

**Committee Review Draft  
November 13, 2015**



**Sherwood West  
Preliminary Concept Plan**

*A long range look at our future*

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# I. Acknowledgements

## City Council

**Krisanna Clark, Mayor**  
**Sally Robinson, Council President**  
**Linda Henderson**  
**Dan King**  
**Jennifer Harris**  
**Jennifer Kuiper**  
**Renee Brouse**

## Planning Commission

**Jean Simson, Chair**  
**Russell Griffin, Vice Chair**  
**Rob Rettig**  
**Chris Flores**  
**Michael Meyer**  
**Alan Pearson**  
**Lisa Walker**

## Community Advisory Committee

**Patrick Allen, Sherwood School Board**  
**Hella Betts, Sherwood West**  
**Anthony Bevel, City of Sherwood**  
**Dennis Christen, Sherwood West**  
**Nathan Claus, City of Sherwood**  
**Tom Day, Sherwood West**  
**Patrick Franco, Sherwood West**  
**Kennedy Hawkins, Sherwood West**  
**Marney Jett, Sherwood Parks Board**  
**Jon Kurahara, Sherwood West**  
**Marvin Mandel, City of Sherwood**  
**Diann Matthews, Sherwood West**  
**Rick Pannell, Sherwood West**  
**Sally Robinson, City Council**  
**Jean Simson, Planning Commission**  
**Ida Wilks, Sherwood West**  
**John Wyland, City of Sherwood**  
**Jamie Stasny, Washington County Citizen Participation Organization**

## Technical Advisory Committee

**Bob Galati, City of Sherwood, Engineering Department**  
**Craig Sheldon, City of Sherwood, Public Works Department**  
**Kristen Switzer, City of Sherwood, Community Services Department**  
**Mike Dahlstrom, Washington County, Land Use and Transportation Department**  
**Brian Harper, Metro**  
**Carrie Pak, Clean Water Services**  
**Erin Holmes, Tualatin River National Wildlife Refuge**  
**Keith Mays, Tualatin River National Wildlife Refuge**  
**Phil Johanson, Sherwood School District**  
**Rob Fagliano, Sherwood School District**  
**John Wolff, Tualatin Valley Fire and Rescue**  
**Jeff Groth, City of Sherwood, Police Department**  
**Ty Hanlon, City of Sherwood, Police Department**  
**Stephen Shane, Washington County, Land Use and Transportation Department**  
**Michaela Skiles, Metro**

## Staff and Consultants

**Brad Kilby, City of Sherwood, Planning Department**  
**Connie Randall, City of Sherwood, Planning Department**  
**Michelle Miller, City of Sherwood, Planning Department**  
**Kirsten Allen, City of Sherwood, Planning Department**  
**Kirstin Greene, Cogan Owens Greene**  
**Anais Mathez, Cogan Owens Greene**  
**Martin Glastra van Loon, SERA Architects**  
**Beth Goodman, ECONorthwest**  
**Lorelei Juntunen, ECONorthwest**  
**Kevin Timmins, Otak**  
**Carl Springer, DKS Associates**  
**John vanStaveren, Pacific Habitat Services**  
**Leslie Carlson, Brink Communications**

## City Administration

**Joe Gall, City Manager**  
**Tom Pessemier, Assistant City Manager**  
**Julia Hajduk, Community Development Director**

## II. Introduction

The City of Sherwood conducted a long-range community planning process, designed to help us manage growth and protect the things we love about this place. The City received a grant from Metro to prepare a concept plan for the regional Urban Reserve Area 5B, approximately 1,291 acres we have identified as Sherwood West. The goal in developing a “preliminary concept plan” is to identify how we grow and provide quality places to live, work and play over the next five decades. This long-range planning process helps us all think about where best to build housing, where to protect farmland and where to build or expand roads and utilities—all with a goal of keeping Sherwood a safe, thriving and healthy community.

### Why are we planning for Sherwood West?

#### **Growth is happening.**

The City of Sherwood is growing along with the rest of the Portland region. Since 1990, we have added hundreds of people every year, with annual growth rates between 3-8%. People are drawn here for our quality of life, our great schools and our vibrant neighborhoods. While that’s a good thing—it provides economic growth and jobs for all of us—it also puts pressure on the city in terms of housing.

#### **We’re running out of places for people to live.**

Sherwood has a shortage of land available for housing. If we don’t add more land for new housing, people will still move here, but housing prices will start to rise and our community will experience more pressure for infill development at higher densities. This could result in two things: rising housing costs may price many people out of the market, including young families, single people and older people on fixed incomes; and infill development pressures could result in higher density housing which could change the character of existing neighborhoods. Increasing the land supply for residential development in a thoughtful manner is one way to help relieve this upward price pressure and make sure our community remains affordable.

#### **We need all kinds of housing.**

As we grow, we’re going to need to provide a variety of housing choices for people who want to live here, including large and small single-family housing, townhouses, duplexes and multifamily units. Providing housing choices makes it possible for people who have lived here a long time to stay in Sherwood as they age, while creating new opportunities for families and keeping housing in our city affordable.

#### **Planned communities grow better.**

Our challenge as a community remains growing in a way that preserves our small town character, our surrounding forests and farms, our thriving businesses and our parks and public spaces. The City of Sherwood is committed to a long-range process that manages growth in a planned and cost-effective way so that Sherwood can remain the thriving and welcoming community that we all love.



## Context

Sherwood West is one of the designated “urban reserve” areas that surround Sherwood. Urban reserves are areas designated by Metro in coordination with its partner cities and counties. These reserves identify land that will be considered for addition to the region’s Urban Growth Boundary (UGB) for urbanization over the next 50 years. The City of Sherwood is located within Metro’s UGB. An urban reserve designation does not change current zoning or restrict a landowners’ currently allowed use of their land. Designations are intended to provide greater certainty regarding long-term expected uses of the land, allowing public and private landowners to make long-term investments with better information.

Sherwood West is the largest urban reserve area adjacent to Sherwood, and given the location of existing utilities, the area that is logically the best direction for the City to consider growing in the future. It may grow faster or more slowly than projected, and in the end of the 50-year plan horizon, may not necessarily be the only direction in which we grow. It is not a given that the entire area will be absorbed into the City.

This Preliminary Concept Plan (Plan) is a tool that purposely does not speak to urban densities or design of a particular area within Sherwood West. It is a high-level, long-range study that we expect to be refined; community values and needs may shift and tastes in housing may change before any land is brought into the regional UGB. Densities and neighborhood form will be established and shaped through future refinement planning processes as areas are brought into the UGB.

### The Preliminary Concept Plan is intended to be:

- A tool for future citizens and decision makers to rely on as they make decisions about expanding the urban growth boundary.
- A foundation for future refinement plans that occur within the area.
- An opportunity to discuss growth well in advance of it actually occurring with both the property owners within the study area and the Sherwood community.

# This document is laid out in six sections.

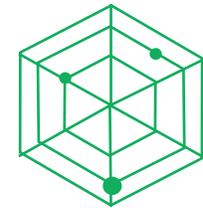
## III. The Planning Process

This section summarizes the background of the project and discusses the formation of various stakeholder groups and community outreach efforts.



## IV. The Sherwood Growth Story

This section provides historic context for the project by recounting the history of growth in Sherwood, and the implications of this changing landscape on land use and planning, particularly for housing policy.



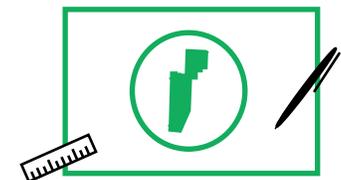
## V. Sherwood West

This section summarizes land use, public utilities and environmental conditions within Sherwood West, and presents an analysis of the landform and how it relates to planning for the area.



## VI. Sherwood West Preliminary Concept Plan

This section presents a high-level conceptual plan for the Sherwood West area that builds upon the landform analysis and emphasizes complete community attributes.



## VII. Funding and Phasing Strategy

This section describes an approach to funding and phasing infrastructure, services and other community elements as a means to inform decisions regarding possible future urban growth in Sherwood West.



## VIII. Next Steps and Recommendations

This section provides thoughts about how to approach implementation for City staff and recommendations on how to move forward given the information provided by this plan.





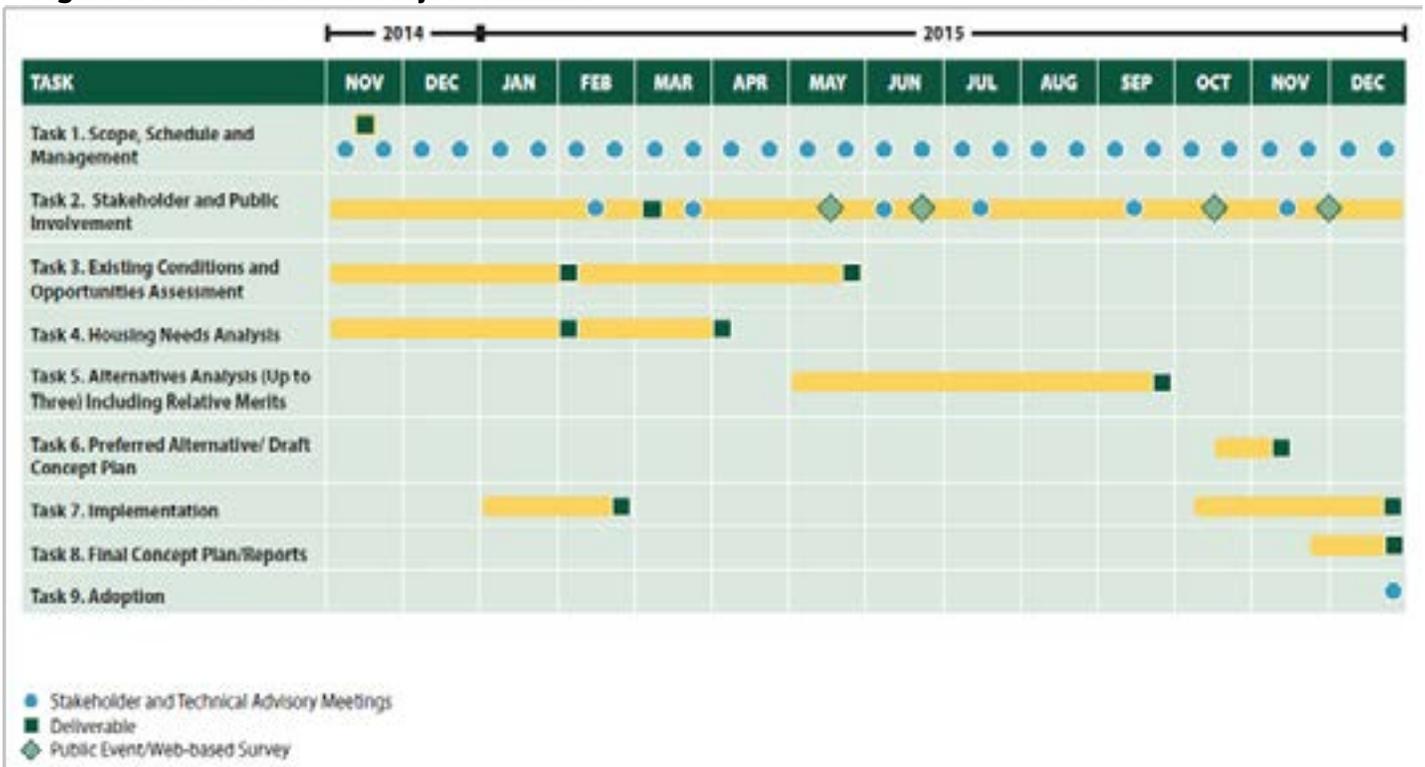
### III. Planning Process

The Sherwood West Preliminary Concept Plan is a long-range community planning process undertaken by the City of Sherwood in 2015. The City received a Construction Excise Tax (CET) grant from Metro to prepare a concept plan for the regional Urban Reserve Area 5B, identified as Sherwood West. The goal is to develop a “preliminary concept plan” that will identify how we grow and provide quality places to live, work and play over the next five decades. This long-range planning process helps us all think about where best to build housing, where to protect farmland and where to build or expand roads and utilities—all with a goal of keeping Sherwood a safe, thriving and healthy community. We call this a Preliminary Concept Plan (Plan) to distinguish it from the more regulatory and required Concept Plan that cities develop once areas are within the regional UGB. Whether or not Sherwood West is included in the regional UGB is a future decision to be made by the City of Sherwood and the Metro regional government.

This planning process began in November 2014 and wrapped up in December 2015. The project was completed through a series of nine tasks within the timeline shown below (Figure 1).

Engaging with Sherwood residents is essential for producing a plan that reflects community values with integrity and foresight. To help guide the project, two stakeholder committees were formed to include a broad range of interests: the Community Advisory Committee (CAC) and the Technical Advisory Committee (TAC). Together, these committees worked to help shape the direction and result of this process.

**Figure 1. Sherwood West Project Timeline**



**The CAC** is made up of 18 community members who live or own property within the city as well as those in the study area, and representatives from the City’s Parks Board, Planning Commission, and City Council, the Sherwood School District, and Washington County Citizen’s Participation Organization (CPO). They were charged with: reviewing materials from the consultant team, providing broad perspectives to ensure the Sherwood West Concept Plan reflects diverse needs, participating in public outreach regarding the plan, and providing recommendations on plan alternatives. They were recruited and selected by the City Council through an open application process.

**The TAC** is comprised of essential public service provider representatives: City Public Works, Engineering, Community Service and Police departments, Clean Water Services, Tualatin River National Wildlife Refuge, Tualatin Valley Fire and Rescue, the Sherwood School District and the Oregon Department of Transportation (ODOT). TAC members reviewed project deliverables for technical adequacy, policy and regulatory compliance.

Every step of the way, Sherwood community members have provided meaningful guidance and feedback, gathered through interviews, public events, community workshops, questionnaires and online surveys. This guidance has been essential to the Sherwood West planning process. The design of the Plan is a reflection of this work. Together, we:

**1. Developed a vision, set goals and proposed evaluation criteria.** The planning process began with articulating a vision for Sherwood West. We solicited community guidance on goals and evaluation criteria through one on one interviews and meetings, public workshops and online surveys, and underwent multiple

### Vision Statement

Sherwood West complements the City’s form and small town character through an integrated and continued pattern of the community’s most valued neighborhoods. Through a range of well-designed housing options and protected natural areas, Sherwood West is a great place for families. It helps satisfy the City’s need for well-planned growth and other community needs. Designed as a complete community, development is orderly, attractive and protects views. The area is well administered and development contributes to the fiscal health of Sherwood.

**Figure 2. Goals and Evaluation Criteria for Sherwood West**

Goal	Evaluation Criteria for Comparison of Alternatives
Growth is well -planned	<ul style="list-style-type: none"> <li>• Neighborhoods are phased adjacent to existing development</li> <li>• Well phased extension of services</li> <li>• Connectivity</li> </ul>
Design includes complete community attributes	<ul style="list-style-type: none"> <li>• Incorporates nature</li> <li>• Neighborhood retail</li> </ul>
Development respects and recognizes Sherwood pattern, heritage and small town feel	<ul style="list-style-type: none"> <li>• Walkable</li> <li>• Integrates with existing Sherwood</li> <li>• View corridors, natural features retained</li> </ul>
Concepts promote health	<ul style="list-style-type: none"> <li>• Walking, bicycling easy to access</li> <li>• Access to trnasportation choice, transit</li> </ul>
Development protects and provides access to nature	<ul style="list-style-type: none"> <li>• View corridor, other assets protected</li> <li>• Walking trails along heritage resources</li> </ul>
Implementation is pragmatic	<ul style="list-style-type: none"> <li>• Options minimize cost of infrastructure</li> <li>• Balance of benefits and burdens of development</li> </ul>

iterations in review by the TAC, CAC and community members. The resulting vision statement is as follows:

**2. Identified existing conditions and key opportunities.** We developed a draft and revised assessment of existing and future conditions for Sherwood West. In addition to infrastructure and public services, we considered the area's landform and natural features. Guidance from the community helped identify missing elements and further opportunities.

**3. Designed alternative concept plan scenarios.** Based on community core values, vision, and existing conditions, we worked with the CAC and TAC to develop three draft alternative concept plan scenarios in order to explore a variety of ideas for comparison.

**4. Considered the relative merits of each scenario and the key features that best represent the goals and objectives of Sherwood West.** Through interactive workshops, community events and online surveys, the CAC, TAC and staff team worked to identify preferences for individual and collective plan elements using the evaluation criteria they helped develop.

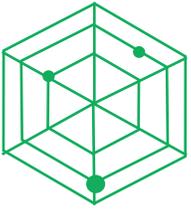
**5. Designed a Preliminary Concept Plan that builds upon community feedback, technical guidance and a landform analysis.** The preliminary concept plan is a hybrid of the three alternatives, combining the preferred elements into a recommended draft "hybrid" Preliminary Concept Plan.

## Community Engagement

- Community Advisory Committee Meetings
- Project Website
- E-Newsletter Subscription & Social Media
- Project Video
- Property Owner Mailing and Meetings (March-April)
- Community Workshop (May)
- Online Survey – Vision and Values (May-June)
- Ice Cream Social & Open House June 2015
- Online Survey – Draft Alternatives (July-August)
- Music on the Green (July-August)
- Movies in the Park (August)
- Community Group Presentations
- Online Survey – Preferred Alternatives (October)
- Property Owner Mailing and Community Workshop (October)
- Sherwood Rotary
- Chamber of Commerce







## IV. The Sherwood Growth Story

### History and Pattern of Urban Growth

Understanding Sherwood's past is key to planning Sherwood's future. Sherwood as it exists today did not just happen; it is the result of many years of small and big, individual and collective decisions. By understanding the history and pattern of growth in Sherwood, we obtain valuable insights into the local identity and values that help to guide future urban growth.

#### Pre-settler era

Prior to the arrival of immigrants, the Sherwood area was inhabited by the Atfalati band of the Kalapuya nation, who ranged across the valley in a hunter-gather style. They are known to have used deliberate burns to clear the valley floor to encourage the growth of the camas plant and to maintain habitat beneficial to deer and elk.

#### Smockville



In 1885 founders James and Mary Smock settled on nearly flat pasture along the east bank of Cedar Creek. The landscape provided farmland, water and timber. They platted "Smock Ville" in 1889, after donating a right-of-way across their property to the Portland and Willamette Valley Railway. Rail service started in 1889, providing access to the larger region for both people and cargo. Unlike most newly-platted towns from this period in the West, Sherwood's streets and blocks were platted with a 40 degree rotation relative to the cardinal points.

The diagonal route of the railway, carefully engineered across the landscape to find the flattest route available, explains the orientation of Sherwood's original nine block plat.

#### 1889-1960



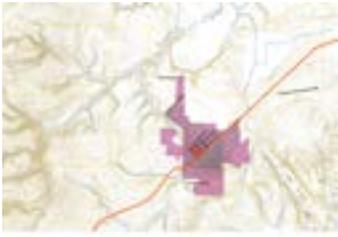
During the first decade, Sherwood's footprint on the landscape was largely contained within the original nine block town plat. In the later decades up to 1960, Sherwood grew modestly, but some expansion took place towards the southeast around the train depot and up the hill along Pine Street. All destinations in town were in close walkable proximity to each other. The population in 1960 was around 680 people.

#### 1960-1970



Around 1960, the automobile started affecting urban settlement patterns across the nation, resulting in more dispersed settlement patterns that are also reflected in Sherwood's expanding urban footprint. A series of annexations took place over the the next 50 years that changed the landscape and the community. The first annexation accommodated growth along the east bank of Cedar Creek towards Highway 99W. In ten years' time, the population doubled to 1,396 residents.

### 1970-1980



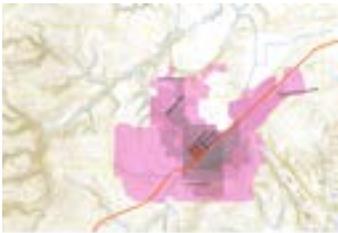
Sherwood continued to attract newcomers and the next decade saw growth across Cedar Creek for the first time with the new High School forming an important component. Growth also occurred towards the southeast, on hillsides facing north and west. In this decade the population grew by nearly 1,000 to 2,386 people.

### 1980-1990



Between 1980 and 1990, the pace of development dropped a little due to recession but still, the population grew by about 700 people to 3,093. To accommodate this increase, the town continued to expand around Cedar Creek and, for the first time, north of Highway 99. Employment areas were developed in the northeast, along the railway.

### 1990-2000



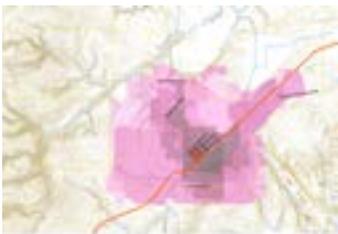
During the last decade of the twentieth century, Sherwood experienced a real boom in population and expansion. Fueled by a strong regional and national economy, the population grew by nearly 9,000 to 11,791 in 2000 for a 380% population increase. The physical imprint on the landscape expanded significantly with the realization of large subdivisions such as Woodhaven. During this decade, urban development also took place northwest of Highway 99W, and into the hills southeast and southwest of town.

### 2000-2010



The first decade of the twenty-first century saw continued but slightly more tempered growth. A 154% population increase over ten years added approximately 6,000 people to Sherwood, bringing the total to 18,194 by the end of the decade. This growth is accommodated mostly in areas in the northwest area of town along Cedar Creek (Roy Rogers Road) and between the historic Old Town and Tualatin-Sherwood Road.

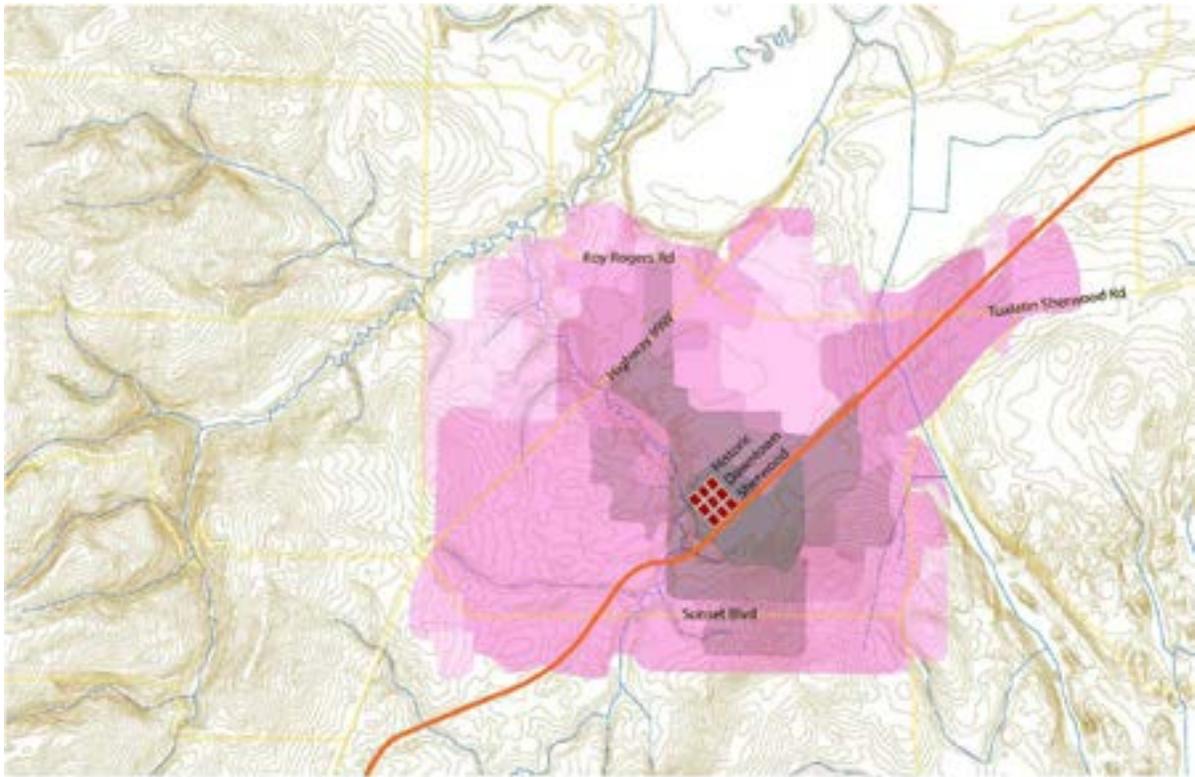
### 2010-2014



US census data takes us only four years farther to 2014, when Sherwood hovers around a population of 19,000 with a lower population increase compared to the two decades prior, most likely as an effect of the Great Recession. Most of the growth that did occur took place along the ever expanding edges of Sherwood in the north and southeast.

### Summary

During its relatively short 125 years of urbanization, Sherwood has experienced significant growth in both population and physical size. Yet somehow, through it all, Sherwood has kept its “small town” identity and appeal. It remains an extremely desirable place to live and work, as demonstrated by appearances in national “Best Places to Live” listings.



Map: Growth of Sherwood

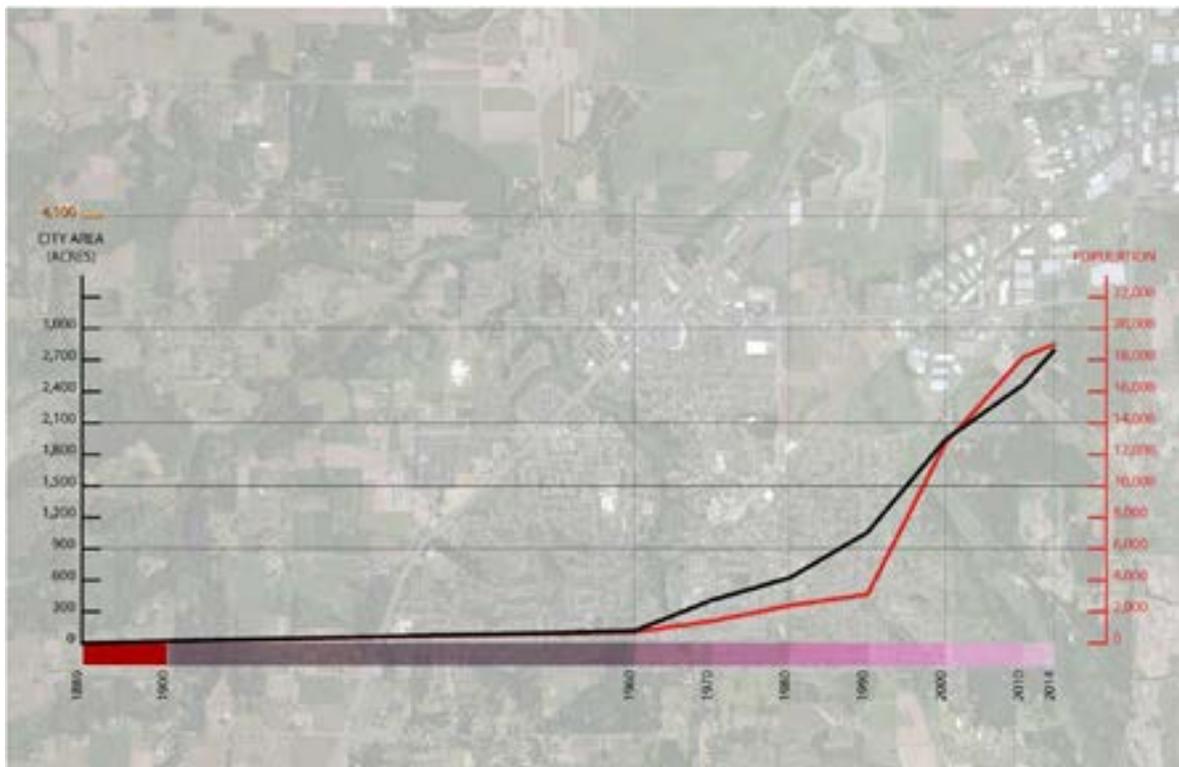


Chart: Growth of Sherwood

## Scale

One of the possible explanations for the “small town” identity lies in the neighborhood scale of individual developments. Analysis reveals a pattern of walkable (quarter mile radius) neighborhoods circling the historic downtown. It appears that Sherwood was deliberately planned around the concept of the walkable neighborhood as the building block of the community as a whole. Taken together, the entire town fits within an imaginary circle with a radius of only one mile: all local destinations are close and potentially within walking and biking distance from any residence.

The urban growth history presented here attempts to build a deeper appreciation of the aspect of time, population size, urban growth and scale, and how they are all interrelated. As such, it is a subjective interpretation based on an analysis of a variety of sources, including Google Earth, Lab Rat Revenge, The Oregon Atlas, Sherwood City Annexation Map, Smockville Original Plat and Wikipedia. This interpretation does not claim to be complete or highly detailed. As this historic growth analysis shows, tremendous change can and possibly will occur. A proper appreciation of this dynamic past is crucial as we lay the foundation for planning the next 50 years of Sherwood’s evolution.

## Implications for Policy

Not only has Sherwood seen significant growth in terms of size and population, but it is also witnessing a change in the demographics of the population. Understanding these characteristics is crucial for determining community needs and analyzing demand for services and infrastructure. Of these demands, housing plays an important role, as it is often the catalyst for the development of roads, utilities, schools, parks and other services.<sup>1</sup>

### How has Sherwood’s Population Changed in Recent Years?

**Sherwood’s population grew relatively fast in recent years.** Sherwood’s population increased 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. Since 2000, 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.

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## A Size Comparison

From a pure physical standpoint, Sherwood’s size compares to places like Forest Grove and Cornelius. Even with Sherwood West included, the physical dimension of the entire town would be small enough to fit inside an imaginary circle with a radius of 1.5 miles. The City’s physical dimension would then be comparable to cities like Woodburn and Canby.

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<sup>1</sup>The majority of data quoted in this analysis is from the US Census American Community survey, with population data from the Population Research Center at Portland State University and development data from the City’s Building Permit database

**Sherwood’s population is aging.** People aged 45 years and older were the fastest growing age group in Sherwood between 2000 and 2010, 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 identify as 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 identify as Latino.

## What Factors May Affect Future Growth in Sherwood?

These trends are likely to create a change in the types of housing demanded or “needed” in Sherwood in the future. This has implications for the City’s housing and land use policies.

**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.

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*“The city needs to provide [for] a diversity of housing types so that our older residents and younger residents can afford to stay and move here.”*

*-Survey Respondent*

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**The growth of younger and diverse 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 increased demand for both ownership and rental opportunities, with an emphasis on housing that is comparatively affordable.<sup>2</sup>

**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.

<sup>2</sup> The housing needs analysis assumes that housing is affordable if housing costs are less than 30% of a household’s gross income. For a household earning \$6,500 (the median household income in Sherwood), monthly housing costs of less than \$1,960 are considered affordable.

**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) was more than 20% higher than Washington County’s median household income (\$64,200). In addition, Sherwood had 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%).

### The City of Sherwood: A Snapshot

As of the 2010 US Census, there were 18,194 people living in the City of Sherwood. The City accounts for about 3.4% of Washington County’s total population of 531,335. Covering an area of approximately 4.3 square miles, Sherwood’s population density is about 4,217.2 per square mile. Relative to the nearby cities of Tualatin, Wilsonville and Newberg, Sherwood has a slightly higher population density per square mile. As shown in Table 1, Sherwood also has a greater number of family households and a higher median household value, as compared to Washington County.

**Table 1. City of Sherwood and Washington County, 2010**

	City of Sherwood	Washington County
Median Household Value <sup>1</sup>	\$340,450	\$307,350
Median Household Income	\$81,000	\$60,963
Family Households	77.7%	67.1%
Average Commute Time	26 minutes	24 minutes
Gender (female)	50.3%	50.8%
Median age	34.2 years	35 years
Hispanic or Latino	7.0%	15.7%

Source: US Census Survey, 2010

<sup>1</sup>Zillow, September 2015

## What are the Implications for Sherwood’s Housing Policies?

Determining demand for housing is based on coordinated forecasts of household growth, provided by Metro. Between 2015 and 2035, Sherwood is forecasted to add 1,156 new households as a response to demand from population growth and demographic shifts.<sup>3</sup>

Not only does the forecast provide an estimate of the number of homes required to respond to population growth, but also where this demand will be generated. The forecast includes growth within city limits as well as areas currently outside of these limits but within the UGB and planned for annexation and development for residential uses. For the City of Sherwood, this is primarily the Brookman Area. Under this combined land base, Sherwood can accommodate Metro’s entire forecast for growth. However, to provide adequate land supply, the Brookman area would need to be annexed by Sherwood voters.

**The results of Sherwood’s 2015 Housing Needs Analysis highlight questions for the update of the City’s overall, citywide Comprehensive Plan and the Sherwood West Preliminary Concept Planning process.**

- 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, such as smaller lots, clustered housing, cottages or townhomes. 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 regional residents 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”?

<sup>3</sup> In 2015, the City of Sherwood conducted a full Housing Needs Analysis. See Appendix 1 for the full executive summary of this report.



# V. Sherwood West

## Existing Conditions

### Study Area

Sherwood West encompasses approximately 1,291 acres located along the western side of the current city limits (Figure 3). The site is bounded on the east by Hwy 99W, SW Elwert Road, and SW Roy Rogers Road. It is bounded by SW Chapman Road on the south and SW Lebeau Rd and SW Scholls-Sherwood Rd to the north. Site topography generally slopes from west to east, with an elevation difference of approximately 150 to 200 feet.

**Figure 3. Sherwood West Study Area**



## Land Use and Zoning

Whereas City acreage is 2,757.8 (4.3 square miles), the Sherwood West study area encompasses 1,291 acres across 126 tax lots and existing right-of-way (Table 2). Besides residential uses, the majority of the land use is designated as agricultural or forest. For more detailed information, see Appendix 2B for the study area buildable land by taxlot and Appendix 3: Boundaries and Buildable Lands Inventory Information for the methodology.

**Table 2. Sherwood West Study Area Buildable Lands**

Total Acreage	1,291
Total Tax Lots	126
Total Tax Lot Acreage (excludes non-taxable area)	1,234
Total Right-of-Way (ROW) Acreage	57
Vacant Lots	39 (263.5 buildable acres)
Partially Vacant Lots with dwellings	83 (406.8 buildable acres)
Committed Lots	4 (0 buildable acres)
Total Buildable Land** Acreage	670.3

\*\*Buildable land calculation includes removal of constrained land, deduction of 0.25-acre from lots greater than 0.5-acre with a dwelling unit, and a percent deduction for future streets.

## Public Facilities<sup>4 5</sup>

### WATER SYSTEM

#### Existing Conditions

The current Water System Master Plan was adopted in May 2015. The Master Plan considers all areas within the city limits, the UGB and the 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, serving the area around the Sunset Reservoirs, is supplied constant pressure by the Sunset Pump Station, and the 455 Pressure Zone serves higher elevation customers on the western edge of the City by gravity from the Kruger Reservoir.

#### Opportunities and Constraints

Initial anticipated growth in Sherwood West will be served by extending 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. Some future customers in Sherwood West may need to be served through a Pressure Relief Valve (PRV)-controlled sub-zone or through individual

<sup>4</sup> At the time the plan was prepared updated to the city sewer and stormwater masterplans were in process, thereby all information should be verified anytime a refinement plan is being prepared.

<sup>5</sup> See Appendix 2 for the full text from the Existing Conditions report.

PRVs on each service in order to maintain required service pressures. 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 by constant pressure from the proposed Edy Road Pump Station. An additional pump station would potentially be needed to serve this area. Extensive large diameter mains will be needed to expand the City's water service area to supply Sherwood West as development occurs. See Appendix 2C for pressure zone boundaries and existing and proposed reservoir, pump station and water line locations identified in the Water System Master Plan.

## **SANITARY SEWER SYSTEM**

### **Existing Conditions**

The current Sanitary Sewer Master Plan was completed in July 2007 and is currently being updated. The Master Plan considers all areas within the city limits and the urban growth boundary, but not Sherwood West.

The City of Sherwood is served by two sanitary sewer trunk lines, the Sherwood Trunk Sewer (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 CWS.

### **Opportunities and Constraints**

Existing sanitary sewer facilities adjacent to or near this site are limited. The Sherwood Interceptor crosses the study area near the northeast corner at Cedar and Chicken Creeks; and any sewer mainlines would need to cross these creeks in order to connect. Brookman is an area within the UGB on the south end of Sherwood between the city limits and SW Brookman Road. The City recently constructed a sewer mainline to the northern boundary of Brookman. Future projects, which would occur with the development of Brookman, would extend the sewer line into Brookman, providing sewer access for Sherwood West at Brookman Road, east of Hwy 99W. Capacity of the Sherwood Trunk Line Sewer and the Sherwood Pump Station will need to be evaluated as part of the Master Plan update. See Appendix 2D for a map of existing sanitary sewer facilities.

## **STORMWATER**

### **Existing Conditions**

The current Stormwater Master Plan was completed in June 2007 and is currently being updated. The Master Plan considers all areas within the city limits and the urban growth boundary, but not Sherwood West.

The Sherwood West study area lies primarily within the Chicken Creek Drainage Basin. The basin flows north and northeast along Chicken Creek, which bisects the site. Cedar Creek flows into Chicken Creek at the northeast corner of the study area, west of SW Roy Rogers Road. West Fork Chicken Creek enters the site near the northwest boundary, and flows east into Chicken Creek. A small portion of the study area in the southeastern corner is part of the Cedar Creek Drainage Basin. On-site runoff enters Goose Creek, which flows from west to east, crosses under Hwy 99 W and reaches 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 that are listed as threatened under the Federal Endangered Species Act. The study area in the vicinity of 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

### **Opportunities and Constraints**

As the study area is undeveloped, there is no existing stormwater infrastructure on-site. 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. The City has indicated that they prefer to use regional stormwater facilities within this study area. See Appendix 2E for a map of storm drainage basins, creeks, and existing stormwater facilities.

## **Transportation**

***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 bypass 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 classifications are listed below.

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

The City of Sherwood's Transportation System Plan (COS TSP) and Washington County's Transportation System Plan (WACO TSP) coordinated the analysis and results for Elwert Road from the intersection of Highway 99W to the Scholls-Sherwood Road intersection.

Both WACO's and COS's TSP's identify the future build-out condition of Elwert Road as a 3-lane arterial which will include sidewalks and bike lanes on both sides of the road. Appropriately sized arterial roads will allow through trips to remain on the arterial system and discourage use of local streets for cut-through traffic routes.

Due to the current adverse vertical alignment condition of Elwert Road, it is anticipated that large cut and fill sections and associated acquisition of additional right-of-way may be needed to bring Elwert Road's alignment (both vertical and horizontal) into conformance with adopted roadway design standards.

**The Kruger/Elwert/Sunset Boulevard/Highway 99W intersection** is on the current Major Streets Transportation Improvement Plan (MSTIP) for reconstructing the intersection by replacing it 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. The intersection improvements are currently scheduled for 2017-2019.

**Roadway Access onto Elwert Road.** Development of the Sherwood West area would require the creation of a secondary collector road paralleling Elwert Road to provide access for businesses and residential developments. This secondary road alignment could potentially run from Chapman Road north to Edy Road. The crossing of Chicken Creek would be a major obstacle for any road extension to Scholls-Sherwood Road. Ideally, any parallel collector road would reconnect to Elwert Road prior to the Elwert Road/Edy Road intersection. From that point on, the Elwert Road vertical alignment would be reconstructed to correct the vertical curve and sight distance issues. The intersections beyond Edy Road includes Schroeder Road and Conzelmann Road. These intersections would likely need to be reconfigured to meet appropriate design standards.



Existing Roundabout Design from the MSTIP.

**Highway 99W** is a state designated freight corridor and limited access highway. It is identified as a principal arterial in both the WACO TSP and COS TSP. Access onto Highway 99W would be coordinated with the Oregon Department of Transportation. The intersections of SW Chapman, SW Brookman and SW Elwert roads will all need to be studied and possibly reconfigured or signalized depending on the amount of traffic generated by future land uses within the area.

**Scholls-Sherwood Road** is designated as an arterial within the WACO 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. There are two intersections along Scholls-Sherwood Road within the study area. As mentioned earlier, the intersection with Elwert Road will require additional study, reconfiguration, and eventual 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 current COS TSP standards for arterial roads, new access should be spaced between 600 to 1,000 feet apart.

**Roy Rogers Road** is designated as an arterial within the WACO TSP. The same standards that apply to Scholls-Sherwood Road would apply to Roy Rogers Road as well.

---

*"I would like to be able to walk to a commercial area - please be sure you plan for a safe pedestrian crossing of Elwert Rd so that my neighbors and I can safely access this area."*

*-Survey Respondent*

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**Both Edy and Chapman roads** are classified as collectors within WACO TSP. Edy Road is also designated a collector street within the COS TSP. Collector streets provide both access and circulation between residential, commercial, industrial and agricultural community areas and the arterial system. Collectors tend to carry fewer motor vehicles than arterials, with reduced travel speeds. Collectors may serve as freight access routes, providing local connections to the arterial network. Generally, collector status roads are intended to connect neighborhoods to nearby centers, corridors, station areas, main streets and nearby destinations in the urban area. In the rural area, collectors are a primary link between the local street system and arterials for freight, people, goods and services. Access control on collectors is moderate, and direct driveway connections are discouraged.

**The remaining streets** within the study area are classified as local streets within the WACO TSP. Local streets primarily provide direct access to adjacent land. 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. Rural local roads have traditionally provided access to a variety of rural land uses including agriculture, forestry, quarry activities, low-density rural residential uses as well as rural commercial and industrial uses. The local streets within the study area are paved with narrow lane widths and roadside ditches to provide drainage. These streets do not include traffic calming measures, sidewalks, or lighting.

Given the terrain, the presence of existing 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. The Street Functional Classification Maps from the WACO TSP and COS TSP are shown in Appendix 2F and 2G, respectively.

## Sherwood West: Potential Impacts on the Regional Transportation System

The Sherwood West Concept Plan identifies land use development patterns and associated transportation facilities that are expected within the bounds of the plan area. More work is required to better understand how urban development in Sherwood West will influence regional travel patterns and how growth in this area might change current regional transportation plans. For now, we offer some preliminary thoughts about the issues and challenges that lie ahead.

### **Regional Travel Patterns**

The primary land use type within the Sherwood West plan area is residential, so commuting traffic will be significant as workers travel to and from their respective job locations. A snapshot of commuter travel patterns was taken from US Census data as of 2013. Today, Sherwood residents primarily travel in the northeast direction to Tigard, Tualatin and Portland, and, to a lesser extent, to the north, to Beaverton, Aloha and Hillsboro for work trips. Far less commuters travel to the south and southwest.

	2013	
	Count	Share
Total Primary Jobs	7,699	100.0%
Less than 10 miles	3,747	48.7%
10 to 24 miles	3,578	46.5%
25 to 50 miles	318	4.1%
Greater than 50 miles	56	0.7%

### **Significant Congestion on Regional Routes**

The regional corridors that serve Sherwood's primary commute patterns include SW Roy Rogers Road, Highway 99W and SW Tualatin-Sherwood Road. Each of these facilities operate with heavy congestion during many hours of the day. Continued land development in the south end of the Portland Metro area and, to a lesser extent, Yamhill County, will extend the congested periods on these regional routes to occur for more hours of the day. So, traffic congestion will likely start earlier and last longer.

Some travelers opt to use more rural roads to get to their destinations. For example, SW River Road, SW 175th Avenue and SW Clark Road are popular rural routes into the Aloha and Hillsboro areas from Sherwood. However, these facilities are not intended to be used by high vehicle traffic volumes, and any design constraints often result in safety concerns when heavily used (for example sharp corners on SW 175th Avenue). Washington County is challenged to keep up with growth in urban traffic using rural facilities. For example, the County recently installed traffic signals at several intersections on SW Roy Rogers Road to address safety concerns on that corridor. Transit services are available only on Highway 99W at this time. However, buses are subject to the same congestion and delays that are experienced by other regional travelers, which makes it a less attractive travel option. No additional transit services are planned on other regional routes in this area.

### **Future Solutions**

As the region grows, long-range transportation plans have considered a variety of solutions to address the severe congestion on regional highways and arterials in the south Metro area. Oregon land use law restricts the options available to include only new or expanded travel facilities within the Urban Growth Boundary. Increasing roadway capacity for autos and trucks can be prohibitively expensive. Transportation service providers are turning to better system management tools, such as the travel time displays on Highway 99W to inform travelers of real time traffic conditions.

High capacity transit services were considered on the Highway 99W corridor as part of the SW Corridor Planning work led by Metro and ODOT. At this time, the most promising option is to upgrade transit service frequency and quality to be more competitive with general auto travel.

## Parks and Trails

Adopted in October 2006, the Parks and Recreation Master Plan conducted a comprehensive review of existing recreation facilities and land resources, and developed goals, objectives, and actions to implement long term strategies for future park development, preservation, design, and funding mechanisms. Key recommendations of the plan include completion of the community trail system and expansion of recreation opportunities such as construction of a skate park.

The Master Plan analyzed lands and facilities in the Sherwood city limits and includes mention of the Tualatin River National Wildlife Refuge (about 1 mile north of the city). At its nearest point, the Wildlife Refuge is less than a quarter-mile from the northeast point of the Sherwood West study area. Within the city limits, Sherwood manages over 300 acres of open space including most of the 100-year floodplain along Cedar Creek and portions along Rock Creek.

In total, 6.5 miles of paved multi-use trails are present in the City's existing open space system. Existing hard surface trails terminate at Highway 99 just south of Sunset Boulevard and approximately 600 feet to the north at Highway 99 in the greenway north of the Sherwood YMCA. These are the closest multi-use trail connections to the Sherwood West study area. The planned Ice Age Tonquin Trail alignment will parallel Roy Rodgers Road at the northeast edge of the study area. The future trail will traverse through Sherwood along Cedar Creek and connect to the Tualatin River National Wildlife Refuge. The completed Tonquin Trail system will link the cities of Sherwood, Tualatin, and Wilsonville.

There are no formal multi-use trails or parks in Sherwood West. Chicken Creek forms a natural greenway flowing southwest to northeast through the study area, eventually draining to the Tualatin River via Cedar Creek. The Cedar Creek greenway through the city connects at Chicken Creek. West Fork Chicken Creek and Goose Creek form smaller natural greenways in the central and southeast portions of the study area, respectively. Upper Chicken Creek, a 38-acre Metro-owned natural area, is located just outside the study area and abuts its western edge south of Kruger Road.

While the Parks Master Plan does not detail needs for the Sherwood West area, Chapter 5 of the Sherwood Comprehensive Plan establishes minimum standards for parks and open space. Those minimum standards are summarized in the following Table 3.

**Table 3. Guidelines for Providing Parks, Recreation and Trail Facilities in Sherwood**

TYPE	SIZE	LEVEL OF SERVICE
Tot Lots/ Mini-Parks	2,400 sq. ft. to 1 acre in size	Minimum of 1 acre to serve needs of 1,000 people
Neighborhood Parks	2-5 acres in size	Minimum of 1 acre to serve needs of 500 people or 1 park to a neighborhood of 2,000 to 4,000 people
Community Park	10-25 acres in size	Minimum of 1 acre to serve needs of 1,000 people or 1 park to a community of 20-25,000 people
General Open Space – Greenway	variable depending on location	Acres per population density is variable but intended to serve entire community
Natural Trails and Scenic Pathways	average of 1-2 miles long use intensity ~50 people/day	These typically border transportation and utility corridors, floodplains and other areas of natural and scenic value
Conservation Management Area	not specified	These generally consist of areas within the 100-year flood plain that are described as wetlands, marsh, bogs, and ponds, and includes all creek and natural drainage ways

*The Comprehensive Plan emphasizes that park facilities must be accessible and central to the population it serves. For example, the service area of a neighborhood park is considered to be ½-mile in radius.*

### Cedar Creek Trail

The Cedar Creek Trail is a planned off-street multi-modal hard surface trail approximately 12 feet wide that begins on the eastern edge of Sherwood at the Murdock/Oregon Street roundabout and runs parallel to the Cedar Creek Trail generally through the center of town and the Cedar Creek corridor north to SW Roy Rogers Road. The City received a federal Regional Flexible Fund grant for design and construction of portions of trail. The project segment from Oregon Street to the SW Meinecke-99W intersection is in the design phase and will be constructed in 2017. Funds are available to include an additional pedestrian/bicycle marked at-grade crossing at the signal at SW Meinecke-Highway 99W, to serve as a short-term solution to better connect pedestrians and bicyclists on both sides of 99W.

The long-term plans for the Cedar Creek Trail include a direct connection with an over or undercrossing of 99W within the Cedar Creek corridor, seamlessly connecting both sides of the Highway with a multi-modal shared use pathway. The City is planning the final alignment within the Cedar Creek corridor north of Highway 99W to Roy Rogers, but construction funds have not been allocated for this segment at this time. The Cedar Creek Trail is a section of the Metro Regional Ice Age Tonquin Trail, a 15-mile planned trail that will one day pass through Wilsonville, Tualatin, Sherwood and parts of Washington and Clackamas County

Ultimately, the intention is to connect the Cedar Creek Trail to the Tualatin River National Wildlife Refuge western parking area, just outside of city limits to the north. The Cedar Creek Trail will be able to connect with the planned trail network within the Sherwood West planning area. Specifically, Cedar Creek flows into Chicken Creek and there is an opportunity to connect the trail system near their confluence with a multi-modal trail linking the City's trail network to Sherwood West. By adding this integral connection point, the entire Sherwood West community may safely walk or bike to all points within the City using the trail network within Sherwood West by linking to the Cedar Creek Trail.

## Environment and Natural Resources

### FLOODPLAINS

There is a defined 100-year floodplain for a portion of Chicken Creek and West Fork Chicken Creek within Sherwood West. The floodplain for Cedar Creek at its intersection with Chicken Creek is also defined. These floodplain areas currently appear to be natural greenways within the study area. The upper reaches of Chicken Creek and Goose Creek do not have available flood study data.

### WETLANDS

National Wetland Inventory (NWI)-mapped wetlands in the study area are most prominent along the riparian corridor of Chicken Creek. Three smaller wetland areas are also shown outside this corridor—two near Chicken Creek and one near the headwaters of Goose Creek. In total, the NWI-mapped wetlands comprise just over 31 acres within the study area. The local wetland inventory from Metro is identical to the NWI.

Additional areas of wetlands are also likely present within the study area. These wetlands would most likely occur along smaller tributaries of Chicken Creek, Cedar Creek and Goose Creek as well as in areas of mapped hydric soils. The Natural Resources Conservation Service (NRCS) maps three hydric soil series within the study area: Wapato silty clay loam, Huberly silt loam, and Delena silt loam. Wapato soils occur within the floodplains of the major streams within the study area; Huberly soils occur on stream terraces and in the agricultural fields in the northern portion of the study area; and Delena soils occur in swales in the upper portions of the watersheds. Additional wetlands are likely present within areas of mapped hydric soils. An inventory would be necessary to determine the likely extent of these wetlands. Wetlands, streams, and natural waterbodies would also have a buffer regulated by Clean Water Services (CWS). These buffers generally extend up to 50 feet from the boundary of the sensitive area, but may extend farther in areas where slopes greater than 25% occur adjacent to the sensitive area.

### SLOPE HAZARD

Steep slopes (25% and greater) in Sherwood West are defined along drainage corridors for Chicken Creek, West Fork Chicken Creek, Goose Creek, and their tributaries. The

steeper slopes are linear along the banks of these drainage ways. In addition, a higher point in the southwest portion of the study area has slopes that exceed 25%. Generally, the study area has an undulating form but not drastic changes in terrain relief. Slope analysis in GIS calculated the results shown below in Table 3 (acreages clipped to the Sherwood West boundary).

**Table 4. Summary of Slope Hazard Area within the Study Area**

SLOPE (%)	AREA (acres)	PORTION OF STUDY AREA (%)
0-10	862.03	67
10-15	219.53	17
15-20	91.63	7
20-25	54.36	4
>25	63.45	5
TOTAL	1,291	100

## ENDANGERED AND THREATENED SPECIES

Endangered and threatened species may occur within the study area if suitable habitat is present. Data from the Oregon Biodiversity Information Center (ORBIC) indicates that one federally listed fish and one state-listed plant have been documented within two miles of the study area. Steelhead (*Oncorhynchus mykiss*), which is federally listed as threatened, is known to occur in Chicken Creek and Cedar Creek. White rock larkspur (*Delphinium leucophaeum*), which is state-listed as endangered, is known to occur to the south of the study area and could occur within the study area if suitable habitat exists.

The U.S. Fish and Wildlife Service (USFWS) lists nine additional federally listed endangered, threatened, and candidate species that are known or suspected to occur in Washington County (Table 4). None of these species are known to occur within the study area, but they could occur if suitable habitat is present. An inventory of the study area would be necessary to document the occurrence of these species or the presence/absence of suitable habitat within the study area.

**Table 5. Endangered and Threatened Species**

Common Name	Scientific Name	Status	Comments
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Threatened	
Northern spotted owl	<i>Strix occidentalis caurinus</i>	Threatened	Habitat not present
Marbled murrelet	<i>Brachyrhamphus marmoratus</i>	Threatened	Habitat not present
Streaked horned lark	<i>Eremophila alpestris strigata</i>	Threatened	
Nelson's checkermallow	<i>Sidalcea nelsoniana</i>	Threatened	
Willamette daisy	<i>Erigeron decumbens</i> var. <i>decumbens</i>	Endangered	
Kincaid's lupine	<i>Lupinus sulphureus</i> ssp. <i>kincaidii</i>	Threatened	
Fender's blue butterfly	<i>Icaricia icarioides fender</i>	Endangered	
Red tree vole	<i>Arborimus longicaudus</i>	Candidate	

## Landform Analysis

Throughout the Sherwood West Planning Process, citizens and stakeholders have highlighted Sherwood's small-town character as the leading identifier to help describe the quality of life. In Chapter 4, History and Pattern of Urban Growth, we raised the idea that this character could be related to the fact that Sherwood is comprised of a series of walkable neighborhoods. In the following chapter we explore this idea further as we take a closer look at the landscape upon which the community was built. The paradox we attempted to explain is this: How is it possible that the Sherwood community consistently describes itself as "small-town", despite its booming expansion from 3,000 to nearly 19,000 people in just over 20 years? How can Sherwood hold on to this identity, character and quality as it continues to grow?

## DOMINANT LANDFORMS

To better understand the underlying topography we first studied a variety of maps at different scales. The first map we looked at came from the State of Oregon's ESRI data viewer. The map shows Sherwood in a slightly larger context to include the surrounding communities of Newberg, Wilsonville and Tualatin. There is a clear separation between the cities and dramatic landforms in between. The shaded relief character of the map clearly shows a wide variety of topographies: rivers, flat flood plains, creeks and hills. These landscape forms play a crucial role in Sherwood's location relative to its neighbors.

Zooming in on Sherwood and its direct surroundings, we studied these landforms in greater detail. Instrumental in this study were the topographic quadrangle maps provided by the United States Geological Survey (USGS). The maps we used show Sherwood ca. 1960, prior to the late twentieth century boom. The maps show 10 foot contour lines, streams, vegetation, roads, railways, powerlines, structures etc. In this particular map it is clear to see that Sherwood settled on a flat plain adjacent to Cedar Creek and is surrounded by hills to the east, west and south, and the flat floodplain of the Tualatin River to the north. Creeks carve canyons and valleys out of hillsides as precipitation finds its way to the lowest point.

By accentuating the hillsides with shading, a pattern of steep hillsides, moderate hillsides and flat lands appears. As expected, the majority of Sherwood is built on flatter ground where it is easier and less expensive to develop. Sherwood settled in the middle of a landscape that is highly varied and quite stunning in its characteristics. We recognize four main land forms, as shown in Figure 4.



The Chehalem Mountains to the West, as seen from Synder Park



Tonquin Scablands to the east, as seen from Tualatin/Sherwood Road

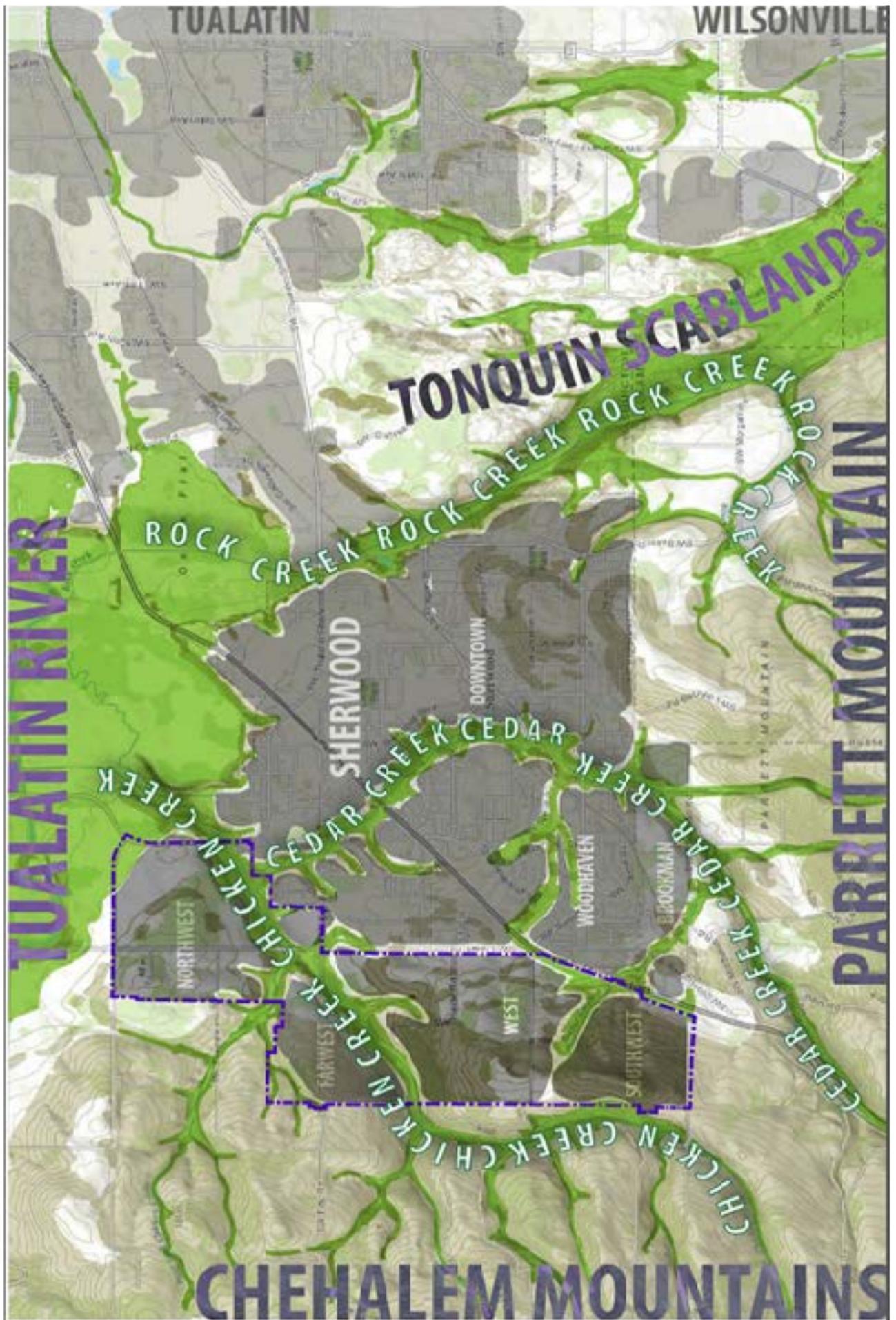


Tualatin River as seen from Roy Rogers Road



Parrett Mountain, as seen driving south on Highway 99W at Chapman Road

Figure 4. Sherwood's Dominant Landforms



What unites these landforms is water. Precipitation falling on the landscape finds its way to the lowest point of the Tualatin Valley, carving out canyons and stream beds along the way. This process provides the final key landscape ingredient: creeks. Sherwood is characterized by its relationship with three significant creeks:

**1. Cedar Creek:** providing the origin of Sherwood. It runs through the entire town, providing distinct places along the way such as Stella Olson Park and the “gateways” into Sherwood where it crosses 99W.

**2. Rock Creek:** the natural organic boundary to the east side of Sherwood. It runs through the Tonquin Scablands, a valley that resulted from erosion and scouring during seasons of thawing and freezing in the last ice-age. Crossing Rock Creek creates several distinct gateways, like at the Oregon Street/Murdock Road Roundabout.

**3. Chicken Creek:** on the west side of Sherwood and an important part of the Sherwood West Study area. Chicken Creek provides extremely valuable fish habitat and is very visible from Elwert Road but also from Roy Rogers Road where it creates another natural “gateway”.

Eventually all three creeks find their way to the Tualatin River. The river’s floodplain is relatively flat, forming a wide open landscape with territorial views of Mount Hood and the Cascade Range.

## A LANDSCAPE BASED URBAN FORM

Over time, Sherwood nestled itself into this landscape, by occupying pockets between creek branches and bounded by steeper hillsides. The resulting urban form is broken up into smaller, neighborhood-sized fragments, connected by stream corridors and adjacent trails. Nearly every resident is only a short walk away from nature, thus defining a connection with nature as the most dominant sense of place.

Sherwood West offers similar conditions for neighborhood-sized, landform based “place-making” that is in line with Sherwood’s existing identity. The interface between future urban areas and existing natural environment will be a defining quality of Sherwood. How we plan for this interface today, will have major implications tomorrow.

## PLANNING AREA LANDFORM BASED SUB-DISTRICTS

In the Sherwood West Area, four distinct sub-areas are recognized within the dramatic landscape of the creeks, hills and valleys. For the purpose of identification they have been given the following working-titles:

- **The North District:** south of Scholls-Sherwood road, north of Chicken Creek
- **The West District:** in the middle of the planning area, directly west of Elwert Road and east of Chicken Creek
- **The Far West District:** west of Chicken Creek and adjacent to Edy Road
- **The Southwest District:** north of Chapman Road and south of Goose Creek (a tributary to Cedar Creek)

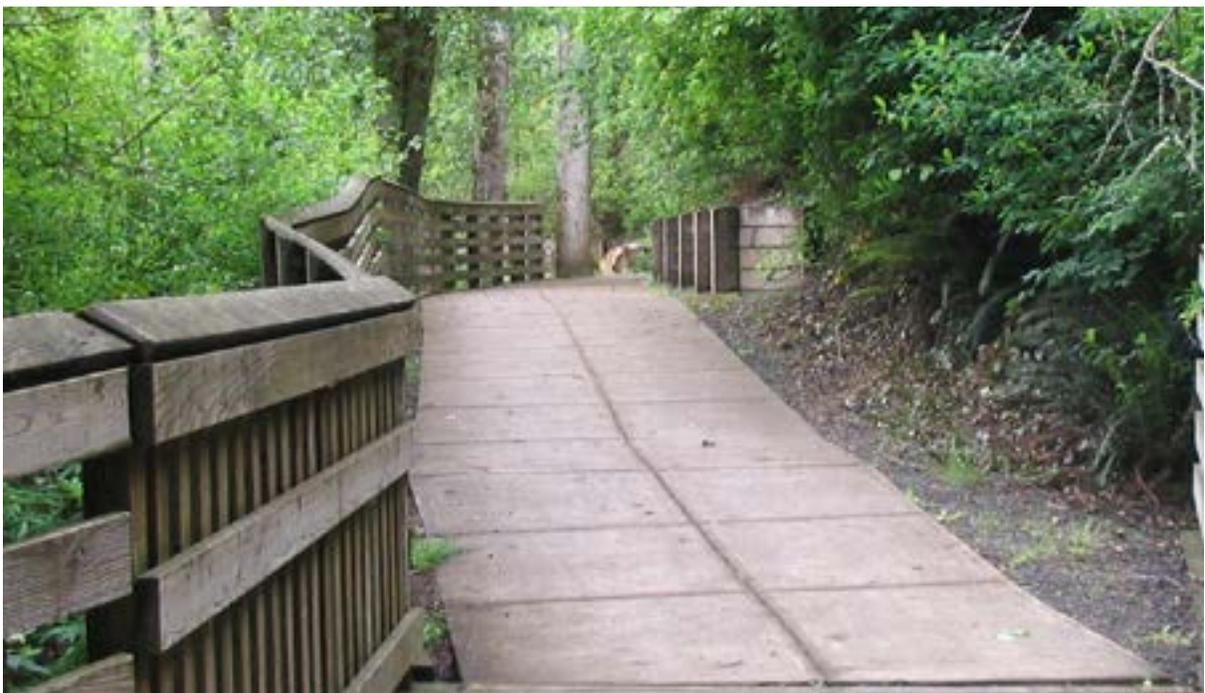
Each of these districts is defined by strong landforms, but the most significant feature is Chicken Creek. Chicken Creek forms the western edge of the southwest and west districts, before it turns east to cross and divide the entire Sherwood West planning area. The northwest and far-west districts are on the other side of Chicken Creek, compared to the rest of Sherwood. Crossing Chicken Creek for urban development is not only challenging from an infrastructure point of view, it also presents a psychological threshold of sorts. By crossing the natural topographical boundary, Sherwood would quite literally jump over a threshold and move into territory that has less clear (and near) boundaries. The decision to expand across Chicken Creek should be carefully considered as such development could open the door to future urban expansions beyond Sherwood West, which could challenge Sherwood's small-scale character.

## IDENTITY

Sherwood is special. It is not like any other place in the Portland Metropolitan Area. Its landscape setting truly sets it apart from anywhere else: Newberg is on the other side of the Chehalem Mountains; Wilsonville is across Parrot Mountain; Tualatin is across the Tonquin Scablands, and Tigard and Beaverton are across the Tualatin River and its associated floodplain.

It is this sense of separation, combined with a strong and coherent structure of walkable, landscape integrated neighborhoods that creates the unique character and identity of Sherwood. A character expressed and valued by the majority of the people that engaged with this project. Throughout the process it has become clear that this is the identity that should form the blue print for the future of Sherwood.

For over a century, Sherwood has been uniquely shaped by its relationship to the landscape and the creeks in particular. As Sherwood evolves and grows, it seems prudent to continue cultivating the quality of life that this relationship brings to the community. These geographic and quality of life assets are the foundation of Sherwood's special identity. These assets deserve to be retained and celebrated.





## VI. Sherwood West Preliminary Concept Plan

The Sherwood West Preliminary Concept Plan is the result of significant input from the community, technical advisors, stakeholders and City staff. The Plan builds upon a collective process in which we:

- Identified existing conditions and key opportunities;
- Developed a vision, set goals and proposed evaluation criteria;
- Designed alternative concept plan scenarios;
- And considered the relative merits of each scenario and the key features that best represent the goals and objectives of Sherwood West.

### Development of Alternatives

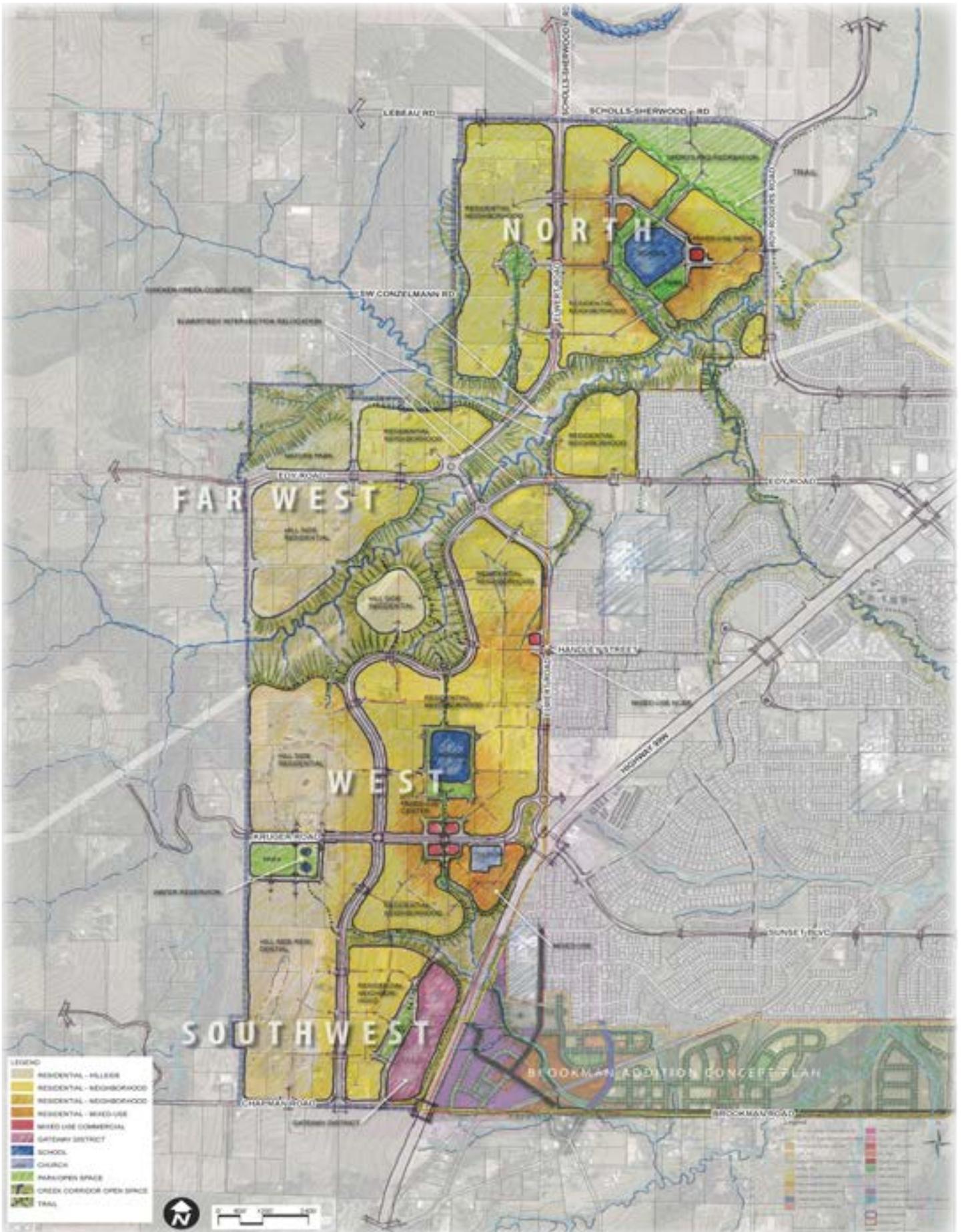
We crafted three draft alternatives to reflect a wide range of ideas in collaboration with the Community Advisory Committee, the Technical Advisory Committee, City staff and the community. The alternatives were intended to explore and compare a variety of ideas in order to solicit preferences for individual and collective plan elements to be combined and advanced into a single preferred alternative. Each alternative recognized the four distinct sub-areas: the North District, West District, Far West District and the Southwest District. See Appendix 4 for a map of each alternative and their supporting narrative.

### Preferred Alternative

The resulting Preferred Alternative is crafted in response to guidance received from stakeholders, technical advisers, City staff and the community on the three alternatives (Figure 5). The Plan directly builds upon the landform analysis and the area's existing conditions, which strongly suggests that the unique identity of Sherwood is defined by its walkable neighborhoods, "nestled" into the rich landscape of creeks, hillsides and valleys. Sherwood's landscape continues to offer direction for future urban growth based on existing characteristics.



Figure 5. Sherwood West Preliminary Concept Plan



**In the Sherwood West Area, each of the four (4) distinct sub-areas is recognized as having unique qualities within the dramatic landscape of these creeks, hills and valleys.**

**The West District** is a mixed-housing district organized around a new school, neighborhood park and mixed-use center. A new neighborhood connector street paralleling Elwert serves the neighborhood from the west side. Housing intensities transition out from this mixed-use center (high to low) with hillside residential on the higher and steeper slopes. Elwert Road is envisioned to be a multi-modal boulevard and extension of Sunset Boulevard, east of Highway 99W. The intersection of Kruger, Elwert and Highway 99W is reconfigured with a roundabout that conforms to the existing City of Sherwood and Washington County Transportation System Plans.



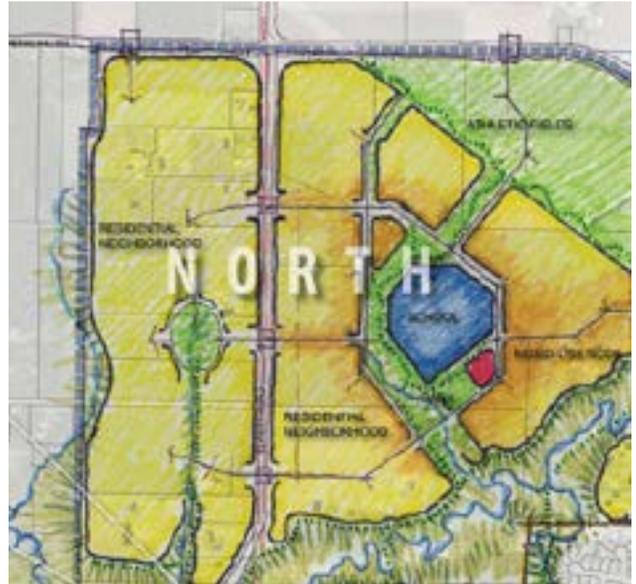
**The Southwest District** is a mostly residential neighborhood with varying intensities and hillside residential on the higher and steeper elevations slopes. This district includes a “Gateway to Wine Country” adjacent to Highway 99W that could facilitate unique opportunities based on Sherwood’s geographic location relative to surrounding wineries: tourism, lodging, a visitor center and other wine industry and agricultural-related commercial uses. An integral trail system is included to provide safe, convenient and comfortable non-motorized connections between all districts and existing Sherwood destinations, including the historic downtown.



The Gateway District shown in the Sherwood West Preliminary Concept Plan is appropriately named: along Highway 99, Sherwood transitions the Portland metropolitan area into the Willamette Valley’s wine country. Situated at this entry point, Sherwood has an opportunity to capitalize on visitors entering or leaving wine country on Highway 99, and draw more heavily on the regional tourist market. To tailor services to the growing wine and specialty agriculture tourism industry, the Gateway District could have lodging appropriate for tourists, tasting rooms, a restaurant, coffee shop and boutique oriented around a central plaza. In Walla Walla, Washington, the Walla Walla Incubators provide an interesting example of the kind of development that could be paired with restaurants, lodging, and small retail shops to comprise Sherwood’s Gateway District.

Because this specific opportunity has not been studied, more market analysis and building design will be necessary before planning and implementation of the Gateway District. See Appendix 6: Retail/Commercial Implementation for more information.

**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. The corner of Roy Rogers and Scholls/Sherwood Road is envisioned as a sports and recreation area that serves the City of Sherwood but allows easy access to visiting athletes from elsewhere in the region. This center could include many services, such as indoor and outdoor sports facilities and arenas, a community pool and other recreational spaces that cater to both children and adults.



The location of the sports and recreation area on the edge of town offers both local (non-motorized) access from the adjacent neighborhood, as well as vehicular access from the adjacent arterial network. The neighborhood park connects the sports and recreation area with the school and a trail along a Chicken Creek branch. 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 headwaters provide the terminus for a second Chicken Creek branch trail. These trails connect to parks, other natural features and the larger, city wide trails system.

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*"I love the community surrounding the school and park and really like the athletic fields - this is needed in Sherwood. I also like the trail connectivity between the schools, homes and athletic fields." -Survey Respondent*

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**The Far West District** includes a mixed residential neighborhood with the higher and steeper elevations envisioned to be hillside residential. The northeast corner of this district is set aside for a nature park to capitalize on the existing habitat values and sensitive topography. Stream corridor buffers are generous to reflect community priorities for natural feature protection, recreation and connectivity. While these may be reduced in refinement planning stages to reflect regulatory constraints, the recreational features such as trails would remain within the corridor.



The Plan shows the intersection of Edy and Elwert Road in a new proposed location to reduce the impact of infrastructure improvements (road widening) on sensitive creek confluences. This shift offers the additional benefit of potentially discouraging regional freight traffic that seeks an alternative north-south route to Highway 99W. Initial cost estimates for improvements to the Edy/Elwert intersection show that the proposed realignment would be more cost-effective than improving the existing roads in their current location. Because this realignment requires further study, the Plan includes an alternative (B) to this realignment, showing the intersection in its original location for purposes of comparison.

## SW Edy/SW Elwert Road Interception Pros and Cons

The intersection alignment of SW Edy and SW Elwert Roads is the largest potential transportation development in the Sherwood West Preliminary Concept Plan. An analysis of how this intersection will be handled was predicated on the development of realistic options and a comparison of the pros and cons of any developed alternative. Two preferred options were identified and analyzed with respect to constructability, construction costs, and environmental impacts.

### Option 1

Option 1 consists of realigning SW Elwert Road and SW Edy Road such as to 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. Option 1 will require construction of structural bridging and 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.



**Option 1**

This option has the benefit of flexibility relative to site development. The need to initiate this project would be predicated on the development of the North District. The North District has significant site development items (e.g. school, regional athletic facility) that would require and be able to cover the majority of the cost of constructing the improvements due to the availability of government funding options. The realignment has the benefit of taking advantage of minimizing environmental impacts and impeding the use of the route to freight traffic.

Construction of this option will also allow the existing SW Elwert/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 indicate that this option, although expensive, has the least cost and impact to local and commuter traffic during construction.

### Option 2

Option 2 consists of correcting the vertical alignment of the SW Edy/SW Elwert Road intersection to meet American Association of State Highway and Transportation Officials (AASHTO) design standards. This means raising the road elevation (approximately 10-20 feet) to flatten the rolling topography for safer stopping sight distances at intersections. 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, there would be impacts to the existing right-of-way and adjacent wetlands due to the need for additional fill. 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. 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.



**Option 2**

Option 2 does lend itself to phased development in conjunction with the North District for the same reasoning as Option 1. However, reconstruction of SW Elwert Road would require closure of the roadway to through traffic until the roadway completion. This would have a definite negative impact to local and commuter traffic during the expected 1 to 2 year construction cycle.

Analysis of the estimated construction costs indicate that this option is the most expensive due to the required mitigation of environmental impacts, and would have the greatest impact to local and commuter traffic during construction. Please see Appendix 7 for the full Transportation Options Alternative Analysis Report.

## Evaluating the Preferred Alternative

The Sherwood West collaborative planning process began with crafting a vision for Sherwood West. With careful guidance from the community, we created a set of goals and evaluation criteria to help weigh the relative merits of each alternative concept plan and the key features that best represent the vision for Sherwood West. The vision is shown below.

Sherwood West complements the City's form and small town character through an integrated and continued pattern of the community's most valued neighborhoods. Through a range of well-designed housing options and protected natural areas, Sherwood West is a great place for families. It helps satisfy the City's need for well-planned growth and other community needs. Designed as a complete community, development is orderly, attractive and protects views. The area is well administered and development contributes to the fiscal health of Sherwood.

Figure 6 shows how well the Preferred Alternative meets each of the six goals for Sherwood West, as well as the criteria used to evaluate the Plan's performance. A high mark indicates outstanding performance, going above and beyond the evaluation criteria to meet the goal. A medium mark indicates good performance, where the Plan meets the criteria but may need more work to meet the goal. Finally, a low mark indicates that the Plan's performance is satisfactory but it must incorporate additional considerations to meet the goal.

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*“Plan for extra-wide sidewalks in the residential areas. It’s my observation that there are a lot of people walking for exercise these days, lots of kids on bikes, and many people walking dogs.”*

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*-Survey Respondent*

**Figure 6. Evaluation of Preferred Concept Plan**

GOAL	Evaluation Criteria	High	Med	Low	Comments
1. Growth is well-planned	<ul style="list-style-type: none"> <li>• Neighborhoods are phased adjacent to existing development</li> <li>• Well phased extension of services</li> <li>• Connectivity</li> </ul>				<ul style="list-style-type: none"> <li>• Neighborhoods are well connected and build upon adjacent development, yet will rely on a coordinated extension of infrastructure services.</li> </ul>
2. Design includes complete community attributes	<ul style="list-style-type: none"> <li>• Incorporates nature</li> <li>• Neighborhood retail</li> <li>• Provides amenities that cannot be located in existing Sherwood</li> </ul>				<ul style="list-style-type: none"> <li>• A “Gateway to Wine Country” could help facilitate tourism opportunities through lodging, a visitor center and wine-related commercial uses.</li> <li>• Small scale retail serves neighborhoods within walking distance</li> <li>• An integral trail system provides safe, convenient and comfortable non-motorized connections between all districts, the existing Sherwood trail system and historic downtown</li> </ul>
3. Development respects and recognizes Sherwood pattern, heritage and small town feel	<ul style="list-style-type: none"> <li>• Walkable</li> <li>• Integrates with existing Sherwood</li> <li>• View corridors, natural features retained</li> </ul>				<ul style="list-style-type: none"> <li>• Development is “nestled” into the rich landscape of creeks, valleys and hillsides.</li> <li>• Neighborhoods are walkable and accessible.</li> </ul>
4. Concepts promote health	<ul style="list-style-type: none"> <li>• Walking, bicycling easy to access</li> <li>• Access to transportation choice, transit</li> </ul>				<ul style="list-style-type: none"> <li>• Walking trails connect neighborhoods to parks, schools and the Sports and Recreation area.</li> <li>• Neighborhoods are organized around nature.</li> <li>• Roads are multimodal boulevards serving pedestrians, cyclists and motorists.</li> </ul>
5. Development protects and provides access to nature	<ul style="list-style-type: none"> <li>• View corridor, other assets protected</li> <li>• Walking trails along heritage resources</li> </ul>				<ul style="list-style-type: none"> <li>• Edy/Elwert realignment avoids the sensitive confluence of streams.</li> <li>• Development respects topography and wide riparian buffers.</li> </ul>
6. Implementation is pragmatic	<ul style="list-style-type: none"> <li>• Options minimize cost of infrastructure</li> <li>• Balance of benefits and burdens of development</li> </ul>				<ul style="list-style-type: none"> <li>• Reduced commercial may yield less revenue for infrastructure</li> <li>• Realigning the Edy/Elwert intersection appears to be more cost-effective than bringing the current facilities up to standard.</li> </ul>

# VII. Sherwood West Phasing and Funding Strategy

This chapter provides a high-level Phasing and Funding strategy that accompanies the Plan. Broadly, the purpose of this strategy is to inform decisions regarding possible future urban development in Sherwood West by providing preliminary information regarding approach to funding and phasing infrastructure, services, and the other elements of the complete community envisioned in the Preliminary Concept Plan.

## Phasing

Development in Sherwood West will require infrastructure investments to bring rural roads to urban standards, cross creeks and other natural habitat areas, and address topography that creates challenges for stormwater drainage and sewer and water provision. These complications are anticipated to carry relatively high costs, and require that the City consider phasing in infrastructure to match a development timeline, rather than building infrastructure all at once. With input from interviews with local service providers and analysis completed by City Engineer, the consultant team created an initial phasing plan for the Plan, which will be considered in more detail if and when Sherwood West is brought into the regional UGB and is preparing to allow urban-level development.

### Phasing and Costs for Roads, Sanitary Sewer, Water and Stormwater

The City Engineer, with support from outside transportation engineers, evaluated phasing and costs for city-controlled hard infrastructure (roads, sanitary sewer, water, stormwater, site preparation, traffic elements, and right-of-way acquisition). Figure 7 shows a general phasing map and an order of magnitude for estimated costs associated with each identified area. The area numbers correspond with the desired phasing timeline.

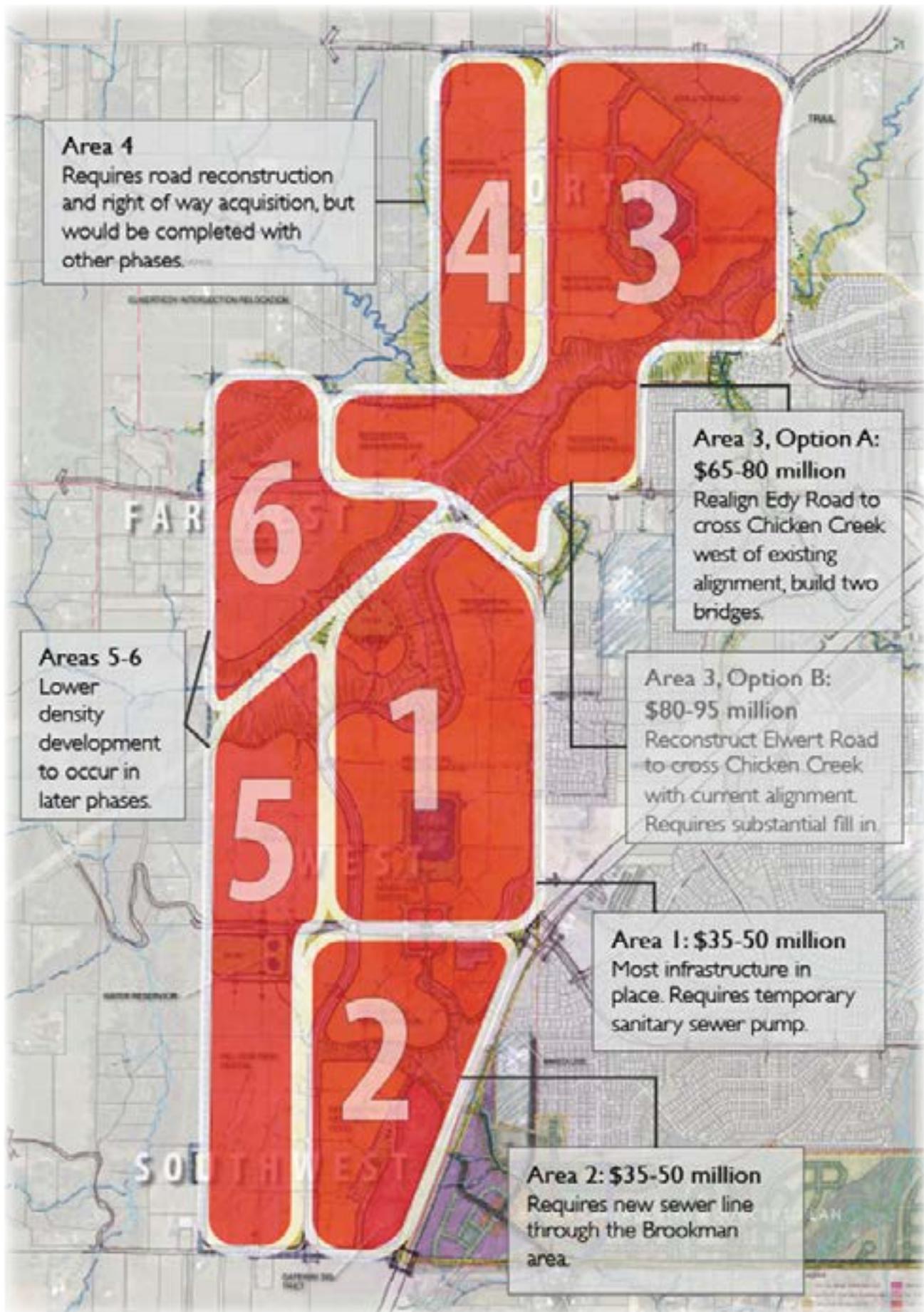
### Purpose and Approach

In response to the preliminary nature of the concept plan itself, the Strategy is not prescriptive and specific, but instead: (1) identifies a place for a more detailed implementation strategy when a concept or master plan is developed; and (2) identifies financial and other barriers or challenges to implementation and preliminary approaches to overcome them.

This Funding and Phasing Strategy was completed in two major steps. Early in the process of developing the pre-concept plan, key City staff and other stakeholders were interviewed regarding infrastructure and service provisions in the area. Key findings from the interviews helped the consultant team and City staff to understand current financial constraints and opportunities associated with the provision of infrastructure; these constraints and opportunities created a foundation for the development of the land use alternatives. For more information, please see Appendix 5: Service Provider Interviews.

Then, once the City identified the Preferred Alternative, a framework was developed for phasing and funding that considers appropriate timing for development and funding sources. City staff provided cost estimates and recommended phasing. In addition to comments from the consultant team and City staff, this Phasing and Funding Strategy also incorporates input from the Technical Advisory Committee (TAC) and Community Advisory Committee (CAC).

Figure 7. Sherwood West Preliminary Phasing



Generally, Area 1 has good development potential: it is relatively flat, proximate to existing Sherwood development, and already contains city-owned land that can be leveraged for right-of-way or for development. It includes planned transportation improvements at the roundabout intersection of Elwert Road and Kruger Road, and unlike other parts of Sherwood West, can be served with a temporary sanitary sewer pump station. All of these considerations combine to make Area 1 the best near-term opportunity for development in Sherwood West.

After Area 1, development could either move to the north or south, but both areas require major infrastructure improvements to be ready for development. The area to the south, Area 2, will require approximately 8,000 linear feet of new sewer line through the Brookman area to accommodate new development, by itself estimated to cost approximately \$1.7 million. Developing to the north, Area 3, requires crossing Chicken Creek, which would be a large and expensive infrastructure project. Given preliminary cost estimates, Area 2 is less expensive to serve than Area 3, especially if Brookman is annexed, as the sewer line would also serve the Brookman area.

Development of Areas 4, 5, and 6 should occur after Areas 1, 2, and 3. The infrastructure required for development in Area 4 will occur in Phase 3 and therefore, the City Engineer identified infrastructure costs in Area 4 as insignificant. Areas 5 and 6, to be developed last, face significant topographical issues that will require a water tower upgrade and pump system for upper elevations. The new system will be a large and expensive undertaking for the City. Costs will be identified during future refinement plans.

**The preliminary estimate of costs includes the following categories of infrastructure and expenses:**

- **Site Preparation.** Includes mobilization, erosion control, clearing and grubbing, temporary protection and traffic control, and removal of structures and obstructions.
- **Roadway Elements.** Includes asphalt pavement, curb and gutter, sidewalk (6-foot width), retaining wall, general excavation, street tree, and planter strip landscape planting.
- **Storm, Sanitary and Water.** Includes sanitary sewer construction, sanitary sewer pump station, storm water sewer construction, water system construction, and stormwater quality treatment facility. Water from fire hydrants should be sufficient to provide at least 1,000 gallons per minute to all single-family and commercial buildings. If a structure is 3,600 square feet or larger, then additional flow may be needed (Oregon Fire Code B105.2). The Fire District strongly encourages new residential developments to include fire sprinkler systems to decrease fire and life safety risks
- **Right of Way Acquisition.**
- **Traffic Elements.** Includes Traffic signals, rectangular rapid flash beacons, striping, signage, and street lighting.
- **Other Construction Items and Contingency.** May include costs such as landscaping, monuments, pedestrian amenities, and specialized street lighting.

## Other Service Needs

In addition to transportation, water and sewer, and stormwater, the City of Sherwood must also consider other service needs. For more detail, please see Appendix 5: Service Provider Interviews. In summary:

- **Schools.** Given the current capacity of schools near Sherwood West, the Sherwood School District identified a likely need for two new schools and improvements to Laurel Ridge Middle School to accommodate population growth in Sherwood West depending on the amount of land annexed. All costs associated with the construction of new schools and improvements to existing schools, including land acquisition costs, should be considered.
- **Public Safety.** As Sherwood West develops, the City will need to have increased capacity for additional fire and police service in the area. Appropriate fire and police response times and general access to the area will rely on transportation connectivity that will be addressed through more detailed planning work. The City is currently working to establish level of service standards that will help to clarify those costs in the coming months.
- **Other City Services.** The City should also consider increased costs for services that will grow as the population grows, for example, library and social services.

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*“Roads should be planned so that they discourage freight traffic, respect environmental conditions and keep our kids safe.” -Survey Respondent*

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## Funding Development in Sherwood West

New infrastructure in Sherwood West will require a mix of new and existing funding sources, and will likely draw from local (City and private developer) and regional (County and possibly Metro) sources. We will seek to maximize the revenue from existing sources (described in summary below) before turning to new sources.

### Existing Funding Sources

The City of Sherwood already has access to mechanisms to fund infrastructure in Sherwood West. These tools will lay the foundation of the future funding plan.

#### ***Transportation Development Tax (TDT)***

Washington County's TDT is a tax on all new development in Washington County based on the development's impact on the transportation system. Expected impact is based on average daily trips generated for various land uses. TDT revenue funds pre-determined transit and road projects that provide additional capacity. Several infrastructure projects in Sherwood West will be eligible to receive TDT funds. Once development begins in Sherwood West, the development will contribute to the TDT.

#### ***Systems Development Charge (SDC)***

In addition to the County's TDT, the City of Sherwood also has a citywide SDC that charges new development. Funds help pay for water, sewer, storm, parks, and street costs. Sherwood West will be eligible to receive SDC funds.

#### ***Major Streets Transportation Improvement Program (MSTIP)***

Washington County property taxes fund major transportation projects in the County through the MSTIP program. Since the late 1990's, the MSTIP tax has been part of the Washington County's fixed tax rate. Because the proposed realignment in Sherwood West will relieve pressure along Highway 99, considerable MSTIP funds may be available for the realignment.

#### ***Metropolitan Transportation Improvement Program (MTIP)***

The MTIP is a "federally mandated four year schedule of expenditures of federal transportation funds as well as significant state and local funds in the Portland metropolitan region."<sup>6</sup> Sherwood West's transportation infrastructure may be eligible for various MTIP funds.

<sup>6</sup> [http://www.oregonmetro.gov/sites/default/files/mtip-pubdraft\\_fy15-18\\_pb032014.pdf](http://www.oregonmetro.gov/sites/default/files/mtip-pubdraft_fy15-18_pb032014.pdf)

## Evaluation of New Funding Tools

Once infrastructure costs are finalized and revenues from the existing tools identified above are estimated, the City will be able to establish a funding “gap” for infrastructure in Sherwood West. The gap will be the amount of funding not available from existing sources that must come from new funding tools. Nearly every UGB expansion area in the Portland Metro Area has had a funding gap, and has required the use of new tools to fill that gap. Anticipating this outcome for Sherwood West, a wide range of potential new funding tools were evaluated against eight established criteria to identify a list of preferred tools that should be considered as a starting place for filling funding gaps, if and when the area develops. The evaluation began by identifying “fatal flaws,” or constraints of tools that make them very unlikely candidates for Sherwood West. After setting aside all of the tools with fatal flaws, the consultant team identified a much shorter list of four preferred tools most applicable to and best for Sherwood West for further analysis in later stages of planning (Appendix 8: Initial Evaluation of Funding Tools provides findings). Table 5 describes the eight criteria.

The final funding plan will likely rely on a combination of tools to fill any funding gaps, and could include both preferred tools and other tools with lower revenue capacity. The tools identified as preferred tools are considered potential cornerstone tools of the ultimate funding plan: they are not “silver bullets” that can individually fund the entirety of Sherwood West’s infrastructure. The matrix in Appendix 8 identifies four preferred tools (in green), based on ratings. Each preferred tool has capacity, is often used for similar infrastructure types, and is often part of funding plans for expansion areas.

- **Property Tax:** General Obligation (GO) Bonds. Local property taxes are committed to pay debt service on a city-issued GO Bond. GO bond levies typically last for 15 to 30 years for capital projects, and must be approved by a public vote. The effective property tax levied to support GO bond obligations can vary over time, based on the total assessed value of property within the jurisdiction that issued the bonds and the scheduled GO bond payment obligations.
- **Supplemental System Development Charge (SDC).** Supplemental SDCs are additional SDCs charged on a specific sub-area of a city and are supplemental to the city’s existing SDC.
- **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. LIDs must be supported by a majority of affected property owners.
- **Utility Fee.** A utility fee is a fee assessed to all businesses and households in the jurisdiction for use of specified types of infrastructure or public utilities, based on the amount of use (either measured or estimated). Most jurisdictions charge water and sewer utility fees, but utility fees can be applied to other types of government activities as well (both capital projects and operations and maintenance). A utility fee could be applied citywide or in a smaller area within a city.

**Table 6. Evaluation Criteria for Funding Tools**

Criterion	Description
<b>Capacity</b>	Revenue-generating capacity considers how much money the tool can generate. The amount any funding tool can raise is directly tied to the rate imposed, and the rate imposed is always at least partially determined by legal authority and political acceptability (both described below). For example, the revenue capacity of a local gas tax depends on whether a community is legally allowed to impose the tax and up to what rate, and what rate its policymakers and constituents are willing to adopt.
<b>Timing</b>	For Sherwood West, it will be important for revenues to be available sooner rather than later. Revenue sources that don't provide revenue until after development occurs are ill suited to fund infrastructure in the early stages of Sherwood West.
<b>Administrative Ease</b>	<p>The easier it is to administer a tool, the lower the costs of administration should be, and the more of the gross revenue that will be available as net revenue for infrastructure projects in Sherwood West.</p> <p>Some questions to consider when evaluating administrative ease include: Would new staff have to be hired? Would a new organizational structure or a new budget procedure have to be put in place? Would collection of the funds be an arduous task? Are new technologies required? The answers to these questions depend in part on what administrative mechanisms are already in place that could be used at little marginal cost.</p>
<b>Stability/ Predictability</b>	<p>Revenue stability considers whether the tool is likely to avoid large fluctuations each year. The more stable a tool, the more it can be assumed to contribute constant revenues over time. Stability is more than a mental comfort: demonstrating stability may be required, for example, for a funding stream that is being pledged to repay a revenue bond.</p> <p>Revenue predictability is related: it considers whether revenue generated by the tool is likely to be close to the forecasts analysts might make, or whether it depends on too many assumptions that could turn out to be inaccurate.</p>
<b>Flexibility</b>	<p>A funding tool may be a little less useful to jurisdictions if its use is limited to certain types of projects. In general, flexibility is a positive attribute. If the revenue can be used for any infrastructure project, there is a greater ability to channel funds to the use with the greatest net benefit at any point in time. The flip side is that if a revenue tool is too flexible it can be difficult to "protect" it from being redirected to other uses.</p> <p>As a practical matter, however, local jurisdictions have many ways to move funding around. For example, even though systems development charges can only be used for projects required by growth, if such projects are not now being covered 100% by systems development charges increasing systems development charges may free up other sources of funding that are more fungible.</p>
<b>Fairness</b>	Fairness, also referred to as equity, can be defined in many ways. In the context of infrastructure funding, the key question related to fairness is "who pays?" A standard definition of fairness in public finance is that the charges that fund the improvement are tied to the users who receive benefits from (or impose costs on) the improvement. Using this definition, and taking a new transportation project as an example, user charges like tolls are fairer than broader-based sources like general property taxes, because the drivers using the transportation most are the ones paying most of the cost of the improvement.
<b>Legality</b>	<p>An essential part of an assessment of a funding tool is determining the legality of the tool. If the tool is currently prohibited by state statute, then there is a very big administrative hurdle to be surmounted up front. All the benefits of a funding tool are moot if the tool is not legal or cannot become legal within the desired timeframe.</p> <p>Even for tools that are legal (and most of the tools included in our evaluation are legal in Oregon at this time), the real issue is whether the tool has detailed and complicated legal requirements that would (1) require a lot of work and cost to implement the tool; (2) raise the likelihood of legal challenge; (3) raise the likelihood that any legal challenge would actually be successful; or (4) reduce political acceptability by adding uncertainty and cost to the implementation process.</p>
<b>Political Acceptability</b>	One would think that if a tool is efficient, fair, and legal that it would be politically acceptable. However, it is not always true. Many times, jurisdictions have pursued the adoption of a funding tool that seemingly scores well on those criteria, only to have their efforts fail because the tool was politically unpopular. A notable example is sales tax, which is legal and efficient, and many would consider fair, but has been repeatedly rejected by Oregon voters, and is generally accepted as politically unacceptable. Thus, our evaluation criteria looks at not only which tools score well on our technical criteria, but also whether or not the tool has proven to be politically acceptable when other jurisdictions in Oregon have attempted to use it.





## VIII. Next Steps and Recommendations

### Next Steps

Once accepted by the Sherwood City Council, this Preliminary Concept Plan will serve as a resource for future discussion about regional Urban Growth Boundary (UGB) expansions. It will help decision makers decide what areas make the most sense for expansion, given:

- The availability of infrastructure
- The costs associated with the extensions of public services
- Property owner sentiment as it relates to growth and the expansion of the City into Sherwood West

Should the Metro Council decide to expand the UGB into any part of the Sherwood West area, this Plan document identifies the opportunities and issues that need to be addressed in a refinement planning process. During the refinement planning process, the City will again reach out to affected property owners and the larger community to develop a plan and associated zoning for the specific area. Upon adoption of a refinement plan, the property owners could petition the City Council to be annexed into Sherwood. As Sherwood is a voter-approved annexation community, Sherwood voters are ultimately in control of what and when land is brought into the city.

After successful annexation into the City, property owners are able to submit land use applications for development proposals consistent with the adopted refinement plan and associated zoning. Building permits and construction activities can be expected to follow land use approval. The graphic below illustrates the variety of key decision points and processes necessary before land can be developed at urban standards (city-level development) in the Sherwood West study area.

### Recommendations

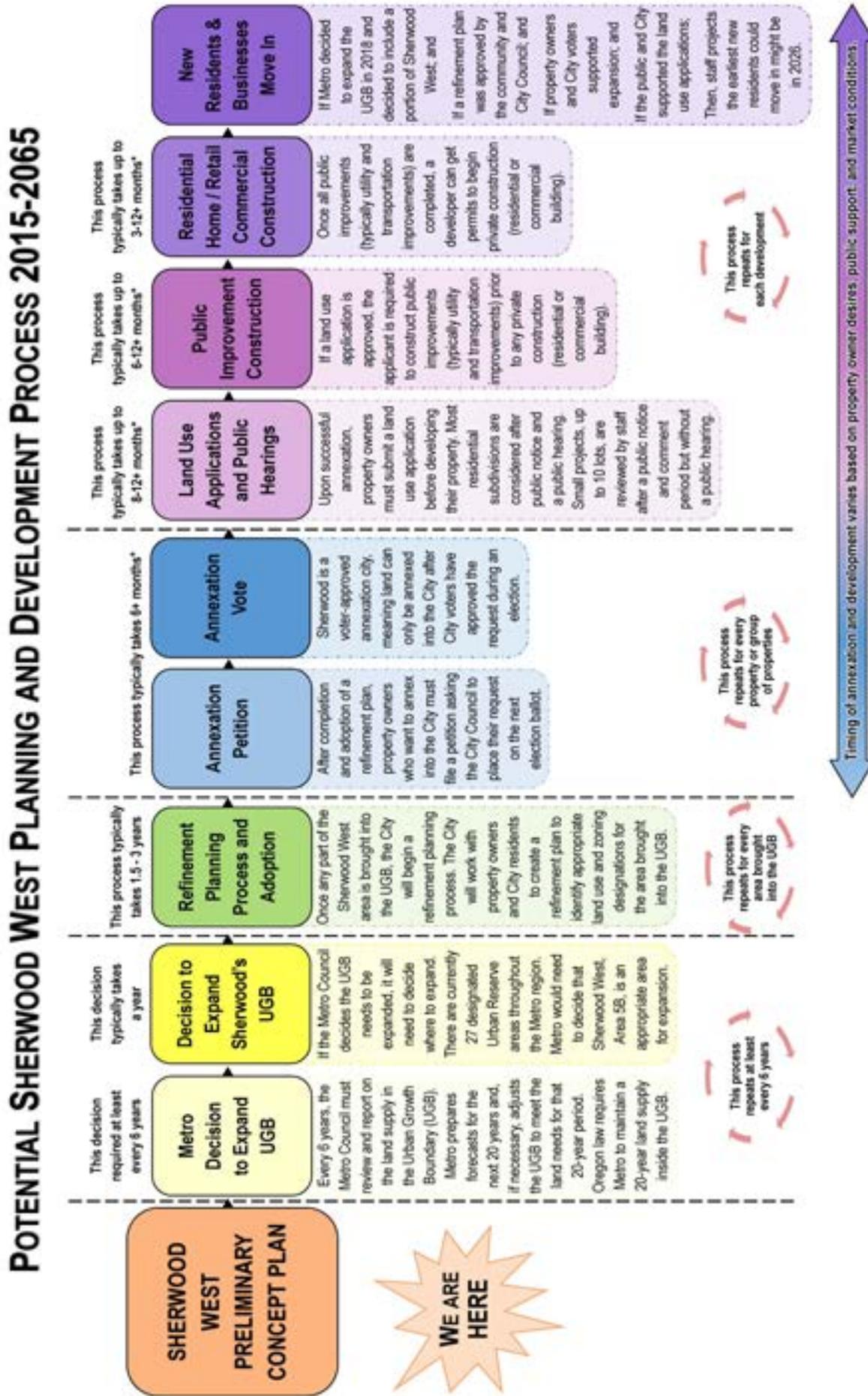
The timing for the need of Sherwood West to accommodate the City's growing population is uncertain. As such, attention to the details outlined in this strategy and near-term actions to continue to prepare for implementation will be important.

Implemented carefully, Sherwood residents and public entities will benefit from more urban-level development in Sherwood. Community members would gain additional housing choice and the community would receive increased public revenues from population growth in Sherwood West that will help keep pace with growing costs of providing public services. Additionally, as land supply in the current City limits dwindles, housing prices will continue to increase, making it more difficult for Sherwood's next generation to find housing in the area, or resulting in increased density.

**Staff will work with the community to consider the following short-term actions:**

- **Building upon partnerships with Washington County, so that road improvements made now anticipate future development and upgrades.** County transportation projects that consider future Sherwood West development will lead to the most efficient infrastructure development in the future.

Figure 8. Planning and Development Process



- **Continuing conversations with Metro.** City staff already interacts with Metro regularly on a range of issues. Moving forward, keeping information about land needs and issues in Sherwood West current will smooth conversations about adding Sherwood West when the time comes.
- **Continuing discussions with area property owners and the Sherwood community about Sherwood West.** These stakeholders are critical to the success of Sherwood West development, especially given the voter-approved annexation laws applicable in Sherwood. By tracking other annexation projects, the City can better understand when Sherwood West may be needed, how the community may support the incorporation of Sherwood West, and what issues are important to them.
- **Carefully consider opportunities to pursue right of way, school site, and park site acquisition, as those opportunities arise.** While more planning work is needed to identify all potential sites that could be acquired, some elements of the Preliminary Concept Plan may be certain enough that site acquisition could occur even before the area is included in the Urban Growth Boundary. Because Sherwood West land is less expensive now than it will be in the future, public agencies seeking land for facilities in the future could save money by acquiring the land now, and holding it for future development. This is particularly true for school facilities.

The City should also look forward to the long term as funding for infrastructure will be needed. While this document provides an initial evaluation of local funding tools and identifies four preferred tools. However, additional research on all funding tools, especially their capacity and willingness to pay will be helpful to prepare for implementation.

**Finally, as Sherwood undergoes future planning projects and processes, we recommend the following actions:**

- **Comprehensive Plan:** Review and amend the City’s Comprehensive Plan policies to address issues in Sherwood West.
- **Zoning and Community Development Code:** Consider a special overlay district with unique performance and design guidelines to ensure high quality development and construction.
- **SW Edy/SW Elwert Roads:** Continue to model the feasibility and cost of realigning the intersection of SW Edy and SW Elwert Road.
- **Plan for Transportation Choice:** Continue to provide transportation options for Sherwood residents over time, consider all options for mobility and accessibility. Continue to focus on “complete street” design to accommodate travelers of all ages and abilities as well as public transit users. These include children, non-drivers, older adults and persons with disabilities. Consider options with TriMet as well as potential sub-regional, more localized options such as the South Metro Area Regional Transit (SMART) model in Wilsonville. Comparable to SMART but even more localized in scale, “neighborhood connector” services can provide local connections between schools, libraries, community centers, shopping areas and recreational facilities. Providing these kinds of transportation options help alleviate local traffic and offers greater flexibility for people of all ages, particularly children and seniors.

- **Housing Needs Analysis:** Convene a community discussion regarding the types and amount of housing that should be accommodated within different areas of the City, including Sherwood West. Use that information to refine potential Plan districts for Sherwood West.
- **Economic Opportunities Analysis:** Identify home based business and also commercial/retail employment in Sherwood West associated with the upcoming Economic Opportunity Analysis. Refine concepts for tourism oriented Gateway district.
- **Public Facility Plans:** Refine water and sewer master plans as needed.

## IX. Appendices

1. **Housing Needs Analysis Executive Summary**
2. **Existing Conditions Report**
  - A. City of Sherwood Plan and Zoning Map, 2013
  - B. Sherwood West Buildable Lands
  - C. Sherwood West Water System
  - D. City of Sherwood Sanitary and Sewer Systems
  - E. Sherwood West Stormwater System
  - F. Washington County Street Classification Map
  - G. City of Sherwood Street Functional Classification
3. **Boundaries and Buildable Lands Inventory Information**
4. **Draft Alternative Concept Plans**
5. **Service Provider Interviews**
6. **Retail/Commercial Implementation**
7. **Transportation Options Alternative Analysis Report**
8. **Sherwood West Initial Evaluation of Funding Tools**