SHERWOOD SOUTH URBAN RESERVE AREA

Total Acres	447	Parcel Acres	421
Gross Vacant Buildable Acres	210	Net Vacant Buildable Acres	159

General Description (see attached map)

The Sherwood South Urban Reserve Area is a rectangular shaped area on the south side of Sherwood, south of SW Brookman Road and east of Highway 99W that totals 447 acres in size. The UGB forms the northern boundary and the Clackamas-Washington County line forms the eastern boundary. The area is served by SW Brookman Road, SW Middleton Road and SW Oberst Road. The area contains five streams including the confluence of Goose and Cedar Creeks. The land north of SW Brookman Road was added to the UGB in 2002; only recently has a portion of the area been annexed to the City of Sherwood and currently it is still rural.

Parcelization, Building Values, Development Pattern (see attached aerial photo)

This moderately sized urban reserve area contains 71 parcels that range in size from 12,200 square feet to 55 acres. Eighty-nine percent of the parcels are less than ten acres and over half the parcels are less than five acres in size. A 65 acre parcel is split by the reserve boundary with 28 acres inside the urban reserve and the remaining 37 acres in a rural reserve. The area includes rural residential development, forested parcels and limited agricultural activity, mostly in pasture land, Christmas trees and orchards. The Timber Line Baptist Church is located on SW Old Highway 99W and a Northwest Natural Gas Facility is located at the corner of SW Old Highway 99W and SW Brookman Road. Overall, 60 of the 71 parcels have improvements, with a median value of $110,470. Five new residences, clustered south of SW Middleton Road, were built on five to eight acre parcels in 2016. Available data does not suggest the existence of power lines or public easements, however approximately one-half mile of Portland and Western Railroad track runs through the western portion of the area.

GOAL 14 LOCATIONAL FACTORS

Efficient accommodation of identified land needs

The reserve area is a mixture of flat areas with some small hills and steeper sloped areas, mostly near the streams that flow north towards Sherwood. Most of the flatter areas are near SW Old Highway 99W and SW Middleton Road and are made up of smaller parcels that would need to be combined to provide limited opportunities for employment uses. This combined with the area being quite some distance from Sherwood's existing employment lands reduces the viability of employment uses occurring in the area. The existing rural residential development pattern and the

agricultural lands provide the opportunity for future residential development. Urban services would need to be extended south to the area through the 2002 UGB expansion area on the north side of SW Brookman Road. This area is able to accommodate a residential land need.

Orderly and economic provision of public facilities and services

Sanitary Sewer Services

Capacity of existing facilities to serve areas already inside the UGB

The City of Sherwood owns, operates and maintains the wastewater collection system within City limits, and Clean Water Services (CWS) provides wastewater treatment at the Durham Wastewater Treatment Plant which has capacity to serve lands inside the UGB. Sewer is conveyed via gravity pipes to the Sherwood Pump Station (maintained by CWS) located northeast of the city. Downstream of the pump station, flows utilize the CWS Upper Tualatin Interceptor to the Durham treatment plant. The City of Sherwood updated their Sanitary Sewer Master Plan in 2016. The master plan includes areas within the City of Sherwood city limits as well as the Tonquin Employment Area (TEA) and the Brookman Addition, which are within the UGB. The Master Plan indicates that there is sufficient capacity for existing development (conveyance, pump station and treatment plant). However, at full build-out of the UGB, there are deficiencies with the Sherwood and Rock Creek Trunk Lines, the Sherwood Pump Station, and the Upper Tualatin Interceptor. CWS has indicated that it has plans to construct a new pump station to supplement the capacity of the Sherwood Pump Station. In addition, CWS is planning for upgrades to the Upper Tualatin Interceptor. These improvements are anticipated within the next five years. Upsizing of the Sherwood and Rock Creek trunk lines would be shared between City of Sherwood and CWS.

Capacity of existing facilities to serve areas proposed for addition to the UGB

Capacity appears to be available at the Durham treatment plant although upgrades may be required. Assuming areas within the existing UGB develop prior to the reserve area; the system would not have capacity to serve the area. However, after improvements are made to the existing system to accommodate the current UGB, there may be additional capacity available for the reserve area.

Impacts to existing facilities that serve nearby areas already inside the UGB

Sewer from the reserve area will be served by the Sherwood Trunk Line. Currently, no existing sewer extends south through the 2002 Brookman Addition area to the reserve area boundary. For the purpose of this report, it is assumed that the Brookman Addition will develop prior to the reserve area. Sewer lines in the Brookman Addition would presumably extend to the northern boundary of the reserve area and new lines will be extended throughout the reserve area. The laterals off the mains will be provided by the development community. CWS' Durham WWTP is a large facility with a broad service area. The cumulative addition of multiple urban reserves could result in a need for some expansion in order to handle additional load.

Sanitary Sewer Piping Costs

Sanitary sewer piping costs	Cost (in millions)
Less than 12" pipe (gravity)	$0.13
12 – 18" pipe (gravity)	$2.37
Total	**$2.5**

Water Distribution Services

Capacity of existing facilities to serve areas already inside the UGB

The City of Sherwood draws the majority of its water supply from the Willamette River Water Treatment Plant (WRWTP) in the City of Wilsonville. The City owns 5 million gallons per day (MGD) of production capacity at the WRWTP. Sherwood also maintains four groundwater wells for back-up supply and maintains an emergency connection and transmission piping through the City of Tualatin's water system. The City of Sherwood Water Master Plan was updated in 2015. According to the Master Plan, the water system has adequate capacity to serve the existing UGB through the 10-year planning horizon with respect to water supply, storage, pumping, and piping. The Brookman Addition and the Tonquin Employment Area (located within the existing UGB) are projected for development within a 20-year planning horizon. To support the 20-year planning horizon, the City will need an additional 1 mgd of supply from the WRWTP. The Master Plan indicates that existing storage and pumping have sufficient capacity for the 20-year planning horizon. New large diameter water lines will need to be extended into the currently undeveloped Brookman Addition and Tonquin Employment Area.

Capacity of existing facilities to serve areas proposed for addition to the UGB

Currently there is adequate water supply for the reserve area or depending on when the reserve area is added to the UGB the City will be able to generate the supply to serve the new development. The master plan did not include the Sherwood South urban reserve in its analysis. However, the Sherwood West and a portion of the Tonquin urban reserves were included. For the purpose of this report, it is assumed that only one reserve area will be developed at a time. The City of Sherwood Master Plan assumed a portion of the Sherwood West reserve area would be developed in the 20-year planning horizon. Therefore, presumably, if the Sherwood South reserve area were to develop instead of Sherwood West, there would be available capacity in the existing system with regards to storage, pumping, and piping. As mentioned above, the City will need to obtain additional supply from the WRWTP to serve full development of the existing UGB as well as additional reserve areas.

Impacts to existing facilities that serve nearby areas already inside the UGB

Because water capacity appears to be adequate, future impacts to the water system are primarily financial. New water mains must be provided to allow development of the reserve area and the laterals off the mains are provided by the development community.

Water Costs

Water piping/storage/pumping costs	Cost (in millions)
12" and smaller	$3.9
Storage/pumping	$2.24
Total	**$6.14**

Storm Sewer Services

Capacity of existing facilities to serve areas already inside the UGB

There is no indication of capacity issues with existing stormwater facilities that serve the land inside the UGB.

Capacity of existing facilities to serve areas proposed for addition to the UGB

Stormwater will be conveyed, treated, and disposed of within the reserve area, therefore, it is not anticipated that existing facilities would be utilized.

Impacts to existing facilities that serve nearby areas already inside the UGB

Stormwater will be conveyed, treated, and disposed of within the reserve area; therefore, no impacts to existing facilities are anticipated.

Storm sewer conveyance and water quality/detention costs for roadways

Conveyance & water quality/detention costs	Cost (in millions)
Conveyance	$5.39
Water quality/detention	$5.26
Total	**$10.65**

Transportation Services

Capacity of existing facilities to serve areas already inside the UGB

Roadway: Most of the roads in Sherwood have an acceptable volume/capacity ratio (<0.9) for the 2015 pm peak. SW Tualatin-Sherwood Road at SW Oregon Street and SW Elwert Road at SW Edy Road have a congested volume/capacity ratio (<1.0) in both directions. SW Tualatin Sherwood Road and Highway 99W are classified as high injury corridors for automobiles.

Transit: Three TriMet bus lines serve Sherwood. Routes 93 and 94 on Highway 99W provide service to the Tigard Transit Center and Tigard/Portland respectively from the Town Center. Route 97 on SW Tualatin-Sherwood Road provides service to the Tualatin WES Station from Old Town.

Bike: Sherwood has eight miles of dedicated bike lanes and three miles of established bikeways along the major roadways that connect with some local trails and bike friendly streets, including a connection to Old Town. There are numerous gaps to some of the residential areas south of the railroad.

Pedestrian: The vast majority of the residential neighborhoods in Sherwood have sidewalks with a number of local trails that connect the different neighborhoods together. The Town Center is well connected with sidewalks as is most of Old Town.

Capacity of existing facilities to serve areas proposed for addition to the UGB

Roadway: SW Brookman Road, the main access point for the reserve area has an acceptable volume/capacity ratio for the 2015 pm peak. SW Ladd Hill Road and Highway 99W also have an acceptable volume/capacity ratio.

Transit: There are no TriMet bus lines near the reserve area. The closest transit stop for routes 93 and 94 are over one mile away in Old Town.

Bike: There are dedicated bike lanes on Highway 99W at the SW Brookman Road intersection. There is a small 650 foot bike lane section on SW Ladd Hill Road between SW Sunset Boulevard and SW Willow Drive, however this bike lane does not connect to any other bike facilities and is over ½ mile from the reserve area.

Pedestrian: SW Sunset Boulevard has sidewalks as do the residential neighborhoods south of the road; however these sidewalks only provide connections internal to the subdivisions. SW Ladd Hill Road has as sidewalk on one side that extends to SW Brookman Road, which is just shy of a ½ mile from the reserve area. North of SW Sunset Boulevard the sidewalks on SW Main Street extend into Old Town.

Impacts to existing facilities that serve nearby areas already inside the UGB

Roadway: Currently SW Brookman Road is a two lane rural road that will be improved to an urban arterial as the land to the north currently in the UGB is urbanized. The improvement of this roadway will provide the capacity to also serve the reserve area, thus traffic impacts to SW Brookman Road should be minimal. Additional traffic could occur on SW Ladd Hill Road/SW Main Street as that is the most direct route to Old Town. Highway 99W adjacent to the reserve area should not be impacted from the relatively small number of new homes expected.

Transit: Some impact to the current TriMet bus routes may occur. See transit analysis below.

Bike: The dedicated bike lanes on Highway 99W could see additional use although the highway is not the most comfortable environment for most bicyclists. The small bike lane section on SW Ladd Hill Road would most likely not see any additional use as it does not connect to any other bike facilities.

Pedestrian: The sidewalk on SW Ladd Hill Road and the sidewalks on SW Sunset Boulevard could see additional use once the gap from SW Brookman Road is completed as that would provide a connection north of SW Sunset Boulevard along SW Main Street to Old Town.

Need for new transportation facilities and costs (see attached transportation map)

SW Brookman Road will need to be improved to urban arterial standards. This is considered a ½ street improvement as the Brookman Addition expansion area from 2002 will be responsible for the northern half of the roadway. SW Middleton Road, SW Labrousse Road and SW Oberst Road will need to be improved to urban collector standards. Two new collectors will be needed to extend east from SW Labrousse Road and then north to SW Brookman Road.

Facility Class		
Arterials	Type	Cost (in millions)
	Existing/Improved ½	$26.10
Collectors	Type	Cost (in millions)
	Existing/Improved	$43.86
	New	$32.69
Total		**$102.65**

Provision of public transit service

TriMet evaluated the reserve area for providing transit service and determined they could reroute an existing line along Highway 99W to serve the reserve area with no additional cost.

Prior to land being included in the UGB a more detailed concept plan, consistent with the requirements of Metro's Urban Growth Management Functional Plan Title 11, is required. This concept plan process will develop more refined public facility and service needs and cost estimates.

Comparative environmental, energy, economic and social consequences (ESEE analysis)

Environmental

Five streams flow through the reserve area including Goose Creek, Cedar Creek and unnamed tributaries to Cedar Creek. Goose Creek flows south through a predominately wooded area for approximately 1,400 feet to join Cedar Creek in the middle of the reserve area. Cedar Creek enters the reserve area in the southwest corner and flows northeast for approximately 3,930 feet to its confluence with Goose Creek. This section of Cedar Creek flows mainly through a wooded riparian area that is well established and located away from existing development and also contains an associated 3.1 acre wetland identified on the National Wetland Inventory (NWI). Cedar Creek continues flowing northeast for approximately 2,100 feet, once again through a mostly wooded riparian corridor. This section of the creek also has an adjacent ½ acre NWI wetland. There is a considerable amount of floodplain associated with these two streams that would help protect the riparian corridors due to floodplain development limitations.

Three tributaries to Cedar Creek flow north through the eastern portion of the reserve area. The two most eastern streams flow through wooded areas and total approximately 4,650 feet. A ½ acre NWI wetland has been identified along the easternmost stream and a small pond not identified as a wetland is along the other stream. The third stream flows through a mostly open landscape of pasture land and farm structures before flowing through a wooded area with rural residences. The total length of this stream is 2,180 feet and also includes a fairly large irrigation pond.

Both riparian and upland wildlife habitat has been identified along all of the stream corridors. The five streams and associated wildlife habitat essentially break up the reserve area into small segments of unconstrained land. In order to urbanize the area in a well connected manner that provides transportation options numerous stream crossings would be required which most likely would negatively impact the stream corridors. If urbanization occurs with less connectivity then impacts to the natural resources can be reduced. It should be noted that the City of Sherwood has preserved the Cedar Creek riparian area that currently is within the city limits by integrating the stream corridor into the urban fabric, resulting in an amenity for its citizens. Overall urbanization of the area could occur with moderate to significant impacts to the stream corridors and habitat areas depending on the urban form and road connections.

Energy, Economic & Social

It is expected that urbanization of the reserve area will result in new housing replacing the existing rural residences. The significant natural resources in the area reduces the amount of development that can occur and forces a segmented development pattern which provides for a significant amount of land that will stay in a natural state, thus reducing the social impacts of future urbanization relative to the loss of a rural lifestyle and sense of place on the existing residents of the area. SW Middleton Road and SW Brookman Road provide access to Highway 99W which connects to employment areas along SW Tualatin Sherwood Road which could help reduce the increase in VMT from urbanization of the area. However, given the modest amount of development that would occur, the increase in traffic would not be great and would not have significant energy consequences. Preservation of the stream corridors provides the opportunity for connections to existing trails within Sherwood that could reduce some local automobile trips, thereby reducing VMT. The agricultural activity within the reserve area is minimal. The loss of the economic impact from these agricultural uses would not be considerable and the potential economic impact of residential development, even though it is not significant will outweigh this loss. Overall this analysis area has low economic, social and energy consequences from urbanization.

Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB (see attached resource land map)

There is a 127 acre block of resource land zoned agriculture forest 20 (AF-20) directly south of the analysis area between SW Ladd Hill Road and SW Labrousee Road. The majority of the resource land is forested with one rural residence and a very limited amount of agricultural activities occurring. Two unnamed tributaries to Cedar Creek flow north through the forested portion of the resource land area in ravines up to 200-feet deep. As there is a very limited amount of agricultural

activities and no indication of forest activities occurring on this resource land area, the proposed urban uses are compatible with the nearby agricultural and forest activities occurring on this farm and forest land.

A second block of resource land zoned AF-20 is located west of the reserve area, on the west side of Highway 99W between SW Chapman Road and SW Gimm Lane, and extends approximately 1½ miles to the Washington County line. Agricultural activities near Highway 99W include a small amount of orchard and field crops and a 44-acre equestrian center. The Highway 99W right-of-way, which is approximately 150-feet in width, provides a good edge to the reserve area in this location. In addition, the equestrian center is essentially a developed use that supplements the buffer of the highway for the majority of the agricultural activities that occur to the west. Due to the fairly wide highway right-of-way and the location of the equestrian center, the proposed urban uses are compatible with the nearby agricultural activities occurring on this farm and forest land.

A third 438 acre block of resource land zoned AF-20 is located approximately ¼ mile south of the reserve area along SW Rein Road. This resource land area is approximately 100-feet higher in elevation and is separated by a number of rural residences. As this block of resource land is not directly adjacent to the reserve area, and there are a number of rural residences located on the slope between the two areas, the proposed urban uses would be compatible with nearby agricultural or forest activities occurring on this farm or forest land. Overall, proposed urban uses in the reserve area have a high compatibility with nearby agricultural and forest activities occurring on farm and forest land outside the UGB.

Metro

Preliminary Urban Growth Boundary Alternatives Analysis

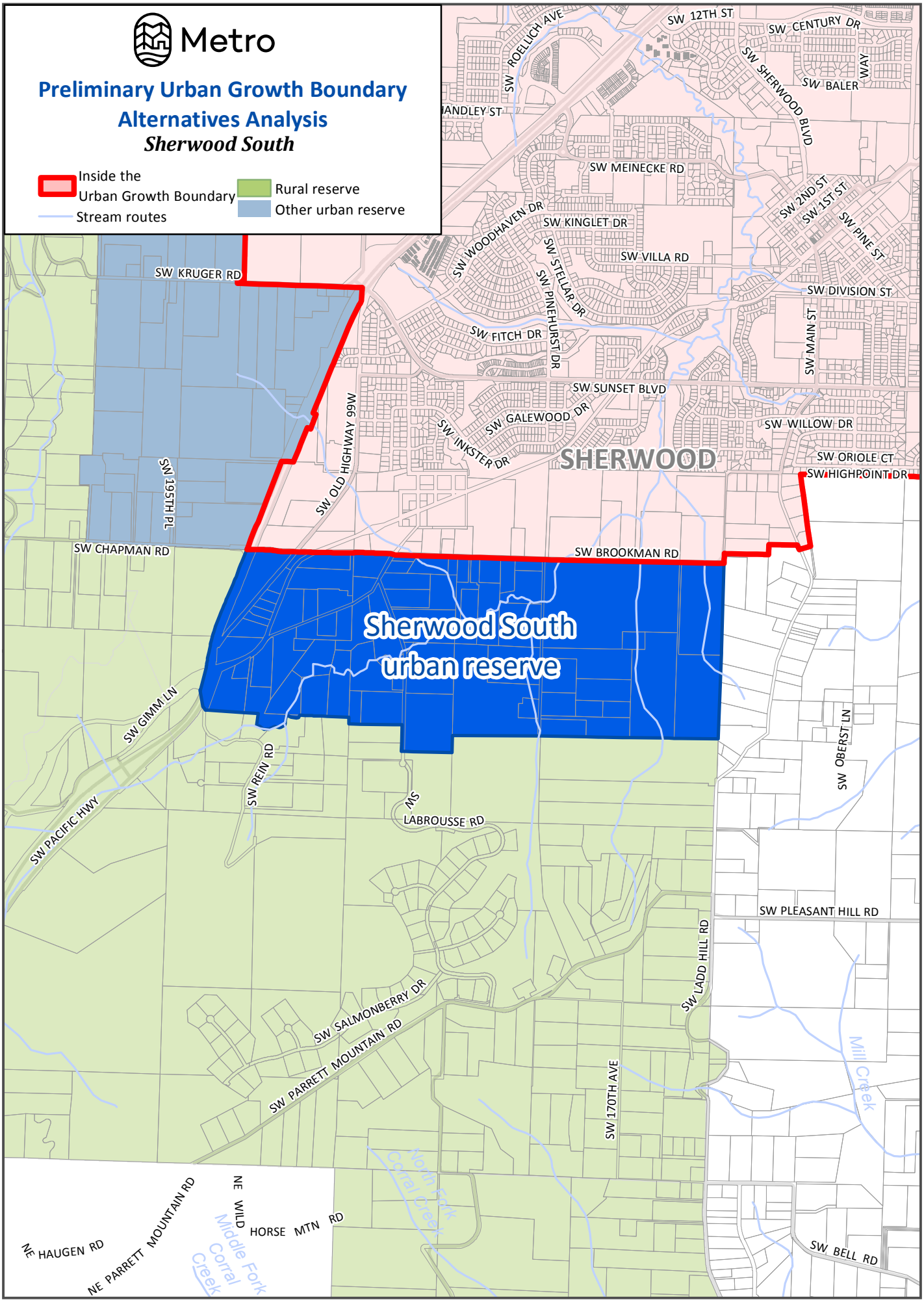
Sherwood South

Inside the Urban Growth Boundary

Stream routes

Rural reserve

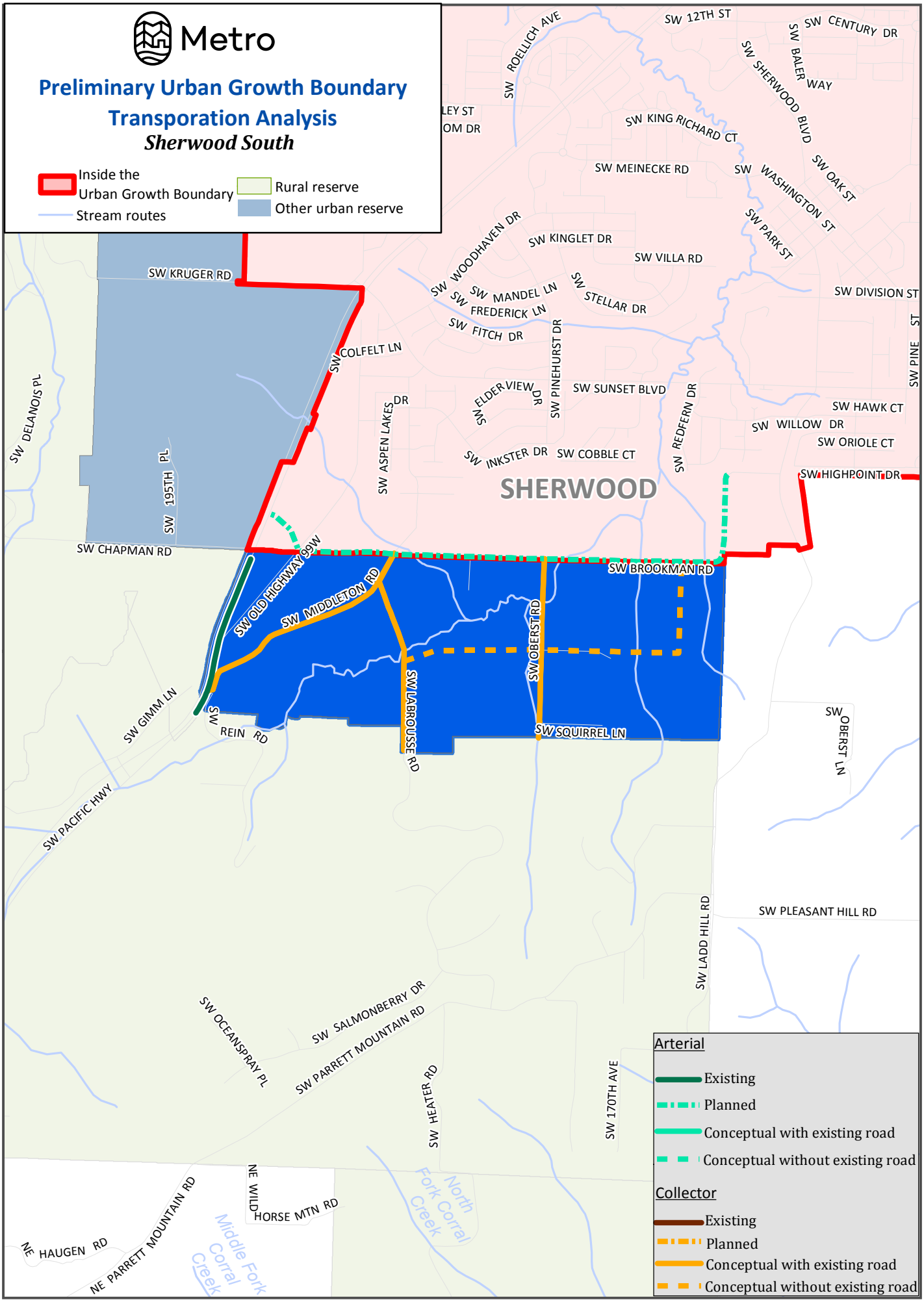
Other urban reserve



Metro

Preliminary Urban Growth Boundary Alternatives Analysis

Sherwood South



Metro

Preliminary Urban Growth Boundary Alternatives Analysis Resource Land

Sherwood South