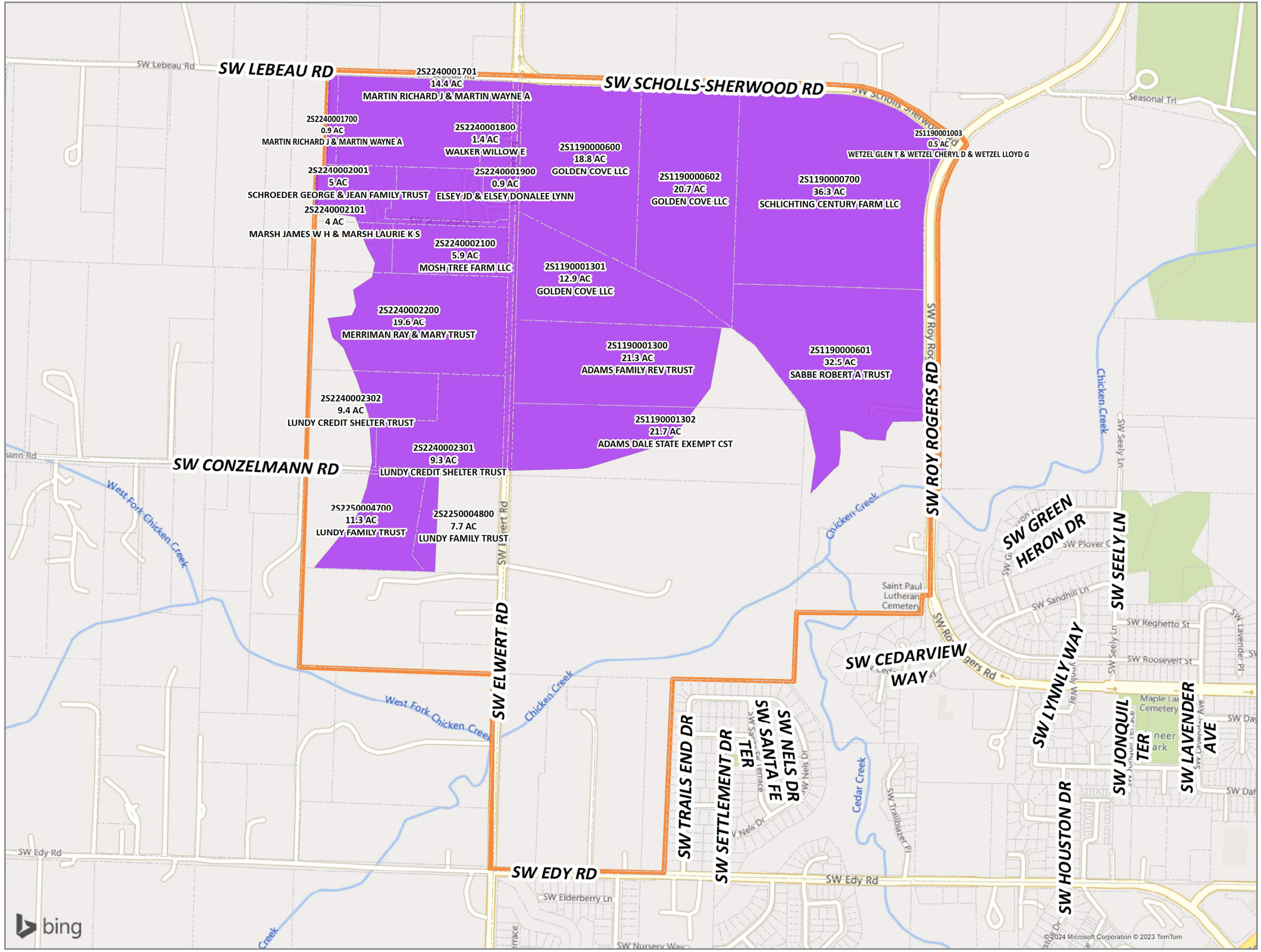

FIGURE 7
SHERWOOD WEST CONCEPT PLAN
NORTH DISTRICT
MIXED EMPLOYMENT OWNERSHIP
SHERWOOD, OREGON

LEGEND

- North District
- Tax Lots
- Mixed Employment per Concept Plan

0 300 600 Feet 1,200

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 2/9/2024
File: Parcel Ownership_ME

Map Created By: BJV
Project No: 2230332.00

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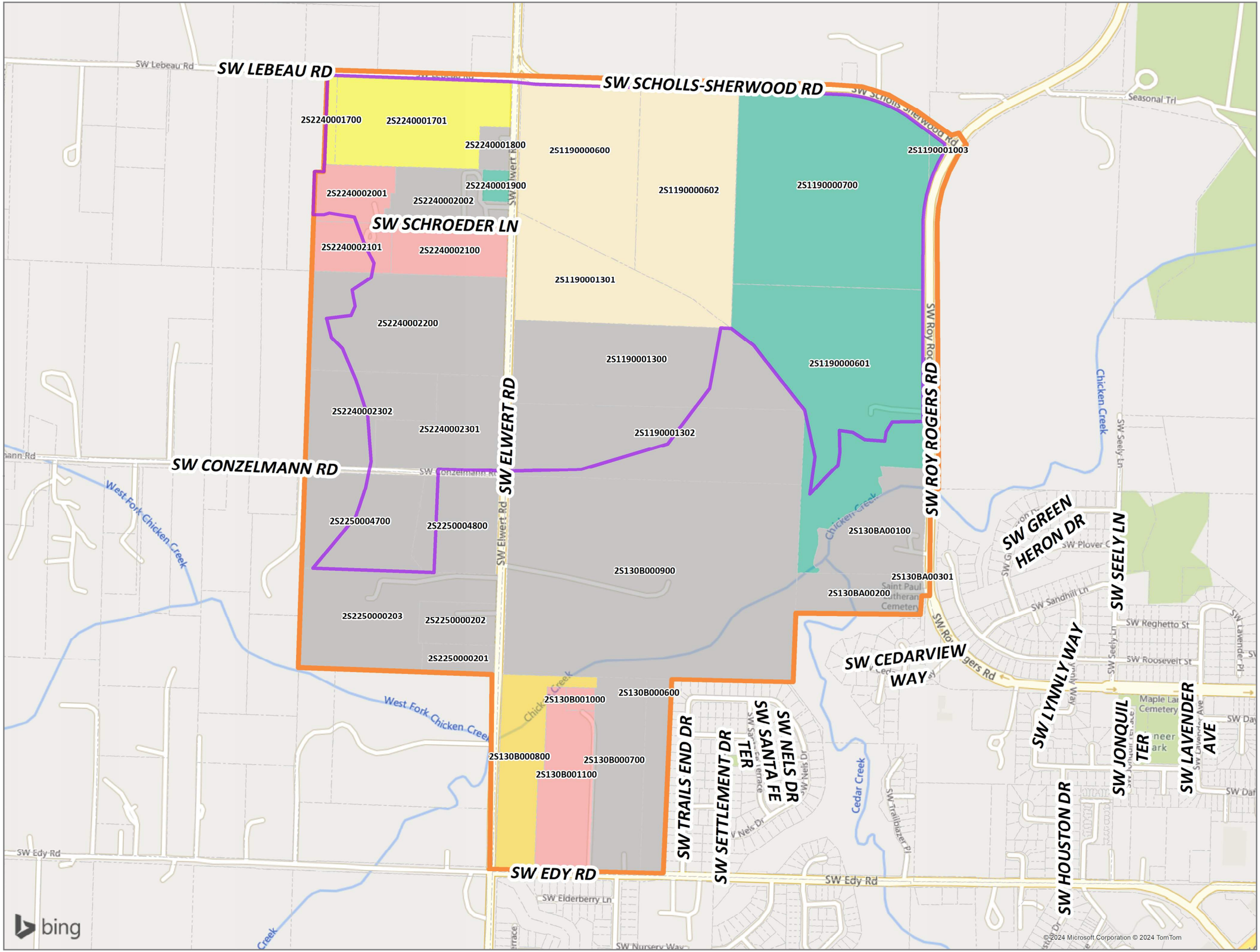
FIGURE 8
SHERWOOD WEST CONCEPT PLAN
PROPERTY OWNER DEVELOPMENT INTEREST
SHERWOOD, OREGON



LEGEND

- North District
- Mixed Employment
- Tax Lots

Survey Response

- Development Interest (for Emp.)
- Development Interest (for Res.)
- Available for Sale (for Emp.)
- Available for Sale (for Res.)
- Not Available or Interested
- No Response

0 300 600 1,200 Feet

N

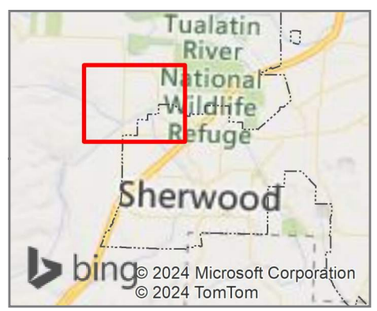
1 inch = 600 feet

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 2/14/2024
File: Owner Devt Interest_ME

Map Created By: BJV
Project No: 2230332.00



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Analysis

Utilizing the Mixed Employment area for large employment development for target industries requires sites that may be composed of multiple properties and ownerships. Based on the factors identified above, the area east of SW Elwert Road is more conducive to large-scale mixed employment development, while the area west of SW Elwert Road is more appropriate for smaller-scale development, for the following reasons:

- Existing parcel sizes are generally larger east of SW Elwert Road, so there are fewer owners overall to aggregate/assemble (six owners east of the road and 10 owners west of the road).
- There are fewer existing residences east of SW Elwert Road.
- There are very few areas with slopes exceeding 10% east of SW Elwert Road. The gentler slopes east of SW Elwert Road are more amenable for large employers. Slopes greater than 10% can be problematic for mixed employment development, particularly many industrial users who prefer not to exceed 5%.
- The combined acreage of properties with owners interested in selling or developing their land is higher east of SW Elwert Road (though one owner of three parcels expressed interest in residential development rather than employment development). No owners east of SW Elwert Road indicated that they had no interest in development.

While the area east of SW Elwert Road does contain Upland Wildlife Habitat Class B, some of this would likely be removed from Metro's Title 13 inventory upon further analysis (e.g., where trees have been removed from formerly forested areas).

The conceptual roadway network depicted in the 2023 Concept Plan would yield development sites with a maximum size of approximately 30 acres. Therefore, to assess opportunities to create sites larger than 50 acres in the Mixed Employment area, Mackenzie drafted multiple preliminary scenarios of potential site configurations and reconfigured roadways and shared those with the TAC (see Appendix 2). In general, utilizing fewer roads would yield larger site sizes, ranging from approximately 50 acres in one configuration to 150 acres in another which eliminated most conceptual roads east of SW Elwert Road. The specific layouts are not reproduced here since the intent was not to compare and contrast specific options but rather to gain feedback from the TAC on general concepts. Observations shared at the December 6, 2023, TAC meeting included:

- The City can undertake a future study to determine the significance of Metro's Title 13 areas as part of future Comprehensive Planning efforts. At this time, the City should not assume that all Title 13 upland habitat areas could be converted to development sites or roadways.
- Large development sites can hinder pedestrian and bicycle access, so if roadways are minimized then providing trails could maintain access for those users.
- Roadway connectivity is likely more important than the City's maximum block size standards, which are more geared towards residential development.
- Certain large employers may have preferred site sizes ranging from 35 acres to over 100 acres.
- While the BPA transmission corridor cannot be used for buildings, it can accommodate parking and vehicle maneuvering space. The BPA does not support planting trees near the BPA easement.
- PGE requests to reserve at least five acres for an electrical substation. Preferably, the substation site would be located in a central location to efficiently serve the North District.
- The City could consider relocating the North District community park to Title 13 upland habitat area to potentially allow other land to be developed with different uses.

- The City has to balance competing interests (e.g., walkability, block size, targeted industries, and upland habitat).

Separately, the City of Sherwood Economic Development Manager and a local real estate broker shared the following comments:

- Development sites of 20-30 acres are reasonable target sizes from a user demand perspective. While larger sizes are more attractive, maintaining flexibility in lot size is preferable over mandating 50-acre sites.
- Roadway locations need to consider circulation and access needs but should maximize developable land to maintain flexibility and minimize development costs.
- Multiple utilities (public utilities, electricity, natural gas, and communications) will be needed to serve future development.
- Preserving large sites provides flexibility for target employment types and changing market conditions and allows employers to grow over time.
- There is current market demand for multi-tenant industrial buildings to accommodate a range of company sizes.
- Rectangular sites are preferred but may not be possible throughout the entire Mixed Employment area.
- Some users will be concerned about public trails or other public easements through development sites due to security needs and truck maneuvering.
- The smaller parcels west of SW Elwert Road provide opportunities for smaller companies.

Potential Strategies for Creating and Protecting Large Sites

Based on the input gathered above and Mackenzie's experience designing business parks and industrial and commercial developments, the following strategies for creating and protecting large sites in the Mixed Employment area were considered.

1. *Large-lot County zoning prior to annexation.*

   Under current Washington County zoning, property east of SW Elwert Road is zoned Exclusive Farm Use (EFU) or Agriculture & Forest (AF-20), both of which has a minimum 80-acre parcel size. While some parcels west of SW Elwert Road are also zoned AF-20, others are zoned Agriculture & Forest 10-acre minimum (AF-10) or Agriculture & Forest 5-acre minimum (AF-5). Coordinating with the County to preserve the current zoning in the near term is advisable to prevent further parcelization prior to City of Sherwood annexation.

2. *City purchase and assembly of parcels.*

   The City or its Urban Renewal Agency (URA) could purchase properties from different owners and assemble them to create larger development sites from smaller parcels. This is an effective strategy if the City or URA have sufficient capital reserves to acquire the needed sites and patiently wait/hold for future development.

3. *Financial incentives for larger sites.*

   The City could make a policy choice to provide financial incentives for employment sites over a minimum threshold size. Incentives could include reduced development review or permit fees,

reduced SDCs, City funding for public infrastructure improvements, or tax abatement for a specified period.

4. *Accelerated review timelines for larger sites.*

   The City could make a policy choice to accelerate land use review and permit review timelines for employment sites over a minimum threshold size. The City could also provide additional support and assistance to coordinate permits required by other agencies.

5. *Tailored development standards for larger sites.*

   The City could enact development standards (potentially via overlay zone) which are tailored to large sites to make them more attractive to developers, such as reduced setbacks, increased height limits, simpler design standards, and block spacing standards correlated with large sites.

6. *Development agreements*

   To advance the City's economic goals, the City could require development agreements focused on aggregation/consolidation of parcels under common ownership to ensure availability for larger employers.

7. *50-acre minimum site size for development.*

   This strategy would guarantee that large sites are available. However, this approach is not recommended as it precludes smaller sites from developing and could delay development if a developer is unable to assemble the requisite parcels to satisfy the minimum size. This could also delay development if market conditions lead to multiple smaller users needing sites but who would not be able to develop if the sites are too below the minimum threshold.

Regardless of the strategies used, Mackenzie recommends that the City provide flexibility for varying user needs by accommodating smaller sites west of SW Elwert Road and larger sites (minimum 30 acres) east of SW Elwert Road.

To maintain connectivity for cyclists and pedestrians, the City could require larger development sites to provide public trail easements through and around private property in lieu of public street connections per the City's block length standards. However, to provide flexibility for site layout, the City should not prescribe the precise alignment of these easements. This concept should be developed further through future Comprehensive Planning efforts to determine the appropriate level of trails to balance circulation, site layout, and site security needs.

III. EVALUATION OF NORTH DISTRICT TRANSPORTATION NETWORK AND INFRASTRUCTURE SYSTEMS

The consultant team reviewed adopted transportation and utility master plans and existing conditions information to identify applicable standards and improvements necessary to accommodate development in the North District.

Transportation Review

Mackenzie reviewed documentation of the existing transportation conditions as well as planned improvements presented in the City of Sherwood Transportation System Plan (TSP), Washington County TSP, currently adopted Sherwood West Concept Plan, and Washington County Urban Reserves Transportation Study. This section discusses the transportation network that serves the North District illustrated in Figure 2 and Figure 6.

Existing and Planned Roadway Conditions

Below is a review of existing roadways within the North District area. Because Sherwood West is currently outside City limits, roadways listed below are generally not improved to City standards. Similarly, County roadways are not currently constructed to their ultimate cross-section.

SW Elwert Road

This County Arterial is currently two lanes wide within the North District spanning from SW Scholls-Sherwood Road to the north, SW Edy Road east of SW Elwert Road to the south, and Chicken Creek west of SW Elwert Road to the south. SW Elwert Road will serve as the primary north-south route through the North District. The County's TSP identifies the ultimate configuration of SW Elwert Road as having three lanes with sidewalks and bike lanes south of SW Edy Road; the same configuration should be continued north of SW Edy Road.

SW Edy Road

This County Collector creates the southern boundary of the North District east of SW Elwert Road. The roadway is currently two lanes wide. The County's TSP identifies SW Edy Road as a future three-lane Collector with sidewalks and bike lanes between SW Borchers Drive and City limits.

SW Scholls-Sherwood Road

This County Arterial creates the northern boundary of the North District east of SW Elwert Road. The roadway continues north of the North District (north-south) and is currently two lanes wide. There is currently no documented plan by Washington County to widen this roadway.

SW Roy Rogers Road

This County Arterial creates the eastern boundary of the North District. The roadway is currently two lanes wide but has been identified to be widened to 4-5 lanes in the future.

Local Street Connections

The following identifies local rural roadways within Sherwood West and areas immediately west of the North District.

- SW Lebeau Road – This rural local road creates the northern boundary of the North District west of SW Elwert Road, opposite SW Scholls-Sherwood Road. The roadway is currently two lanes wide.
- SW Conzelmann Road – This rural local road intersects SW Elwert Road north of Chicken Creek. This roadway is currently two lanes wide. This roadway consists of rolling terrain west of the Sherwood West area.

Transit Service

TriMet serves downtown Sherwood with Routes 94 and 97. TriMet's Southwest Service Enhancement Plan is anticipated to provide service along portions of SW Roy Rogers Road and SW Sherwood Boulevard, starting about three-quarters of a mile east of the North District.

Access Spacing Standards

Sherwood Municipal Code (SMC) Section 16.106.040(M) dictates that private access to arterials should be minimized, with access taken on a lower classified alternative whenever possible. The following spacing standards generally apply to new driveway and roadway access points:

- Local streets – 10 feet from the point of curvature or 25 feet if no radius exists.
- Neighborhood routes – 50 feet.
- Collectors – 100 feet.
- Arterials – 600 feet.

City of Sherwood Engineering Design and Standard Details Manual Section 210.6(E) dictates that roadways/full access intersections and driveways should be spaced according to the following per roadway classification, as measured between centerlines:

- Local streets – 200 feet minimum for intersections, 530 feet maximum for driveways.
- Neighborhood routes – 200 feet minimum for intersections, 530 feet maximum for driveways.
- Collectors – 200 feet minimum for driveways and 400 feet minimum for intersections, 530 feet maximum.
- Minor Arterials – 300 feet minimum for driveways and limited access intersections (such as accesses limited to right-in/right-out movements and sometimes left-in movements), 600 feet minimum for full access intersections.
- Major Arterials – 500 feet minimum for driveways and limited access intersections (such as accesses limited to right-in/right-out movements and sometimes left-in movements), 1,000 feet minimum for full access intersections.

Direct private access onto SW Elwert Road should be minimized based on its arterial designation. This roadway should serve as the main thoroughfare for the North District. This is a consideration in the case where direct access is needed from SW Roy Rogers Road or SW Scholls-Sherwood Road, two County arterials that bound the North District. Additionally, only collector roadways are allowed to take access from County arterials.

Transportation Improvements Review

The Transportation Impact Analysis (TIA) prepared by DKS Associates (Appendix L of the 2023 Sherwood West Concept Plan) indicated that the SW Elwert Road/SW Lebeau Road/SW Scholls-Sherwood Road intersection operated acceptably under existing conditions but would need capacity improvements by 2040 to accommodate the projected Sherwood West traffic. Either a traffic signal or roundabout should be considered as a future improvement at the SW Elwert Road/SW Lebeau Road/SW Scholls-Sherwood Road intersection.

The DKS Associates TIA did not provide recommendations for additional improvements. However, we note existing City and County streets and new City streets serving the North District will need to be improved/constructed to applicable cross-section standards. Sidewalks and bike lanes on both SW Scholls-Sherwood Road and SW Roy Rogers Road will be needed to provide cross-circulation for bicyclists and pedestrians to and from the North District.

Public Infrastructure Review

Mackenzie reviewed documentation of the existing infrastructure conditions, as well as proposed improvements for water distribution, sewer collection and treatment, and storm drainage systems.

Water Infrastructure

Municipal water service for Sherwood West is expected to be provided by the City of Sherwood. Existing service is provided to the eastern and southern boundaries of the Sherwood West employment area, and expansion to the area is described in the 2015 Water System Master Plan. A diagram of existing and proposed water infrastructure is included as Figure 9.

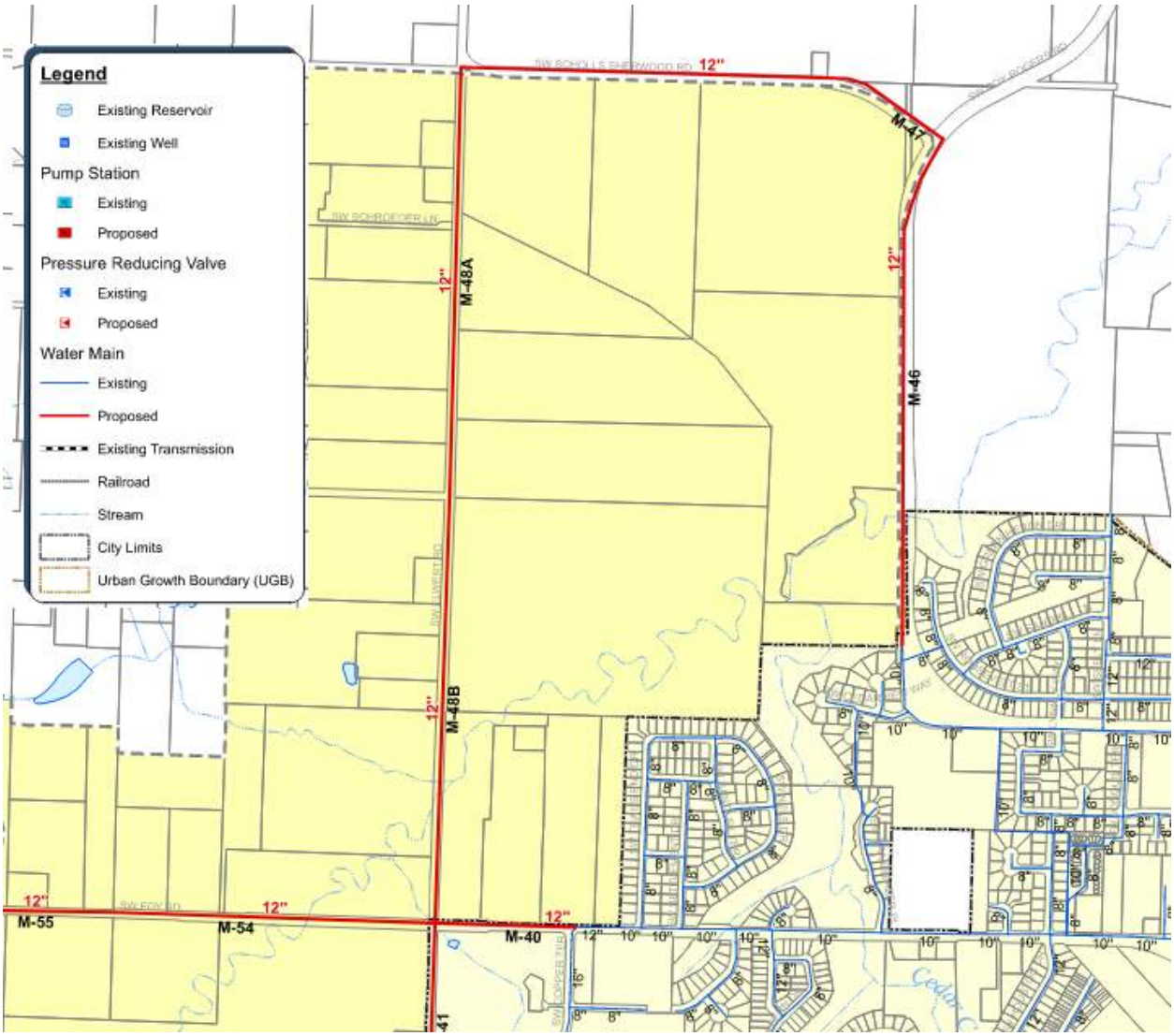


Figure 9: Water Plan
Source: 2015 Water System Master Plan

The Sherwood West area will be developed as part of the 380-foot Pressure Zone, which comprises most of the City's water service area. This existing zone is served by two reservoirs with an existing capacity of 6.0 million gallons (MG). The 2015 Water System Master Plan Update indicates the 380-foot Pressure Zone reservoirs will experience a 0.61-MG deficit at full build-out of the entire plan service area. However, since the 380-foot zone covers such a large area of the City including other significant growth areas, it is not clear that the expected storage deficit will be due to Sherwood West development. As noted in the Master Plan, the expected deficiency is far enough out on the development timeline that the need for storage expansion should be considered as part of future planning analysis.

Water supply to the City is provided from the Willamette River Water Treatment Plant (WRWTP) located in Wilsonville. The City's ownership and capacity was expanded at the WRWTP, bringing the City's capacity from 5 million gallons per day (MGD) to 6.7MGD. In addition, the City has a number of groundwater wells with a combined capacity of 2.6 MGD. The groundwater wells are currently serving the City as an emergency/redundant water supply.

The Master Plan projects Sherwood West development within the 380-foot pressure zone to contribute up to 1.97-MGD demand to the system at full build-out, which represents approximately 21.9% of the total demand on the City's system. While it is unlikely that build-out of the Mixed Employment area of the North District would trigger the need for additional supply from the WRWTP, the North District represents a significant increase in demand to the existing system. The demand projection does not appear to include process water uses. Adding high-demand mixed employment users in the study area could potentially exceed the demand estimates and trigger a need for additional supply sooner than originally projected.

The distribution system in the North District is proposed to extend new 12-inch water lines within SW Elwert Road, SW Scholls-Sherwood Road, and SW Roy Rogers Road creating a looped system. This water main size is expected to be sufficient for most mixed employment uses; however, high-demand users could require higher peak flows and larger mains than are currently planned.

Sanitary Sewer Infrastructure

Municipal sewer service for the Sherwood West area is expected to be provided by the City of Sherwood. A diagram of existing and proposed sanitary sewer infrastructure is included as Figure 10.

The 2021 CWS master plan anticipates a new Chicken Creek pump station to be located within the North District, which will receive flows from the Sherwood West urban reserve area as well as existing flows currently carried by the Sherwood trunk line. A new 24-inch force main approximately 18,000 feet long from the pump station will convey wastewater to an existing 42-inch trunk main located in Oregon Highway 99W, which will allow the district to abandon the existing Sherwood trunk sewer line through the Tualatin Wildlife Refuge.

The City's 2016 Sanitary Sewer Master Plan does not specifically address the Sherwood West expansion, and the improvements identified in that plan are now out-of-date.

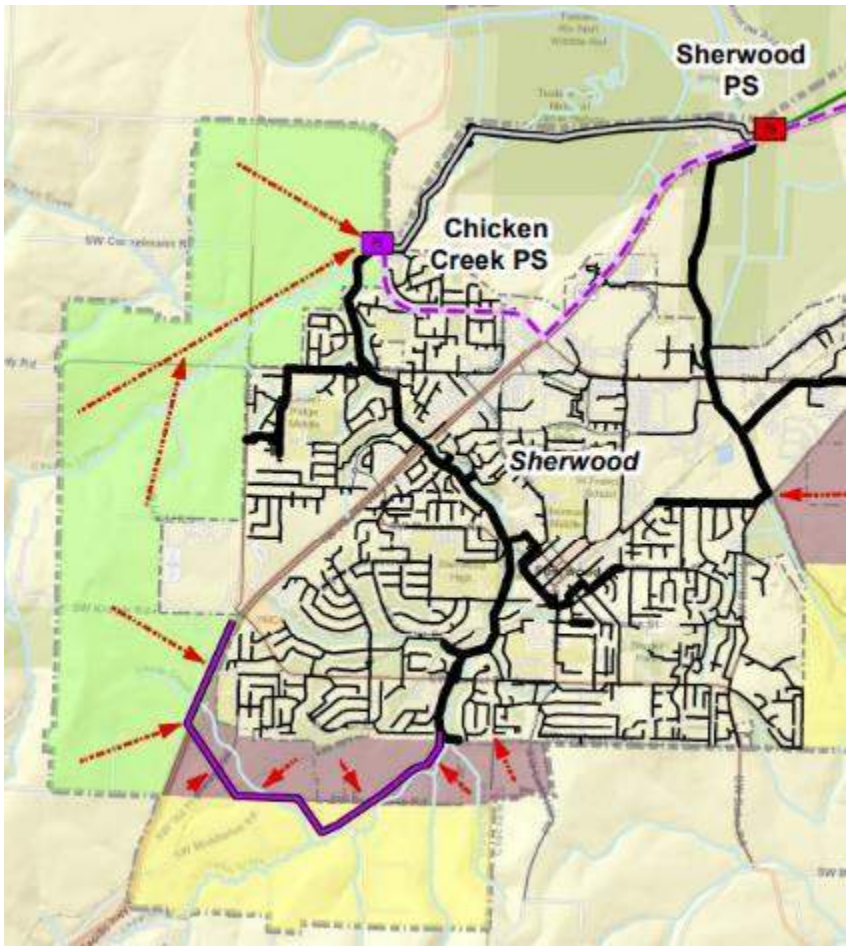


Figure 10: Sewer Plan
Source: 2021 CWS Sewer Master Plan

Stormwater Infrastructure

The Sherwood West study area is split between two regional drainage basins. The majority of the area drains to Chicken Creek, which runs through the area to the northeast and eventually discharges to the Tualatin River. Approximately 35 acres of the North District drains north directly to the Tualatin River.

The North District is expected to be annexed into CWS; therefore, storm management facilities will be designed according to CWS standards for water quality treatment and flow control. Low-impact development approaches are encouraged for new development to minimize the size of regional facilities. Regional facilities may be designed and constructed as individual properties develop; alternatively, the City may opt to provide a sub-area plan and establish regional facilities in a more comprehensive design.

The City's 2016 Stormwater Master Plan did not extend into the Sherwood West urban reserve area, so no specific improvements are noted. The plan indicates the Chicken Creek basin drains a total of approximately 4,875 acres comprising a mix of developed and undeveloped land. Chicken Creek drains to the Tualatin River.

Current CWS mapping indicates the reach of Chicken Creek that runs through the study area is designated as high hydromodification risk. This risk category indicates that new development will be required to

reduce downstream runoff peak flows below pre-development levels, which generally results in larger detention storage volumes required than for sites in other categories.

Hydrologic soil mapping of the study area indicates the near-surface soils in the Sherwood West area generally consist of Group B, C, and C/D soils. These categories represent relatively low infiltration capacity of the native soils. In general, lower infiltration rates result in the need for larger detention storage facilities.

A diagram of existing stormwater infrastructure in and near the North District is included as Figure 11.

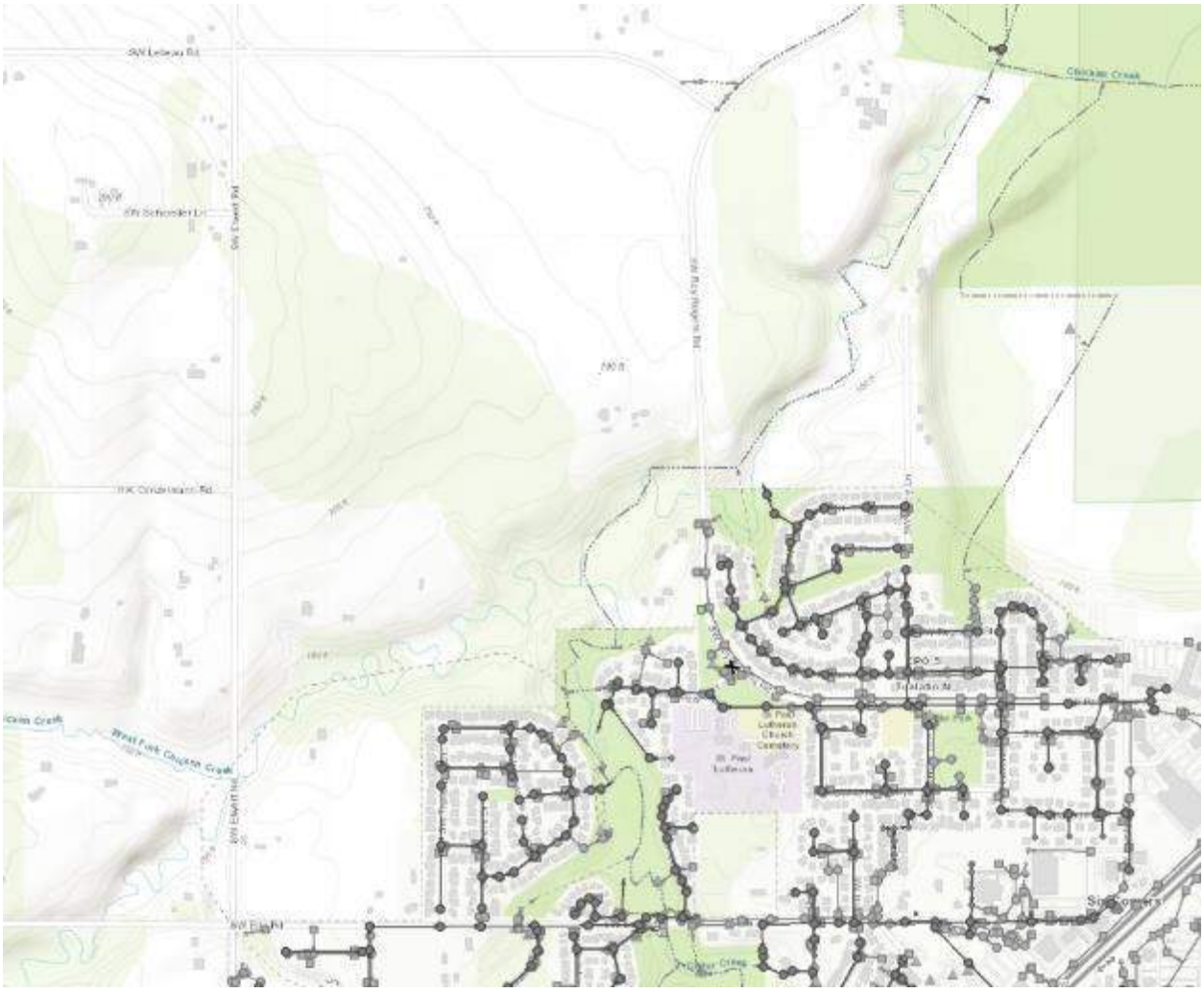


Figure 11: Storm Plan
Source: CWS Stormwater Mapping GIS (accessed January 2024)

Energy and Communications Infrastructure Review

Energy utilities serving the study area include Northwest Natural Gas (NW Natural) and Portland General Electric (PGE).

NW Natural has not provided specific planning information for this study. NW Natural mapping shows two pipes within SW Elwert Road, a 10-inch diameter line along the west edge, and a 24-inch diameter transmission pipeline along the east edge.

Figure 12: Natural Gas Plan
Source: NW Natural GIS mapping (accessed January 2024)

PGE staff met with City staff and Mackenzie as a part of this project to help inform the conceptual transportation and utility corridors in the North District, as well as to identify PGE's land needs for an electrical substation. PGE indicated that Sherwood West is not currently served with power infrastructure to support the proposed urban development expansion. New infrastructure is expected to include overhead transmission lines, substation(s), and underground distribution conduits. In general, PGE prefers substation lot footprints of approximately five acres located within the development area, with 60-foot-wide transmission corridors connecting to the regional power grid, following roadways to the extent possible to reduce the challenges associated with accessing off-road infrastructure. Distribution corridors would be 10 feet wide, such as in roadside public utility easements. PGE staff also provided a preliminary sketch (for illustrative purposes only) denoting the locations of existing electrical infrastructure and potential future corridors within the North District. The sketch also denoted one possible substation location, though PGE staff clarified that the location was flexible. See Appendices 4 and 5.

BPA has an easement for overhead power lines that crosses the northern section of the North District; however, these are not available for direct customer access. BPA staff has not indicated that there would

be any need to widen the corridor in the future. The separation requirement from these utilities to any buildings reduces the developable portion of affected sites. As noted previously, buildings may not be located under the BPA power lines. However, parking and stormwater areas may be allowed under certain conditions provided there is adequate clearance from the power lines.

Private communications providers in the general area include CenturyLink, Verizon, and Comcast, while the City of Sherwood operates a fiber optic municipal broadband network (Sherwood Broadband) that provides high-speed internet service throughout the City and could be expanded to serve Sherwood West.

IV. REFINEMENT OF CONCEPTUAL LAND USE, TRANSPORTATION NETWORK, AND INFRASTRUCTURE SYSTEMS

This section describes proposed refinements to the North District of the Sherwood West Concept Plan to optimize road and utility layout while allowing for large employment sites east of SW Elwert Road. Key projects and planning-level infrastructure construction cost estimates are provided as well.

Concept Plan Refinement Scenarios

To illustrate a range of potential employment land lot configurations and transportation and utility corridors in the North District, Mackenzie has prepared two different scenarios of how the area could develop in the future. The scenarios attempt to balance competing needs such as large employment sites, connectivity, protection of Title 13 habitat, trail locations, livability, site security, etc. Through discussion with Metro staff, the City understands it can undertake a future Economic, Social, Environmental, and Energy (ESEE) analysis to determine the value of the upland habitat and evaluate how much development, if any, can occur in the area. The previous ESEE analysis completed by Metro in 2005 likely considered rural development in its alternatives analysis. Once brought into the UGB, the ESEE analysis completed by the City will instead consider the benefits of urban development. To account for the uncertainty related to the extent of allowable development in Title 13 areas (which will depend on future site assessment), the two scenarios present varying degrees of upland habitat impact.

Notably, the scenarios are for illustrative purposes only, as a means to draw conclusions about the developability of the study area and will require further refinement during Comprehensive Planning efforts if Metro adds Sherwood West to the UGB.

The following overarching aims informed each of the two scenarios:

- Preserving opportunities for large employment sites in the Mixed Employment area east of SW Elwert Road, with smaller employment sites west of SW Elwert Road. Combined, these areas will accommodate a range of building and site sizes since specific users are not known.
- Accounting for the location of the BPA transmission corridor in the northeast portion of the District by proposing large employment sites that could accommodate buildings placed outside the power line corridor.
- Maintaining the residential areas from the 2023 Concept Plan as previously planned.
- Keeping the North District community park in the location shown in the 2023 Concept Plan. The current location contains steep slopes not conducive to employment uses, is contiguous to Title 13 habitat so it would serve as a connection between open space areas and is close to planned residential uses which can promote walking and bicycling between the two areas.
- Utilizing SW Elwert Road as the major north-south transportation spine, with realignment at the south end of the North District as proposed in the 2023 Concept Plan.
- Providing east-west roadways between SW Elwert Road and SW Roy Rogers Road to allow for efficient circulation.
- Providing roadway locations that comply with applicable County and City minimum spacing standards.
- Limiting the length of roadways through Title 13 upland habitat areas where feasible.
- Extending public utilities within the proposed public streets as much as possible and minimizing utility corridors outside of roadways.
- Accounting for the future extension of electrical transmission lines along roadways, while not specifying their specific location nor the location of a future electrical substation.

- Utilizing regional stormwater ponds at the downstream (eastern) side of the North District. Regional ponds may be designed to accommodate runoff from a mix of public right-of-way and private development. Ponds may be designed and constructed as individual sites develop; alternatively, the City may elect to prepare a sub-area drainage plan with CWS to design stormwater drainage treatment and management for the entire basin, including an implementation schedule.
- Keeping the regional trails the same as shown in the 2023 Concept Plan. While local trails have not been illustrated, the intent would be that they connect from sites and roadways to the regional trail network. Trail connectivity would need to maintain the maximum trail spacing of 300 feet as dictated by SMC Section 16.106.030(B), or a separate standard (e.g., special overlay standards) should be established for the Mixed Employment area if the 300-foot spacing cannot be achieved.

Scenario A

Scenario A utilizes a series of east-west roadways to provide access to development areas while minimizing the need for site access from SW Elwert Road, SW Roy Rogers Road, and SW Scholls-Sherwood Road. Two of the east-west roadways (a new collector road and the eastward extension of SW Conzelmann Road) would connect to SW Roy Rogers Road.

As depicted in Figure 13, within the Mixed Employment Area, Scenario A illustrates seven potential development sites as summarized in Table 1:

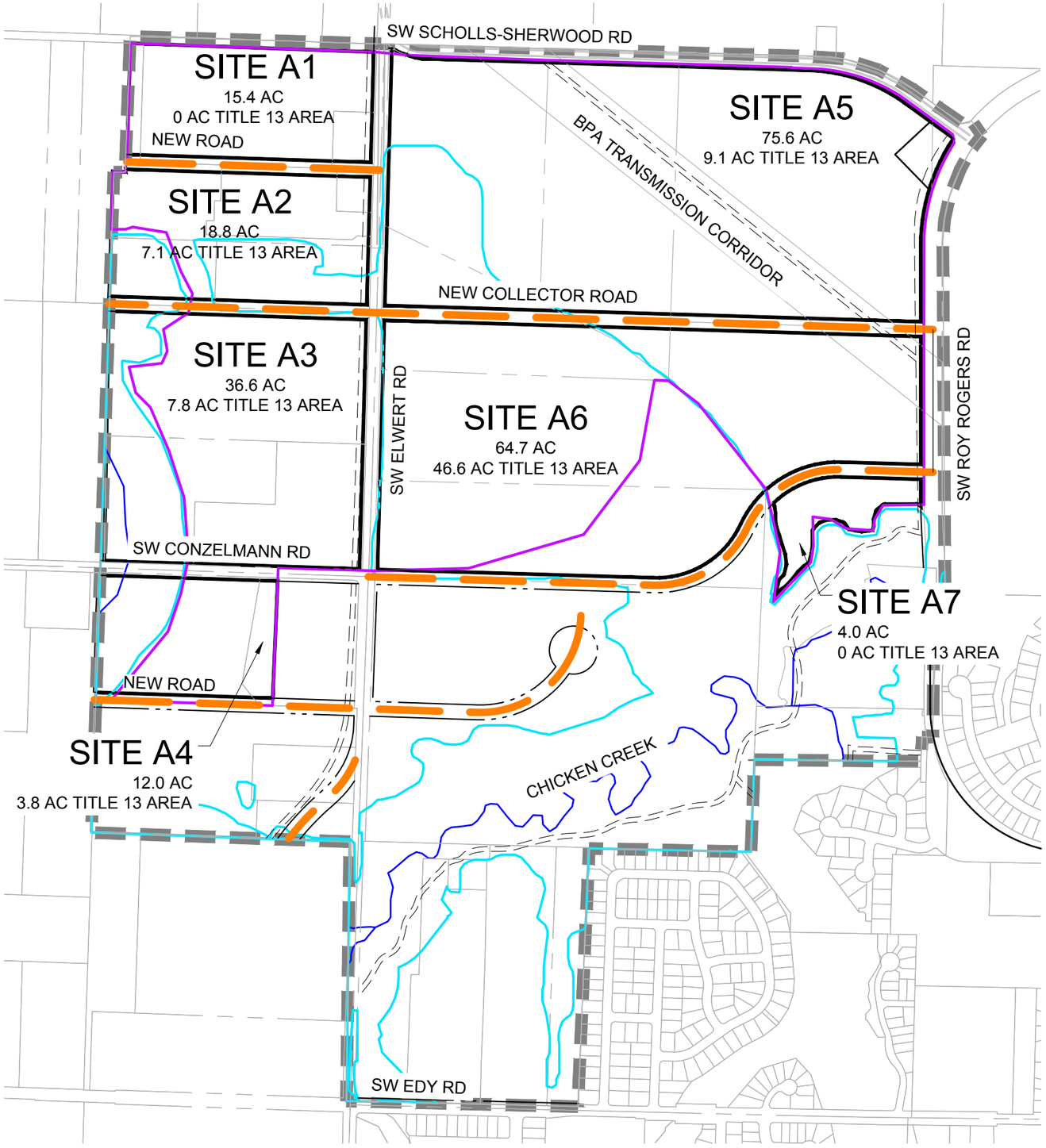
TABLE 1: SCENARIO A POTENTIAL DEVELOPMENT SITES

Site	East or West of SW Elwert Road	Gross Area (acres)	Title 13 Area (acres)	Area outside Title 13 Area (acres)
A1	West	15.4	0	15.4
A2	West	18.8	7.1	11.7
A3	West	36.6	7.8	28.8
A4	West	12.0	3.8	8.2
Total (West)	**West**	**82.8**	**18.7**	**64.1**
A5	East	75.6	9.1	66.5
A6	East	64.7	46.6	18.1
A7	East	4.0	0	4.0
Total (East)	**East**	**144.3**	**55.7**	**88.6**
Total		**227.1**	**74.4**	**152.7**

Site A6 diverges from the 2023 Concept Plan by including approximately 13 gross acres from area that had been designated Title 13 Riparian/Upland rather than Mixed Employment.

Potential access locations to Mixed Employment development sites are shown in Figure 14, as dictated by the spacing standards for arterials (SW Elwert Road, SW Roy Rogers Road, and SW Scholls-Sherwood Road) and collectors.

FIGURE 13



LEGEND

- NORTH DISTRICT BOUNDARY
- POTENTIAL DEVELOPMENT LOT BOUNDARY
- PROPOSED NEW ROAD ALIGNMENT
- PROPOSED ROAD R.O.W.
- REGIONAL TRAIL PER CONCEPT PLAN (LOCAL TRAILS NOT SHOWN)
- TITLE 13 LANDS BOUNDARY
- EXISTING TAX LOT
- MIXED EMPLOYMENT AREA BOUNDARY

SHERWOOD WEST - NORTH DISTRICT
SCENARIO A STREET PLAN

FEBRUARY 9, 2024
Job # 2230332.00

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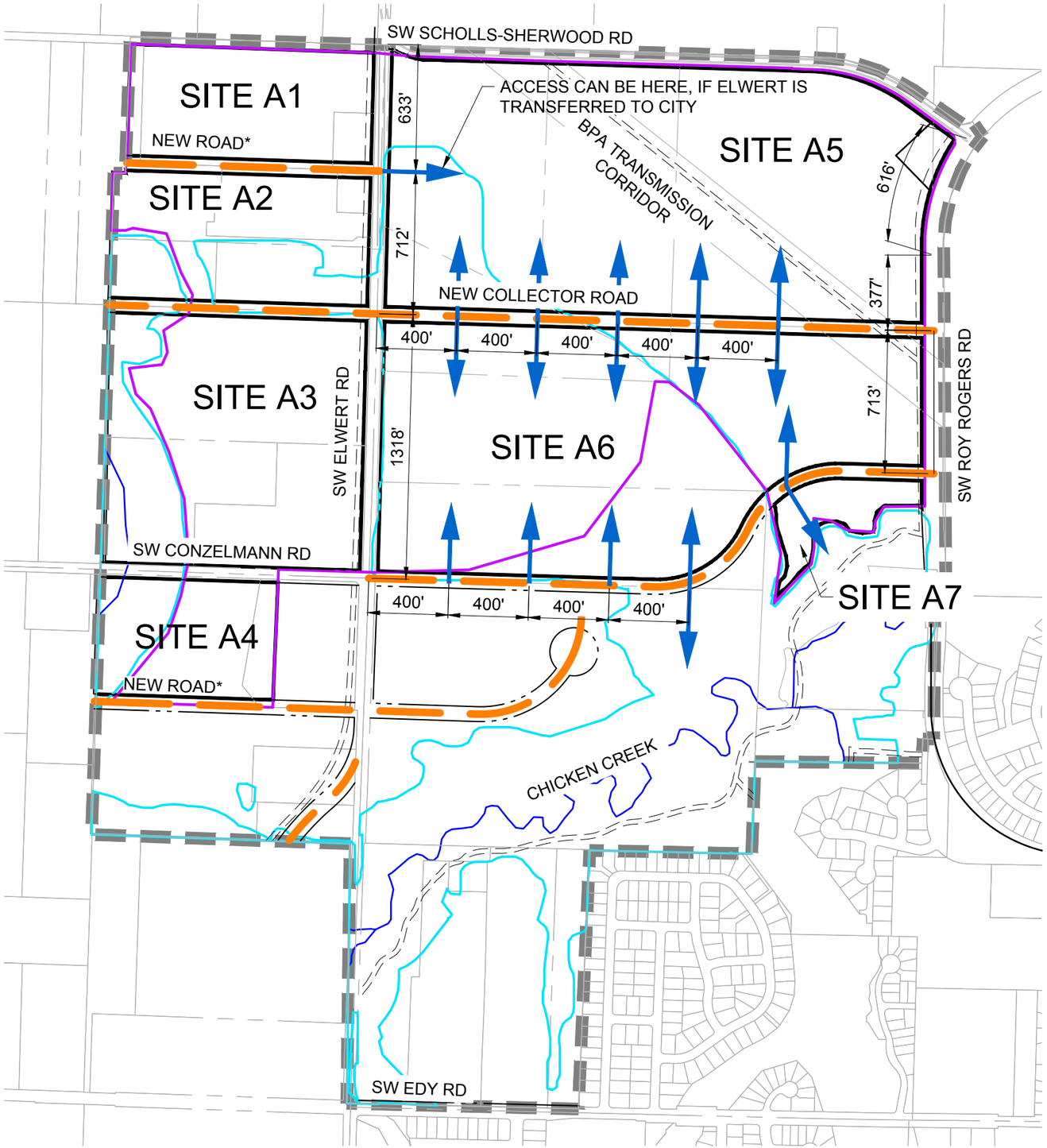
2230332001\DRAWINGS\CIVIL\EXHIBIT\332-FIG 13 - OPT A STREET EXHIBIT.DWG BMR 02/09/24 16:09 1:600

FIGURE 14



LEGEND

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- EXISTING TAX LOT
- MIXED EMPLOYMENT AREA BOUNDARY
- POTENTIAL SITE ACCESS

STREET/DRIVEWAY SPACING STANDARDS

ARTERIAL - 600' MINIMUM, 1,000' MAXIMUM
COLLECTORS - 100' MINIMUM, 400' MAXIMUM

*FUNCTIONAL CLASSIFICATION TO BE COLLECTOR IF ELWERT ROAD IS MAINTAINED UNDER COUNTY OWNERSHIP AND MAINTENANCE. FUNCTIONAL CLASSIFICATION MAY BE LOCAL ROAD IF ELWERT ROAD IS TRANSFERRED TO CITY.

SHERWOOD WEST - NORTH DISTRICT
SCENARIO A STREET PLAN - WITH INTERSECTION SPACING

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2230332\00\DRAWINGS\CIVIL\EXHIBIT\332-FIG 14 - OPT A STREET EXHIBIT - INTERSECTION.DWG BMR 02/09/24 16:10 1:600

Scenario B

Scenario B utilizes fewer east-west roadways than Scenario A, but still provides access to development areas while minimizing the need for site access from SW Elwert Road, SW Roy Rogers Road, and SW Scholls-Sherwood Road. In this scenario, SW Conzelmann Road would extend eastward to terminate in a cul-de-sac, while the new collector road would connect to SW Roy Rogers Road.

As depicted in Figure 15, within the Mixed Employment Area, Scenario B illustrates the following potential development sites as summarized in Table 2:

TABLE 2: SCENARIO B POTENTIAL DEVELOPMENT SITES

Site	East or West of SW Elwert Road	Gross Area (acres)	Title 13 Area (acres)	Area outside Title 13 Area (acres)
B1	West	15.4	0	15.4
B2	West	20.0	7.7	12.3
B3	West	35.3	7.8	27.5
B4	West	12.0	3.7	8.3
Total (West)	**West**	**82.7**	**19.2**	**63.5**
B5	East	95.8	12.7	83.1
B6	East	54.3	47.1	7.2
Total (East)	**East**	**150.1**	**59.8**	**90.3**
Total		**232.8**	**79.0**	**153.8**

Site B6 diverges from the 2023 Concept Plan by including approximately 17 gross acres from area that had been designated Title 13 Riparian/Upland rather than Mixed Employment.

Potential Scenario B access locations to Mixed Employment development sites are shown in Figure 16, as dictated by the spacing standards for arterials (SW Elwert Road, SW Roy Rogers Road, and SW Scholls-Sherwood Road) and collectors.

Comparison of Scenarios

Scenario A provides seven sites in 227.1 gross acres, while Scenario B provides six sites in 232.8 gross acres. Scenario B provides larger sites east of SW Elwert Road, which could potentially accommodate larger employers. However, the buildable acreage in each scenario is dependent on the degree to which Title 13 areas may be developed, as both scenarios have nearly the same areas outside Title 13 (152.7 acres for Scenario A and 153.8 acres for Scenario B).

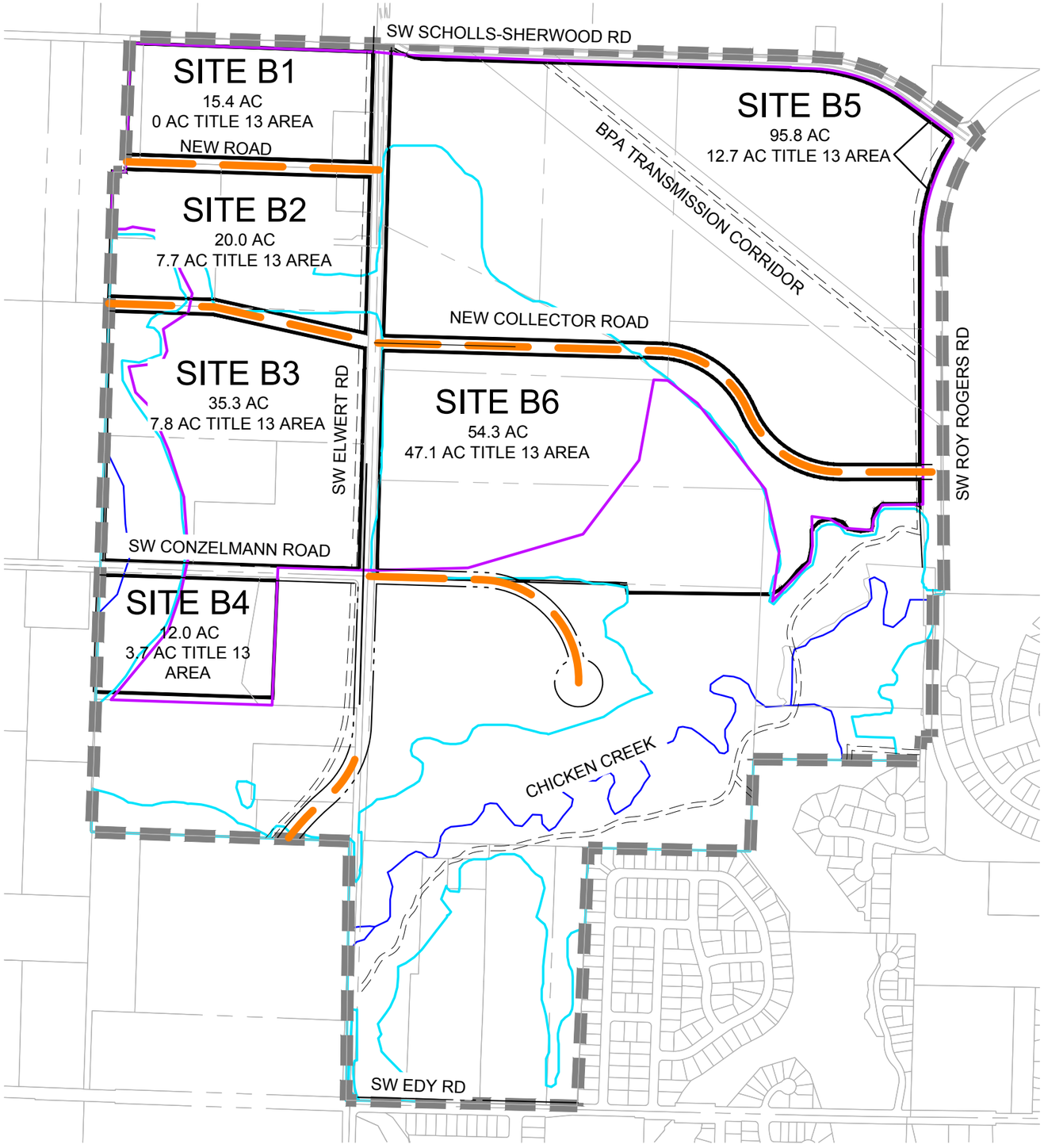
With two new east-west roadways to SW Roy Rogers Road, Scenario A would require more infrastructure and transportation investment than Scenario B, which has a single new east-west roadway to SW Roy Rogers Road.

The two scenarios were shared with the TAC members to seek input. Observations shared at the January 31, 2024 TAC meeting included:

- Scenario B may create more flexibility in lot size and lower road construction costs.

- The City will need to keep Title 13 regulations in mind when identifying developable areas as part of future Comprehensive Planning efforts if Metro adds the area the UGB. The City may perform an ESEE analysis as part of that process.
- Transportation connections to County arterials (e.g., SW Elwert Road, SW Scholls-Sherwood Road, SW Roy Rogers Road) is limited to collector streets.
- Providing trail circulation through the North District would increase connectivity but developers and employers may have hesitation about public trails through their sites.

FIGURE 15



LEGEND

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- POTENTIAL DEVELOPMENT LOT BOUNDARY
- PROPOSED NEW ROAD ALIGNMENT
- PROPOSED ROAD R.O.W.
- REGIONAL TRAIL PER CONCEPT PLAN (LOCAL TRAILS NOT SHOWN)
- TITLE 13 LANDS BOUNDARY
- EXISTING TAX LOT
- MIXED EMPLOYMENT AREA BOUNDARY

SHERWOOD WEST - NORTH DISTRICT
SCENARIO B STREET PLAN

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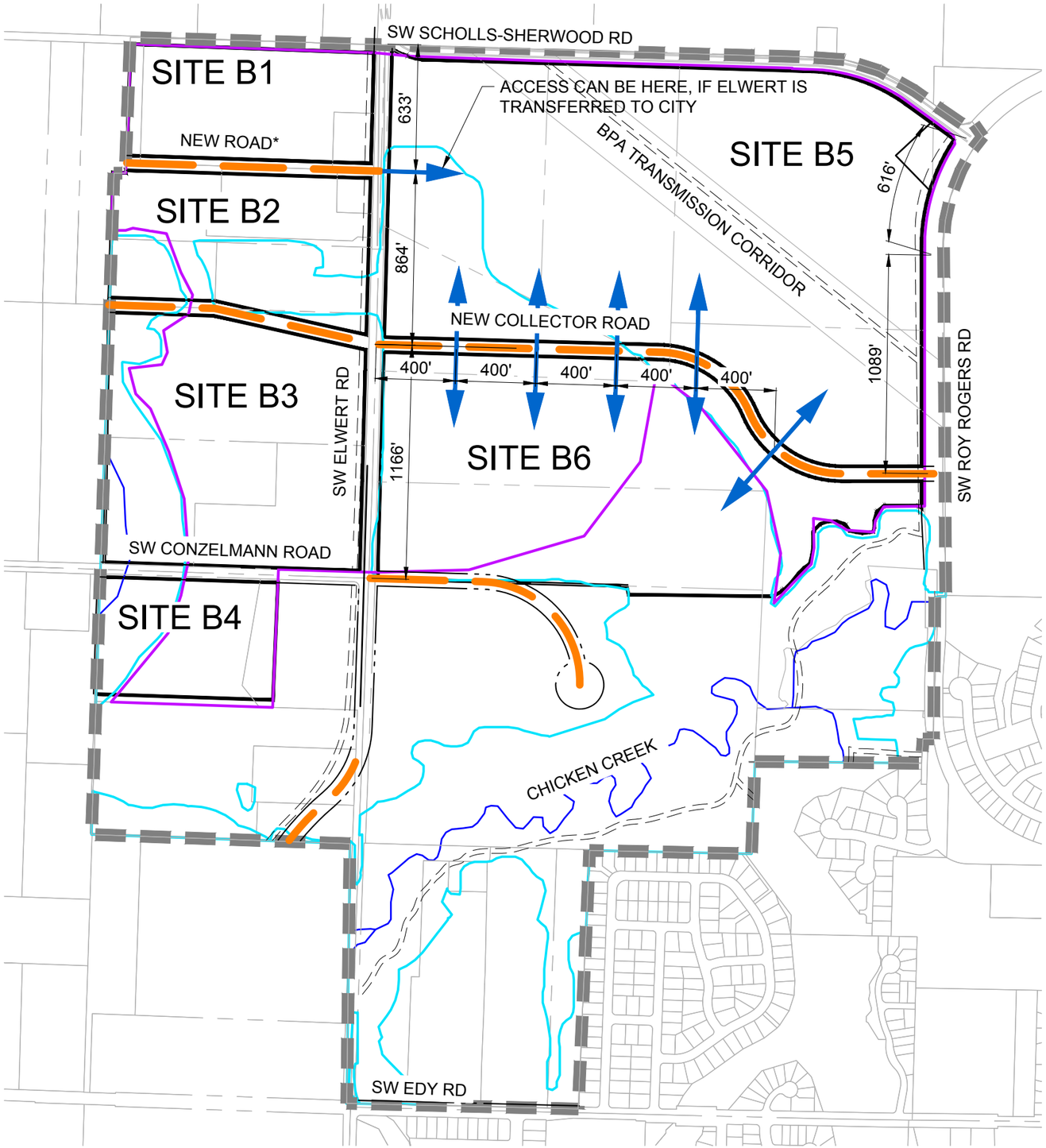
2230332\00\DRAWINGS\CIVIL\EXHIBIT\332-FIG 15 - OPT B STREET EXHIBIT.DWG BMR 02/09/24 16:10 1:600

FIGURE 16



LEGEND

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- POTENTIAL DEVELOPMENT LOT BOUNDARY
- PROPOSED NEW ROAD ALIGNMENT
- PROPOSED ROAD R.O.W.
- REGIONAL TRAIL PER CONCEPT PLAN (LOCAL TRAILS NOT SHOWN)
- TITLE 13 LANDS BOUNDARY
- EXISTING TAX LOT
- MIXED EMPLOYMENT AREA BOUNDARY
- POTENTIAL SITE ACCESS

STREET/DRIVEWAY SPACING STANDARDS

ARTERIAL - 600' MINIMUM, 1,000' MAXIMUM
COLLECTORS - 100' MINIMUM, 400' MAXIMUM

*FUNCTIONAL CLASSIFICATION TO BE COLLECTOR IF ELWERT ROAD IS MAINTAINED UNDER COUNTY OWNERSHIP AND MAINTENANCE. FUNCTIONAL CLASSIFICATION MAY BE LOCAL ROAD IF ELWERT ROAD IS TRANSFERRED TO CITY.

SHERWOOD WEST - NORTH DISTRICT
SCENARIO B STREET PLAN - WITH INTERSECTION SPACING

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2230332\00\DRAWINGS\CIVIL\EXHIBIT\332-FIG 16 - OPT B STREET EXHIBIT - INTERSECTION.DWG BMR 02/09/24 16:11 1:600

Transportation and Infrastructure Improvements

Transportation Improvements

The roadway network necessary to support the North District will require improvements per City and County cross-section standards. Table 3 below presents our recommendations on new roadway classifications with the corresponding cross-section standards based on either City or County requirements.

TABLE 3: RECOMMENDED CLASSIFICATIONS AND CORRESPONDING ROADWAY CROSS-SECTION STANDARDS

Roadway	Extents	Jurisdiction	Functional Classification	Right-of-Way Width
SW Elwert Road	SW Scholls-Sherwood Road to SW Edy Road	City of Sherwood [1]	Arterial	78 feet
SW Scholls-Sherwood Road	SW Lebeau Road to SW Roy Rogers Road	Washington County	Arterial	90 feet
SW Conzelmann Road (Scenario A)	SW Elwert Road to SW Roy Rogers Road	City of Sherwood	Collector [2]	74 feet
New east-west Collector	SW Elwert Road to SW Roy Rogers Road	City of Sherwood	Collector	74 feet

1. Elwert Road is currently a County arterial. Transferring ownership to the City would allow the City to provide direct local road access from Elwert Road to the planned community park and residential uses in the North District.
2. SW Conzelmann Road is currently a local road but to maintain compliance with County access standards, we recommend this roadway to be re-designated as a Collector if extension to SW Roy Rogers Road is planned.

The extension of SW Conzelmann Road to SW Roy Rogers Road is only recommended with Scenario A, as noted above.

To account for the transportation improvements identified in the refined Concept Plan, the City's TSP should be updated to reflect the transportation network improvements needed to facilitate development of the North District and the remainder of Sherwood West. Some of the recommendations below refer to either Scenario A or Scenario B. If no scenario is identified with the recommendation, the recommendation applies to both Scenario A and Scenario B.

City TSP Recommendations

- Identify SW Elwert Road as the primary north/south arterial roadway serving the North District.
- Identify a project to widen SW Elwert Road to the three-lane arterial standard with bike lanes and sidewalks, if ownership is transferred to the City.
- Identify a project to extend SW Conzelmann Road eastward to SW Roy Rogers Road as a Collector (Scenario A).
- Identify a project to construct a new east-west Collector extending from the area west of SW Elwert Road to SW Roy Rogers Road.
- Identify a project to improve the SW Elwert Road/SW Conzelmann Road intersection (Scenario A).
- Identify a project to improve the SW Elwert Road/new east-west Collector intersection.

- If SW Elwert Road remains a County arterial, identify a project to construct a new east-west collector road serving park and residential uses.
- If SW Elwert Road becomes a City arterial, identify a project to construct a new east-west local road serving park and residential uses.
- Identify a trail network through the North District.
- Require trail connections where public streets dead-end to provide cross-circulation for pedestrians and cyclists through the roadway network.

County TSP Recommendations

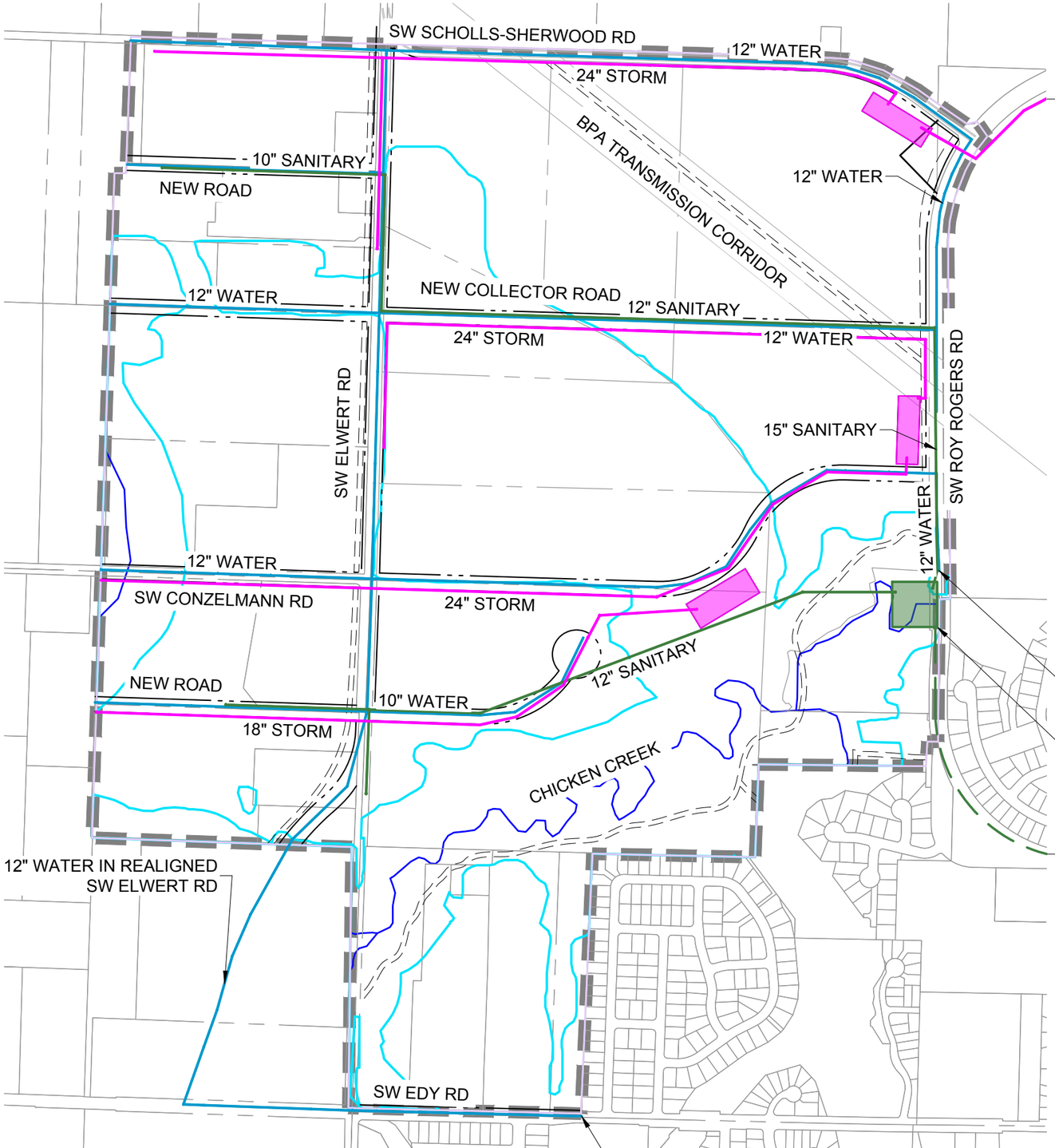
Similarly, improvements to County facilities may be needed. Washington County should update its TSP to include transportation network improvements that have been identified in the 2020 Washington County Infrastructure Analysis:

- Identify a project to widen SW Elwert Road to the three-lane arterial standard with bike lanes and sidewalks, if ownership is maintained by County.
- Identify a project to improve the SW Elwert Road/SW Scholls-Sherwood Road intersection.
- Identify a project to improve the future SW Roy Rogers Road/SW Conzelmann Road intersection (Scenario A).
- Identify a project to improve the future SW Roy Rogers Road/new east-west Collector intersection (Scenario B).
- Identify a project to improve the southern half of SW Scholls-Sherwood Road to the County's arterial standard with bike lanes and sidewalks.
- Identify a project to improve the west half of SW Roy Rogers Road to the County's arterial standard with bike lanes and sidewalks.

Public Infrastructure Improvements

Public utility infrastructure is required to support mixed employment development within the North District. As shown in Figure 17 and Figure 18, improvements are expected for public water, sanitary sewer, and stormwater systems. To be conservative, utility improvement quantities listed below are based on Scenario A (which depicts more roadways and utilities).

FIGURE 17



STORM MAIN TO CHICKEN CREEK

CONNECT TO EXISTING WATER

SANITARY PUMP STATION

24" SANITARY FORCEMAIN TO CWS TRUNK LINE

CONNECT TO EXISTING WATER

LEGEND

- NORTH DISTRICT BOUNDARY
- WATER
- SANITARY
- STORM
- TITLE 13 LANDS BOUNDARY
- REGIONAL TRAIL PER CONCEPT PLAN (LOCAL TRAILS NOW SHOWN)
- EXISTING TAX LOT
- STORM POND

SHERWOOD WEST - NORTH DISTRICT
SCENARIO A UTILITY LAYOUT

FEBRUARY 9, 2024
Job # 2230332.00

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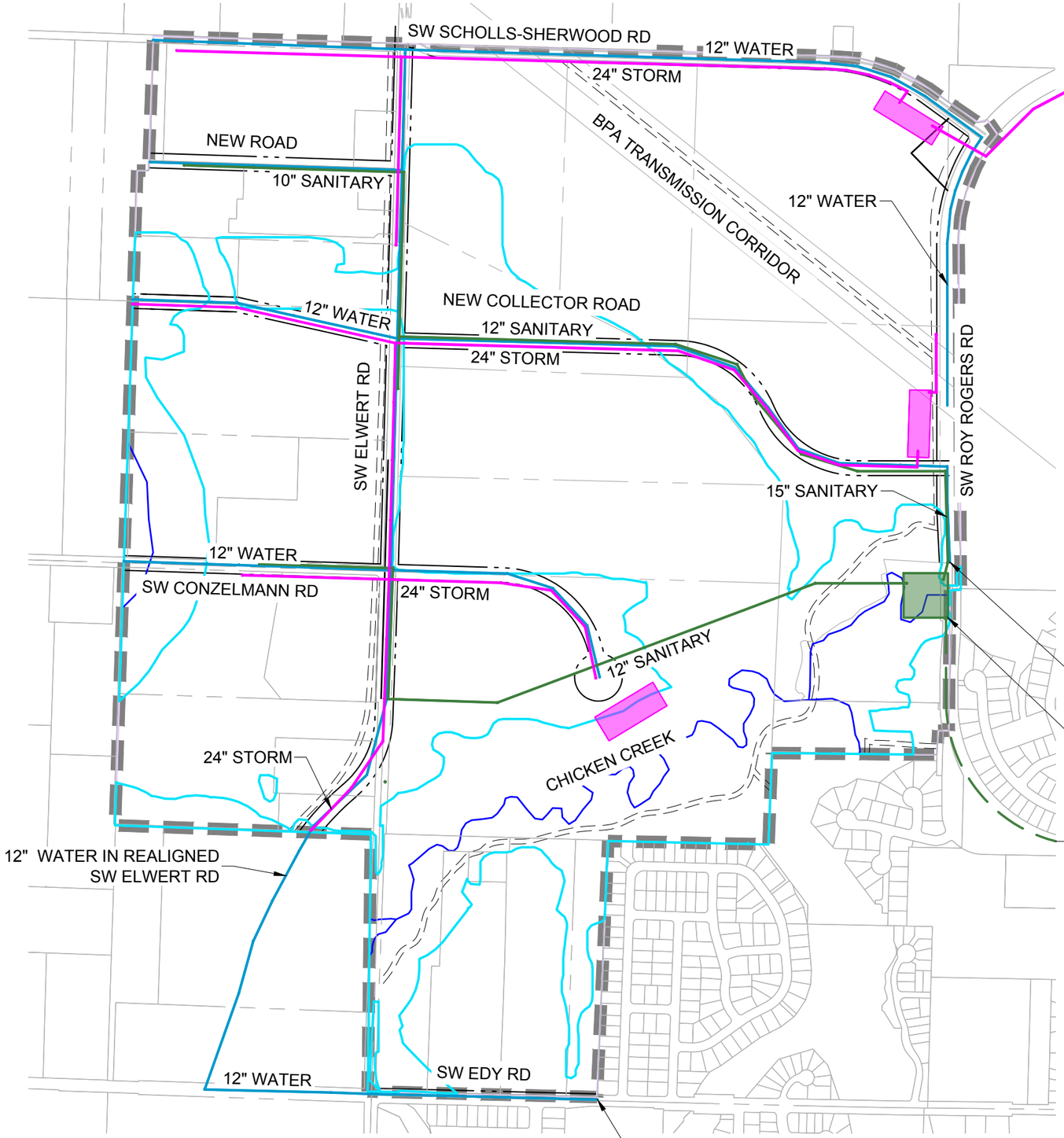
2230332\DRAWINGS\CIVIL\EXHIBIT\332-FIG 17 - OPT A EXHIBIT.DWG BMR 02/09/24 16:11 1:600

FIGURE 18



LEGEND

- NORTH DISTRICT BOUNDARY
- WATER
- SANITARY
- STORM
- TITLE 13 LANDS BOUNDARY
- REGIONAL TRAIL PER CONCEPT PLAN (LOCAL TRAILS NOW SHOWN)
- EXISTING TAX LOT
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SHERWOOD WEST
SCENARIO B UTILITY LAYOUT

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Job # 2230332.00

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"2230332000" C:\TEMP\ACPUBLISH_28284\332-FIG 18 - OPT B EXHIBIT.DWG 8MR 02/09/24 16:12 1:600

Water

Construct new water lines to be located generally within new public roadway rights-of-way, expected to consist of:

- Approximately 24,500 linear feet (LF) of 12-inch water pipes.
- Approximately 2,700 LF of 10-inch water pipes.
- Connections to existing City of Sherwood water system at SW Edy Road and SW Roy Rogers Road.
- Ongoing improvements to the City's water system through the Willamette Water Supply project, including a new water treatment plant. Costs associated with the Willamette Water Supply improvements are not included in this study.

Sanitary Sewer

Construct new sanitary sewer lines and facilities to be located within new public roadway rights-of-way to the extent possible, expected to consist of:

- Chicken Creek sanitary sewer CWS pump station.
- Approximately 18,000 LF of 24-inch CWS sanitary sewer force main.
- Approximately 1,200 LF of 15-inch gravity sanitary sewer pipes.
- Approximately 5,500 LF of 12-inch gravity sanitary sewer pipes.
- Approximately 3,000 LF of 10-inch gravity sanitary sewer pipes.

Stormwater

Construct new storm drainage lines and facilities to be located generally within new public roadway rights-of-way, expected to consist of:

- Approximately 9.5 acres (total) of regional storm treatment pond facilities.
- Approximately 2,200 LF of 30-inch storm drainpipes.
- Approximately 12,300 LF of 24-inch storm drainpipes.
- Approximately 3,200 LF of 18-inch storm drainpipes.

Key Projects

Following is a list of key transportation, water, sanitary sewer, and storm projects required to serve the North District at full development capacity:

Transportation

- SW Elwert Road/SW Scholls-Sherwood Road intersection improvements.
- Widening of SW Elwert Road to include bike and pedestrian facilities.
- Designate roadway connections west of SW Elwert Road.
- Designate new Collector roads running east/west in TSP update.
- Improve the SW Elwert Road/SW Scholls-Sherwood Road intersection with signalization or roundabout.
- Improve the SW Elwert Road/SW Conzelmann Road intersection with signalization or roundabout (Scenario A).
- Improve the SW Elwert Road/East-West Collector intersection with signalization or roundabout.

Water

- Approximately 11,400 LF of water line installation is considered high priority to construct a water line loop through the North District. Dead-end lines extended from the existing water system boundaries are unlikely to be able to support development of the larger mixed employment sites within the North District without a looped connection.

Sanitary Sewer

- Priority sewer projects include the pump station, force main, and 15-inch sewer line to support initial mixed employment development within the North District. Subsequent improvements are expected to be constructed with adjacent site development.

Storm

- Since storm drainage is required for all new public and private development, priority storm improvements are likely to be aligned with the initial site development and roadway construction.

Transportation and Infrastructure Construction Cost Estimates

Development of the 405 acres in the North District will require transportation improvements and installation of public utilities. Mackenzie prepared a preliminary (planning-level) construction cost estimates for these improvements as detailed in Table 4 below. Estimates were only prepared for Scenario A since it had longer roadway and pipe networks.

TABLE 4: SCENARIO A PLANNING-LEVEL TRANSPORTATION AND INFRASTRUCTURE COSTS	
Category	**Estimated Cost (2024 dollars)**
Public Water	$10,745,000
Public Sanitary Sewer	$18,162,500
Public Storm Drain	$10,932,500
Public Roadways	$64,150,000
Total	**$103,990,000**

The total infrastructure cost of nearly $104 million equates to approximately $6 per square foot, based on the 405 gross acres in the North District. However, as some portions of the North District will not be developed, the effective cost per square foot will be even higher.

Detailed breakdowns of the cost estimates are attached in Appendix 7.

The above costs exclude the following:

- Site development costs (e.g., earthwork, paving, and landscaping).
- Building costs (as they vary depending on construction type and level of finish).
- Soft costs, such as permitting, design consultants, City staff, and overhead costs such as contingency.

The City should consider who constructs new roadways. If new core roadways are constructed by the City that may facilitate quick development of sites within the North District. Alternatively, if developers are required to build entire roadways that may narrow the pool of developers interested in the North District, although they may be reimbursed for the improvements through SDC and TDT credits. Who constructs the improvements may also impact the sequence of development-ready areas.

V. EVALUATION OF MIXED EMPLOYMENT AREA FOR TARGET EMPLOYMENT TYPES

The 2023 Concept Plan notes the following with respect to target employment sites that may be applicable to the North District:

- *Employment/Industrial. There is strong potential for mixed employment and industrial development, considering the increasing demand for, and limited supply of, high-quality buildable employment land in the region, particularly large sites.*
- *Tech Clusters. Sherwood is centrally located between existing tech clusters in Wilsonville and the Sunset Corridor, and developers are looking for opportunities elsewhere in the region. The Sherwood area is beginning to draw interest from existing tech companies in Hillsboro and elsewhere.*
- *Plan for Mixed Employment. Most of the opportunities for long-term job creation will likely require a mixed employment approach—namely industrial, flex, and office. Mixed Employment in centers/parks of 20-100 acres is the strongest market.*
- *Reserve large, flat parcels with transportation access for employment uses. Land needs for mixed employment range from 40 to 50 acres per "center" or "park." The City should target areas of Sherwood West with the largest and flattest contiguous tracts of land for these developments, with slopes of less than 3.0 percent.*
- *Be Flexible. Maintain as much flexibility (zoning, land, tools, approach) as possible in planning for employment growth as market cycles and trends over the next 20 years are unclear. This means maintaining large, contiguous sites but not mandating large-lot sites.*

(Source: Sherwood West Concept Plan, July 2023, pp. 21-22)

Furthermore, the 2023 Economic Opportunities Analysis (EOA), adopted by the City Council in June 2023, identified the following Target Industries for the City as a whole:

- *Manufacturing*
  - *Technology and Advanced Manufacturing*
  - *Machinery Manufacturing*
  - *Clean Tech*
- *Professional and Business Services*
  - *Software and Media*
  - *Clean Tech*
  - *Athletics and Outdoors*
  - *Other Services*
- *Wholesale*
- *Services for Visitors*
- *Services for Residents*
  - *Medical Services*
  - *Legal Services*
  - *Financial Services*
  - *Retail*
  - *Personal Services*
  - *Restaurants*

(Source: Sherwood Economic Opportunities Analysis, April 2023, Figure 3.01)

To evaluate whether the development areas depicted in the two scenario diagrams could accommodate development in the City's target industries, Mackenzie referred to preferred characteristics for different industries, based on Business Oregon's Industrial Development Competitiveness Matrix included in Appendix 6. The characteristics identified in Table 5, which are reproduced from Appendix 6, are from those industry types in the Business Oregon matrix which are closest to the City's target employment uses.

TABLE 5: INDUSTRIAL PREFERRED SITE CHARACTERISTICS					
Factor	***High-Tech/Clean-Tech Manufacturing***	***Advanced Manufacturing and Assembly***	***General Manufacturing***	***Industrial Business Park and R&D Campus***	***Local Warehouse/ Distribution***
Competitive site acreage	5 - 100+	5 - 25+	5 - 15+	20 - 100+	10 - 25+
Competitive maximum slope	0 - 5%	0 - 7%	0 - 5%	0 - 7%	0 - 5%
Railroad Access	Preferred	Not Required	Preferred	Preferred	Preferred
Minimum water service diameter	12" - 16"	8" - 12"	6" - 10"	8" - 12"	4" - 6"
Minimum sanitary sewer service diameter	12" - 18"	10"-12"	6" - 8"	10"-12"	4"
Preferred natural gas service diameter	6"	6"	4"	6"	2"
Minimum electrical service demand (megawatts)	4-6 MW	1 MW	0.5 MW	0.5 MW	1 MW
Fiber optic communications	Required	Required	Preferred	Required	Preferred

Source: Mackenzie, Business Oregon Industrial Development Competitive Matrix

Target Industry Suitability Assessment

Based on Table 5 and Appendix 6:

- The site sizes in Scenario A range from four acres to 75 acres, while those in Scenario B range from 12 acres to 95 acres. These sizes are generally in line with the competitive acreage ranges for the target industries, with the exception of very large High-Tech/Clean-Tech Manufacturing and Industrial Business Park and R&D Campus users, some of which seek sites over 100 acres.
- Some of the Mixed Employment land (primarily west of SW Elwert Road) has slopes over 10% which could limit the types of development that occur on those sites (e.g., these sites could

accommodate smaller format employment buildings such as office or small flex space but not large industrial employers that need large, flat sites for single-level floor plates). By contrast, the majority of Mixed Employment land east of SW Elwert Road has slopes under 10%, which is more conducive to the target industries.

- The water main size depicted in Figure 13 is 12-inch in the Mixed Employment area. This size is generally sufficient for the target industries, with the exception of high-demand users that may require higher peak flows and larger water mains than are currently planned.
- The sanitary sewer line sizes depicted in Figure 13 include 10-inch in the northwest portion west of SW Elwert Road and 12-inch or 15-inch lines elsewhere in the Mixed Employment area. These sizes are generally sufficient for the target industries, with the exception of high-demand users that may require higher peak flows and larger sanitary sewer lines than are currently planned.
- The storm drain sizes depicted in Figure 13 include 24-inch lines in the Mixed Employment area, which should be sufficient for the anticipated amount of impervious surface.
- While there may be a need for system-wide improvements identified in utility master plans, such analysis of those plans is beyond the scope of this project.

Recommendations

To help promote development of the Mixed Employment area with the target employment types, the City can consider the following approaches:

- Implement some of the strategies for creating and protecting large sites identified in Section II.
- Engage a natural resources consultant to evaluate the condition of Mixed Employment areas designated by Metro as Title 13 habitat and to assist the City with economic, social, environmental and energy (ESEE) analysis to determine the appropriate level of protection considering urban land uses.
- Continue engagement with Portland General Electric and initiate engagement with NW Natural to plan for the energy needs of the Mixed Employment area.
- Coordinate with Sherwood Broadband staff and other communications providers to plan for the communication needs of the Mixed Employment area.
- Facilitate annexation and development discussions with property owners to explain the annexation process, timeline, and costs. Consider whether to provide annexation assistance to property owners.
- Coordinate with Washington County and Oregon Department of Transportation regarding transportation needs for both employment and residential uses.
- Coordinate with Clean Water Services regarding storm drainage and sanitary sewer planning.
- Coordinate with TriMet regarding service planning for Sherwood West in general and the North District in particular.
- Amend the TSP and utility master plans and capital improvement plan to incorporate key projects identified above.
- Construct key projects identified above in section IV.

VI. TRANSPORTATION AND INFRASTRUCTURE FUNDING CONSIDERATIONS FOR SHERWOOD WEST

As part of the project, Leland Consulting Group (LCG) prepared a summary memo to discuss Sherwood West transportation and infrastructure construction costs and funding. Highlights from the memo—which is attached as Appendix 8—are presented below.

Construction Cost and Revenue Comparison

LCG analyzed the transportation, infrastructure, regional parks, and regional trails construction costs for all of Sherwood West (using cost estimates provided by Mackenzie for the North District and for regional trails, together with City of Sherwood City Engineering cost estimates for the remainder of Sherwood West). LCG then estimated potential revenues from development, such as system development charges (SDCs) and the Washington County Transportation Development Tax (TDT).

The financial analysis demonstrated that potential revenues generated at full buildout of Sherwood West are likely sufficient to cover estimated infrastructure construction costs for sanitary sewer and parks; however, revenues are expected to be insufficient to cover construction costs for water, transportation, and storm infrastructure. This analysis is preliminary and will require further refinement during Comprehensive Planning, but points to the fact that additional funding sources may be needed to cover some construction costs.

Potential Funding Sources

LCG identified a range of funding tools that could be used to supplement shortfalls, including the following:

- Federal funding sources such as the Economic Development Administration.
- State funding sources such as the Special Public Works Fund, Community Paths Grants, Immediate Opportunity Fund, Oregon Parks and Recreation Department Local Government Grant Program, and other emerging opportunities.
- Regional funding sources such as Washington County's Major Streets Transportation Improvement Program (MSTIP) or the Metropolitan Transportation Improvement Program (MTIP) or other regional flexible funding overseen by Metro.
- Local funding mechanisms such as supplemental SDCs, a Local Improvement District (LID), utility fees, general obligation bonds, or urban renewal tax increment financing.

While each of these funding sources would require further evaluation to determine applicability and viability, it does appear that there are supplemental funding sources that could be used to bolster the revenues expected from SDCs and TDT.

VII. CONCLUSION

Development of the North District of the Sherwood West urban reserve area can be implemented in a manner that advances the City's long-term goals including economic development, provision of housing, and conservation of natural resources.

The Mixed Employment area designated in the 2023 Concept Plan appears appropriate for development with the City's target employment types, and infrastructure can be constructed to serve the area in an orderly manner. Roadway improvements and public utility extensions would be required for the development, but the necessary improvements are typical of development in new areas.

Competing interests for infrastructure within the North District specifically include a need or desire for large sites (up to 50 acres), maintaining City block length standards, providing reasonable cross-circulation for pedestrians and bicyclists, and minimizing or avoiding impact on protected habitat areas. We have provided two potential scenarios for roadway layout and site creation that attempts to balance these competing interests while providing flexibility on lot size for future developers and users.

Public utilities to the North District are generally expected to be extended from the existing boundary of City services. Fortunately, the City appears to be proactive in expanding capacity for water and sanitary sewer in cooperation with the Willamette River Water Treatment Plant and CWS sewer basin improvements. However, the extension of these utilities from existing service boundaries and through the North District present significant costs. Partnership with cooperating agencies such as CWS will likely be key to establishing robust infrastructure within the North District.

The City may elect to construct key public infrastructure projects to facilitate development within the North District, which would provide certainty in roadway and utility alignments. Any pre-emptive infrastructure should be constructed in locations to maintain flexibility of site layouts. In particular, key infrastructure such as locating an electrical substation for PGE and installing the sewer pump station and force main for CWS can help early developers overcome significant hurdles.

Both roadway scenarios presented above provide east-west cross-circulation through the North District, providing continuity to smaller sites west of SW Elwert Road and larger sites east of SW Elwert Road. Scenario A assumed greater impact to Title 13 areas with two east-west collectors extending to SW Roy Rogers Road whereas Scenario B only assumes one east-west collector extending to SW Roy Rogers Road. As Scenario A has more roadways and utilities, Mackenzie estimated construction costs only for this scenario, totaling nearly $104 million.

Leland Consulting Group's financial analysis indicates that at full buildout, SDC and TDT revenues are likely sufficient to cover estimated infrastructure construction costs for sanitary sewer and parks but are likely insufficient to cover construction costs for water, transportation, and storm infrastructure. Therefore, LCG identified a range of potential funding sources for the City to consider as it moves into the Comprehensive Planning stage if Metro approves the request to add Sherwood West to the UGB.

APPENDIX 1

NOVEMBER 2023 CITY OF SHERWOOD LETTER TO PROPERTY OWNERS REGARDING INTEREST IN DEVELOPMENT

City of Sherwood
22560 SW Pine St.
Sherwood, OR 97140
Tel 503-625-5522
Fax 503-625-5524
www.sherwoodoregon.gov

Mayor
Tim Rosener

Council President
Keith Mays

Councilors
Renee Brouse
Taylor Giles
Doug Scott
Dan Standke
Kim Young

City Manager
Keith Campbell

November 13, 2023

Dear Sherwood West Property Owner:

As part of the City of Sherwood's ongoing long-term planning for the Sherwood West area, the City is gathering information on parcel size and property owner interest regarding future development **in the mixed-employment district** envisioned for the **northern portion** of Sherwood West. Please see the map on backside of letter.

This effort is part of the Sherwood West Concept Plan, a long-range planning document that will guide Sherwood community members, decision-makers, and staff as they make plans and decisions about future growth in Sherwood West. Metro has designated Sherwood West as an "urban reserve," which means that at some point in the future, it will be added to the Urban Growth Boundary. The Concept Plan has been informed by extensive public involvement, with the Preliminary Concept Plan approved in 2016 and further revisions accepted by the Sherwood City Council this past summer. Further information is available on the City's website at

sherwoodoregon.gov/planning/page/sherwood-west-preliminary-concept-plan-re-look.

Determining property owners' interest in developing or selling their properties for employment uses will allow the City to form plans for preserving large lots and to determine the viability of future developers and employers to create large building sites by purchasing multiple smaller lots.

If your property is currently available for sale or lease –or you are interested in making it available for sale in the future–please indicate accordingly on the enclosed form and return it in the envelope provided, by fax, or by email. *If your property is NOT available and you are NOT interested in including it for use in the employment district, we ask that you please indicate this information to us as well.*

Please note: the City's intent is only to gather information at this point. The City does not become involved in the pricing of land or in sale or lease negotiations. The attached form does not obligate you in any way to sell your land.

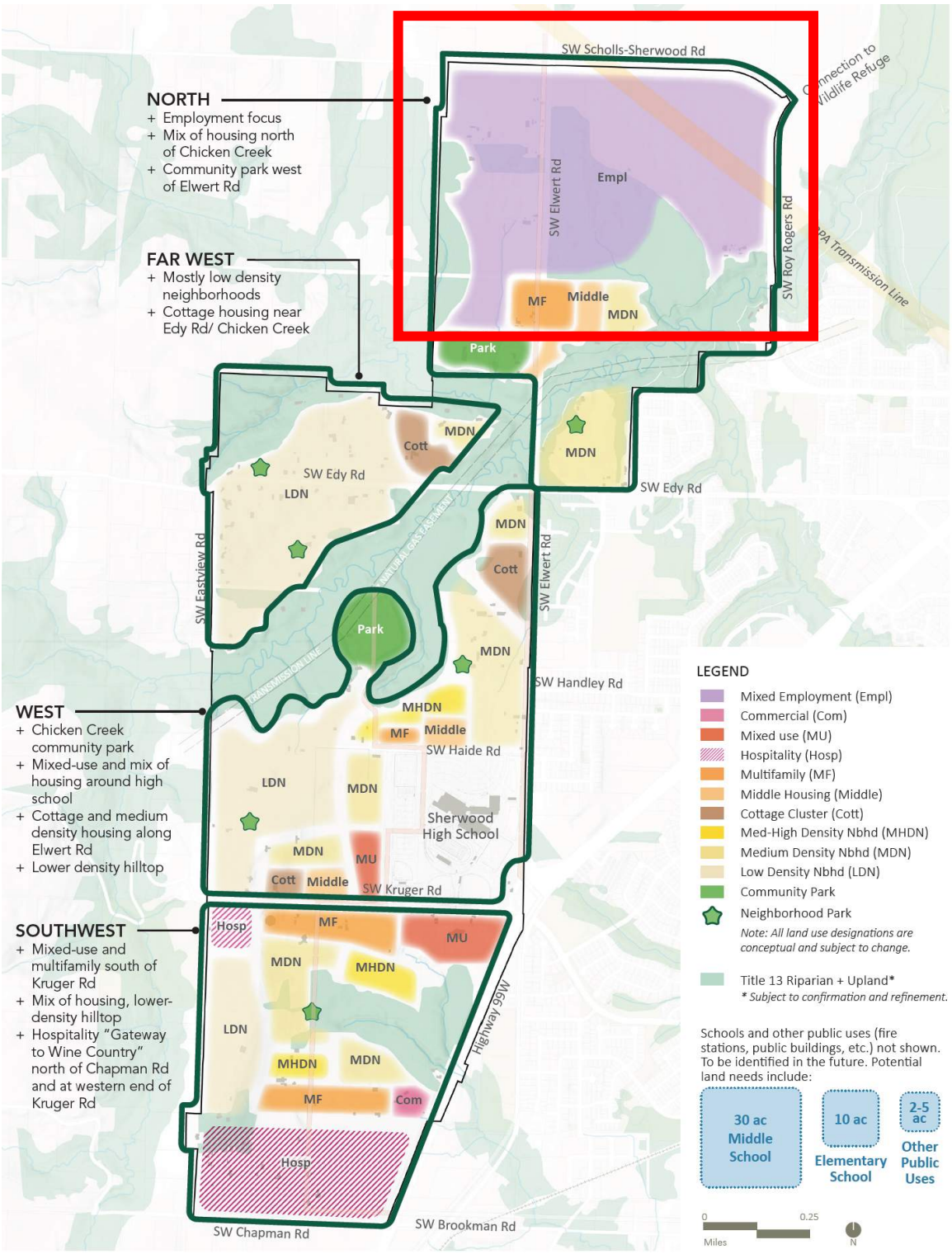
We would request that you return the enclosed form to the City by **Monday, November 27, 2023,** in the return envelope provided or call Erika Palmer, Planning Manager at the City of Sherwood, with your response.

If you have any questions or require additional clarification, please feel free to contact the project representative:

Erika Palmer, Planning Manager at City of Sherwood
Phone Number: (503) 625-4208
Email: palmere@sherwoodoregon.gov

Sincerely,
Erika Palmer, Planning Manager

Mixed-Employment Zone



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Keith Campbell

Erika Palmer, Planning Manager
City of Sherwood
22560 SW Pine St.
Sherwood, OR 97140

RE: Sherwood West Long-Term Concept Large Parcel Protection for Employment Uses

I, _____ as the owner/representative of the property located in Washington County, OR at address

_____

/tax lot _____, submit the following:

Check the box that represents your interest in selling, leasing, and/or developing your property for the purpose of contributing to the creation of a Mixed-Employment District. Please sign the letter and return either: in the envelope provided and addressed to City of Sherwood (see above), email to palmere@sherwoodoregon.gov, or fax it to 503-625-5524 by Monday, November 27, 2023.

☐ I am interested in developing my property in the future for employment uses.

☐ I am interested in making my property available for sale for future employment uses.

If property is already for sale:
Listing Agent/Representative: _____

Phone: _____

Parcel size (acres): _____

☐ My property is NOT available, and I am presently NOT interested in selling or developing it for employment uses.

Property owner signature: _____

Printed name:_____ Date: _____

Phone: _____ Email: _____

APPENDIX 2

NOTES FROM DECEMBER 6, 2023 TECHNICAL ADVISORY COMMITTEE MEETING

MACKENZIE.

P 503.224.9560 ▪ F 503.228.1285 ▪ W MCKNZE.COM
RiverEast Center, 1515 SE Water Avenue, #100, Portland, OR 97214

Portland, Oregon ▪ Vancouver, Washington ▪ Seattle, Washington

MEETING MINUTES

PROJECT NUMBER:	2230332.00	ISSUE DATE:	December 20, 2023
PROJECT NAME:	Sherwood West Concept Plan Refinement		

RECORDED BY:	Brian Varricchione – Project Manager
TO:	FILE
PRESENT:	Erika Palmer, Craig Sheldon, Jason Waters, Kristen Switzer, Eric Rutledge, Joy Chang, Colleen Resch – City of Sherwood Chris Faulkner – Clean Water Services (CWS) Glen Bolen – Oregon Department of Transportation (ODOT) Glen Hamburg – Metro Matt Craigie, CJ Doxsee, Suzanne Savin – Washington County Mike Weston – City of King City Theresa Haskins – Portland General Electric (PGE) Darin Smith – Bonneville Power Administration (BPA) Brian Varricchione, Gabriela Frask, Janet Jones, Brent Nielsen, Breezy Rinehart-Young, Scott Moore – Mackenzie

SUBJECT: Technical Advisory Committee (TAC) Meeting #1 (December 6, 2023)

INFORMATION ITEMS

1. City of Sherwood (Erik Rutledge) opened the meeting by providing a recap of Sherwood West history and a summary of next steps.
    A. The last Technical Advisory Committee (TAC) meeting for the Sherwood West area was held late last winter. City Council adopted the current concept plan in July 2023.
    B. The City recently submitted a letter of interest to Metro regarding a potential urban growth boundary (UGB) expansion of up to 1,200 acres.
    C. City's intent is to submit the Sherwood West Concept Plan to Metro in April 2024.
    D. Metro is looking for site development readiness for industrial users. The City views the employment area near the new Sherwood High School and the employment area in the North District catalysts for future economic growth.
    E. The current effort is on the North District where most jobs within the Sherwood West plan area would be located.
        I. Mackenzie's scope includes reviewing opportunities to create parcel sizes larger than 50 acres to better satisfy Metro Title 11 code requirements.
        II. Mackenzie's scope also includes looking at refinements to the transportation network and utility corridors in the North District and preparing infrastructure cost estimates.
2. Mackenzie (Brian Varricchione) shared maps conveying existing conditions. These maps are enclosed within Attachment B.
    A. The first map shows City limits, Sherwood West reserve area, and North District.

B. The second map shows existing lot lines within North District.

C. The third map shows floodplain, riparian corridors, and upland wildlife habitat areas as determined by Metro's Title 13 inventory.

D. The fourth map shows slopes which impact developability, particularly industrial users. Slopes greater than 10% can be problematic for development, and many industrial users prefer not to exceed 5%.

I. City of Sherwood (Erik Rutledge) noted it would be helpful to understand what acreage is remaining after excluding high slope areas.

E. The fifth map shows the land uses areas depicted in the July 2023 Concept Plan, along with the conceptual road alignments.

F. The sixth map shows owners of properties within the proposed Mixed Employment area.

G. The seventh map shows the response from property owners regarding willingness to sell their property. Brian pointed out many property owners did not respond to the City's survey.

I. City of Sherwood (Erik Rutledge) noted that while the map depicts little interest in property owners selling their land, there have been several "behind-the-scenes" purchase offers from developers for property within the North District.

H. The eighth map shows development considerations within the North District, such as the BPA easement at the northeast corner, the preclusion of large parcels due to block length and intersection spacing standards, smaller areas west of Elwert Road, and Title 13 habitat designation.

I. It is currently unclear how Title 13 habitat designations affect developability within the North District.

I. The ninth map shows intersection and driveway spacing standards.

3. Mackenzie (Brian Varricchione) shared maps conveying potential parcelization within North District to explore ways in which large parcels could be created to attract employers. These maps are enclosed within Attachment B.

A. Scenario A shows road alignments consistent with approved concept plan. The largest parcel size is about 30 acres, and one site may not be developable due to Title 13 habitat designation.

B. Scenario B shows removal of the north-south roadway running parallel to Elwert Road resulting in a 50-acre site in northeast corner.

C. Scenario C shows two large parcels at about 70 acres by extending Conzelman Road to the east and terminating at Roy Rogers Road north of the creek and removing the east-west concept road east of Elwert Road. This scenario also removes the north-south road west of Elwert Road.

D. Scenario D is similar to Scenario C but alignment of north-south road parallel to Elwert Road minimizes impacts to Title 13 habitat.

E. Scenario E is very similar to Scenario D but with a different east-west connection to Roy Rogers Road.

F. Scenario F only assumes extension of Conzelman Road to east on the eastern portion creating a 150-acre site east of Elwert Road.

4. Metro (Glen Hamburg) cautioned the group against assuming that the Title 13 upland habitat area is developable, but noted the City can undertake a study to determine significance of habitat area at the time of comprehensive planning if the area is added to the UGB. Glen also noted his preferred concept may be Scenario E but perhaps removing the east-west roadway traversing the Title 13 habitat area.

   A. Mackenzie (Brian Varricchione) pointed out there is a portion of land currently designated as Title 13 habitat area where trees have been recently removed.

   B. Metro (Glen Hamburg) confirmed that area could be removed from the Title 13 upland habitat as part of future efforts.

5. City of King City (Mike Weston) asked if there is a trail planned along power lines and cautioned against having block lengths that are too long for pedestrians. He urged the team to consider some public connections within large parcels such as trails through large development parcels.

6. ODOT (Glen Boden) asked if subdivision of smaller parcels would be prohibited to accommodate development, and if so, the City should "stick to their guns" about large parcels. Glen also noted connectivity is more important than roadway location standards, and one example of administrative flexibility can be to provide one frontage road per property.

7. PGE (Theresa Haskins) shared with the group that developers often complain there are no lots available that are large enough to accommodate certain users. She asked the City to consider if they want larger manufacturing or smaller user requests. The average acreage request from observation is 35 acres but can be as high as 100 acres.

8. Washington County (Matt Craigie) noted perhaps a community park can be sited within the upland habitat area, noting that it would not generate property taxes. He noted that may allow other land to be developed with different uses. He also suggested reviewing other examples and typologies with similar layouts to the area closest to the BPA easement corridor.

   A. Mackenzie (Scott Moore) noted there are certain design components that are often allowed within BPA easement areas such as maneuvering space for vehicles; however, buildings cannot be placed within the easement area.

   B. BPA (Darren Smith) noted that generally customers request stormwater detention, parking, lighting, etc. within BPA easements and cautioned against planting vegetation associated with parking near the BPA easement area.

9. PGE (Theresa Haskins) informed the group that PGE will want to reserve at least five acres for an electrical substation site and reminded the group there will be constraints with where the substation can be placed. As an example, a substation cannot be placed on a slope.

10. City of Sherwood (Erik Rutledge) reminded the group the next meeting will be more focused on utilities/infrastructure and other needs.

11. Mackenzie (Brent Nielsen) asked the group how they felt about eliminating the north-south roadway west of Elwert Road.

   A. City of Sherwood (Erik Rutledge) noted that the City has to balance competing interests (e.g., walkability, block size, targeted industries, and upland habitat). The City will look at

the target industries, easement locations, etc. to calibrate the land supply with the needs of target users. Removing this roadway may be fine as long as it is consistent with the goals of this exercise.

Every effort has been made to accurately record this meeting. If any errors or omissions are noted, please provide written response within five days of receipt.

Enclosure(s): Attachment A – Meeting Agenda
Attachment B – Meeting Materials

c: Present

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RiverEast Center, 1515 SE Water Avenue, #100, Portland, OR 97214
Portland, Oregon ▪ Vancouver, Washington ▪ Seattle, Washington

MEETING AGENDA

PROJECT NUMBER:	2230332.00	**TODAY'S DATE:**	November 30, 2023
PROJECT NAME:	Sherwood West Concept Plan Refinement		

MEETING DATE:	December 6, 2023
MEETING TIME:	2:00 PM – 3:00 PM
MEETING PLACE:	Virtual
PARTICIPANTS:	Erika Palmer, Bruce Coleman, Craig Sheldon, Jason Waters, Kristen Switzer, Eric Rutledge, Joy Chang – City of Sherwood Chris Faulkner – Clean Water Services (CWS) Glen Bolen – Oregon Department of Transportation (ODOT) Glen Hamburg – Metro Jessica Pelz, Matt Craigie, Theresa Cherniak, CJ Doxsee, Suzanne Savin – Washington County Eva Kristofik – Friends of Tualatin River National Wildlife Refuge Mike Weston – City of King City Preston Korst – Home Building Association (HBA) Ty Darby – Tualatin Valley Fire & Rescue (TVF&R) Theresa Haskins – Portland General Electric (PGE) Darin Smith – Bonneville Power Administration (BPA) Brian Varricchione, Gabriela Frask, Janet Jones, Brent Nielsen, Breezy Rinehart-Young, Scott Moore - Mackenzie
FACILITATOR:	Erika Palmer (City of Sherwood), Brian Varricchione (Mackenzie)

SUBJECT: Technical Advisory Committee (TAC) Meeting #1

I. INTRODUCTIONS — Erika Palmer: 5 minutes

- Names and roles
- Previous Concept Plan involvement (if any)

II. PROJECT INTRODUCTION — Erika Palmer: 5 minutes

- TAC role and responsibilities

III. PROJECT GOALS & SCOPE OF WORK — Brian Varricchione: 10 minutes

- Schedule

IV. **TASK 1 PRESENTATION/WORK SESSION** Brian Varricchione: 35 minutes

- Consultant presentation
- TAC Discussion

V. NEXT STEPS & SCHEDULE Brian Varricchione: 5 minutes

MEETING PACKET

As you review the meeting packet materials prior to the meeting, the consultant team requests you consider and think about the following questions and comments and come to the meeting prepared to discuss.

A. Site sizes

1. The site size scenario sketches on pages 10-15 include a variety of site sizes, some of which exceed 50 acres to accommodate large employers. Which are your preferred scenarios?

B. Roadways

1. The Sherwood West Concept Plan includes multiple proposed/future roads. In efforts to create/preserve as many large industrial/employment sites as possible, some of the proposed/future roads, particularly west of Elwert Rd, may not be necessary as they create small sites (10 acres and smaller) as a result of bifurcation. What do you think of the consultant teams scenarios that eliminate or relocate roads from the Concept Plan?
2. Several scenarios in the meeting packet include potential road realignments in order to preserve/create large industrial/employment sites. What are your thoughts and are these alignments acceptable from your agency and perspective?
3. Page 9 of the meeting packet includes a map with intersection and driveway spacing standards. The consultant team used these standards to help identify potential site locations and configurations. What are your thoughts on deviating from the block length and/or spacing requirements to accommodate large employment sites?
4. Our assumption is within the North District Elwert Road should be designed based on City standards once the area is annexed to the City. Is that correct?

C. Utilities

1. We have received Sherwood's master plans for sewer, water, and storm drainage. Please provide the CWS master plan to verify downstream connection points for sanitary sewer.
2. Please confirm the City's preference for regional stormwater facilities or separated public/private approach.

3. Please confirm preferred power transmission corridors and substation footprints within the study area, if needed.

D. Natural Resources

1. The North District has many potential development constraints, including BPA transmission line, steep slopes, and Metro Title 13 upland wildlife habitat. Please share any information you have on these constraints and the potential to allow impacts to accommodate employment uses. Can new roadways be constructed through Metro Title 13 upland habitat areas?

c: Participants

SHERWOOD WEST CONCEPT PLAN NORTH DISTRICT Sherwood, Oregon

11/30/23 DISCUSSION DRAFT

SW SCHOLLS-SHERWOOD RD

SW ROY ROGERS RD

SW ELWERT RD

SW CONZELMANN RD

SW EDY RD

City of Sherwood

LEGEND

- Sherwood City Limits
- Sherwood West
- North District

0 700 1,400 2,800 Feet

1 inch = 1,474 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/29/2023
File: Sherwood West_North District

Map Created By: BJV
Project No: 2230332.00

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11/30/23 DISCUSSION DRAFT

SW LEBEAU RD
SW SCHOLLS-SHERWOOD RD
SW ELWERT RD
SW CONZELMANN RD
SW EDY RD
SW ROY ROGERS RD
SW GREEN HERON DR
SW SEELY LN
SW CEDARVIEW WAY
SW LYNNLY WAY
SW JONQUIL TER
SW LAVENDER AVE
SW HOUSTON DR
SW SETTLEMENT DR
SW NELS DR
SW SANTA FE TER

2S2240001701 14.4 AC
2S2240001700 0.9 AC
2S2240001800 1.4 AC
2S2240002001 5 AC
2S2240001900 0.9 AC
2S2240002002 5.4 AC
2S1190000600 18.8 AC
2S1190000602 20.7 AC
2S1190000700 36.3 AC
2S1190001003 0.5 AC
2S2240002101 4 AC
2S2240002100 5.9 AC
2S1190001301 12.9 AC
2S2240002200 19.6 AC
2S1190001300 21.3 AC
2S1190000601 32.5 AC
2S2240002302 9.4 AC
2S2240002301 9.3 AC
2S1190001302 21.7 AC
2S2250004700 11.3 AC
2S2250004800 7.7 AC
2S130BA00100 8.5 AC
2S130B000900 58.3 AC
2S2250000202 3.3 AC
2S130BA00200 5 AC
2S2250000203 14.5 AC
2S2250000201 2 AC
2S130B001000 0.7 AC
2S130B000800 8.9 AC
2S130B000600 4.7 AC
2S130B001100 9 AC
2S130B000700 10 AC

bing
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SHERWOOD WEST CONCEPT PLAN NORTH DISTRICT AERIAL Sherwood, Oregon

LEGEND

- North District
- Tax Lots
- BPA Transmission Corridor

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Aerial Taxlots_ND

Map Created By: BJV
Project No: 2230332.00

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11/30/23 DISCUSSION DRAFT

SW LEBEAU RD
SW SCHOLLS-SHERWOOD RD
SW SCHROEDER LN
SW CONZELMANN RD
SW ELWERT RD
SW ROY ROGERS RD
SW GREEN HERON DR
SW SEELY LN
SW CEDARVIEW WAY
SW LYNNLY WAY
SW JONQUIL TER
SW LAVENDER AVE
SW TRAILS END DR
SW SETTLEMENT DR
SW NELS DR
SW SANTA FE TER
SW HOUSTON DR
SW EDY RD

bing

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SHERWOOD WEST CONCEPT PLAN NORTH DISTRICT ENVIRONMENTAL Sherwood, Oregon

LEGEND

- North District
- Tax Lots
- Streams
- Wetland
- 1% Annual Chance Flood Hazard
- Regulatory Flooodway

Title 13

- Riparian Wildlife Habitat Class I
- Riparian Wildlife Habitat Class II
- Riparian Wildlife Habitat Class III
- Upland Wildlife Habitat Class A
- Upland Wildlife Habitat Class B

0 300 600 1,200 Feet

N

1 inch = 600 feet

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Environmental_ND

Map Created By: BJV
Project No: 2230332.00

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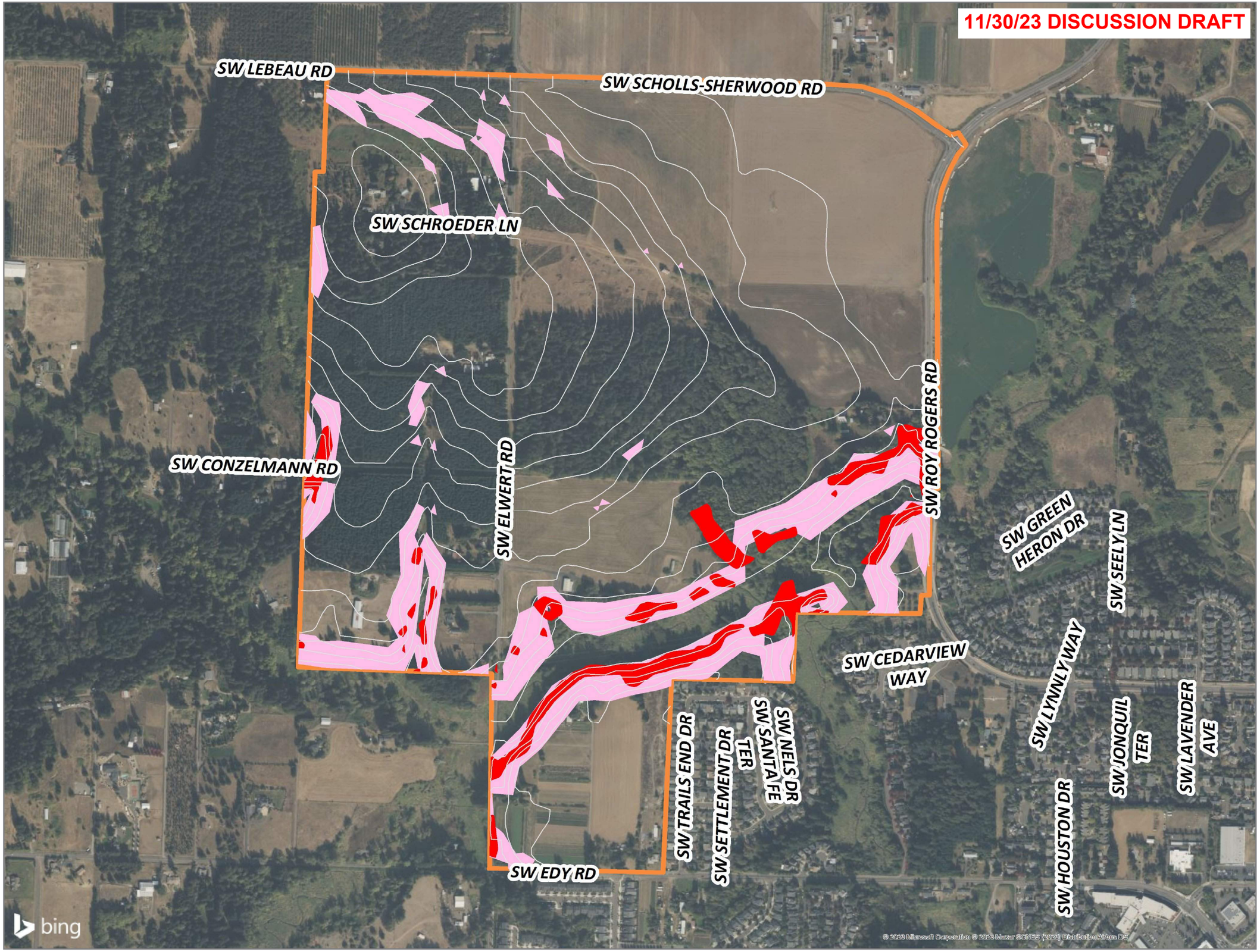

SHERWOOD WEST CONCEPT PLAN NORTH DISTRICT CONTOURS & SLOPE Sherwood, Oregon

LEGEND

- North District
- 10ft Contours
- 10%-25% Slope
- Over 25% Slope

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Contours and Slopes_ND

Map Created By: BJV
Project No: 2230332.00

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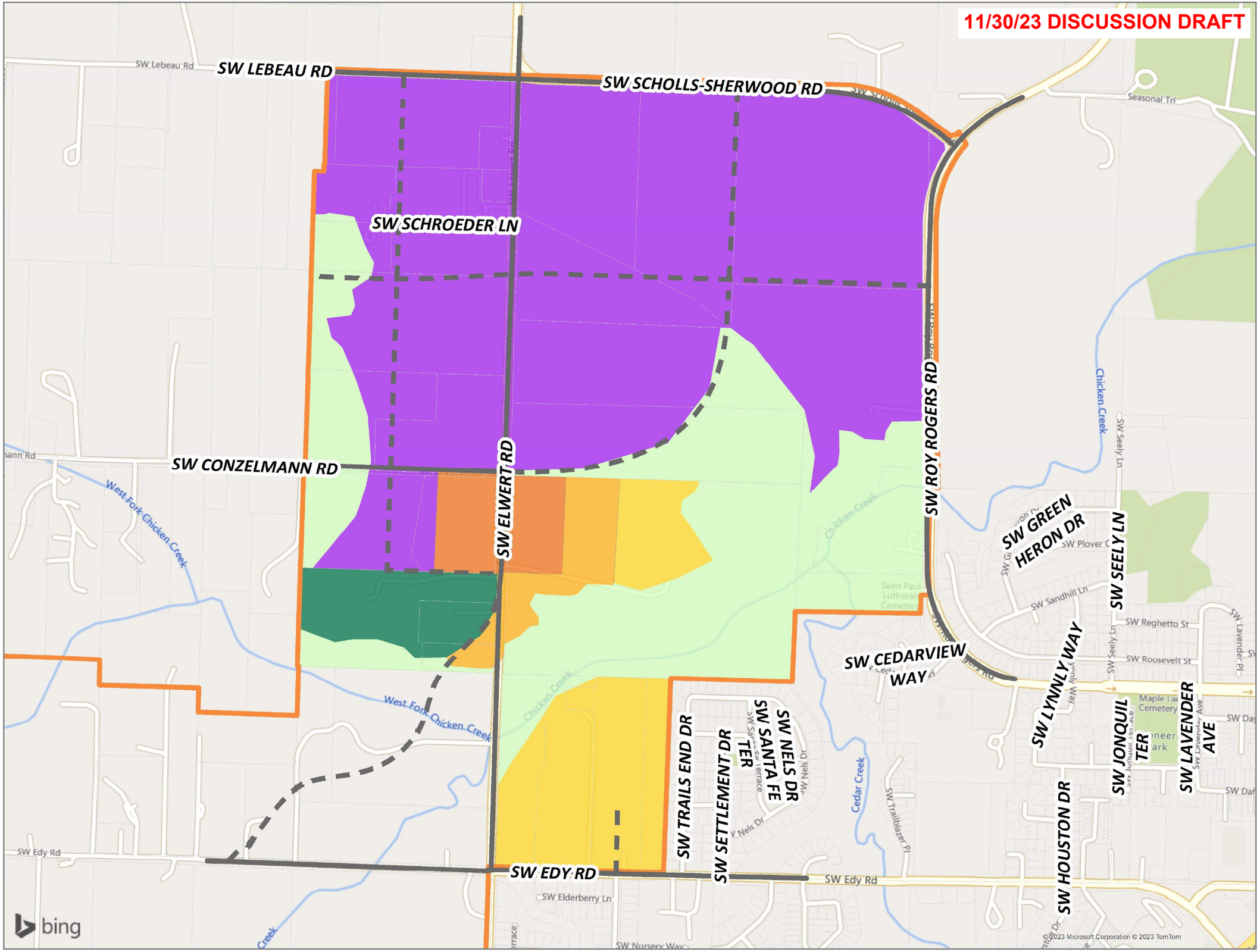

SHERWOOD WEST CONCEPT PLAN NORTH DISTRICT LAND USE & ROADS Sherwood, Oregon

LEGEND

- Sherwood West
- Tax Lots

North District Land Use

- Mixed Employment
- Multifamily
- Middle Housing
- Medium Density Neighborhood
- Community Park
- Title 13 Riparian/Upland

Roadways

- Existing
- Conceptual

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Land Use_ND

Map Created By: BJV
Project No: 2230332.00

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11/30/23 DISCUSSION DRAFT

SHERWOOD WEST CONCEPT PLAN
NORTH DISTRICT
MIXED EMPLOYMENT
Sherwood, Oregon

SW LEBEAU RD
SW SCHOLLS-SHERWOOD RD
SW CONZELMANN RD
SW ELWERT RD
SW ROY ROGERS RD
SW EDY RD
SW TRAILS END DR
SW SETTLEMENT DR
SW NELS DR
SW SANTA FE TER
SW CEDARVIEW WAY
SW GREEN HERON DR
SW SEELY LN
SW LYNNLY WAY
SW JONQUIL TER
SW LAVENDER AVE
SW HOUSTON DR

2S2240001701
14.4 AC
MARTIN RICHARD J & MARTIN WAYNE A

2S2240001700
0.9 AC
MARTIN RICHARD J & MARTIN WAYNE A

2S2240001800
1.4 AC
WALKER WILLOW E

2S1190000600
18.8 AC
GOLDEN COVE LLC

2S1190001003
0.5 AC
WETZEL GLEN T & WETZEL CHERYL D & WETZEL LLOYD G

2S2240002001
5 AC
SCHROEDER GEORGE & JEAN FAMILY TRUST

2S2240001900
0.9 AC
ELSEY JD & ELSEY DONALEE LYNN

2S1190000602
20.7 AC
GOLDEN COVE LLC

2S1190000700
36.3 AC
SCHLICHTING CENTURY FARM LLC

2S2240002101
4 AC
MARSH JAMES W H & MARSH LAURIE K S

2S2240002100
5.9 AC
MOSH TREE FARM LLC

2S1190001301
12.9 AC
GOLDEN COVE LLC

2S2240002200
19.6 AC
MERRIMAN RAY & MARY TRUST

2S1190001300
21.3 AC
ADAMS FAMILY REV TRUST

2S1190000601
32.5 AC
SABBE ROBERT A TRUST

2S2240002302
9.4 AC
LUNDY CREDIT SHELTER TRUST

2S1190001302
21.7 AC
ADAMS DALE STATE EXEMPT CST

2S2240002301
9.3 AC
LUNDY CREDIT SHELTER TRUST

2S2250004700
11.3 AC
LUNDY FAMILY TRUST

2S2250004800
7.7 AC
LUNDY FAMILY TRUST

Saint Paul Lutheran Cemetery
Maple Lane Cemetery
Pioneer Park
Chicken Creek
West Fork Chicken Creek
Cedar Creek

bing
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LEGEND

- North District
- Tax Lots
- Mixed Employment

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Parcel Ownership_ME

Map Created By: BJV
Project No: 2230332.00

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11/30/23 DISCUSSION DRAFT

SHERWOOD WEST CONCEPT PLAN
MIXED EMPLOYMENT DEVELOPMENT INTEREST
Sherwood, Oregon

LEGEND

- North District
- Mixed Employment

Survey Response

- Interested in Developing
- Available for Sale
- Available for Sale (for MDR)
- Not Available or Interested
- No Response

0 300 600 Feet 1,200

N

1 inch = 600 feet

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Owner Devt Interest_ME

Map Created By: BJV
Project No: 2230332.00

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Mixed Employment Development Considerations

11/30/23 DISCUSSION DRAFT

Parcelization west of SW Elwert Rd hampers opportunities to create large development sites

Limited development opportunities in steel slope areas

Roadway spacing/block spacing affects size of development sites

BPA electrical transmission corridor restricts building locations

Title 13 habitat significance not yet determined

SW LEBEAU RD
SW SCHOLLS-SHERWOOD RD
SW SCHROEDER LN
SW CONZELMANN RD
SW ELWERT RD
SW ROY ROGERS RD
SW GREEN HERON DR
SW SEELY LN
SW CEDARVIEW WAY
SW LYNNLY WAY
SW JONQUIL TER
SW LAVENDER AVE
SW TRAILS END DR
SW SETTLEMENT DR
SW NELS DR
SW SANTA FE TER
SW HOUSTON DR
SW EDY RD

SHERWOOD WEST CONCEPT PLAN
MIXED EMPLOYMENT

Sherwood, Oregon

LEGEND

- North District
- Tax Lots
- Mixed Employment
- BPA Transmission Corridor
- 10ft Contours
- 10%-25% Slope
- Over 25% Slope
- Title13 Riparian/Upland

Roadways

- Existing
- Conceptual

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Emp_50_acres

Map Created By: BJV
Project No: 2230332.00

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Intersection Spacing Standards

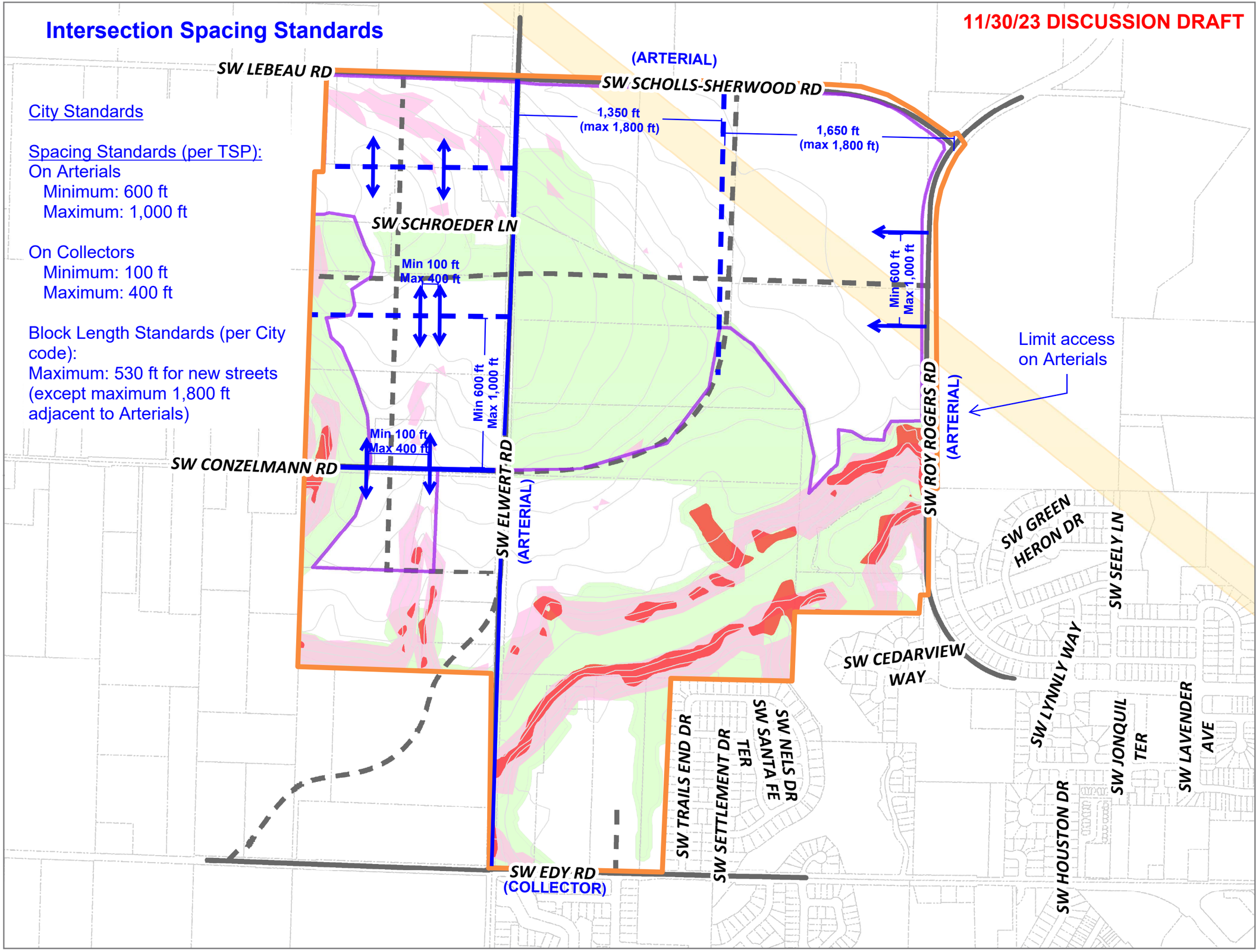
11/30/23 DISCUSSION DRAFT

City Standards

Spacing Standards (per TSP):
On Arterials
Minimum: 600 ft
Maximum: 1,000 ft

On Collectors
Minimum: 100 ft
Maximum: 400 ft

Block Length Standards (per City code):
Maximum: 530 ft for new streets (except maximum 1,800 ft adjacent to Arterials)



LEGEND

- North District
- Tax Lots
- Mixed Employment
- BPA Transmission Corridor
- 10ft Contours
- 10%-25% Slope
- Over 25% Slope
- Title13 Riparian/Upland

Roadways

- Existing
- Conceptual

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Emp_50_acres

Map Created By: BJV
Project No: 2230332.00

SHERWOOD WEST CONCEPT PLAN
MIXED EMPLOYMENT

Sherwood, Oregon

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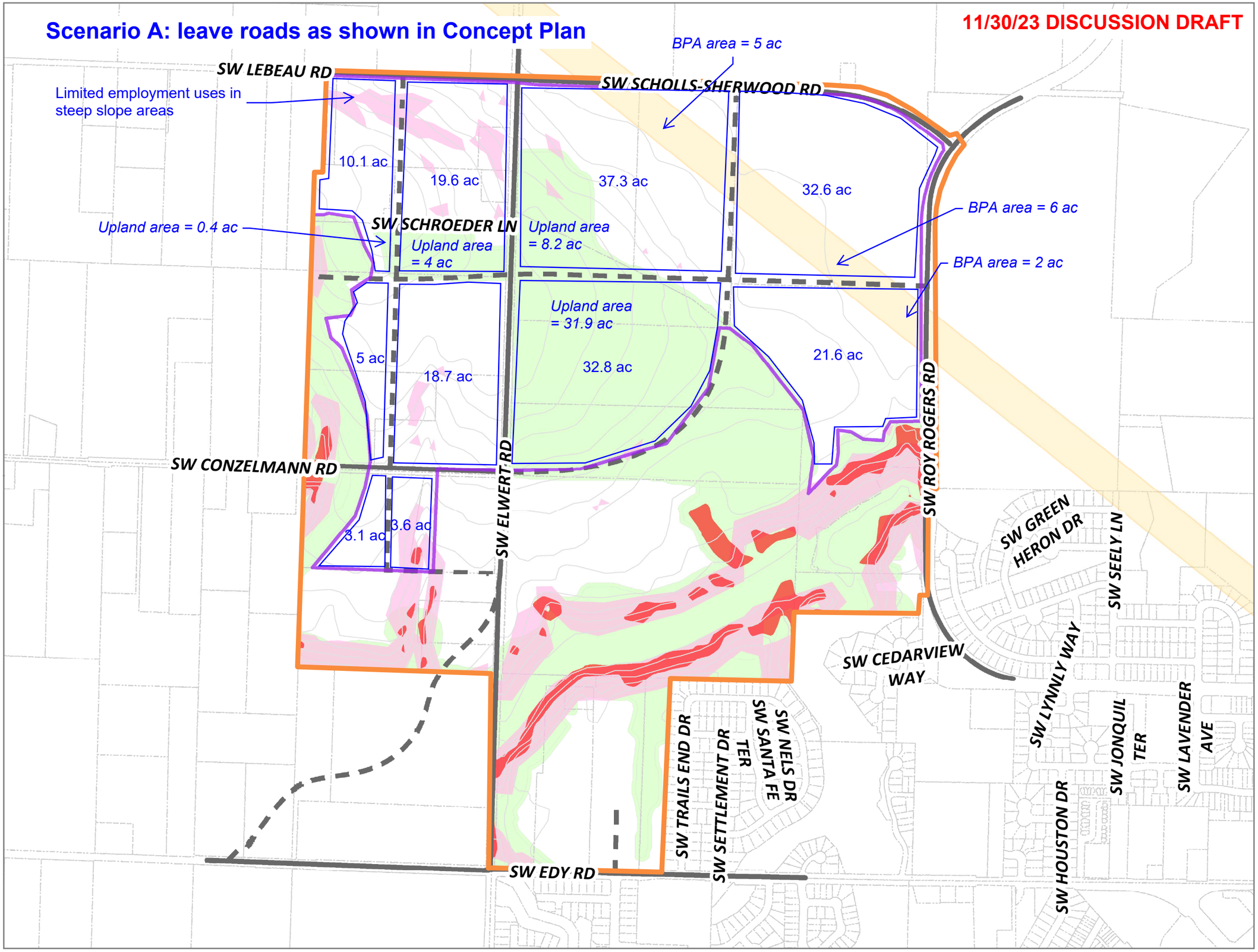
Scenario A: leave roads as shown in Concept Plan

11/30/23 DISCUSSION DRAFT



SHERWOOD WEST CONCEPT PLAN MIXED EMPLOYMENT

Sherwood, Oregon

LEGEND

- North District
- Tax Lots
- Mixed Employment
- BPA Transmission Corridor
- 10ft Contours
- 10%-25% Slope
- Over 25% Slope
- Title 13 Riparian/Upland

Roadways

- Existing
- Conceptual

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Emp_50_acres

Map Created By: BJV
Project No: 2230332.00

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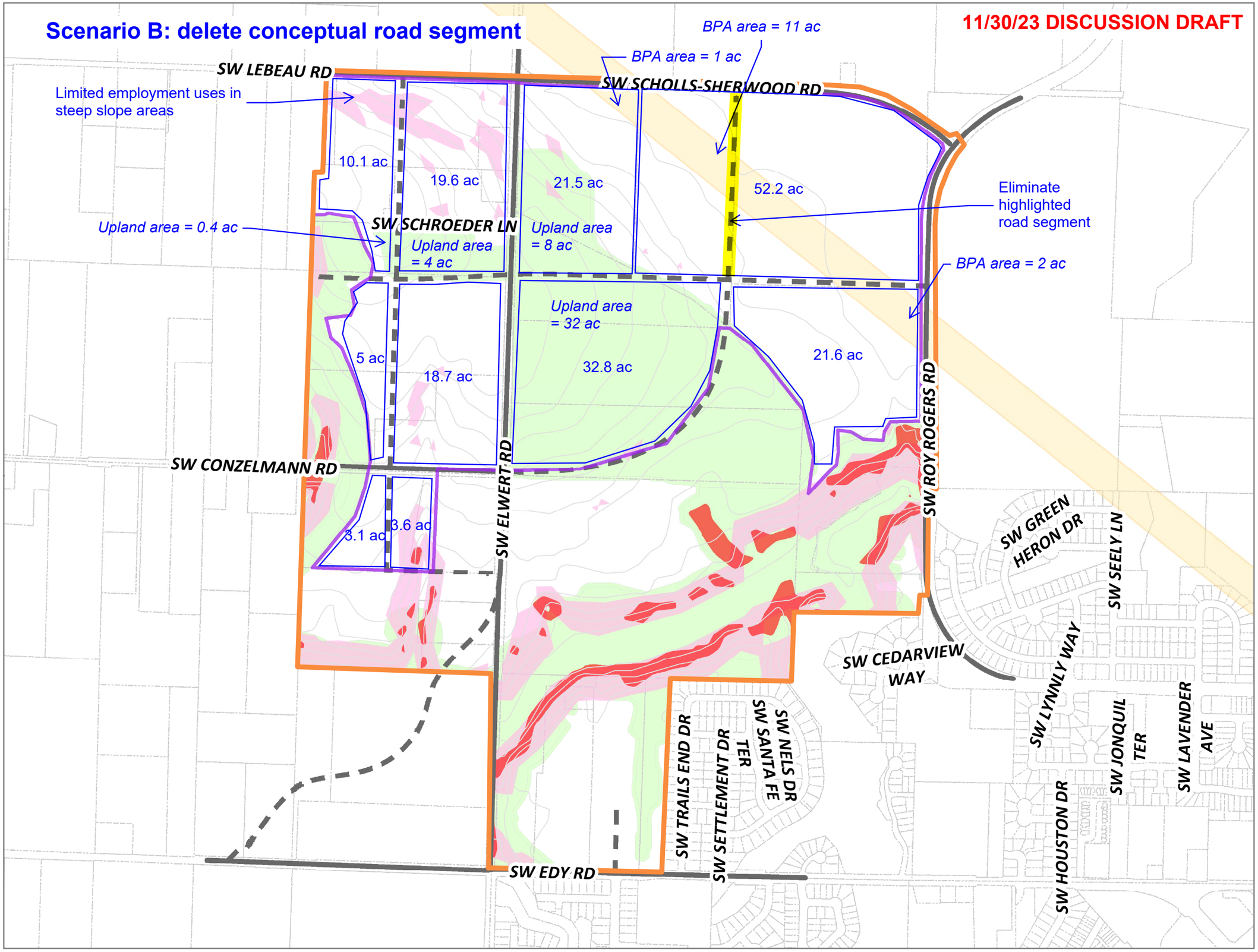
Scenario B: delete conceptual road segment

11/30/23 DISCUSSION DRAFT



SHERWOOD WEST CONCEPT PLAN
MIXED EMPLOYMENT

Sherwood, Oregon

LEGEND

- North District
- Tax Lots
- Mixed Employment
- BPA Transmission Corridor
- 10ft Contours
- 10%-25% Slope
- Over 25% Slope
- Title 13 Riparian/Upland

Roadways

- Existing
- Conceptual

0 300 600 1,200 Feet

N

1 inch = 600 feet

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Emp_50_acres

Map Created By: BJV
Project No: 2230332.00

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Scenario C: reconsider roadways

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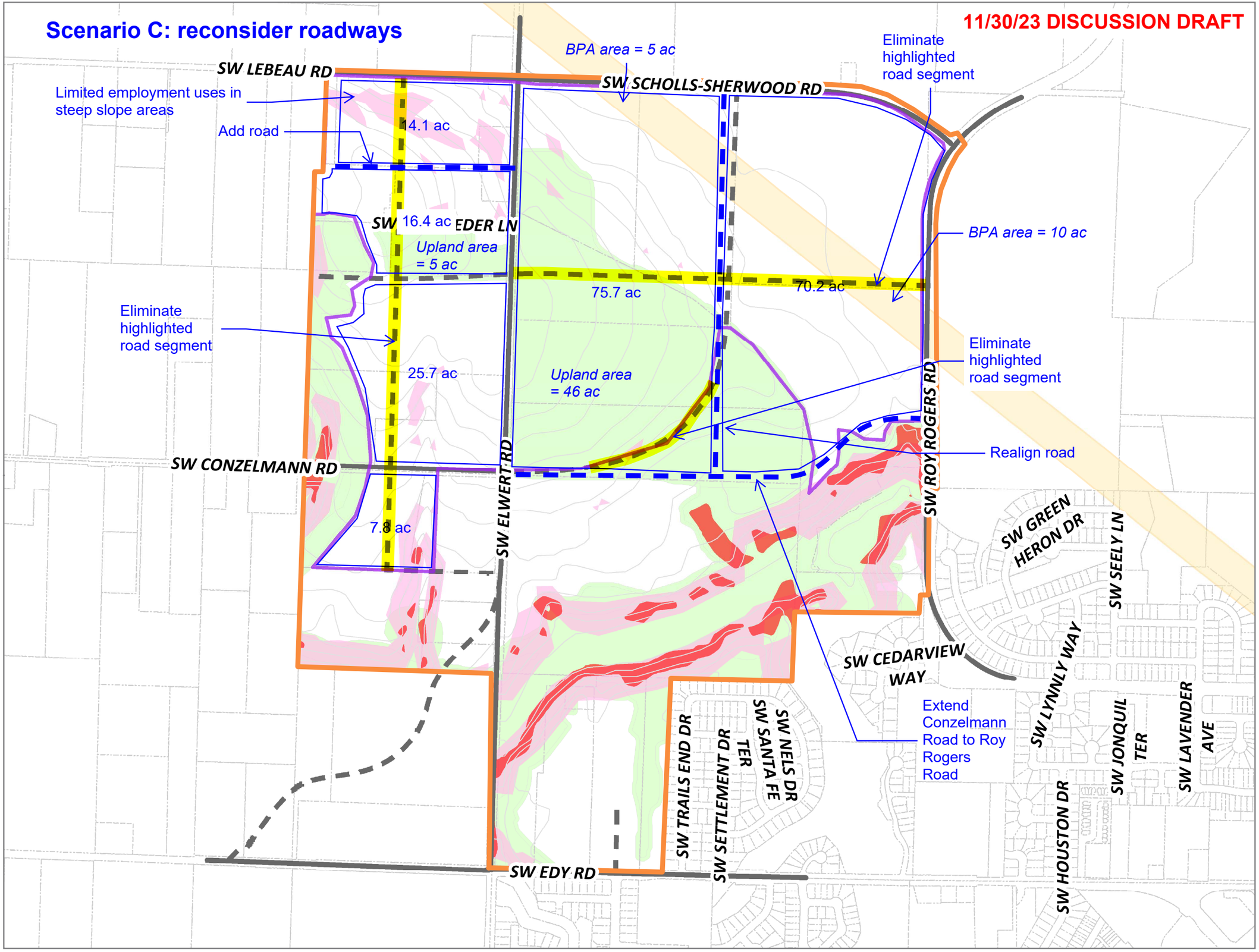

LEGEND

- North District
- Tax Lots
- Mixed Employment
- BPA Transmission Corridor
- 10ft Contours
- 10%-25% Slope
- Over 25% Slope
- Title 13 Riparian/Upland

Roadways

- Existing
- Conceptual

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Emp_50_acres

Map Created By: BJV
Project No: 2230332.00

SHERWOOD WEST CONCEPT PLAN
MIXED EMPLOYMENT

Sherwood, Oregon

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Scenario D: reconsider roadways

11/30/23 DISCUSSION DRAFT

SW LEBEAU RD

SW SCHOLLS-SHERWOOD RD

SW ELWERT RD

SW ROY ROGERS RD

SW CONZELMANN RD

SW EDY RD

SW TRAILS END DR

SW SETTLEMENT DR

SW NELS DR

SW SANTA FE TER

SW CEDARVIEW WAY

SW GREEN HERON DR

SW SEELY LN

SW LYNNLY WAY

SW JONQUIL TER

SW LAVENDER AVE

SW HOUSTON DR

Limited employment uses in steep slope areas

Add road

14.1 ac

16.4 ac

Upland area = 5 ac

71.6 ac

58 ac

25.7 ac

7.8 ac

Upland area = 44 ac

BPA area = 5 ac

BPA area = 10 ac

Eliminate highlighted road segment

Eliminate highlighted road segment

Realign road

Eliminate highlighted road segment

Extend Conzelmann Road to Roy Rogers Road

LEGEND

- North District
- Tax Lots
- Mixed Employment
- BPA Transmission Corridor
- 10ft Contours
- 10%-25% Slope
- Over 25% Slope
- Title 13 Riparian/Upland

Roadways

- Existing
- Conceptual

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Emp_50_acres

Map Created By: BJV
Project No: 2230332.00

SHERWOOD WEST CONCEPT PLAN
MIXED EMPLOYMENT

Sherwood, Oregon

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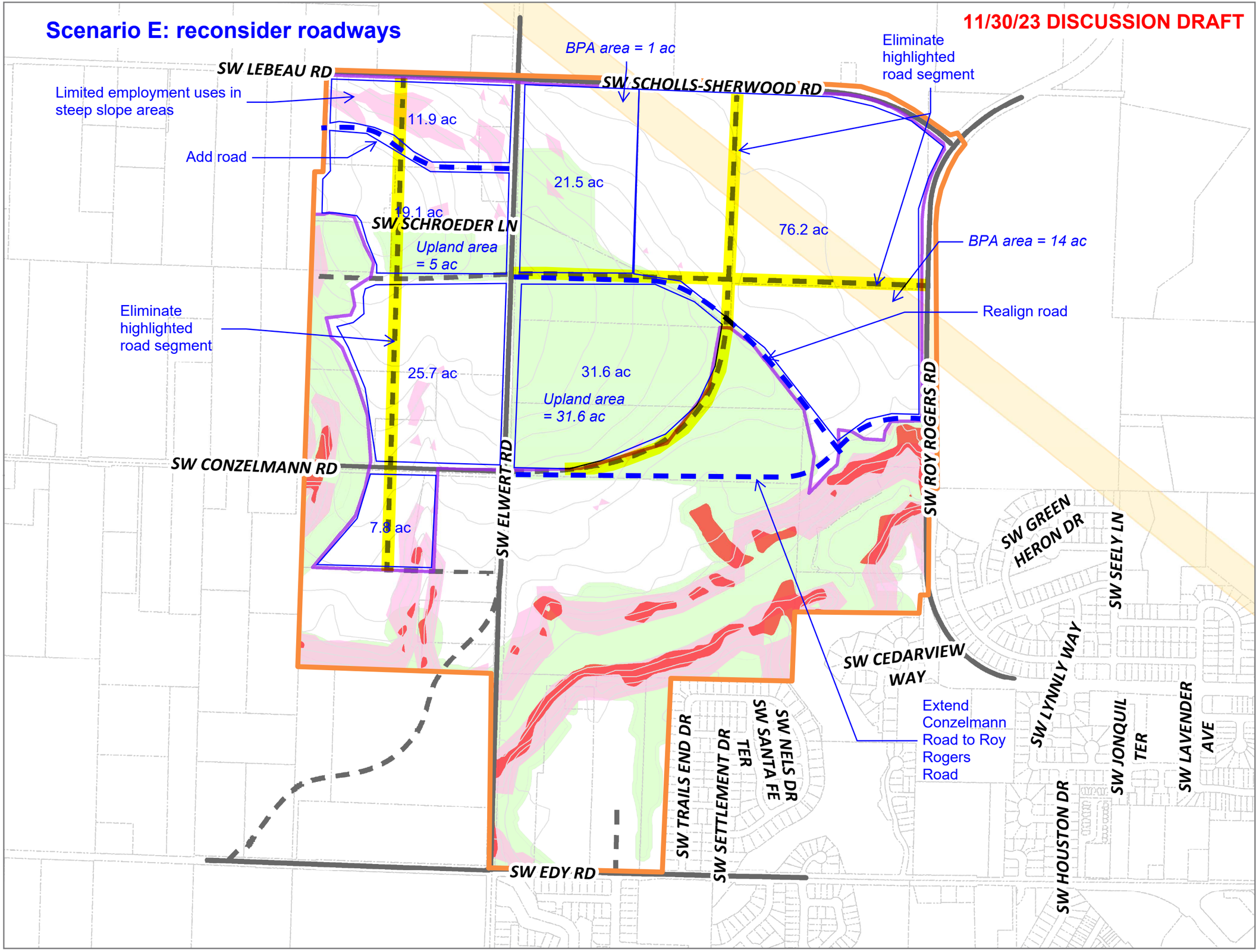
Scenario E: reconsider roadways

11/30/23 DISCUSSION DRAFT



SHERWOOD WEST CONCEPT PLAN
MIXED EMPLOYMENT

Sherwood, Oregon

LEGEND

- North District
- Tax Lots
- Mixed Employment
- BPA Transmission Corridor
- 10ft Contours
- 10%-25% Slope
- Over 25% Slope
- Title 13 Riparian/Upland

Roadways

- Existing
- Conceptual

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Emp_50_acres

Map Created By: BJV
Project No: 2230332.00

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Scenario F: reconsider roadways

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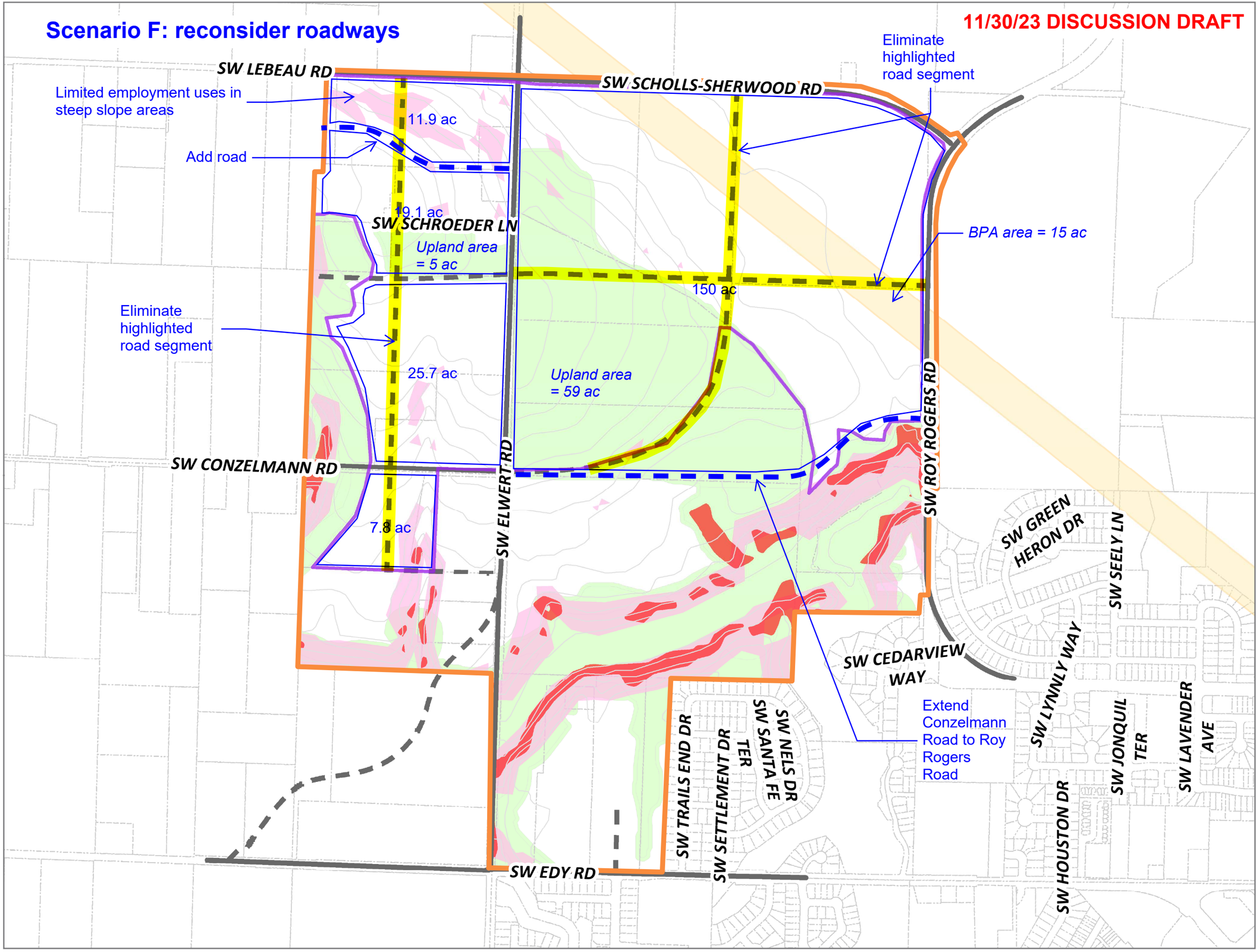

SHERWOOD WEST CONCEPT PLAN
MIXED EMPLOYMENT

Sherwood, Oregon

LEGEND

- North District
- Tax Lots
- Mixed Employment
- BPA Transmission Corridor
- 10ft Contours
- 10%-25% Slope
- Over 25% Slope
- Title 13 Riparian/Upland

Roadways

- Existing
- Conceptual

0 300 600 1,200 Feet

1 inch = 600 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, October 2023

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 11/30/2023
File: Emp_50_acres

Map Created By: BJV
Project No: 2230332.00

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APPENDIX 3

NOTES FROM JANUARY 31, 2024 TECHNICAL ADVISORY COMMITTEE MEETING

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MEETING MINUTES

PROJECT NUMBER:	2230332.00	ISSUE DATE:	February 7, 2024
PROJECT NAME:	Sherwood West Concept Plan Refinement		

RECORDED BY:	Brian Varricchione – Project Manager
TO:	FILE
PRESENT:	Bruce Coleman, Craig Sheldon, Jason Waters, Eric Rutledge – City of Sherwood Chris Faulkner – Clean Water Services (CWS) Glen Bolen – Oregon Department of Transportation (ODOT) Glen Hamburg – Metro CJ Doxsee, Suzanne Savin – Washington County Mike Weston – City of King City Hap English, Chris Lu, Tod Shattuck – Portland General Electric (PGE) Preston Korst – Home Building Association (HBA) Brian Varricchione, Gabriela Frask, Janet Jones, Brent Nielsen – Mackenzie
SUBJECT:	**Technical Advisory Committee (TAC) Meeting #2 (January 31, 2024)**

INFORMATION ITEMS

1. City of Sherwood (Eric Rutledge) provided an update on the project status.
   A. Staff has had numerous work sessions with the City Council to discuss Sherwood West and whether Council is interested in applying to Metro for the urban reserve to be added to the urban growth boundary (UGB). City Council has determined they want to include the entirety of Sherwood West in the UGB amendment request.
   B. The purpose of the current Concept Plan refinement project is to refine concept area and prepare cost estimates and revenue estimates.
   C. City Council will review the materials in March and submit the formal request to Metro in early April.
   D. The staff is seeking letters of support from agencies and service provider partners and is coordinating with Washington County.
2. Mackenzie (Brian Varricchione) provided a quick recap of Mackenzie's scope of work, which is to examine opportunities for large lots in the Mixed Employment area, refine the transportation network and utility corridors in the North District, prepare infrastructure cost estimates for the North District, and estimate regional trail costs throughout Sherwood West.
3. Mackenzie (Brian Varricchione) discussed the existing conditions graphics with the TAC.
   A. The existing conditions maps (Attachment B) have had minor updates since the 12/6/2023 TAC meeting.
   B. The existing parcels are smaller west of SW Elwert Road and larger east of SW Elwert Road. Floodplain and riparian corridors are outside the Mixed Employment area. Portions of the Mixed Employment area have identified Title 13 upland habitat. Due to the existing parcel

sizes and gentler slopes, the area east of SW Elwert Road lends itself more easily to large employment sites.

C. The map indicating property Owner interest in selling or developing for employment lands is based solely on Owner responses to the City's written survey, and may not portray all owner sentiment since many Owners did not respond to the City's mailing. City of Sherwood (Eric Rutledge) thinks there may be other interested Owners.

4. Mackenzie (Brian Varricchione, Brent Nielsen, and Janet Jones) shared maps regarding potential transportation, lot, and utility layouts.

   A. The two scenarios are meant to convey a range of potential options for the future, subject to additional revision during the comprehensive planning process if Metro approves the UGB expansion. Mackenzie is not asking the TAC members to pick one scenario over another.

   B. Scenario A depicts two east-west collectors connecting to SW Roy Rogers Road, with resulting parcel sizes in the Mixed Employment area ranging from 4 acres to 75 acres.

   C. Scenario B depicts a single east-west collector connecting to SW Roy Rogers Road, with resulting parcel sizes in the Mixed Employment area ranging from 12 acres to 95 acres.

   D. In both scenarios:

      I. The potential large lots are east of SW Elwert Road, with smaller rectangular lots west of SW Elwert Road.

      II. Roadway spacing and site access points conform to the spacing standards for arterials (on SW Elwert Road, SW Roy Rogers Road, and SW Scholls-Sherwood Road) and collectors (for the two proposed collectors). Access is prioritized on collectors, not arterials.

      III. The water main design is a series of loops extending from the City's existing water system.

      IV. Sanitary sewer service relies on a Clean Water Services pump station near Chicken Creek, which would pump to existing infrastructure in Highway 99W.

      V. Regional storm facilities are proposed for public right-of-way and private stormwater runoff.

5. City of Sherwood (Bruce Coleman) indicated that Scenario B may create more flexibility and lesser costs with roads. He likes the idea of larger lots on the east for large employers and smaller lots on the west side of SW Elwert Road, which could serve as incubator space. He inquired whether energy and technology infrastructure would be considered.

   A. Mackenzie (Brent Nielsen) noted that PGE provided feedback requesting room for a 5-acre substation, but they do not want to call out a specific location in order to maintain flexibility. Mackenzie (Brian Varricchione) indicated that PGE has said some high-tech users want redundant power which can mean from two power sources or from two substations.

   B. Mackenzie (Brian Varricchione) stated that coordination with NW Natural and communications providers is beyond the current scope.

C. Mackenzie (Brent Nielsen) commented that the utility sizes are intended for typical light industrial users and may need to be upsized for some high-tech users with high water demands.

6. Metro (Glen Hamburg) expressed a general preference for Scenario B, and inquired what the City's thoughts were regarding designating 50 acres of Title 13 upland habitat as mixed employment.

   A. City of Sherwood (Eric Rutledge) stated the City is supportive of upland and riparian habitat, and intends to look at upland habitat area more closely during comprehensive planning to comply with Metro standards. He noted the option to go through a detailed study to analyze Title 13 upland habitat and said he could envision a campus-type area that has protected habitat and trails and that preserves existing trees.

   B. Metro (Glen Hamburg) said the City's goal of protecting trees is good but cautioned the City about assuming the Title 13 area could be utilized as Mixed Employment. The City can embark on economic, social, environmental,. and Energy (ESEE) analysis but cannot prejudge the outcome. He appreciates the creativity with Scenario B and having the road around the Title 13 area.

7. Washington County (CJ Doxsee) shared several comments.

   A. Washington County is currently updating its significant natural resource regulations, which would apply prior to annexation.

   B. Arterial streets (SW Elwert Road, SW Scholls-Sherwood Road, SW Roy Rogers Road) should only have collector access, not neighborhood routes or local streets. The County encourages site access from collectors instead of arterials, which could be challenging around the BPA transmission corridor.

   C. The unit costs for improvements low for road widening (he suggested $2,000/linear foot) and intersection improvements (he suggested $1.5 million).

8. ODOT (Glen Bolen) explained that ODOT does not want to overload Highway 99W. He also observed that the City's economic opportunities analysis identified base employment and raised concerns about flexibility, noting it may lead to conflicts between abutting uses.

   A. City of Sherwood (Eric Rutledge) noted that the flexibility in this study is geared toward lot sizes, not necessarily to uses.

   B. City of Sherwood (Bruce Coleman) agreed that the flexibility should be geared toward lot sizes and building types and sizes, stating that the City is being strategic about uses. He observed that the City's Employment Industrial zone has been successful in attracting employers with quality jobs.

9. Mackenzie (Janet Jones) commented on the block length standards and how those interact with large parcel needs. Mackenzie recommends adequate trail circulation through the area to promote bicycling and pedestrians, but specific local trail locations are not illustrated.

   A. City of Sherwood (Eric Rutledge) liked the idea but indicated the City would likely get some developer pushback.

10. Mackenzie (Brian Varricchione) discussed the schedule, noting the April 5 deadline for the City to apply to Metro for the UGB amendment.

Every effort has been made to accurately record this meeting. If any errors or omissions are noted, please provide written response within five days of receipt.

Enclosure(s): Attachment A – Meeting Agenda
Attachment B – Meeting Materials

c: Present

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MEETING AGENDA

PROJECT NUMBER:	2230332.00	**TODAY'S DATE:**	January 25, 2024
PROJECT NAME:	Sherwood West Concept Plan Refinement		

MEETING DATE:	January 31, 2024
MEETING TIME:	1:30 PM – 3:00 PM
MEETING PLACE:	Virtual
PARTICIPANTS:	Bruce Coleman, Craig Sheldon, Jason Waters, Kristen Switzer, Eric Rutledge, Joy Chang – City of Sherwood Chris Faulkner – Clean Water Services (CWS) Glen Bolen – Oregon Department of Transportation (ODOT) Glen Hamburg – Metro Jessica Pelz, Matt Craigie, Theresa Cherniak, CJ Doxsee, Suzanne Savin – Washington County Eva Kristofik – Friends of Tualatin River National Wildlife Refuge Mike Weston – City of King City Preston Korst – Home Building Association (HBA) Ty Darby – Tualatin Valley Fire & Rescue (TVF&R) David Underwood, Chris Lu – Portland General Electric (PGE) Darin Smith – Bonneville Power Administration (BPA) Brian Varricchione, Janet Jones, Brent Nielsen – Mackenzie
FACILITATORS:	Eric Rutledge, City of Sherwood Brian Varricchione, Mackenzie

SUBJECT: Technical Advisory Committee (TAC) Meeting #2

I. INTRODUCTIONS — Eric: 5 minutes

- Names and roles

II. UPDATES FROM CITY OF SHERWOOD — Eric: 10 minutes

III. PROJECT RECAP AND SCOPE OF WORK — Brian: 5 minutes

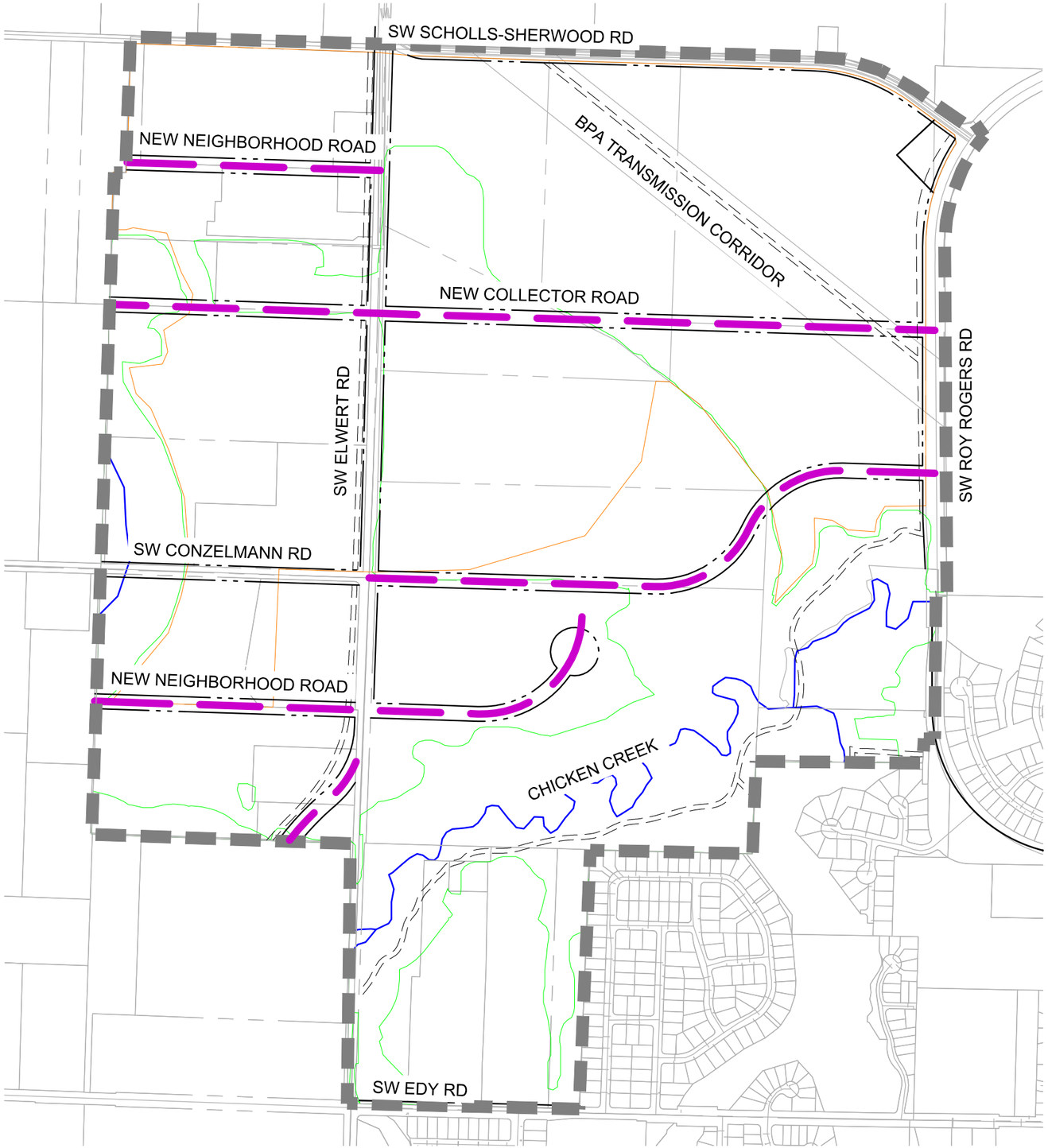
IV. TASK 2 PRESENTATION/WORK SESSION — Brian/Brent/Janet: 60 minutes

- Consultant presentation on road and utility layouts and potential development sites
- TAC Discussion

V. NEXT STEPS & SCHEDULE — Eric/Brian: 5 minutes

c: Participants

1/25/24 DISCUSSION DRAFT



LEGEND

- NORTH DISTRICT BOUNDARY
- PROPOSED ROAD ALIGNMENT
- PROPOSED ROAD R.O.W.
- REGIONAL TRAIL PER CONCEPT PLAN
- TITLE 13 LANDS BOUNDARY
- EXISTING TAX LOT
- MIXED EMPLOYMENT AREA BOUNDARY

SHERWOOD WEST - NORTH DISTRICT
SCENARIO A STREET PLAN

JANUARY 25, 2024
Job # 2230332.00

SCALE: 1"=600'
0 300 600

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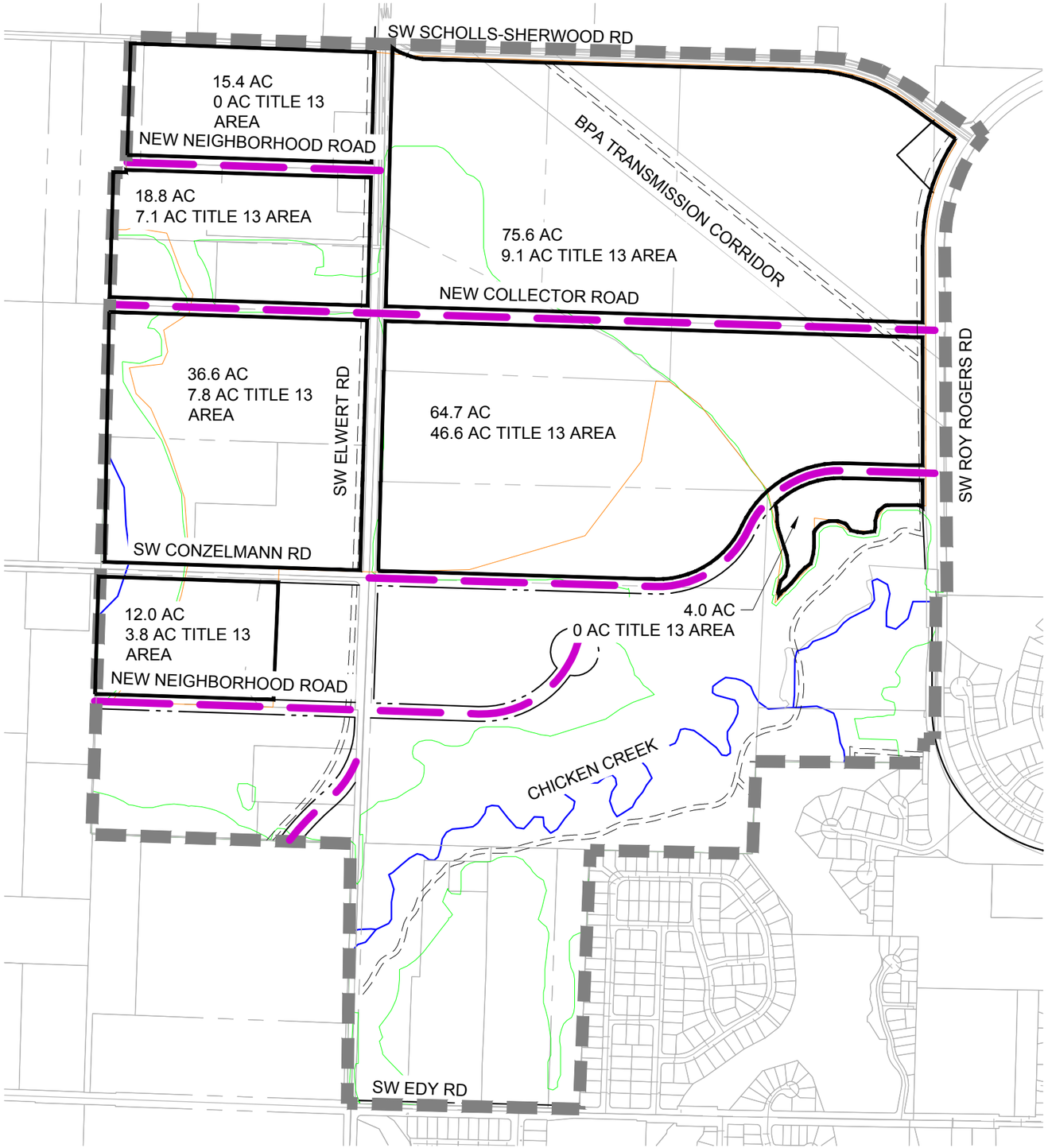

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SHERWOOD WEST - NORTH DISTRICT

SCENARIO A STREET PLAN - WITH DEVELOPMENT AREAS

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Job # 2230332.00

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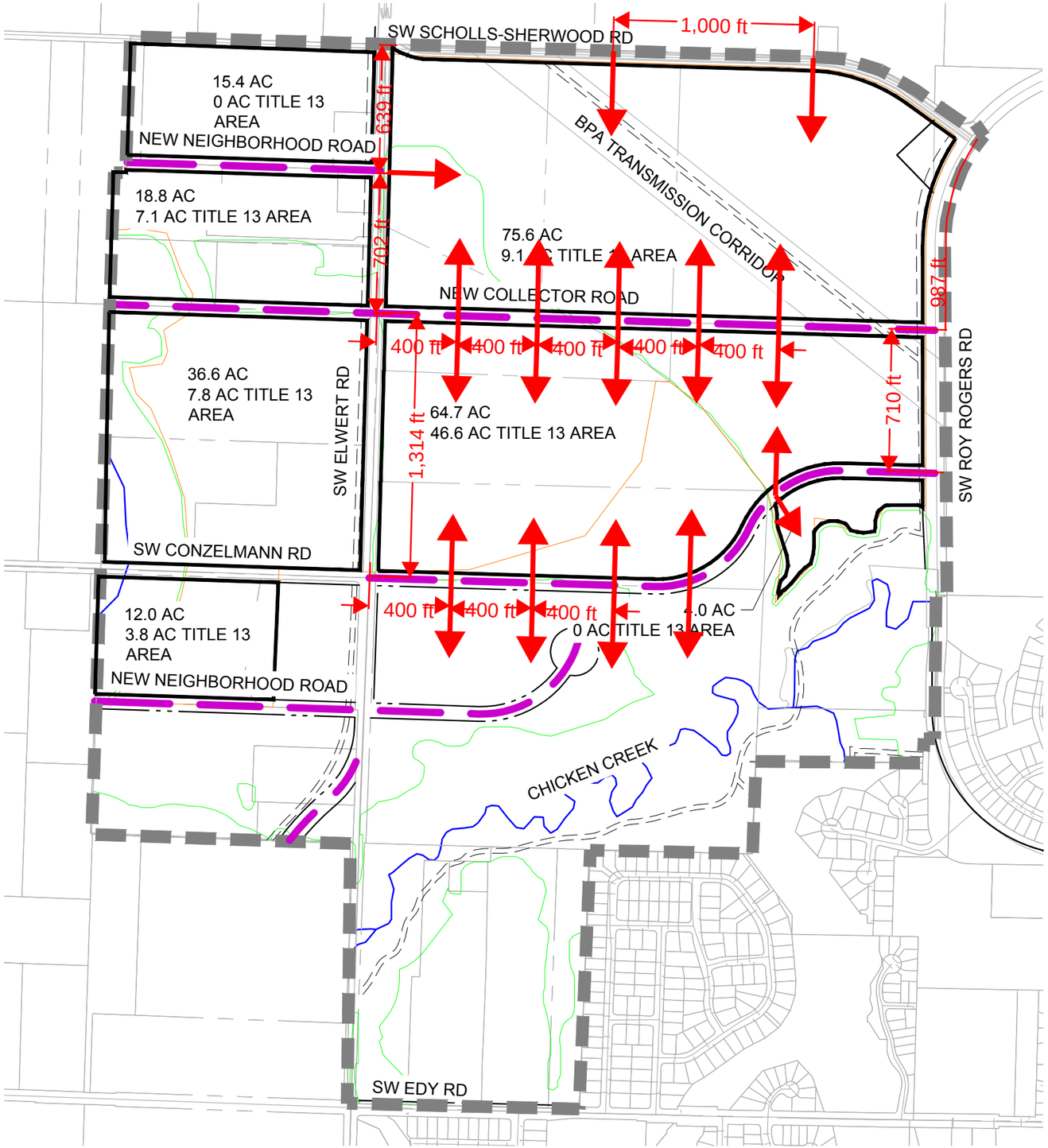

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Street/Driveway Spacing Standards

Arterials - 600' minimum, 1,000' maximum
Collectors - 100' minimum, 400' maximum

Potential site access

SHERWOOD WEST - NORTH DISTRICT

SCENARIO A STREET PLAN - WITH INTERSECTION SPACING

JANUARY 25, 2024
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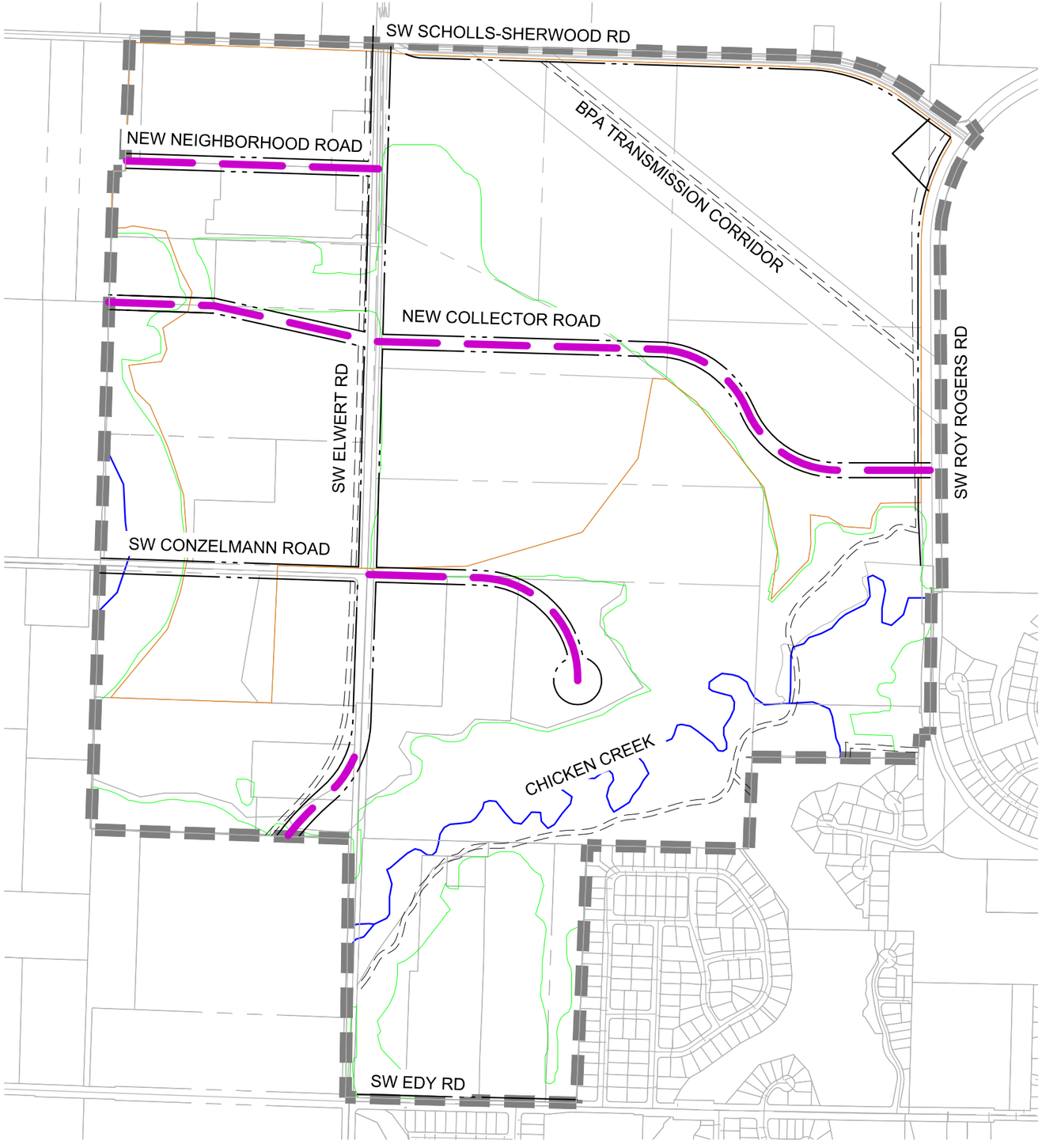

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SHERWOOD WEST - NORTH DISTRICT
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JANUARY 25, 2024
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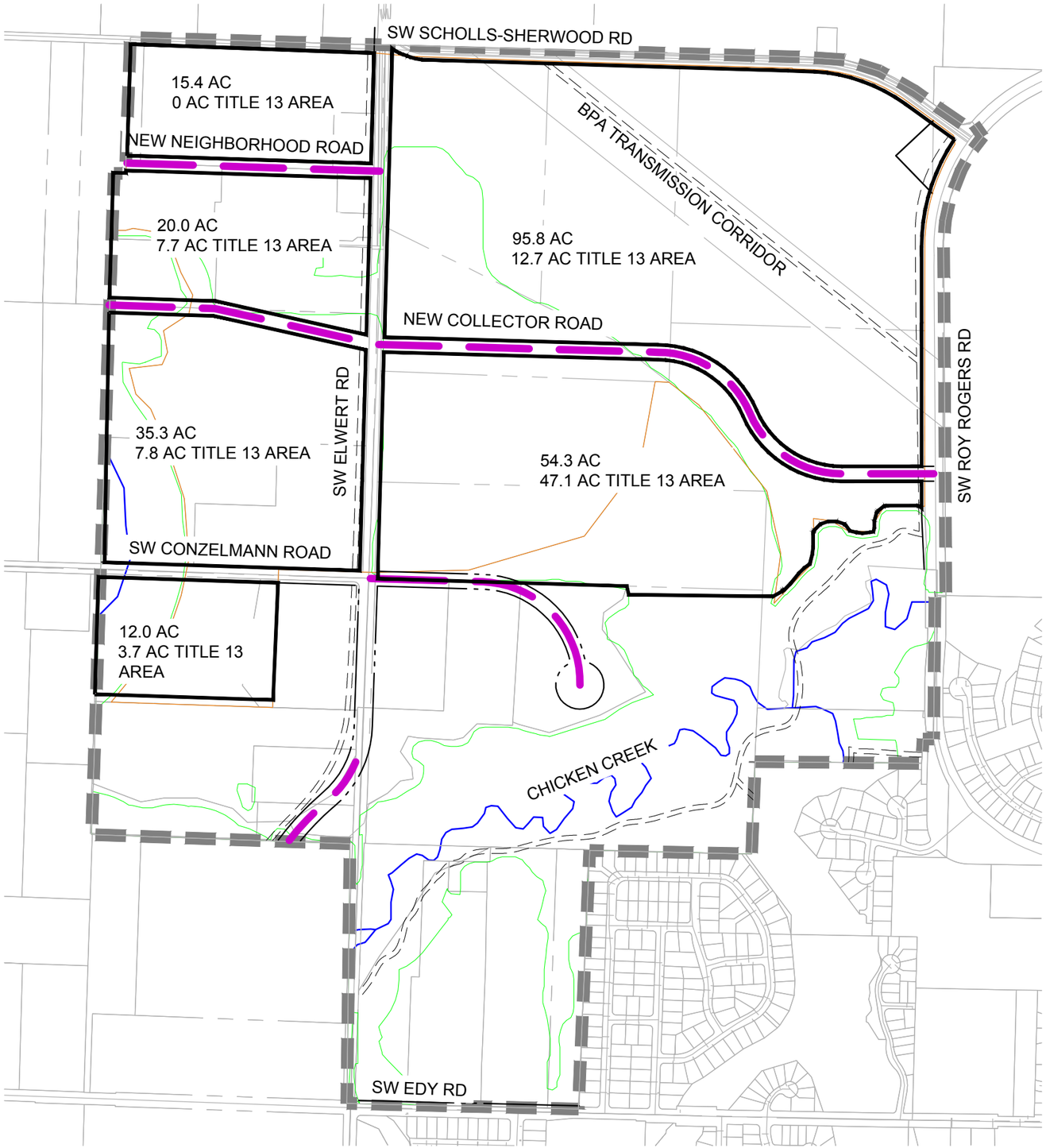

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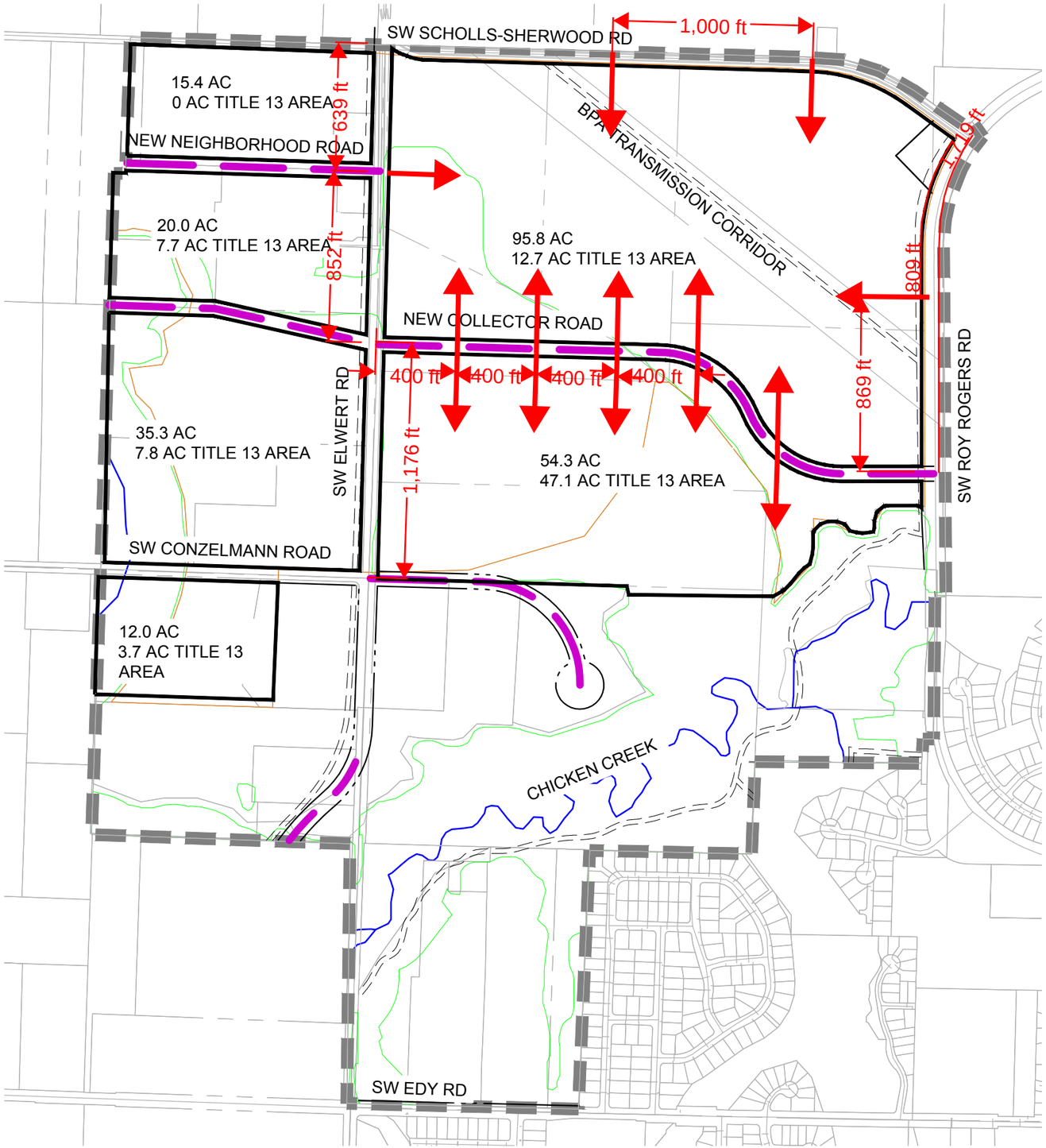

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SHERWOOD WEST - NORTH DISTRICT

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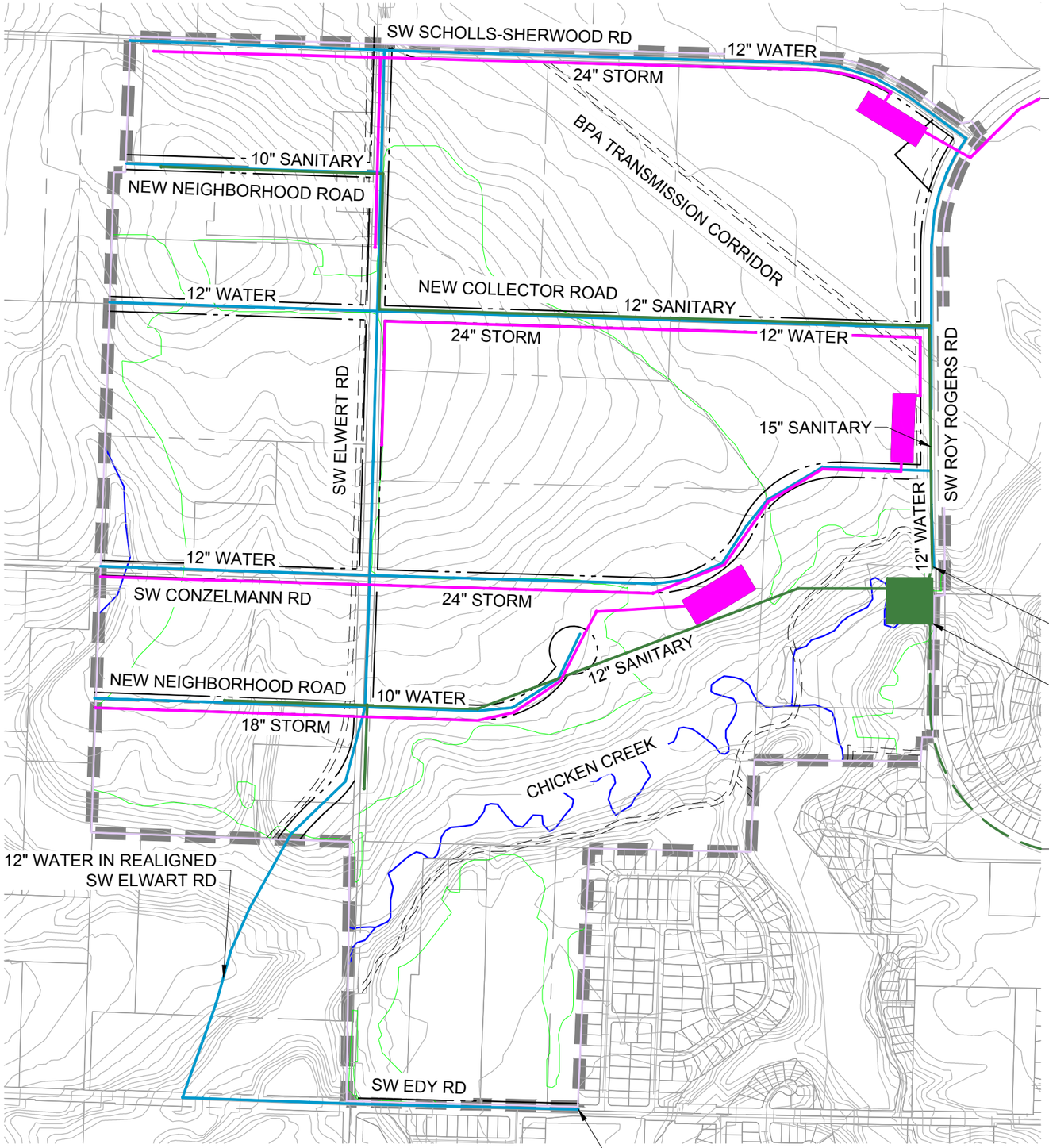

STORM MAIN TO CHICKEN CREEK

LEGEND

- NORTH DISTRICT BOUNDARY
- WATER
- SANITARY
- STORM
- EXISTING 5' CONTOURS
- TITLE 13 LANDS BOUNDARY
- EXISTING LAX LOT
- STORM POND

CONNECT TO EXISTING WATER

SANITARY PUMP STATION

24" SANITARY FORCEMAIN TO CWS TRUNK LINE

CONNECT TO EXISTING WATER

SHERWOOD WEST - NORTH DISTRICT
SCENARIO A UTILITY LAYOUT

JANUARY 25, 2024
Job # 2230332.00

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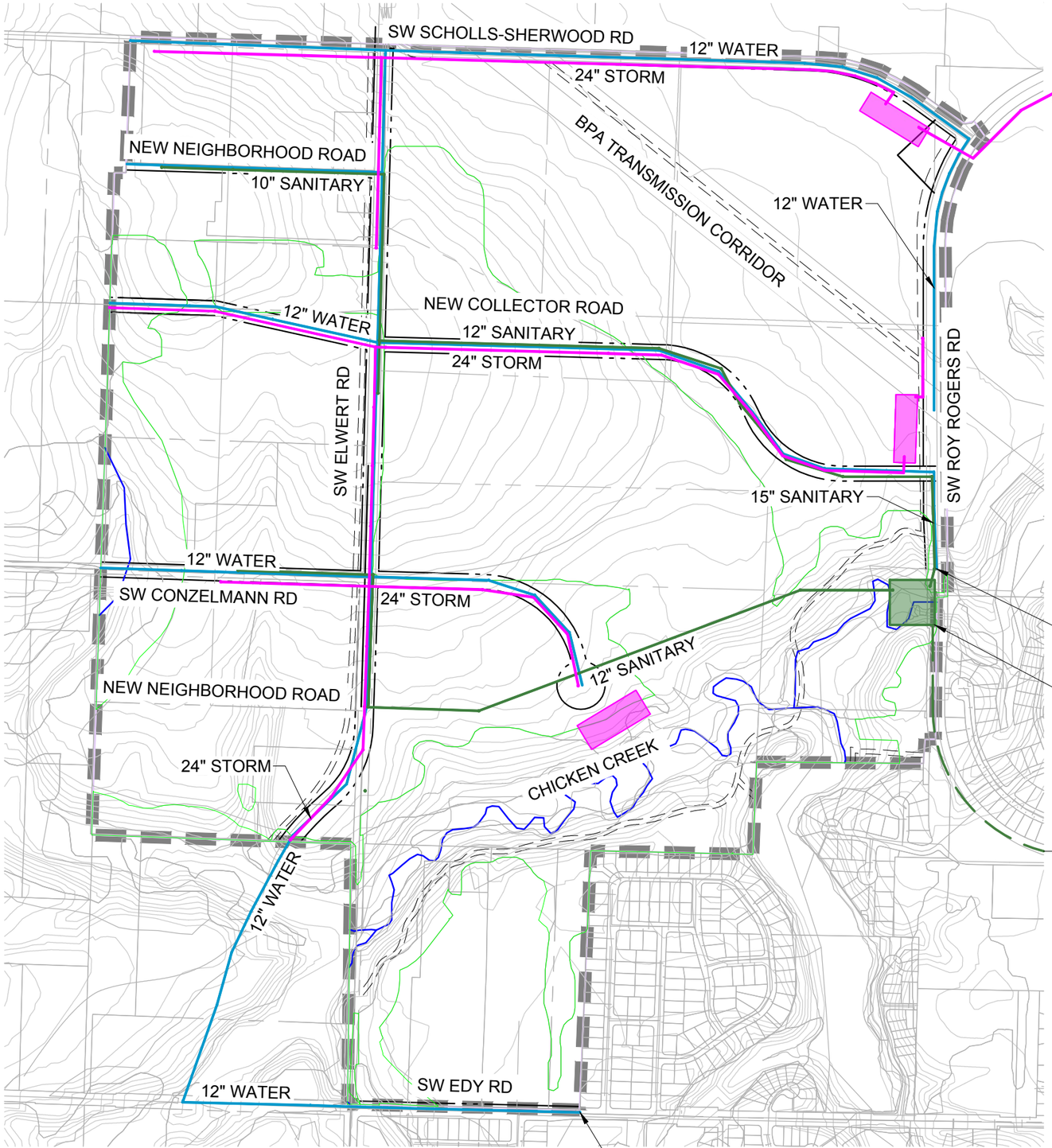

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- SANITARY
- STORM
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- STORM POND

SHERWOOD WEST
SCENARIO B UTILITY LAYOUT

JANUARY 30, 2024
Job # 2230332.00

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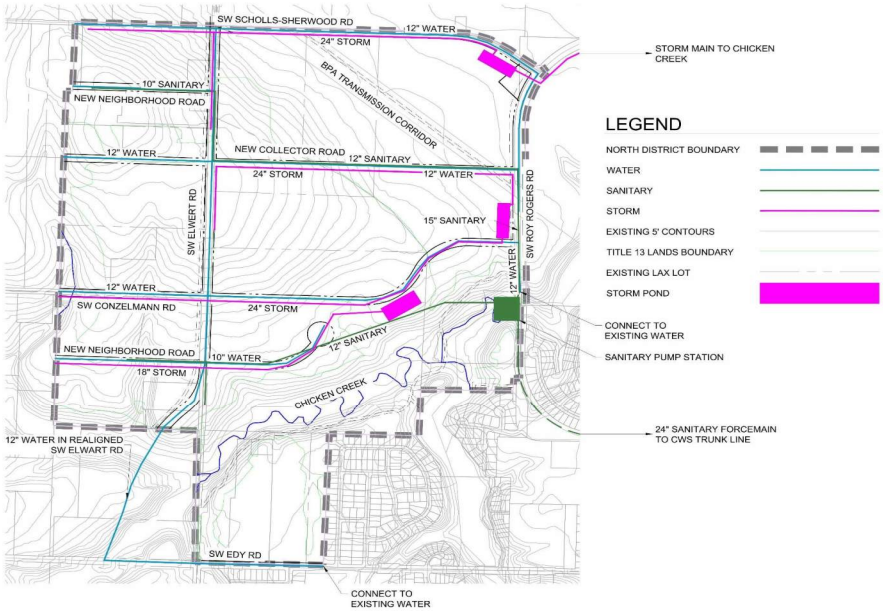
Sherwood West - North District

City of Sherwood
Public Infrastructure Summary



Water Distribution	Sanitary Sewer	Storm Drainage
Existing Water Infrastructure	*Existing Sewer Infrastructure*	*Existing Storm Infrastructure*
Nearest Water Location: **Eastern and Southern boundaries of Sherwood West**	Nearest Sewer Location: **OR-99W CWS Trunk Line**	Nearest Storm Location: **Chicken Creek**
Water Provider: **City of Sherwood**	Sewer Provider: **City of Sherwood**	Storm Provider: **City of Sherwood**
Water Service Area: **380 West Zone**	Sewer Service Basin: **Cedar Creek Basin**	Storm System Outfall: **Chicken Creek**
Distance to Site: **Adjacent to East and South**	Distance to Site: **18,000 LF**	Distance to Site: **Adjacent to South**

Proposed Water Improvements

Pipe Size	Pipe Length	Unit Cost	Total Cost
10"	2,700 LF	$350	$ 945,000
12"	13,100 LF	$400	$ 5,240,000
* 12"	11,400 LF	$400	$ 4,560,000
Total Water Improvements Cost:			**$ 10,745,000**

Proposed Sewer Improvements

Pipe Size	Pipe Length	Unit Cost	Total Cost
10"	3,000 LF	$275	$ 825,000
12"	5,500 LF	$350	$ 1,925,000
* 15"	1,200 LF	$375	$ 450,000
* 24" FM	18,000 LF	$350	$ 6,300,000
* Pump Station	10.5 MGD	$825,000	$ 8,662,500
Total Sanitary Sewer Improvements Cost:			**$18,162,500**

Proposed Storm Improvements

Pipe Size	Pipe Length	Unit Cost	Total Cost
18"	3,200 LF	$400	$ 1,280,000
24"	12,300 LF	$425	$ 5,227,500
30"	2,200 LF	$500	$ 1,100,000
Pond:	9.5 ac	$350,000	$ 3,325,000
Total Storm Improvements Cost:			**$ 10,932,500**

Other Water Notes:
* Indicates priority improvements to be constructed with or prior to initial development.

Water Design: 12 months
Water Permit / Construction: 18 months

Other Sewer Notes:
Forcemain to OR-99W 42" gravity main is required per CWS East Basin master plan.
* Indicates priority improvements to be constructed with or prior to initial development.

Sewer Design: 18 months
Sewer Permit / Construction: 24 months

Other Storm Notes:
Majority of area drains to Chicken Creek. Small portion in the north drains to the Tualatin River.
* Indicates priority improvements to be constructed with or prior to initial development.

Storm Design: 12 months
Storm Permit / Construction: 18 months

Proposed Transportation Improvements

Description	Size	Length	Unit Cost	Total Cost	Design	Permitting & Construction
Widen Scholls-Sherwood Road	1 Lane 1 Frontage	4,400 ft	$800	$ 3,520,000	6 months	12 months
Northern collector street	2 Lanes Full Street	4,100 ft	$1,600	$ 6,560,000	12 months	12 months
Southern collector street	2 Lanes Full Street	4,400 ft	$1,600	$ 7,040,000	12 months	18 months
Neighborhood Road	2 Lanes Full Street	2,600 ft	$1,600	$ 4,160,000	9 months	9 months
NW Collector street	2 Lanes Full Street	1,300 ft	$1,600	$ 2,080,000	6 months	9 months
Elwert Road southern realignment	2 Lanes Full Street	750 ft	$2,000	$ 1,500,000	6 months	12 months
Elwert Road removal to Edy Rd	2 Lanes Removal	2,000 ft	$500	$ 1,000,000	6 months	12 months
Widen Elwert Road	1 Lane 2 Frontage	3,400 ft	$1,000	$ 3,400,000	6 months	12 months
Widen Roy Rogers Road	1 Lane 1 Frontage	5,400 ft	$800	$ 4,320,000	12 months	12 months
Widen Edy Road	1 Lane	1,100 ft	$800	$ 880,000	9 months	12 months
Intersection Improvements (Signals)		5 EA	$750,000	$ 3,750,000	6 months	12 months
Total Transportation Improvement Cost:				**$33,580,000**		

Mackenize Project No. 2230332.00

Revision Date: 1/25/2024

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Sherwood West - Regional Trails

City of Sherwood
Public Infrastructure Summary

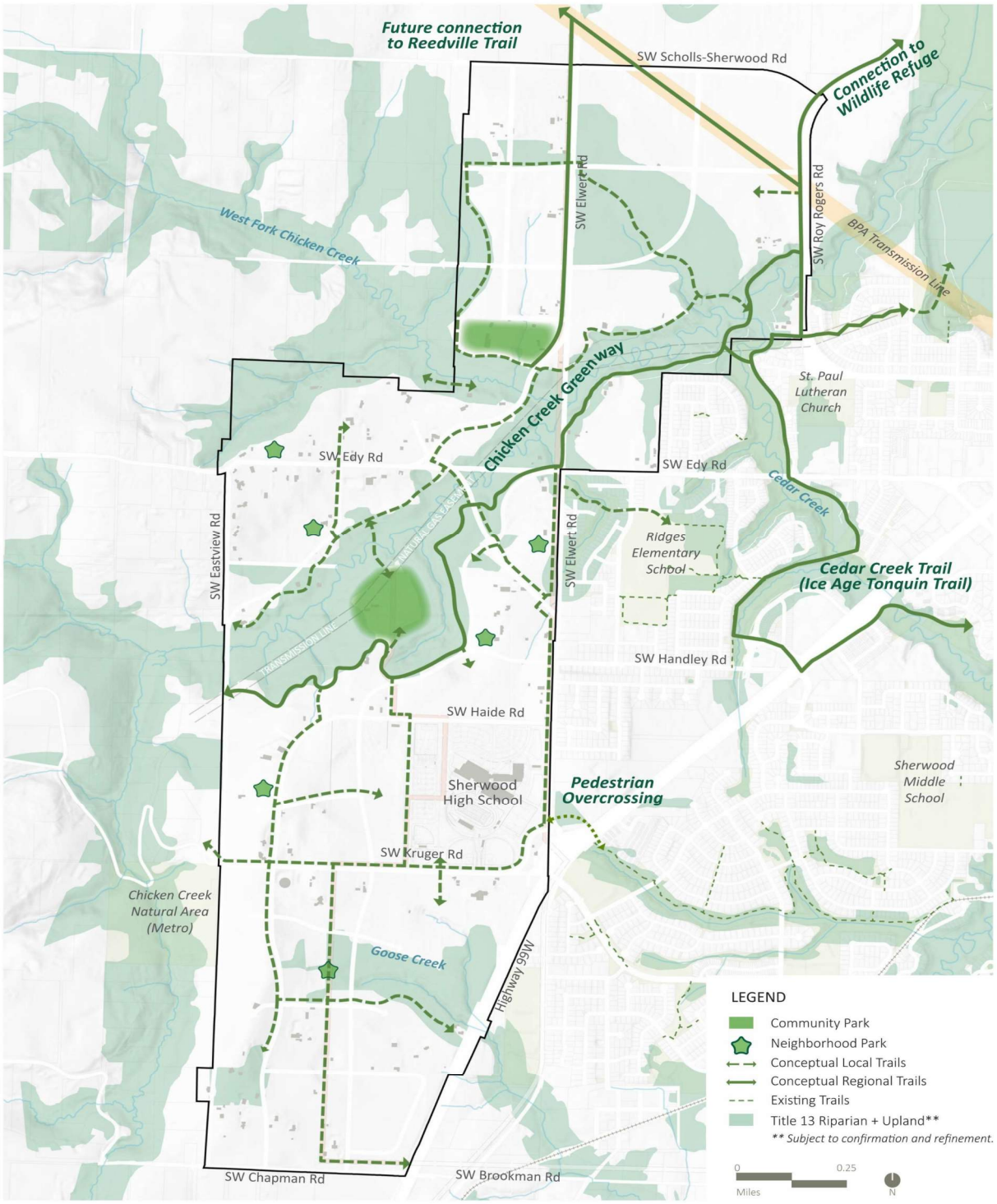

Image source: Sherwood West Concept Plan, July 2023

Proposed Regional Trail Improvements

Description	Length	Unit Cost	Total Cost	Design & Permitting	Construction
12' Regional Trail (North District)	12,600 ft	$400	$ 5,040,000	6 months	9 months
12' Regional Trail (West District)	7,700 ft	$400	$ 3,080,000	6 months	9 months
Bridge (West District)	1 EA	$300,000	$ 300,000	6 months	9 months
Boardwalk Segments (West District)	600 ft	$650	$ 390,000	6 months	9 months
Total Regional Trail Improvement Cost:			**$8,810,000**		

Mackenize Project No. 2230332.00

Revision Date: 1/25/2024

APPENDIX 4

NOTES FROM DECEMBER 7, 2023 PORTLAND GENERAL ELECTRIC MEETING

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MEETING MINUTES

PROJECT NUMBER:	2230332.00	ISSUE DATE:	December 20, 2023
PROJECT NAME:	Sherwood West Concept Plan Refinement		

RECORDED BY:	Brian Varricchione – Project Manager
TO:	FILE
PRESENT:	Erika Palmer, Bruce Coleman – City of Sherwood Theresa Haskins, David Underwood, Chris Lu – Portland General Electric (PGE) Brian Varricchione, Brent Nielsen – Mackenzie

SUBJECT: Portland General Electric Meeting (December 7, 2023)

ACTION ITEMS

1.1 City of Sherwood (Erika Palmer), by 12/8/2023, to forward the 12/6/2023 Technical Advisory Committee maps to PGE staff.

1.2 City of Sherwood (Erika Palmer), by 12/15/2023, to forward the land use map(s) and other relevant information from the Concept Plan to PGE staff.

1.3 PGE (David Underwood and Chris Lu), by 12/22/2023, to share information with the City regarding the general locations of existing infrastructure and guidance on utility corridor orientation (e.g., north-south, east-west, etc.).

INFORMATION ITEMS

1. The intent of the meeting was to gather information from PGE to help inform the conceptual transportation and utility corridors in the Sherwood West Concept Plan's North District, as well as to identify PGE's land needs for an electrical substation.

2. City staff noted that they wish to maintain maximum flexibility to accommodate future employers. They would prefer to have high-tech users rather than distribution centers.

3. PGE attendees noted the following:

   A. The Bonneville Power Administration's (BPA's) 500 kV line is not available for direct customer access.

   B. Their electrical designs are based on load density, which varies based on land use, so it will be helpful for PGE to know the anticipated land uses throughout the Sherwood West area, not just the North District.

   C. The City should consider whether they will allow data centers as not, as that affects power demand and location.

   D. Assume that electrical corridors follow roadways to the extent possible, to reduce the challenges associated with accessing off-road infrastructure. PGE lines would not need to parallel the BPA corridor.

E. PGE needs to know the locations of critical facilities (hospitals, pump stations, fire stations, etc.) to ensure they have reliable power.

F. Some users what redundant power. Depending on the user, this could either mean feeds from multiple substations or perhaps only feeds from different transformers within a single substation. The anticipated users would likely be satisfied with a single substation.

G. Transmission corridors would be 60 feet wide while distribution corridors would be 10 feet wide (e.g., in an easement). Underground power would be limited to local distribution, not transmission.

H. PGE would want to know about future transportation projects (e.g., road widening, road removal) prior to establishing the specific location of infrastructure.

I. Clean Water Services will need a pump station in the North District. PGE recommends that it be located near a substation but not directly adjacent (to minimize underground utility congestion and to ensure adequate room for future expansion).

J. The Concept Plan should plan for a minimum of 1 substation. PGE's preference for a substation site is flat, square/rectangular, free of wetlands, and at least 5 acres. Once a site has been purchased or identified, the lead time for design and construction is 2-3 years due to market demand and supply chain issues.

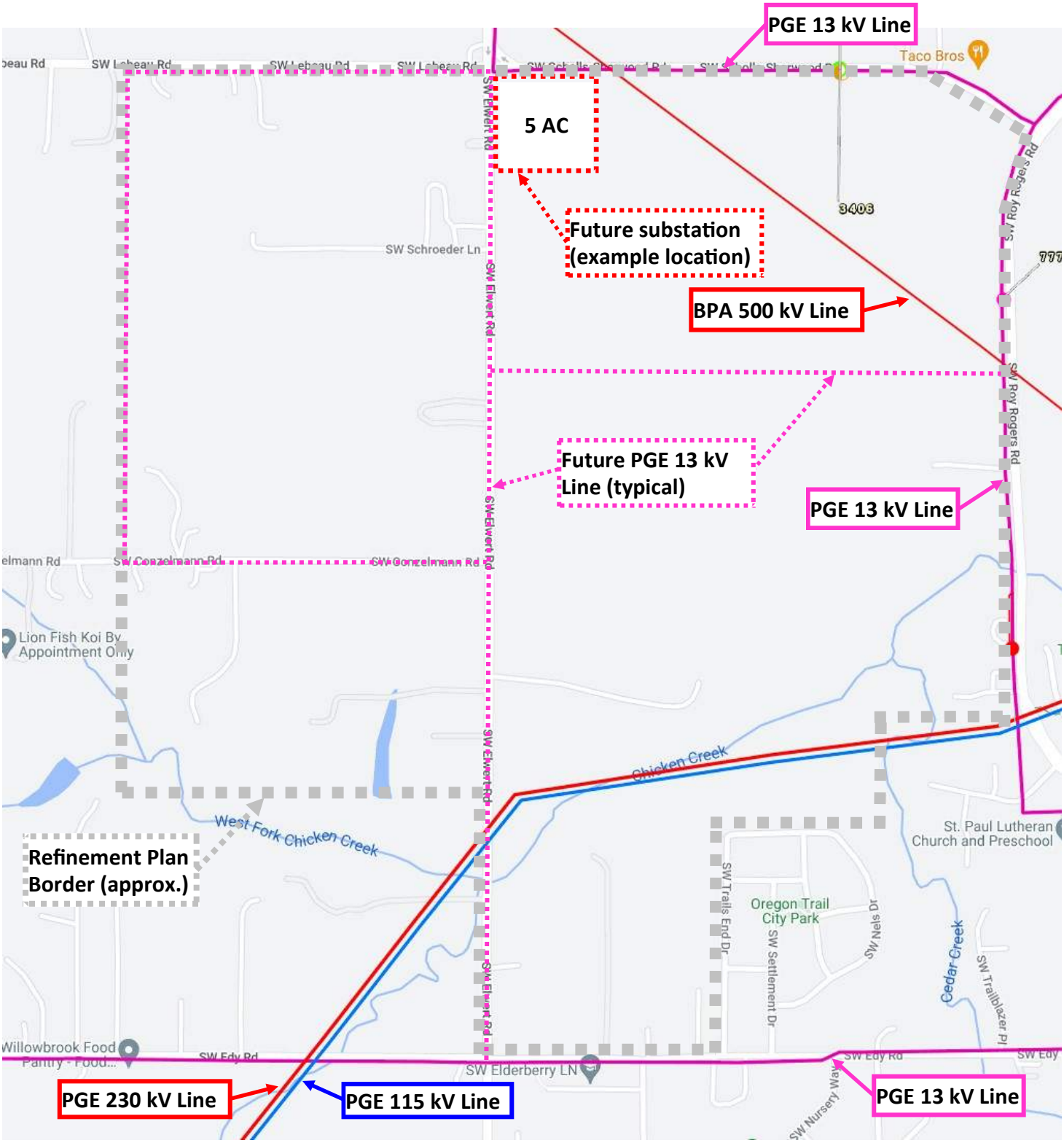
K. There is also a lead time for planning and constructing transmission lines.

Every effort has been made to accurately record this meeting. If any errors or omissions are noted, please provide written response within five days of receipt.

c: Present

APPENDIX 5

PGE SHERWOOD WEST CONCEPT PLAN REFINEMENT MAP, JANUARY 19, 2024



Sherwood West

Concept Plan Refinement

Response to Action Item 1.3
from 12/20/23 meeting minutes.

By: Ken Spencer and Josh Davis at PGE

Date: 1/19/24

APPENDIX 6

BUSINESS OREGON INDUSTRIAL DEVELOPMENT COMPETITIVENESS MATRIX

STATE OF OREGON - Infrastructure Finance Authority
Industrial Development Competitiveness Matrix

			Production Manufacturing		Value-Added Manufacturing and Assembly		Light / Flex Industrial			Warehousing & Distribuiton		Specialized		
	PROFILE		A	B	C	D	E	F	G	I	H	J	K	L
	CRITERIA		Heavy Industrial / Manufacturing	High-Tech / Clean-Tech Manufacturing	Food Processing	Advanced Manufacturing & Assembly	General Manufacturing	Industrial Business Park and R&D Campus	Business / Admin Services	Regional Warehouse / Distribution	Local Warehouse / Distribution	UVA Manufacturing / Research	Data Center	Rural Industrial
1	**GENERAL REQUIREMENTS**		Use is permitted outright, located in UGB or equivalent and outside flood plain; and site (NCDA) does not contain contaminants, wetlands, protected species, or cultural resources or has mitigation plan(s) that can be implemented in 180 days or less.											
	PHYSICAL SITE													
2	TOTAL SITE SIZE**	Competitive Acreage*	10 - 100+	5 - 100+	5 - 25+	5 - 25+	5 - 15+	20 - 100+	5 - 15+	20 - 100+	10 - 25+	10 - 25+	10 - 25+	5 - 25+
3	COMPETITIVE SLOPE:	Maximum Slope	0 to 5%	0 to 5%	0 to 5%	0 to 7%	0 to 5%	0 to 7%	0 to 12%	0 to 5%	0 to 5%	0 to 7%	0 to 7%	0 to 5%
	TRANSPORTATION													
5	TRIP GENERATION:	Average Daily Trips per Acre	40 to 60 (ADT / acre)	40 to 60 (ADT / acre)	50 to 60 (ADT / acre)	40 to 60 (ADT / acre)	40 to 50 (ADT / acre)	60 to 150 (ADT / acre)	170 to 180 (ADT / acre)	40 to 80 (ADT / acre)	40 to 80 (ADT / acre)	40 to 80 (ADT / acre)	20 to 30 (ADT / acre)	40 to 50 (ADT / acre)
6	MILES TO INTERSTATE OR OTHER PRINCIPAL ARTERIAL:	Miles	w/ in 10	w/ in 10	w/ in 30	w/ in 15	w/ in 20	N/A	N/A	w/ in 5 (only interstate or equivalent)	w/ in 5 (only interstate or equivalent)	N/A	w/ in 30	N/A
7	RAILROAD ACCESS:	Dependency	Preferred	Preferred	Preferred	Not Required	Preferred	Preferred	Not Required	Preferred	Preferred	Not Required	Avoid	N/A
8	PROXIMITY TO MARINE PORT:	Dependency	Preferred	Preferred	Preferred	Not Required	Preferred	Preferred	Not Required	Preferred	Preferred	Not Required	Not Required	N/A
9	PROXIMITY TO REGIONAL COMMERCIAL AIRPORT:	Dependency	Preferred	Competitive	Preferred	Competitive	Preferred	Required	Preferred	Preferred	Preferred	Preferred	Competitive	N/A
		Distance (Miles)	w/ in 60	w/ in 60	w/ in 60	w/ in 30	w/ in 60	w/ in 30	w/ in 60	w/ in 60	w/ in 60	w/ in 30	w/ in 60	N/A
10	PROXIMITY TO INTERNATIONAL AIRPORT:	Dependency	Preferred	Competitive	Preferred	Competitive	Preferred	Competitive	Preferred	Preferred	Preferred	Competitive	Preferred	N/A
		Distance (Miles)	w/ in 300	w/ in 300	w/ in 300	w/ in 100	w/ in 300	w/ in 100	w/ in 300	w/ in 300	w/ in 300	w/ in 100	w/ in 300	N/A
	UTILITIES													
11	WATER:	Min. Line Size (Inches/Dmtr)	8" - 12"	12" - 16"	12" - 16"	8" - 12"	6" - 10"	8" - 12"	4" - 6"	4" - 8"	4" - 6"	4" - 8"	16"	4" - 8"
		Min. Fire Line Size (Inches/Dmtr)	10" - 12"	12" - 18"	10" - 12"	10" - 12"	8" - 10"	8" - 12"	6" - 10"	10" - 12"	6" - 8"	6" - 10"	10"-12"	6" (or alternate source)
		High Pressure Water Dependency	Preferred	Required	Required	Preferred	Not Required	Preferred	Not Required	Not Required	Not Required	Not Required	Required	Not Required
		Flow Gallons per Day per Acre)	1600 (GPD / Acre)	5200 (GPD / Acre)	3150 (GPD / Acre)	2700 (GPD / Acre)	1850 (GPD / Acre)	2450 (GPD / Acre)	1600 (GPD / Acre)	500 (GPD / Acre)	500 (GPD / Acre)	1600 (GPD / Acre)	50-200 (Gallons per MWh) †	1200 (GPD / Acre)
12	SEWER:	Min. Service Line Size (Inches/Dmtr)	6" - 8"	12" - 18"	10" - 12"	10" - 12"	6" - 8"	10" - 12"	6" - 8"	4"	4"	6"	8"-10"	4" - 6" (or on-site source)
		Flow (Gallons per Day per Acre)	1500 (GPD / Acre)	4700 (GPD / Acre)	2600 (GPD / Acre)	2500 (GPD / Acre)	1700 (GPD / Acre)	2000 (GPD / Acre)	1600 (GPD / Acre)	500 (GPD / Acre)	500 (GPD / Acre)	1300 (GPD / Acre)	1000 (GPD / Acre) ‡	1000 (GPD / Acre)
13	NATURAL GAS:	Preferred Min. Service Line Size (Inches/Dmtr)	4" - 6"	6"	4"	6"	4"	6"	2"	2"	2"	2"	4"	N/A
		On Site	Competitive	Competitive	Preferred	Competitive	Competitive	Competitive	Preferred	Preferred	Preferred	Preferred	Preferred	Preferred
14	ELECTRICITY:	Minimum Service Demand	2 MW	4-6 MW	2-6 MW	1 MW	0.5 MW	0.5 MW	0.5 MW	1 MW	1 MW	0.5 MW	5-25 MW	1 MW
		Close Proximity to Substation	Competitive	Competitive	Not Required	Competitive	Preferred	Competitive	Preferred	Not Required	Not Required	Not Required	Required, could be on site	Not Required
		Redundancy Dependency	Required	Preferred	Not Required	Required	Not Required	Competitive	Required	Not Required	Not Required	Not Required	Required	Not Required
15	TELECOMMUNICATIONS:	Major Communications Dependency	Preferred	Required	Preferred	Required	Required	Required	Required	Preferred	Preferred	Required	Required	Preferred
		Route Diversity Dependency	Not Required	Required	Not Required	Required	Not Required	Preferred	Required	Not Required	Not Required	Not Required	Required	Not Required
		Fiber Optic Dependency	Preferred	Required	Preferred	Required	Preferred	Required	Required	Preferred	Preferred	Required	Required	Not Required
16	**SPECIAL CONSIDERATIONS:**		Adequate distance from sensitive land uses (residential, parks, large retail centers) necessary. High throughput of materials. Large yard spaces and/or buffering required. Often transportation related requiring marine/rail links.	Acreage allotment includes expansion space (often an exercisable option). Very high utility demands in one or more areas common. Sensitive to vibration from nearby uses.	May require high volume/supply of water and sanitary sewer treatment. Often needs substantial storage/yard space for input storage. Onsite water pre-treatment needed in many instances.	Surrounding environment of great concern (vibration, noise, air quality, etc.). Increased setbacks may be required. Onsite utility service areas. Avoid sites close to wastewater treatment plants, landfills, sewage lagoons, and similar land uses. Lower demands for water and sewer treatment than Production High-Tech Manufacturing.	Adequate distance from sensitive land uses (residential, parks) necessary. Moderate demand for water and sewer. Higher demand for electricity, gas, and telecom.	High diversity of facilities within business parks. R&D facilities benefit from close proximity to higher education facilities. Moderate demand on all infrastructure systems.	Relatively higher parking ratios may be necessary. Will be very sensitive to labor force and the location of other similar centers in the region. High reliance on telecom infrastructure.	Transportation routing and proximity to/from major highways is crucial. Expansion options required. Truck staging requirements mandatory. Minimal route obstructions between the site and interstate highway such as rail crossings, drawbridges, school zones, or similar obstacles.	Transportation infrastructure such as roads and bridges to/from major highways is most competitive factor.	Must be located withn or near FAA-regulated UAV testing sites. Moderate utility demands. Low reliance on transportation infrastructure.	Larger sites may be needed. The 25 acre site requirement represents the more typical site. Power delivery, water supply, and security are critical. Surrounding environment (vibration, air quality, etc.) is crucial. May require high volume/supply of water and sanitary sewer treatment.	Located in more remote locations in the state. Usually without direct access (within 50 miles) of Interstate or City of more than 50,000 people.

Mackenzie; Business Oregon

Terms:

More Critical ↑ Less Critical	**'Required'** factors are seen as mandatory in a vast majority of cases and have become industry standards
	'Competitive' significantly increases marketability and is *highly recommended by Business Oregon* . May also be linked to financing in order to enhance the potential reuse of the asset in case of default.
	'Preferred' increases the feasibility of the subject property and its future reuse. Other factors may, however, prove more critical.

* Competitive Acreage: Acreage that would meet the site selection requirements of the majority of industries in this sector.

**Total Site: Building footprint, including buffers, setbacks, parking, mitigation, and expansion space

† Data Center Water Requirements: Water requirement is reported as gallons per MWh to more closely align with the Data Center industry standard reporting of Water Usage Effectiveness (WUE).

‡ Data Center Sewer Requirements: Sewer requirement is reported as 200% of the domestic usage at the Data Center facility. Water and sewer requirements for Data Centers are highly variable based on new technologies and should be reviewed on a case-by-case basis for specific development requirements.

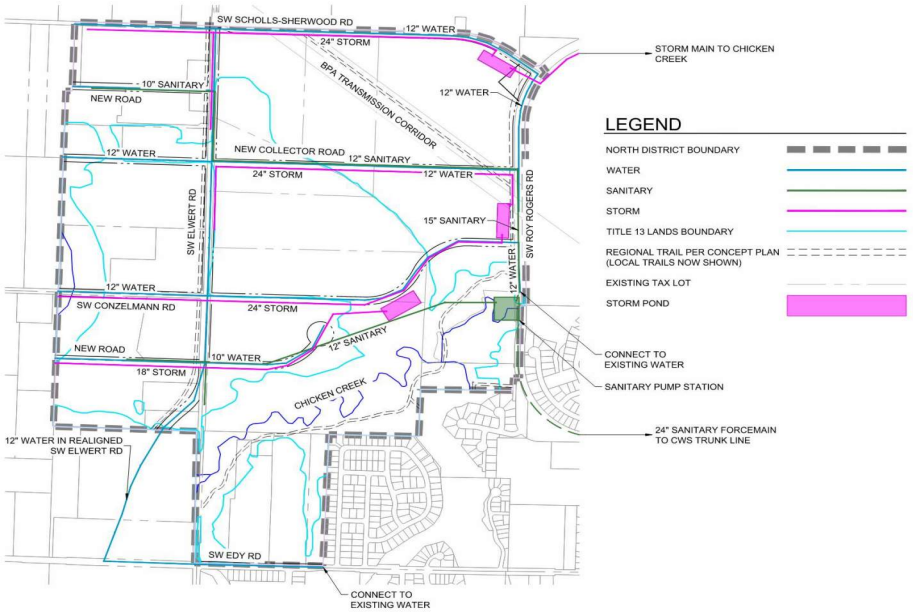
APPENDIX 7

MACKENZIE INFRASTRUCTURE COST ESTIMATES FOR NORTH DISTRICT AND REGIONAL TRAILS

MACKENZIE.

Sherwood West - North District

City of Sherwood
Public Infrastructure Summary



Water Distribution

Existing Water Infrastructure

Nearest Water Location: **Eastern and Southern boundaries of Sherwood West**
Water Provider: **City of Sherwood**
Water Service Area: **380 West Zone**
Distance to Site: **Adjacent to East and South**

Proposed Water Improvements

Pipe Size	Pipe Length	Unit Cost	Total Cost
10"	2,700 LF	$350	$ 945,000
12"	13,100 LF	$400	$ 5,240,000
* 12"	11,400 LF	$400	$ 4,560,000

Total Water Improvements Cost: $ 10,745,000

Other Water Notes:

* Indicates priority improvements to be constructed with or prior to initial development.

Water Design: 12 months
Water Permit / Construction: 18 months

Sanitary Sewer

Existing Sewer Infrastructure

Nearest Sewer Location: **OR-99W CWS Trunk Line**
Sewer Provider: **City of Sherwood**
Sewer Service Basin: **Cedar Creek Basin**
Distance to Site: **18,000 LF**

Proposed Sewer Improvements

Pipe Size	Pipe Length	Unit Cost	Total Cost
10"	3,000 LF	$275	$ 825,000
12"	5,500 LF	$350	$ 1,925,000
* 15"	1,200 LF	$375	$ 450,000
* 24" FM	18,000 LF	$350	$ 6,300,000
* Pump Station	10.5 MGD	$825,000	$ 8,662,500

Total Sanitary Sewer Improvements Cost: $18,162,500

Other Sewer Notes:

Forcemain to OR-99W 42" gravity main is required per CWS East Basin master plan.
Cost estimates for 24" FM and Chicken Creek pump station are from CWS master plan, project DU21C-27a.
* Indicates priority improvements to be constructed with or prior to initial development.

Sewer Design: 18 months
Sewer Permit / Construction: 24 months

Storm Drainage

Existing Storm Infrastructure

Nearest Storm Location: **Chicken Creek**
Storm Provider: **City of Sherwood**
Storm System Outfall: **Chicken Creek**
Distance to Site: **Adjacent to South**

Proposed Storm Improvements

Pipe Size	Pipe Length	Unit Cost	Total Cost
18"	3,200 LF	$400	$ 1,280,000
24"	12,300 LF	$425	$ 5,227,500
30"	2,200 LF	$500	$ 1,100,000
Pond:	9.5 ac	$350,000	$ 3,325,000

Total Storm Improvements Cost: $ 10,932,500

Other Storm Notes:

Majority of area drains to Chicken Creek. Small portion in the north drains to the Tualatin River.

* Indicates priority improvements to be constructed with or prior to initial development.

Storm Design: 12 months
Storm Permit / Construction: 18 months

Proposed Transportation Improvements

Description	Size	Length	Unit Cost	Total Cost	Design	Permitting & Construction
Widen Scholls-Sherwood Road	1 Lane 1 Frontage	4,400 ft	$2,000	$ 8,800,000	6 months	12 months
Northern collector street	2 Lanes Full Street	4,100 ft	$2,000	$ 8,200,000	12 months	12 months
Southern collector street	2 Lanes Full Street	4,400 ft	$2,000	$ 8,800,000	12 months	18 months
Neighborhood Road	2 Lanes Full Street	2,600 ft	$2,000	$ 5,200,000	9 months	9 months
NW Collector street	2 Lanes Full Street	1,300 ft	$2,000	$ 2,600,000	6 months	9 months
Elwert Road southern realignment	2 Lanes Full Street	750 ft	$3,000	$ 2,250,000	6 months	12 months
Elwert Road removal to Edy Rd	2 Lanes Removal	2,000 ft	$500	$ 1,000,000	6 months	12 months
Widen Elwert Road	1 Lane 2 Frontage	3,400 ft	$2,000	$ 6,800,000	6 months	12 months
Widen Roy Rogers Road	1 Lane 1 Frontage	5,400 ft	$2,000	$ 10,800,000	12 months	12 months
Widen Edy Road	1 Lane	1,100 ft	$2,000	$ 2,200,000	9 months	12 months
Intersection Improvements (Signals)		5 EA	$1,500,000	$ 7,500,000	6 months	12 months

Total Transportation Improvement Cost: $ 64,150,000

Note: transportation improvement construction estimates based on unit costs provided by Washington County and City of Sherwood, January 31, 2024

Mackenize Project No. 2230332.00

Revision Date: 2/9/2024

MACKENZIE.

Sherwood West - Regional Trails

City of Sherwood
Public Infrastructure Summary

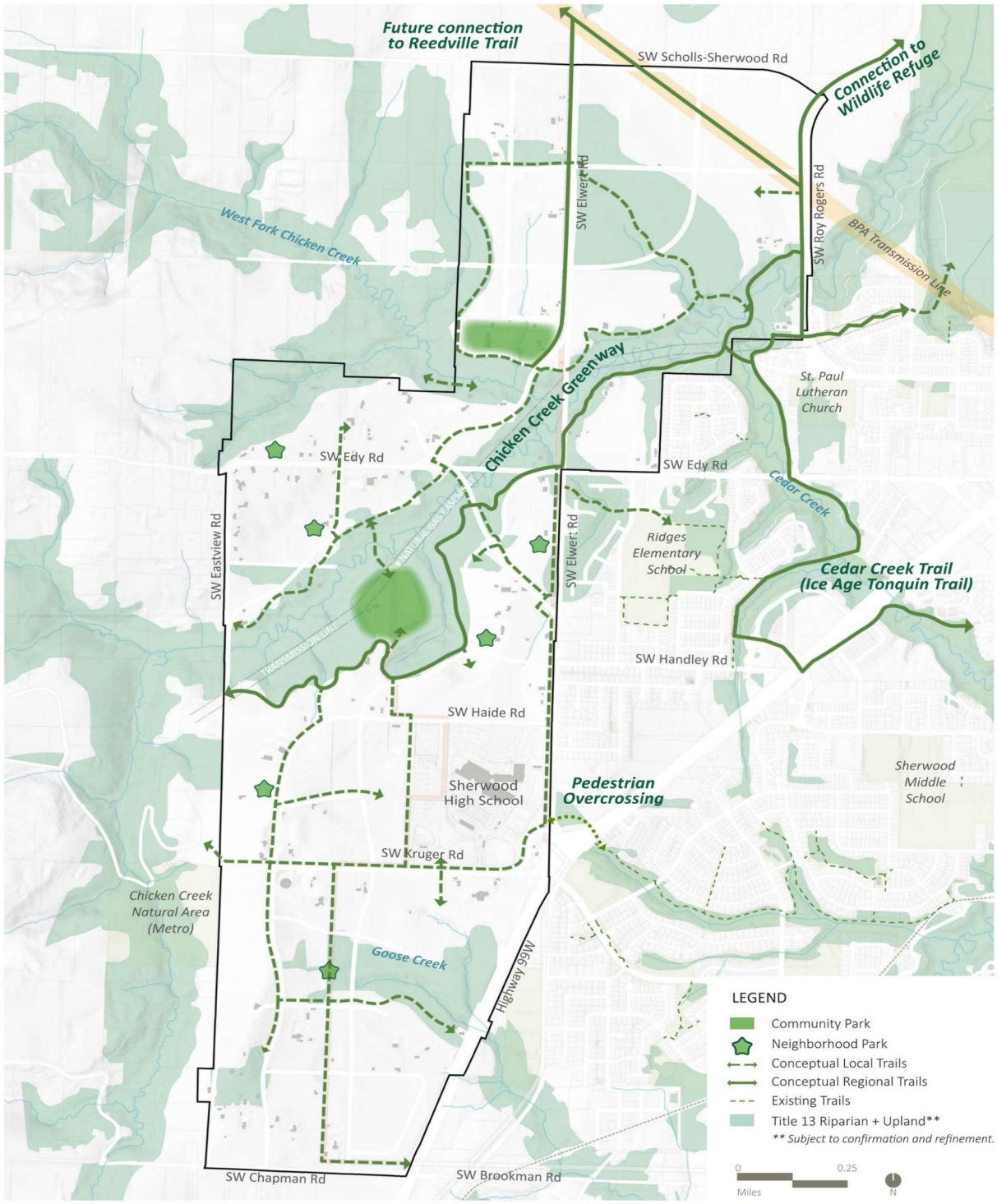


Image source: Sherwood West Concept Plan, July 2023

Proposed Regional Trail Improvements

Description	Length	Unit Cost	Total Cost	Design & Permitting	Construction
12' Regional Trail (North District)	12,600 ft	$400	$ 5,040,000	6 months	9 months
12' Regional Trail (West District)	7,700 ft	$400	$ 3,080,000	6 months	9 months
Bridge (West District)	1 EA	$300,000	$ 300,000	6 months	9 months
Boardwalk Segments (West District)	600 ft	$650	$ 390,000	6 months	9 months
Total Regional Trail Improvement Cost:			**$8,810,000**		

Mackenize Project No. 2230332.00

Revision Date: 2/9/2024

APPENDIX 8

PRELIMINARY INFRASTRUCTURE FUNDING STRATEGY MEMO, LELAND CONSULTING GROUP

See Concept Plan Appendix O