



Sherwood West Preliminary Concept Plan

A long range look at our future.

Existing Conditions Summary

Updated March 24, 2015

The purpose of this memorandum is to summarize the existing conditions and opportunities of the Sherwood West study area. An overview of Sherwood's population characteristics, land use and historic growth patterns is provided. In addition, this memorandum outlines the opportunities and constraints for the provision of parks and trails, transportation facilities and public services (including water, sanitary sewer, and storm utilities) to the study area. The memorandum includes the following sections:

- Project Description
- Study Area
- Population and Demographics
- Land Use and Buildable Lands
- Historic Growth Patterns
- Public Facilities
- Transportation
- Parks and Trails
- Environment and Natural Resources

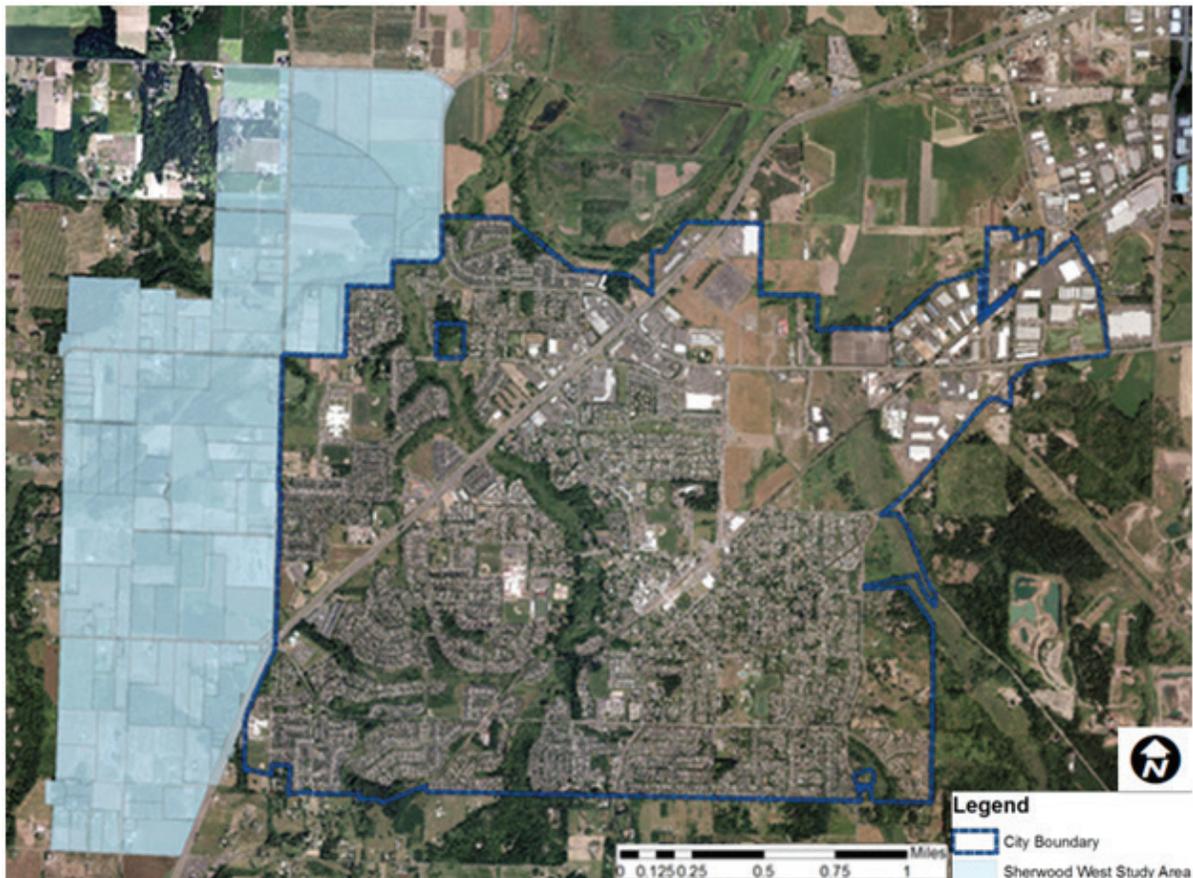
Project Description

The Sherwood West Preliminary Concept Plan is a comprehensive, long-range community plan for the Urban Reserve Area 5B, as designated by the Metro Council in 2011. As a preliminary concept plan, this project will help inform future decisions about whether Sherwood grows up or out, where housing is built and schools are located, and how infrastructure may be served over the next 50 years. A key element of a preliminary concept plan is a phasing strategy for incremental inclusion in the UGB, to the extent demanded by local and regional growth projections.

Study Area

The study area encompasses approximately 1,291 acres located along the western side of the current city limits (Figure 1). 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 1. Sherwood West Study Area



Population and Demographics

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

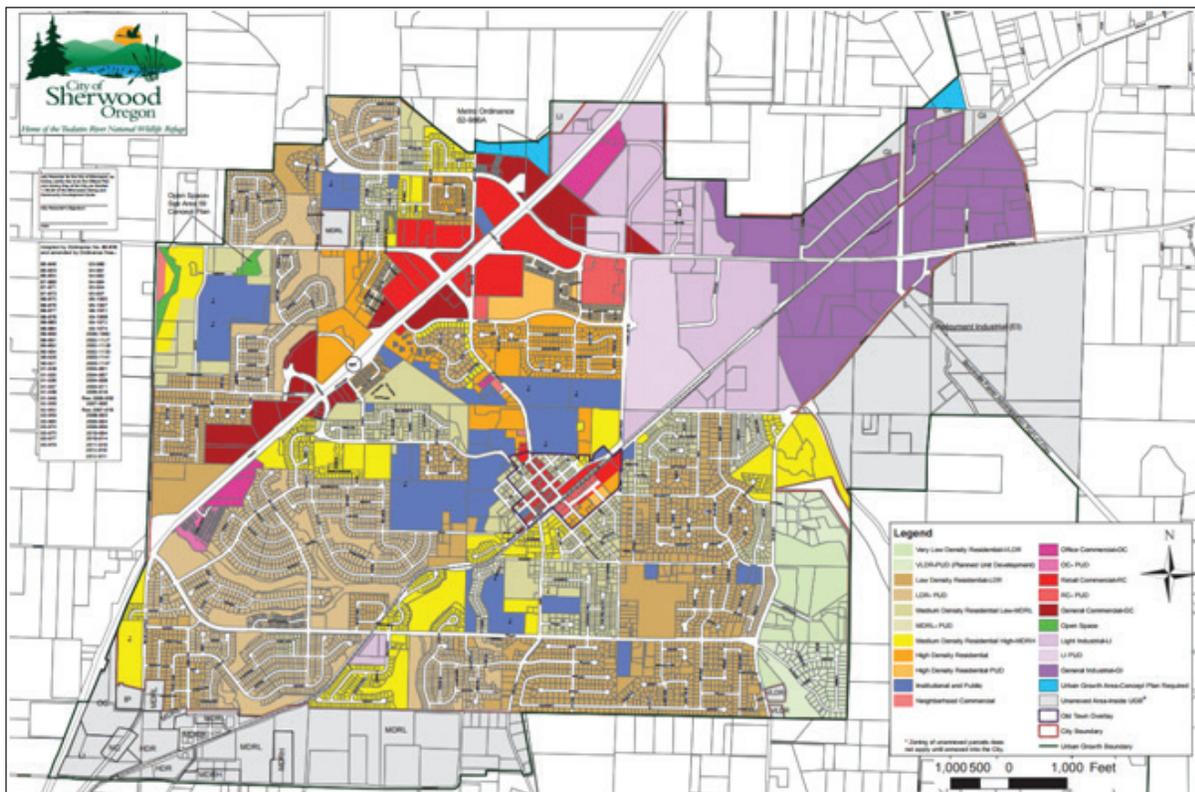
	City of Sherwood	Washington County
Median Household Value	\$327,000	\$282,400
Median Household Income	\$81,000	\$60,963
Family Households	77.7%	67.1%
Average Commute time	26 minutes	24 minutes
Gender (female)	50.3%	50.8%
Median age	34.2 years	35 years
Hispanic or Latino	7%	15.7%

Source: US Census Bureau, 2010

Land Use and Zoning

The City of Sherwood’s plan and zoning map indicates that the majority of the City is residential (Figure 2). Some commercial activity is centered along HWY 99W and within the historic center, while industrial uses occupy the northeastern edge of Sherwood. The City has a relatively large portion of land zoned for public institutions and civic centers.

Figure 2. City of Sherwood Plan and Zoning Map, 2013



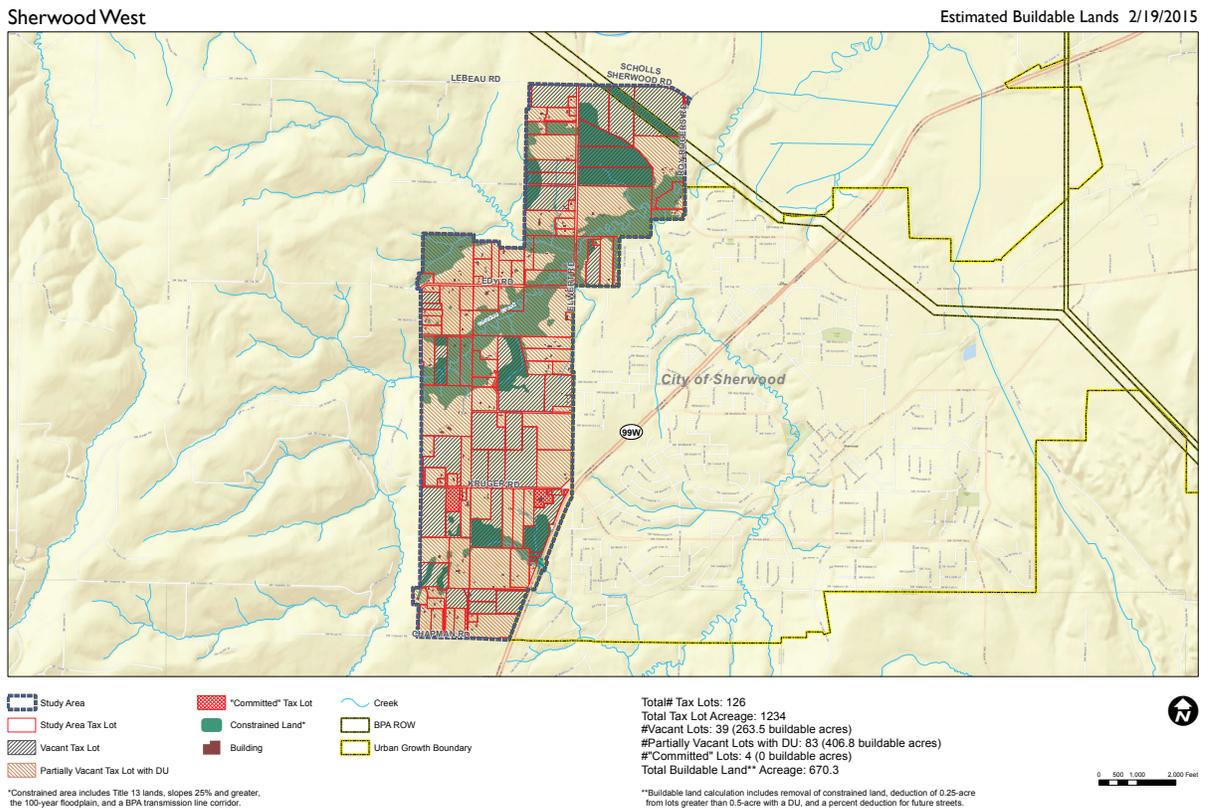
Whereas City acreage is 2,757.8 (4.3 square miles), the Sherwood West study area encompasses 1,234 taxable acres across 126 tax lots (Table 2). Besides residential uses, the majority of the land use is designated as agricultural or forested. Figure 3 shows the study area's buildable land by tax lot.

Table 2. Sherwood West Study Area Buildable Lands Facts

Total Tax Lots	126
Total Tax Lot Acreage	1,234
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 DU, and a percent deduction for future streets.**

Figure 3. Sherwood West Buildable Land



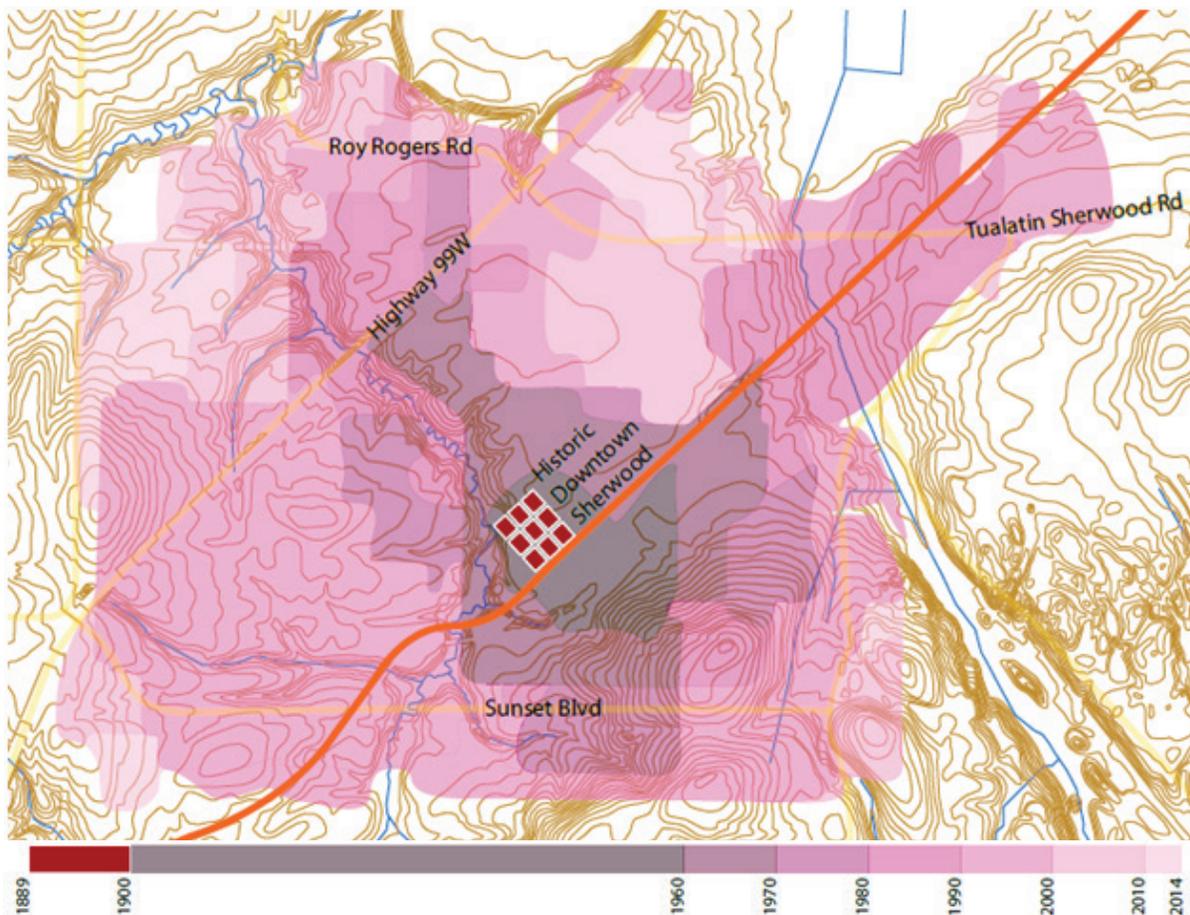
**Constrained area includes Title 13 lands, slopes 25% and greater, the 100-year floodplain, and a BPA transmission line corridor.*

Historic Growth Patterns

The City of Sherwood was first platted in 1889, and later incorporated in 1893. The city plot was oriented around the railroad and subsequently built out from this 45-degree angle. Like most other western frontier towns, Sherwood's economy was largely based off the gold rushes in the 1800s. At the time of incorporation in the 1890s, Sherwood's main industry was a pressed brick yard.

The geographic distribution of Sherwood's growth has mostly been defined by creeks and roads. From the early 1900s to 1950s, Sherwood's growth remained relatively compact and primarily followed the railroad track (Figure 4). In 1951, Sherwood's downtown spanned 9 blocks and had fewer than 600 people.

Figure 4. City of Sherwood, Historic Growth, 1889-2014



It was only after 1960 that Sherwood began to witness major, consecutive growth spurts, with its population and land area nearly doubling (on average) every ten years through present day (Table 3).

Table 3. City of Sherwood, Population and % Change, 1900-2015

1970	Population	% Change
1900	111	--
1910	115	3.6
1920	320	178.3
1930	382	19.4
1940	447	17
1950	575	28.6
1960	680	18.3
1970	1,396	105.3
1980	2,386	70.9
1990	3,093	29.6
2000	11,791	281.2
2010	18,194	54.3
Estimated 2015	18,955	3.8

Source: US Census Bureau, 2010

In 1991, with the availability of 1,300 acres of land for construction, the City of Sherwood adopted its first Comprehensive Plan. Over the next ten years, Sherwood saw its biggest boom, with its population nearly tripling in size. Most of this growth was attributed to the Woodhaven development, which added over 1,000 housing units to Sherwood. Today, the City estimates its current population at 18,995, up from around 18,195 from the 2010 US Census. Relative to historical patterns, growth in the past five years has slowed.

Whereas Sherwood’s population growth has been significant over the past 50 years, the City’s major services exist within a one-mile radius, which helps retain the City’s “small-town feel.” With the potential incorporation of Sherwood West study area, this radius could extend up to 1.5 miles.

Public Facilities

Water Systems

Existing Conditions

The current Water System Master Plan was completed in August 2005 and is currently being updated. The Master Plan considers all areas within the city limits and the urban growth boundary. The West Sherwood Concept Plan study area is outside of the urban growth boundary and was not included in the Master Plan. The City’s primary water supply is from the Wilsonville Water Treatment Plant, supplemented by groundwater wells and by a connection to the Tualatin-Portland supply main. The City’s distribution system includes three service zones supplied by two storage reservoirs

and two pumping stations. The Master Plan indicates that additional water supply and storage will be necessary to support future growth in the City.

Opportunities and Constraints

Existing water facilities in or near the study area include a water reservoir, a supply line, and distribution lines. The Kruger Reservoir is a 3.0 MG reservoir located inside the study area, south of SW Kruger Road and approximately one half mile west of Hwy 99 W. The Kruger Reservoir serves the 455 pressure zone, which provides water to areas above 250 feet elevation. An 18-inch transmission line is located in SW Kruger Road between the reservoir and Hwy 99W. The study area south of SW Handley Street is primarily above the 250 foot elevation level. According to the master plan, the 455 pressure zone can serve areas up to a maximum elevation of 300 feet; however, preliminary calculations by the City Engineer suggest that the Kruger Reservoir could possibly serve elevations up to between 340 feet and 370 feet.

The study area north of SW Handley Street falls primarily within the 380 pressure zone, which serves areas below an elevation of 250 feet. The current 380 pressure zone is served by the Main Reservoir, which has 2.0 MG of storage. The master plan indicates that additional storage may be required to serve future development.

Adjacent to the study area, the 18-inch water main from the Kruger Reservoir extends north in SW Elwert Road for approximately 800 feet. The line then reduces to a 12-inch line and continues north to SW Handley Street. In addition, a short segment of 12-inch waterline has been constructed in Elwert Road in the vicinity of Derby Terrace. Near the north end of the study area, a 16-inch water main located in SW Copper Terrace terminates at SW Edy Rd, approximately 840 feet east of the study area. These waterlines may be locations where future on-site water systems could connect to the existing City of Sherwood water system. See Figure 5 for pressure zone boundaries, existing reservoir locations, and existing water line locations.

Figure 5. Sherwood West Water System

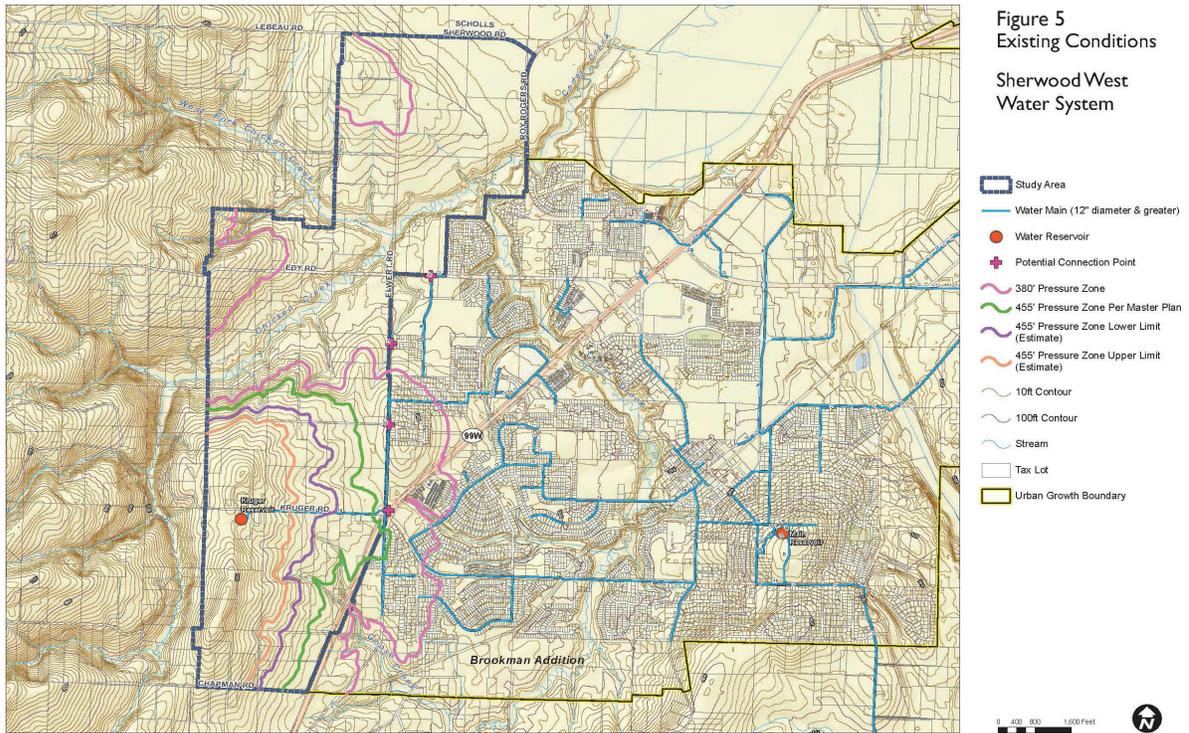


Figure 5
Existing Conditions
Sherwood West
Water System

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. The West Sherwood Concept Plan study area is outside of the urban growth boundary and was not included in the Master Plan.

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

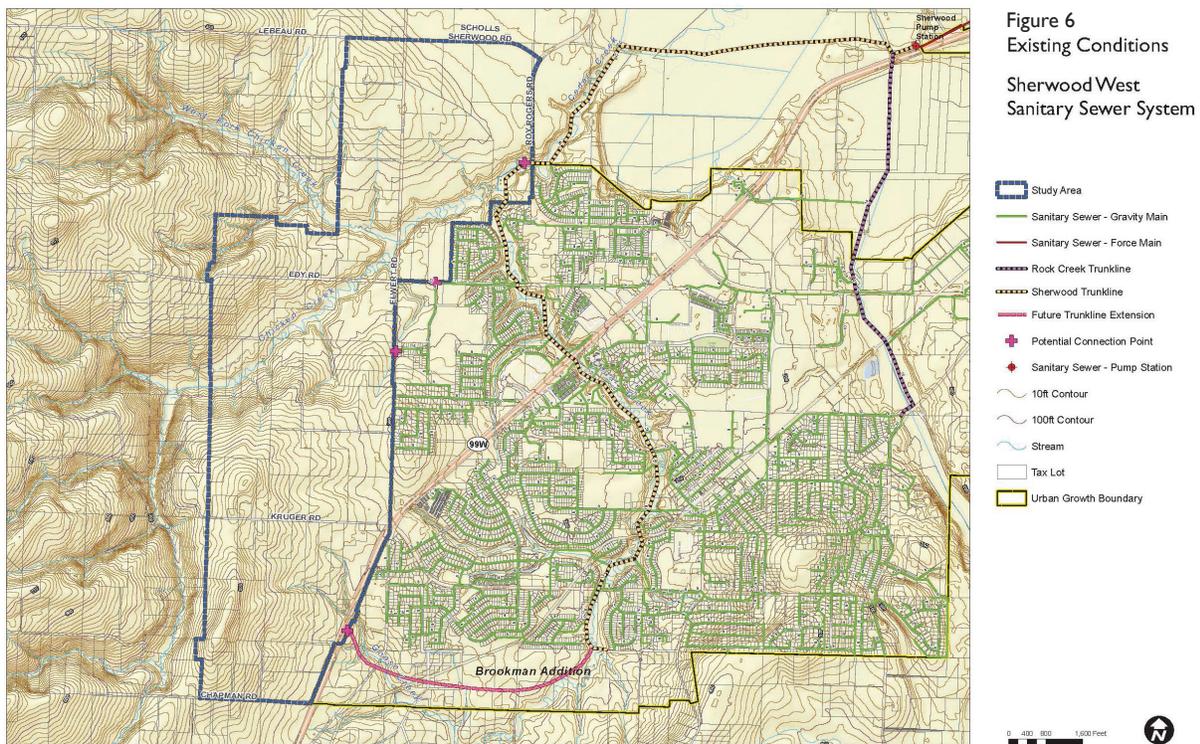
Existing sanitary sewer facilities adjacent to or near this site are limited. The Sherwood Interceptor crosses the study area near the northeast corner at Cedar and Chicken Creeks; and any sewer mainlines would need to cross these creeks in order to connect. A 15-inch line is stubbed to Elwert Road at adjacent Derby Terrace. This line connects to a 15-inch line in SW Copper Terrace which flows north to SW Edy Road and connects to the Sherwood Interceptor to the east.

The Brookman Addition is an area within the urban growth boundary on the south end of Sherwood between the city limits and SW Brookman Road. In the Sanitary Sewer Master Plan, this area is identified as Area 54/55. The City, recently constructed a sewer mainline to the boundary of the Brookman Addition. Future projects, which would occur with the development of the Brookman Addition, would extend the sewer line into the Brookman Addition, providing sewer access for the West Sherwood Concept Plan study area 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 Figure 6 for a map of existing sanitary sewer facilities.

Figure 6. Sherwood West Sanitary Sewer System



Stormwater

Existing Conditions

The current Storm Water 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. The West Sherwood Concept Plan study area is outside of the urban growth boundary and was not included in the Master Plan.

The West Sherwood Concept Plan 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.

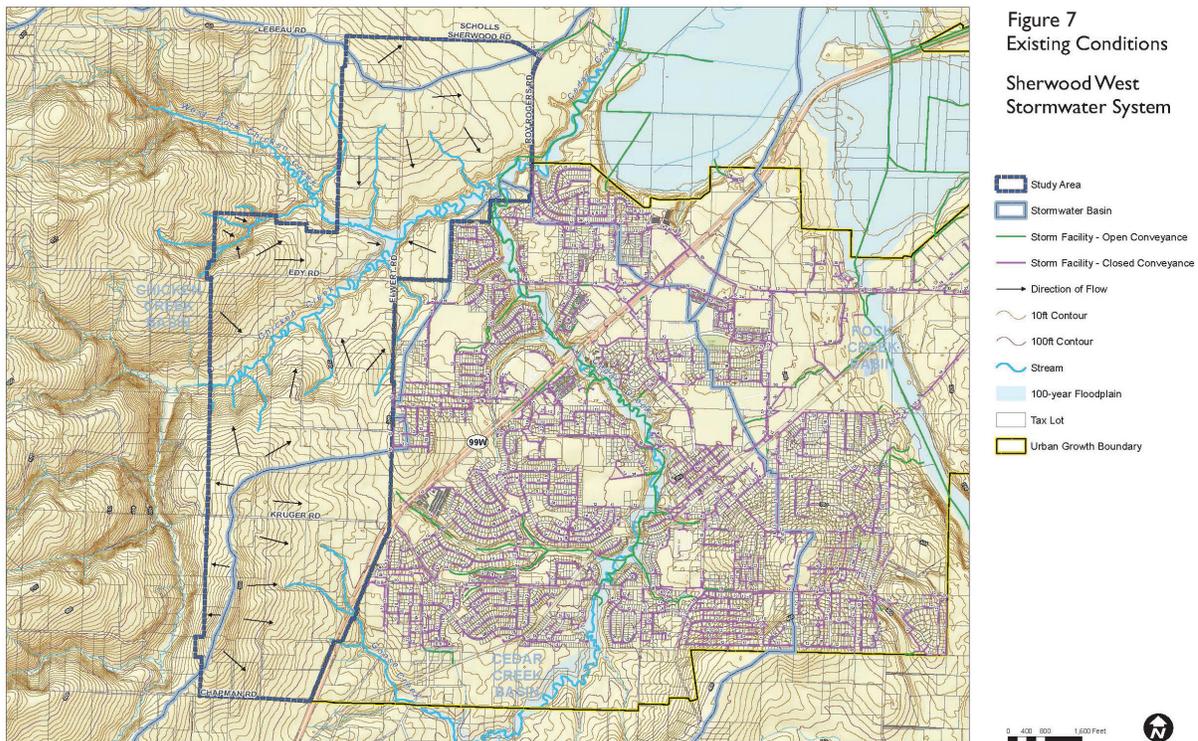
The Stormwater Master Plan notes that Chicken and Cedar Creeks have been identified by the EPA as providing habitat for anadromous fish that are listed as threatened under the Federal Endangered Species Act. According to the Storm Water Master Plan, on-site soils fall primarily in Hydrologic Soils Group C, with small areas of Groups B and D. The 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 Figure 7 for a map of storm drainage basins, creeks, and existing storm water facilities.

Figure 7. Sherwood West Stormwater System



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.

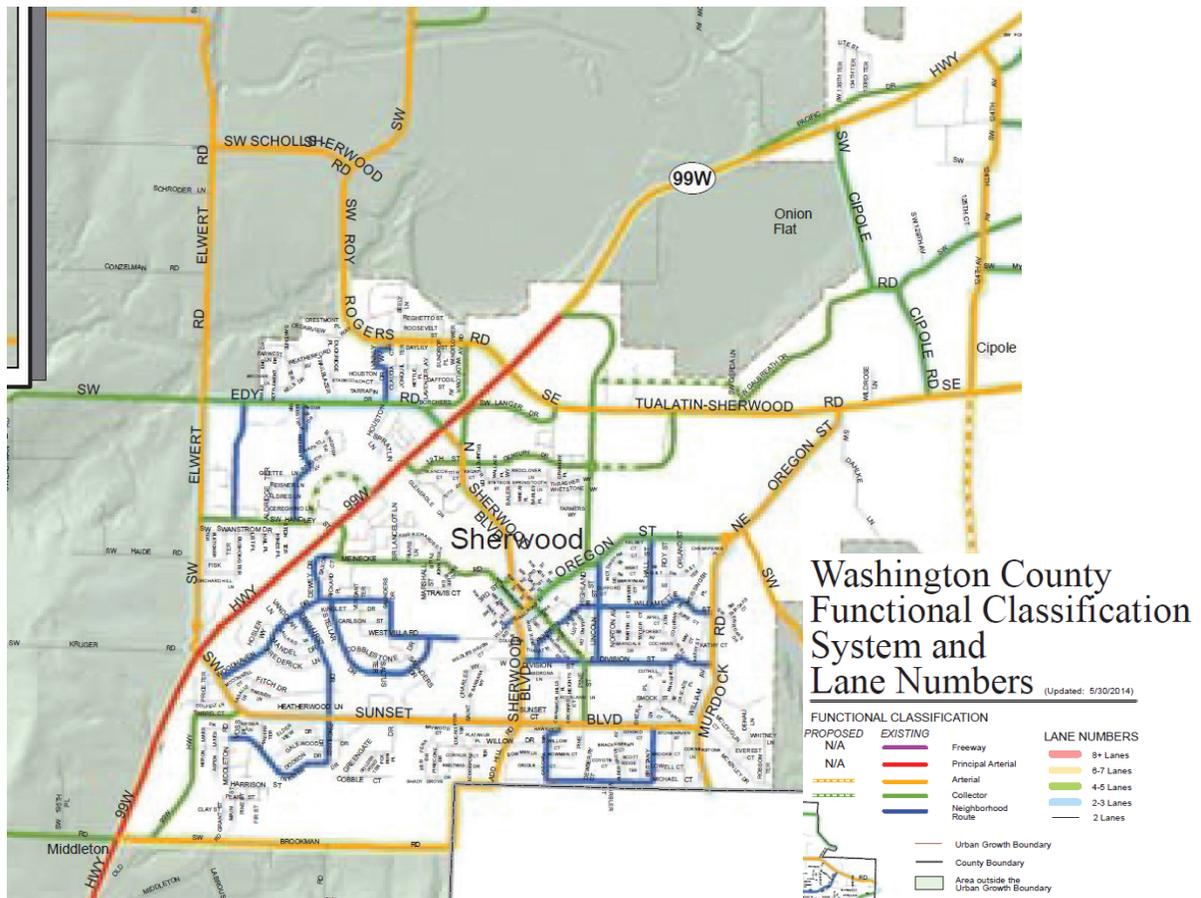
Both WACO's and COS's TSP's identify the future build-out condition of Elwert Road as a 3-lane arterial which will include sidewalks and bike lanes on both sides of the road. Appropriately sized arterial roads will allow through trips to remain on the arterial system and discourage use of local streets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

There are a number of existing east-west rural roads that serve the study area. The WACO STP identifies one arterial road, Scholls-Sherwood Road, located along the northern boundary of the area. Two collector roads are identified: Edy Road, located near the middle of the study area, and Chapman Road, located along the southern boundary. Five local, two-lane, rural roads are identified: Lebeau Road; Schroder Lane; Conzelmann Road, Haide Road, and Krueger Road.

Figure 8 shows the street functional classification system of the study area in Washington County.

Figure 8. Washington County Street Classification Map - excerpt Sherwood



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 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 4.

Table 4. 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 to 2 miles long with a use intensity of about 50 people per 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.

Environment and Natural Resources

Floodplains

Based on Flood Insurance Rate Map (FIRM) analysis, there is a defined 100-year floodplain for a portion of Chicken Creek and up 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) features 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 data comprises just over 31 acres within the study area. The local wetland inventory from Metro is identical to the NWI.

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 5 (acres clipped to the Sherwood West boundary).

Table 5. Summary of Slope Hazard Area within the Study Area

Slope (%)	Area (acres)	Portion of Study Area (%)
0-10	862	67
10-15	220	17
15-20	92	7
20-25	54	4
>25	63	5
Total	1,291	100