

2010 Update

Southwest Tualatin Concept Plan



City of Tualatin

Prepared by the City of Tualatin

In Conjunction With:

**Oregon Transportation and Growth
Management Program**

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Technical Analysis provided by:

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1 INTRODUCTION

The *Southwest Tualatin Concept Plan* (SWCP) is a guide for the industrial development of a 614-acre area currently outside the southwestern corner of the City of Tualatin (City). The SWCP follows the December 2002 and June 2004 decisions by the Metropolitan Service District (Metro) to bring the area inside the regional urban growth boundary (UGB), and thus set the stage for future urbanization of this area. Additionally, an urban reserve in Washington County is part of the SWCP area. Metro conditioned the land for industrial development as part of a strategy to balance the supply of land within the Portland Metropolitan region for job creation. The Concept Plan allows for flexibility in industrial development while promoting compatibility with adjacent land uses and natural resources.

Context and Setting

The SWCP area is located southwest of Tualatin (Figure 1). The project area is comprised of land brought into the UGB at different times and an urban reserve in Washington County. Approximately 50 acres of the study area were within the pre-2002 UGB and owned by Tigard Sand and Gravel (TSG). The area known as the Tonquin Industrial Group (TIG), consisting of approximately 50 acres, was added in December 2002 through Metro Ordinance 02-969B. The area known as TSG, consisting of approximately 252 acres, was added in December 2002 through Metro Ordinance 02-990A. Another portion consisting of approximately 80 acres was added in June 2004 through Metro Ordinance 04-1040B. The two areas, TSG and TIG, are designated Regionally Significant Industrial Area (RSIA) by Metro. The RSIA's are lands located throughout the Portland Metropolitan region that have been identified as important for future regional economic growth,

with close access to the region's major transportation facilities. The balance of the area (non-RSIA) is designated industrial by Metro. Through preliminary planning, and with property owners' consent, additional areas known as the "supplemental planning areas" were incorporated into the concept planning area.

2010 Update

Initial planning work took place from October 2004 through August 2005 with input from the public, property owners, other stakeholders and a technical advisory committee (TAC). In August 2005, the City Council directed staff to place the SWCP work activities on hold until *Tualatin Tomorrow*, the community vision and strategic action plan, was complete. The plan was accepted by the City Council on June 25, 2007, and activities on the SWCP recommenced in December 2007; however, at that time an alternative for the I-5 to 99W Connector had not been recommended so activities were again put on hold until clarity emerged from the Connector process. In February 2009 the I-5 to 99W Connector Project Steering Committee voted (6 to 2) to recommend that Metro include Alternative 7 in the Regional Transportation Plan (RTP) update. With this direction, work activities recommenced. The TAC agreed in November 2009 that land use assumptions from 2005 were still appropriate. They also agreed to add lands to the SWCP boundary and include that land in an infrastructure analysis update. The boundary was expanded to include 183 gross acres located south of the SWCP in an area commonly referred to as the Knife River Area.

The study area is bounded on the north and partially on the east by the City of Tualatin. The balance of the area on the east, south and west are bounded by unincorporated Washington County. The project area touches SW 120th Avenue to the north and extends past SW Tonquin Road to the south. Bonneville Power Administration (BPA) and Portland General Electric (PGE) power lines traverse the area. The

Portland & Western Railroad runs on the east side of the project area, providing the potential for future direct rail service.

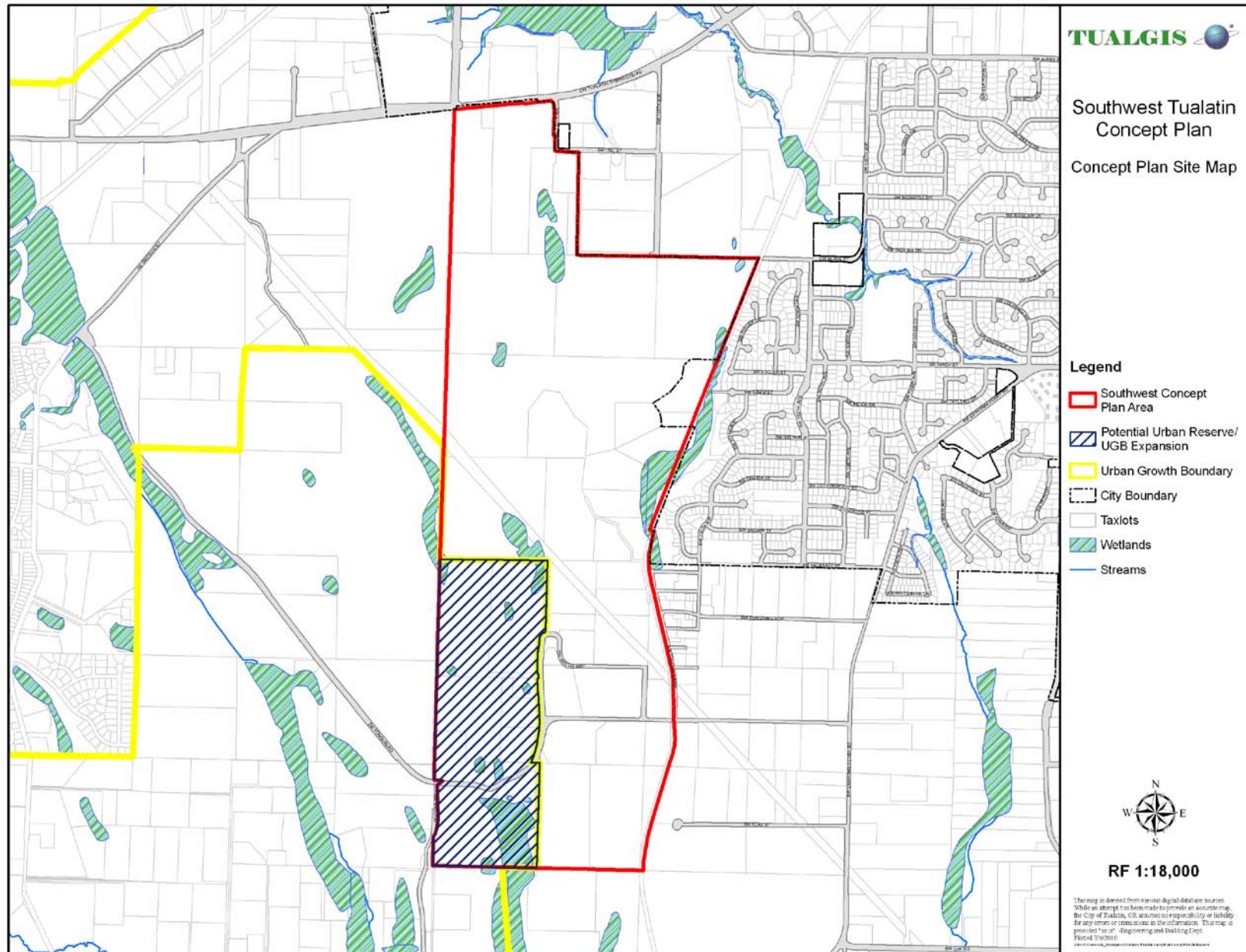
Key features of the Concept Plan are summarized in Table 1. This is based on a conceptual development scenario as shown in Figure 3.

Plan Summary

Table 1 Concept Plan Summary

Element	Description
Land Use and Development	Land use is proposed to be a mix of light industrial and high-tech uses in a corporate campus setting, consistent with new planning district requirements. The RSIA-designated area requires at least one 100-acre parcel and one 50-acre parcel for large industrial users. The remainder of the area is likely to include light industrial with some limited, local-serving commercial services.
Transportation	Primary access to the Southwest Tualatin Concept Plan area will be from an extended SW 124th Avenue south of Tualatin-Sherwood Road. Secondary access is planned via SW 115th and SW 120th Avenues. SW 124th Avenue is proposed to connect Tualatin-Sherwood Road ultimately with Tonquin Road. Arterial improvements are proposed to Tonquin Road from SW 124th to the railroad tracks terminating in a proposed bridge over the railroad. SW Blake Street is proposed to extend from 124th Avenue past SW 115th and will end in a cul de sac 350 feet west of the Portland & Western Railroad. SW 115th Avenue is proposed to connect Blake Street with an unnamed east-west collector and terminating at the Tonquin Road arterial improvements. The unnamed east-west collector will connect SW 124th Avenue with SW 115th Avenue. All arterials and collectors would follow Tualatin's transportation classifications in Chapter 11. SW 117th Avenue, SW 122nd Avenue, and SW Ite Street would follow the Local Commercial Industrial (B-CI) street section. All streets would have bike lanes, sidewalks, landscaping and lighting.
Water	Proposed improvements include a new Level B storage reservoir, a 16-inch diameter water main forming a loop through the project area and connecting with the storage reservoir, and 10-inch diameter water mains along the major roads through the SWCP area.
Sewer	Due to topography in the area, wastewater from the southern portion of the SWCP area could be conveyed to two lift stations. One permanent lift station proposed on the southern most edge of the area, and one interim lift station proposed in the northerly section of the southern portion of the area. Wastewater would be pumped north from the lift station through a new force main that discharges to a gravity sewer flowing to the Bluff/ Cipole Trunk Sewer. These improvements are consistent with the Tualatin Sewer Master Plan.
Storm Drainage	The area drains to two different receiving waters: Coffee Lake Creek to the south and Hedges Creek to the north. A new on-site storm drainage system would be created with one extended dry basin designed for water quality treatment that drains to Hedges Creek. This facility should be located at a regional low point. Detention was considered unnecessary due to the capacity in this area to infiltrate flows through both the regional and low impact development facilities. Three new extended dry basins would be designed for water quality treatment and detention purposes for the area that drains south toward Coffee Lake Creek. The facilities are sized for water quality to filter out pollutants from stormwater runoff and also sized for detention due to Coffee Lake Creek's limited capacity to absorb more water.
Natural Resources	Existing regulations would minimize potential adverse effects on resources identified in the Tualatin Natural Features Map and Tualatin Basin Natural Resource Recommendations to Metro.

Figure 1 Site Map



2 PLANNING PROCESS

What is a Concept Plan?

A concept plan guides how land added to the UGB will be used, provided with urban services, and developed in the context of existing adjacent communities. Concept plans, which typically focus on issues of land use, transportation, public infrastructure, and natural resources, are defined in Title 11 of Metro's *Functional Plan* (Code Sections 3.07.1105 – 3.07.1140, "Planning for New Urban Areas"). The SWCP area is intended only for industrial development and supporting commercial activities. It is not large enough to be considered a complete community. As a result, not all of the concept plan parts defined in Metro's *Functional Plan* apply to the SWCP¹. The requirements for a concept plan are described in more detail in the Metro handbook titled *Liveable New Communities* (2002). The eleven basic parts of a concept plan are listed below, with those relevant to the *Southwest Tualatin Concept Plan* shown in *italics*.

1. *Annexation plan*
2. Residential densities of at least 10 dwelling units per net residential acre
3. Provisions for a diversity of housing stock
4. Provisions for affordable housing
5. *Provisions for commercial and industrial land suited to the area*
6. *Conceptual transportation plan*
7. *Natural resource protection and restoration plan*

¹ Provisions for commercial use (other than directly supportive of industrial activities), housing, and schools are not applicable because the Concept Plan area is for industrial use only.

8. *Public facilities plan*
9. Plan for schools
10. *Overall urban growth diagram*
11. *Coordination among city, county, school districts, and other districts*

Although some land was already within the UGB prior to 2002, Metro added the majority of the area addressed by the Concept Plan to the regional UGB in December 2002 and June 2004, and at that time conditioned the land for industrial use. Preparation of the SWCP is the next step toward future urbanization of this land and annexation into the City. Additionally, 117-acres of the revised SWCP area is an urban reserve as of August 2010 and not yet inside the UGB.

How Was the Plan Developed?

The planning process consisted of four key components:

- Input from the Technical Advisory Committee (TAC)
- Involvement of property owners, other stakeholders, and the public
- Establishment of Concept Plan goals
- Review of existing conditions

INPUT FROM TECHNICAL ADVISORY COMMITTEE

Development of the Concept Plan was guided by input from a 31-member TAC that met 12 times during the planning process from 2004 to 2010. The TAC included representatives from the City of Tualatin, Oregon Department of Transportation (ODOT), Washington County, Metro, Clean Water Services (CWS), TriMet, City of Sherwood, City of Wilsonville, Bonneville Power Administration (BPA), Portland General Electric, Oregon Department of Geology and Mineral Industries (DOGAMI), Department of Corrections (Coffee

Creek Correctional Facility), ODOT Rail, Tualatin Valley Fire and Rescue (TVF&R), Oregon Department of Land Conservation and Development (DLCD), Genesee & Wyoming (Portland & Western Railroad), Tigard Sand and Gravel, and the Tonquin Industrial Group. Documentation of TAC meetings that took place in 2007 through 2010 are provided in Appendix A, and documentation from 2004 through 2005 is provided in Appendix I.

INVOLVEMENT OF STAKEHOLDERS AND THE PUBLIC

The broader community was involved in the Concept Plan process through mailings to interested parties, regular postings on the project's webpage, and four public open houses. The public open houses were conducted on March 9, 2005, June 14, 2005, January 5, 2010 and July 22, 2010, to allow public review and subsequent revision of the draft plan and to give the public a chance to comment on the 2010 update. Documentation of the 2010 public open houses is provided in Appendix B and the 2005 open houses in Appendix J. In addition, a Neighborhood Developer meeting was held on July 26, 2005 to discuss Conceptual Development Alternative 3, and on August 4, 2005, a letter with project information was mailed to over 1,700 property owners. Conceptual Development Alternative IV was created in response public comments received during and after the July 22, 2010 Open House.

ESTABLISHMENT OF CONCEPT PLAN GOALS

Goals for the Concept Plan were established early in the planning process. The goals, shown in Table 2, were reviewed and affirmed by the TAC at their meetings on March 30, 2005, and May 11, 2005. When the TAC reconvened, in November 2009, they reaffirmed the goals of the SWCP. The TAC met in the interim on April 23, 2008 at which time staff presented a comparison of select strategies from *Tualatin Tomorrow* a community vision and strategic action plan and the SWCP elements and goals. The purpose of this exercise was to ensure that

when the SWCP area is annexed into the City, the plan elements help achieve the goals of *Tualatin Tomorrow*. The matrix presenting this comparison is included as Appendix G.

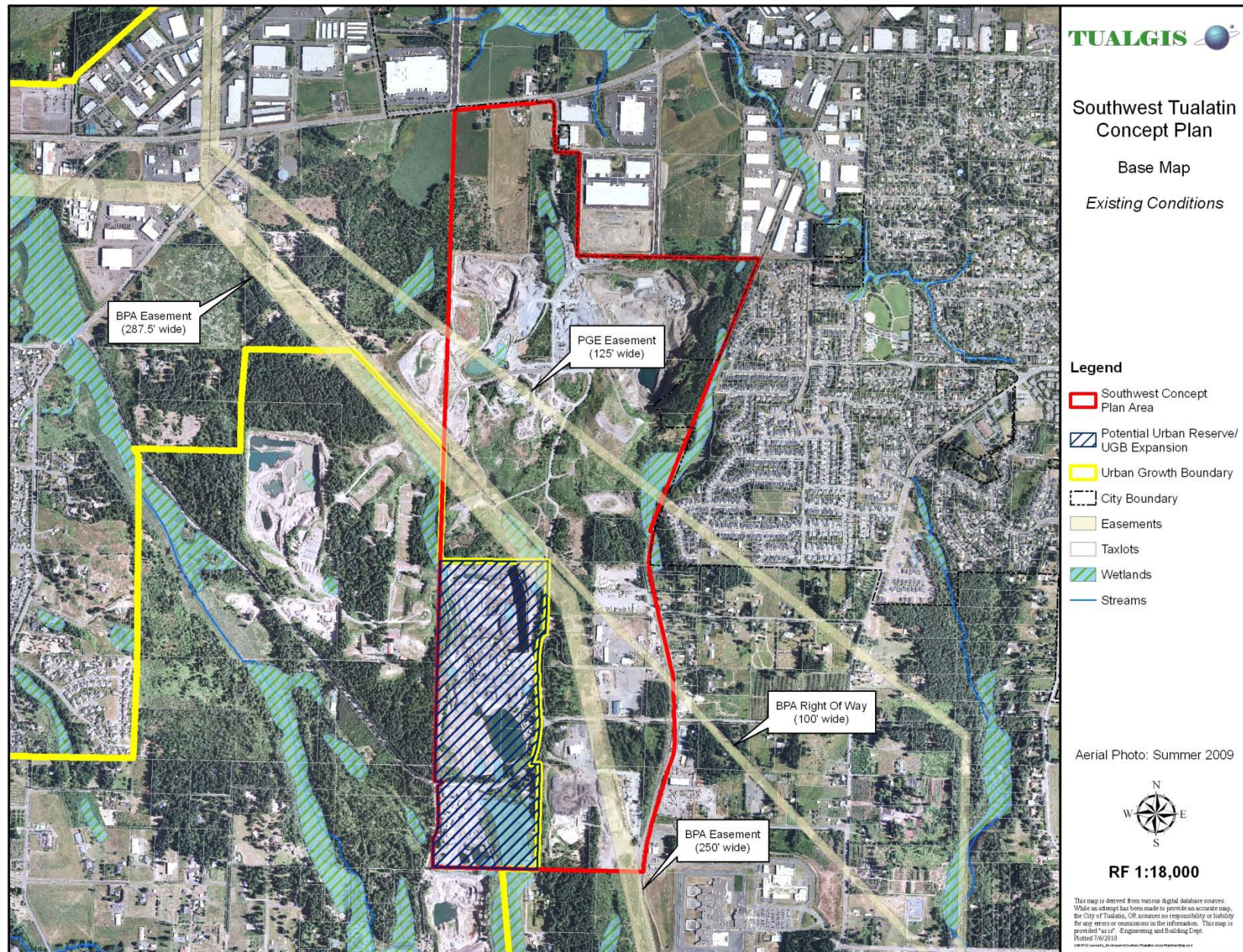
REVIEW OF EXISTING CONDITIONS

The first portion of the technical work for the Concept Plan focused on the review and analysis of existing conditions. This included a document review, site visit, and an analysis of transportation and infrastructure needs based on existing conditions. An existing conditions memorandum, from 2005, including a traffic impact assessment is included in Appendix K. In 2010 a traffic analysis was prepared and is included in Appendix C. A map summarizing key existing conditions is included as Figure 2.

Table 2 Concept Plan Goals

A.	Create a plan to guide future development of the project area.
B.	Ensure the SWCP meets Metro Ordinances 02-990A and 04-1040B.
C.	Ensure an adequate and efficient transportation system.
D.	Coordinate the planning with the future I-5 to 99W connector.
E.	Involve the broader community in the planning process.
F.	Work with BPA and PGE to ensure safe development.
G.	Identify alternative methods of providing infrastructure and highlight any issues related to supply and delivery limitations for the different types of infrastructure systems.
H.	Identify the cost of infrastructure and identify alternative methods of funding for infrastructure provision.
I.	Evaluate limited commercial uses to serve the needs of the area's employees.
J.	Preserve significant natural resources.

Figure 2 Existing Conditions



3 CONCEPT PLAN

The Concept Plan is described in the text below and illustrated in the referenced figures.

Land Use and Development Plan

ZONING

When the Concept Plan area was added to the UGB in 2002 and 2004, Metro conditioned the land to be used for two types of industrial purposes: Regionally Significant Industrial Area (RSIA) and Industrial. The potential urban reserve area has not been given a designation yet, but it is anticipated to receive an industrial designation if it is brought into the UGB. When land in the SWCP area is annexed to the City of Tualatin upon development or redevelopment, the land use district would be Business Park. There are several reasons for this designation.

1. As a new district within the City of Tualatin, it allows more focused types of light industrial, high-tech and campus employment users, with strict limitations on commercial development. This, in turn, will help meet Metro's goals regarding "regionally significant industrial" and other industrial development.
2. The new designation is intended to be a good transition zone between existing residential areas and potential residential areas in the Basalt Creek Planning Area to the east and industrial areas west of the Portland & Western Railroad. The new designation requires high quality landscaping, buffering, and design standards intended to alleviate and/or mitigate potential impacts on adjacent Residential Districts, while promoting light industrial activities within a campus-like setting.

Key development assumptions associated with the Business Park planning designation are shown in Table 3.

Table 3 Development Assumptions

Development Assumptions for Southwest Tualatin Concept Plan Potential Business Park Planning District

Minimum Parking	0.3 spaces per 1,000 square feet (warehouse) up to a range of 1.6-3.0 spaces per 1,000 square feet (manufacturing), depending on use.
Setbacks	Front: 30 - 50 feet Side/back: 0 - 100 feet* Private road: 5 feet Public road: 30-50 feet Parking areas: 20 - 25 feet
Impervious Surface	Up to 80 percent of the development area may be impervious.
Landscaping	A minimum of 20 percent of the development area is required to be landscaped.
Minimum Lot Size	20,000 square feet; except for RSIA-designated land, which shall include at least one 100-acre parcel and one 50-acre parcel.
Maximum Structure Height	65 feet to 85 feet if certain yard requirements are met. Within 100 feet of residential district, maximum height is 28 feet.

* Within this range, setbacks will be larger if property abuts a residential area.

DEVELOPABLE AREA

Of the approximately 614 acres in the SWCP area, the actual developable area is reduced by the following factors or development requirements:

- Approximately 448 acres within the Concept Plan area are considered to be net buildable acres (net of existing/planned public arterial and collector street right-of-way, wetlands, floodways, flood plains, streams, slopes greater than 25%, 50 foot

buffers around sensitive areas and 35 feet from the top of the bank on slopes greater than 25%).

- Areas within BPA and PGE easements are subject to the following constraints:
 - Cannot be used for parking, buildings, or water quality facilities
 - No buildings can be constructed within 25 feet of the vertical members of the transmission line towers
 - Potentially could be used for public open space, such as a trail

It is assumed that impacts on potential floodplains and wetlands could be mitigated offsite and would not reduce developable area. Any offsite mitigation would be subject to the applicable regulations of the affected jurisdictions (e.g., Washington County or Clean Water Services).

The local resources in the Natural Resources Map would be protected, where appropriate, and enhanced as a condition for new development.

The Portland & Western Railroad right-of-way (owned by ODOT) traverses the area in a north-south alignment along the eastern boundary of the SWCP. ODOT's Rail Division has indicated that no new public at-grade street or pedestrian crossings would be allowed. The 2010 transportation analysis update proposes constructing one bridge over the railroad right-of-way. This bridge would connect Tonquin Road in the southern end of the study area. Additionally, this plan proposes a pedestrian and bike connection that could cross the railroad either as a bridge or a tunnel in the vicinity of SW Blake Street. This pedestrian and bike facility would connect SW 108th Street with the trail system and a proposed Blake Street cul-de-sac west of the Portland & Western Railroad. Trails are proposed to follow the utility easements in the area and the existing tree stand

along the eastern boundary. The proposed trail system could incorporate elements of the Tonquin Trail which is in the planning process at the time of this writing. The alignments of the Tonquin Trail are an emerging issue and are not defined at this time. The proposed trails in the Concept Plan could evolve and be modified as the Tonquin Trail continues to develop.

FUTURE URBAN EXPANSION

When the SWCP area is annexed into the City of Tualatin, it will form the southwestern city limits. The Concept Plan area is partially surrounded on two sides by land that is currently inside the City of Tualatin city limits. The land on the west, south and east of the SWCP area is currently within unincorporated Washington County. However, most of these areas will become urbanized in the future. Adjacent to the SWCP area on the northwest is the approximately 300-acre "Quarry Area," that will be annexed into the City of Sherwood as the Tonquin Employment Area. Land on the southeast, 645-acre are (approximate), known as the "Basalt Creek Area" was brought into the UGB by Metro in June 2004 for future industrial and residential development. In 2009 additional land was added to the SWCP area including 66 acres of industrial land located west of the railroad right-of-way and south of Knife River. Additionally, an urban reserve area of 117 acres currently outside the UGB and located directly south and southeast of the SWCP area was added.

Traffic Analysis

BACKGROUND

As discussed above, in December 2002 and June 2004, Metro added land designated for future industrial development in Southwest Tualatin to the Portland regional UGB. This, together with pre-2002 UGB land, the land in the industrial land west of the railroad and the urban reserve land, make up the 614-acre Southwest Tualatin Concept Plan area. The SWCP area is located south of Tualatin-Sherwood Road and west of the current Tualatin city limits and in the future will be annexed into the

City of Tualatin. Current land uses in the planning area consist of aggregate mining (the majority of the area), and a small amount of rural industrial, manufacturing uses, and Tualatin Valley Fire and Rescue training facility at the south end of the area. This draft plan identifies land use, transportation, and urban service needs for the area, once mining operations cease and the rural industrial and other non-industrial sites redevelop. The draft preferred conceptual development plan (Alternative IV 2010 Update) is illustrated in Figure 3.

PLANNING PROCESS

The end result of the concept plan process will be amendments to the Tualatin Development Code (TDC) and Transportation System Plan (TSP) that will allow the future redevelopment of the SWC area from its current rural, industrial and aggregate extraction uses to more urbanized industrial uses. These future uses are assumed to be a mix of “light industrial” (e.g., printing, material testing, and assembly of data processing equipment) and “business park” uses (e.g., flex-type space for technology companies).

The 2010 transportation analysis considered the following parameters:

- The trip generation potential of the SWCP area plus an additional 183 acres north and south of Tonquin Road (areas K and L in Figure 3);
- The traffic-redistribution effects of the preferred roadway network from the I-5 to 99W Connector Study;
- Changes to Oregon’s Transportation Planning Rule (TPR) since 2005;
- A horizon year of 2030; and
- Coordination with concept planning efforts with the adjacent Tonquin Employment Area in the City of Sherwood.

TPR requirements pertaining to plan and land use regulation amendments are given in Oregon Administrative Rules section 660-

012-0060. Proposed changes to land use plans must determine whether the proposed change would create a “significant effect” on the planned transportation system. The transportation system plans for the City of Tualatin, Washington County and Metro’s Regional Plan could be affected by the eventual TDC amendments resulting from the SWCP work. All three of these adopted plans assumed future urban levels of development that are more intense than what is reasonably likely to occur. Table 4 compares the jobs assumed by Metro’s model and the jobs assumed by the SWCP analysis in the years 2020, 2030 and 2035. In the 2030 horizon year the Metro model assumes 3,516 jobs will exist in the area and the SWCP analysis assumes only 2,800 jobs will exist in the area. In the year 2030 the SWCP area could be 68% developed and when the entire area is completely developed there could be 4,100 employees. (See Appendix C Traffic Analysis for more details). Because the number of jobs assumed by the SWCP analysis is fewer than the number of jobs assumed by the Metro model, it is unlikely that changes to the TDC will create a “significant effect” on the planned transportation system.

Table 4 Employment comparison of Metro model and SWCP land use assumptions

Analysis Year	Total Employment
2020 (Metro model)	1,782
2020 (Concept Plan)	1,400
2030 (Metro model)	3,516
2030 (Concept Plan)	2,800
2035 (Metro model)	3,735
2035 (Concept Plan)	3,500

Tualatin’s Leveton Employment Area, established in 1985, was used as a guide for development in the SWCP area. When the Leveton Employment Area was annexed into the City it was characterized by underdevelopment and faced a variety of physical and economic obstacles including inadequate infrastructure systems to allow

industrial development to occur. Sanitary sewer, water and transportation systems were generally below standard or non-existent and an abandoned sand quarry inhibited future development.²

Between the years 1985 and 2005 Tualatin saw an economic growth spurt and employment in the Leveton area grew at a high rate of 140 jobs per year. The SWCP area has similar existing conditions (see Appendix K Existing Conditions Technical Memorandum March 8, 2005), and it is reasonable to assume that similar growth patterns will occur in the area.

The transportation system in the year 2030 will not be the same as it is today. Metro's regional transportation 2030 model used for the I-5 to 99W Connect Study and Alternative 7, was used for this analysis. The road network used in this model assumed the following future projects:

- Constructing the I-5 to 99W Connector as a five-lane arterial following an alignment along the south edge of the Concept Plan area, connecting I-5 north of the North Wilsonville interchange to Highway 99W south of Brookman Road.
- Widening Tualatin-Sherwood Road to 5 lanes from Tualatin to Sherwood.
- Extending SW 124th Avenue as a 5-lane arterial from Tualatin-Sherwood Road to Tonquin Road and eventually the I-5 to 99W Connector, with right- and left-turn lanes provided at signalized intersections.
- A future transportation solution to the inadequate access and connectivity via the current bridge across the Tualatin River into the Tualatin Town Center and the industrial district will be addressed in Tualatin's next Transportation System Plan update.
- Extending Herman Road as a 3-lane arterial from Cipole Road to Highway 99W.

- Blake Street from SW 115th Avenue to SW 124th Avenue and continuing on as an east-west collector street into the Tonquin Employment Area and Sherwood.

SUMMARY OF RESULTS

The 2010 update analysis study intersections consisted of the arterial/collector and arterial/arterial intersections along the periphery of the Concept Plan area, as well as the highest-volume collector/collector intersection within the SWCP area. The following intersections were studied:

- SW 115th Avenue/Tualatin-Sherwood Road
- SW 115th Avenue/Blake Street
- SW 115th Avenue/East-West Collector
- SW 115th Avenue/ Tonquin Road
- SW 124th Avenue/Tualatin-Sherwood Road
- SW 124th Avenue/Blake Street
- SW 124th Avenue/East-West Collector
- SW 124th Avenue/Tonquin Road and
- SW 124th Avenue/I-5 to 99W Connector

All intersections would meet City of Tualatin standards (Level of Service D or better for signalized intersections). Intersections along Tualatin-Sherwood Road would also be Washington County intersections and would meet the County's signalized intersection

² City of Tualatin, Economic Development Division *Leveton Tax Increment Plan-April 2002*, Tualatin, Oregon

standard of a volume to capacity ratio of 0.99 or less. If the I-5 to 99W Connector were to become a County facility, its intersections with SW124th Avenue would also meet the County signalized intersection standard.

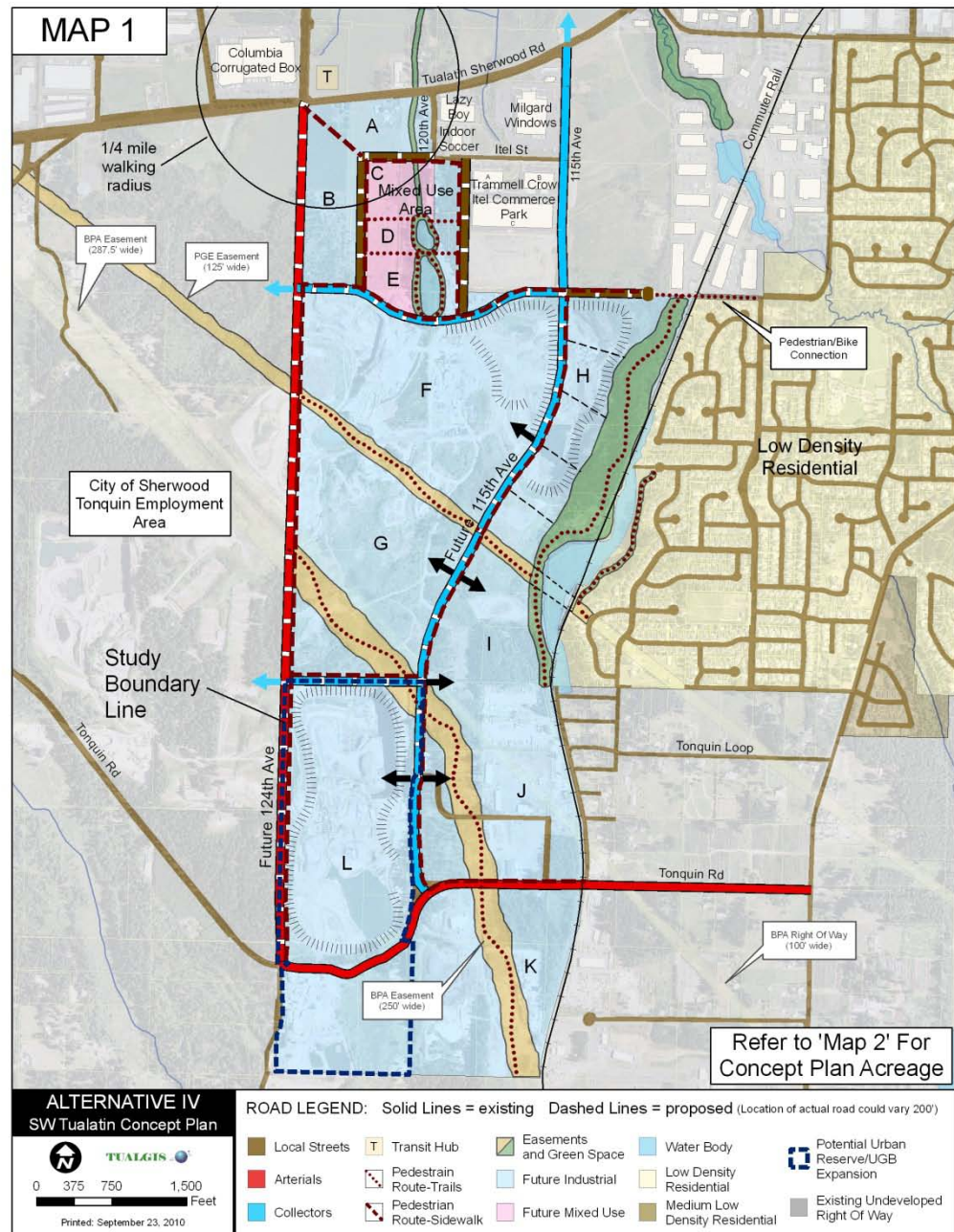
If the Southwest Tualatin Concept Plan area were to build out by the year 2030, all of the study intersections would (or could be made to) meet applicable City and County standards. The intersection of SW 124th Avenue with the I-5 to 99W Connector would require separate intersections with the eastbound and westbound Connector roadways, preferably located where future interchange ramps would intersect SW 124th Avenue. Additionally, the exact location of the intersection of SW Blake Street and SW 124th will be determined through coordination between the Cities of Sherwood and Tualatin when more in-depth site analysis has been conducted.

An additional transportation consideration is the alignment of SW 124th Avenue. As proposed, SW 124th Avenue follows a straight line from Tualatin-Sherwood Road to Tonquin Road. However, a portion of this area is a proposed Urban Reserve currently being reviewed by the Department of Land Conservation and the Land Conservation

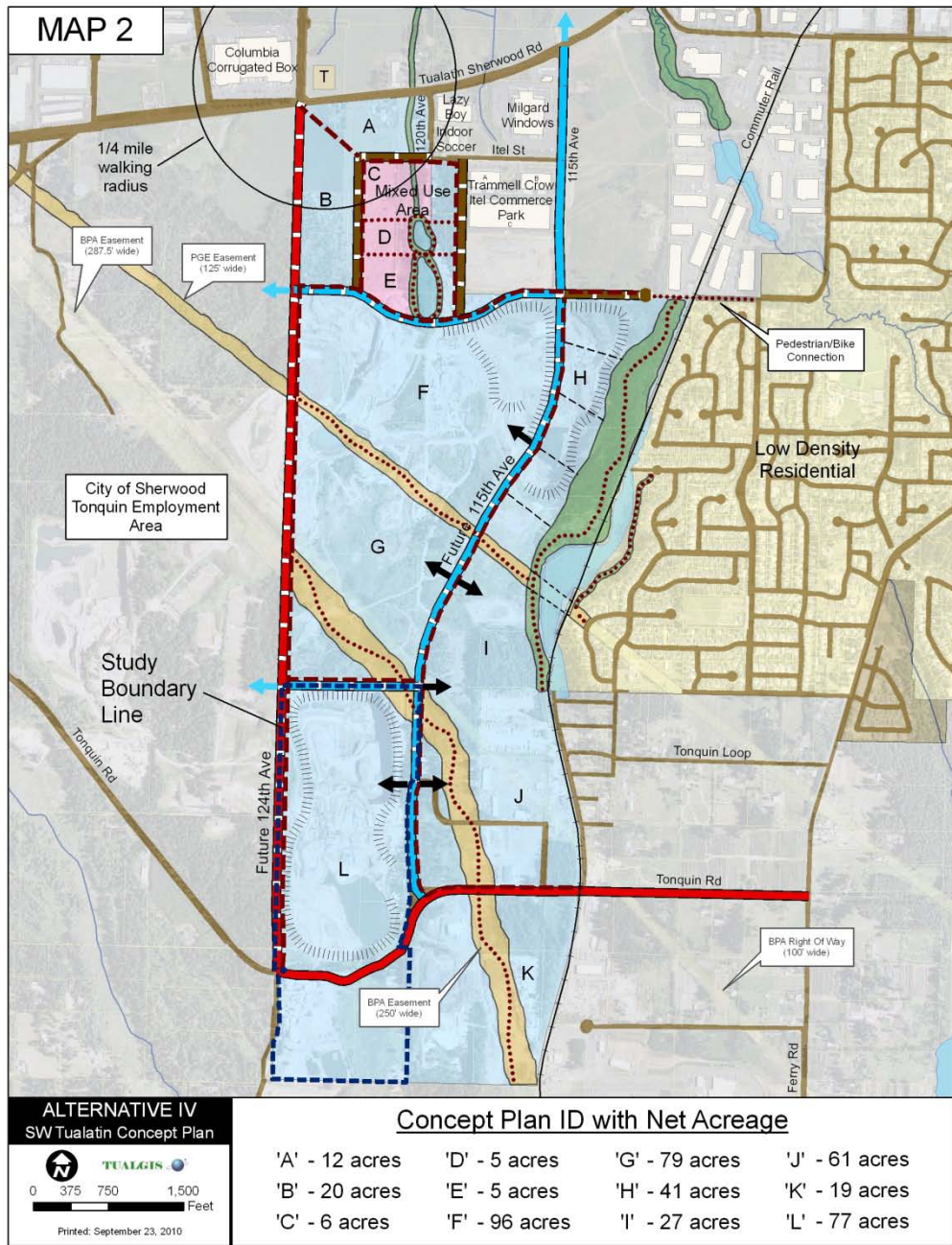
Development Commission. If this area is not designated an urban reserve or brought into the UGB in December 2010, SW 124th Avenue will essentially follow the boundary of the potential Urban Reserve by turning east and then south to connect with Waldo Way and eventually Tonquin Road. It should also be noted that the actual constructed road facilities could vary from the proposed conceptualized location as seen in Figure 3 by as much as 200 feet when built.

The 2005 Concept Plan recommended that the SW 120th Avenue/Tualatin-Sherwood Road intersection be converted to a right-in, right-out configuration, due to the difficulty of making left turns at this location and the proximity of traffic signals at SW 115th and SW 124th Avenues. That recommendation still holds. For the complete traffic analysis from 2005, see Appendix L Future Alternatives Traffic Analysis May 2, 2005; Updated June 12, 2005.

Figure 3
Preferred
Concept Plan



Preferred
Concept Plan
'Map 2'



Infrastructure Needs

WATER SYSTEM

There are currently no public water lines located in the Concept Plan area.

Development Issues: The Concept Plan area must be in the City of Tualatin prior to receiving water service.

Infrastructure Needs: The water master plan includes the Concept Plan area (referenced as the “Tigard Sand and Gravel Area”) in the hydraulic modeling and capital improvement project (CIP) identification tasks see Appendix K, Table ES-1 and Figure ES-1. Figure 4 illustrates the extension of the City’s water system to and within the SWCP area. The routing of the pipes within the plan area has been modified to follow the new roadways proposed. Once development assumptions have been specified, more specific estimates of future infrastructure needs can be made. Over time, additional water sources will need to be identified to serve Tualatin’s future growth. At this time, the city is exploring options. The 2010 update includes impacts for providing water to an expanded area. This includes the urban reserve area, the industrial area west of the railroad right-of-way and the impact of providing water to some portion of the balance of the “Basalt Creek Area” that is proposed to support residential and commercial uses. See Appendix D for 2010 updated infrastructure analysis.

SEWER SYSTEM

No sanitary sewer system of adequate size currently exists within or near the Concept Plan area.

Development Issues: The Concept Plan area must be in the City of Tualatin prior to receiving sewer service.

Infrastructure Needs: The sewer master plan included the SWCP area in the hydraulic modeling and capital improvement project (CIP) identification tasks. Three recommended CIP projects were identified to provide sanitary sewer service to the Concept Plan area and adjacent areas in southwest Tualatin. The recommended projects are:

- Tualatin-Sherwood Extension – a new 24-inch pipeline located in Tualatin-Sherwood Road, extending from the Concept Plan area easterly to SW Avery Street;
- Bluff/Cipole Lateral – Increase existing 12-inch to 21-inch pipe to an 18-inch and 36-inch pipeline extending from near the SW Tualatin-Sherwood Road / SW Avery Street intersection to the existing Bluff/Cipole Trunk; and
- Bluff/Cipole Trunk improvements – upsize existing trunk line pipe diameters.
- The 2010 infrastructure analysis identified the need for additional 8-inch local sewers, 12-inch force main and additional lift station capacity.
- Similar needs were identified for the potential urban reserve area and the industrial area west of the railroad right-of-way.

For the purposes of allocating offsite infrastructure improvements to the SWCP area development, only the Bluff/Cipole Lateral project is included in the capital cost estimate to serve the Concept Plan area. Figure 4 illustrates the offsite sanitary sewer improvements. Appendix E provides more details on the assumptions contained in the capital cost estimates and Appendix D contains the 2010 updated infrastructure analysis.

STORM DRAINAGE

No storm water system exists within the Concept Plan area. The plan area rises gradually in elevation from approximately 185 feet at the

north to about 290 feet along the central east side, then drops to about 240 feet at the south. Drainage is imperfect, but is generally toward the north and south, with a break point at approximately the middle of the Concept Plan area. Drainage in the northern portion around and in the quarry infiltrates through the fragmented basalt and drains toward Hedges Creek. Drainage to the south flows toward Coffee Lake Creek, which flows to the Willamette River.

Infrastructure Needs: Runoff from future streets or access roads and development in the portion of the Concept Plan area will need to meet Clean Water Services (CWS) design criteria for storm water quality and quantity control. A new conveyance system will need to be installed along the roadways. Site development runoff will need to be treated and detained, if necessary, before being discharged to the public drainage systems. It should be noted that most of the Concept Plan area is outside of the current CWS service area. The CWS service area may be expanded in the future to include the Concept Plan area. If this does not occur, the City may require that new development meet CWS requirements. Four regional stormwater facilities are proposed. They are designed to meet peak flows and runoff volumes. Each facility is an extended dry basin, designed to CWS standards. Three facilities in the southern portion of the area that drain to Coffee Lake Creek are designed to provide water quality treatment and detention, while the facility that drains to Hedges Creek is designed to provide water quality treatment only.

OTHER UTILITIES

The only known utility that crosses the study area is electrical; the Bonneville Power Administration (BPA) and Portland General electric (PGE) transmission lines. PGE provides electrical service in the SWCP area and has the capacity to serve the needs of the study area. PGE operates an 115-kV electrical transmission line that runs diagonally across the middle of the study area. A second 115-kV electrical transmission line run by BPA (referred to as the Keeler Oregon City

#2, Oregon City Stub) crosses the SWCP area on BPA's right-of-way or easement. This is a regional distribution line that is not used to provide electrical service to the area.

Conversations with BPA staff have indicated that in the future the corridor could be used for open space or perhaps a trail but is off limits for development or use as a water quality facility. BPA is willing to work with property owners or the City to provide road access to sites within the SWCP area. No construction could occur within 25 feet of the transmission line poles. Also, no parking, refueling, or storage of flammable materials may occur on the BPA right-of way.

Phone service and natural gas utility service will be needed to serve future development in the SWCP area. These private utilities will be funded and constructed privately at development occurs.

Natural and Cultural Resources

A study of the Natural and Cultural Resources was conducted for the I-5 to 99W Connector project titled *I-5 to 99W Connector Project Alternative Analysis Report-June 2008* (Connector Study). The project area encompassed the SWCP area and a much larger geographic study area that stretched approximately from I-5 on the east to 99W on the west, Elligsen Road on the south to the Tualatin River on the north. Generally, the Connector study was consistent with the SWCP *Existing Conditions Technical Memorandum* 2005 (see Appendix K) however there is some additional information from the Connector Study.

Broadly, the Connector Study area lies within the basins of the lower Willamette River and the Tualatin River. Specifically, the SWCP area lies in the subbasins of Hedges Creek and Coffee Lake Creek also referred to in the Connector Study as Seely Ditch.

Existing Conditions: Natural resources in the Concept Plan area have been highly modified by historical and current land uses.

The plant community consists predominantly of scrub-shrub vegetation with remnant patches of forested habitat. Shrub vegetation is dominated by oceanspray (*Holodiscus discolor*) and poison oak (*Rhus diversiloba*). Dominant trees include madrone (*Arbutus menziesii*), Scouler's willow (*Salix scouleriana*), black cottonwood (*Populus balsamifera*), and Douglas fir (*Psuedotsuga menziesii*). With the exception of a fairly large population of madrone, no unique species or species assemblages were found. Madrone is native to western Oregon, but not particularly common in this portion of the Willamette Valley. Introduction and dispersal of weeds is prevalent, facilitated by high truck traffic and the electrical transmission rights-of-way (i.e., BPA). The Connector Study found the presence of Douglas Hawthorne (*Crataegus douglasii*), common cattail (*Typha latifolia*), soft rush (*Juncus effuses*) and slough sedge located in the Hedges Creek subbasin. The Coffee Lake Creek subbasin was observed to have a large cattail marsh (presumed to be Kolk Pond) with an open water area partially covered by duckweed (*Lemna minor*). Also, Douglas fir upland borders this area.

Wildlife activity appears sparse where vegetation is cleared and land use by people is active. Inactive land areas appear suitable for a variety of wildlife species, especially deer, coyote, small mammals, song birds, and reptiles. "From a wildlife perspective, the Rock Creek and Coffee Lake Creek subbasins function as a single system linking the Tualatin River to the Willamette River through the Tonquin Scablands."³ According to the Connector Study the Tonquin Scablands border the westerly edge of the SWCP study area.

The Washington County soil map indicates that most of the plan area is covered by Saum silt loam (38), Briedwell stony silt loam (5), Hillsboro loam (21), and Pits (76), all non-hydric soils. Wapato silty

clay loam (43), a hydric soil, is present along Coffee Lake Creek and west of the old railroad station. Wetland resources tend to occur at hydric soil locations. The Connector Study indicates areas of soft soils along portions of Coffee Lake Creek in the southern portion of the SWCP area. Additionally, the study indicates the majority of the area is in shallow bedrock. Portions of the study area are characterized by steep slopes greater than 40 percent gradient and some slopes that are 15 to 40 percent gradient. These slopes are most likely due to aggregate mining in the SWCP area. Along Coffee Lake Creek, there are small areas with a high liquefaction hazard according to the Connector Study. There is an indication of possible moderate erosion hazard on the westerly portion of the SWCP area. The Connector Study used key environmental indicators to identify likely areas of archeological significance. One such indicator that can be found in the SWCP area are Mollisols or "soils that formed under grasslands and created areas that would have been rich in food resources."⁴

Waters and wetlands seem to occur where perched hydrology intersects with ground surfaces. A cursory search for potential waters and wetlands reveals the Kolk Ponds, shallow wetland ponds in the north east are, and wetlands associated with Coffee Lake Creek. The Connector Study indicates possible emergent and scrub-shrub wetlands in the northern portion of the SWCP study area, and it indicates the presence of emergent wetlands and hydric soils along the Coffee Lake Creek stream.

Field observations indicate that wetland conditions exist at former borrow sites, where unimproved roads have altered surface drainage, at roadside ditches, and at CWS Water Quality Sensitive Areas and Vegetated Corridors. It will be challenging to determine the jurisdictional status of wetlands that occur at active and formerly

³ I-5 to 99W Connector Project Alternative Analysis Report, June 2008 retrieved from website July 6, 2010 www.i5to99w.org

⁴ I-5 to 99W Connector Project Alternative Analysis Report, June 2008

active quarry operations, potentially isolated wetlands, drainage ditch wetlands, and artificial ponds.

A small resource area at the southeastern corner of the SWCP area, where a portion of an old railroad station exists, is designated a Historic and Cultural Resource according to Washington County's Rural/Natural Resource Plan (See Appendix K for the existing conditions report and Appendix P for the 2005 review of Historical Resources).

Development Issues: According to Washington County, the greatest resource value is for mineral and aggregate sources. Protection of waters and wetlands will constrain many land uses because regulated areas are scattered across the Concept Plan area. The initial impression is that threatened and endangered species protections do not appear to impact development. Presence of archeological resources is unknown, but unlikely at present and former borrow areas. Current stormwater and surface water patterns and management are disjunct and imperfect. Figure 5 identifies wetland areas as well as those areas with trees and vegetation.

Figure 4 Water and Wastewater Infrastructure

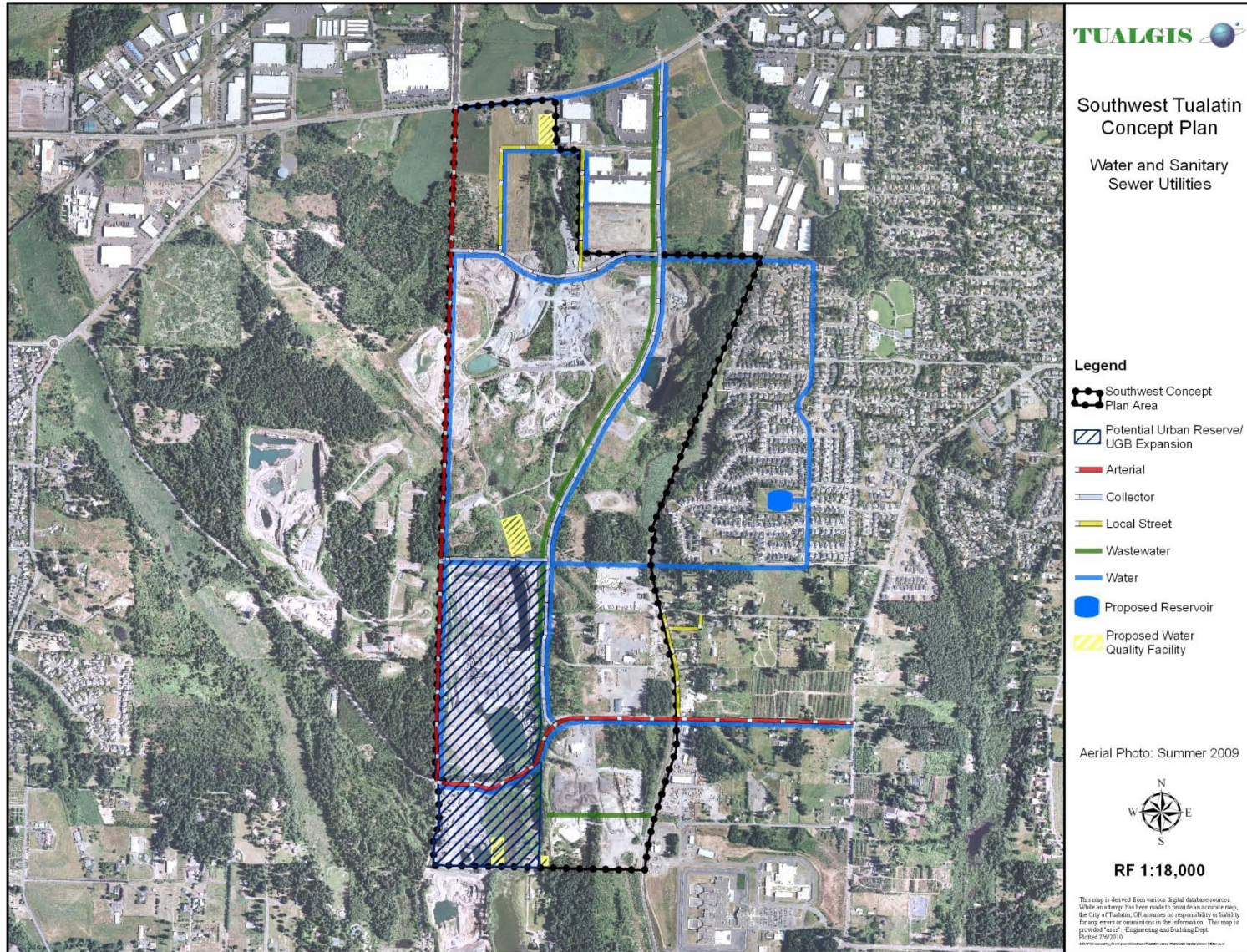
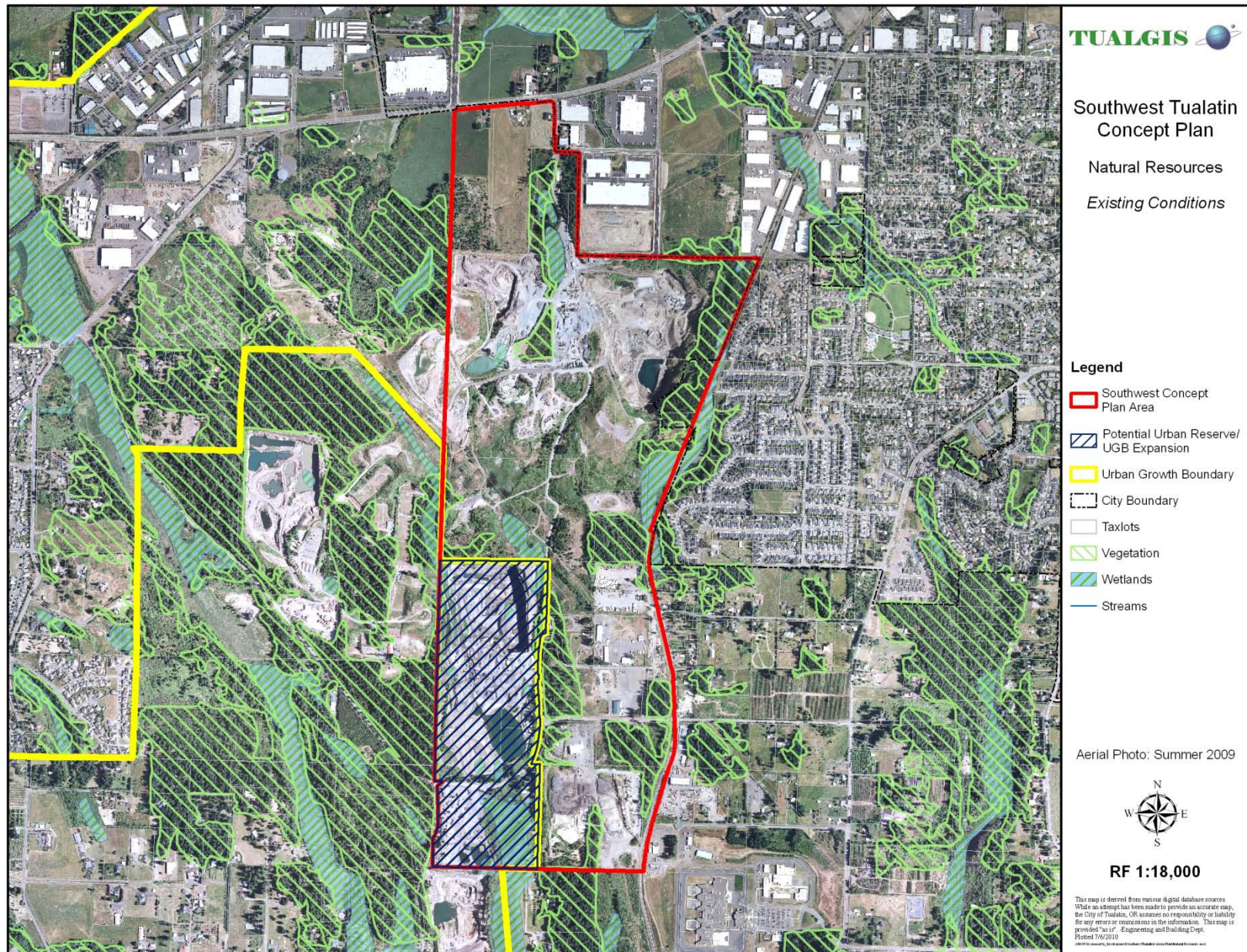


Figure 5 Natural Resources



4 Implementation

This section addresses five key considerations for SWCP implementation: provision of urban services, cost estimates, funding options, fiscal impacts findings, and consistency with City plans and policies.

Provision of Urban Services

This plan assumes that the new SW 124th Avenue extension will be funded with a variety of funding sources including local sources, Washington County and the Metro Regional Transportation Improvement Plan. Other roads and utilities will likely be funded by local resources, including City and private developer contributions. Developers will be responsible for providing local streets and utility connections to trunk line systems. However, to maintain flexibility, the plan does not identify specific locations or configurations for these local connections. Assumptions are that the best configuration of development on the Concept Plan area would be determined by market opportunities and constraints at the time of development, allowed uses, and other Tualatin Development Code (TDC) requirements.

Development of the private tax lots within the Concept Plan area, either individually or in combination, would influence the sequencing of services provided. If the developable lots are developed separately, coordination is recommended so as not to preclude the provision of public infrastructure to the remaining sites through reasonable and affordable means. Such coordination would ensure that:

- Development on one parcel would not preclude the development of the remaining parcel(s).

- Connections to City utilities would not preclude connections from the remaining parcel(s).
- Pedestrian and vehicular access to one development project would not preclude pedestrian and vehicular access to the remaining parcel(s).
- Utility access to remaining development parcel(s) would be provided by initial development project(s).
- Any privately constructed infrastructure to be assumed by the City would provide capacity for full build-out of the planning area, and conform to applicable city standards and specifications.
- Surface water management for one development project would not preclude practicable and reasonable means for surface water management of the remaining parcel(s).

Cost Estimates

Total capital costs for major roads, sewer, water, and storm water systems have been estimated for build out of the SWCP area (see Appendix D for 2010 updated analysis and Appendix M for 2005 analysis.) Unit costs were prepared based on local and regional experience with a variety of roadway and pathway projects. Table 4 below summarizes the capital costs based on 2010 analysis.

The preliminary cost estimates assume typical design sections for collector and arterial street improvements. Costs for right-of-way acquisition have been calculated separately from the capital facility costs. Estimates do not include permitting or geotechnical soils work. Other costs may include special environmental mitigation, wetland enhancements and business or residential relocations. The 2010 update included the cost of roadway, bridges, signals and earthwork in the road segment costs. The update also analyzed road improvement needs in the expanded area.

The collector roads are assumed to be two lanes with center turn lanes, bike lanes, sidewalks, landscaping, underground utilities, and street illumination. The arterial road (SW 124th Avenue) is assumed to be four lanes with bike lanes, sidewalks, landscape strips, landscaped median, street illumination, and a center turn lane at street intersections. It is assumed that the pathways would be comprised of soft trails (pervious surface) within the power line easements, and concrete trails around the ponds. Pedestrian trails were not added to the expanded area therefore cost estimates from 2005 only increased by 10percent to reflect the inflation costs from 2005 to 2009. The Tonquin Trail master plan, a regional effort led by Metro, indicates potential trail segments traversing the SWCP area. These segments could follow Tonquin Road.

Table 5 Estimated Capital Costs

Estimated Capital Costs

System	Cost
SW 124th Avenue ¹	\$85,745,000
Arterials ²	\$13,390,000
Collectors ³	\$12,570,000
Pedestrian/Trails	\$1,075,000
Water	\$11,830,000
Sanitary Sewer	\$15,330,000
Bluff/ Cipole upsize ⁴	\$2,270,000
Stormwater Regional Facilities	\$1,657,000
Total Capital Costs	\$143,867,000
Right-of-way Costs ⁵	\$8,782,452
Total Costs	\$152,649,452

Source: CH2M HILL, *Southwest Tualatin Concept Plan Update*

Portland, Oregon June 21, 2010. Based on Conceptual Development Alternative IV and expanded boundary. All costs stated in constant year 2009 dollars at complete build out.

1. Prepared by the City of Tualatin in 2007 for the Metro 2035 Regional Transportation Plan Update. This includes costs for right-of-way, agency administration and risk contingencies and all signals on SW 124th Avenue. The 2007 estimate was escalated at 2% per year by CH2M Hill to adjust from 2007 to 2009.
2. Includes the costs of one bridge/ railroad crossings.
3. Includes the cost of one signal at the intersection of SW 115th Avenue and SW Tonquin Road.
4. Bluff/Cipole upsize costs for the segment D285 as per the Clean Water Services Sanitary Sewer and Master Plan.
5. Right-of-way costs developed by the City of Tualatin Community Development in constant 2009 dollars. Costs range from \$8,908,000 to \$9,340,000.

Major on-site and off-site public infrastructure items including roads, trails, water, sewer, and storm water facilities are estimated to cost approximately \$152.6 million. In 2010 transportation development tax revenues are anticipated to generate \$11.5 million or cover 8% of the total cost. Existing sewer/ water/ storm drain fees are anticipated to generate about \$19 million in revenues or cover 12% of the total costs. It is important to note that \$152.6 million represents costs for a complete build out of the area. Development will most likely occur in phases from north to south and the capital costs could be incurred over time as development occurs. A pedestrian connection in the vicinity of SW 108th and Blake Street has not been included in total estimated capital costs. Estimates indicated a bridge could cost \$4.1 million and a tunnel/ culvert could cost \$9.2 million.

Funding Options

To implement the Concept Plan, funding would be required to design and construct new or improved transportation and public utility infrastructure. Related costs could include environmental and other permitting, and legal fees.

The City in conjunction with Metro, ODOT, and private property owners and developers can fund the capital projects with a combination of traditional and innovative public-private funding sources.

Potential funding sources may include federal and state transportation grants (distributed through Metro); state infrastructure loans; special public works funds; Oregon Immediate Opportunity Program; and local funding through system development charges and establishment of an urban renewal district, local improvement district, or zone of benefit district. Public-private development agreements may also be considered which results in the advanced financing of major public improvements in exchange for system development charge waivers or credits.

Fiscal Impact Findings

It is anticipated there will be substantial direct economic benefits and costs associated with the planned light industrial development in the SWCP area. The direct fiscal costs and benefits have been forecasted based on typical growth assumptions for light industrial developments (see Appendix E). Assuming that 68% of the site could be developed by year 2030, the general conclusions that can be reached by this analysis include:

- Total assessed value of development would increase by at least \$265 million over current assessed values;
- If annexed by the City of Tualatin, total annual property tax revenues and fees would likely amount to \$665,000 of added annual revenue to the City;
- Annual governmental service costs for general government, police and planning would amount to about \$103,000 per year;

- The annual cost of maintaining and operating the road and trail system is expected to cost the City over \$153,000 per year;
- There would also be added maintenance costs for the sewer and water systems of approximately \$340,000 per year, but that would likely be “covered” by rate collections by service providers, such as Clean Water Services.
- Significant positive economic impacts are anticipated from more than 3,700 construction jobs and 2,232 permanent jobs. The direct and indirect payroll that supports these jobs is expected to yield over \$718 million in construction expenditures, \$395 million in annual direct wages, and \$323 million in annual indirect spending.
- The added permanent income of \$141 million is expected to support over \$9.8 million in additional state income tax revenues, and over \$1.4 million in Tri-Met tax revenues.

Consistency with City Plans and Policies

Implementation of the Concept Plan would require changes to City plans and policies, as outlined below.

TRANSPORTATION SYSTEM PLAN (TDC CHAPTER 11)

Tualatin’s TSP is implemented primarily by Chapter 11 of the Tualatin Development Code. The TDC would need to be amended to incorporate the following amendments. See Appendix F for a complete list of recommended changes to the TSP.

A summary of key transportation improvements includes:

Arterials:

- SW 124th Avenue, Tualatin-Sherwood Road to south terminus at Tonquin Road or to I-5 to 99W Connector

- SW Tonquin Road, SW 124th Avenue to planning area boundary and continuing east becoming an above grade railroad crossing.

Collectors:

- Blake Street, SW 115th Avenue to SW 124th Avenue
- SW 115th Avenue, Tualatin-Sherwood Road to a future Blake Street to Tonquin Road.
- Unnamed east-west connector, SW 115th Avenue to SW 124th Avenue

Local Streets:

- Blake Street, SW 115th Avenue extending approximately 800 feet west and terminating as a cul-de-sac approximately 350 feet east of the Portland & Western Railroad.
- Itel Street, SW 122nd Avenue to SW 115th Avenue.
- SW 122nd Avenue, between a future extension of SW Itel and Blake Street.
- SW 117th Avenue, Itel Street to the proposed Blake Street extension

The TSP amendments will need to be reviewed by the Tualatin Planning Advisory Committee and adopted by the City Council.

OTHER

To codify the SWCP, a number of other elements of the Tualatin Development Code (and the Comprehensive Plan incorporated therein) would need updating with map changes and additional text. These changes will be identified by City of Tualatin staff as part of the adoption process. A preliminary list of potential changes is included in Appendix F.