

## TONQUIN URBAN RESERVE AREA

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Total Acres	573	Parcel Acres	559
Gross Vacant Buildable Acres	127	Net Vacant Buildable Acres	97

### General Description (see attached map)

The Tonquin Urban Reserve Area is an irregular shaped area between the cities of Tualatin and Sherwood that totals 573 acres in size. The current UGB forms the eastern, northern and western boundaries of the area. SW Tonquin Road diagonally splits the area in a northwest to southeast direction and provides access to the area. Construction of the Basalt Creek Parkway and SW 124<sup>th</sup> Avenue Extension (expected completion date of September 2018) will provide greater access to the area. This area is very conflicted in its uses; a large portion is utilized by three quarry sites, there is a gun club, protected open space land, a fire department facility, and a few rural residences.

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

This medium sized urban reserve area contains 28 parcels, six of which have single family residences. Parcels range in size from one-third of an acre to 164 acres. All but eight of the parcels are greater than five acres and eight are greater than 20 acres in size. Approximately 192 acres are owned by industrial users engaged in aggregate products and the Tri-County Gun Club owns 224 acres, a portion of which is also being used for aggregate mining. The gun club has a firearms range that is utilized by both club members and law enforcement agencies. The Tualatin Valley Fire and Rescue Training Center is located at the corner of SW Morgan Road and SW Tonquin Road. Three parcels are owned by the United States Government and are part of the Rock Creek Unit of the Tualatin River National Wildlife Refuge. Eleven of the parcels have improvements, with a median value of \$146,660. A power line runs along the northern edge of the area for approximately 2,100 feet. The entire reserve area is identified on Washington County's Rural and Natural Resource Plan as an area with more than one significant natural resource on the site.

## GOAL 14 LOCATIONAL FACTORS

### Efficient accommodation of identified land needs

This area contains a number of uses and constraints that impact the ability to efficiently accommodate land needs. As noted above a significant portion of the area is currently being used for quarry operations and once a quarry is no longer being mined a reclamation plan must be implemented. Thus any re-use of the quarry areas will be well in the future, possibly even beyond the 20-year timeframe for this analysis. The area also contains a significant amount of natural resources that greatly reduce the ability to accommodate a significant amount of residential or

employment land need. The Ice Age Tonquin Trail is planned to bisect the area diagonally connecting Sherwood with both Tualatin and Wilsonville. This area is able to accommodate a very limited portion of both a residential and employment 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 small 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 Rock Creek Trunk Line. Currently, no existing sewer extends to the site and a sewer line would need to be constructed through the Tonquin Employment Area (inside the UGB) to serve this reserve area. New lines will need to be extended throughout the site. The laterals off the mains will be provided by the development community. Based on topography, sewer service for this site would require a pump station. CWS' Durham treatment plant 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. Upsizing of existing infrastructure would be required as noted above.

## Sanitary Sewer Piping Costs

Sanitary sewer piping costs	Cost (in millions)
Less than 12" pipe (gravity)	\$6.77
Force main	\$2.09
Pump station	\$0.80
<b>Total</b>	<b>\$9.66</b>

## 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. Sherwood 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

Water supply for this reserve area appears to be adequate, or the City will be able to generate the supply as this area comes online. A portion of this reserve area was included in the Water Master Plan and according to the Master Plan, there would be available capacity in the existing system with regards to storage, pumping, and piping to serve a portion of the site (through the 20-year planning horizon). 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 land added from the reserve areas.

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

New water mains must be provided to allow development of the reserve area. It appears that new water mains can be extended to this reserve area near its western boundary. The undeveloped TEA that is inside the UGB lies between existing development and the reserve area. If the TEA is developed first, water service could presumably be extended to the site from the TEA. The laterals off the mains will be provided by the development community.

## Water Costs

Water piping/storage/pumping costs	Cost (in millions)
12" and smaller	\$5.94
18" and larger	\$3.17
Storage/pumping	\$1.23
<b>Total</b>	<b>\$10.34</b>

## 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	\$4.57
Water quality/detention	\$4.65
<b>Total</b>	<b>\$9.22</b>

## Transportation Services

### Capacity of existing facilities to serve areas already inside the UGB

**Roadway:** Most of the roads in Tualatin and in the unincorporated area east of the reserve area have an acceptable volume/capacity ratio (<0.9) for the 2015 pm peak. SW Boones Ferry Road at the Tualatin River has a severely congested volume/capacity ration (>1.0) for the southbound lane and a congested volume/capacity ratio (<1.0) for the northbound lane. Highway 99W at SW Tualatin Road and I-5 between SW Tualatin-Sherwood Road and the Tualatin River has a congested volume/capacity ratio in both directions. SW Avery Street from SW Boones Ferry Road to SW Tualatin Sherwood Road and SW Tualatin Sherwood Road are classified as high injury corridors for automobiles. SW Boones Ferry Road is classified as a high injury corridor for bikes.

Most of the roads in Sherwood, which borders a portion of the reserve area to the west, also have an acceptable volume/capacity ratio 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 in both directions. SW Tualatin Sherwood Road and Highway 99W are classified as high injury corridors for automobiles.

**Transit:** Seven TriMet bus lines and the Westside Express Service (WES) Commuter Rail serve Tualatin. The routes are spread out along the major roadways including Highway 99W, SE Tualatin-Sherwood Road and SW Boones Ferry Road providing service to the Town Center and employment areas. 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:** Tualatin has a fairly well established bike route system of dedicated bike lanes (25 miles), established bikeways (7 miles) and local trails that connect the employment areas and Town Center to the residential areas. There are two bike lane connections across I-5 to provide access to the eastern portion of the city. Sherwood has numerous dedicated bike lanes (8 miles) and established bikeways (3 miles) 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:** Most of the residential areas of Tualatin have sidewalks with less pedestrian connections in the employment areas. The Town Center has a fairly well established pedestrian network that also includes access to some trails. 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:** The only access point from the Tualatin area (the adjacent land is unincorporated) is the new Basalt Creek Parkway that opened in 2017. The new 124<sup>th</sup> Avenue extension, from SW Tualatin-Sherwood Road to the Basalt Creek Parkway is expected to be completed in September 2018. The only access point from Sherwood is along SW Tonquin Road which has an acceptable volume/capacity ratio.

**Transit:** The closest TriMet bus route is the 97, which is approximately one mile from the reserve area and provides service between Sherwood and Tualatin during the morning and afternoon commute times along SW Tualatin-Sherwood Road. All other bus routes are over a mile away. The WES Commuter Rail is about ¼ mile away but the closest station is about four miles away in Tualatin.

**Bike:** The closest bike facility is the dedicated bike lane on SW Oregon Street in Sherwood that is approximately ⅓ mile from the reserve area via SW Tonquin Road. This bike lane is approximately ½ mile long, running from the roundabout to just short of SW Tualatin-Sherwood Road and doesn't provide a connection point to other bike facilities.

**Pedestrian:** The closest sidewalks are along SW Oregon Street which is approximately 1/3 mile from the reserve area via SW Tonquin Road. The sidewalks connect to the sidewalks along SW Tualatin-Sherwood Road to the north that extend towards the Town Center and employment areas. There is a 1/3 mile gap in sidewalks to the south that leads to Old Town.

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

**Roadway:** The new Basalt Creek Parkway is designed to allow for expansion of the roadway over time. The new 124<sup>th</sup> Avenue extension was designed to provide capacity for future employment uses within the current UGB and the urban reserve area. SW Tonquin Road currently has an acceptable volume/capacity ratio and would be expected to see additional traffic to and from Sherwood.

**Transit:** The existing bus lines that serve Sherwood and Tualatin would not be impacted. See transit analysis below.

**Bike:** The dedicated bike lane on SW Oregon Street in Sherwood would be expected to see additional use however the 1/3 mile gap on the portion of SW Tonquin Road that is already inside the UGB and the larger gap on SW Oregon Street would need to be addressed to reach maximum potential future use.

**Pedestrian:** The sidewalks along SW Oregon Street would be expected to see additional use however the 1/3 mile gaps on the portion of SW Tonquin Road that is already inside the UGB and on SW Oregon Street would need to be addressed to make the important connection to Old Town and to reach the potential future use.

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

SW Tonquin Road would need to be improved to urban arterial standards. A new collector would need to be built to connect from SW Dahlke Lane to the north to SW Tonquin Road and then east to the reserve boundary.

Facility Class		
<b>Arterials</b>	Type	Cost (in millions)
	Existing/Improved	\$69.29
<b>Collectors</b>	Type	Cost (in millions)
	New	\$22.08
<b>Total</b>		<b>\$91.37</b>

Provision of public transit service

TriMet evaluated the reserve area for providing transit service and determined service is unlikely to occur.

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**

Rock Creek and a tributary flow north through the western portion of the reserve area for just over one mile. Approximately two-thirds of the stream corridor is on federal land that is part of the Tualatin River National Wildlife Refuge. The non-federal land that contains Rock Creek is included in the Refuge's Rock Creek Unit acquisition boundary, indicating a desire for the Refuge to purchase the land in the future. There are two National Wetland Inventory (NWI) wetlands associated with Rock Creek, each one approximately 11 acres in size, that are also on federal land. There is a significant amount of riparian and upland habitat associated with Rock Creek. Two additional NWI wetlands have been identified that total 1.4 acres. The riparian corridor and adjacent upland habitat on the Refuge land will not be impacted by urbanization of the reserve area. However, urbanization of the land between the Refuge properties may impact the stream corridor resulting in negative effects downstream, unless the Refuge is successful in purchasing this land that is within the acquisition boundary.

Coffee Lake Creek flows south through the eastern portion of the reserve area for approximately 1.5 miles. The northern portion of the stream flows through open land under the power lines and forested areas of the gun club property, prior to draining into a pond associated with one of the quarry operations. An 8.9 acre NWI wetland is associated with this portion of the stream corridor. The remaining portion of the stream is manipulated by a series of quarry operations before leaving the reserve area. Numerous NWI wetlands, totaling approximately 18 acres, are identified on the various quarry lands. As one would expect there is no evidence of habitat on the quarry sites. It is impossible to assess the impacts urbanization may have on the stream and wetlands prior to the reclamation plan being developed. Overall urbanization of the area could occur with low to moderate impacts to the stream corridors, wetlands and upland habitat areas, depending on the ability of the Wildlife Refuge to purchase additional land and the components of the reclamation plans for the individual quarry sites.

### **Energy, Economic & Social**

As noted previously this area contains a significant amount of land that is not conducive to urbanization due to public ownership, quarry activities and a private gun club. There are seven properties totaling 63 acres that have the potential for development in the short term. Six of the properties have residences and five of the six have significant natural resources identified on them, which further reduces the amount of development that could occur. Therefore any development that did occur would be very minor and isolated, assuming that the quarries continue to operate. While any development will impact the six existing residences, the social impacts of future urbanization on these existing residents would be small. Given the modest amount of development that would occur, the increase in traffic would not be great and would not have significant energy

consequences. The quarry activity within the reserve area is significant and the loss of the economic impact from these uses would be considerable if the extraction activities were terminated prior to the rock resource being exhausted. Overall this analysis area has low to medium economic, social and energy consequences from urbanization, depending on the timing of the termination of the quarry activity.

**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)**

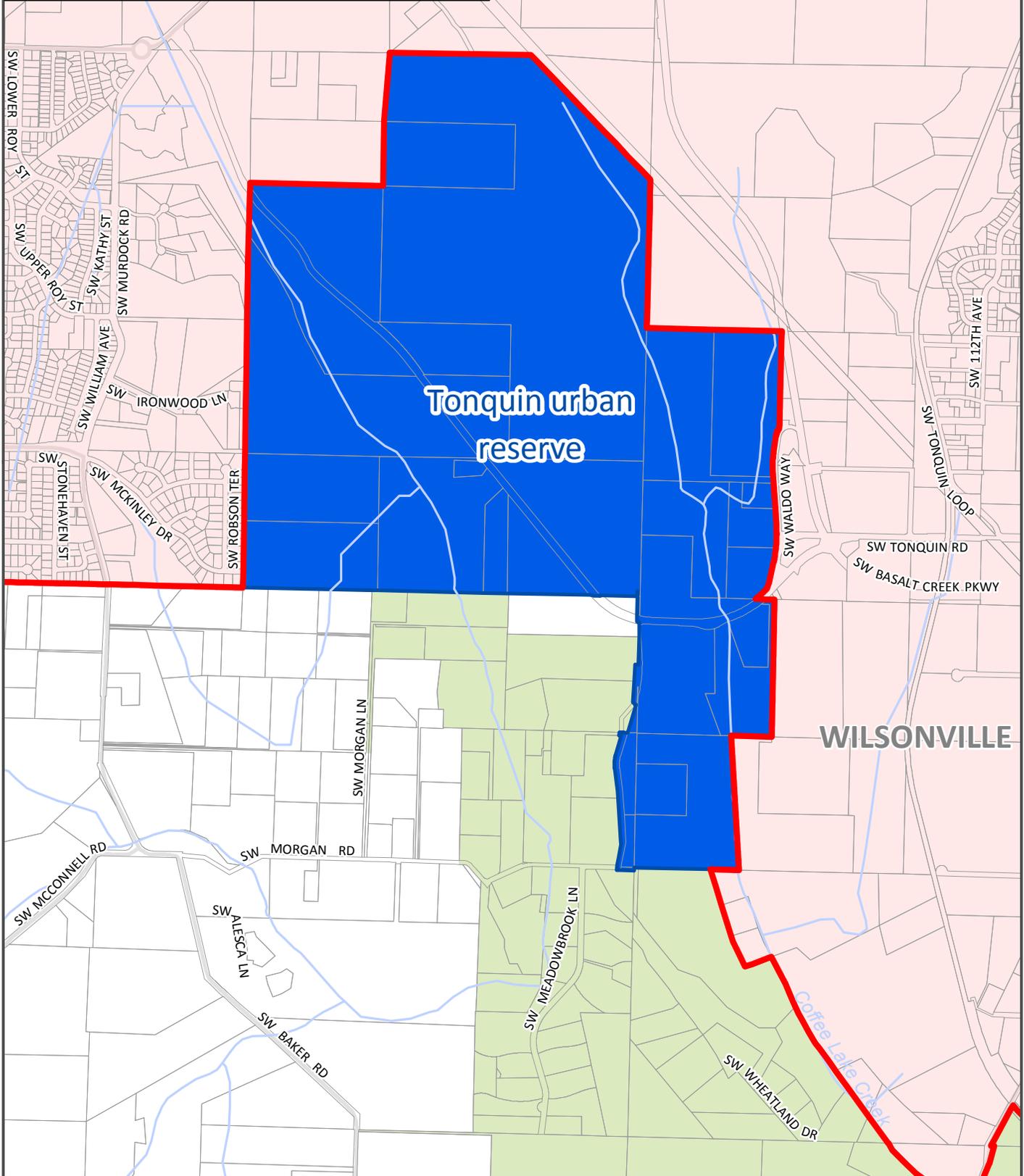
Only the southern edge of the reserve area is not defined by the UGB and the vast majority of the adjacent land is zoned for rural residential use. There is one very small block of exclusive farm use (EFU) zoned land that borders the very southwestern corner of the area. This block of EFU land contains two residences and no agricultural activities, thus the proposed urban uses have high compatibility with nearby agricultural activities occurring on farm land outside the UGB.



Metro

# Preliminary Urban Growth Boundary Alternatives Analysis Tonquin

- Inside the Urban Growth Boundary
- Rural reserve
- Other urban reserve
- Stream routes

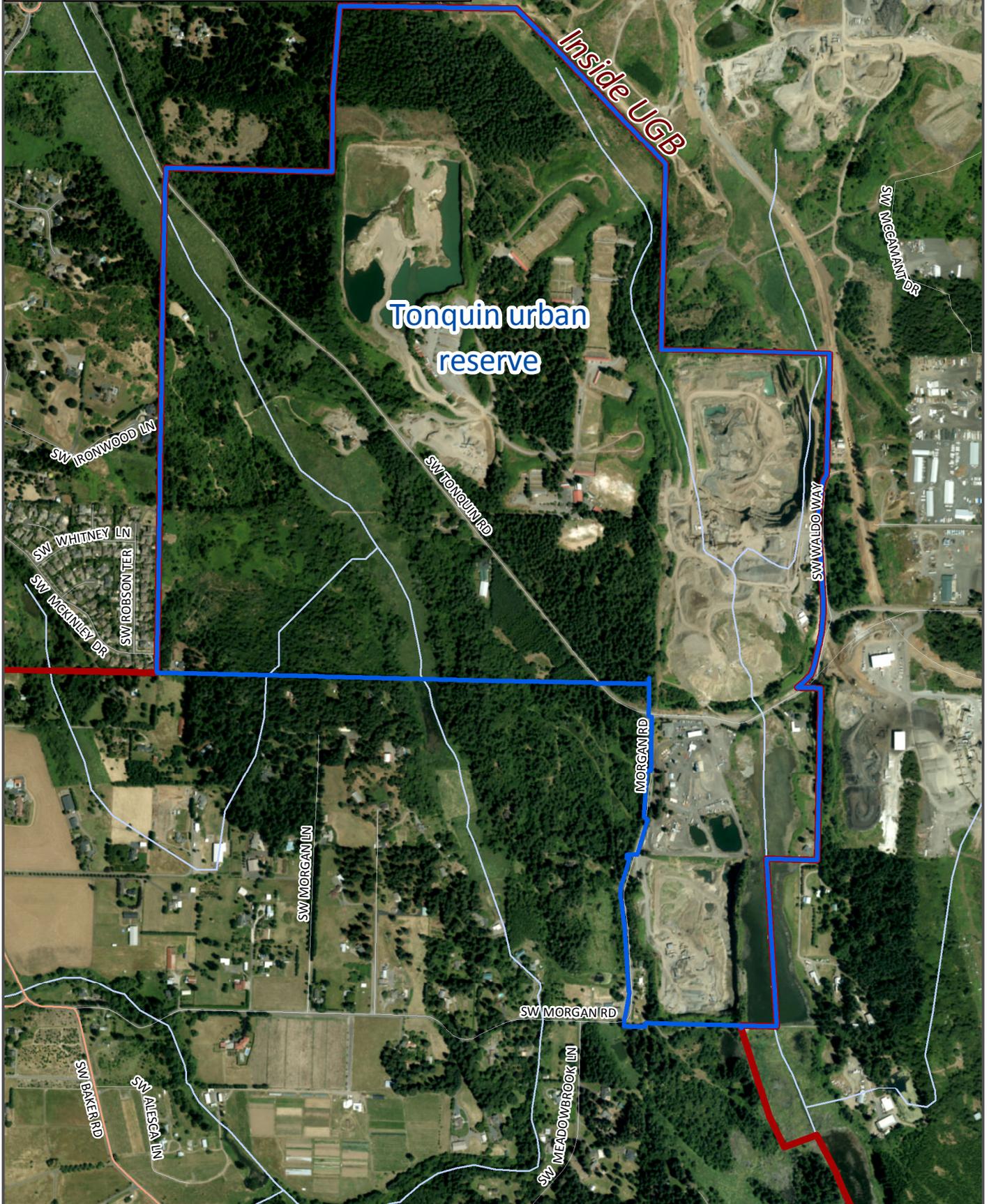


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Preliminary Urban Growth Boundary  
Alternatives Analysis  
Tonquin



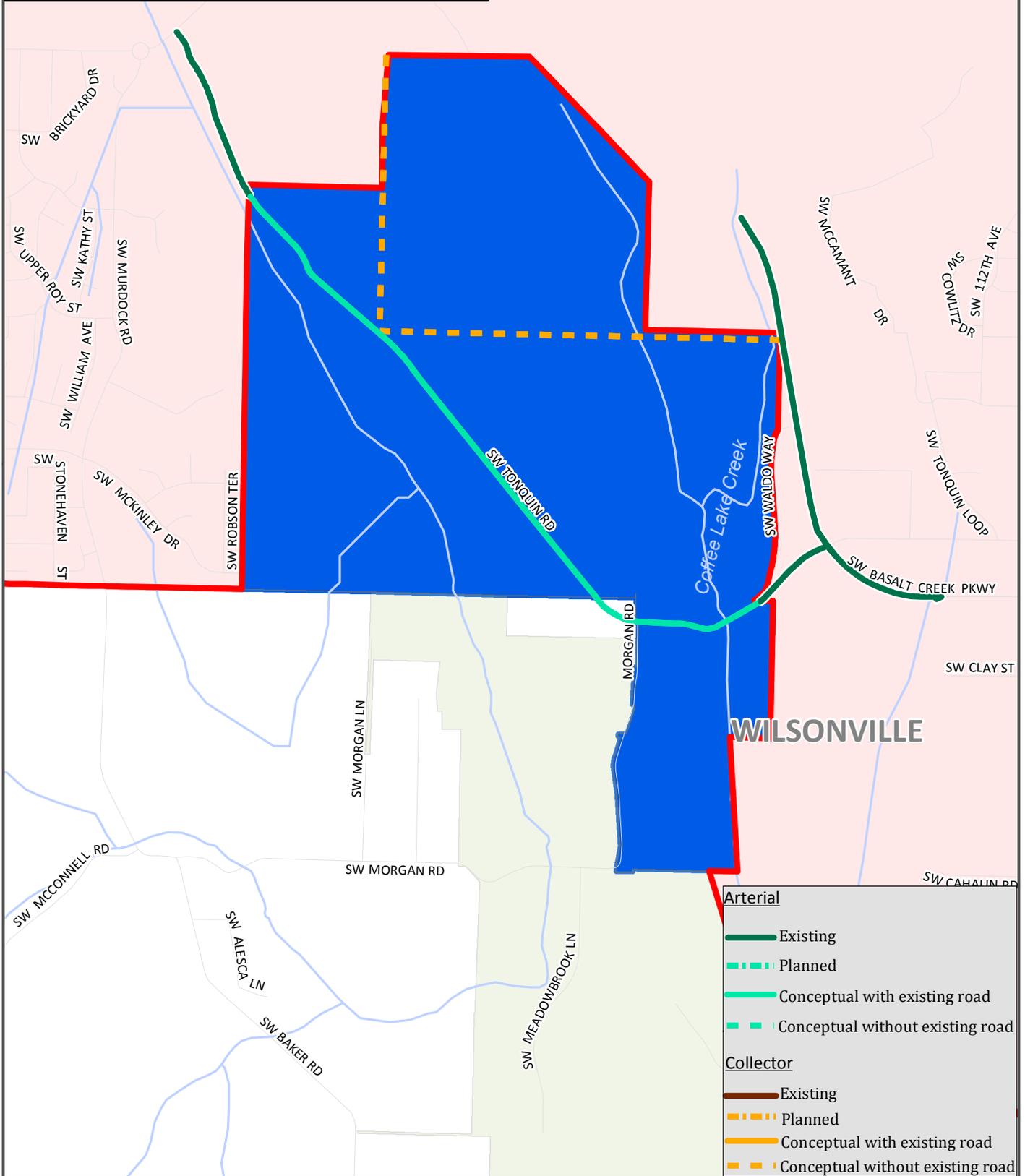
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# Preliminary Urban Growth Boundary Transportation Analysis Tonquin

- Inside the Urban Growth Boundary
- Rural reserve
- Stream routes
- Other urban reserve



**Arterial**

- Existing
- Planned
- Conceptual with existing road
- Conceptual without existing road

**Collector**

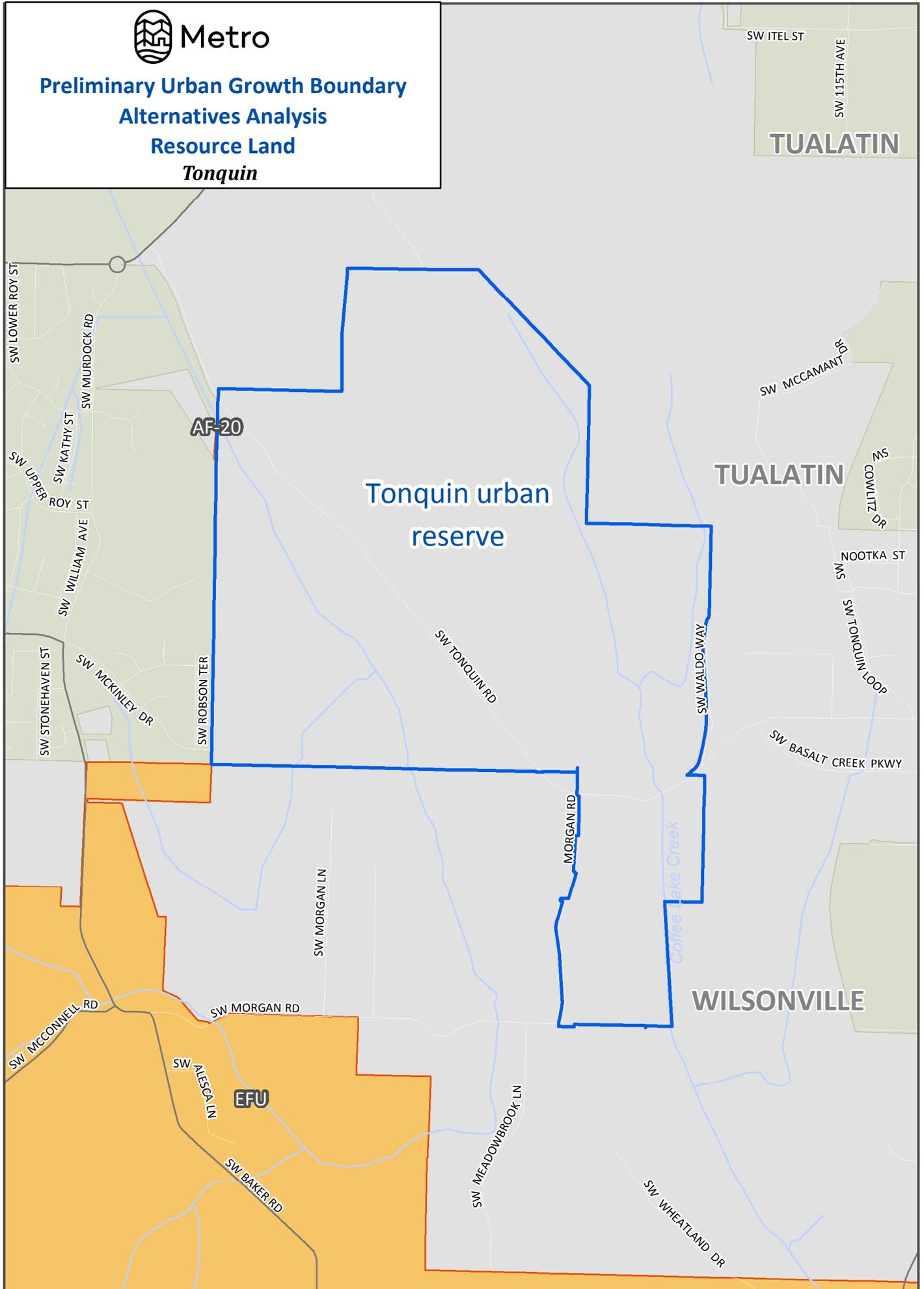
- Existing
- Planned
- Conceptual with existing road
- Conceptual without existing road

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Preliminary Urban Growth Boundary  
Alternatives Analysis  
Resource Land  
Tonquin



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