2010 Update

Southwest Tualatin Concept Plan

City of Tualatin

Prepared by the City of Tualatin

In Conjunction With:
Oregon Transportation and Growth Management Program

With Support From:
Metro's Construction Excise Tax Grant program

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Accepted by City Council October 11, 2010

CONTENTS

Section — Page

Tables

Figures

Appendices Part I 2010 Update

A. Technical Advisory Meeting Documentation
B. Public Involvement
C. Traffic Analysis
D. Infrastructure Analysis
E. Fiscal Impact Analysis
F. Recommended Changes to the Tualatin Development Code and Transportation Plan
G. Southwest Concept Plan compared to select strategies from *Tualatin Tomorrow* Community Vision and Strategic Action Plan

Appendices Part II 2005 Concept Plan

H. Southwest Tualatin Concept Plan Draft August 2005
I. TAC Meeting Documentation
J. Public Open House Documentation
K. Existing Conditions Technical Memorandum
L. Future Alternatives Traffic Analysis
M. Capital Cost Memorandums
N. Fiscal Impacts Analysis Memorandum
O. Recommended Changes to the Tualatin Transportation System Plan
P. Historical Resource Analysis

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Southwest Tualatin Concept Plan work activities in 2004-2005 were partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by the federal Transportation Equity Act for the 21st Century (TEA-21), local government, and the State of Oregon. The contents of this document do not necessarily reflect views or policies of the State of Oregon.

Additional funding for the 2010 update was made possible by a grant from the Metropolitan Service District and their Construction Excise Tax program.

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 RSIAs 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.

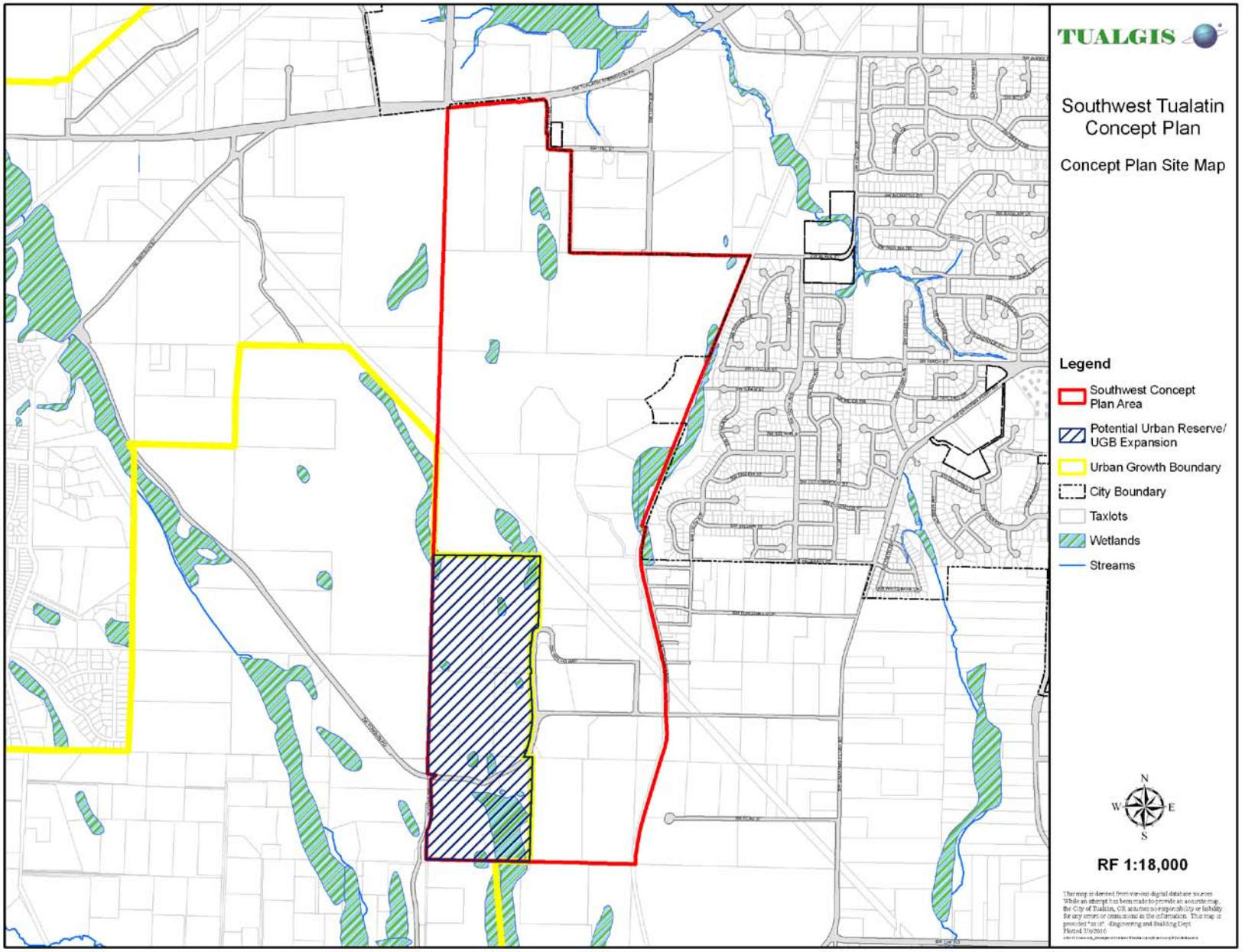
Key features of the Concept Plan are summarized in Table 1. This is based on a conceptual development scenario as shown in Figure 3.

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 Itel 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 SWCP[1]. The requirements for a concept plan are described in more detail in the Metro handbook titled *Livable 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*
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

[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.

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.

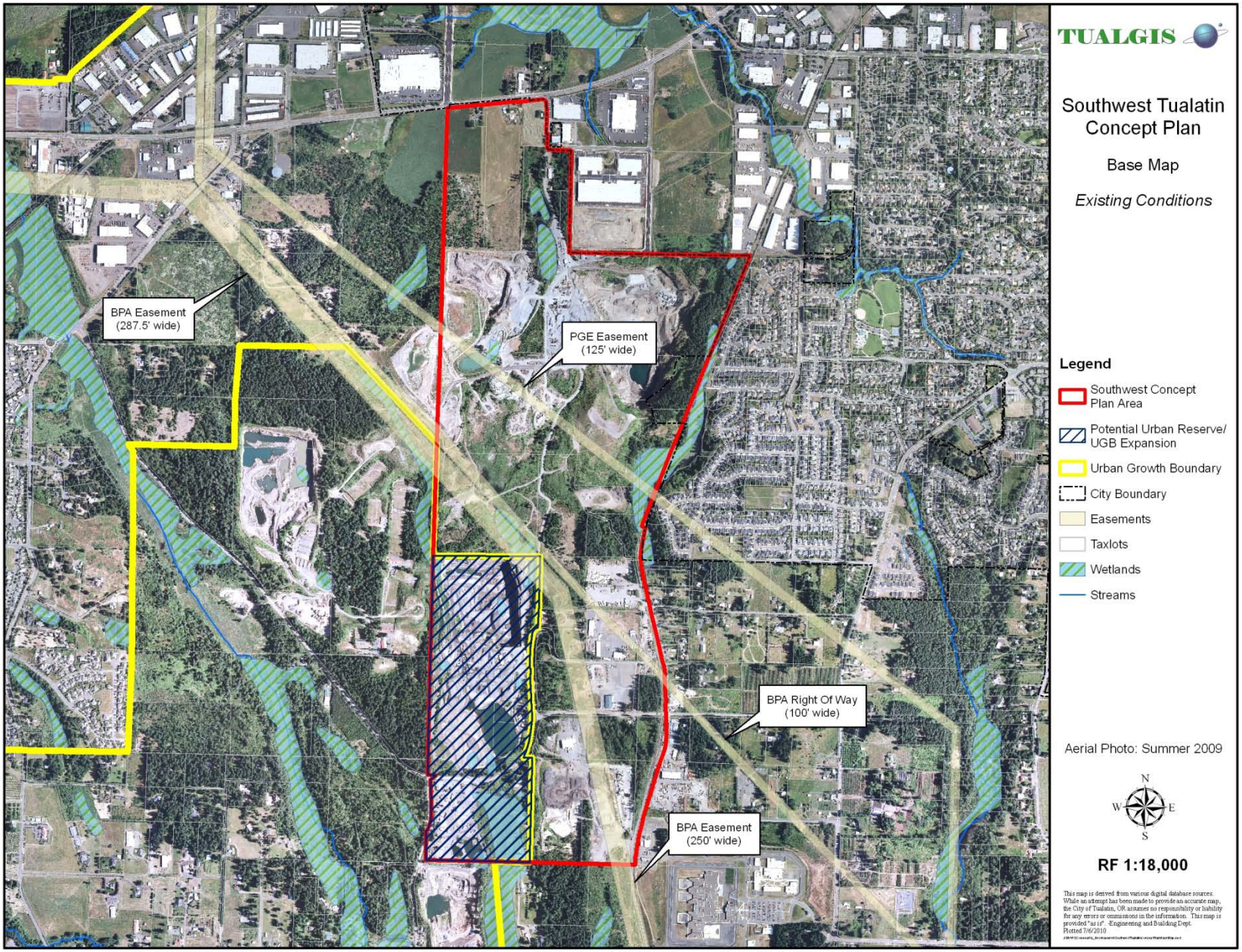
REVIEW OF EXISTING CONDITIONS

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-acrea 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 Aveue/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

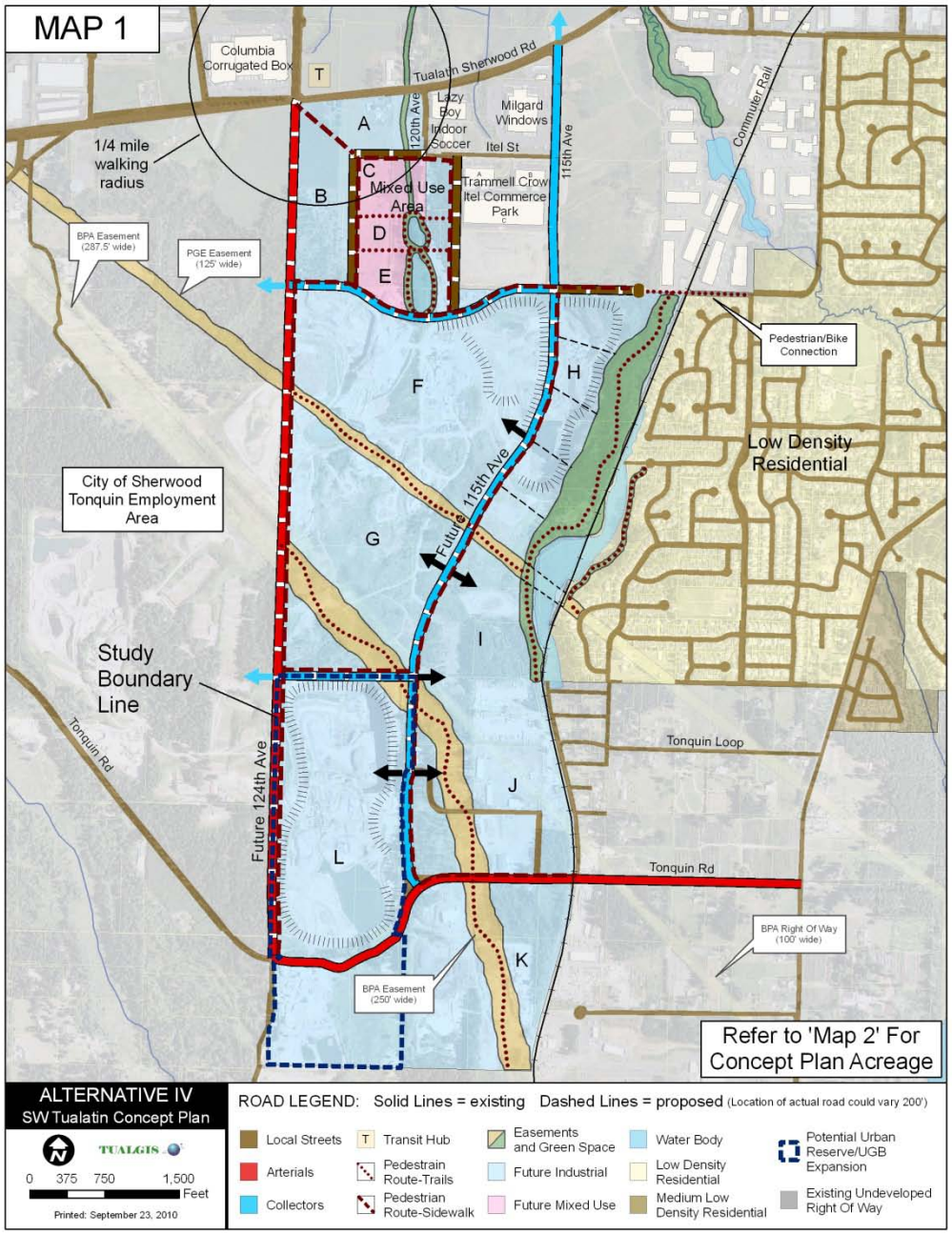
standard of a volume to capacity ratio of 0.99 or less. If the I-5 to 99W Connector were to become a County facility, its intersections with SW124th Avenue would also meet the County signalized intersection standard.

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.

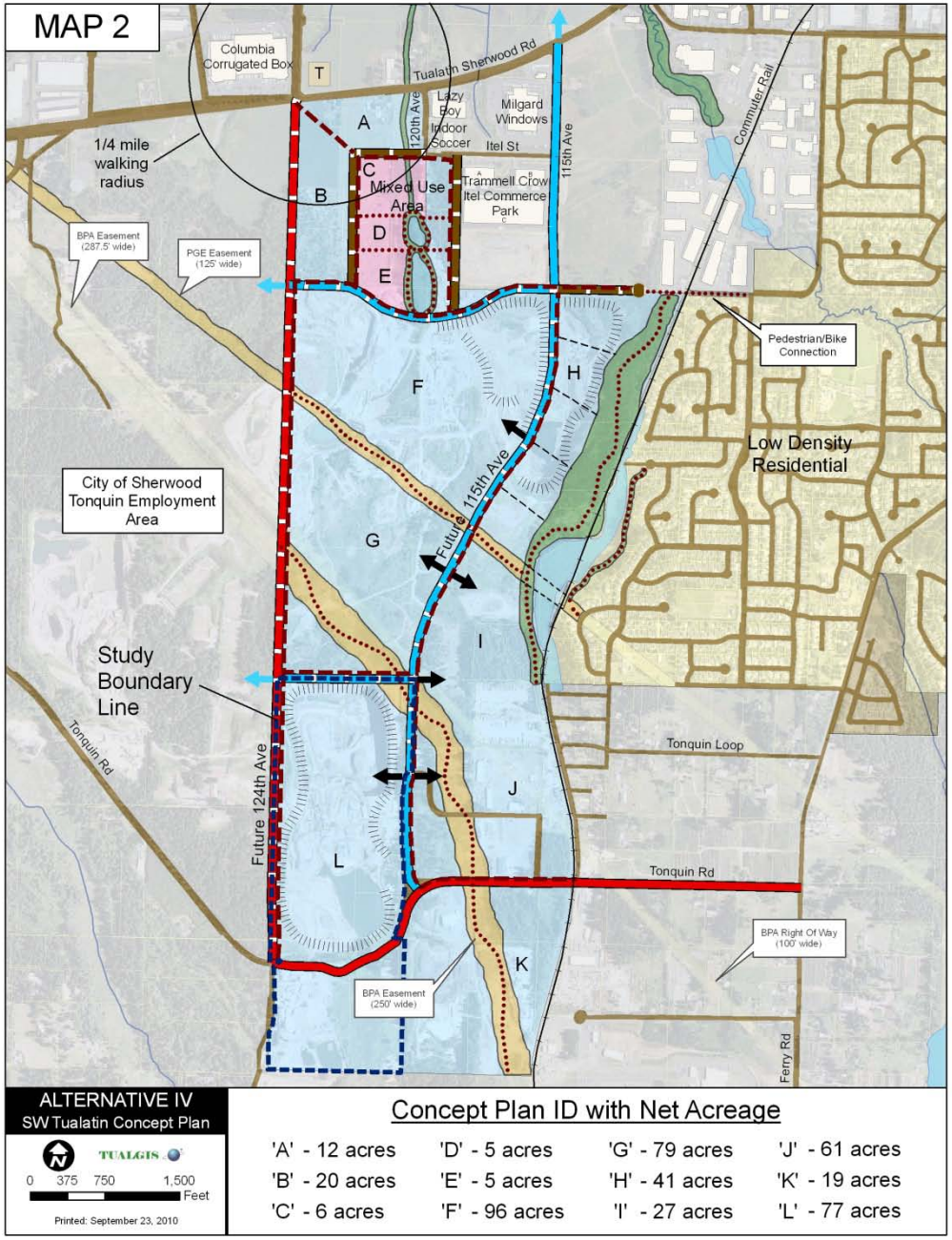
An additional transportation consideration is the alignment of SW 124th Avenue. As proposed, SW 124th Avenue follows a straight line from Tualatin-Sherwood Road to Tonquin Road. However, a portion of this area is a proposed Urban Reserve currently being reviewed by the Department of Land Conservation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

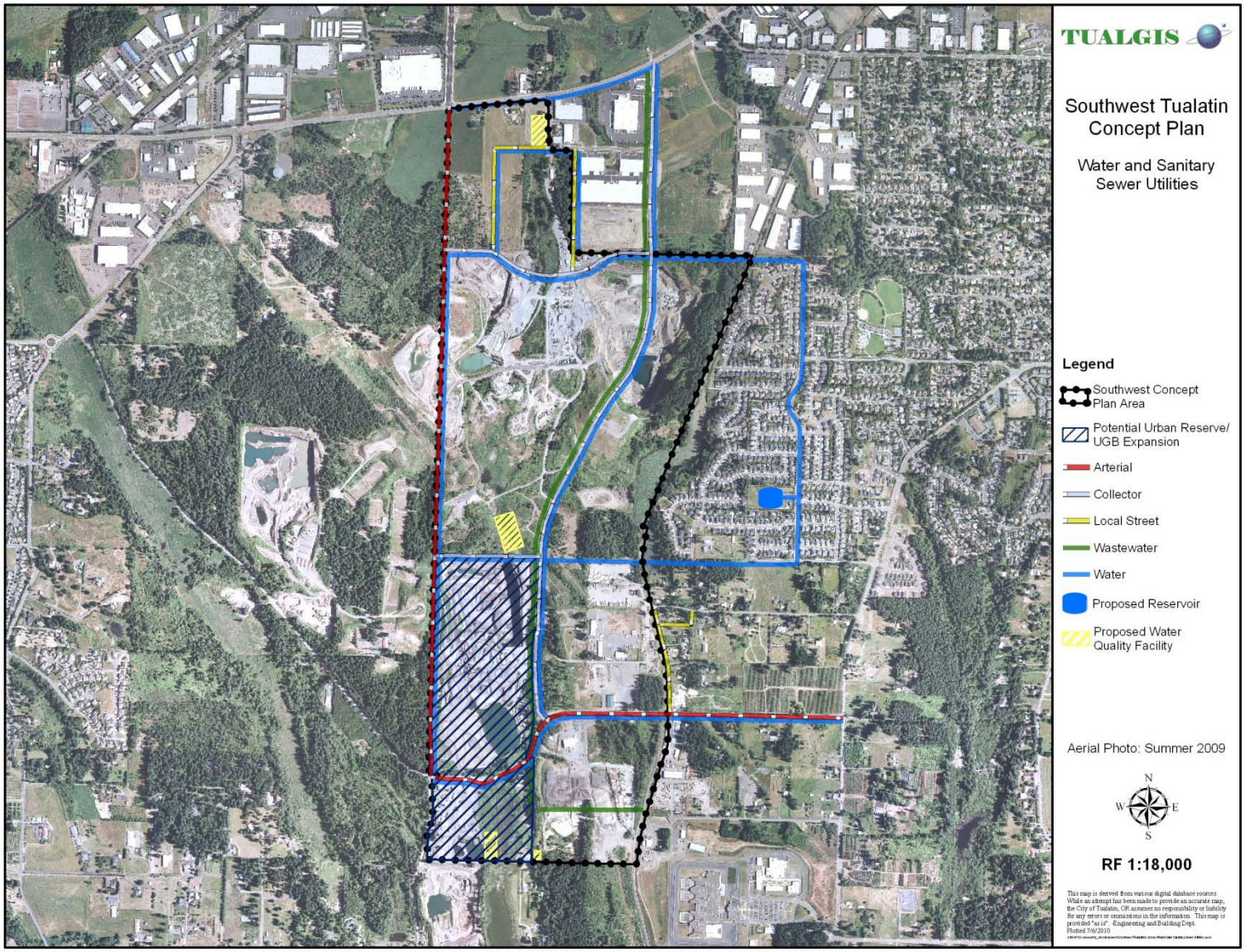
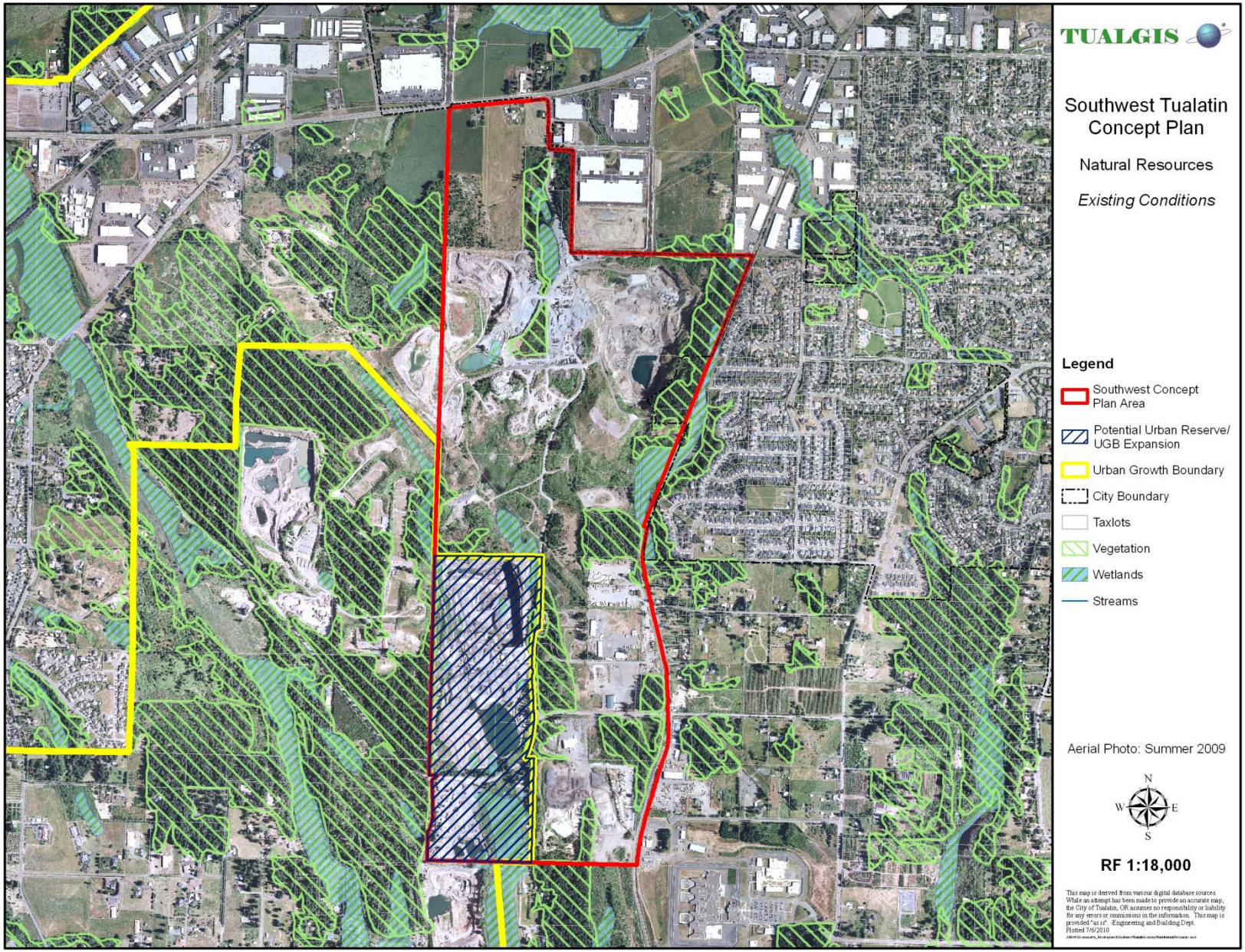


Figure 5 Natural Resources



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.

CITY OF TUALATIN

Southwest Tualatin Concept Planning
Technical Advisory Committee #8
December 20, 2007
10:30AM – 12:00PM
Council Chambers – 18880 SW Martinazzi Avenue
Tualatin

A G E N D A

1. Introductions
2. Status of SWCP
3. Tualatin Tomorrow
4. RFP
5. IGA
6. Metro Functional Plan Update
7. I5/99W Connector
8. Schedule next TAC meeting

SWTCP TAC Meeting Notes from 12/20/07

1. Introductions
    a. 14 people present
    b. Doug Rux; Aquilla Hurd-Ravich; Marguerite Nabeta; Ed Christie; Martin Herron; Jennifer Galaway; Rachit Arora; Kenneth Itel; Kaaren Hofmann; Matt Oyew; Chris Beecher; Mike McKillip; Hank Stukey; Mark Brown
2. Doug Rux went over the agenda
3. Recap of SWTCP status as of 12/20/07
    a. One year time line including consultant time and code amendment and adoption phase
4. Recap of Tualatin Tomorrow
5. Intergovernmental Agreement with Metro for CET funds to pay for a consultant
    a. To be approved at CC 1/14/08
6. Metro Functional Plan Update
    a. No representative from Metro to give an update
7. I5/99W Connector
    a. Mike McKillip gave an update of the progress
    b. Comments:
        i. Mark Brown- feels it is too early too start consultant work and that it is a waste of money because the I5/99W connector may go through the Concept Plan area; the area brought into to the UGB by Metro in 2004 has not been zoned yet.
        ii. Ken Itel- why would Metro want to run a road through the Concept Plan when they themselves identified it as an area needed for industrial uses. What direction is Metro leaning/ want in regards to the I5-99W connector?
        iii. Mike McKillip responded by saying that those questions raised by Mr. Itel had been asked by Metro staff at the PSC meetings. They are asking what kind of land uses may be eliminated and that close attention should be paid to land use and where the connector project lands.
        iv. Mike McKillip also commented that although some of the alternatives seem out of place (referencing connector alternatives that cut through the Concept Plan) they can't be summarily dismissed but must be evaluated and dismissed based on evaluation criteria.
        v. Doug noted that we will keep the group up to date with I-5/99W progress and when their meetings are held.
8. The next meeting will not be scheduled until some time in March and we/ Aquilla will send out an update in January with information about when the next meeting will occur.
9. Start time 10:30 am End time11:30am

CITY OF TUALATIN

Southwest Tualatin Concept Planning
Technical Advisory Committee #8
April 23, 2008
10:30AM – 12:00PM
Council Chambers – 18880 SW Martinazzi Avenue
Tualatin

A G E N D A

1. Introductions
2. Recap of last meeting and status update of SWCP
3. I5/99W Connector status update
4. Tualatin Tomorrow and SWCP Land Use Matrix
5. Schedule next TAC meeting

CITY OF TUALATIN

Southwest Tualatin Concept Planning
Technical Advisory Committee #8
April 23, 2008
10:30AM – 12:00PM
Council Chambers – 18880 SW Martinazzi Avenue
Tualatin

A G E N D A

1. Introductions
   Doug Rux; Aquilla Hurd-Ravich; Mark Brown; Jennifer Galaway; Dave Lintz; Ken Leahy; Slade Leahy; Ray Bridges; Meg Fernikees; Matt Oyen

2. Recap of last meeting and status update of SWCP
   See meeting presentation

3. I5/99W Connector status update
   See meeting presentation

4. Tualatin Tomorrow and SWCP Land Use Matrix
   See meeting presentation

5. Schedule next TAC meeting
   See meeting presentation

Southwest Tualatin Concept Plan

Technical Advisory Committee

Meeting #9

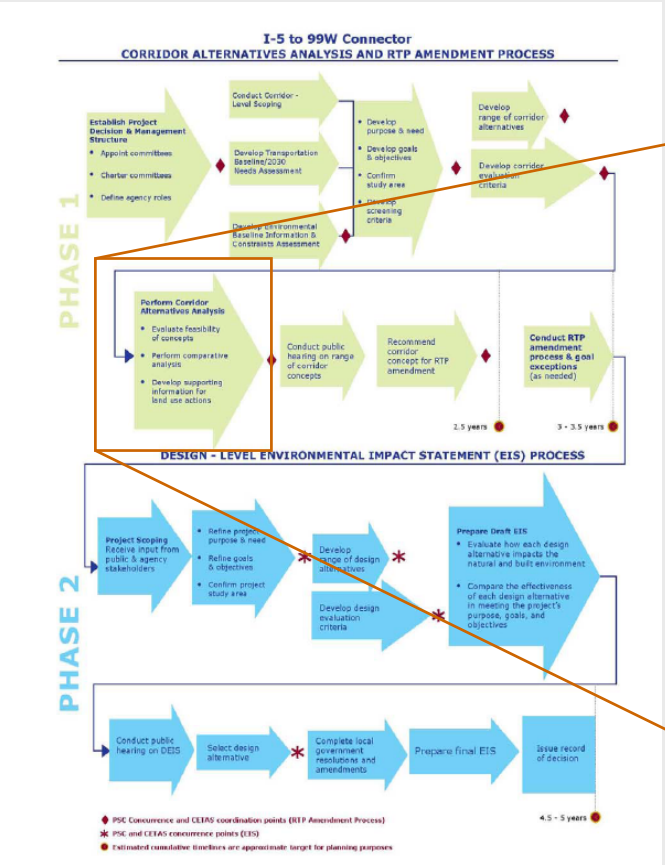
April 23, 2008

City of Tualatin

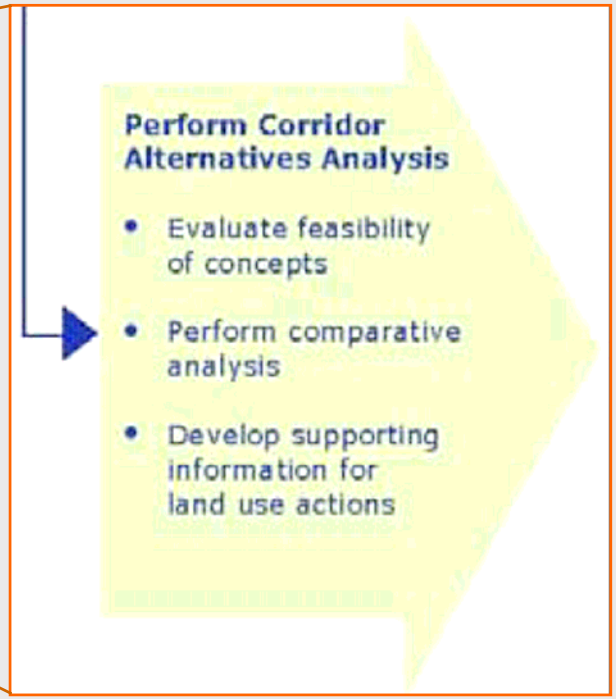
Recap

- December 20, 2007 last TAC meeting:
  - Time Line
  - Metro Functional Plan Update
  - Intergovernmental Agreement
  - RFP for Consultant Services
  - Tualatin Tomorrow
    - Matrix presentation today
  - I-5/99W Connector Project

I-5 to 99W



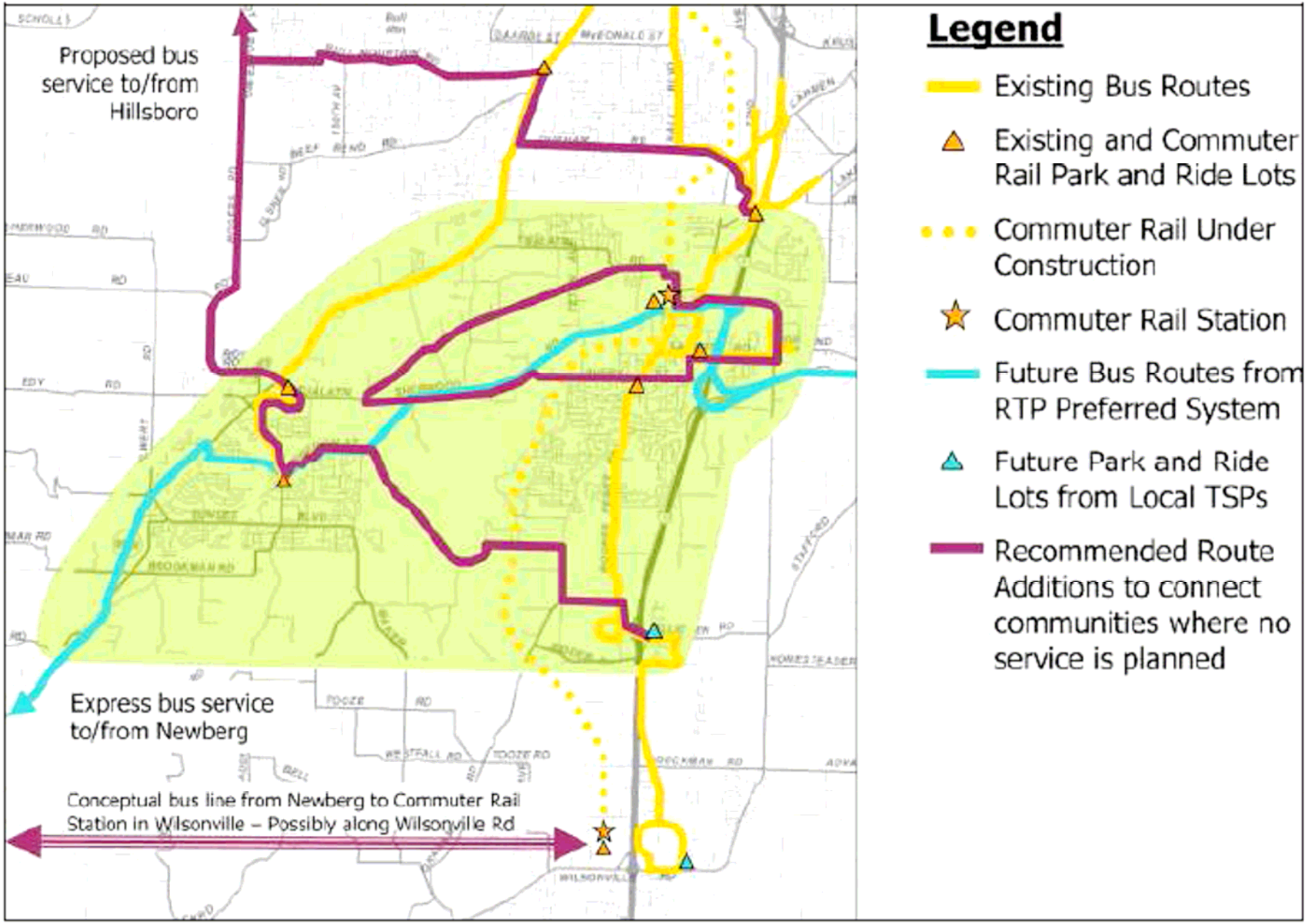
Current Phase in Process



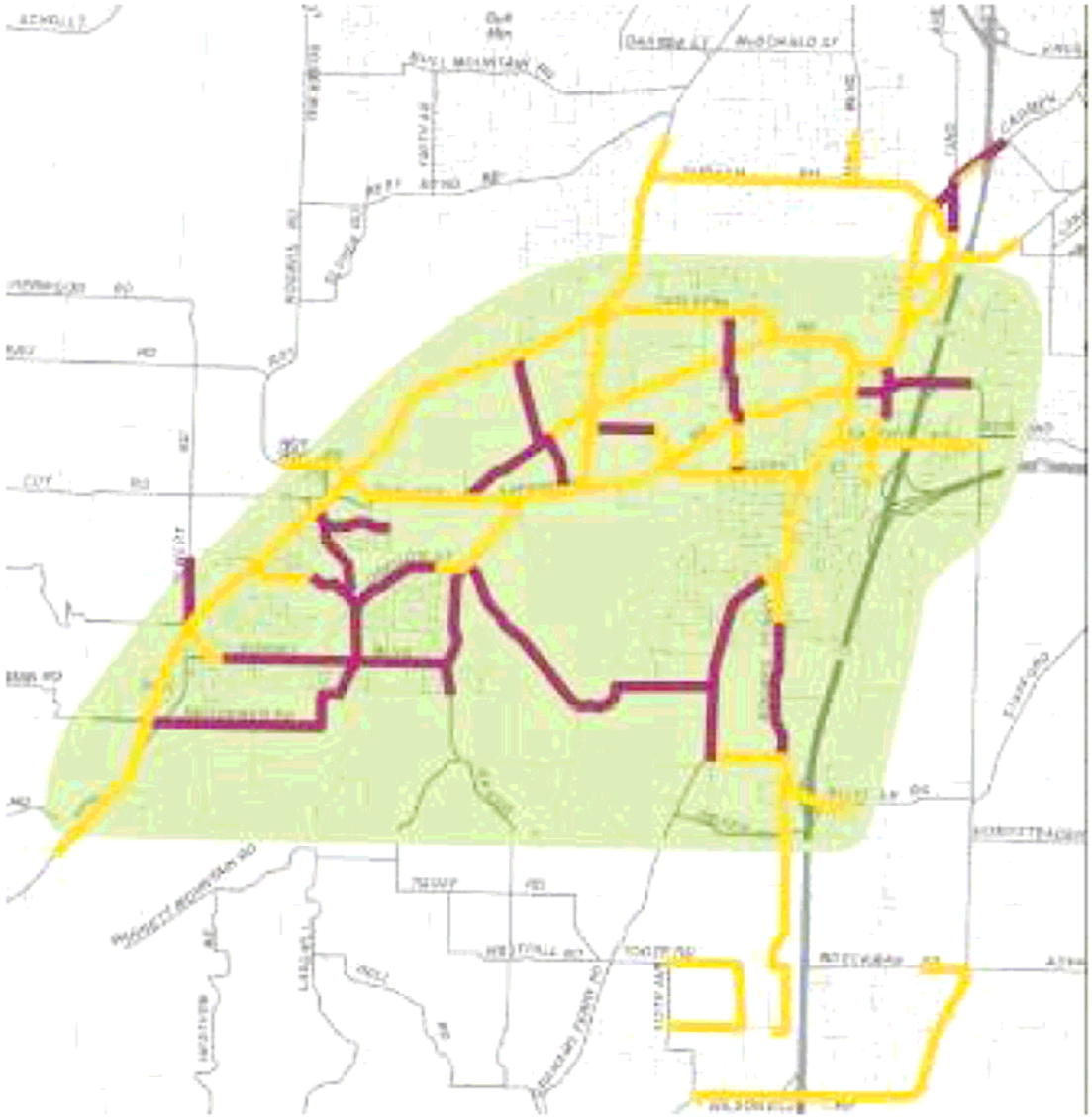
I-5 to 99W

- Range of Alternatives:
  - No-Build (No new connector but continue with previously approved transportation improvements)
  - TSM/TDM Alternative
  - Enhance Existing System Alternative (EESA)
  - Connector Alternative(s) within the UGB
  - Connector Alternative(s) partially outside the UGB
    - www.i5to99w.org

TDM Measure: Enhanced Transit Services



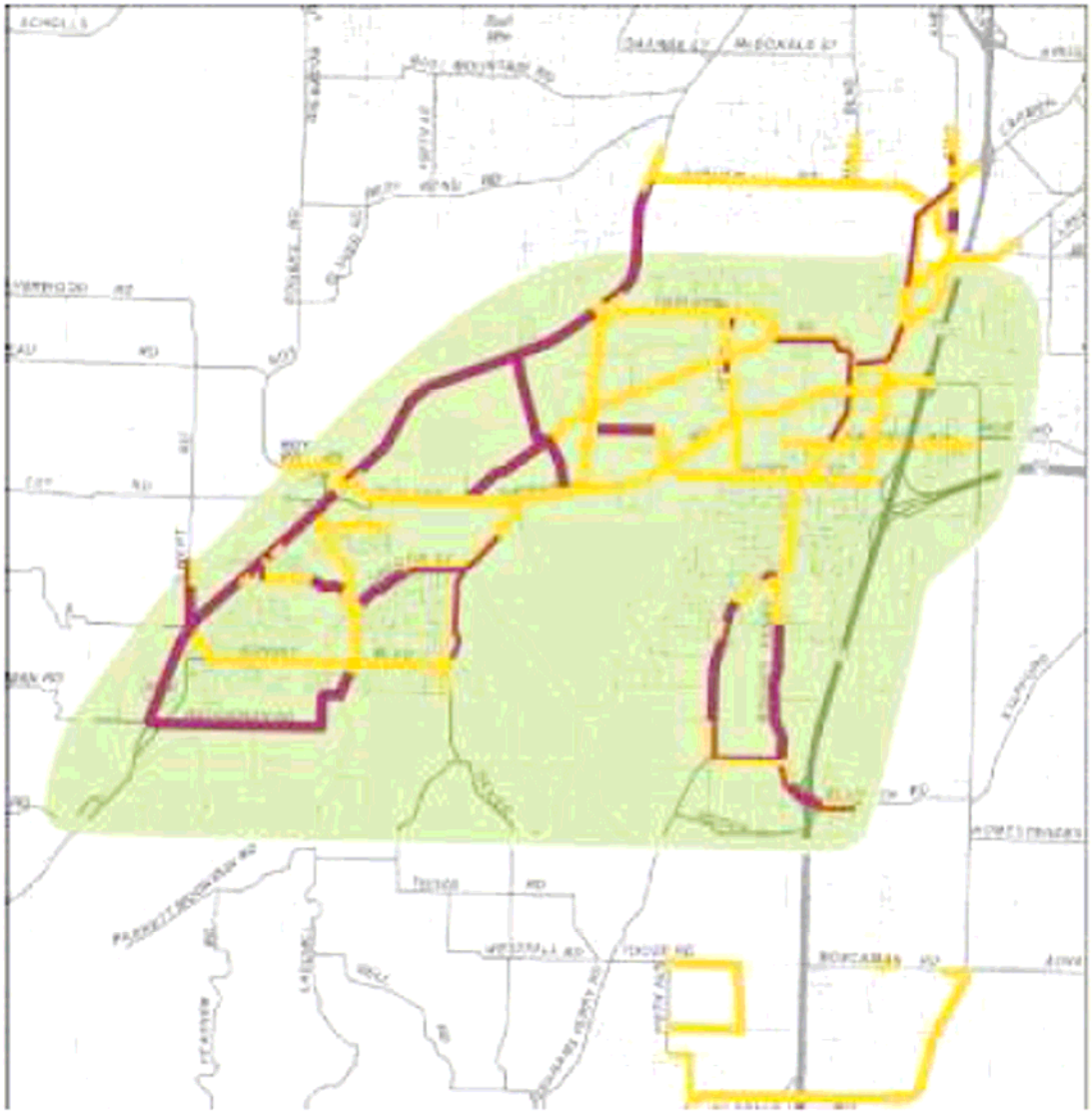
TDM Measure: Enhanced Bicycle System



Legend

- Existing or RTP Financially Constrained Bike Lanes or Rural Shoulder Bike Facilities
- Proposed Bike System Expansion

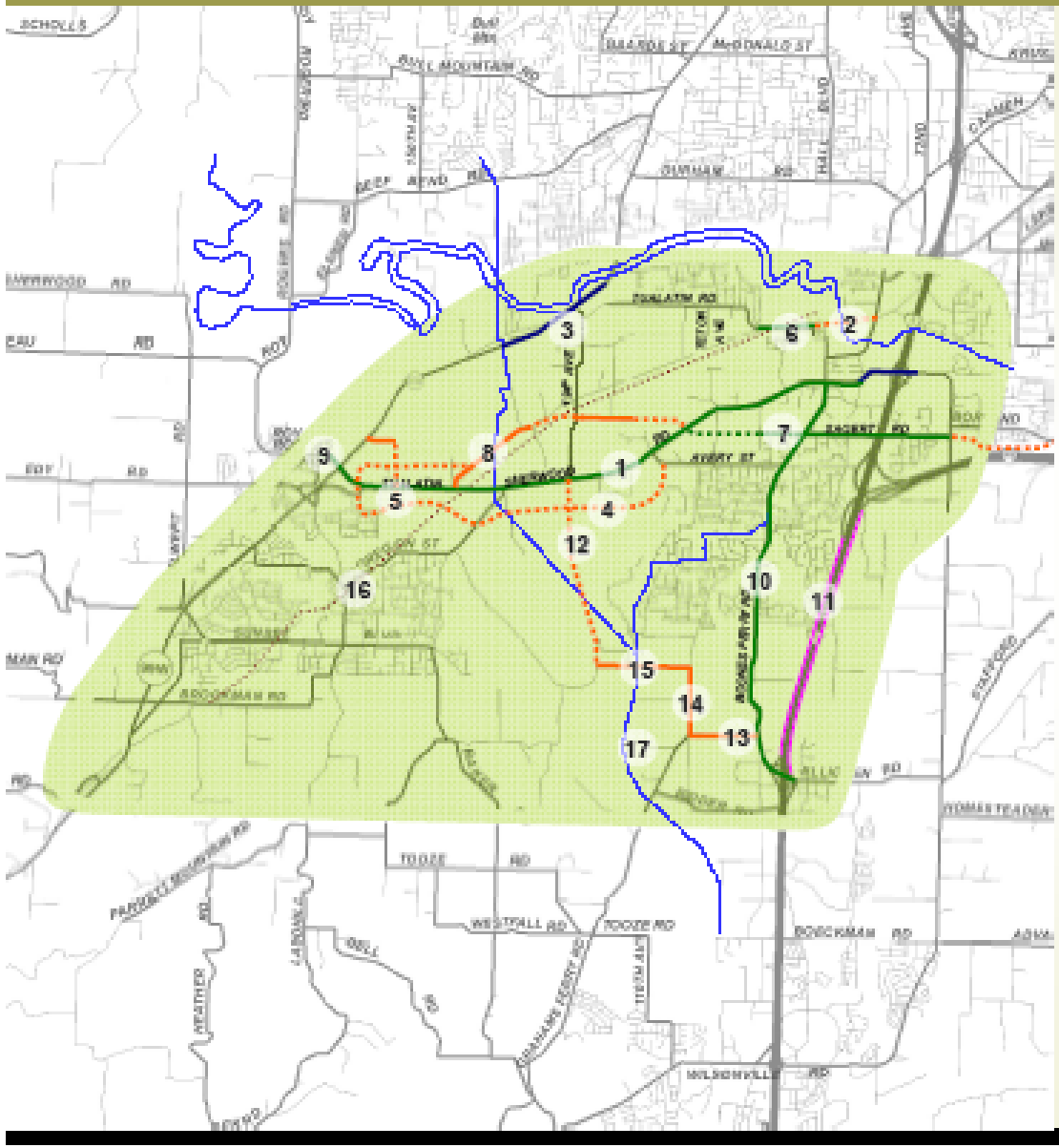
TDM Measure: Enhanced Pedestrian System



Legend

- Existing or RTP Financially Constrained Pedestrian Facilities
- Proposed Pedestrian System Expansion

Proposed Enhanced Existing System Alternative (EESA)

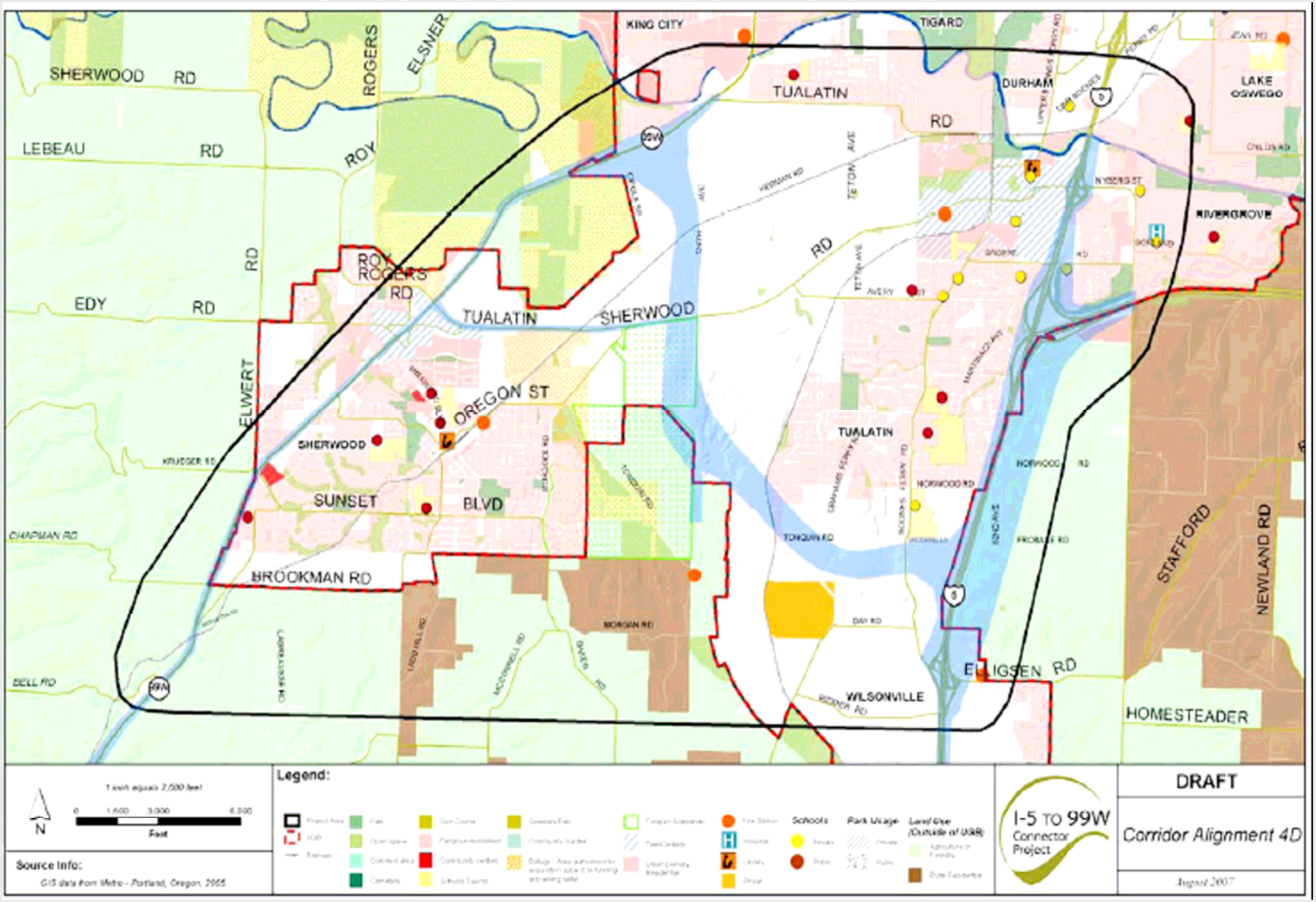


Legend

- 2-3 Lane Improved Roadway
- 2-3 Lane New Roadway
- 4-5 Lane Improved Roadway
- 4-5 Lane New Roadway
- 6-7 Lane Improved Roadway
- Auxiliary Lane
- Commuter Rail Extension
- Regional Trail System

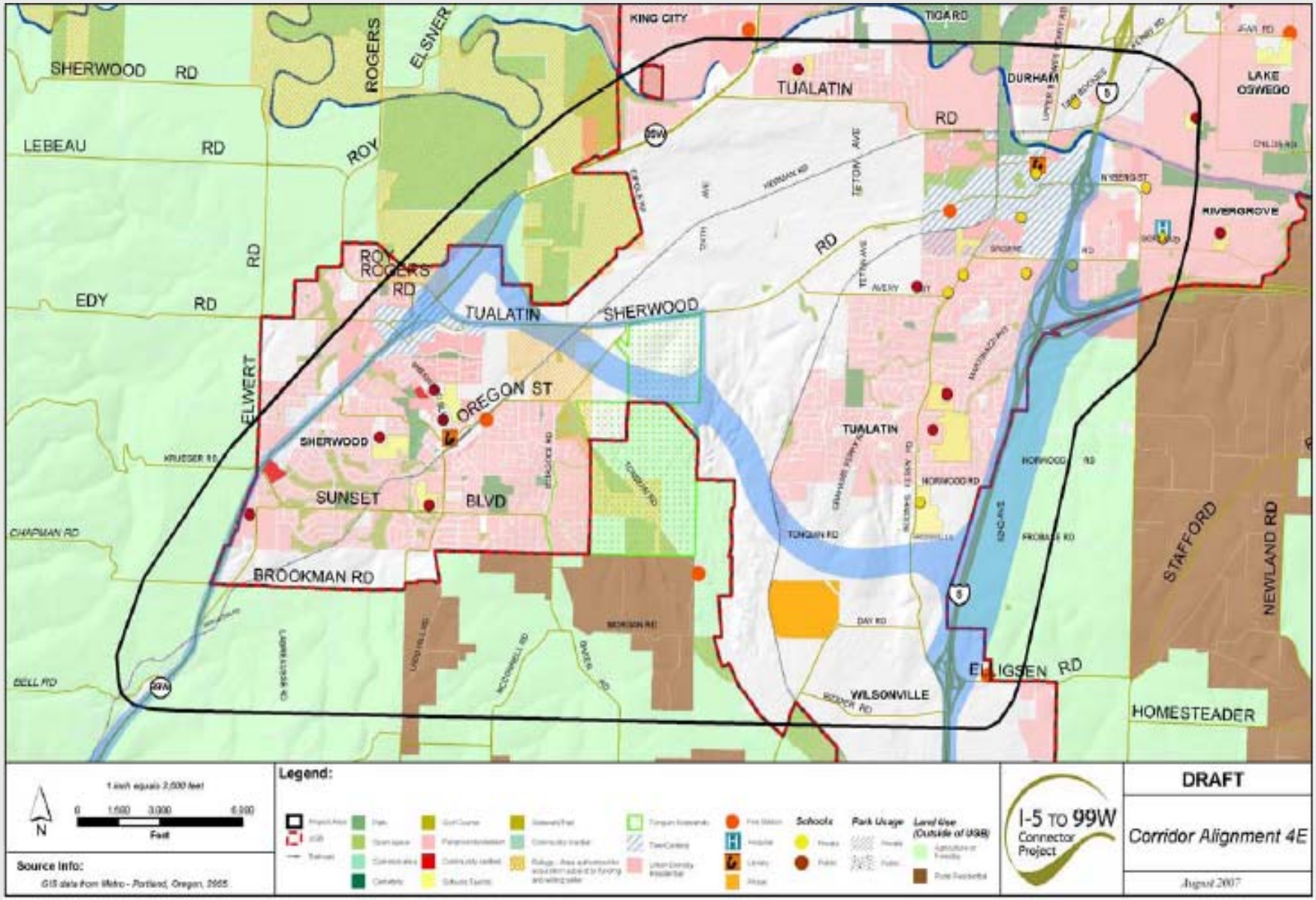
Note: These improvements would be in addition to those included in the 2030 Baseline

I-5 to 99W Alternative 4D



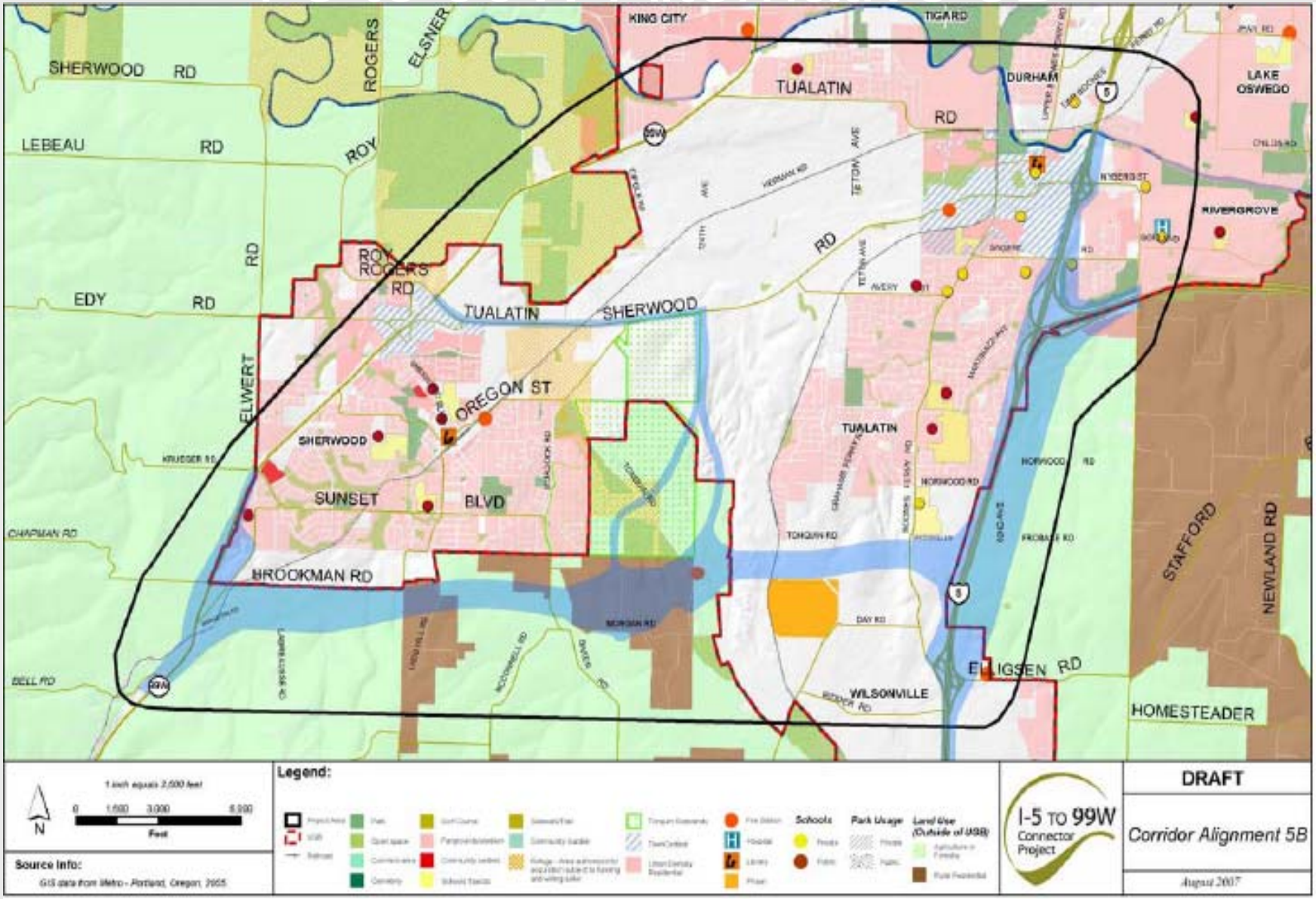
Range of Alternatives Report Prepared by David Evans and Associates, Inc- August 28, 2007

I-5 to 99W Alternative 4E



Range of Alternatives Report Prepared by David Evans and Associates, Inc- August 28, 2007

I-5 to 99W Alternative 5B



Range of Alternatives Report Prepared by David Evans and Associates, Inc- August 28, 2007

SWTCP- Time Line 2008

January 14	• IGA adopted by Tualatin City Council
Fall 2008	• I-5 to 99W Alternatives Reviewed by Project Steering Committee
Fall 2008	• Issue RFP • Obtain Consultant Services
Winter 2009	• Consultant Review, Analysis and Update to The Concept Plan Technical Appendices

Tualatin Tomorrow

- Adopted by City Council on June 25, 2007.
  - Land use matrix created to compare Tualatin Tomorrow with the Southwest Concept Plan.

Land Use Matrix

Tualatin Tomorrow Strategies:	**Southwest Concept Plan Elements:**
Growth, Housing and Town Center	Land Use and Development
Parks, Recreation and Natural Areas	Natural and Cultural Resources
Traffic, Transportation and Connectivity	Transportation

Conclusion

- Next TAC Meeting Fall 2008

MEMORANDUM
CITY OF TUALATIN

TO: Southwest Concept Plan Technical Advisory Committee and Interested Parties

FROM: Aquilla Hurd-Ravich, Senior Planner

DATE: November 6, 2009
TIME: 10:30AM TO 12PM
LOCATION: Tualatin Council Chambers

SUBJECT: MEETING AGENDA SOUTHWEST CONCEPT PLAN

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1. Introductions/ Welcome back
2. Updates
    a. Timeline for completion of revisited plan- *Aquilla Hurd-Ravich*
    b. CH2M Hill consultants will update infrastructure analysis- *Aquilla Hurd-Ravich*
3. Regional updates
    a. I-5 to 99W Connector and RTP- *Mike McKillip*
    b. Urban & Rural Reserves- *Doug Rux*
    c. Sherwood's Tonquin Employment Area- *Doug Rux*
4. Alternative III Concept Plan
    a. Discuss new areas added to the Concept Plan- *Aquilla Hurd-Ravich*
    b. TAC and Property Owners accept the added areas and Alternative III – *Aquilla Hurd-Ravich*

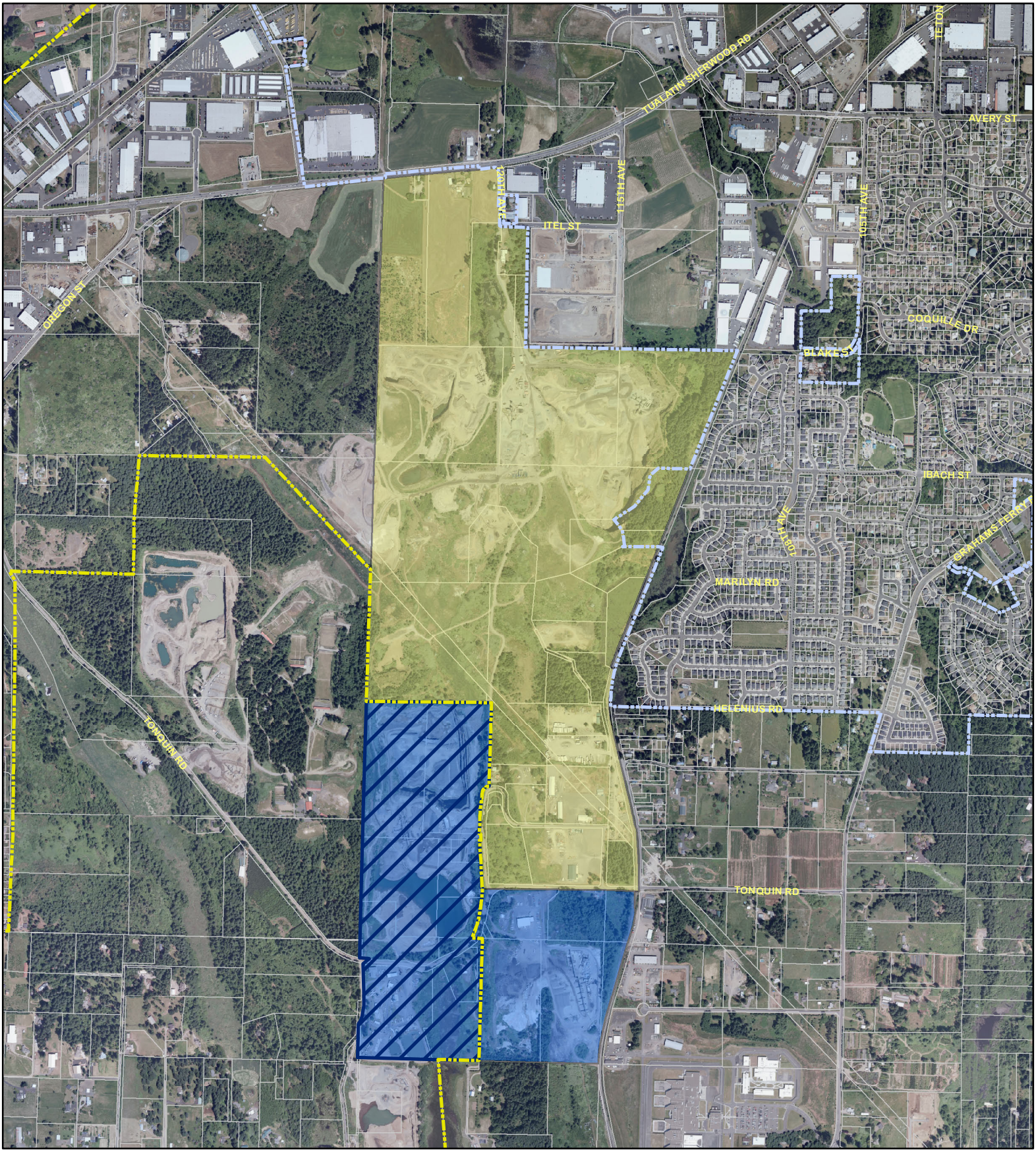
Attachments:
A: Time line
B: Map: Proposed new areas and expanded boundaries
C: Map: Alternative III Southwest Concept Plan

Southwest Concept Plan Schedule 2009-2010

	October	November	December	January	February	March	April	May	June
Property Owners		Reconvene- update regional issues and accept current concept plan		Present updated analysis and finalize concept plan					
TAC		Reconvene: update regional issues and accept current concept plan		Present updated analysis and finalize concept plan					
Consultant	Public Service Agreement and Contract	Update infrastructure analysis	Update infrastructure analysis	Submit updated infrastructure analysis					
Metro	Coordination of contract payment submit scope of work			Submit work products for CET Grant					Submit final plan and adopted code language changes
Public		Update webpage	Webpage update	Open House					Public Hearing at City Council meeting
TPAC				Review revised plan, make recommendations to Council to accept plan				Present TDC code language changes, recommend Council adopt changes	
Staff				Code language changes	Code language changes	Code language changes	Code language changes		
Council				Update on progress and actions by the TAC and Property owners	Accept Concept Plan				Adopt TDC code language

Southwest Concept Plan Boundary and Expanded Area

TUALGIS



Southwest Concept Plan Area

Expanded Boundary Area

Potential Urban Reserve

City Boundary

Urban Growth Boundary

RF 1:16,700

N W E S

This map is derived from various digital database sources. While an attempt has been made to provide an accurate map, the City of Tualatin, OR assumes no responsibility or liability for any errors or ommissions in the information. This map is provided "as is". -Engineering and Building Dept.
Plotted 12/23/2009

J:\MAPS\Temp\TOM_ARC\Community Development Maps\Aquilla Maps\SouthwestConceptPlanBoundaryExpandedArea.mxd

Columbia Corrugated Box

SW Tualatin Sherwood Rd

1/4 mile walking radius

120th Ave

Lazy Boy

Milgard Windows

115th Ave

Indoor Soccer-plex

Itel St

A

B

C

D

E

Mixed Use Area

Future Blake St

Railroad

F

H

PGE Easement (125' wide)

Future 115th Dr

BPA Easement (287.5' wide)

G

I

J

STUDY BOUNDARY LINE

Future 124th Ave

Tonquin Loop

SW Tonquin Rd

SW Tonquin Rd

Low Density Residential

Potential I-5/99W Connector Corridor
(Final location to be determined through a separate planning process.)

ALTERNATIVE III
SW Tualatin Concept Plan

17355 SW Boones Ferry Road
Lake Oswego, OR 97035
Phone: (503) 635-3618
FAX: (503) 635-5395
otak

0' 300' 600' 1,200'

LEGEND: Solid lines = existing
Dashed lines = proposed

- Potential I-5/99W Connector Corridor
- Arterials
- Collectors
- Local Streets
- Transit Hub
- Pedestrian Route-Trails
- Green Space and Easements
- Water Body
- Pedestrain Route-Sidewalk
- Future Industry
- Future Mixed-Use
- Low Density Residential

SWCP TAC Notes from 11/6/09

1. Introductions/ Welcome Back
    a. Doug Rux; Aquilla Hurd-Ravich; Mike McKillip; Roger Metcalf; Tony Urbanek; Mark Brown; Ed Christie; Eric Johnson; Donna Alberston; Matt Wellner; Carrie Pak; Matthew Oyen

2. Updates
    a. AHR reviewed the timeline for completion
    b. AHR shared that the City hired CH2M HILL to update infrastructure analysis

3. Regional Updates
    a. Mike McKillip reviewed the status of the I-5 to 99W Connector project
    b. DR reviewed the status of urban and rural reserves
    c. DR reviewed the status of Sherwood's Tonquin Employment Area

4. Alternative III Concept Plan
    a. AHR discussed the concept plan and land use assumptions from 2005 and the expanded area.
        i. Doug Rux: there are some road way changes in the north eastern portion of the concept plan based on development that has occurred.
    b. The TAC, property owners and interested parties agreed to expand the study area.

5. Steve Kelley suggested we show the Tonquin Trail on the maps and overlay the Concept Plan with the expanded areas and Clackamas County's reserves designations. He also commented that either we or Sherwood or both should look at the combined effects of our two concept plan areas on traffic. Carrie Pak added we should look at how sewer lines align.

6. Carrie Pak suggested that we generate some maps that overlay the Alternative III Concept Plan with reserves work, Sherwood concept plan and Tonquin Trail.

7. Mark Brown suggested that as we refine details of location of roadways that we look at more westerly access points to his and Albertson's property.

8. Steve Kelly asked how 124th will align with to get connect with Tonquin?

9. Mike McKillip suggested we send out a list of contact people who are making decisions about the I-5 to 99W connector to the SWCP TAC and interested parties.

10. Roger Metcalf emailed a suggestion after the meeting suggesting creating a map with Alternative III merged with property lines.

MEMORANDUM
CITY OF TUALATIN

TO: Southwest Concept Plan Technical Advisory Committee and Interested Parties

FROM: Aquilla Hurd-Ravich, Senior Planner

DATE: January 29, 2010

TIME: 10:30 AM TO 11:30 AM

LOCATION: Tualatin Council Chambers

SUBJECT: MEETING AGENDA SOUTHWEST CONCEPT PLAN

---

1. Introductions
2. Updates
    a. Open House on January 5, 2010 - *Aquilla Hurd-Ravich*
    b. Updates to the Tualatin Planning Advisory Committee on January 14, 2010 and the City Council on January 25, 2010 - *Aquilla Hurd-Ravich*
    c. Executed the Construction Excise Tax Grant with Metro - *Aquilla Hurd-Ravich*
    d. Update on the analysis of infrastructure costs - *Doug Rux*
3. Regional Updates
    a. Urban Rural Reserves Process - *Doug Rux*
4. Next Steps
    a. Review updated timeline - *Aquilla Hurd-Ravich*

Attachment: A: Timeline

Southwest Tualatin Concept Plan (SWCP) 2009-2010 Timeline

	November	December	January	February	March	April	May	June
Property Owners, Technical Advisory Committee and Interested Parties (TAC) :	Kick off meeting		Review updated analysis and finalize concept plan			Review proposed code language changes		
Consultant:	Begin infrastructure analysis update	Work continues	Work concludes					
Public:			Open House			Open House to review proposed code language changes		Public hearing at City Council meeting
Tualatin Planning Advisory Committee (TPAC):			Update of activities at January 14, 2010 meeting	Recommendation to Council made at February 11, 2010 meeting			Present development code language changes for a recommendation to Council	
Architectural Review Board (ARB)						Review proposed code language changes		
Tualatin Parks Advisory Committee (TPARK)						Review proposed code language changes		
City Council:			Update of activities at January 25, 2010 meeting	Accept updated plan on February 22, 2010				Adopt code language changes
Staff:			Begin updating Development Code	Work continues	Work continues	Work continues	Work concludes	
Metro:				Submit accepted concept plan to Metro			Submit City's recommended Comp Plan amendments	Submit adopted Comp Plan and code language changes

MEMORANDUM
CITY OF TUALATIN

TO: Southwest Concept Plan Technical Advisory Committee and Interested Parties

FROM: Aquilla Hurd-Ravich, Senior Planner

DATE: January 29, 2010

TIME: 10:30 AM TO 11:30 AM

LOCATION: Tualatin Council Chambers

SUBJECT: MEETING AGENDA SOUTHWEST CONCEPT PLAN

---

1. Introductions
    a. In attendance: Michael R. Wheeler- City of Wilsonville, Tony Urbanek- Tigard Sand and Gravel, Roger Metcalf- Tigard Sand and Gravel, Tim Marshall-Knife River, Glenn Ziegler- Milgard, Matt Wellner- Metropolitan Land Group, Heather Austin- City of Sherwood, Mathew Oyen- Pactrust, Steve Kelly- Washington County, Kaaren Hofmaan- City of Tualatin, Mara Danielson- ODOT, Ken Itel- Property Owner, Carl Switzer- City of Tualatin, Aquilla Hurd-Ravich- City of Tualatin
2. Updates
    a. Open House on January 5, 2010 - *Aquilla Hurd-Ravich*
        i. Ms. Hurd-Ravich discussed the open house in terms of turn out and what questions were asked. Most questions related to when the area could or would be annexed into the City.
    b. Updates to the Tualatin Planning Advisory Committee on January 14, 2010 and the City Council on January 25, 2010 - *Aquilla Hurd-Ravich*

i. Ms. Hurd-Ravich briefly summarized the updates that were given to TPAC and the City Council about work activities on the Concept Plan.

c. Executed the Construction Excise Tax Grant with Metro - *Aquilla Hurd-Ravich*

i. Ms. Hurd-Ravich gave an update about the funding via a Construction Excise Tax Grant through Metro. In order to being receiving the funds Metro required the City to sign an agreement for consultant services to aid in the update and the City had to submit a timeline with deliverables. Funds are paid when Metro receives these deliverables.

d. Update on the analysis of infrastructure costs - *Doug Rux*

i. Mr. Rux was not in attendance. Ms. Hurd-Ravich discussed the infrastructure analysis update from CH2M Hill titled *SW Tualatin Concept Plan –Update* January 8, 2010.

3. Regional Updates

a. Urban Rural Reserves Process - *Doug Rux*

i. Ms. Hurd-Ravich gave a brief update on the status of Urban Rural Reserves. The three counties made their recommendations to the Core 4 who then made recommendations to the Metro Council.

4. Next Steps

a. Review updated timeline - *Aquilla Hurd-Ravich*

i. Ms. Hurd-Ravich concluded by discussing the timeline for the upcoming months.

Attachment: A: Timeline

MEMORANDUM
CITY OF TUALATIN

TO: SWCP Technical Advisory Committee and Interested Parties

FROM: Aquilla Hurd-Ravich, Senior Planner

DATE: June 30, 2010 2 p.m. to 3 p.m.

LOCATION: Tualatin Council Chambers

SUBJECT: MEETING AGENDA SOUTHWEST CONCEPT PLAN

---

1. Introductions
    a. In attendance: Ed Christie,- Tera Hydra, Steve Kelley- Washington County, Carl and Eric Johnson, Eric Sporre- Pac Trust, Henry Stukey- Tonquin Road, Matthew Oyen- Pac Trust, Ken Itel- property owner, Roger Metcalf- Tigard Sand and Gravel, Stephan Lashbrook- City of Wilsonville, Chris Neamtzu- City of Wilsonville, Carl Switzer- City of Tualatin, Dan Boss- City of Tualatin, Kaaren Hoffman- City of Tualatin, Doug Rux- City of Tualatin, Aquilla Hurd-Ravich- City of Tualatin.
2. Updates
    a. Infrastructure Analysis-
        i. Since the last meeting in January, the infrastructure analysis has been revised to reflect comments from staff and to reflect the traffic analysis. The infrastructure analysis looked at wastewater/water, transportation facilities and stormwater regional facilities. The concept plan area was broken into three areas and analyzed separately. SWTCP Area is the original concept plan area, the urban reserve area is to the south and Area 1 is the area west of south of Tonquin Rd and west of the rail road.
        ii. The wastewater analysis was updated from 2005 to reflect the expanded area in the concept plan, and the inflation of construction costs since 2005. There is small ridge that divides the area into 2

watersheds. All flow from the area is proposed to be conveyed to the Durham WWTP which means that two lift stations are necessary one permanent one on the southerly edge and one interim station in the northern portion of the southerly watershed.

iii. Again, the water sytem analysis was updated to reflect the new areas and the inflation of construction costs since 2005. It was determined that new level B storage reservoir is needed to serve the area and it can be located just east of the Concept Plan area.

iv. The analysis of potential streets reviewed the costs associated with developing a conceptual transportation system of arterials and collectors. It should be noted that costs for SW 124th Ave came from work the City did for the Metro 2035 Regional Transportation Plan update. The costs included a Blake Street extension and improvements to 108th and 105th Avenues. There are two bridges proposed as above grade railroad crossings, six signals along SW 124th two are proposed to intersect with a future possible southern arterial south of Tonquin Rd, one signal is proposed at the intersection of SW 115th and Tonquin Rd. A round about is proposed at Blake and 115th to discourage truck traffic from entering the residential neighborhood to the east.

1. Comments: Matthew Oyen, Pac Trust, commented that the build out for SW 115th Avenue is different for Pac Trust than what is shown in the analysis.
2. Steve Kelley, Washington County, commented that the analysis and concept plan map show SW 124th Avenue as a straight alignment from Tualatin-Sherwood Road to Tonquin Road. The actual built intersection may look different that the “T” shape presented in the analysis. Washington County requires all access to arterials from other arterial or collectors, therefore the arrow indicating a local street connection to

Tonquin Road, an arterial, should be removed from the Concept Plan Graphic.

v. The stormwater analysis was based on the 2005 analysis and updated to include the new area. It was determined that four facilities are needed to serve the area. Three facilities that drain to Coffee Lake Creek were designed to provide detention and water quality treatment and the fourth facility that drains to Hedges Creek was designed for detention only.

vi. Transportation analysis- this analysis looked at two situations, if code amendments would create a significant effect on the area's planned transportation system and a longer-term analysis of full build out.

b. New CET Grant from Metro
   i. On June 10, the City was awarded two CET grants. One is $70,000 to study the feasibility of creating an urban renewal district in the southwest concept plan. Introduce Doug to talk about the details.

c. Revised Concept Plan Graphic
   i. Included in the packet is a revised graphic- go over the revisions
      1. Comment: Eric Johnson noted that the graphic includes alpha labels but there is no corresponding explanation stating what those labels refer to.

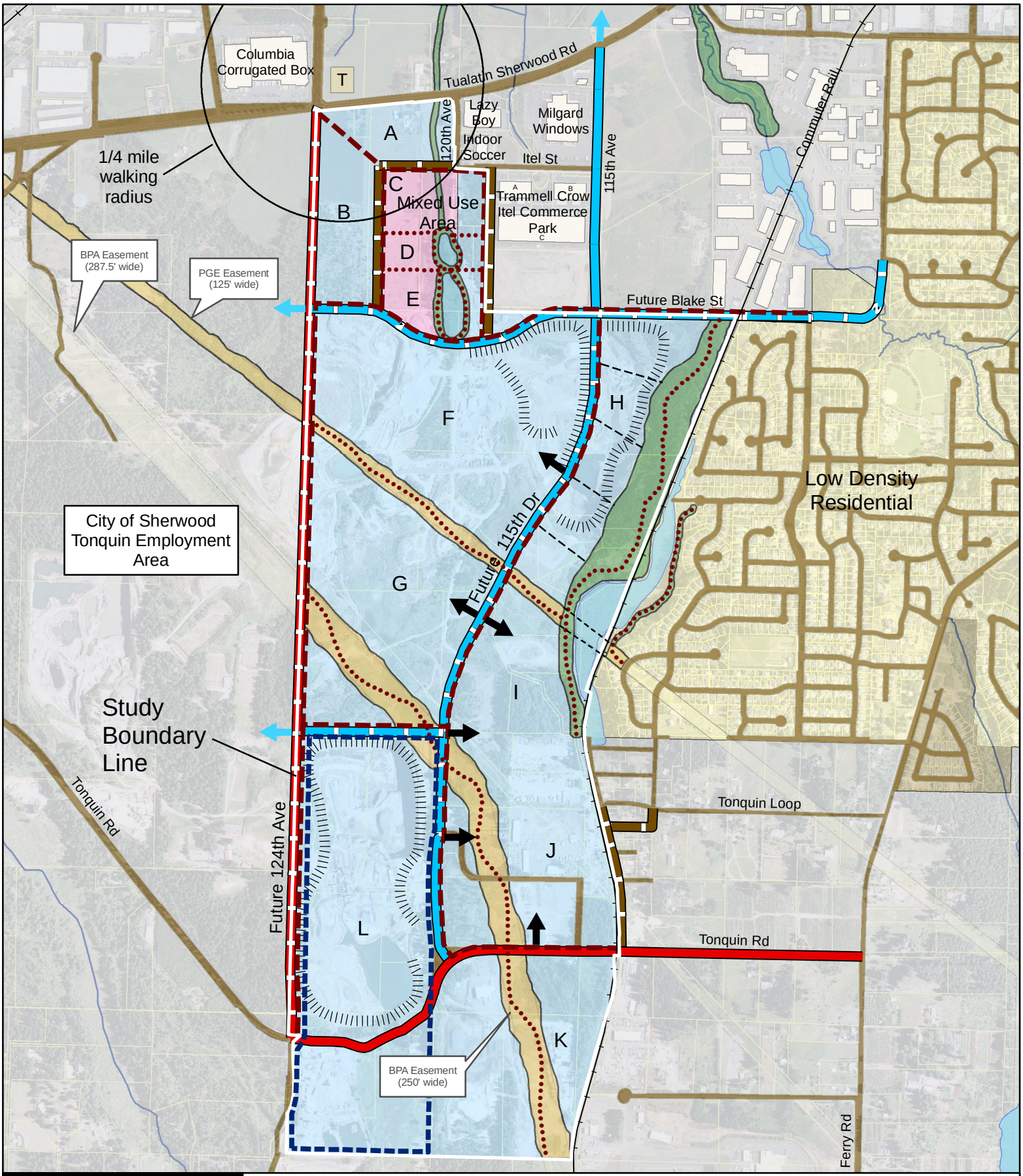
d. Sherwood TEA update
   i. A public hearing before the Planning Commission is scheduled for July 13, 2010. They are aiming to adopt the concept plan and plan amendments by the end of the summer.

e. Revised deliverables to Metro
   i. We just sent a request to Metro COO Michael Jordan asking to revise the deliverable dates. This process is funded partially from Metro CET funds and we receive payments when we provide deliverables. Our original agreement stated we would have the code amendments adopted by June 2010 but we were delayed by the transportation

analysis and the need to coordinate with Sherwood and get buy-in from ODOT, Washington County and Metro.

3. Regional Updates
    a. Urban Rural Reserves Process
        i. On June 10 Metro designated 28,165 acres of urban reserve land including the area south of the Concept Plan. The next step is for LCDC to approve the ordinances adopted by Metro and the Couties.
    b. Regional Transportation Plan
        i. The RTP was also adopted on June 10 and SW 124th was included as one of the financially constrained projects.
4. Review the Draft Southwest Tualatin Concept Plan 2010 Update
    a. The plan has been updated to reflect work done since the TAC meeting in December of 2007.
5. Next Steps
    a. Key Dates
        i. July 23rd next TAC meeting to discuss the entire Draft Concept Plan and all the appendices. A full draft will be available on our website no later than July 14. A link will be sent out via email for you to review and comment.

Attachment: A: Revised Concept Plan Graphic
B: Revised Concept Plan Graphic with Parcel Lines
C: June 2010 Fact Sheet
D: Key Dates



ALTERNATIVE III
SW Tualatin Concept Plan

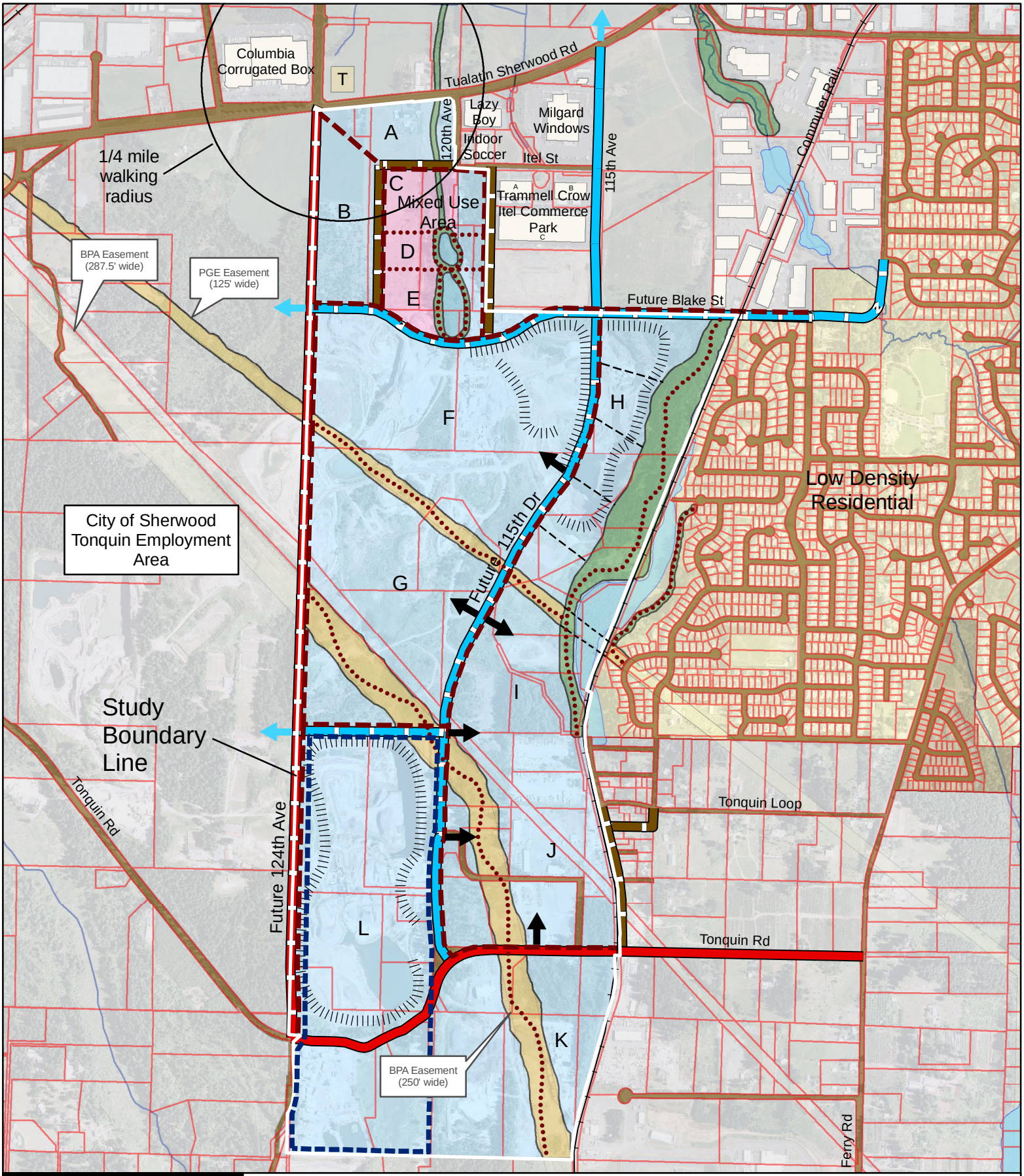
TUALGIS

0 405 810 1,620 Feet

Printed: June 14, 2010

ROAD LEGEND: Solid Lines = existing Dashed Lines = proposed

- Local Streets
- Arterials
- Collectors
- T Transit Hub
- Pedestrain Route-Trails
- Pedestrian Route-Sidewalk
- Easements and Green Space
- Future Industrial
- Future Mixed Use
- Water Body
- Low Density Residential
- Medium Low Density Residential
- Potential Urban Reserve/UGB Expansion



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SW Tualatin Concept Plan

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- Low Density Residential
- Medium Low Density Residential
- Potential Urban Reserve/UGB Expansion

Southwest Tualatin Concept Plan Fact Sheet

City of Tualatin

June 2010

The Southwest Tualatin Concept Plan (SWCP) is a guide for industrial development of a 614-acre area currently located outside the City that will become part of the City when properties annex into Tualatin's boundary.

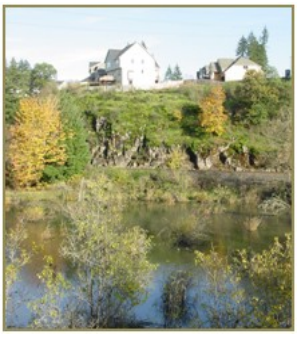
History:

In 2002 and 2004, Metro brought the SWCP land into the Urban Growth Boundary (UGB) through a series of decisions, and designated one portion of this land Regionally Significant Industrial Area (RSIA) and another portion industrial land. RSIA land must have at least one parcel of 100 acres and one parcel of 50 acres. These designations were part of Metro's strategy to create employment lands within the region. 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).

Why update the plan?

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 completed. This plan was accepted by the City Council on June 25, 2007, and work on the SWCP recommenced. The previously completed analysis has been updated to reflect changed circumstances from 2005 to 2010. These changes include the rise in construction costs to build roads, sewer and water systems, consideration of transportation analysis work from the *I-5 to 99W Connector Study*, the regional transportation plan, the City of Sherwood's concept plan for an area adjacent to the SWCP area, and the expanded SWCP boundary. The City is on track to adopt changes to the Tualatin Development Code in November 2010.

Why expand the concept plan boundary?



The original SWCP area of 431 acres was expanded by the TAC and the City in November 2009 to include 183 acres south of Tonquin Road and west of the railroad tracks. The Council identified these lands for industrial employment purposes. Approximately 66 acres currently have industrial uses and were brought into the UGB in 2004. Approximately 117 acres are currently outside of the UGB and could potentially be designated an Urban Reserve. The expanded area will help connect a future extension of SW 124th Avenue to Tonquin Road.

For more information visit :
www.ci.tualatin.or.us/departments/communitydevelopment/planning/longrange/SWTualatinConceptPlan.cfm

Southwest Tualatin Concept Plan Fact Sheet continued...

City of Tualatin

June 2010

Key Features of the 2005 Concept Plan:

Land Use and Development-

Land use will be a mix of light industrial and high tech uses, such as printing, material testing, and assembly of data processing equipment or flex space for technology companies, in a corporate campus setting. Additionally, some commercial service uses such as restaurants and retail shops, are proposed to serve the industrial area and employees. Trails are proposed in the area and will likely follow the rail road tracks and two utility easements.

Transportation-

Primary access will be from an extended SW 124th Avenue south of SW Tualatin-Sherwood Road. Secondary access is planned from SW 115th and SW 120th Avenues. SW Blake Street is proposed to be extended and SW 117th and SW 122nd Avenues, and SW Itel Street are proposed new roads. All streets will have sidewalks, bike lanes, street lighting, trees and landscaping.

Water, Sewer and Storm Drainage-

These proposed systems will require new pipes and some replacement of existing pipes to accommodate increased demands.

Natural Resources-

Local resources will be protected, where appropriate, and enhanced as a condition for new development. The tree buffer next to the railroad line is proposed to be protected.

Key Dates:

June 2010-

- Technical Advisory Committee meeting to share 2010 draft report

July 2010-

- Open house to review 2010 draft report and possible urban renewal area

August 2010-

- Tualatin Planning Advisory Committee makes recommendation to City Council
- City Council reviews and accepts updated concept plan

October 2010-

- Open House to review proposed code language

November 2010-

- Tualatin Planning Advisory Committee recommendation to Council on code language
- City Council reviews and adopts code language

Contact Information:

Aquilla Hurd-Ravich
Senior Planner
ahurd-ravich@ci.tualatin.or.us
503.691.3028

City of Tualatin
Community Development Department
18880 Martinazzi Ave
Tualatin, Oregon 97062

MEMORANDUM
CITY OF TUALATIN

TO: SWCP Technical Advisory Committee and Interested Parties

FROM: Aquilla Hurd-Ravich, Senior Planner

DATE: June 30, 2010

SUBJECT: SOUTHWEST CONCEPT PLAN KEY DATES

Key Dates:

July 22, 2010: Open House Council Chambers

August 3, 2010: Tualatin Planning Advisory Committee Recommendation

August 23, 2010: Tualatin City Council accepts plan

October 2010: Open House to review proposed code language

November 2, 2010: Tualatin Planning Advisory Committee recommendation to Council on code language

November 22, 2010: City Council reviews and adopts code language

MEMORANDUM
CITY OF TUALATIN

TO: Southwest Concept Plan Technical Advisory Committee (TAC) and Interested Parties

FROM: Aquilla Hurd-Ravich, Senior Planner *AHR*

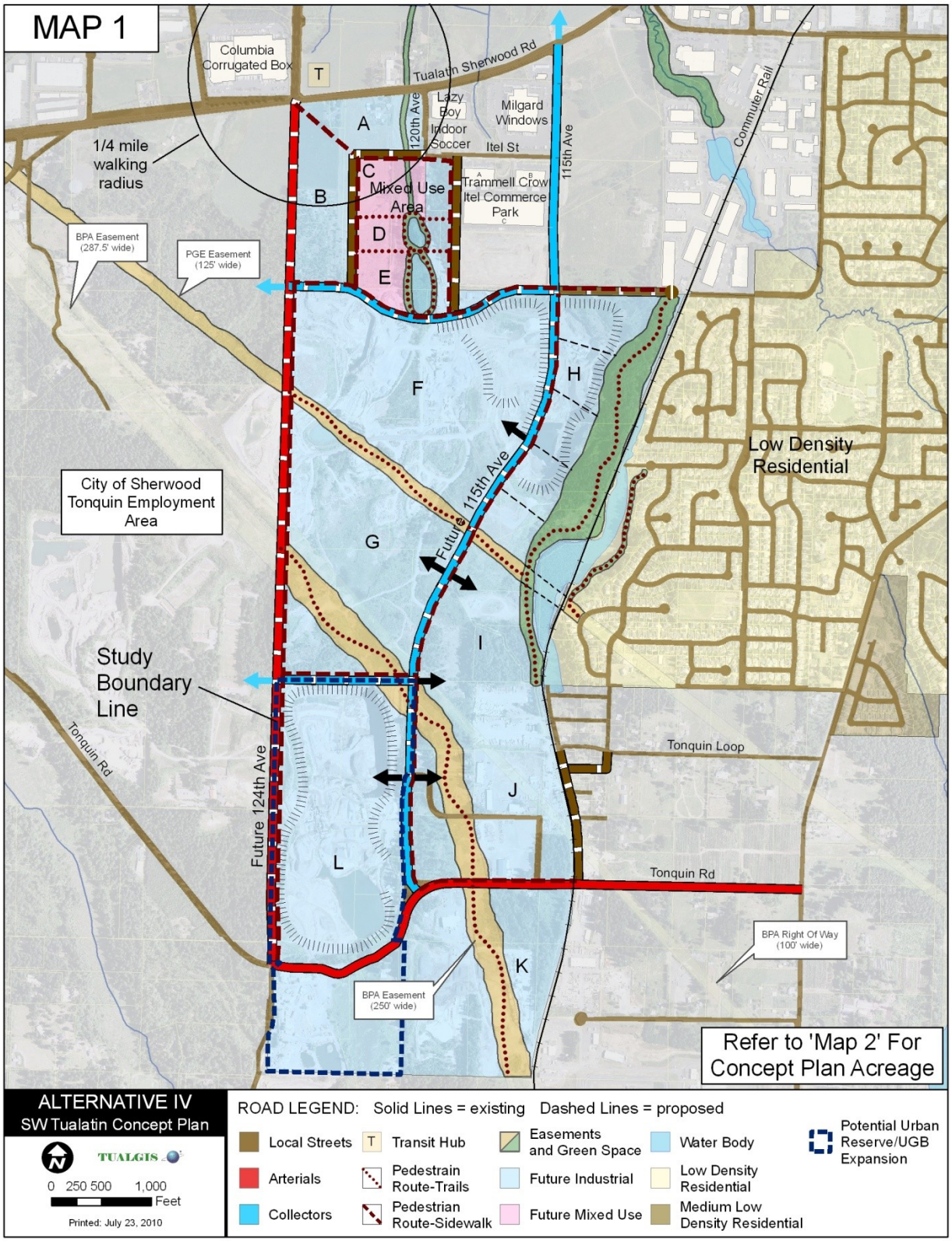
DATE: July 23, 2010

SUBJECT: SOUTHWEST CONCEPT PLAN ALTERNATIVE IV- NO BLAKE STREET EXTENSION

After receiving public input about the Southwest Concept Plan (SWCP) Alternative III, it is clear that a Blake Street extension is not viewed favorably by the residents of the neighborhood abutting the SWCP area. In response, staff is working with our consultants to prepare an Alternative IV concept plan map that eliminates the Blake Street connection from the railroad tracks east to SW 108th Avenue and any improvements to the curve at SW 108th to Blake Street to SW 105th. Alternative IV shows a future Blake Court as a local cul-de-sac between the proposed SW 115th Avenue and the Portland & Western Railroad tracks.

Alternative IV and the accompanying technical analysis are being developed to compare against Alternative III. A discussion of both options will reviewed by the TAC and the Tualatin Planning Advisory Committee (TPAC). The technical analysis, traffic analysis and capital costs, reflecting these changes will be available for review by July 28, 2010. The Technical Advisory Committee will reconvene on July 30, 2010 at 10 am in the Council Chambers to discuss the analysis and the comparison. TPAC will review the material and make a recommendation to the City Council on August 3, 2010 at 7pm in the Council Chambers.

All information will be available via the City website and a link will be sent out when the information has been posted. Alternative IV is attached for your review.


MAP 1
Columbia Corrugated Box
T
Tualatin Sherwood Rd
120th Ave
Lazy Boy
Indoor Soccer
Milgard Windows
Itel St
115th Ave
Commuter Rail
1/4 mile walking radius
A
B
C
Mixed Use Area
Trammell Crow Itel Commerce Park
D
E
BPA Easement (287.5' wide)
PGE Easement (125' wide)
F
H
Low Density Residential
City of Sherwood Tonquin Employment Area
Future 115th Ave
G
I
Study Boundary Line
Tonquin Rd
Future 124th Ave
Tonquin Loop
J
L
Tonquin Rd
BPA Right Of Way (100' wide)
K
BPA Easement (250' wide)
Refer to 'Map 2' For Concept Plan Acreage
ALTERNATIVE IV
SW Tualatin Concept Plan
TUALGIS
0 250 500 1,000
Feet
Printed: July 23, 2010
ROAD LEGEND: Solid Lines = existing Dashed Lines = proposed
Local Streets
Arterials
Collectors
T Transit Hub
Pedestrain Route-Trails
Pedestrian Route-Sidewalk
Easements and Green Space
Future Industrial
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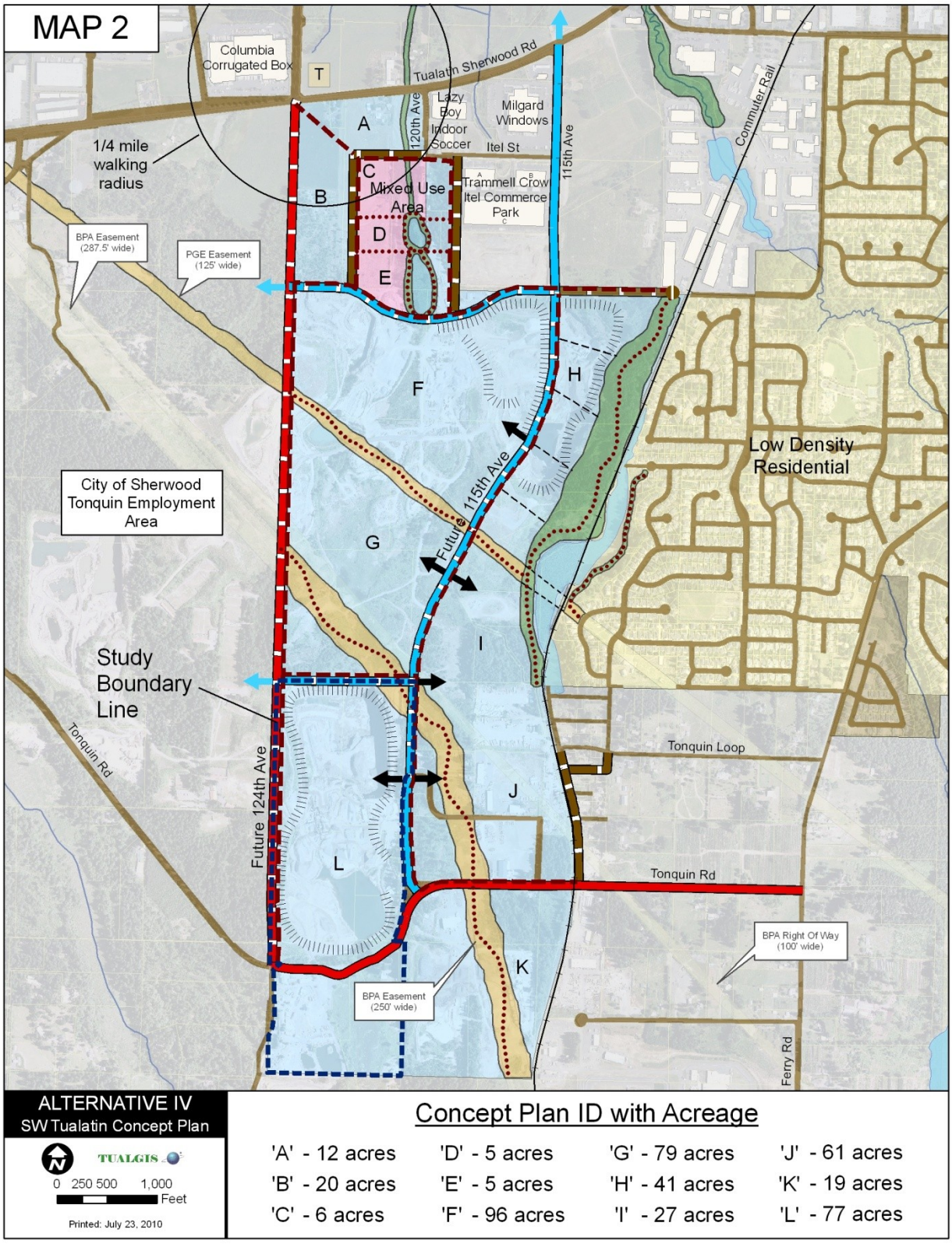
Water Body
Low Density Residential
Medium Low Density Residential
Potential Urban Reserve/UGB Expansion


MAP 2
Columbia Corrugated Box
T
Tualatin Sherwood Rd
120th Ave
Lazy Boy
Indoor Soccer
Milgard Windows
Itel St
115th Ave
Commuter Rail
1/4 mile walking radius
A
B
C
Mixed Use Area
Trammell Crow Itel Commerce Park
D
E
BPA Easement (287.5' wide)
PGE Easement (125' wide)
F
H
Low Density Residential
City of Sherwood Tonquin Employment Area
Future 115th Ave
G
I
Study Boundary Line
Tonquin Rd
Future 124th Ave
Tonquin Loop
J
L
Tonquin Rd
BPA Right Of Way (100' wide)
K
BPA Easement (250' wide)
Ferry Rd
ALTERNATIVE IV
SW Tualatin Concept Plan
TUALGIS
0 250 500 1,000
Feet
Printed: July 23, 2010
Concept Plan ID with Acreage
'A' - 12 acres
'B' - 20 acres
'C' - 6 acres
'D' - 5 acres
'E' - 5 acres
'F' - 96 acres
'G' - 79 acres
'H' - 41 acres
'I' - 27 acres
'J' - 61 acres
'K' - 19 acres
'L' - 77 acres

.

MEMORANDUM
CITY OF TUALATIN

TO: SWCP Technical Advisory Committee and Interested Parties

FROM: Aquilla Hurd-Ravich, Senior Planner

DATE: July 23, 2010 10 a.m. to 12 p.m.

LOCATION: Tualatin Council Chambers

SUBJECT: MEETING AGENDA AND RECAP SOUTHWEST CONCEPT PLAN

---

1. Introductions: Kaaren Hoffman, City of Tualatin; Steve Kelley, Washington County; Roger Metcalf, Tigard Sand and Gravel; Ben Bryant, City of Tualatin; Chris Neamtzu, City of Wilsonville; Jamie Morgan-Stasny, Metropolitan Land Group; Doug Rux, City of Tualatin; Aquilla Hurd-Ravich, City of Tualatin
2. Updates
    a. SWCP Open House on July 22, 2010
        i. Review
        ii. Public Comments
            1. Aquilla Hurd-Ravich presented a memo describing what transpired at the Open House and a map labeled Alternative IV with a Blake Street connection eliminated and a future Blake Street terminating in a cul-de-sac at the Portland & Western rail road.
            2. Ms. Hurd-Ravich and Doug Rux debriefed the group of comments received at the Open House on July 22, 2010. The predominate comments were from residents of the Hedges Park neighborhood in opposition to a Blake Street connection and a bridge acting as a grade separated crossing of the Portland & Western Railroad. Primary concerns were industrial truck traffic, traffic congestion from vehicles accessing Sherwood, cut through traffic of vehicles avoiding

Tualatin-Sherwood Road and safety, noise, and pollution concerns. Some residents suggested creating a connection at Helenius Way or Industrial Way. Helenius Way was discussed in 2005 as a possible connection and ruled out. Industrial Way is a private driveway, not a public street, and both suggestions would still require grade separated crossings.

3. Staff described presenting an Alternative IV map with updated analysis to TPAC for their consideration as an alternative to a plan with Blake Street as a connection.

3. Review the Draft Southwest Tualatin Concept Plan 2010 Update
    a. Comments from the TAC (the plan and appendices are available via the website: http://www.ci.tualatin.or.us/departments/communitydevelopment/planning/longrange/SWTualatinConceptPlan.cfm
        i. Comments from TAC members about the Alternative III (the plan as presented) and the newly revised plan and map called Alternative IV:
            1. Steve Kelly: Conduct analysis to compare both alternatives, State, County and Metro policies all require connectivity; there are connectivity rules and ordinances in the State wide system. Explore other alternatives with ODOT rail. The County will want to see analysis of Alternative IV changes, how those changes affect Tualatin's TSP and this may trigger TPR requirements. The County encourages a bike and pedestrian crossing.
            2. Kaaren Hoffman: Blake Street is not in the 2035 RTP and it is not in the Alternative 7 I-5 to 99W Connector project.
            3. S. Kelley: reminded the group that the intersection of SW 124th and Tonquin Rd could move
            4. Chris Neamtzu: Asked if the Wilsonville Coffee Creek Master Plan was incorporated into the SWCP traffic analysis?

5. S. Kelley: DKS (Sherwood's traffic consultants on the Tonquin Employment Area) used Wilsonville traffic numbers in their modeling which was incorporated into our modeling. Alternative 7 incorporated Wilsonville's Coffee Creek traffic numbers which acted as the basis for Tualatin SWCP traffic analysis.
6. A.Hurd-Ravich: Another TAC meeting was scheduled for July 30, 2010 at which time the traffic and infrastructure analysis accompanying Alternative IV could be discussed.

4. Key Dates
    a. August 3, 2010 Tualatin Planning Advisory Committee
    b. August 9, 2010 City Council Work Session
    c. August 23, 2010 City Council presentation to accept the SWCP.

MEMORANDUM
CITY OF TUALATIN

TO: SWCP Technical Advisory Committee and Interested Parties

FROM: Aquilla Hurd-Ravich, Senior Planner

DATE: July 30, 2010 10 a.m. to 12 p.m.

LOCATION: Tualatin Council Chambers

SUBJECT: MEETING AGENDA SOUTHWEST CONCEPT PLAN

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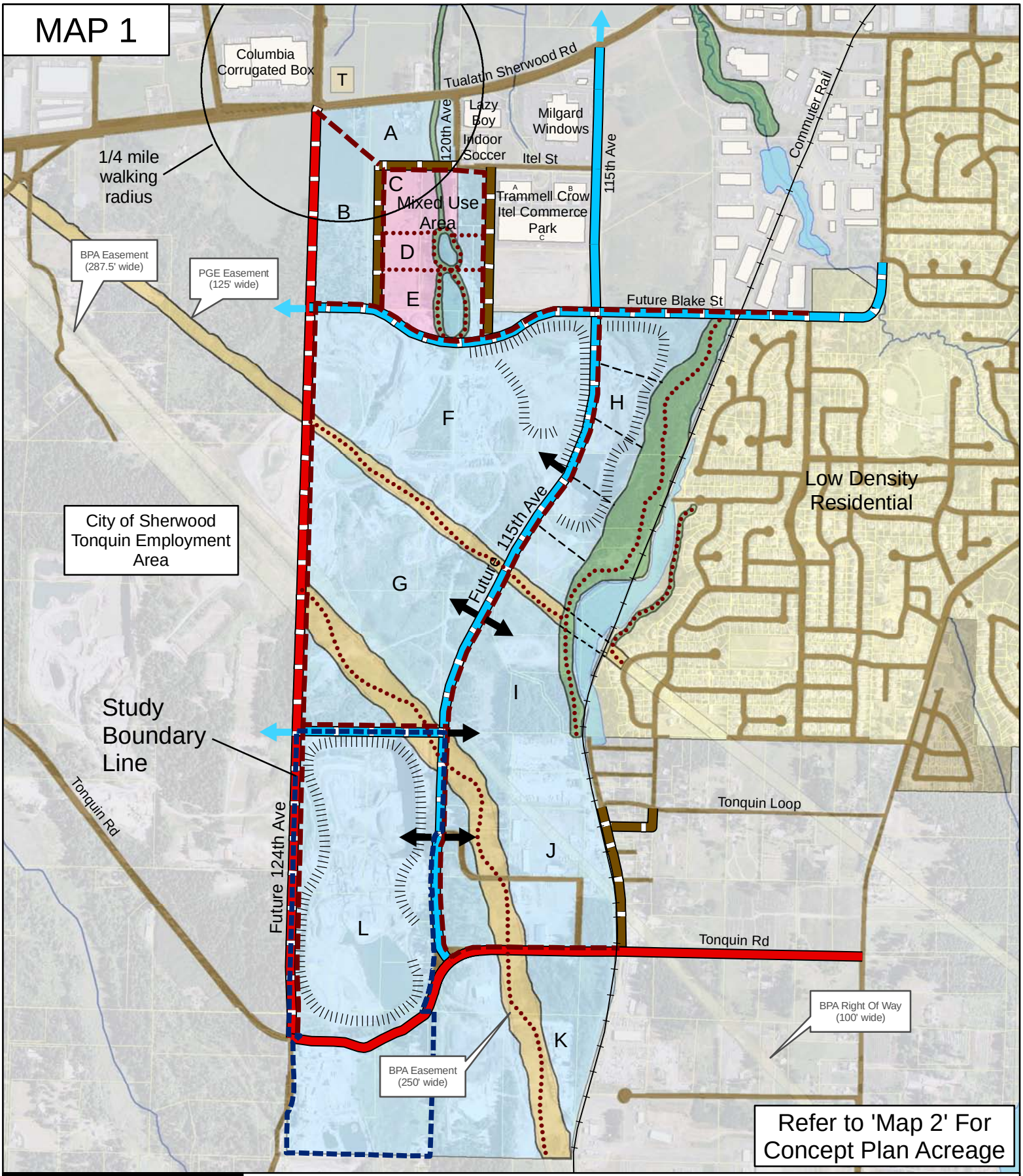
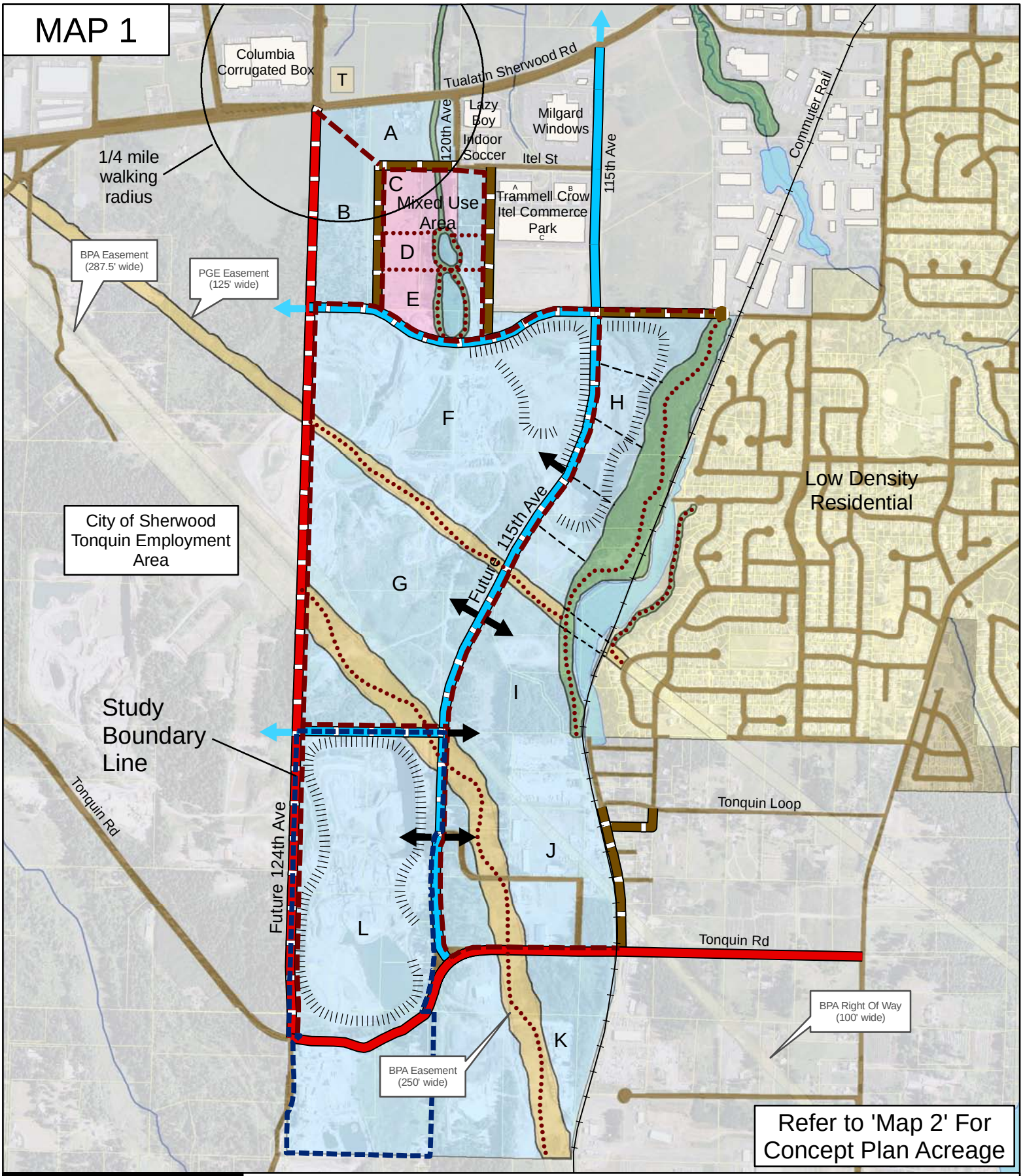
1. Introductions
2. Alternative III and Alternative IV compare and contrast
    a. Map
    b. Infrastructure costs
    c. Traffic Analysis
3. Key Dates
    a. August 3, 2010 Tualatin Planning Advisory Committee
    b. August 9, 2010 City Council Work Session
    c. August 23, 2010 City Council presentation to accept the SWCP.

Attachments:
1. Alternative III Map
2. Alternative IV Map
3. SW Tualatin Concept Plan Update- July 27, 2010
4. 2010 Concept Plan Alternative without a Blake Street Connection July 27, 2010
5. Southwest Concept Plan Public Comment Log and Petitions


MAP 1
Columbia Corrugated Box
T
Tualatin Sherwood Rd
120th Ave
Lazy Boy
Indoor Soccer
Milgard Windows
Itel St
115th Ave
Commuter Rail
1/4 mile walking radius
A
B
C
Mixed Use Area
Trammell Crow Itel Commerce Park
D
E
BPA Easement (287.5' wide)
PGE Easement (125' wide)
Future Blake St
F
H
Low Density Residential
City of Sherwood Tonquin Employment Area
Future 115th Ave
G
I
Study Boundary Line
Tonquin Rd
Future 124th Ave
Tonquin Loop
J
L
Tonquin Rd
BPA Right Of Way (100' wide)
K
BPA Easement (250' wide)
Refer to 'Map 2' For Concept Plan Acreage
ALTERNATIVE III
SW Tualatin Concept Plan
TUALGIS
0 375 750 1,500 Feet
Printed: July 8, 2010
ROAD LEGEND: Solid Lines = existing Dashed Lines = proposed
Local Streets
Arterials
Collectors
Transit Hub
Pedestrain Route-Trails
Pedestrian Route-Sidewalk
Easements and Green Space
Future Industrial
Future Mixed Use
Water Body
Low Density Residential
Medium Low Density Residential
Potential Urban Reserve/UGB Expansion



ALTERNATIVE IV
SW Tualatin Concept Plan

TUALGIS

0 375 750 1,500 Feet

Printed: July 23, 2010

ROAD LEGEND: Solid Lines = existing Dashed Lines = proposed

- Local Streets
- Arterials
- Collectors
- T Transit Hub
- Pedestrain Route-Trails
- Pedestrian Route-Sidewalk
- Easements and Green Space
- Future Industrial
- Future Mixed Use
- Water Body
- Low Density Residential
- Medium Low Density Residential
- Potential Urban Reserve/UGB Expansion

SW Tualatin Concept Plan Update - Estimate Revisions

PREPARED FOR: City of Tualatin

PREPARED BY: Darren Hippenstiel/PDX

REVIEWED BY: Dave Simmons/PDX

DATE: July 27, 2010

PROJECT NO.: 398395.48.01

The objective of this memorandum is to document revised assumptions for the development of infrastructure within the area southwest of the City of Tualatin known as the SW Tualatin Area. The total revised cost estimated for the development of infrastructure in the SWTCP area is **$141,597,000**. A summary of the revised assumptions per major infrastructure category follows:

Transportation:

Collector 1 shown in SWTCP update memo dated 06/25/2010 is revised to end approximately 200' east of Collector 2 (SW 115th Ave.). A cul-de-sac type treatment is now assumed. This revised assumption eliminates the bridge to cross the Portland and Western Railroad line, walls assumed necessary to retain the fill from adjacent properties, embankment material, and roadway materials. These revisions reduce the estimated cost for Collector 1 from $12,410,000 to $3,400,000, a reduction of $9,010,000

Additionally the reconstruction of the curve on SW Blake Street from SW 105th to SW 108th is removed from consideration. The costs update those prepared as part of the SW Tualatin Concept Plan (SWTCP) in 2005 and subsequent updates from this project. This revision reduces the total for transportation infrastructure by $1,500,000.

The total revised cost to provide transportation infrastructure in the SW Tualatin Area is **$69,424,000**, a total reduction of $10,510,000.

Stormwater Regional Facilities:

The reduction in impervious surfaces has a negligible effect on the sizing requirements for regional stormwater facilities and has no effect on the location of regional facilities. The cost for providing regional stormwater facilities for the SWTCP area is unchanged.

Water Systems and Sanitary:

The base assumption for water systems at bridge crossings is that the piping will be bored under the crossing rather than hung from the bridge.

There are no sanitary crossings in this location assumed. Any sanitary service west of the rail crossing would flow the west and connect to the trunk line assumed on SW 115th Ave.

Given these base assumptions already used in developing the SWTCP infrastructure development estimate updates, the estimate is unchanged.

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
610 SW Alder Street, Suite 700, Portland, OR 97205 P 503.228.5230 F 503.273.8169

TECHNICAL MEMORANDUM

Date: July 27, 2010 Project #: 10599

To: Doug Rux and Aquilla Hurd-Ravich, City of Tualatin

From: Paul Ryus, P.E.
Project: Southwest Tualatin Concept Plan
Subject: 2010 Concept Plan Alternative Without a Blake Street Connection

INTRODUCTION

The current Tualatin Transportation System Plan (TSP) includes a future extension of Blake Street west from SW 108th Avenue, connecntig to SW 124th Avenue. The 2005 Southwest Tualatin Concept Plan transportation analysis assumed this connection, as did the 2010 Concept Plan update (described in our June 25, 2010 memo) and the Tonquin Employment Area study. However, at an open house held in mid-July, neighbors expressed concern about truck and commuter traffic passing through the neighborhood as a result of the Blake Street extension.

This memo analyzes long-term (year 2030) traffic operations at key intersections within and adjacent to the Southwest Tualatin Concept Plan area, if Blake Street was not constructed between SW 108th Avenue and the railroad tracks. The memo also discusses the amount of traffic forecast to use the Blake Street extension, if it were constructed.

PLANNING AREA BUILD-OUT ANALYSIS WITHOUT BLAKE STREET CONNECTION

This analysis identifies transportation system needs in the year 2030, assuming full build-out of the Southwest Tualatin Concept Plan area without a Blake Street connection between SW 108th and the Concept Plan area. Blake Street would still be constructed within the Concept Plan area, but would only serve a local traffic function, instead of the collector function proposed by the Tualatin TSP. This is a conservative analysis, as our June 25, 2010 memo showed that the Concept Plan area is expected to be only about 68% built out by 2030, based on the City's experience with the growth of the Leveton Employment Area. As was the case in the June 25, 2010 memo, the purpose of the build-out analysis is to determine the ultimate size of the transportation infrastructure needed to serve the Concept Plan area.

All assumptions regarding land use, future road network, and trip generation remain the same as described in the June 25, 2010 memo, except that Blake Street is not assumed to be extended between SW 108th Avenue and the railroad tracks. The June 25, 2010 analysis forecast that the Blake Street connection would be used by approximately 355 vehicles during the 2030 weekday p.m. peak hour. Further, the Metro model results show that of the trips generated within the SW Tualatin Concept Plan and Tonquin Employment Area that would be using Blake Street, approximately two-thirds would be bound for the Sagert Street overcrossing of I-5 and points east. The model indicates that the remaining one-third of site-generated trips using Blake Street would be bound for the Norwood Road overcrossing of I-5 and points east. Other traffic using Blake Street would consist of traffic generated in the neighborhoods on both sides of Boones Ferry Road between Avery Street and Tonquin Road that uses Blake Street as a way to travel to and from Sherwood.

For the purposes of this analysis, site-generated traffic traveling to and from the Sagert Street overcrossing was assumed to use Tualatin-Sherwood Road and Avery Road instead. Neighborhood traffic using the Blake Street extension was also assumed to use this route. Site-generated traffic traveling to the Norwood Road overcrossing was assumed to use Tonquin Road instead. Table 1 summarizes the average delay, level of service (LOS), and volume-to-capacity (v/c) ratio for the 2030 weekday p.m. peak hour for this trip distribution pattern.

Table 1. Year 2030 Weekday P.M. Peak Hour Study Area Intersection Operations

Intersection	Average Delay (sec)	LOS	v/c Ratio
SW 115th Avenue/Tualatin-Sherwood Road	14.1	B	0.57
SW 115th Avenue/Blake Street	11.2	B	0.10
SW 115th Drive/East-West Collector	18.1	C	0.28
SW 115th Drive/Tonquin Road	16.0	B	0.63
SW 124th Avenue/Tualatin-Sherwood Road	52.2	D	0.94
SW 124th Avenue/Blake Street	47.3	D	0.74
SW 124th Avenue/East-West Collector	24.4	C	0.67
SW 124th Avenue/Tonquin Road	35.5	D	0.83
SW 124th Avenue/Westbound I-5-99W Connector	34.0	C	0.86
SW 124th Avenue/Eastbound I-5-99W Connector	32.1	C	0.72

Comparing the results shown in Table 1 to the results in Table 2 of the June 25, 2010 memo, most intersections would experience increased traffic and relatively small increases in delay. However, all intersections would continue to meet City of Tualatin standards (LOS 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 standard of a v/c ratio of 0.99 or less. If the I-5/99W Connector were to become a state highway, its intersections with SW 124th Avenue would also meet ODOT standards for the Portland Metro area (v/c ratio of 0.99 or less).

BLAKE STREET USE WITH A CONNECTION

The June 25, 2010 analysis forecast that the Blake Street connection would be used by approximately 355 vehicles during the weekday p.m. peak hour in 2030. Of these, about 215 vehicles would be generated by the Concept Plan area, while the remainder would be generated by the Tonquin Employment Area and/or by the neighborhoods east of the Concept Plan Area. About three-quarters of the traffic exiting the Concept Plan area during the 2030 weekday p.m. peak hour are forecast to turn south on SW 108th Avenue.

Truck traffic volume on Blake Street would be expected to be minimal for several reasons:

- SW 115th Avenue would provide a shorter, more direct truck route to Tualatin-Sherwood Road and I-5 north than Blake Street and SW 105th Avenue, which involves going up and down a hill and around sharp curves.
- SW 124th Avenue would provide a faster, easier truck route to I-5 south (via the I-5/99W Connector) than would a route through the neighborhood.
- Truck traffic to and from the east would be expected to be going to and from I-5, rather than over it. The Metro model indicates that site-generated traffic using the Blake Street connection would be headed to overpasses leading over I-5, rather than onto it.
- The 2005 Concept Plan proposed several treatments to further discourage use of Blake Street by trucks; these included:
    - A narrower ("Cb") minor collector cross-section for Blake Street between SW 108th and SW 115th Avenues, as compared to a major collector cross-section west of SW 115th Avenue.
    - A "gateway treatment" for Blake Street to indicate the transition from the employment area to the residential area; this could consist of a roundabout at the Blake Street/SW 115th Avenue intersection or a median island in Blake Street to further narrow the perceived street width.

CONCLUSIONS

Intersections within and adjacent to the Southwest Tualatin Concept Plan area would operate within their respective jurisdictions' standards in 2030, if the Concept Plan area was fully built out at that time and if a Blake Street connection between SW 108th and SW 115th Avenues was not constructed.

About 60% of the traffic using the Blake Street connection during the 2030 weekday p.m. peak hour would be generated by the Concept Plan area, and about three-quarters of this traffic would pass through the neighborhood via SW 108th Avenue. The remaining traffic would be generated either by the Tonquin Employment Area and/or by the neighborhoods east of the Concept Plan area. Truck traffic would not be expected to use Blake Street, as it provides a slower route to Tualatin-Sherwood Road than SW 115th Avenue, no truck destinations are readily accessed

through the neighborhoods, and planned street design features would further discourage any possible truck use.

Southwest Concept Plan Public Comment Log as of 7/30/10			
	Date	**Name**	**Comment**
1.	July 9, 2010	Jeffery S. Nighbert	I have reviewed the map that was sent in the mail outlining the proposed actions associated with the Southwest Tualatin Concept Plan. I have a major concern about the "Future Blake Street" as it is shown in the plan: I feel that extending Blake street to the Industrial area would increase traffic and congestion too much in our quiet neighborhood. After so much effort was spent making SW 108th Street pedestrian and family friendly with bike trails, cross walks and vegetation, it seem inconsistent to cut a road over to the the industrial area through our neighborhood that would open our neighborhood up to heavy truck and commuter traffic associated with the industrial area. Don't think for a minute that cars and trucks would not take a shortcut out of the industrial zone and clog that tiny road. As it stands now Blake street has a very tight curve near the stream it crosses just down from the Garden Corner business. There is practically no room for bikes and pedestrians now, think of it a rush hour or when big trucks decide they need to take a shortcut to avoid the traffic on Tualatin-Sherwood Road. Traffic would also probably spill onto 108th street and Ibach road and that would be the end of pedestrian and family friendly. The solution is to NOT extend Blake road over to the industrial area from 108th street. That way industrial park traffic and congestion would be forced to use Tualatin-Sherwood road, Tonkin road, 124th, and 115th street. Lets maintain our great neighborhoods for families and pedestrians. Lets isolate heavy truck and rush hour traffic away from residential areas. I am serious about this issue. If you would like to discuss these concerns with me, please call at 503-482-5812.
2.	July 17, 2010	Scott and Marty Campbell via Mayor Lou Ogden	Scott mentioned to me a concern about a via duct type RR crossing of Blake street going west into the area. I was unaware of the grade separated crossing but, of course, from a traffic standpoint, grade separation is a good thing. I think his concern is the noise of trucks climbing up over the RR, etc and also the truck traffic from 105th or 108th into the area in conflict with neighborhood traffic in that section of Tualatin. I have not looked at it in enough detail to know how likely his concerns are to come to fruition. Thanks, Lou Ogden
3.	July 19, 2010	Stephen & Maxine Jones	The Southwest Tualatin Concept Plan has suggested the extension of Blake Street from 108th to 115th. This has got to be the worst possible use of our tax payer money. The road will have no access until it reaches 115th. The corner of Blake St and SW 105th is a hairpin curve that will be a high accident area. There is no reason to increase in traffic

			(where trucks currently are limited) on this neighborhood street where 115th can handle it. With this street will decrease property values for the homeowners who current pay alot of taxes to this city and Increase noise pollution This would be a waste of taxpayer money and would only help the person or persons who own the land that has to be purchased to make this extension on Blake. This feels like a very political and profitable advantage for some people and a good "Date Line" topic if it goes through.
4.	July 21, 2010	Jerry Markey Milgard Manufacturing	I am writing on behalf of Milgard Manufacturing, a subsidiary of Masco Corporation regarding the SWCP open house scheduled for July 22. Milgard Manufacturing would like to submit the following comments for consideration. Milgard Manufacturing understands the purpose of annexing the 614 acre site into the City of Tualatin for future industrial development. However, Milgard Manufacturing contends the transportation infrastructure required to support current industrial development does not exist. Milgard Manufacturing cannot support further industrial expansion without immediate improvements to the road system for truck traffic. During the past four years, there has been extensive industrial growth adjacent to the Milgard Manufacturing facility with minimal road improvements to accommodate the industrial growth in the area. The Blake Street expansion has been discussed for several years with no action taken. The Blake Street expansion should be completed prior to the annexation. The 115th Avenue and the 124th Avenue expansion should be a mandatory requirement that occur simultaneously in conjunction with the annexation. Thank you for allowing Milgard Manufacturing to comment on the Southwest Tualatin Concept Plan. Respectfully submitted, Jerry Markey, Sr. Property Appraiser
5.	July 21, 2010	Heather Austin City of Sherwood	I am headed out of town tomorrow morning, so I won't be able to make your open house or your TAC on Friday. I have reviewed the concept plan online and don't have any comments at this time. I am very curious about the Business Park zone and how that develops so if you are going to have any additional information on that at either of the meetings this week, I would be interested to see it. Thanks and good luck with your meetings!
6.	July 22, 2010	Ray Valone Metro	As you know, I'm filling in for Sherry while she is out of the office. I will not be able to attend tomorrow's meeting, so I am writing to inform you of my review of some of the material posted on the City's web site. I read the SWTCP 2010 Update, the transportation analysis from Kittelson and the estimate summary for infrastructure costs. Based on these documents, I do not see anything that would not be in compliance with Title 11 or the conditions of addition of the ordinances that brought the land into the UGB. The three concept plan documents do not, of

			course, address the requirements in the Metro code in the way of findings. We look forward to such findings when the City adopts implementing language for the concept plan later this year. You should work with Sherry for guidance as these findings are developed. Please let me know the outcome of tomorrow's meeting.
7.	July 22, 2010	Jennifer Hughes	There's a rumor rampant in my neighborhood that Walmart wants to build the Blake Street extension from 108th to 115th in order to run its trucks that way in conjunction with a new warehouse/distribution facility. After looking at your website, the closest I could come was the McLane Foodservice AR decision. I've contacted Engineering for the Public Facilities Decision, but I didn't see anything in the AR materials that suggested the applicant was interested in building Blake, though it appears they will dedicate ROW and eventually have an access point for truck circulation through the site. I'd appreciate anything you can tell me about future plans this applicant may have for use of Blake to 108th. I am aware of the Concept Plan in the area and the issues regarding Blake in that context. Thank you.
8.	July 22, 2010	Gordon Russell	I am responding to you due to I will be unable to attend this evenings meeting for the SW Tualatin Concept Plan Open House. **I am OPPOSED to the Future Blake Road Street that connects the proposed developement to the Low Density Residential.** I live at XXX XXX for over last 10 years. During this time a forest has been removed, and Public Train (WES) is now operating, and now a proposed street going into our neighborhood. These ALL have had a negative impact on our wildlife, noise, property values, and community. Wildlife - Still deer crossing located in the area where development is to happen. Deer were there just last week. New Road dramatically effects their habitat. - Current easement where Blake Street to happen, deer and other wildlife use/habitat. - We continue to press on the limited green space this community apparently use to pride itself on, not continue to reduce and eliminate it. Business - There is so much commercial realestate vacant, thus seems odd that such a commercial project makes sense at this point. - Where are funds coming from to do this developement and why is it a priority, and why is the Blake Street Addition part of it. Shouldnt Goverment money should be used on positive projects, not ones the decline our communities value. Shouldnt they have **Real Value** for the residents of Tualatin. Neighborhood - Since WES has been operating, my property value has declined dramatically. This project will again subject me to a Tualatin Decision that will effect the value of the home I purchased. - It already takes 10 minutes to get through NON TUALATIN Resident traffic to get to I-5. Additional Traffic will increase with this, potentially significantly. - 108th has BECOME a busy street, with Resident and Non Resident

			cars and trucks using. It has become a short cut already to get from Tualatin Sherwood Road to I-5 South. Adding Blake STreet is now another way to reduce time to get to destinations for NON RESIDENTS of Tualatin. - Noise. WES has me up at 6am in the morning. The additional traffic will be adding additional noise to at one time was a quiet peaceful area to live. As a Resident of this community I continue to see decisions that negatively impact our neighborhood and property values. Again, another one is being proposed. The City needs to see it from the Residents view point. Its our families and our investments. I thought our City Goverment is to look after our welfare?? I am a Volunteer Head Coach for Tualatin Baseball and have a State Playoff Baseball Game this evening, same time. Thus the email due to I will not be able to attend. Any feedback is appreciated.
9.	July 22, 2010	Laura Russell	I am responding to you due to I will be unable to attend this evenings meeting for the SW Tualatin Concept Plan Open House. **I am OPPOSED to the Future Blake Road Street that connects the proposed developement to the Low Density Residential.** I live at XXX XXX for over last 10 years. During this time a forest has been removed, and Public Train (WES) is now operating, and now a proposed street going into our neighborhood. These ALL have had a negative impact on our wildlife, noise, property values, and community. Wildlife - Still deer crossing located in the area where development is to happen. Deer were there just last week. New Road dramatically effects their habitat. - Current easement where Blake Street to happen, deer and other wildlife use/habitat. - We continue to press on the limited green space this community apparently use to pride itself on, not continue to reduce and eliminate it. Business - There is so much commercial realestate vacant, thus seems odd that such a commercial project makes sense at this point. - Where are funds coming from to do this developement and why is it a priority, and why is the Blake Street Addition part of it. Shouldnt Goverment money should be used on positive projects, not ones the decline our communities value. Shouldnt they have **Real Value** for the residents of Tualatin. Neighborhood - Since WES has been operating, my property value has declined dramatically. This project will again subject me to a Tualatin Decision that will effect the value of the home I purchased. - It already takes 10 minutes to get through NON TUALATIN Resident traffic to get to I-5. Additional Traffic will increase with this, potentially significantly.

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10.	July 22, 2010 (Open House)	Greg Perez	We are concerned about the expansion or setup on Blake Street. A bridge over the rail road tracks would destroy the current buffer to our neighborhood with large truck traffic. We understand McLane Foods is a distributor for Walmart and other large volume stores. The present bugger to the industrial park and the rail, are just right; truck access to Blake would be counter to rail
11.	July 22, 2010 (Open House)	Susan Gudmundson	Absolutely opposed to the Blake Street access. Do not build a bridge over the railroad. There are other solutions that will not impact the residential community.
12.	July 22, 2010 (Open House)	Robert Jensen	My home is in Hedges Park. I strongly feel the proposed road development (Blake St) and elevated overpass bridge crossing the railroad tracks would significantly and adversely impact my quality of life and property values. I would support a one lane access road to the service the railroad tracks, but nothing more substantial.
13.	July 22, 2010 (Open House)	Mike Loftin	Don't allow access along "future Blake" road and across the RR tracks. Keep any and all industrial traffic access off Blake, 105th and 108th. Preserve all trees along RR and preserve all lakes and streams. Compensate all residential property owners within ¼ miles of Blake to reflect significant impact to property values.
14.	July 22, 2010 (Open House)	Ann Loftin	It is a bad idea to extend Blake Street across the railroad tracks. This would only bring traffic (trucks…) through residential neighborhoods. It would be much more effective to funnel these onto Tualatin-Sherwood. Property values would be greatly reduced.
15.	July 22, 2010 (Open House)	Peter Gall	I'm opposed to future Blake Street proposal.
16.	July 22, 2010 (Open House)	Name not legible	The bridge is such a bad idea. None of you obviously live near a road with trucks.
17.	July 22, 2010 (Open House)	Karen Gall	I'm opposed to the Blake St. proposal.
18.	July 22, 2010 (Open House)	Linda Onheiber	Oppose future construction of Blake Street.

19.	July 22, 2010 (Open House)	David Onheiber	I oppose the future construction of Blake Street that will allow car and truck traffic access from/to the industrial and mixed use areas. There is already too much noise and traffic in this area, especially on 105th.
20.	July 22, 2010 (Open House)	Rita Perez	I am vehemently opposed to the part of the Concept Plan that includes extending Blake Street west to 105th. This extension would require an overpass directly adjacent to my property (XXXX Byrom Terr) which would literally be above our house and in our backyard. An alternative would be to construct a road from Avery through the Industrial Park (Tri-City) to 115th. This plan would not only alleviate traffic on 105th but would not impact our home values, quality of life and our existing neighborhood. Please don't destroy our neighborhood and our financial investment.
21.	July 22, 2010 (Open House)	Scott Campbell	I am strongly opposed to extending Blake Street from 115th to 108th. I would like to see an alternative investigated to run a road through the industrial park off of Itel. The first step would be to stop at the industrial park. Then in the future, extend through the park to 105th. The big issue with Blake is it requires an overpass, which destroys home values which today are $750 k and up.
22.	July 22, 2010 (Open House)	Scott Campbell	I am very much against the extension of Blake from 108th to 115th over the railroad tracks. This creates a huge hardship for the homes in the surrounding area. In my case, my backyard would look directly at an overpass and the value of my home would be devastated. I am also concerned about the truck traffic and overall traffic which would funnel into the neighborhood. Commercial and residential need to maintain a buffer and extending Blake in this manner destroys that buffer. Please consider alternatives to extending Blake, especially since it must go over or under the tracks.
23.	July 22, 2010 (Open House)	Dondal J Defler	Potential Urban Reserve: my primary concern is the extension of Blake St. This future site change is unnecessary and provides an access for far too few people to be cost worthy. It would feed too many cars onto an already plugged road system. Also, building a bridge as explained is simply a pipe dream with no cash for development.
24.	July 22, 2010 (Open House)	Rosalie Defler	Blake St. Access Not Needed; Do not want access road t Blake St. into Industrial District. People in Indian Woods were not send recent info; Our info came by word of mouth from Hedges area neighbors. We live on corner 105th and Paulina "Bad Corner" large vehicles shake house when hit bottom of road at corner.
25.	July 22, 2010 (Open House)	Judy Elli	Do not extend Blake from 105th. We have enough noise from WES and freight trains at night, gun club, Tigard Sand and Gravel blasting. We do not need our home values decreased by additional traffic and noise.
26.	July 22, 2010 (Open House)	Tom Oberg	I live on 109th Terrace but the back of my house is on 108th. Right now, when big trucks come down 108th our house shakes! Other concerns: 1) Too many trucks now- this will bring more! 2) Reduced home values 3) Safety concerns from additional traffic Please contact me
27.	July 22, 2010 (Open House)	Carol Beaulieu	We are opposed to any access via Blake Street. There are several alternatives routes that would be much less expensive to develop and would not impact residential neighborhoods.
28.	July 22,	Phil Beaulieu	There is no need to access Blake St. with a 24' high bridge when there

	2010 (Open House)		is already a railroad crossing in the Tri County Industrial Park. It does not make sense to spend the additional monies when there are many other options available that would minimally impact existing industrial areas with affecting one of Tualatin's premier neighborhoods.
29.	July 22, 2010 (Open House)	Tricia Windhorn	No future Blake St.! Create a future industrial Way, Industry is who the road is for. Leave residential areas out of the plan.
30.	July 22, 2010 (Open House)	Kristi Johnson James	I oppose the extension of Blake St.
31.	July 22, 2010 (Open House)	Eric Pitt	I am critically opposed to the extension of Blake St across the railroad tracks. So far any 'proposed' plan would have a significantly negative impact on our neighborhood as well as surrounding neighborhoods. I am writing to formally document my opposition to this proposal and to ask for alternative. (1) Eliminate Blake Street off the map (2) find another non-impactful route. Please hear our voices and help us maintain the neighborhood and the significant investment we have made into our homes. I am always available at the email address below.
32.	July 22, 2010 (Open House)	Betty Helenius	I oppose the Blake Street extension. The street is too narrow, and it borders on a sharp 90 degree curve. Too much traffic already.
33.	July 22, 2010 (Open House)	Donna Kreitzberg	I oppose the extension of Blake to 115th; keep industrial traffic out of the residential neighborhoods; don't let SW Tualatin-Sherwood Rd traffic cut through to 108th; waste of government money.
34.	July 22, 2010 (Open House)	Scott Trumbo	Blake St. Connector is a bad plan. Costly prime real estate, high density housing and greenway development make this a bad choice.
35.	July 22, 2010 (Open House)	Alan Fernstein	Please put any bridges, connector roads, etc that have to cross the railroad tracks through the commercial area instead of near residential areas.
36.	July 22, 2010 (Open House)	Marty Campbell	The extension of 108th/105th to Blake is very concerning. Industrial and residential traffic will be extensive through the greater Ibach community. The "conceptual" bridge that would possibly be built in my backyard is unacceptable and will also bring my home value down. I want to live in Tualatin and I want to stay here. If you build this I may possibly leave this community. I oppose Blake!
37.	July 22, 2010 (Open House)	Steve Windhorn	Suggest the city re-look at the Blake Street extension and rout the street thru the existing industrial park.
38.	July 22, 2010 (Open House)	Kathy Newcomb	There are mature trees to be protected? Good (green area) We (in N. Tualatin) had a very bad experience and felt under attach as a neighborhood. It was a great surprise to read in a letter to Metro that the Councils' policy is to protect neighborhoods!! This should be an active policy. Blake St. could be badly damaged.
39.	July 22, 2010 (Open	Jennifer Pitt	The extension of Blake St. past the railroad tracks is a ridiculous idea. There is not enough room to build a road and if you did my fence would be looking at the road. If elevated, due to the railroad tracks, I would

	House)		see it form my deck. There are many other options (i.e. Itel industrial, etc) I have attached 32 signatures strongly opposed to this idea. *(List of signatures included as Public Comment Attachment1)*
40.	July 22, 2010	Marty Campbell	Hi, I wanted to thank you for hosting the open house you had tonight regarding the Southwest Tualatin Concept area. As I mentioned tonight at the open house, my objection to the Blake expansion through to 105th/ 108th is based on how it will negatively impact the greater Ibach neighborhoods and overall Southwest Tualatin residential neighborhoods. Not only will the industrial traffic be large but the surrounding areas such as Sherwood and Bull Mountain will see this as an easy cut through. The traffic, noise and congestion impact it will have on 108th and surrounding streets, will be astounding and the quality of life will be drastically diminished in this residential area. I happen to live alongside the easement in which the Blake Road could be possibly placed. The thought of a 140 span bridge that is 30-40 feet tall and 60-80 feet wide, with bright lighting seems unimaginable. This easement is a place in which wild life is active. We need to think about how much disruption is acceptable in our environment as well. I purchased my home here in Tualatin with the thoughts of a peaceful neighborhood within which I could raise my two children and let them attend an amazing HS. Now the possibility of a major road (BRIDGE) behind my beautiful home makes me feel absolutely sick. The time, energy, money and love that has gone into my Hedges Park home is very high. I planned on living here a very long time because I have an investment in being here and love this area. Now, it makes me question the investment the city and county has in me, a tax paying resident. In fact we are one of the highest in the Tualatin area. I am a supportive individual of progression but there is a delicate balance in having commercial/industrial roads mix too closely with residential developments. Please feel free to contact me via email or phone at any time. I invite you to see our area and how beautiful it is without the Blake expansion disrupting our neighborhood. I think you will agree that the area is just not fit for such a project and that the impact it will have on your Tualatin residents will be devastating to their home values and quality of life. Thank you so much for listening to why I object to the Blake Road expansion and I look forward to you visiting. Sincerely, Marty Campbell
41.	July 23, 2010	Robert J Jensen Jr., Patricia J Jensen, Robert J Jensen III	Ms. Hurd-Ravich, I attended the open house last night to learn more about and express my opinion on the proposed Blake Street extension. The three of us living in our family home (all voters) are united in feeling that this project, particularly the inclusion of a bridge over the railroad tracks, would drastically and adversely impact our quality of life and the value of our property. We would support a one-lane access road extension of Blake Street to enable servicing of the railroad tracks, but nothing

			more substantial. It is incredible to us that such a massive road/bridge project could even be envisioned just outside the back property lines of our development. Please convey our feelings and concerns to the appropriate officials involved with this project. Thank you. Sincerely, Robert J. Jensen Jr. Patricia J. Jensen Robert J. Jensen III
42.	July 23, 2010	Rita Perez	Dear Aquilla, Thank you for hosting the SW Tualatin Concept Plan Open House last night. My husband, Greg, and I really appreciated meeting and talking to you about the Concept Plan. You were very informative and patient in hearing our concerns. As we explained our objection to the plan is not in the development of a commercial/industrial park, but the Blake expansion west of the railroad connecting to 105th St. We live directly abutting the easement. The proposed expansion would require that a required overpass be constructed on that portion of the road due to the railroad crossing. Having an expansion bridge 30-40 feet tall and 60-80 feet wide essentially in our backyard is devastating. The easement is the only buffer between our Hedges Park neighborhood and the already existing industrial park. This expansion would eliminate that buffer, create a high noise level, pollution, safety issues and significantly devalue our property. Our quality of life would most certainly be adversely impacted. It has always been our understanding that the City of Tualatin values a homogeneous melding of residential and commercial living and working together. This plan certainly is not taking the establish residential community into consideration. The Hedges Park/Hedges Creek and Ibach neighborhoods are one of the most expensive in the City of Tualatin. We have all invested vast sums of money, time and love into our neighborhood. We are an asset to the City of Tualatin and take great pride in our homes. I ask the city to permanently shelve that part of the Concept Plan that would extend Blake Street and drastically change our established quality of life. Please contact me anytime and come see first hand my home and those along the easement. It would give you a good perspective of the issues I have raised. Thank you again for listening to me last night and for reading this letter of objection. Sincerely,

			Rita Perez
43.	July 23, 2010	Jennifer Hughes	Hi Doug, Thanks for the thorough reply. I stopped by the open house last night and was able to ask several questions. I have to admit I'm torn on this one. As a planner (and driver!) myself, I'm sensitive to the need for a street grid, and I've known since before I purchased my home on Willow Street that the Blake Street right-of-way existed and the TSP called for straightening the curves on 108th/105th. However, as a resident and property owner, I'm concerned about traffic volumes on 108th and related safety and livability issues. I understand that the traffic analysis for the Concept Plan used modeling done for the RTP and the I-5/99W connector. Did that modeling (or additional modeling) evaluate what the Blake Street extension would do to traffic volumes on 105th/108th? Diverting existing 108th traffic to Blake instead of Avery/T-S Road is one thing, but increasing volumes on 108th due to the use of Blake as an alternative east/west route causes me more heartburn! I am sympathetic to the concerns of property owners immediately south of the Blake ROW regarding noise and exhaust, plus the aesthetic impact of the railroad bridge. Also, I wonder whether any traffic flow benefits of the extension are worth the monetary cost of construction, especially with a railroad bridge. Finally, I'm concerned about environmental impacts to wetlands, trees, etc. I haven't walked down to the Blake Street ROW but I plan to. Based on driving by, I wonder whether topography is a significant constraint to it's eventual development. There's quite a grade change between the residences on the south and the existing industrial park to the north. I plan to put my concerns in a letter to the City Council, and would appreciate your response to the question on the traffic modeling. It's been many years ago now, but I served a term on TPAC and remember you from those days. Thanks, Jennifer
44.	July 23, 2010	RoeAnn and Tom Oberg	Our sentiments exactly. Thank you for writing this well-thought out letter and thank you to the city for giving us a chance to express our concerns. We hope that you seriously consider the negative implications of a Blake St. extention. RoeAnn and Tom Oberg Jul 23, 2010 01:30:25 PM, wrote: >Dear Aquilla, > >Thank you for hosting the SW Tualatin Concept Plan Open House last night. My husband, Greg, and I really appreciated meeting and talking to you about the Concept Plan. You were very informative and patient in

			hearing our concerns. > >As we explained our objection to the plan is not in the development of a commercial/industrial park, but the Blake expansion west of the railroad connecting to 105th St. > >We live directly abutting the easement. The proposed expansion would require that a required overpass be constructed on that portion of the road due to the railroad crossing. Having an expansion bridge 30-40 feet tall and 60-80 feet wide essentially in our backyard is devastating. The easement is the only buffer between our Hedges Park neighborhood and the already existing industrial park. This expansion would eliminate that buffer, create a high noise level, pollution, safety issues and significantly devalue our property. Our quality of life would most certainly be adversely impacted. > >It has always been our understanding that the City of Tualatin values a homogeneous melding of residential and commercial living and working together. This plan certainly is not taking the establish residential community into consideration. > >The Hedges Park/Hedges Creek and Ibach neighborhoods are one of the most expensive in the City of Tualatin. We have all invested vast sums of money, time and love into our neighborhood. We are an asset to the City of Tualatin and take great pride in our homes. I ask the city to permanently shelve that part of the Concept Plan that would extend Blake Street and drastically change our established quality of life. >Please contact me anytime and come see first hand my home and those along the easement. It would give you a good perspective of the issues I have raised. Thank you again for listening to me last night and for reading this letter of objection. >Sincerely, >Rita Perez
45.	July 25, 2010	Scott Campbell	Hi Aquilla, Thank you for listening and coming up with an alternative plan for the Southwest Concept that betters serves the residential neighborhoods bordering the new concept plan area. Clearly, I am strongly in favor of alternative IV as I believe it serves the industrial traffic requirements without significant impact to our community. It also greatly reduces the overall cost of the project by eliminating a very expensive overpass and road.
46.	July 26, 2010	Patricia Huntting	**Kaaren and committee:** **Please do not develop the Blake Street extension, it makes no sense to us.** **It is directly across the back of my home and I am the closest to the railroad tracks.** **It would completely disrupt the whole neighborhood and take the**

			house values further down. **I do not want to lay in bed and watch the semi trucks going by up in the air. Dirt, exhaust, noise, etc. would be present.** **Any manner of privacy would be completely gone. No one in our neighborhood is in favor of this change.** **See you tonight.** PLEASE - PLEASE - DO NOT DO THIS!!
47.	July 26, 2010	Eric and Jennifer Pitt	Dear Councilors and city officials, I am a concerned citizen that lives next to the existing SW Blake & 108th. My fellow neighbors and I have spent numerous hours researching the potential for the Blake St. extension to come through our neighborhood. I wanted to write and express my family's opposition to any extension of SW Blake west to 115th. I am sure my fellow neighbors have written as well to express their opinions and objections to this proposed expansion. However, I am not sure anyone associated with this project has a keen understanding of how it would impact those homes (mine included) that border the proposed Blake St. expansion. We have heard and seen those we made direct contact with shaking their heads in understanding, but in order to truly understand the significance of the impact it would be ideal, if not preferred, to have someone come out and see it from our perspective. It would certainly resonate with those who could come out and perhaps offer some realism to our opposition. The impact to our greater surrounding neighborhood would be very large as well. From a substantial increase to road traffic, noise, pollution, litter, vagrants, foot traffic to a massive structure and overpass that will engulf the neighborhood, to a removal of over 25 evergreen trees (some of which are greater than 50ft tall), to the destruction of a deer habitat and finally to an increased risk to families and pedestrians walking the neighborhood and making their way to Ibach park. Finally, the funding for this proposed connection is going to be millions of dollars. I am sure there are other initiatives that would serve the community of Tualatin much better if diverted elsewhere. The impact of extending Blake St. would be far greater than the benefit. We ask that you consider alternate roads for an extension, and leave Blake as is or not make it a connecting road across the RR tracks. Please help to keep industrial traffic in the industrial development and not bring that traffic into our safe neighborhoods where a large number of children reside and play. Thank you for taking the time to consider my family and our thoughts.

48.	July 26, 2010	Patricia H. Huntting	Please do not develop Blake St. I am the closest to the road and the tracks. Please!!
49.	July 23, 2010	Email correspondence between Aquilla Hurd-Ravich, Senior Planner City of Tualatin, Cathy Holland, Citizen and Doug Rux, Community Development Director City of Tualatin	At the Open House we heard from residents concerns over Blake Street connecting between 108th Avenue and 115th Avenue, specifically any connection of this roadway from the railroad tracks to 108th. In response to the input I directed our consultants today to evaluate and prepare memorandums analyzing the impacts of eliminating Blake Street between the railroad track and 108th from the Concept Plan. This includes transportation impacts to the SW Concept Plan and cost reductions if Blake Street is not constructed between the railroad tracks and 108th. In addition I directed that the improvements identified in Option III to the curves between 105th and 108th be removed from the cost estimate in the evaluation because if there is no Blake Street connection to 108th there is no direct link to funding options because of no direct connection to the SW Concept Plan. We have coined this new information as Alternative IV The project web site has new information which is Alternative IV showing a map the shows Blake Street as a cul-de-sac terminating on the west side of the railroad track and shows no transportation improvements east of the railroad tracks. The consultants are doing the analysis of the impacts based on the above paragraph. I do not have the web site address at hand but I believe you were on the email list communication distributed earlier today that has that link showing a graphic of Alternative IV. With the new information it will be able to compare Alternatives III and IV. That information will be given to TPAC. The information should be available on July 28 as Aquilla indicated and we will post. The info to the web and send a notification to those who attended the Open House and have us email addresses that the information is available. In response to inquiry about language contained in the Sherwood Tonquin Plan I have forwarded your email to their staff. As we did not write that text I want to get a response from Sherwood on what they think they were saying. Hope this helps. If you have further questions please direct them to me. Have a good weekend. *(Doug Rux)* --- **From**: c.holland73@comcast.net <c.holland73@comcast.net> **To**: AQUILLA HURD-RAVICH **Cc**: Doug Rux **Sent**: Fri Jul 23 20:25:51 2010 **Subject**: Re: Southwest Tualatin Concept Plan- No Blake Street Connection Aquilla - I am having a hard time seeing it. Your earlier email indicated that after receiving input about the

			Southwest Concept Plan Alternative III, it was clear that a Blake Street extension is not viewed favorably by the residents of the neighborhood abutting the plan area. In response, staff is working with our consultants to prepare an Alternative IV concept plan map that eliminates the Blake Street connection from the railroad tracks east to SW 108th Avenue and any improvements to the curve at SW 108th to Blake Street to SW 105th. If Alternative IV does not proposed to eliminate the future portion of Blake Street, how does that work if it eliminates the Blake Street connection from the railroad tracks east to SW 108th Avenue and any improvements to the curve at SW 108th to Blake Street to SW 105th? Is there a map or chart I can look at? It could help us understand how the words fit the street map. Thanks, Cathy ----- Original Message ----- From: "AQUILLA HURD-RAVICH" <AHURD-RAVICH@ci.tualatin.or.us> To: "c holland73" <c.holland73@comcast.net> Cc: "Doug Rux" <drux@ci.tualatin.or.us> Sent: Friday, July 23, 2010 5:04:32 PM Subject: RE: Southwest Tualatin Concept Plan- No Blake Street Connection Cathy- To clarify, Alternative IV does not propose to eliminate the future portion of Blake Street in the Southwest Concept Plan Area. Alternative IV only proposes to eliminate the connection from the existing Blake Street in the residential neighborhood to the Southwest Concept Plan Area and thereby eliminating the need for a required grade separated crossing. Therefore the collector level roadway referred to in the Tonquin Employment Area could connect with a future roadway in the Southwest Concept Plan area. However, such a roadway would not connect to the residential neighborhood to the east. Does that make sense? **Aquilla Hurd-Ravich** Senior Planner| Community Development Department **From:** c.holland73@comcast.net [mailto:c.holland73@comcast.net] **Sent:** Friday, July 23, 2010 4:40 PM **To:** AQUILLA HURD-RAVICH **Cc:** Doug Rux **Subject:** Re: Southwest Tualatin Concept Plan- No Blake Street Connection Aquilla - Here is what we pulled off - it looks a little different than your email. Does this clarify my question? Is this incorrect? Cathy

			Sherwood's Concept Plan Report on page 21 shows Blake Rd Extension and the their "Internal Connector" to the west of it. See page 14 of the their document: "The transportation analysis performed as part of the second phase concluded that development in the Tonquin Employment Area will require an east-west connection from SW 124th Avenue to SW Oregon Street through the site. This collector-level roadway is a vital component of future development because it would help to facilitate east-west mobility through the area and would serve as a parallel route to SW Tualatin-Sherwood Road by connecting to SW Blake Street in the Southwest Tualatin Concept Plan area. Beyond the internal circulation function it provides, this collector is shown to provide an overall benefit to the existing transportation system, in particular by reducing future traffic demand on SW Tualatin-Sherwood Road. All three of the Preliminary Concept Alternatives included this necessary east-west collector. The conceptual alignment for this roadway is shown on Figure IV-1." Sherwood's page... http://www.sherwoodoregon.gov/tea-concept-plan-pa-09-03 ----- Original Message ----- From: "AQUILLA HURD-RAVICH" <AHURD-RAVICH@ci.tualatin.or.us> To: "c holland73" <c.holland73@comcast.net> Cc: "Doug Rux" <drux@ci.tualatin.or.us> Sent: Friday, July 23, 2010 4:32:53 PM Subject: RE: Southwest Tualatin Concept Plan- No Blake Street Connection Cathy- Sherwood's Tonquin Employment Area shows a collector street from SW 124th to Oregon Street. This collector is to serve their 300 acre area. We have just shared this information with Sherwood today. Once the analysis is complete we will discuss this alternative and the analysis with the City of Sherwood. Thank you, **Aquilla Hurd-Ravich** Senior Planner| Community Development Department **From:** c.holland73@comcast.net [mailto:c.holland73@comcast.net] **Sent:** Friday, July 23, 2010 4:24 PM **To:** AQUILLA HURD-RAVICH **Subject:** Re: Southwest Tualatin Concept Plan- No Blake Street Connection Aquilla - How will this change work with the Sherwood Concept Plan? They have Blake as a major street. Thanks, Cathy Holland ----- Original Message -----

			From: "AQUILLA HURD-RAVICH" <AHURD-RAVICH@ci.tualatin.or.us> Sent: Friday, July 23, 2010 4:11:44 PM Subject: Southwest Tualatin Concept Plan- No Blake Street Connection Thank you for attending the Southwest Concept Plan Open House meeting last night. A crucial part of the concept planning process is receiving feedback from the residents who will be affected the most by this plan. The comments we received last night and throughout this process are welcomed and will be shared with the Tualatin Planning Advisory Committee (TPAC) and the City Council. After receiving input about the Southwest Concept Plan Alternative III, it is clear that a Blake Street extension is not viewed favorably by the residents of the neighborhood abutting the plan area. In response, staff is working with our consultants to prepare an Alternative IV concept plan map that eliminates the Blake Street connection from the railroad tracks east to SW 108th Avenue and any improvements to the curve at SW 108th to Blake Street to SW 105th. Alternative IV shows a future Blake Court as a local cul-de-sac between the proposed SW 115th Avenue and the Portland & Western Railroad tracks. Alternative IV and the accompanying technical analysis are being developed to compare against Alternative III. A discussion of both options will reviewed by the Southwest Concept Plan Technical Advisory Committee (TAC) and TPAC. The technical analysis, traffic analysis and capital costs, reflecting these changes will be available for review by July 28, 2010 via the City website. The TAC will reconvene on July 30, 2010 at 10 am in the Council Chambers to discuss the analysis and the comparison. TPAC will review the material and make a recommendation to the City Council on August 3, 2010 at 7pm in the Council Chambers. Please visit the Southwest Concept Plan webpage to review a draft map of Alternative IV. http://www.ci.tualatin.or.us/departments/communitydevelopment/planning/longrange/SWTualatinConceptPlan.cfm Thank you, **Aquilla Hurd-Ravich** Senior Planner City of Tualatin | Community Development Department 503.691.3028 | www.ci.tualatin.or.us Please consider the environment before printing this email. DISCLAIMER: This email is a public record of the City of Tualatin and is subject to public disclosure unless exempt from disclosure under Oregon Public Records Law. This email is subject to the State Retention Schedule.
50.	July 29, 2010	Jan and Mike Carpenter	This is our vote and opinion on the purposed Plan III Blake Expansion…no way. Thank you for your consideration. Jan & Mike Carpenter

The following people are **opposed** to the extension of Blake Avenue between 108th and 115th street in Tualatin, OR as part of the Southwest Concept Plan. Extending Blake creates a hardship for the residential neighborhood and diminishes the quality of life for the residents. It also destroys any buffer between commercial and residential areas and encourages commercial traffic to be mixed with residential traffic. We find this an unacceptable solution. We believe there are alternative solutions that more appropriate for our community.

#	Name	Address	Phone #	eMail	Signature
1	Jennifer Pitt	10915 SW Byron Terr	8857928	ericjedi@aol.com	Jennifer Pitt
2	Maxine Jones	21538 S.W 109th	885-1628	tshorese juno.com	Maxine Jones
3	Stephen Jones	21538 SW 109th	885-1628	TSJhorse@juno.com	
4	Tricia Windham	10920 SW Byron Terr	503.702.6587	tricawindham.aol	
5	Steve WINDHORN	10920 SW BYRON TR	503 702-8600	SWINDHORN STEVE@AOL.COM	
6	Sonnet Blanchat	10970 SW Byron	503-367-0	Sonnetbl@gmail	
7	Jeanne Pellatz	11000 SW Byron	692-5901	jepellatz@comcast.net	
8	Joy Jim Boryska	21540 SW 110th Pl	486-5537	joyboryska@gmail.com	Joyce Boryska
9	Cecil H Pattison	21875 SW Feller	692-0166	whpattison@comcast	
10	Scott Trumbo	10780 SW Willow	885-9182	trumbo@comcast.net	
11	Kay Blanchat	10785 SW Willow	656-63	kay.brandre@tyson.com	
12	Roman Makarowsky	10775 SW Willow	6120929	Roman Makarowsky@comcast.net	
13	N/A	10755 SW Willow	6912107		N/A
14	JOE MCMILLEN	10725 Willow St	5036911280	rjmemillen@msn.com	
15	Amy Pate	10715 SW Willow	5036911988	amyp@bonnidev.com	Amy Pate
16	John Ferguson	21760 SW 106th	5036924748	johnferguson@verizon.net	
17		10730 SW Willow			
18	PATRICK Crowell	10730 SW Willow	503-692-0539	pc.crowell@	Patrick E Crowell
19	SUSAN CROWELL	10730 SW WILLOW	5036920539	comcast.net	Susan Crowell
20	Kelly Anderson	10750 SW Willow	503 691-6648	lahainamaui@hotmail.com	
21	Carol Beaulieu	21735 SW 109th Ter	(503) 6129700		Carol Beaulieu
22	Dick Cudmundson	21665 SW 109th Ter	(503) 691-2330	siouxsee@aol.com	
23	Micky Stewart	10735 SW Willow	503-691-1419	mickystew@comcast.net	Micky Stewart
24	Cheryl Stewart	10735 SW Willow	503-691-1419	Same	
25	Andrew Qin	21560 SW 109th	~~503-358-8~~ 503-692-1628	qinh@onid.orst.edu	

The following people are **opposed** to the extension of Blake Avenue between 108th and 115th street in Tualatin, OR as part of the Southwest Concept Plan. Extending Blake creates a hardship for the residential neighborhood and diminishes the quality of life for the residents. It also destroys any buffer between commercial and residential areas and encourages commercial traffic to be mixed with residential traffic. We find this an unacceptable solution. We believe there are alternative solutions that more appropriate for our community.

#	Name	Address	Phone #	eMail	Signature
26	Meg Lewis-Price	21850 SW 109th Terrace	503-612-0800	meglewisprice@hotmail.com	Meg Lewis-Price
27	Marty Campbell	10925 SW Byron	503 691 1408	marty.campbell@comcast.net	Marty Campbell
28	Jasmine Miller	21676 SW Dakota	(503) 885-8821		Jasmine Miller
29	Jazzy Suyematsu	9817 SW Coquille	503/691 5997		Jazzy Suyematsu
30	Gabrielle Lerren	9378 SW Ochoco Ct.	(503)691-8190		Gaby Lerren
31	Kelly Skoglund	10619 SW Bannock Ct	503 706 7698		Kelly Skoglund
32	Christy Dirodi	14730 SW 139th	5033579559		Chris Dirodi
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HOW ARE WE DOING?

18880 SW Martinazzi Avenue, Tualatin OR 503.692.2000 www.ci.tualatin.or.us

Your Comments are Important!

Neighbors oppose extending Blake to 115th

Also - so do those neighbors - 82 signatures

TELL US ABOUT YOUR VISIT:

Date: _____ Location of Your Visit: _____

Who helped you? _____

Did you get what you needed? _____ Yes _____ No

How would you rate our service?

_____ Excellent _____ Satisfactory _____ Needs Improvement

MAY WE CONTACT YOU?

Name: _____

Phone: _____

Email: _____

Best time to reach you? _____

July 21, 2010

Neighbors OPPOSE the extension of Blake Avenue to 115th Street

We, the undersigned, strongly oppose the extension of SW Blake Avenue to 115th Street for the following simple reasons:

1. There is no need for this extension of SW Blake to 115th; the development can be served off Tualatin-Sherwood via 115th or 124th;
2. The extension will create a glaring eye-sore and cause horrendous traffic noise in Hedges Park residential neighborhood;
3. The extension will destroy the existing grass pathway that serves as the required buffer between commercial and residential areas; and
4. The extension will cause the values of the homes in Hedges Park to drop significantly

#	Name	Address	Signature
1	Chris Shell	11040 SW Byrom Terrace	
2	Doug Shell	11040 SW Byrom Terrace	
3	Caydan Russell	11075 SW Byrom Terrace	
4	Laurie Buchler	11080 SW Byrom Terrace	
5	Michael Buchler	11080 SW Byrom Ter	
6	Laura Russell	11075 SW Byrom Ter.	
7	Nick Meenaan	21820 S.W. Fuller DR	
8	David Thomas	21810 S.W. Fuller DR	
9	Patricia Thomas	21810 SW Fuller Dr	
10	Mark Molau	21788 SW Fuller Dr. Tualatin OR 97062	
11	Elena Molau	21788 SW Fuller Dr Tualatin	
12	Tom Leishman	21777 SW Fuller Dr Tualatin OR 97062	
13	Monica Michael Wolfley	21783 S.W. Fuller Dr.	
14	Matthew Wachsmann	21783 SW. Fuller Dr.	
15	Tony Carlson	21743 SW Aspen Pl.	
16	Cameron Colby	21717 SW Aspen Pl.	
17	Kyle Beckman	21653 SW Aspen Pl	
18	Brandi Beckman	21653 SW Aspen Pl	
19	Brock Mattila	21601 SW Aspen Pl	
20	Tana K Richmond	21699 SW Aspen Pl	
21	Jake Richmond	21699 SW Aspen Pl	
22	Darryl Arthur	11039 SW Keller St	
23	Pat Jensen	11055 SW Byrom Ter	
24	Robert J. Jensen	11055 SW Byrom Ter	
25	Donna Kreitzberg	PO Box 3242 Tualatin OR 97062	

Neighbors OPPOSE the extension of Blake Avenue to 115th Street

We, the undersigned, strongly oppose the extension of SW Blake Avenue to 115th Street for the following simple reasons:

1. There is no need for this extension of SW Blake to 115th; the development can be served off Tualatin-Sherwood via 115th or 124th;
2. The extension will create a glaring eye-sore and cause horrendous traffic noise in Hedges Park residential neighborhood;
3. The extension will destroy the existing grass pathway that serves as the required buffer between commercial and residential areas; and
4. The extension will cause the values of the homes in Hedges Park to drop significantly

#	Name	Address	Signature
26	Annelle Brewer	11035 SW Byron Ter	Annelle Brewer
27	KENT BREWER	11035 SW BYRON TER	Kent A Brewer
28	Patricia Nusszbaum	21585 SW 110th Place	Patricia Nusszbaum
29	Jerry Nusszbaum	21585 SW 110th Place	Jerry Nusszbaum
30	Pat Huntley	21920 SW 110th Pl	Pat Huntley
31	HAROLD PETERSON	11020 SW BYRON	Harold R Peterson
32	Amy Loftin	11015 SW Byrom	Amy Loftin
33	Mike Loftin	11015 SW Byrom	Mike Loftin
34	Tony Hunt	PO Box 384	Tony Hunt
35	Chris Marsh	18495 Rose Ct	Chris Marsh
36	Jeanne E. Pellatz	11000 SW Byron Ter.	Jeanne E. Pellatz
37	Diane M. Geyer	11060 SW Byrom Ter.	Diane M. Geyer
38	Jeffrey Geyer	11060 SW Byrom terr	Jeffrey Geyer
39	Mary Pattison	21875 SW Fuller	Mary L Pattison
40	William Pattison	21875 SW Fuller	William A Pattison
41	KAREN ZIMEK	21840 SW FULLER	Karen Zimek
42	Tammy Tillema	21880 SW Fuller	Tammy Tillema
43	Anne Lynett	21900 SW Fuller	Anne Lynett
44	DANIEL DOWD	10985 SW EVANS CT	Daniel Dowd
45	Tonya Quiner	10980 SW Evans Ct	Tonya Quiner
46	Laura Russell	22026 SW Fuller Dr	Laura Russell
47	Patricia Markensen	22017 SW FULLER DRIVE	Patricia Markensen
48	Don Kozlowski	10960 SW Koller ST	Don Kozlowski
49	Kat Koller	10960 SW Koller ST	
50	Evan Esau Evan Esau	10942 SW Koller St	Evan Esau
51	Michelle Esau	10942 SW Koller St	Michelle Esau

Neighbors OPPOSE the extension of Blake Avenue to 115th Street

We, the undersigned, strongly oppose the extension of SW Blake Avenue to 115th Street for the following simple reasons:

1. There is no need for this extension of SW Blake to 115th; the development can be served off Tualatin-Sherwood via 115th or 124th;
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3. The extension will destroy the existing grass pathway that serves as the required buffer between commercial and residential areas; and
4. The extension will cause the values of the homes in Hedges Park to drop significantly

#	Name	Address	Signature
52	Jana Hudgins	20695 SW 98th Ave	
53	MATTHEW GARLAND (MATTHEW GARLAND)	20990 SW 108th st.	
54	Jim Carr	21160 SW 108th Ave	
55	RICHARD Robinson	10356 SW Susquehanna Dr	
56	Rita Robinson	10336 SW Susquehanna Dr.	
57	RUTH ROBINSON	10336 SW Susquehanna Dr.	
58	Herb Book	10440 SW Susquehanna	
59	Kathleen Young	10488 SW Susquehanna	
60	Sandra Wahlstrom	10499 SW Susquehanna	
61	Jim Nyhammer	20999 SW 104th	
62	Ronald Dennerson	20916 SW 104	
63	Randy Frost	20869 SW 104th Ave.	
64	Paul Luvaas	20888 SW 104 Ave	
65	Maia Luvaas	20888 SW 104th Ave	
66	CRAIG STOVERHACKER	20916 SW 104th AVE	
67	Kari Johnson	10413 SW Moratoc Dr.	
68	LARRY SHERWOOD	10432 SW MORATOC	
69	John Watson	22215 SW 105	
70	Mark Kuth	10480 SW Paulina DR	
71	Don Deffer	10485 SW Paulina DR	
72	Rosalie DeHerr	10485 SW Paulina DR	
73	LINDA OMHEIRER	10465 SW PAULINA DR.	
74	Heather Peterson	10312 SW Moratoc Dr.	
75	Todd Peterson	10312 SW Moratoc Dr.	
76	Justin Ahrenkiel	21255 SW 104th Terr	

Neighbors OPPOSE the extension of Blake Avenue to 115th Street

We, the undersigned, strongly oppose the extension of SW Blake Avenue to 115th Street for the following simple reasons:

1. There is no need for this extension of SW Blake to 115th; the development can be served off Tualatin-Sherwood via 115th or 124th;
2. The extension will create a glaring eye-sore and cause horrendous traffic noise in Hedges Park residential neighborhood;
3. The extension will destroy the existing grass pathway that serves as the required buffer between commercial and residential areas; and
4. The extension will cause the values of the homes in Hedges Park to drop significantly

#	Name	Address	Signature
77	Karen Ottaller	10770 SW Willow St.	Karen Ottaller
78	Julie Makarovsky	10775 SW Willow St	
79	Jennifer Hughes	10755 SW Willow St	Jennifer Hughes
80	Marty Campbell	10925 SW Byron Terr	Marty Campbell
81		10928 SW Byron Ter	
82	Drew Campbell	10925 SW Byron Ter	
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MEMORANDUM
CITY OF TUALATIN

TO: SWCP Technical Advisory Committee and Interested Parties

FROM: Aquilla Hurd-Ravich, Senior Planner

DATE: July 30, 2010 10 a.m. to 12 p.m.

LOCATION: Tualatin Council Chambers

SUBJECT: MEETING AGENDA AND RECAP SOUTHWEST CONCEPT PLAN

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1. Introductions: Chris Neamtzu, City of Wilsonville; Ken Itel, property owner; Steve Kelly, Washington County; Roger Metcalf, Tigard Sand and Gravel; Julia Hajduk, City of Sherwood; Marah Danielson, ODOT; Scott Campbell, Resident; Jennifer Pitt, resident; Rita Perez, resident; Pat Jensen, resident; Robert Jensen, resident; Karen Mohling, TVF&R; Kaaren Hofmann, City of Tualatin; Aquilla Hurd-Ravich, City of Tualatin
2. Alternative III and Alternative IV compare and contrast
    a. Map
    b. Infrastructure costs
    c. Traffic Analysis
    d. TAC Discussion:
        i. Marah Danielson-ODOT does not think traffic analysis for the Concept Plan should include the southern arterial connector and should model traffic without that arterial. The Connector will not be a state highway or in ODOTs system. The Southern arterial is not in the financially constrained RTP.
        ii. Chris Neamtzu- Wilsonville agrees with ODOT in that the southern arterial should not be part of the traffic analysis. Given that funding is continually being funneled away from the connector the southern arterial should not be part of the SWCP analysis. He questioned how the intersections and roads to the east were being analyzed such as

Day Road, Grahams Ferry and the I-5 interchange because they were analyzed in 2005. He also questioned how Basalt Creek was factored into the analysis.

1. Aquilla Hurd-Ravich responded with that question was posed to our traffic consultants of whether or not we needed to address those intersections outside of the planning area. Her understanding is that because the SWCP estimated employment numbers are lower than those in the 2030 Metro model, we did not need to look other intersections because those traffic counts would have been accounted for in the regional models.

iii. Steve Kelly- Agrees with ODOT and Wilsonville that traffic should be evaluated without the connector. They would also like to see turn movements at the study intersections. The County encourages that Blake Street have at least a pedestrian/ bike connection

iv. M.Danielson- ODOT could coordinate a meeting with ODOT Rail to explore other crossing options.

v. S. Kelly- The County encourages the City to explore all possible rail crossing options. The number of vehicles cross the rail does not change if Blake Street goes away it becomes a question of where the vehicles cross.

vi. Julia Hajduk- Sherwood asked DKS to evaluate the impact of eliminating Blake Street on the Tonquin Employment Area (TEA). There are little impacts to none on the TEA area but DKS asserts it would affect Tualatin. Sherwood is concerned about impacts to the regional system.

vii. C.Neamtzu- Wilsonville questioned how regional TSPs accounted for jobs/employment in the SWCP area and the Urban Reserve Area.

viii. S.Kelly- Reminded staff to make sure the SWCP area is part of the Urban Planning Area Agreement prior to adoption.

1. Aquilla Hurd-Ravich questioned if we can land to our Urban Planning Area Agreement that is not currently in the UGB?

ix. J.Hajduk.- Suggested that if need be Tualatin could bifurcate the adoption process and to account for area inside the UGB and outside the UGB depending on whether or not area outside the UGB can be added to our Urban Planning Area Agreement with Washington County. J.Hajduk asked if we looked at Blake Street as a local street rather than a collector street.

x. Ken Itel- During the 2005 planning process Blake Street was seen as access for employees from the residential area to the employment area. Is there a way to prohibit truck traffic from using Blake in a similar manner as the sign posted on Avery?

1. S Kelly- prohibiting truck traffic cannot be enforced by the police. A sign can be posted but it can't be enforced.
2. K. Hofmann- We can't legally prohibit truck traffic, but she would be ok with posting a sign.

xi. Karen Mohling- Generally, TVF&R like more connections because it gives them flexibility when responding. Ms. Mohling suggested using some kind of traffic calming to discourage truck traffic. TVF&R appreciates the connection.

xii. A question came up if ODOT rail differentiates emergency vehicles in the types of preferred crossings.

xiii. S. Kelly- The County thinks we should consider emergency access.

xiv. K. Mohling- She will is going to evaluate response times with and without the Blake Street connection and will forward that information on to the City which will get sent out to the TAC.

xv. C. Neamtzu- Is urban level development in Basalt Creek assumed in the traffic analysis? How will the traffic from SWCP affect the Basalt Creek area? Will there be funding for future studies of this area?

xvi. S. Kelly- Alternative 7 did not include urban level development in Basalt Creek. The County is interested in assuring there is funding available for future studies.

xvii. K. Hofmann- TSP update will start in fall

1. C. Neamtzu- Wilsonville's TSP is also updating their TSP.

xviii. Comments from the public:

1. S. Campbell- a connection will encourage truck traffic through the neighborhood.
2. J. Pitt- Why wasn't Industrial Way mentioned as a connection? And have we considered the traffic impacts on Grahams Ferry and Day Road.
3. R. Perez- If the City has to purchase/ gain right-of-way to make a bridge or tunnel work why not gain the right-of-way for Industrial Way.

3. Key Dates
    a. August 3, 2010 Tualatin Planning Advisory Committee
    b. August 9, 2010 City Council Work Session
    c. August 23, 2010 City Council presentation to accept the SWCP.

Attachments:
1. Alternative III Map
2. Alternative IV Map
3. SW Tualatin Concept Plan Update- July 27, 2010
4. 2010 Concept Plan Alternative without a Blake Street Connection July 27, 2010
5. Southwest Concept Plan Public Comment Log and Petitions

MEMORANDUM
CITY OF TUALATIN

TO: SWCP Technical Advisory Committee and Interested Parties

FROM: Aquilla Hurd-Ravich, Senior Planner

DATE: September 24, 2010 10am to 11am

LOCATION: Tualatin Council Chambers

SUBJECT: MEETING AGENDA AND RECAP SOUTHWEST CONCEPT PLAN

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1. Introductions: Jamie Morgan-Stasny, Metropolitan Land Group; Sherry Oeser, Metro; Dan Boss, City of Tualatin; Kaaren Hoffman, City of Tualatin; Doug Rux, City of Tualatin; Marah Danielson, ODOT.
2. Update latest Council actions
    a. September 13 work session the Council was presented with three policy choices: Accept a concept plan that does not include a Blake Street connection and that
        i. Includes a southern arterial
        ii. Does not include a southern arterial
        iii. Does not include a southern arterial and does not include a potential urban reserve/ UGB expansion area.
    b. After discussion of the transportation alternatives they agreed by consensus that the traffic modeling in the Southwest Concept Plan should include the UGB expansion area and a southern arterial.
3. Discuss additional traffic analysis
    a. Kittelson prepared did additional analysis that looked at traffic in the concept plan without a southern arterial. They developed three additional scenarios with no southern arterial and not Blake Street:
        i. Scenario 1 assumes employment at 3,510 (2030 Metro model)
        ii. Scenario 2 assumes no UGB expansion area
        iii. Scenario 3 assumes 4,100 employees similar to Scenario 1

   b. Comment from Marah Danielson: needs along 99W are being looked/ addressed through the Southwest Corridor study facilitated by Metro. This is best place to address cumulative needs and impacts from multiple concept and land use plans that are taking place throughout the region and could affect Highway 99 W.

4. Key Dates
   a. October 11, 2010 Council to accept concept plan by resolution
   b. Discuss request to Metro to extend the milestone deadlines for code language and comprehensive plan updates.
      i. Proposing to have all code amendments complete by March 2011

Attachments:
1. September 8, 2010 Concept Plan Alternatives without a Southern Arterial Connection

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TRANSPORTATION ENGINEERING / PLANNING
610 SW Alder Street, Suite 700, Portland, OR 97205 P 503.228.5230 F 503.273.8169

TECHNICAL MEMORANDUM

Date: September 8, 2010 Project #: 10599

To: Doug Rux and Aquilla Hurd-Ravich, City of Tualatin

From: Paul Ryus, P.E.
Project: Southwest Tualatin Concept Plan
Subject: 2010 Concept Plan Alternatives Without a Southern Arterial Connection

INTRODUCTION

The transportation analysis for the 2010 Southwest Tualatin Concept Plan update (June 25, 2010) included an analysis of the traffic impacts of the Concept Plan area from the perspective of Oregon's Transportation Planning Rule (TPR), as well as an analysis of transportation infrastructure needs for the Concept Plan area at build-out, when approximately 4,100 jobs would be located within the area. An update to this analysis (July 27, 2010) investigated build-out impacts to the transportation system if Blake Street were not to be connected between SW 108th and SW 115th Avenues.

At the request of various stakeholders in the concept planning process, we have conducted additional analysis that investigates the impacts to the roadways in the vicinity of the Concept Plan area if the Southern Arterial option for the I-5/99W Connector were not to be constructed before the Concept Plan area was built out. In addition, we have estimated traffic growth on selected roadways external to the Concept Plan area. This additional analysis is provided for information only; as described in our June 25, 2010 analysis, (1) the trip generation potential of the Concept Plan area was incorporated into the Portland region's transportation planning model as far back as the 2020 version of the model and (2) the updated Concept Plan anticipates the area developing more slowly than assumed in the 2020, 2030, and 2035 regional models. Therefore, the site's traffic impacts have already been accounted for in the traffic volume forecasts used to develop city and county transportation system plans for the area.

ANALYSIS SCENARIOS

Three additional scenarios are analyzed in this memo. All three scenarios assume no Southern Arterial and no Blake Street connection. With the exception of Scenario 2, SW 124th Avenue would end at Tonquin Road. SW Concept traffic with origins or destinations for I-5 south would use Tonquin Road, Grahams Ferry Road, Day Road, and Boones Ferry Road to access I-5 at the North Wilsonville interchange (#286). The following is a description of each scenario:

:

- **Scenario 1:** This scenario assumes an employment level within the Concept Plan that is consistent with what was assumed in the 2030 regional model (3,510 employees). As discussed in our June 25, 2010 memo, this employment level is likely to be reached at some point beyond 2030.
- **Scenario 2:** This scenario is intended to be used only for infrastructure planning purposes within the SW Concept planning area as it assumes the maximum employment density that is likely to be achieved within the SW Concept Plan (similar to Scenario 3 below), but assumes the 77-acre Parcel L (see Figure 1) remains outside the Portland metropolitan area Urban Growth Boundary in 2030 horizon year. In this scenario, the assumed employment level is 3,350 employees. Further, SW 124th Avenue would end at the east-west collector street located between Parcels G and L. While the horizon year for modeling purposes is 2030, as discussed in our June 25, 2010 memo, this employment level is likely to be reached at some point beyond 2030.
- **Scenario 3:** This scenario is for infrastructure planning within the SW Concept planning area as it assumes the maximum employment density that is likely to be achieved within the SW Concept Plan (4,100 employees). Similar to Scenario 2, while the horizon year for modeling purposes is 2030, as discussed in our June 25, 2010 memo, this employment level is likely to be reached at some point beyond 2030.

For comparison purposes, the results of the "base build-out" Concept Plan area scenario used in the June 25, 2010 analysis is also presented. The base build-out scenario assumed "build-out" of the Concept Plan at 4,100 employees (with a 2030 modeling horizon) and the existence of a Southern Arterial. SW 124th Avenue was assumed to end at the Southern Arterial in both scenarios. The modeling performed for the Southern Arterial did not assume an interchange between the Southern Arterial and I-5; instead, traffic used Boones Ferry Road to travel between the Southern Arterial and the North Wilsonville interchange. The base scenario results presented here have been adjusted from the original version to remove a proposed collector street south of the Tonquin Employment Area and west of SW 124th Avenue (in the vicinity of the Tri-County Gun Club) and reassigning traffic accordingly. This was done to be consistent with the City of Sherwood's planning for the Tonquin Employment Area.

Updated results of the "base build-out without Blake" scenario used for the July 27, 2010 analysis are also presented for comparison purposes. This scenario differs from the base build-out scenario only in that no Blake Street connection is assumed. The redistribution of trips from Blake Street has been adjusted slightly from the July analysis, taking advantage of the refined modeling information available from the model runs for the new scenarios, particularly the refined street network. Compared to the results presented in the July 27, 2010 memo, the delay and volume-to-capacity ratio results change slightly for most intersections, but the level of service (LOS) results do not change, except at SW 115th Avenue/Tonquin Road (went from LOS B to LOS C) and at SW 115th Avenue/Blake Street (went from LOS B to LOS A).

For ease of comparison between scenarios, a roundabout continues to be assumed at the SW 115th Avenue/Blake Street intersection. As discussed in the June 25, 2010 analysis, a traffic signal or four-way stop could also be applied here, but with higher levels of delay.

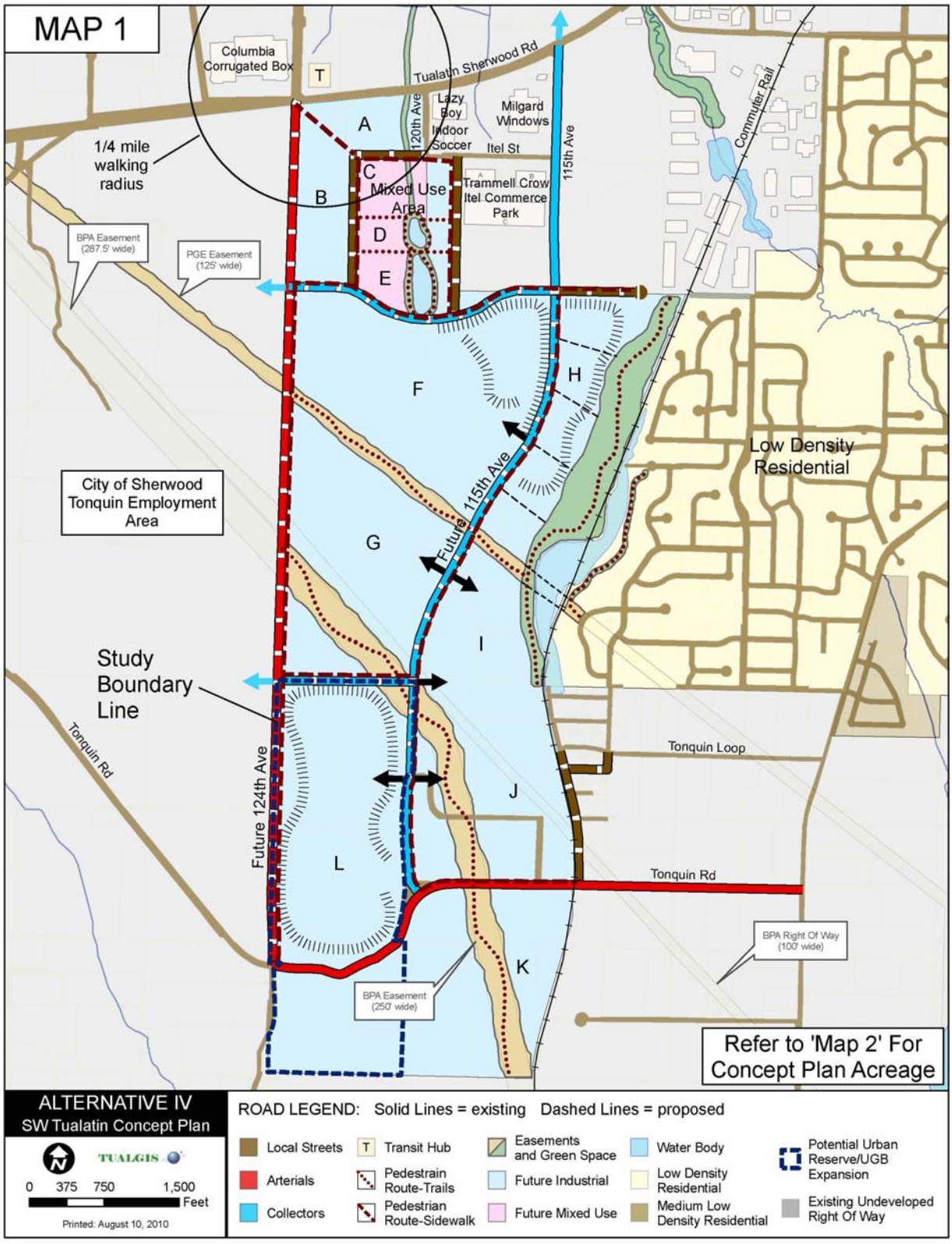


Figure 1. Southwest Tualatin Concept Plan Area

ANALYSIS RESULTS

Table 1 summarizes the 2030 weekday p.m. peak hour average delay, LOS, and volume-to-capacity (v/c) ratios at each of the study intersections, for each of the scenarios.

Table 1. Year 2030 Weekday P.M. Peak Hour Study Area Intersection Operations

Intersection	Delay (sec) / LOS / Volume-to-Capacity Ratio				
	Base Build-out Scenario	Base Build-out without Blake Scenario	New Scenario 1	New Scenario 2	New Scenario 3
SW 115th Ave./ Tualatin-Sherwood Rd.	12.8/B/0.55	14.9/B/0.56	27.0/C/0.62	32.7/C/0.87	27.9/C/0.62
SW 115th Ave./ Blake St.	5.3/A/0.36 [a]	5.2/A/0.39 [a]	7.3/A/0.53 [a]	7.4/A/0.57 [a]	6.8/A/0.53 [a]
SW 115th Ave/ East-West Collector	19.7/C/0.26 [b]	23.8/C/0.31 [b]	11.7/B/0.18 [b]	28.3/C/0.72	11.6/B/0.18 [b]
SW 115th Ave/ Tonquin Rd.	21.9/D/0.60	25.5/C/0.71	27.9/C/0.90	30.2/C/0.90	30.8/C/0.92
SW 124th Ave./ Tualatin-Sherwood Rd.	48.1/D/0.90	50.6/D/0.94	52.9/D/0.83 42.3/D/0.88 [c,d]	54.6/D/0.83 41.3/D/0.88 [c,d]	52.9/D/0.83 41.9/D/0.88 [c,d]
SW 124th Ave./ Blake St.	45.3/D/0.77	49.6/D/0.77	40.6/D/0.55 46.7/D/0.72 [c]	41.2/D/0.61 46.2/D/0.77 [c]	39.4/D/0.52 43.2/D/0.68 [c]
SW 124th Ave./ East-West Collector	17.4/B/0.74	17.5/B/0.76	19.9/B/0.31 17.2/B/0.48 [c]	--	21.9/C/0.33 19.2/B/0.50 [c]
SW 124th Ave./ Tonquin Rd.	34.3/C/0.83	35.3/D/0.83	36.9/D/0.86	--	36.5/D/0.86
SW 124th Ave./ Southern Arterial WB	34.0/C/0.86	34.0/C/0.86	--	--	--
SW 124th Ave./ Southern Arterial EB	32.1/C/0.72	32.1/C/0.72	--	--	--

All intersections are signalized and results given are intersection averages, unless indicated otherwise.
-- Intersection does not exist in this scenario.
WB = westbound, EB = eastbound.
[a] Roundabout.
[b] Two-way stop-controlled intersection (eastbound stop-controlled); results shown are for the worst movement.
[c] Assumes three-lane cross-section on SW 124th Avenue
[d] Assumes two northbound left-turn lanes on SW 124th Avenue

As Table 1 shows, there is generally little variation in results among the intersections between the various scenarios and all of the intersections would meet Tualatin's LOS D operational standard and Washington County's 0.99 v/c ratio operational standard. The following points stand out from the analysis:

- In any of the three scenarios without a Southern Arterial, Tonquin Road, Grahams Ferry Road, and Day Road become much more heavily used routes between Wilsonville and both the Concept Plan area and Sherwood. East of SW 115th Avenue.

- In Scenarios 1-3, without the Southern Arterial, the analysis results show that a three-lane cross-section would be adequate to meet the projected demands, though at SW 124th/SW Tualatin-Sherwood Road, two northbound left turn lanes would be required to meet the City's LOS "D" operating standard.
- In Scenario 2, although the SW 115th Avenue/Tonquin Road intersection would meet Tualatin's and Washington County's operational standards with just one southbound left-turn lane, two left-turn lanes would be recommended to better manage southbound left-turning queues. In Scenario 2, traffic that would otherwise use SW 124th Avenue to access Tonquin Road is diverted to SW 115th Avenue, instead.
- In Scenario 2, the SW 115th Avenue/East-West Collector intersection would need to be signalized to accommodate the volume of traffic diverted from SW 124th Avenue.
- In Scenarios 1 and 3, the East-West Collector plays a relatively minor role in the Concept Plan area's circulation. In the base scenario, Concept Plan area traffic uses the east-west collector both to head south on SW 124th Avenue (eventually bound for Highway 99W south) and north on SW 124th Avenue (bound for Highway 99W north, Sherwood, and Washington County points northwest of Sherwood). In Scenarios 1 and 3, the east-west collector is only used by traffic to and from the north on SW 124th Avenue. In Scenario 2, the east-west collector serves as a continuation of SW 124th Avenue for traffic headed to and from Wilsonville.
- In Scenario 2, the SW 124th Avenue/SW Tualatin-Sherwood Road intersection would be just at the lower boundary of Tualatin's LOS D standard.

TRAFFIC VOLUMES ON SELECTED AREA ROADWAYS

Total traffic volumes were evaluated for three locations along the edges of the Concept Plan area—SW 124th Avenue south of Tualatin-Sherwood Road, SW 115th Avenue south of Tualatin-Sherwood Road, and SW 115th Avenue north of Tonquin Road—and one internal location, along the East-West Collector. Figure 2 compares 2030 weekday p.m. peak hour volumes (sum of both directions) along these roadways for each of the scenarios.

Figure 2 shows that without the Southern Arterial, traffic volumes are approximately 40% lower along SW 124th Avenue in all of the new scenarios and about 50% lower along the East-West Collector in Scenarios 1 and 3. In Scenario 2, where SW 124th Avenue ends at the East-West Collector, traffic volumes on the East-West Collector and SW 115th Avenue north of Tonquin Road are substantially higher than in the other scenarios. Figure 2 also shows that traffic volumes are also substantially higher on SW 115th Avenue south of Tualatin-Sherwood Road in the new scenarios; however, this is an artifact of the modeling process, which explicitly modeled SW 115th Avenue in the new scenarios, but did not in the base scenarios. The presence or absence of the Southern Arterial would not be expected to significantly impact the northern section of SW 115th Avenue, while the absence of Blake Street would affect volumes to the extent shown by the difference in the two base scenario volumes.

Future traffic growth was also evaluated for five roadways beyond the Concept Plan area that were requested by stakeholders in the concept planning process. These roadways are: Highway 99W north of SW 124th Avenue, Highway 99W south of Sherwood, Grahams Ferry Road north of

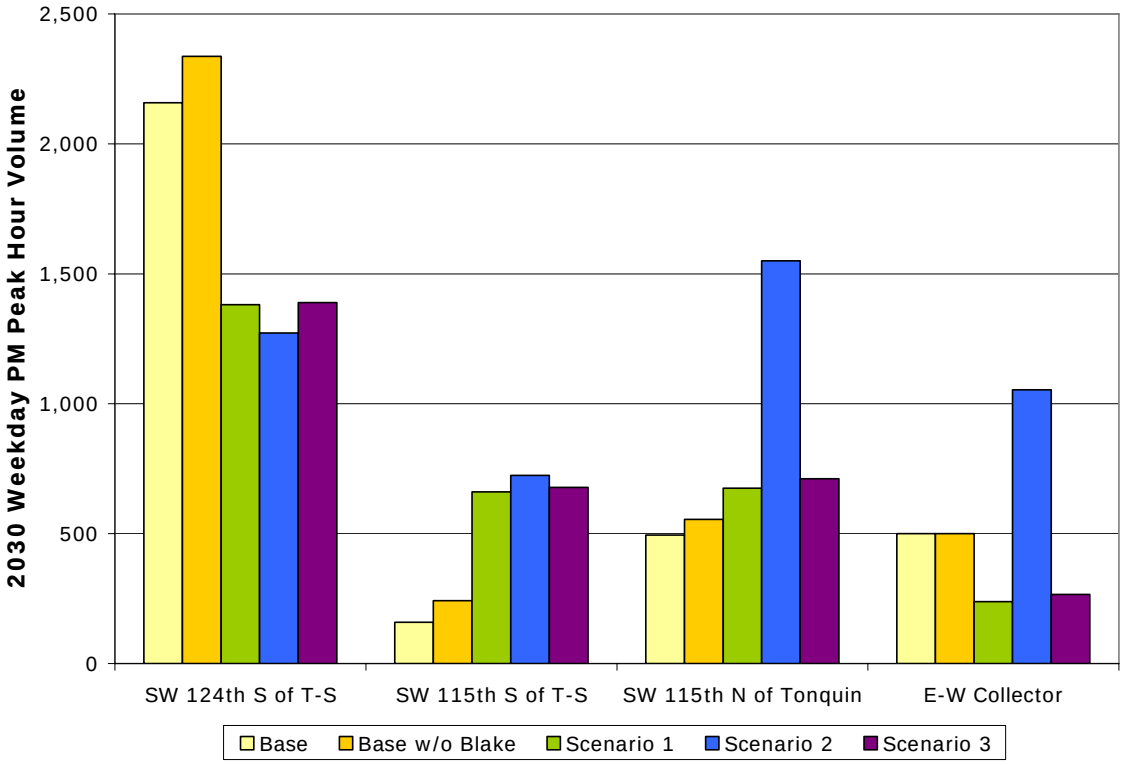


Figure 2. Traffic Volumes at Selected Locations Within the Concept Plan Area

Day Road, Day Road between Grahams Ferry Road and Boones Ferry Road, and Boones Ferry Road north of the North Wilsonville I-5 interchange. Table 2 presents the results of this evaluation and includes a comparison of total weekday p.m. peak hour volume, SW Concept Plan traffic volumes, and the percentage contribution of SW Concept Plan represents of the total traffic. The volumes in Table are for Scenario 1 discussed earlier in this memorandum, which represents the 3,510 employment level within the SW Concept Plan. This employment level is consistent with the level assumed within the 2030 Regional Model. This scenario assumes no Southern Arterial. As indicated in Table 2, with Scenario 1, the SW Concept Plan contributes between two and 10 percent of the total traffic on the various roadway links. Once again, it is important to note that the 3,510 employment level within the SW Concept Plan is not anticipated to be reached until some time beyond the 2030 horizon year.

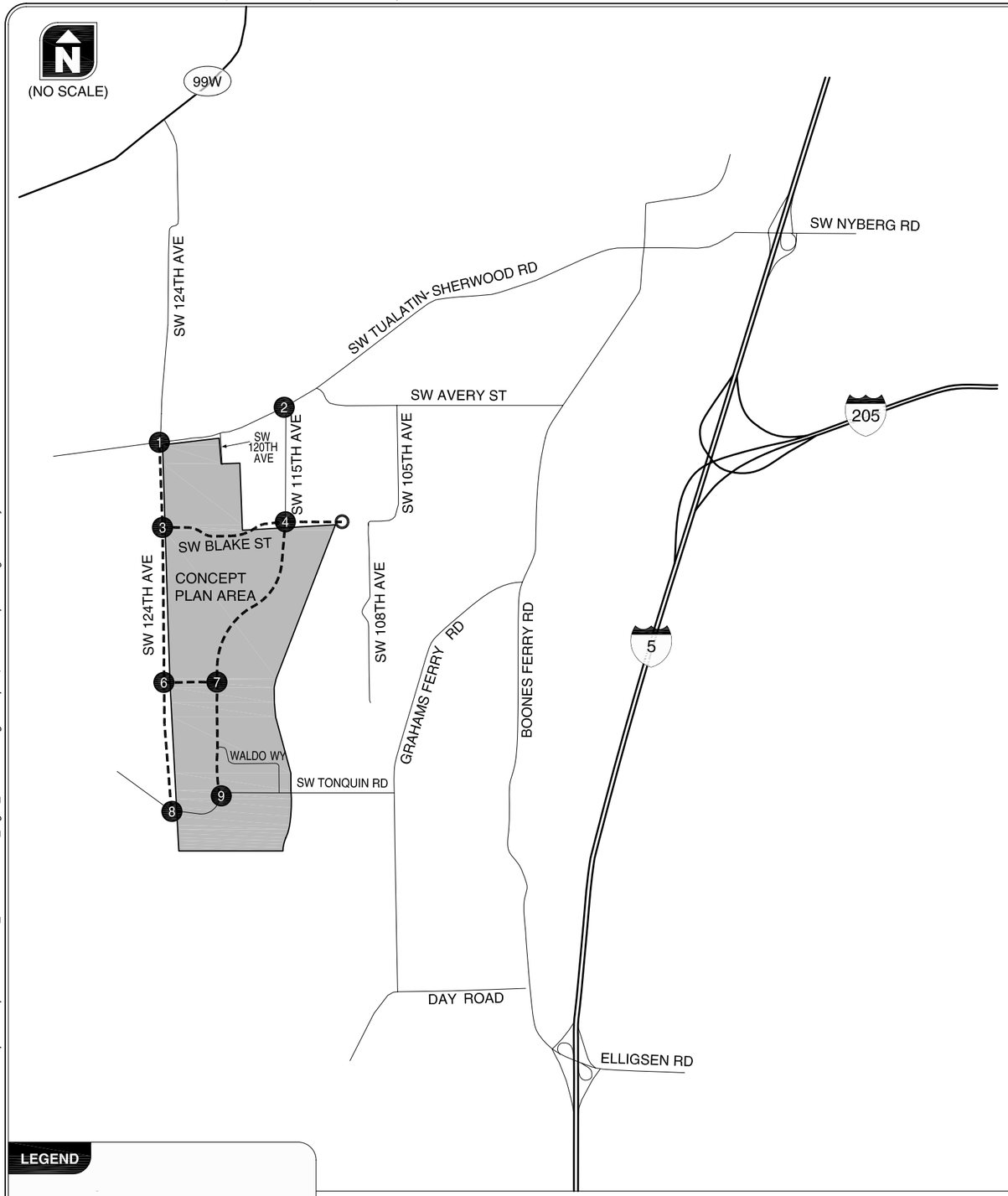
Table 2. Weekday P.M. Peak Hour Traffic Volumes on Selected Area Roadways in 2030

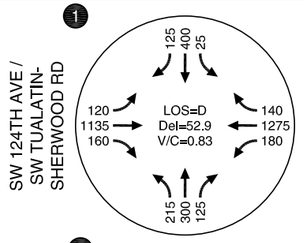
	SW Concept Plan Link Volume Contribution				
	99W North	99W South	Graham's Ferry	Day Road	Boones Ferry
Total Traffic	4853	4547	2092	1746	2908
SW Concept Plan Traffic	88	96	206	136	131
SW Concept % of Total	2%	2%	10%	8%	5%[a]

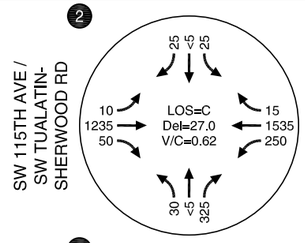
[a] As the SW Concept Plan approaches the I-5 Interchange the SW Concept plan traffic would distribute to the south (to and from I-5) and to the east (using Stafford Road).

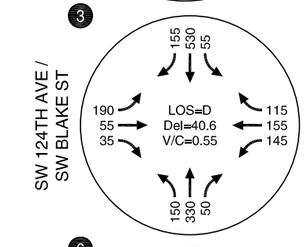
Attachments

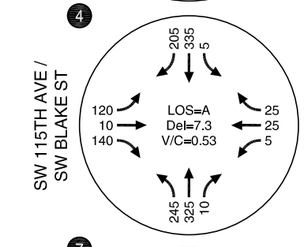
Figure A. Scenario 1
Figure B. Scenario 2
Figure C. Scenario 3
Figure D. Base Build-out Scenario
Figure E. Base Build-out Scenario (no Blake Street connection)

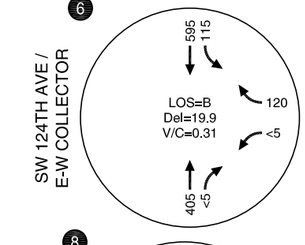


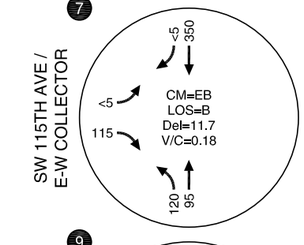


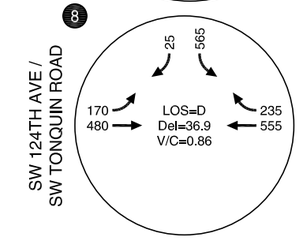


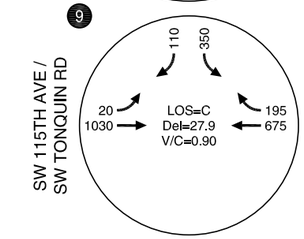










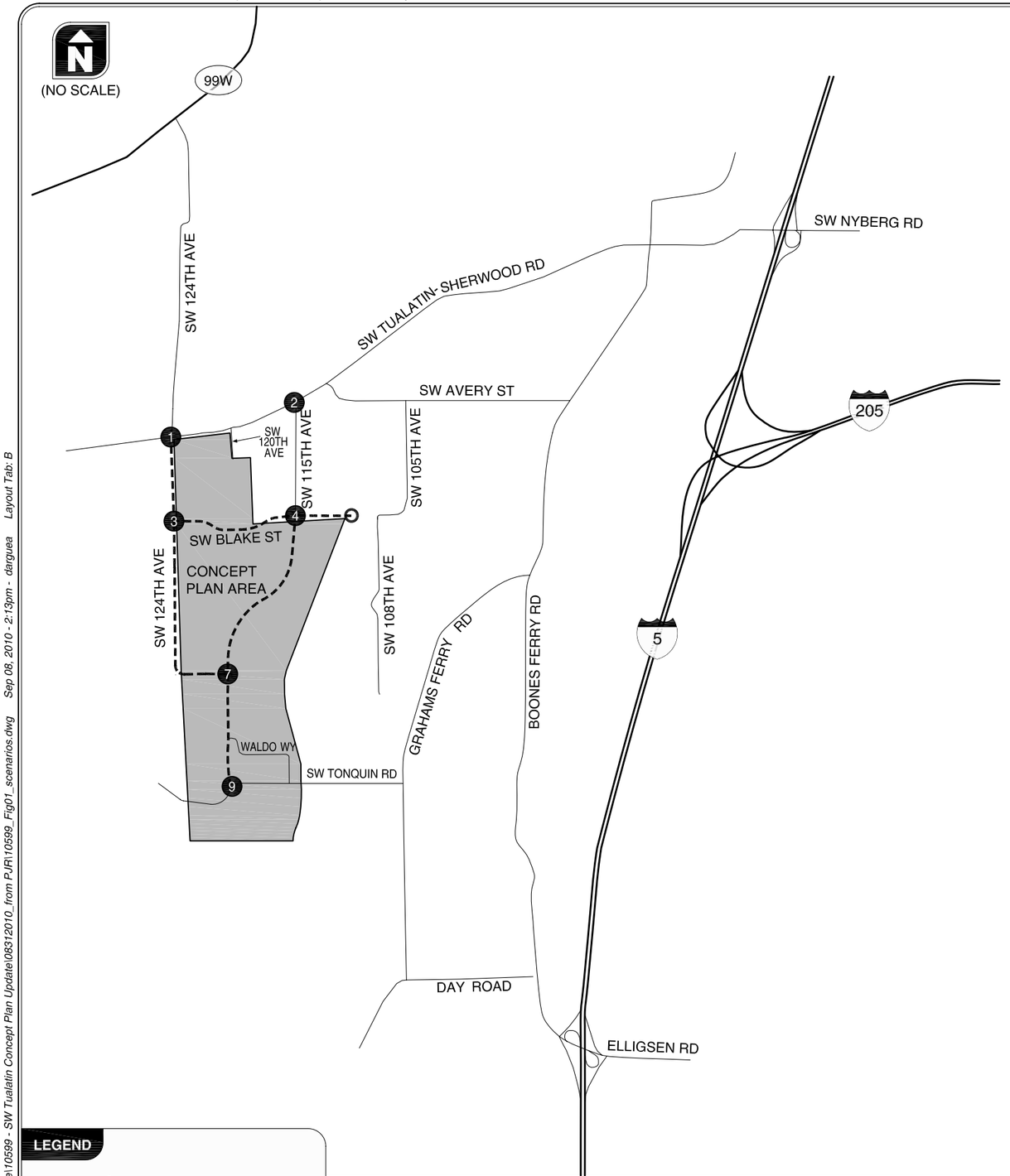


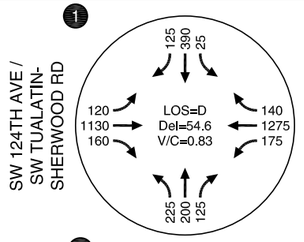
LEGEND

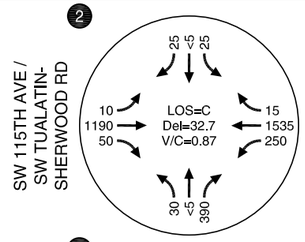
----- - PROPOSED ROADWAYS

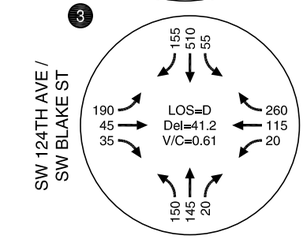
YEAR 2030 FORECAST TRAFFIC OPERATIONS - SCENARIO 1
WEEKDAY PM PEAK HOUR
TUALATIN, OREGON

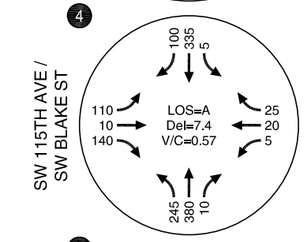
FIGURE **A**

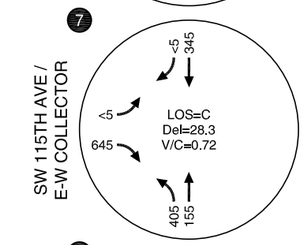


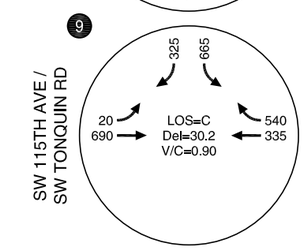












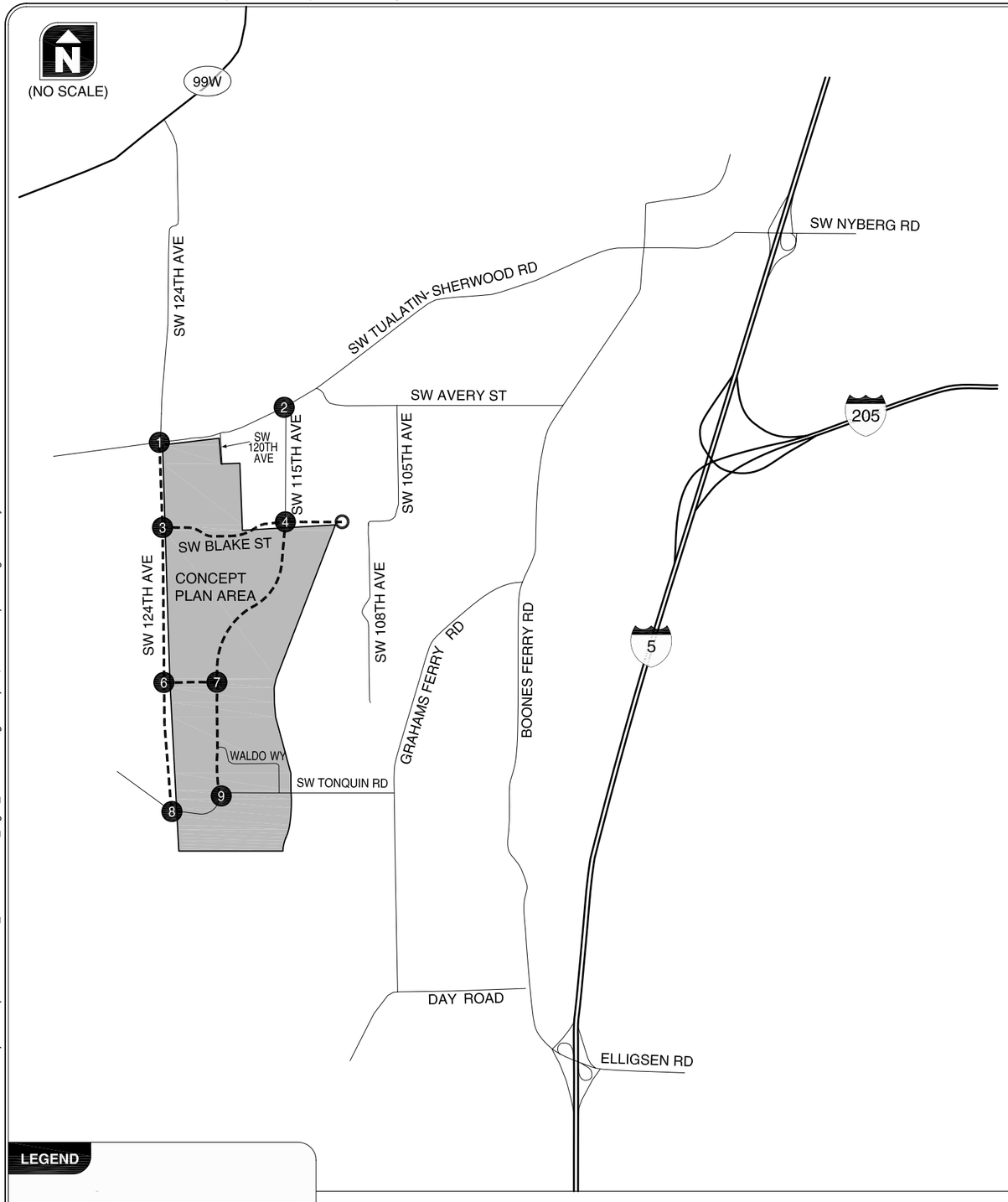
LEGEND

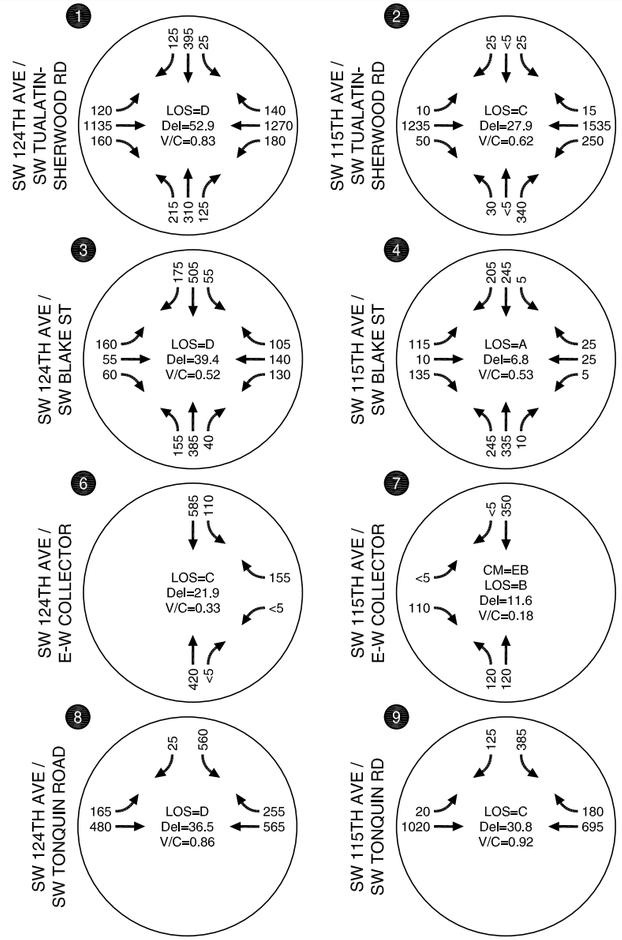
----- - PROPOSED ROADWAYS

YEAR 2030 FORECAST TRAFFIC OPERATIONS - SCENARIO 2
WEEKDAY PM PEAK HOUR
TUALATIN, OREGON

FIGURE **B**

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING / TRAFFIC ENGINEERING



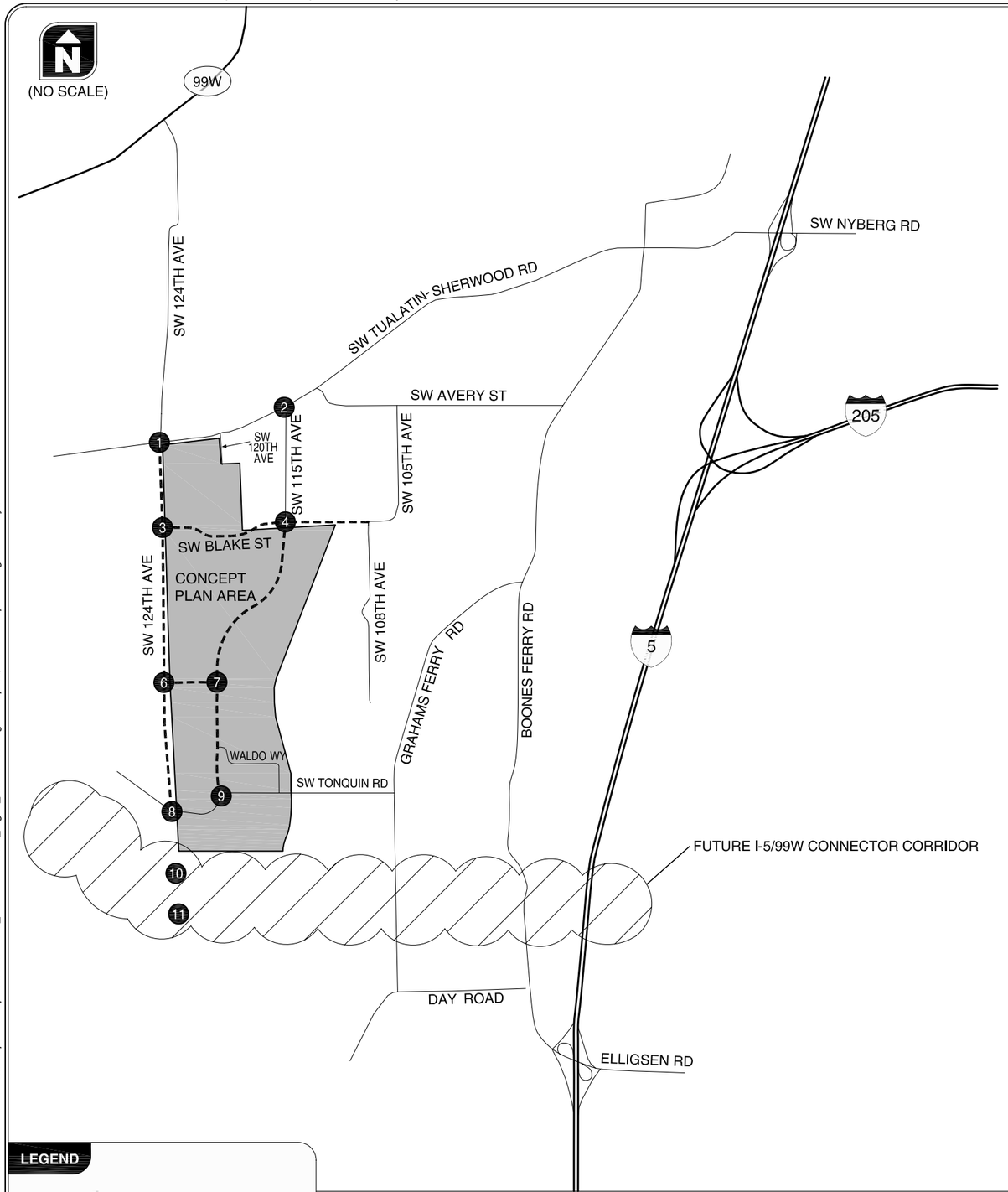


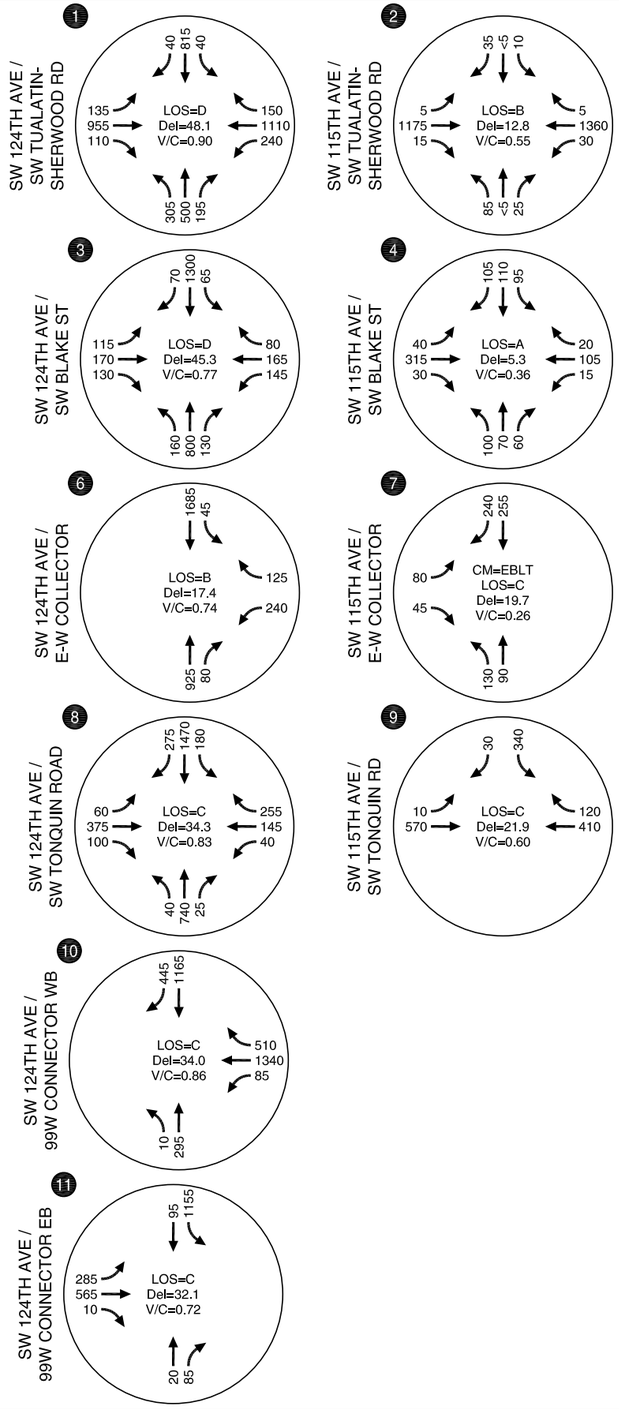
LEGEND

----- - PROPOSED ROADWAYS

YEAR 2030 FORECAST TRAFFIC OPERATIONS - SCENARIO 3
WEEKDAY PM PEAK HOUR
TUALATIN, OREGON

FIGURE **C**



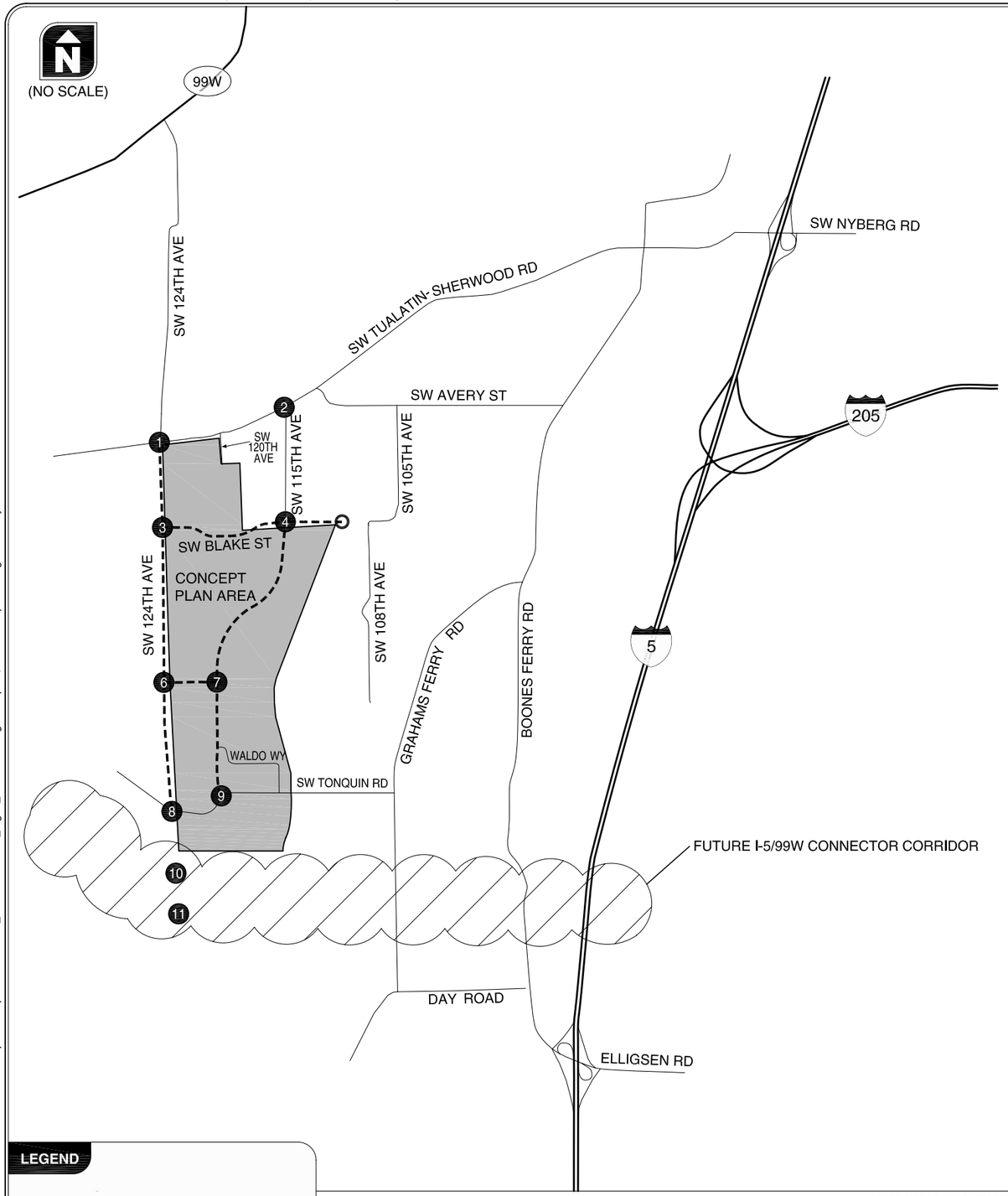


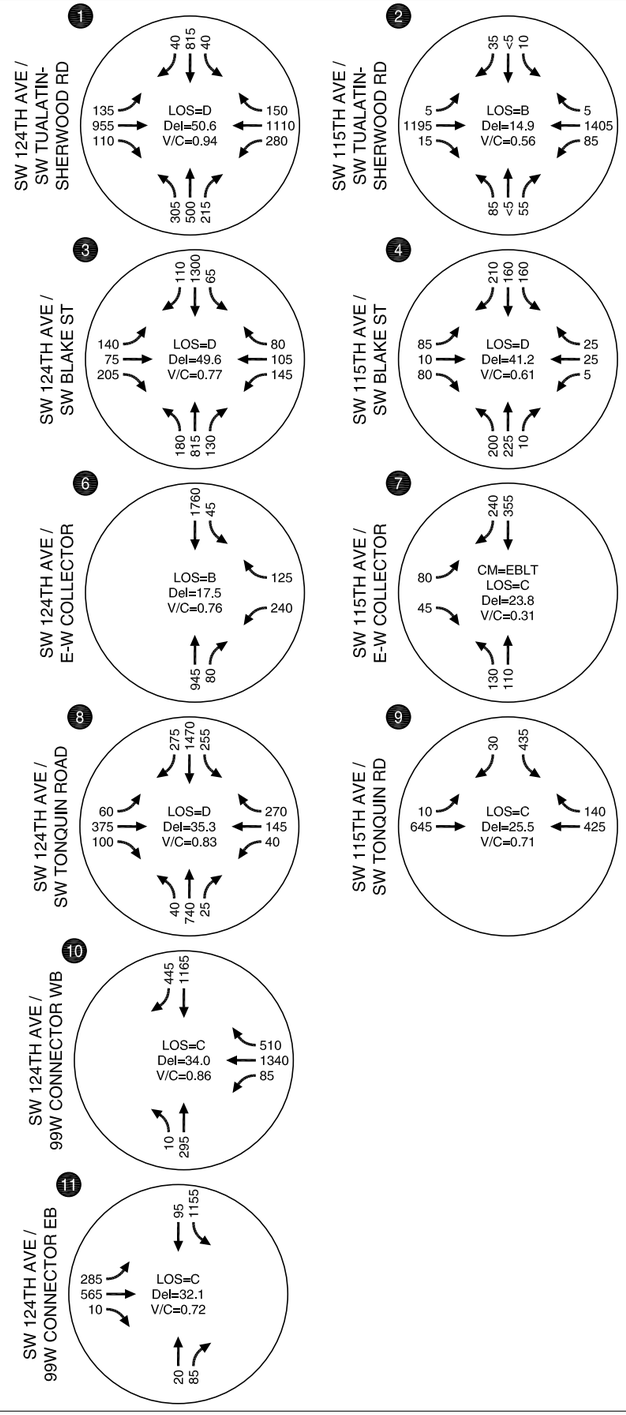
LEGEND

----- - PROPOSED ROADWAYS

YEAR 2030 FORECAST TRAFFIC OPERATIONS - BASE BUILDOUT CONCEPT PLAN
WEEKDAY PM PEAK HOUR
TUALATIN, OREGON

FIGURE **D**





LEGEND

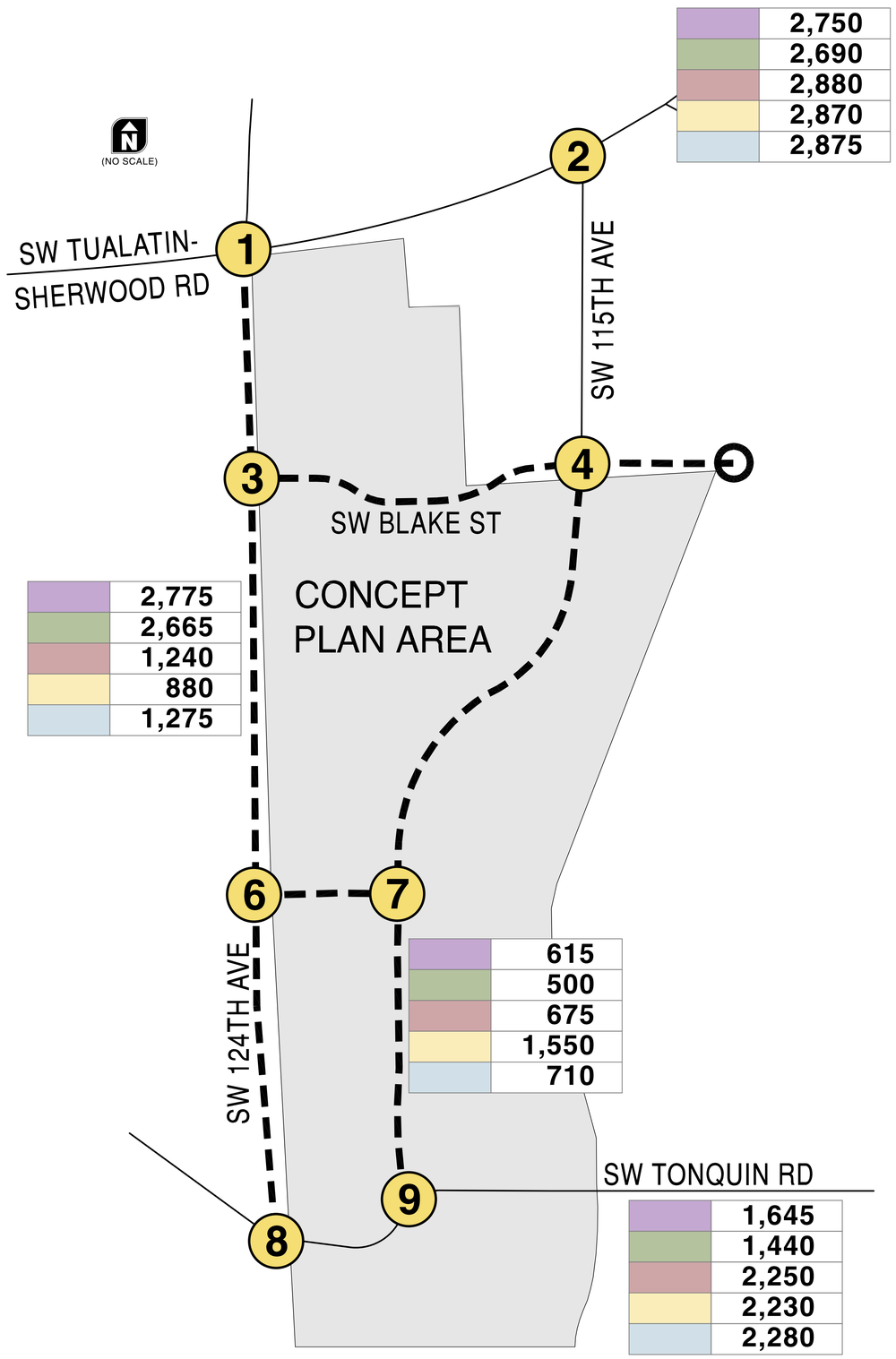
----- - PROPOSED ROADWAYS

YEAR 2030 FORECAST TRAFFIC OPERATIONS - BASE BUILDOUT CONCEPT PLAN (WITHOUT BLAKE STREET CONNECTION)
WEEKDAY PM PEAK HOUR
TUALATIN, OREGON

FIGURE **E**

H:\projfile\10599 - SW Tualatin Concept Plan Update\08312010_from PJR\10599_Fig01_scenarios.dwg Sep 08, 2010 - 2:15pm - darguea Layout Tab: E

Year 2030 Forecast Traffic Operations – Scenario 1
Weekday PM Peak Hour



1 SW 124TH AVE/ SW TUALATIN-SHERWOOD RD

D
D
D
D
D

2 SW 115TH AVE/ SW TUALATIN-SHERWOOD RD

B
B
C
C
C

3 SW 124TH AVE/ SW BLAKE ST

D
D
D
D
D

4 SW 115TH AVE/ SW BLAKE ST

A
A
A
A
A

6 SW 124TH AVE/ E-W COLLECTOR

B
B
B
NA
C

7 SW 115TH AVE/ E-W COLLECTOR

C
C
B
C
B

8 SW 124TH AVE/ SW TONQUIN RD

D
C
D
NA
D

9 SW 115TH AVE/ SW TONQUIN

C
C
C
C
C

- Base-Buildout (with S. Arterial)
- Base-Buildout without Blake (with S.Arterial)
- Scenario 1 (3,510 Employees)
- Scenario 2 (3,350 Employees)
- Scenario 3 (4,100 Employees)

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
1.	July 9, 2010	Jeffery S. Nighbert	I have reviewed the map that was sent in the mail outlining the proposed actions associated with the Southwest Tualatin Concept Plan. I have a major concern about the "Future Blake Street" as it is shown in the plan: I feel that extending Blake street to the Industrial area would increase traffic and congestion too much in our quiet neighborhood. After so much effort was spent making SW 108th Street pedestrian and family friendly with bike trails, cross walks and vegetation, it seem inconsistent to cut a road over to the the industrial area through our neighborhood that would open our neighborhood up to heavy truck and commuter traffic associated with the industrial area. Don't think for a minute that cars and trucks would not take a shortcut out of the industrial zone and clog that tiny road. As it stands now Blake street has a very tight curve near the stream it crosses just down from the Garden Corner business. There is practically no room for bikes and pedestrians now, think of it a rush hour or when big trucks decide they need to take a shortcut to avoid the traffic on Tualatin-Sherwood Road. Traffic would also probably spill onto 108th street and Ibach road and that would be the end of pedestrian and family friendly. The solution is to NOT extend Blake road over to the industrial area from 108th street. That way industrial park traffic and congestion would be forced to use Tualatin-Sherwood road, Tonkin road, 124th, and 115th street. Lets maintain our great neighborhoods for families and pedestrians. Lets isolate heavy truck and rush hour traffic away from residential areas. I am serious about this issue. If you would like to discuss these concerns with me, please call at 503-482-5812.
2.	July 17, 2010	Scott and Marty Campbell via Mayor Lou Ogden	Scott mentioned to me a concern about a via duct type RR crossing of Blake street going west into the area. I was unaware of the grade separated crossing but, of course, from a traffic standpoint, grade separation is a good thing. I think his concern is the noise of trucks climbing up over the RR, etc and also the truck traffic from 105th or 108th into the area in conflict with neighborhood traffic in that section of Tualatin. I have not looked at it in enough detail to know how likely his concerns are to come to fruition. Thanks, Lou Ogden

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
3.	July 19, 2010	Stephen & Maxine Jones	The Southwest Tualatin Concept Plan has suggested the extension of Blake Street from 108th to 115th. This has got to be the worst possible use of our tax payer money. The road will have no access until it reaches 115th. The corner of Blake St and SW 105th is a hairpin curve that will be a high accident area. There is no reason to increase in traffic (where trucks currently are limited) on this neighborhood street where 115th can handle it. With this street will decrease property values for the homeowners who current pay alot of taxes to this city and Increase noise pollution. This would be a waste of taxpayer money and would only help the person or persons who own the land that has to be purchased to make this extension on Blake. This feels like a very political and profitable advantage for some people and a good "Date Line" topic if it goes through.
4.	July 21, 2010	Jerry Markey Milgard Manufacturing	I am writing on behalf of Milgard Manufacturing, a subsidiary of Masco Corporation regarding the SWCP open house scheduled for July 22. Milgard Manufacturing would like to submit the following comments for consideration. Milgard Manufacturing understands the purpose of annexing the 614 acre site into the City of Tualatin for future industrial development. However, Milgard Manufacturing contends the transportation infrastructure required to support current industrial development does not exist. Milgard Manufacturing cannot support further industrial expansion without immediate improvements to the road system for truck traffic. During the past four years, there has been extensive industrial growth adjacent to the Milgard Manufacturing facility with minimal road improvements to accommodate the industrial growth in the area. The Blake Street expansion has been discussed for several years with no action taken. The Blake Street expansion should be completed prior to the annexation. The 115th Avenue and the 124th Avenue expansion should be a mandatory requirement that occur simultaneously in conjunction with the annexation. Thank you for allowing Milgard Manufacturing to comment on the Southwest Tualatin Concept Plan. Respectfully submitted, Jerry Markey, Sr. Property Appraiser
5.	July 21, 2010	Heather Austin City of Sherwood	I am headed out of town tomorrow morning, so I won't be able to make your open house or your TAC on Friday. I have reviewed the concept plan online and don't have any comments at this time. I am very curious about the Business Park zone and how that develops so if you are going to have any additional information on that at either of the meetings this week, I would be interested to see it. Thanks and good luck with your meetings!

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
6.	July 22, 2010	Ray Valone Metro	As you know, I'm filling in for Sherry while she is out of the office. I will not be able to attend tomorrow's meeting, so I am writing to inform you of my review of some of the material posted on the City's web site. I read the SWTCP 2010 Update, the transportation analysis from Kittelson and the estimate summary for infrastructure costs. Based on these documents, I do not see anything that would not be in compliance with Title 11 or the conditions of addition of the ordinances that brought the land into the UGB. The three concept plan documents do not, of course, address the requirements in the Metro code in the way of findings. We look forward to such findings when the City adopts implementing language for the concept plan later this year. You should work with Sherry for guidance as these findings are developed. Please let me know the outcome of tomorrow's meeting.
7.	July 22, 2010	Jennifer Hughes	There's a rumor rampant in my neighborhood that Walmart wants to build the Blake Street extension from 108th to 115th in order to run its trucks that way in conjunction with a new warehouse/distribution facility. After looking at your website, the closest I could come was the McLane Foodservice AR decision. I've contacted Engineering for the Public Facilities Decision, but I didn't see anything in the AR materials that suggested the applicant was interested in building Blake, though it appears they will dedicate ROW and eventually have an access point for truck circulation through the site. I'd appreciate anything you can tell me about future plans this applicant may have for use of Blake to 108th. I am aware of the Concept Plan in the area and the issues regarding Blake in that context. Thank you.

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
8.	July 22, 2010	Gordon Russell	I am responding to you due to I will be unable to attend this evenings meeting for the SW Tualatin Concept Plan Open House. I am OPPOSED to the Future Blake Road Street that connects the proposed developement to the Low Density Residential. I live at XXX XXX for over last 10 years. During this time a forest has been removed, and Public Train (WES) is now operating, and now a proposed street going into our neighborhood. These ALL have had a negative impact on our wildlife, noise, property values, and community. Wildlife - Still deer crossing located in the area where development is to happen. Deer were there just last week. New Road dramatically effects their habitat. - Current easement where Blake Street to happen, deer and other wildlife use/habitat. - We continue to press on the limited green space this community apparently use to pride itself on, not continue to reduce and eliminate it. Business - There is so much commercial realestate vacant, thus seems odd that such a commercial project makes sense at this point. - Where are funds coming from to do this developement and why is it a priority, and why is the Blake Street Addition part of it. Shouldnt Goverment money should be used on positive projects, not ones the decline our communities value. Shouldnt they have Real Value for the residents of Tualatin. Neighborhood - Since WES has been operating, my property value has declined dramatically. This project will again subject me to a Tualatin Decision that will effect the value of the home I purchased. - It already takes 10 minutes to get through NON TUALATIN Resident traffic to get to I-5. Additional Traffic will increase with this, potentially significantly. - 108th has BECOME a busy street, with Resident and Non Resident cars and trucks using. It has become a short cut already to get from Tualatin Sherwood Road to I-5 South. Adding Blake STreet is now another way to reduce time to get to destinations for NON RESIDENTS of Tualatin. - Noise. WES has me up at 6am in the morning. The additional traffic will be adding additional noise to at one time was a quiet peaceful area to live. As a Resident of this community I continue to see decisions that negatively impact our neighborhood and property values. Again, another one is being proposed. The City needs to see it from the Residents view point. Its our families and our investments. I thought our City Goverment is to look after our welfare?? I am a Volunteer Head Coach for Tualatin Baseball and have a State Playoff Baseball Game this evening, same time. Thus the email due to I will not be able to attend.

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
9.	July 22, 2010	Laura Russell	I am responding to you due to I will be unable to attend this evenings meeting for the SW Tualatin Concept Plan Open House. I am OPPOSED to the Future Blake Road Street that connects the proposed developement to the Low Density Residential. I live at XXX XXX for over last 10 years. During this time a forest has been removed, and Public Train (WES) is now operating, and now a proposed street going into our neighborhood. These ALL have had a negative impact on our wildlife, noise, property values, and community. Wildlife Still deer crossing located in the area where development is to happen. _Deer were there just last week. New Road dramatically effects their habitat. Current easement where Blake Street to happen, deer and other wildlife use/habitat. - We continue to press on the limited green space this community apparently use to pride itself on, not continue to reduce and eliminate it. Business - There is so much commercial realestate vacant, thus seems odd that such a commercial project makes sense at this point. - Where are funds coming from to do this developement and why is it a priority, and why is the Blake Street Addition part of it. Shouldnt Goverment money should be used on positive projects, not ones the decline our communities value. Shouldnt they have Real Value for the residents of Tualatin. Neighborhood - Since WES has been operating, my property value has declined dramatically. This project will again subject me to a Tualatin Decision that will effect the value of the home I purchased. - It already takes 10 minutes to get through NON TUALATIN Resident traffic to get to I-5. Additional Traffic will increase with this, potentially significantly. - 108th has BECOME a busy street, with Resident and Non Resident cars and trucks using. It has become a short cut already to get from Tualatin Sherwood Road to I-5 South. Adding Blake STreet is now another way to reduce time to get to destinations for NON RESIDENTS of Tualatin. - Noise. WES has me up at 6am in the morning. The additional traffic will be adding additional noise to at one time was a quiet peaceful area to live. As a Resident of this community I continue to see decisions that negatively impact our neighborhood and property values. Again, another one is being proposed. The City needs to see it from the Residents view point. Its our families and our investments. I thought our City Goverment is to look after our welfare??
10.	July 22, 2010 (Open House)	Greg Perez	We are concerned about the expansion or setup on Blake Street. A bridge over the rail road tracks would destroy the current buffer to our neighborhood with large truck traffic. We understand McLane Foods is a distributor for Walmart and other large volume stores. The present bugger to the industrial park and the rail, are just right; truck access to Blake would be counter to rail.

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
11.	July 22, 2010 (Open House)	Susan Gudmundson	Absolutely opposed to the Blake Street access. Do not build a bridge over the railroad. There are other solutions that will not impact the residential community.
12.	July 22, 2010 (Open House)	Robert Jensen	My home is in Hedges Park. I strongly feel the proposed road development (Blake St) and elevated overpass bridge crossing the railroad tracks would significantly and adversely impact my quality of life and property values. I would support a one lane access road to the service the railroad tracks, but nothing more substantial.
13.	July 22, 2010 (Open House)	Mike Loftin	Don't allow access along "future Blake" road and across the RR tracks. Keep any and all industrial traffic access off Blake, 105th and 108th. Preserve all trees along RR and preserve all lakes and streams. Compensate all residential property owners within ¼ miles of Blake to reflect significant impact to property values.
14.	July 22, 2010 (Open House)	Ann Loftin	It is a bad idea to extend Blake Street across the railroad tracks. This would only bring traffic (trucks…) through residential neighborhoods. It would be much more effective to funnel these onto Tualatin-Sherwood. Property values would be greatly reduced.
15.	July 22, 2010 (Open House)	Peter Gall	I'm opposed to future Blake Street proposal.
16.	July 22, 2010 (Open House)	Name not legible	The bridge is such a bad idea. None of you obviously live near a road with trucks.
17.	July 22, 2010 (Open House)	Karen Gall	I'm opposed to the Blake St. proposal.
18.	July 22, 2010 (Open House)	Linda Onheiber	Oppose future construction of Blake Street.
19.	July 22, 2010 (Open House)	David Onheiber	I oppose the future construction of Blake Street that will allow car and truck traffic access from/to the industrial and mixed use areas. There is already too much noise and traffic in this area, especially on 105th.
20.	July 22, 2010 (Open House)	Rita Perez	I am vehemently opposed to the part of the Concept Plan that includes extending Blake Street west to 105th. This extension would require an overpass directly adjacent to my property (XXXX Byrom Terr) which would literally be above our house and in our backyard. An alternative would be to construct a road from Avery through the Industrial Park (Tri-City) to 115th. This plan would not only alleviate traffic on 105th but would not impact our home values, quality of life and our existing neighborhood. Please don't destroy our neighborhood and our financial investment.
21.	July 22, 2010 (Open House)	Scott Campbell	I am strongly opposed to extending Blake Street from 115th to 108th. I would like to see an alternative investigated to run a road through the industrial park off of Itel. The first step would be to stop at the industrial park. Then in the future, extend through the park to 105th. The big issue with Blake is it requires an overpass, which destroys home values which today are $750 k and up.

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
22.	July 22, 2010 (Open House)	Scott Campbell	I am very much against the extension of Blake from 108th to 115th over the railroad tracks. This creates a huge hardship for the homes in the surrounding area. In my case, my backyard would look directly at an overpass and the value of my home would be devastated. I am also concerned about the truck traffic and overall traffic which would funnel into the neighborhood. Commercial and residential need to maintain a buffer and extending Blake in this manner destroys that buffer. Please consider alternatives to extending Blake, especially since it must go over or under the tracks.
23.	July 22, 2010 (Open House)	Dondal J Defler	Potential Urban Reserve: my primary concern is the extension of Blake St. This future site change is unnecessary and provides an access for far too few people to be cost worthy. It would feed too many cars onto an already plugged road system. Also, building a bridge as explained is simply a pipe dream with no cash for development.
24.	July 22, 2010 (Open House)	Rosalie Defler	Blake St. Access Not Needed; Do not want access road t Blake St. into Industrial District. People in Indian Woods were not send recent info; Our info came by word of mouth from Hedges area neighbors. We live on corner 105th and Paulina "Bad Corner" large vehicles shake house when hit bottom of road at corner.
25.	July 22, 2010 (Open House)	Judy Elli	Do not extend Blake from 105th. We have enough noise from WES and freight trains at night, gun club, Tigard Sand and Gravel blasting. We do not need our home values decreased by additional traffic and noise.
26.	July 22, 2010 (Open House)	Tom Oberg	I live on 109th Terrace but the back of my house is on 108th. Right now, when big trucks come down 108th our house shakes! Other concerns: 1) Too many trucks now- this will bring more! 2) Reduced home values 3) Safety concerns from additional traffic Please contact me
27.	July 22, 2010 (Open House)	Carol Beaulieu	We are opposed to any access via Blake Street. There are several alternatives routes that would be much less expensive to develop and would not impact residential neighborhoods.
28.	July 22, 2010 (Open House)	Phil Beaulieu	There is no need to access Blake St. with a 24' high bridge when there is already a railroad crossing in the Tri County Industrial Park. It does not make sense to spend the additional monies when there are many other options available that would minimally impact existing industrial areas with affecting one of Tualatin's premier neighborhoods.
29.	July 22, 2010 (Open House)	Tricia Windhorn	No future Blake St.! Create a future industrial Way, Industry is who the road is for. Leave residential areas out of the plan.
30.	July 22, 2010 (Open House)	Kristi Johnson James	I oppose the extension of Blake St.

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
31.	July 22, 2010 (Open House)	Eric Pitt	I am critically opposed to the extension of Blake St across the railroad tracks. So far any 'proposed' plan would have a significantly negative impact on our neighborhood as well as surrounding neighborhoods. I am writing to formally document my opposition to this proposal and to ask for alternative. (1) Eliminate Blake Street off the map (2) find another non-impactful route. Please hear our voices and help us maintain the neighborhood and the significant investment we have made into our homes. I am always available at the email address below.
32.	July 22, 2010 (Open House)	Betty Helenius	I oppose the Blake Street extension. The street is too narrow, and it borders on a sharp 90 degree curve. Too much traffic already.
33.	July 22, 2010 (Open House)	Donna Kreitzberg	I oppose the extension of Blake to 115th; keep industrial traffic out of the residential neighborhoods; don't let SW Tualatin-Sherwood Rd traffic cut through to 108th; waste of government money.
34.	July 22, 2010 (Open House)	Scott Trumbo	Blake St. Connector is a bad plan. Costly prime real estate, high density housing and greenway development make this a bad choice.
35.	July 22, 2010 (Open House)	Alan Fernstein	Please put any bridges, connector roads, etc that have to cross the railroad tracks through the commercial area instead of near residential areas.
36.	July 22, 2010 (Open House)	Marty Campbell	The extension of 108th/105th to Blake is very concerning. Industrial and residential traffic will be extensive through the greater Ibach community. The "conceptual" bridge that would possibly be built in my backyard is unacceptable and will also bring my home value down. I want to live in Tualatin and I want to stay here. If you build this I may possibly leave this community. I oppose Blake!
37.	July 22, 2010 (Open House)	Steve Windhorn	Suggest the city re-look at the Blake Street extension and rout the street thru the existing industrial park.
38.	July 22, 2010 (Open House)	Kathy Newcomb	There are mature trees to be protected? Good (green area) We (in N. Tualatin) had a very bad experience and felt under attach as a neighborhood. It was a great surprise to read in a letter to Metro that the Councils' policy is to protect neighborhoods!! This should be an active policy. Blake St. could be badly damaged.
39.	July 22, 2010 (Open House)	Jennifer Pitt	The extension of Blake St. past the railroad tracks is a ridiculous idea. There is not enough room to build a road and if you did my fence would be looking at the road. If elevated, due to the railroad tracks, I would see it form my deck. There are many other options (i.e. Itel industrial, etc) I have attached 32 signatures strongly opposed to this idea. (List of signatures included as Public Comment Attachment1)

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
40.	July 22, 2010	Marty Campbell	Hi, I wanted to thank you for hosting the open house you had tonight regarding the Southwest Tualatin Concept area. As I mentioned tonight at the open house, my objection to the Blake expansion through to 105th/ 108th is based on how it will negatively impact the greater Ibach neighborhoods and overall Southwest Tualatin residential neighborhoods. Not only will the industrial traffic be large but the surrounding areas such as Sherwood and Bull Mountain will see this as an easy cut through. The traffic, noise and congestion impact it will have on 108th and surrounding streets, will be astounding and the quality of life will be drastically diminished in this residential area. I happen to live alongside the easement in which the Blake Road could be possibly placed. The thought of a 140 span bridge that is 30-40 feet tall and 60-80 feet wide, with bright lighting seems unimaginable. This easement is a place in which wild life is active. We need to think about how much disruption is acceptable in our environment as well. I purchased my home here in Tualatin with the thoughts of a peaceful neighborhood within which I could raise my two children and let them attend an amazing HS. Now the possibility of a major road (BRIDGE) behind my beautiful home makes me feel absolutely sick. The time, energy, money and love that has gone into my Hedges Park home is very high. I planned on living here a very long time because I have an investment in being here and love this area. Now, it makes me question the investment the city and county has in me, a tax paying resident. In fact we are one of the highest in the Tualatin area. I am a supportive individual of progression but there is a delicate balance in having commercial/industrial roads mix too closely with residential developments. Please feel free to contact me via email or phone at any time. I invite you to see our area and how beautiful it is without the Blake expansion disrupting our neighborhood. I think you will agree that the area is just not fit for such a project and that the impact it will have on your Tualatin residents will be devastating to their home values and quality of life. Thank you so much for listening to why I object to the Blake Road expansion and I look forward to you visiting. Sincerely, Marty Campbell

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
41.	July 23, 2010	Robert J Jensen Jr., Patricia J Jensen, Robert J Jensen III	Ms. Hurd-Ravich, I attended the open house last night to learn more about and express my opinion on the proposed Blake Street extension. The three of us living in our family home (all voters) are united in feeling that this project, particularly the inclusion of a bridge over the railroad tracks, would drastically and adversely impact our quality of life and the value of our property. We would support a one-lane access road extension of Blake Street to enable servicing of the railroad tracks, but nothing more substantial. It is incredible to us that such a massive road/bridge project could even be envisioned just outside the back property lines of our development. Please convey our feelings and concerns to the appropriate officials involved with this project. Thank you. Sincerely, Robert J. Jensen Jr. Patricia J. Jensen Robert J. Jensen III

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
42.	July 23, 2010	Rita Perez	Dear Aquilla, Thank you for hosting the SW Tualatin Concept Plan Open House last night. My husband, Greg, and I really appreciated meeting and talking to you about the Concept Plan. You were very informative and patient in hearing our concerns. As we explained our objection to the plan is not in the development of a commercial/industrial park, but the Blake expansion west of the railroad connecting to 105th St. We live directly abutting the easement. The proposed expansion would require that a required overpass be constructed on that portion of the road due to the railroad crossing. Having an expansion bridge 30-40 feet tall and 60-80 feet wide essentially in our backyard is devastating. The easement is the only buffer between our Hedges Park neighborhood and the already existing industrial park. This expansion would eliminate that buffer, create a high noise level, pollution, safety issues and significantly devalue our property. Our quality of life would most certainly be adversely impacted. It has always been our understanding that the City of Tualatin values a homogeneous melding of residential and commercial living and working together. This plan certainly is not taking the establish residential community into consideration. The Hedges Park/Hedges Creek and Ibach neighborhoods are one of the most expensive in the City of Tualatin. We have all invested vast sums of money, time and love into our neighborhood. We are an asset to the City of Tualatin and take great pride in our homes. I ask the city to permanently shelve that part of the Concept Plan that would extend Blake Street and drastically change our established quality of life. Please contact me anytime and come see first hand my home and those along the easement. It would give you a good perspective of the issues I have raised. Thank you again for listening to me last night and for reading this letter of objection. Sincerely, Rita Perez

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
43.	July 23, 2010	Jennifer Hughes	Hi Doug, Thanks for the thorough reply. I stopped by the open house last night and was able to ask several questions. I have to admit I'm torn on this one. As a planner (and driver!) myself, I'm sensitive to the need for a street grid, and I've known since before I purchased my home on Willow Street that the Blake Street right-of-way existed and the TSP called for straightening the curves on 108th/105th. However, as a resident and property owner, I'm concerned about traffic volumes on 108th and related safety and livability issues. I understand that the traffic analysis for the Concept Plan used modeling done for the RTP and the I-5/99W connector. Did that modeling (or additional modeling) evaluate what the Blake Street extension would do to traffic volumes on 105th/108th? Diverting existing 108th traffic to Blake instead of Avery/T-S Road is one thing, but increasing volumes on 108th due to the use of Blake as an alternative east/west route causes me more heartburn! I am sympathetic to the concerns of property owners immediately south of the Blake ROW regarding noise and exhaust, plus the aesthetic impact of the railroad bridge. Also, I wonder whether any traffic flow benefits of the extension are worth the monetary cost of construction, especially with a railroad bridge. Finally, I'm concerned about environmental impacts to wetlands, trees, etc. I haven't walked down to the Blake Street ROW but I plan to. Based on driving by, I wonder whether topography is a significant constraint to it's eventual development. There's quite a grade change between the residences on the south and the existing industrial park to the north. I plan to put my concerns in a letter to the City Council, and would appreciate your response to the question on the traffic modeling. It's been many years ago now, but I served a term on TPAC and remember you from those days. Thanks, Jennifer

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
44.	July 23, 2010	RoeAnn and Tom Oberg	Our sentiments exactly. Thank you for writing this well-thought out letter and thank you to the city for giving us a chance to express our concerns. We hope that you seriously consider the negative implications of a Blake St. extention. RoeAnn and Tom Oberg Jul 23, 2010 01:30:25 PM, wrote: >Dear Aquilla, > >Thank you for hosting the SW Tualatin Concept Plan Open House last night. My husband, Greg, and I really appreciated meeting and talking to you about the Concept Plan. You were very informative and patient in hearing our concerns. > >As we explained our objection to the plan is not in the development of a commercial/industrial park, but the Blake expansion west of the railroad connecting to 105th St. > >We live directly abutting the easement. The proposed expansion would require that a required overpass be constructed on that portion of the road due to the railroad crossing. Having an expansion bridge 30-40 feet tall and 60-80 feet wide essentially in our backyard is devastating. The easement is the only buffer between our Hedges Park neighborhood and the already existing industrial park. This expansion would eliminate that buffer, create a high noise level, pollution, safety issues and significantly devalue our property. Our quality of life would most certainly be adversely impacted. > >It has always been our understanding that the City of Tualatin values a homogeneous melding of residential and commercial living and working together. This plan certainly is not taking the establish residential community into consideration. > >The Hedges Park/Hedges Creek and Ibach neighborhoods are one of the most expensive in the City of Tualatin. We have all invested vast sums of money, time and love into our neighborhood. We are an asset to the City of Tualatin and take great pride in our homes. I ask the city to permanently shelve that part of the Concept Plan that would extend Blake Street and drastically change our established quality of life. >Please contact me anytime and come see first hand my home and those along the easement. It would give you a good perspective of the issues I have raised. Thank you again for listening to me last night and for reading this letter of objection. >Sincerely, >Rita Perez

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
45.	July 25, 2010	Scott Campbell	Hi Aquilla, Thank you for listening and coming up with an alternative plan for the Southwest Concept that betters serves the residential neighborhoods bordering the new concept plan area. Clearly, I am strongly in favor of alternative IV as I believe it serves the industrial traffic requirements without significant impact to our community. It also greatly reduces the overall cost of the project by eliminating a very expensive overpass and road.
46.	July 26, 2010	Patricia Huntting	Kaaren and committee: Please do not develop the Blake Street extension, it makes no sense to us. It is directly across the back of my home and I am the closest to the railroad tracks. It would completely disrupt the whole neighborhood and take the house values further down. I do not want to lay in bed and watch the semi trucks going by up in the air. Dirt, exhaust, noise, etc. would be present. Any manner of privacy would be completely gone. No one in our neighborhood is in favor of this change. See you tonight. PLEASE - PLEASE - DO NOT DO THIS!!

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
47.	July 26, 2010	Eric and Jennifer Pitt	Dear Councilors and city officials, I am a concerned citizen that lives next to the existing SW Blake & 108th. My fellow neighbors and I have spent numerous hours researching the potential for the Blake St. extension to come through our neighborhood. I wanted to write and express my family's opposition to any extension of SW Blake west to 115th. I am sure my fellow neighbors have written as well to express their opinions and objections to this proposed expansion. However, I am not sure anyone associated with this project has a keen understanding of how it would impact those homes (mine included) that border the proposed Blake St. expansion. We have heard and seen those we made direct contact with shaking their heads in understanding, but in order to truly understand the significance of the impact it would be ideal, if not preferred, to have someone come out and see it from our perspective. It would certainly resonate with those who could come out and perhaps offer some realism to our opposition. The impact to our greater surrounding neighborhood would be very large as well. From a substantial increase to road traffic, noise, pollution, litter, vagrants, foot traffic to a massive structure and overpass that will engulf the neighborhood, to a removal of over 25 evergreen trees (some of which are greater than 50ft tall), to the destruction of a deer habitat and finally to an increased risk to families and pedestrians walking the neighborhood and making their way to Ibach park. Finally, the funding for this proposed connection is going to be millions of dollars. I am sure there are other initiatives that would serve the community of Tualatin much better if diverted elsewhere. The impact of extending Blake St. would be far greater than the benefit. We ask that you consider alternate roads for an extension, and leave Blake as is or not make it a connecting road across the RR tracks. Please help to keep industrial traffic in the industrial development and not bring that traffic into our safe neighborhoods where a large number of children reside and play. Thank you for taking the time to consider my family and our thoughts.
48.	July 26, 2010	Patricia H. Huntting	Please do not develop Blake St. I am the closest to the road and the tracks. Please!!

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
49.	July 23, 2010	Email correspondence between Aquilla Hurd-Ravich, Senior Planner City of Tualatin, Cathy Holland, Citizen and Doug Rux, Community Development Director City of Tualatin	At the Open House we heard from residents concerns over Blake Street connecting between 108th Avenue and 115th Avenue, specifically any connection of this roadway from the railroad tracks to 108th. In response to the input I directed our consultants today to evaluate and prepare memorandums analyzing the impacts of eliminating Blake Street between the railroad track and 108th from the Concept Plan. This includes transportation impacts to the SW Concept Plan and cost reductions if Blake Street is not constructed between the railroad tracks and 108th. In addition I directed that the improvements identified in Option III to the curves between 105th and 108th be removed from the cost estimate in the evaluation because if there is no Blake Street connection to 108th there is no direct link to funding options because of no direct connection to the SW Concept Plan. We have coined this new information as Alternative IV The project web site has new information which is Alternative IV showing a map the shows Blake Street as a cul-de-sac terminating on the west side of the railroad track and shows no transportation improvements east of the railroad tracks. The consultants are doing the analysis of the impacts based on the above paragraph. I do not have the web site address at hand but I believe you were on the email list communication distributed earlier today that has that link showing a graphic of Alternative IV. With the new information it will be able to compare Alternatives III and IV. That information will be given to TPAC. The information should be available on July 28 as Aquilla indicated and we will post. The info to the web and send a notification to those who attended the Open House and have us email addresses that the information is available. In response to inquiry about language contained in the Sherwood Tonquin Plan I have forwarded your email to their staff. As we did not write that text I want to get a response from Sherwood on what they think they were saying. Hope this helps. If you have further questions please direct them to me. Have a good weekend. (Doug Rux) _____ From: c.holland73@comcast.net <c.holland73@comcast.net> To: AQUILLA HURD-RAVICH Cc: Doug Rux Sent: Fri Jul 23 20:25:51 2010 Subject: Re: Southwest Tualatin Concept Plan- No Blake Street Connection Aquilla - I am having a hard time seeing it. Your earlier email indicated that after receiving input about the Southwest Concept Plan Alternative III, it was clear that a Blake Street extension is not viewed favorably by the residents of the neighborhood abutting the plan area. In response, staff is working with our consultants to prepare an

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
50.	July 27, 2010	Ray Valone Metro	Aquilla, This email is in response to your phone message to me regarding the proposed Blake Street connection in the draft SW Tualatin Concept Plan (July 2010). First, eliminating that proposal would not violate any Metro Functional Plan requirement. We do, however, strongly encourage street connectivity whenever possible. This connection would seem to provide another east/west connection between the residential area to the east and the job areas to the west. Short of a full street connection, we strongly encourage the City to at least provide a bike/pedestrian/emergency vehicle connection at this location. It would, in part, help with better access to the proposed trail network on the concept plan site. If needed, we would support the City's proposal to do this with a letter, as appropriate, during the hearings on this plan. Ray Ray Valone, AICP Principal Planner Metro
51.	July 29, 2010	Jan and Mike Carpenter	This is our vote and opinion on the purposed Plan III Blake Expansion…no way. Thank you for your consideration. Jan & Mike Carpenter

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
52.	July 30, 2010	Micky and Cheryl Stewart	Dear City Officials, We are writing to inform you that we seriously oppose the Plan III Blake Expansion SW Concept Plan(Alternative Plan III). We have lived on 10735 SW Willow for over 10 years and have had 2 children attend Tualatin schools. We value the serenity and clean environment of the Tualatin area around our home. We are very near Ibach Park and this has been a great area for us to live. As you are aware, the Tualatin area which will be effected by the plan is an area of very nice and well kept homes. Already, we have had to put up with increasing noise caused by the trains in the area including the mass transit trains to the surrounding suburbs. Additionally, we daily have to deal with the noise from the gun club in Sherwood. Putting the proposed expansion project in will only add to this growing noise problem, plus bring traffic congestion and pollution into a great neighborhood. This will only lower our home values even further than what has happened during the tough economic times of the past few years. If this project goes in, it will be nearly impossible to sell our home if we want to get away from the problems caused by the expansion. We ask you, along with our thousands of neighbors, to THROW OUT THE PROPOSED BLAKE EXPANSION PLAN III ! Please feel free to call us or let us know what more we can do to let our opinion be known. I will be out of town on business during the August 3rd TPAC meeting but I am sure lots of people from the area will be in attendance to show their opposition. Please let us know if there are any future meetings we should attend. Thank you.
53.	July 31, 2010	John and Michele Warther	Dear Protectors of Tualatin, My Family and I are new residents and property owner of 20550 SW 104th Ave 97062. We want to voice our opposition to Alternative III Blake Expansion. Thank You, John and Michele Warther
54.	August 2, 2010	Peter & Karen Gall	To all, My wife and I are opposed to the Blake street connection. We are in favor of PLAN IV Regards, Peter & Karen Gall

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
55.	August 2, 2010	Ali Gustafson	Mr. Mayor, Please, please, please do not let the proposed Blake Expansion plan to EVER get beyond the "it was just an idea" phase!!!! Why in the world would, whomever these people are thinking up this absolutely destructive idea, want to totally destroy our neighborhoods and turn our homes into nothing more than a corner Chevron under an overpass? What a disasterous and riduculous idea!!! Please don't let this happen. I know you live here and your children go have gone to school with mine. Don't turn our ideal town into nothing more than a place for vagrants to camp and pollution and destruction to set in. And we think the housing market is bad now. Just try to sell after an atrocity like this sick idea is implemented. No, no and no!!! Sincerely, Ali Gustafson Tualatin

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
56.	August 2, 2010	Julie Makarowsky	Dear Council Members and City Planners, Please accept this email in opposition to the Blake Street expansion as it currently stands. For the past 9 years I reside next door to the Garden Corner Nursery next to their parking lot entry and a type III street barricade. Through these years I have witnessed the growth and development of this area, along with a number of incidents, accidents and hazards during inclement weather along Blake Street and 108th Avenue. This area as we are all well aware has special conditions existing to this piece of land that is characterized by its special features of geography, topography, size, shape and buildings involved. Over the years that I have lived here, I have expressed my concerns of speeding, safety and design improvements on a number of occasions to Ms. Hofmann, Civil Engineer of the City and feel as though the possibilities of encouraging a more creative approach to the improvement of 108th and Blake have been totally avoided in order to keep the provisions of the existing plan to accommodate a future extension/connection to an industrial zone. As a directly affected neighbor of this expansion my biggest concern is that the mindset of this expansion is that automobiles matter more than the needs of people. Adding more vehicles to this road and not addressing necessary traffic calming solutions to an already dangerous road is not in the best interest of the local residents and would drastically impact the surrounding property owners. Instead, I welcome the opportunity to engage and encourage a more creative approach to the development of this land, while at the same time enhancing and preserving the value, spirit, character and integrity of the surrounding area. Sincerely, Julie Makarowsky

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
57.	August 2, 2010	Mark Evans and Peggy Scott	All: As homeowners in Hedges Park, at 21860 SW Fuller Dr, we STRONGLY oppose the Blake expansion project. We strongly recommend you vote NO, as our city planner's, Mayor, and council members. We VALUE our TUALATIN NEIGHBORHOODS, and firmly expect you to oppose this plan. When the time comes for us to vote for your elected positions, we will both remember how the vote on this measure proceeded. We would be happy to be contacted to discuss. Your interested constituents, Mark Evans and Peggy Scott
58.	August 3, 2010	Meg Lewis-Price	Hello Aquilla Hurd-Ravich, I live in Hedges Park on 109th Terrace. I oppose the plan to expand Blake behind my neighborhood. We already have an issue in our neighborhood which adversely affects our neighborhood: the train tracks. This is a very nice neighborhood, and none of us can afford to see our property values plummet further. We are hanging on, riding out the recession and drop in housing values, and simply cannot afford the personal financial ruin from a drop in housing values which will result from the noice, the traffic, the pollution of cars using the cut-through proposed. Obviously, the greatest issue is the physical eyesore from our streets and our homes. When homes in this neighborhood go on the market, if that road is built, folks will see the road and simply not even come in to look at a house. My words are strong--words like "ruin," and "plummet," and "eyesore." I mean every one of them, because I simply cannot afford to lose the investment which my home represents. Do any of the decision-makers in this process live in this neighborhood? If any do, I would like to hear their point of view. I request that you drop this plan, and come up with a different proposal which will not adversely affect so many residents' property values. Why not build this cut-through through the industrial park itself, the park south of Avery and west of 105th? Many of those warehouses/buildings have lost tenants, due to the recession, and sit empty. Meg Lewis-Price

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
59.	August 3, 2010	Patty Blackburn	Mayor Odgen & Council Members, "Thank you" for your contribution in making and keeping Tualatin a great place to live. My family and I have been residents since 1982 and have no plan to 'upgrade' as we consider this community "near perfect". To tell you what you already know, there's quite a negative neighborhood campaign re the potential Blake Expansion. We live on Hedges Ct., on the 'other' side of 108th St. but have been assured our lives will be altered should this monstrous expansion occur. Doubtful. The double corner on 108th, at The Garden Corner Nursery, has long been a potential fatality that has somehow defied the odds. That a vehicular death, pedestrian death, or roller blade / scooter child death has yet to occur on those corners is amazing. In that regard, a plan that involves sidewalks and increases safety in that area would be a godsend. While I feel for the Hedges Park residents, the area is an easement, entitled to be restructered for the common good. What about..... ... an UNDERpass rather than an over-pass? ... expansion of Tualatin-Sherwood road so there would literally be a "truck lane" for industrial area access? ... usage of Itel St. in the process rather than Future Blake St. ? I know my suggestions lack creativity; you've looked at the issues long and hard. We'll better inform ourselves and look to an outcome that is a "win-win" for both commerce and community. Patty Blackburn
60.	August 3, 2010	Rita Perez	Submitted a position paper via email. See SW Concept Plan Position Paper.
61.	August 3, 2010	Mary H Stuart	August 3,2010 PLEASE let be known that I am totally opposed to the proposed Blake III Expansion! My home is on Nelson Street backing up to 108th. I feel that this would be a detriment to my property. PLEASE, consider the people that live here before voting on this proposal!!!!!! THANK YOU for your consideration!!! Mary H. Stuart

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
62.	August 3, 2010	Marie-Luise Shockloss	Dear Sirs, >>>My family and I are residents of the Hedges Park Development. We moved here 10 years ago because we liked the city of Tualatin for its quaint residential areas, care of trees and great schools and parks. We love our neighborhood, our children use Ibach Park and visit Hazelbrook Elementary School and Tualatin High School. The proposed expansion of Blake Street would complete change our living environment. The noise and air pollution of hundreds of trucks would greatly deteriorate our quality of living in our neighborhood. My daughter just started driving. Bringing more traffic so close to the residential area is very dangerous. We acquired an expensive JC Reeves home. The price of our house would deteriorate. Had we known the city was planning this Industrial Expansion so close to our neighborhood and now to attract even more traffic from the busy Tualatin Sherwood Road we would have never bought our home here, but in a city that cares for their residential tax payers. So, for the sake of the City of Tualatin and its so far great standing with its residents please stop the planned expansion Plan III. Please think of alternatives to detour the traffic through the Industrial Areas. Sincerely Wayne and Marie-Luise Shockloss
63.	August 4, 2010	Bill Holmstrom Department of Land Conservation and Development	Hi Aquilla, Thanks for your response. The TPR does require the city to plan for a connected local street network including bicycle and pedestrian facilities. If the city wants to delete this connection, it should make findings that the remaining planned network will provide for safe and convenient circulation. The city should address the reasons why this connection was planned in the first place and how the amended TSP will address those issues. The city should include how other parts of the planned transportation network will have to change to make up for the loss of this connection. While we support the development of connected local street networks, we recognize the presence of the railroad does introduce some complications here. We would agree with Metro and Washington County that a pedestrian and bicycle crossing may make sense at this location. We recommend contacting ODOT rail division as early as possible to go over their requirements for this type of facility. Thanks, -Bill Bill Holmstrom AICP | Transportation & Land Use Planner Planning Services Division | Transportation & Growth Management Oregon Dept. of Land Conservation and Development

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
64.	August 4, 2010	Donna and Rick Rentfro	To Whom It May Concern, I would like it to be known that we are vehemetly opposed to the proposed Plan III Blake Expansion. Keep industrial and commuter traffic out of our neighborhood! Donna and Rick Rentfro
65.	August 4, 2010	Peter Gall	Thank you for the update on the vote. My wife and I are opposed to the Blake Street connection, but are in favor of option IV Regards, Peter
66.	August 5, 2010	Kathleen Young	I attended the council meeting on Tuesday. Along with every one else present I am strongly, VEHEMENTLY opposed to the Blake street extension through 105th. If the aim of this proposed plan is to lessen the traffic congestion on Tualatin Sherwood road, it is only a stop gap measure. It seems to me and to others at the meeting that the 99-I 5 connection is the only real solution that would carry for many years. Realistically, the Blake Street extension only provides temporary relief; which means we will have to revisit this same issue in the not-too-distant future. Thanks for your consideration! Kathleen Young

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
67.	August 5, 2010	Tony Carlson	Hi Sherilyn, Lou, et al, I recently attended the TPAC meeting on August 3rd since I was made aware of the Alternate 3 to extend Blake St. including adding a bridge over the existing train tracks. Many of the concerned neighbors brought up several good points and a few alternatives to why Blake street should not be extended and I would strongly agree with their recommendation to NOT extend the road or build the bridge. The road extension and bridge would really bring down the quality of the neighborhood and would have long term consequences. The current separation between this neighborhood and the adjacent industry should be maintained including access roads, etc. With the long term impacts of the light and noise pollution, I'm sure that many neighbors would rather sell their house at a loss and live elsewhere than remain with this huge inconvenience. With the lower property values, I can not see this nice neighborhood staying the way that it is. I'm glad that you are working on this issue and are looking at the long term effects this could have on the local community. I agree that growing industry and jobs are great, however, maintaining the current quality of life is much more important. Thank you for the service you provide. Please email or call me with any questions or if I can help in any way. Tony Carlson

Southwest Concept Plan Public Comment Log as of 8/9/10

	Date	Name	Comment
68.	August 6, 2010	Karen Mohling, Tualatin Valley Fire and Rescue	Aquilla, Thank you for the update on the Tualatin Planning Advisory Committee's recommendation for the Southwest Concept Plan (SWCP). Tualatin Valley Fire Rescue would like to submit information for consideration by the Tualatin City Council during their upcoming work session on August 9th. When there is an emergency and seconds count, the Fire District provides the quickest response possible. As communities grow and areas develop, we are challenged to maintain our response-time standards with increased traffic loads. As connecting roads become available, we have more flexibility in our response routes which can help us maintain and improve our response times. Also, when additional access is made available to the nearby neighborhoods, the Fire District will be able to better serve those residents and businesses. Tualatin Valley Fire & Rescue supports Alternative 3 in the SWCP that provides a Blake Street connection. The Fire District also supports the use of street signs that will discourage and minimize any non-resident traffic through the neighborhood; this could include signs that indicate "Local Traffic Only" and " No Trucks". Finally, we endorse the use of traffic calming measures such as painted lines of travel, street trees, curb extensions, chokers, medians, pavement texture and speed cushions to control existing traffic on residential streets. If ODOT can permit an at-grade-crossing, the Fire District would also support this design to minimize the effect of the connection on the neighborhood. Thank you for your assistance. Karen Mohling Deputy Fire Marshal TVF&R
69.	August 7, 2010	Mark Evans and Peggy Scott	All, We know that on August 9 the City Council, during a work session, will be discussing the Southwest Concept Plan. We strongly urge you to adopt TPAC's recommendation of the Southwest Concept Plan Alternative IV. We do NOT want any work done on the Blake Street connection , or work done on the curve. We appreciate your support in this matter. Thank you. Mark Evans and Peggy Scott

To: Tualatin City Council
SW Concept Planning Commission

From: Rita Perez
Member of Citizen Involvement AD Hoc Committee

Re.: SW Concept Plan
Position Paper

All planning and further development of the SW Concept Plan needs to stop until the Citizens of Tualatin have an opportunity to voice their concerns and positions concerning the transportation issues.

It is clear from the Alternative III and Alternative IV plans that the SW Concept Plan Commission, consultants and Staff have not adequately and responsibly addressed the ingress and egress issues with the best interests of the residents of Tualatin in mind.

No current or future industrial/commercial development should be planned, approved or implemented by the City without the transportation issues, such as connector roads, definitely determined and approved with the citizens' input throughout the planning process.

Any connector roads, including expansion bridges, should never go through or abut established residential neighborhoods without specifically agreed upon buffer zones separating the industrial/commercial from the residential.

Industrial development should impact industry not established residential communities.

I propose the following:

If an access connector road is required off 105th Street to the proposed SW Concept Plan development, the existing road, Industrial Way, be used.

Although Industrial Way is a private road through Tri County Industries, it has an existing railroad crossing and direct access into the SW Concept Plan's industrial development area. This Alternative V Plan would not require building an overpass in the backyard of the Hedges Park residential community. Not only would this alternative plan maintain the existing buffer between residential and industrial land use, but it would also be a more cost efficient solution.

In addition, the proposed Blake Street expansion requires that private land be purchased either from the residents abutting Blake Street or from Tri County Industries.

The logical and fair choice is to purchase Industrial Way from Tri County Industries and keep the residential neighborhood intact.

Further, the SW Concept Plan should be stopped until:

1) southern routes have been determined and materialized;

2) Tualatin-Sherwood Blvd. is widened from Teton to Highway 99;

3) Blake Street expansion is permanently removed from any planning so that this issue is never revisited in the future;

4) An Alternative V plan is developed with the voice of the citizens' knowledge and approval.

5) A clear definition of buffer zones separating residential, commercial, and industrial land use be permanently established by the city.Buffer zones must be clearly defined as to their required size, locations, and design.

Direct attention by the City Council to these issues would go a long way in restoring a sense of trust in the City of Tualatin's mayor and the City Council.

I am available to assist the Council in a fair and effective plan.

Sincerely,

Rita Perez
10965 SW Byrom Terrace
Tualatin, OR 97062

503-486-5255 h
503-730-4023 c

celtic.rita@gmail.com

HOW ARE WE DOING?

18880 SW Martinazzi Avenue, Tualatin OR 503.692.2000 www.ci.tualatin.or.us

Your Comments are Important!

Neighbors oppose extending Blake to 115th

Also - so do those neighbors - 82 signatures

TELL US ABOUT YOUR VISIT:

Date: _____ Location of Your Visit: _____

Who helped you? _____

Did you get what you needed? _____ Yes _____ No

How would you rate our service?

_____ Excellent _____ Satisfactory _____ Needs Improvement

MAY WE CONTACT YOU?

Name: _____

Phone: _____

Email: _____

Best time to reach you? _____

July 21, 2010

Neighbors OPPOSE the extension of Blake Avenue to 115th Street

We, the undersigned, strongly oppose the extension of SW Blake Avenue to 115th Street for the following simple reasons:

1. There is no need for this extension of SW Blake to 115th; the development can be served off Tualatin-Sherwood via 115th or 124th;
2. The extension will create a glaring eye-sore and cause horrendous traffic noise in Hedges Park residential neighborhood;
3. The extension will destroy the existing grass pathway that serves as the required buffer between commercial and residential areas; and
4. The extension will cause the values of the homes in Hedges Park to drop significantly

#	Name	Address	Signature
1	Chris Shell	11040 SW Byrom Terrace	
2	Doug Shell	11040 SW Byrom Terrace	
3	Caydan Russell	11075 SW Byrom Terrace	
4	Laurie Buchler	11080 SW Byrom Terrace	
5	Michael Buchler	11080 SW Byrom Ter	
6	Laura Russell	11075 SW Byrom Ter.	
7	Nick Meenaan	21820 S.W. Fuller DR	
8	David Thomas	21810 S.W. Fuller DR	
9	Patricia Thomas	21810 SW Fuller Dr	
10	Mark Molau	21788 SW Fuller Dr. Tualatin OR 97062	
11	Elena Molau	21788 SW Fuller Dr Tualatin	
12	Tom Leishman	21777 SW Fuller Dr Tualatin OR 97062	
13	Monica Michael Wolfley	21783 S.W. Fuller Dr.	
14	Matthew Wachsmann	21783 SW. Fuller Dr.	
15	Tony Carlson	21743 SW Aspen Pl.	
16	Cameron Colby	21717 SW Aspen Pl.	
17	Kyle Beckman	21653 SW Aspen Pl	
18	Brandi Beckman	21653 SW Aspen Pl	
19	Brock Mattila	21601 SW Aspen Pl	
20	Tana K Richmond	21699 SW Aspen Pl	
21	Jake Richmond	21699 SW Aspen Pl	
22	Darryl Arthur	11039 SW Keller St	
23	Pat Jensen	11055 SW Byrom Ter	
24	Robert J. Jensen	11055 SW Byrom Ter	
25	Donna Kreitzberg	PO Box 3242 Tualatin OR 97062	

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#	Name	Address	Signature
26	Annelle Brewer	11035 SW Byron Ter	Annelle Brewer
27	KENT BREWER	11035 SW BYRON TER	Kent A Brewer
28	Patricia Nusszbaum	21585 SW 110th Place	Patricia Nusszbaum
29	Jerry Nusszbaum	21585 SW 110th Place	Jerry Nusszbaum
30	Pat Huntley	21920 SW 110th Pl	Pat Huntley
31	HAROLD PETERSON	11020 SW BYRON	Harold R Peterson
32	Amy Loftin	11015 SW Byrom	Amy Loftin
33	Mike Loftin	11015 SW Byrom	Mike Loftin
34	Tony Hunt	PO Box 384	Tony Hunt
35	Chris Marsh	18495 Rose Ct	Chris Marsh
36	Jeanne E. Pellatz	11000 SW Byron Ter.	Jeanne E. Pellatz
37	Diane M. Geyer	11060 SW Byrom Ter.	Diane M. Geyer
38	Jeffrey Geyer	11060 SW Byrom terr	Jeffrey Geyer
39	Mary Pattison	21875 SW Fuller	Mary L Pattison
40	William Pattison	21875 SW Fuller	William A Pattison
41	KAREN ZIMEK	21840 SW FULLER	Karen Zimek
42	Tammy Tillema	21880 SW Fuller	Tammy Tillema
43	Anne Lynett	21900 SW Fuller	Anne Lynett
44	DANIEL DOWD	10985 SW EVANS CT	Daniel Dowd
45	Tonya Quiner	10980 SW Evans Ct	Tonya Quiner
46	Laura Russell	22026 SW Fuller Dr	Laura Russell
47	Patricia Markensen	22017 SW FULLER DRIVE	Patricia Markensen
48	Don Kozlowski	10960 SW Koller ST	Don Kozlowski
49	Kat Koller	10960 SW Koller ST	
50	Evan Esau Evan Esau	10942 SW Koller St	Evan Esau
51	Michelle Esau	10942 SW Koller St	Michelle Esau

Neighbors OPPOSE the extension of Blake Avenue to 115th Street

We, the undersigned, strongly oppose the extension of SW Blake Avenue to 115th Street for the following simple reasons:

1. There is no need for this extension of SW Blake to 115th; the development can be served off Tualatin-Sherwood via 115th or 124th;
2. The extension will create a glaring eye-sore and cause horrendous traffic noise in Hedges Park residential neighborhood;
3. The extension will destroy the existing grass pathway that serves as the required buffer between commercial and residential areas; and
4. The extension will cause the values of the homes in Hedges Park to drop significantly

#	Name	Address	Signature
77	Karen Ottaller	10770 SW Willow St.	Karen Ottaller
78	Julie Makarovsky	10775 SW Willow St	
79	Jennifer Hughes	10755 SW Willow St	Jennifer Hughes
80	Marty Campbell	10925 SW Byron Terr	Marty Campbell
81		10928 SW Byron Ter	
82	Drew Campbell	10925 SW Byron Ter	
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4. The extension will cause the values of the homes in Hedges Park to drop significantly

#	Name	Address	Signature
52	Jana Hudgins	20695 SW 98th Ave	
53	MATTHEW GARLAND (MATTHEW GARLAND)	20990 SW 108th st.	
54	Jim Carr	21160 SW 108th Ave	
55	RICHARD Robinson	10356 SW Susquehanna Dr	
56	Rita Robinson	10336 SW Susquehanna Dr.	
57	RUTH ROBINSON	10336 SW Susquehanna Dr.	
58	Herb Book	10440 SW Susquehanna	
59	Kathleen Young	10488 SW Susquehanna	
60	Sandra Wahlstrom	10499 SW Susquehanna	
61	Jim Nyhammer	20999 SW 104th	
62	Ronald Dennerson	20916 SW 104	
63	Randy Frost	20869 SW 104th Ave.	
64	Paul Luvaas	20888 SW 104 Ave	
65	Maia Luvaas	20888 SW 104th Ave	
66	CRAIG STOVERHACKER	20916 SW 104th AVE	
67	Kari Johnson	10413 SW Moratoc Dr.	
68	LARRY SHERWOOD	10432 SW MORATOC	
69	John Watson	22215 SW 105	
70	Mark Kuth	10480 SW Paulina DR	
71	Don Deffer	10485 SW Paulina DR	
72	Rosalie DeHerr	10485 SW Paulina DR	
73	LINDA OMHEIRER	10465 SW PAULINA DR.	
74	Heather Peterson	10312 SW Moratoc Dr.	
75	Todd Peterson	10312 SW Moratoc Dr.	
76	Justin Ahrenkiel	21255 SW 104th Terr	

The following people are **opposed** to the extension of Blake Avenue between 108th and 115th street in Tualatin, OR as part of the Southwest Concept Plan. Extending Blake creates a hardship for the residential neighborhood and diminishes the quality of life for the residents. It also destroys any buffer between commercial and residential areas and encourages commercial traffic to be mixed with residential traffic. We find this an unacceptable solution. We believe there are alternative solutions that more appropriate for our community.

#	Name	Address	Phone #	eMail	Signature
1	Jennifer Pitt	10915 SW Byron Terr	8857928	ericjedi@aol.com	Jennifer Pitt
2	Maxine Jones	21538 S.W 109th	885-1628	tshorese juno.com	Maxine Jones
3	Stephen Jones	21538 SW 109th	885-1628	TSJhorse@juno.com	
4	Tricia Windham	10920 SW Byron Terr	503.702.6587	tricawindham.aol	
5	Steve WINDHORN	10920 SW BYRON TR	503 702-8600	SWINDHORN STEVE@AOL.COM	
6	Sonnet Blanchat	10970 SW Byron	503-367-0	Sonnetbl@gmail	
7	Jeanne Pellatz	11000 SW Byron	692-5901	jepellatz@comcast.net	
8	Joy Jim Boryska	21540 SW 110th Pl	486-5537	joyboryska@gmail.com	Joyce Boryska
9	Cecil H Pattison	21875 SW Feller	692-0166	whpattison@comcast	
10	Scott Trumbo	10780 SW Willow	885-9182	trumbo@comcast.net	
11	Kay Blanchat	10785 SW Willow	656-63	kay.brandre@tyson.com	
12	Roman Makarowsky	10775 SW Willow	6120929	Roman Makarowsky@comcast.net	
13	N/A	10755 SW Willow	6912107		N/A
14	JOE MCMILLEN	10725 Willow St	5036911280	rjmemillen@msn.com	
15	Amy Pate	10715 SW Willow	5036911988	amyp@bonnidev.com	Amy Pate
16	John Ferguson	21760 SW 106th	5036924748	johnferguson@verizon.net	
17		10730 SW Willow			
18	PATRICK Crowell	10730 SW Willow	503-692-0539	pc.crowell@	Patrick E Crowell
19	SUSAN CROWELL	10730 SW WILLOW	5036920539	comcast.net	Susan Crowell
20	Kelly Anderson	10750 SW Willow	503 691-6648	lahainamaui@hotmail.com	
21	Carol Beaulieu	21735 SW 109th Ter	(503) 6129700		Carol Beaulieu
22	Dick Cudmundson	21665 SW 109th Ter	(503) 691-2330	siouxsee@aol.com	
23	Micky Stewart	10735 SW Willow	503-691-1419	mickystew@comcast.net	Micky Stewart
24	Cheryl Stewart	10735 SW Willow	503-691-1419	Same	
25	Andrew Qin	21560 SW 109th	~~503-358-8~~ 503-692-1628	qinh@onid.orst.edu	

The following people are **opposed** to the extension of Blake Avenue between 108th and 115th street in Tualatin, OR as part of the Southwest Concept Plan. Extending Blake creates a hardship for the residential neighborhood and diminishes the quality of life for the residents. It also destroys any buffer between commercial and residential areas and encourages commercial traffic to be mixed with residential traffic. We find this an unacceptable solution. We believe there are alternative solutions that more appropriate for our community.

#	Name	Address	Phone #	eMail	Signature
26	Meg Lewis-Price	21850 SW 109th Terrace	503-612-0800	meglewisprice@hotmail.com	Meg Lewis-Price
27	Marty Campbell	10925 SW Byron	503 691 1408	marty.campbell@comcast.net	Marty Campbell
28	Jasmine Miller	21676 SW Dakota	(503) 885-8821		Jasmine Miller
29	Jazzy Suyematsu	9817 SW Coquille	503/691 5997		Jazzy Suyematsu
30	Gabrielle Lerren	9378 SW Ochoco Ct.	(503)691-8190		Gaby Lerren
31	Kelly Skoglund	10619 SW Bannock Ct	503 706 7698		Kelly Skoglund
32	Christy Dirodi	14730 SW 139th	5033579559		Chris Dirodi
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SWCP July 22, 2010 Open House

- An invitation was sent to over 435 property owners in the Southwest Concept Plan Area and the residential neighborhood to the east.
- An announcement was made in the City newsletter July edition of *Tualatin Today*
- An announcement was sent to the Chamber to include in their weekly e-blast.
- An announcement was distributed via flash news
- An announcement was placed on the City website was updated on the "News and Notes" page; the Calendar section; and the Long Range Planning webpage.
- An announcement was placed in the CPO5 newsletter.
- An announcement was submitted to *Tualatin Life* newspaper July edition.
- The technical advisory committee was invited.

City of Tualatin

Open House

7/22/10

5:30pm to 7:30pm

Tualatin City Council Chambers

18880 SW Martinazzi Ave

In the City Council Building near the Tualatin Library.

Southwest Tualatin Concept Plan Open House

Future meeting dates

- July 30, 2010 Technical Advisory Committee Meeting
- August 3, 2010 Tualatin Planning Advisory Committee
- August 9, 2010 City Council Work Session
- August 23, 2010 City Council accepts plan

City of Tualatin

18880 SW Martinazzi Ave
Tualatin, OR 97062

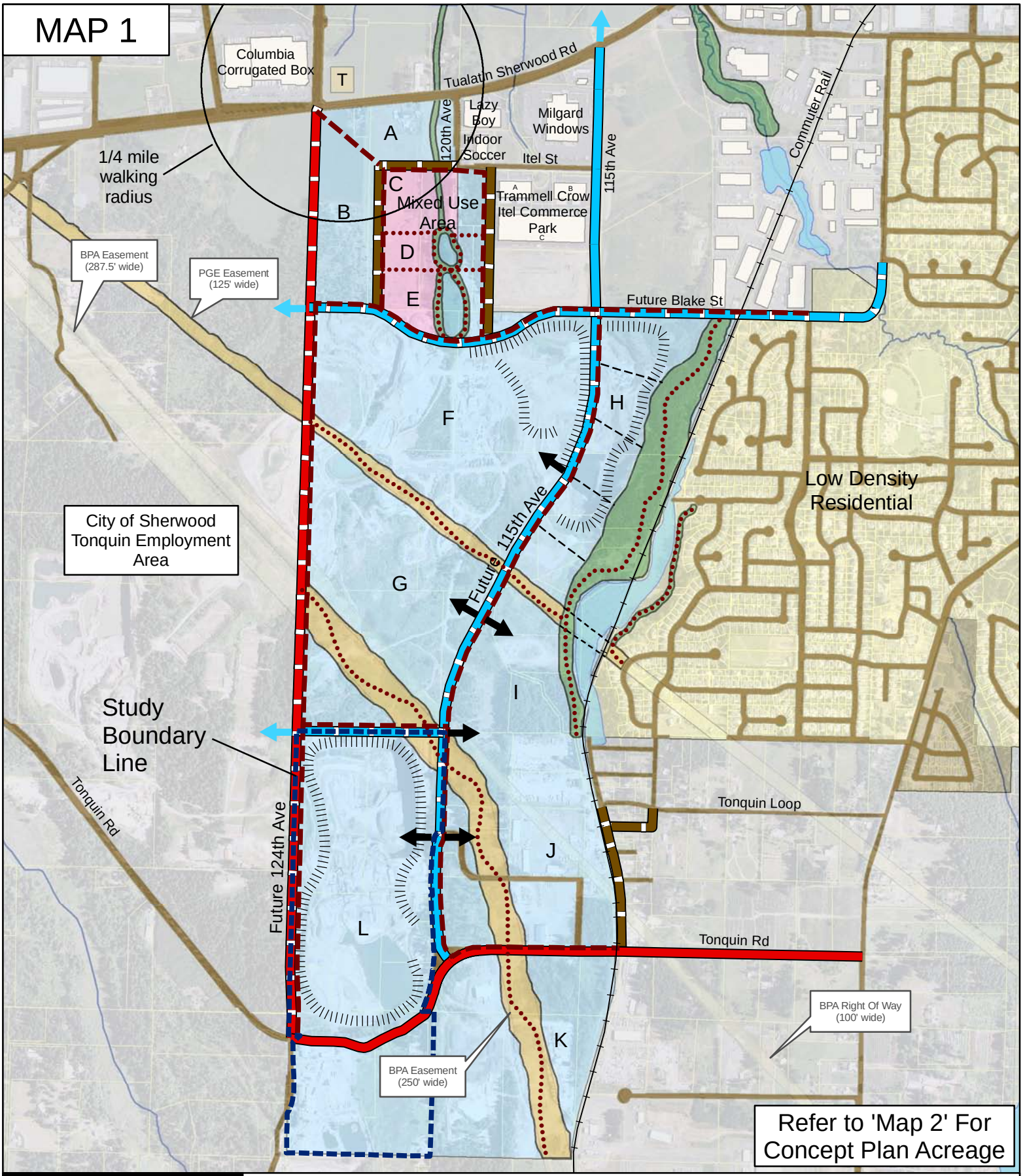
You are invited to the Southwest Tualatin Concept Plan **Open House on July 22, 2010 from 5:30pm to 7:30pm in the Council Chambers** located at 18880 SW Martinazzi Avenue.

The Southwest Tualatin Concept Plan (SWCP) is a guide for the industrial development of a 614-acre area currently located outside the city that will be part of the city in the future when properties are annexed into Tualatin's boundary.

If you are unable to attend, email your comments to:
Aquilla Hurd-Ravich, Senior Planner
ahurd-ravich@ci.tualatin.or.us,

For more information visit the website at:
http://www.ci.tualatin.or.us/departments/communitydevelopment/planning/longrange/SWTualatinConceptPlan.cfm

Or call: 503.691.3028


MAP 1
Columbia Corrugated Box
T
Tualatin Sherwood Rd
120th Ave
Lazy Boy
Indoor Soccer
Milgard Windows
Itel St
115th Ave
Commuter Rail
1/4 mile walking radius
A
B
C
Mixed Use Area
Trammell Crow Itel Commerce Park
D
E
BPA Easement (287.5' wide)
PGE Easement (125' wide)
Future Blake St
F
H
Low Density Residential
City of Sherwood Tonquin Employment Area
Future 115th Ave
G
I
Study Boundary Line
Tonquin Rd
Future 124th Ave
Tonquin Loop
J
L
Tonquin Rd
BPA Right Of Way (100' wide)
K
BPA Easement (250' wide)
Refer to 'Map 2' For Concept Plan Acreage
ALTERNATIVE III
SW Tualatin Concept Plan
TUALGIS
0 375 750 1,500 Feet
Printed: July 8, 2010
ROAD LEGEND: Solid Lines = existing Dashed Lines = proposed
Local Streets
Arterials
Collectors
Transit Hub
Pedestrain Route-Trails
Pedestrian Route-Sidewalk
Easements and Green Space
Future Industrial
Future Mixed Use
Water Body
Low Density Residential
Medium Low Density Residential
Potential Urban Reserve/UGB Expansion

Southwest Tualatin Concept Plan Fact Sheet

City of Tualatin

June 2010

The Southwest Tualatin Concept Plan (SWCP) is a guide for industrial development of a 614-acre area currently located outside the City that will become part of the City when properties annex into Tualatin's boundary.

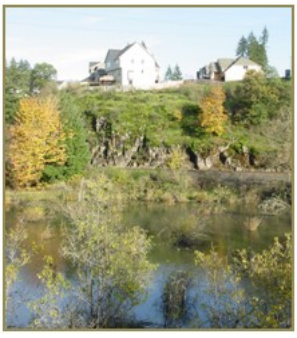
History:

In 2002 and 2004, Metro brought the SWCP land into the Urban Growth Boundary (UGB) through a series of decisions, and designated one portion of this land Regionally Significant Industrial Area (RSIA) and another portion industrial land. RSIA land must have at least one parcel of 100 acres and one parcel of 50 acres. These designations were part of Metro's strategy to create employment lands within the region. 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).

Why update the plan?

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 completed. This plan was accepted by the City Council on June 25, 2007, and work on the SWCP recommenced. The previously completed analysis has been updated to reflect changed circumstances from 2005 to 2010. These changes include the rise in construction costs to build roads, sewer and water systems, consideration of transportation analysis work from the *I-5 to 99W Connector Study*, the regional transportation plan, the City of Sherwood's concept plan for an area adjacent to the SWCP area, and the expanded SWCP boundary. The City is on track to adopt changes to the Tualatin Development Code in November 2010.

Why expand the concept plan boundary?



The original SWCP area of 431 acres was expanded by the TAC and the City in November 2009 to include 183 acres south of Tonquin Road and west of the railroad tracks. The Council identified these lands for industrial employment purposes. Approximately 66 acres currently have industrial uses and were brought into the UGB in 2004. Approximately 117 acres are currently outside of the UGB and could potentially be designated an Urban Reserve. The expanded area will help connect a future extension of SW 124th Avenue to Tonquin Road.

For more information visit :
www.ci.tualatin.or.us/departments/communitydevelopment/planning/longrange/SWTualatinConceptPlan.cfm

Southwest Tualatin Concept Plan Fact Sheet continued...

City of Tualatin

June 2010

Key Features of the 2005 Concept Plan:

Land Use and Development-

Land use will be a mix of light industrial and high tech uses, such as printing, material testing, and assembly of data processing equipment or flex space for technology companies, in a corporate campus setting. Additionally, some commercial service uses such as restaurants and retail shops, are proposed to serve the industrial area and employees. Trails are proposed in the area and will likely follow the rail road tracks and two utility easements.

Transportation-

Primary access will be from an extended SW 124th Avenue south of SW Tualatin-Sherwood Road. Secondary access is planned from SW 115th and SW 120th Avenues. SW Blake Street is proposed to be extended and SW 117th and SW 122nd Avenues, and SW Itel Street are proposed new roads. All streets will have sidewalks, bike lanes, street lighting, trees and landscaping.

Water, Sewer and Storm Drainage-

These proposed systems will require new pipes and some replacement of existing pipes to accommodate increased demands.

Natural Resources-

Local resources will be protected, where appropriate, and enhanced as a condition for new development. The tree buffer next to the railroad line is proposed to be protected.

Key Dates:

June 2010-

- Technical Advisory Committee meeting to share 2010 draft report

July 2010-

- Open house to review 2010 draft report and possible urban renewal area

August 2010-

- Tualatin Planning Advisory Committee makes recommendation to City Council
- City Council reviews and accepts updated concept plan

October 2010-

- Open House to review proposed code language

November 2010-

- Tualatin Planning Advisory Committee recommendation to Council on code language
- City Council reviews and adopts code language

Contact Information:

Aquilla Hurd-Ravich
Senior Planner
ahurd-ravich@ci.tualatin.or.us
503.691.3028

City of Tualatin
Community Development Department
18880 Martinazzi Ave
Tualatin, Oregon 97062

CPO #5 NEWSLETTER

Citizen Participation Organization #5 — Washington County
Serving: Sherwood & Tualatin Areas — July 2010
CPO Newsletters available on the web at http://extension.oregonstate.edu/washington/cpo-5-sherwoodtualatin
CPO 5 Map: http://extension.oregonstate.edu/washington/sites/default/files/CPO5_0.pdf

OSU Oregon State University

Oregon State University Extension Service supports CPOs through an intergovernmental agreement with Washington County, the sole funder of the CPO program. Extension CPO coordinators provide information on land use and livability issues, resource referrals, and work with CPO members to increase understanding of public policy and decision-making processes.

This newsletter material was developed by representatives of your local CPO and is forwarded to you as part of the Extension Service's support to citizen involvement in local government. Washington County administration, departments, and/or officials claim no responsibility, expressed or implied, for the content of this document.

CPO 5 Steering Committee

Co-Chairs:	Terri Wilson
	Eugene Stewart
CCI Rep:	Terri Wilson
Members at Large:	Joe Baney
	Marsha Brown
	Craig Hopkins
	George Pitts

CPO Coordinator
Margot Barnett, OSU Faculty
Phone: 503-821-1114
Fax: 503-690-3142
Email: margot.barnett@oregonstate.edu
OSU Washington County Office
18640 NW Walker Road, #1400
Beaverton, OR 97006-8927

To review copies of the Sherwood Community Plan, go to http://www.co.washington.or.us/LUT/Divisions/LongRangePlanning/Publications/sherwoodcp.cfm

Mark Your Calendar

Citizen Participation Organization 5
CPO 5 is taking the summer off

The next CPO 5 meeting will be:

Thursday, September 9, 2010, 7:00PM

Southwest Tualatin Concept Plan Open House

The public is invited to an Open House for the Southwest Tualatin Concept Plan (SWCP) on **July 22, 2010** from 5:30 pm to 7:30 pm in the Council Chambers located at 18880 Martinazzi Avenue.

The SWCP is a guide for the industrial development of a 614-acre area located outside the city south of Tualatin-Sherwood Road and generally between 115th and 124th Avenues. The area extends south to Tonquin Road and is located in the vicinity of the Tigard Sand and Gravel quarry. The City has expanded the boundary to include land south of Tonquin Road and west of the railroad tracks. Please attend the open house to give us your feedback on the draft concept plan.

Metro, the regional government, designated the land for industrial development as part of their strategy to balance the supply of land within the Portland metropolitan region for job creation. 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. The planning process established Concept Plan goals and reviewed existing conditions at the time.

In August 2005 the City Council directed staff to place SWCP work activities on hold until Tualatin Tomorrow, the community vision and strategic action plan, was completed. This plan was accepted by the City Council on June 25, 2007, and work on the SWCP has recommenced taking into consideration Tualatin Tomorrow and the I-5 to 99W Connector Project and the regional transportation plan. The City is working with a consultant to update analysis from 2005 data to 2009 data, and we are on track to adopt changes to the Development Code in November 2010.

For more information please contact: Aquilla Hurd-Ravich, Senior Planner, Community Development Department at 503.691.3028 or ahurd-ravich@ci.tualatin.or.us

SWCP January 5, 2010 Open House

- An invitation was sent to over 400 property owners in the Southwest Concept Plan Area and the residential neighborhood to the east.

- An announcement was made in the City newsletter Tualatin Today

- An announcement was sent to the Chamber to include in their weekly e-blast.

- An announcement was distributed via flash news

- An announcement was placed on the City website was updated on the “News and Notes” page; the Calendar section; and the Long Range Planning webpage.

- The technical advisory committee was also invited.

Southwest Tualatin Concept Plan Fact Sheet

January 2010

The Southwest Tualatin Concept Plan (SWCP) is a guide for industrial development of a 614-acre area currently located outside the City that will become part of the City when properties annex into Tualatin's boundary.

History:

In 2002 and 2004, Metro brought the SWCP land into the Urban Growth Boundary (UGB) through a series of decisions, and designated one portion of this land as Regionally Significant Industrial Area (RSIA) and another portion as industrial land. RSIA land must have at least one parcel of 100 acres and one parcel of 50 acres. These designations were part of Metro's strategy to create employment lands within the region. 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).

Why update the plan?

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 completed. This plan was accepted by the City Council on June 25, 2007, and work on the SWCP recommenced. The previously completed analysis will be updated to reflect changed circumstances from 2005 to 2009. These changes include the rise in construction costs to build roads, sewer and water systems, consideration of transportation analysis work done for the *I-5 to 99W Connector Study*, and the City of Sherwood's concept plan for an area adjacent to the SWCP area. The City is on track to adopt changes to the Tualatin Development Code in June 2010.

Why expand the concept plan boundary?

The original SWCP area of 431 acres was expanded by the TAC and the City in November 2009 to include 183 acres south of Tonquin Road and west of the railroad tracks. The Council identified these lands for industrial employment purposes. Approximately 66 gross acres currently have industrial uses and were brought into the UGB in 2004. Approximately 117 gross acres are currently outside of the UGB and Washington County has recommended to Metro that this area be designated an urban reserve. The expanded area will help connect a future extension of 124th Avenue to Tonquin Road or a future east/ west arterial road.

Key Dates:

February 11, 2010 Tualatin Planning Advisory Committee makes recommend-ation to Council

February 22, 2010 City Council accepts updated concept plan

April 2010 Open House to review proposed code language changes

May 2010 Tualatin Planning Advisory Committee recommendation to Council on code language changes

June 2010 City Council adopts code language changes

For more detailed information about the **SWCP** or to view the 2005 plan visit the Long Range Planning webpage at:
www.ci.tualatin.or.us/departments/communitydevelopment/planning

Southwest Tualatin Concept Plan Fact Sheet continued…

January 2010

Key Features of the 2005 Concept Plan:

Land Use and Development-
Land use will be a mix of light industrial and high tech uses, such as printing, material testing, and assembly of data processing equipment or flex space for technology companies, in a corporate campus setting. Additionally, some commercial service uses such as restaurants and retail shops, are proposed to serve the industrial area and the employees. Trails are proposed to follow the rail road tracks and the two utility easements.

Transportation-
Primary access will be from an extended 124th Avenue south of Tualatin-Sherwood Road. Secondary access is planned from SW 115th and SW 120th Avenues. SW Blake Street is proposed to be extended and SW 117th, and SW 122nd Avenues, and SW Itel Street are proposed new roads. All streets will have street lighting, trees and landscaping.

Water, Sewer and Storm Drainage-
These proposed systems will require new pipes and some replacement of existing pipes to accommodate increased demands.

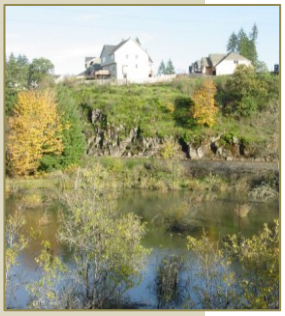
Natural Resources-
Local resources will be protected, where appropriate and enhanced as a condition for new development. The tree buffer next to the railroad line is proposed to be protected.

Contact Information:

Aquilla Hurd-Ravich,
Senior Planner
ahurd-ravich@ci.tualatin.or.us
503.691.3028

Community Development Department

18880 Martinazzi Ave
Tualatin, OR 97062



City of Tualatin
www.ci.tualatin.or.us

NOTICE OF OPEN HOUSE

SOUTHWEST TUALATIN CONCEPT PLAN

GENERALLY LOCATED SOUTH OF TUALATIN-SHERWOOD ROAD BETWEEN 115TH AND 124TH AVENUES AND EXTENDS JUST SOUTH OF TONQUIN ROAD.

The Southwest Tualatin Concept Plan (SWCP) is a guide for the industrial development of a 614-acre area currently located outside the city that will be part of the city in the future when properties are annexed into Tualatin's boundary.

This open house is an opportunity for you to review the concept and provide comments on the project.

DATE:	January 5, 2010
TIME:	5:30 pm – 7:30 pm
LOCATION:	Tualatin Council Chambers 18880 SW Martinazzi Avenue

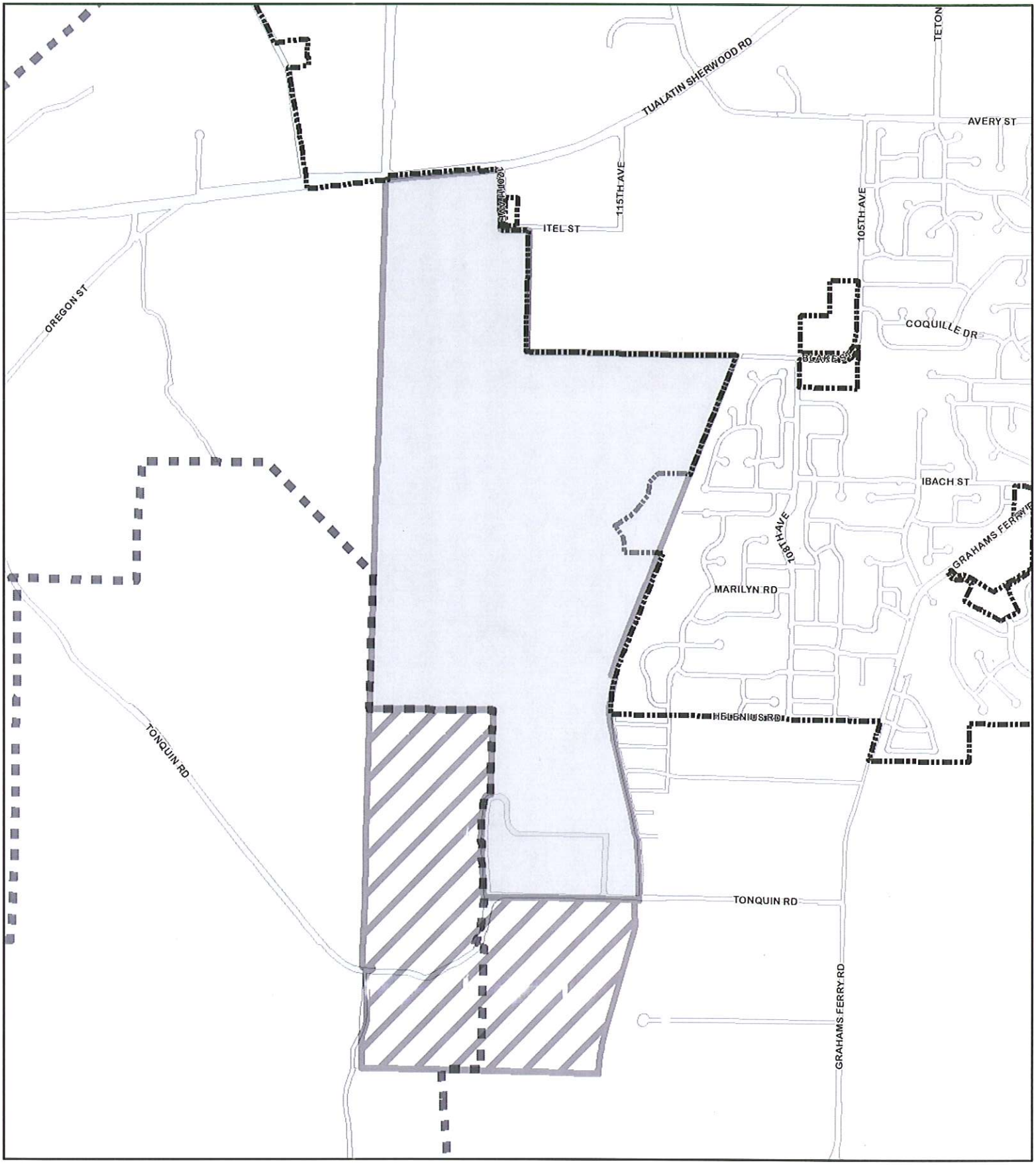
If you have any questions about this project, please contact:

Aquilla Hurd-Ravich, Senior Planner
503.691.3028
ahurd-ravich@ci.tualatin.or.us

Please see the map on the back of this notice.

Southwest Tualatin Concept Plan

TUALGIS



Southwest Concept Plan Area

Expanded Boundary Area

City Boundary

Urban Growth Boundary

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This map is derived from various digital database sources. While an attempt has been made to provide an accurate map, the City of Tualatin, OR assumes no responsibility or liability for any errors or ommissions in the information. This map is provided "as is". -Engineering and Building Dept.
Plotted 12/11/2009

J:\MAPS\Temp\TOM_ARC\Community Development Maps\Aquila Maps\SouthPlanningAreaBoundaries_MailingList.mxd

City of Tualatin

www.ci.tualatin.or.us

December 18, 2009

Southwest Tualatin Concept Plan Notification of Open House

You are invited to an Open House for the Southwest Tualatin Concept Plan on **January 5, 2010 from 5:30 pm to 7:30 pm** in the Council Chambers located at 18880 Martinazzi Avenue. The Southwest Tualatin Concept Plan (SWCP) is a guide for the industrial development of a 614-acre area currently located outside the city that will be part of the city in the future when properties are annexed into Tualatin's boundary. It is south of Tualatin-Sherwood Road, generally between 115th and 124th Avenues, extends south to Tonquin Road and is located in the vicinity of the Tigard Sand and Gravel quarry. The City has expanded the boundary to include land south of Tonquin Road and west of the railroad tracks. Please attend the open house to give us your feedback on the draft concept plan.

Metro, the regional government, designated the land for industrial development as part of their strategy to balance the supply of land within the Portland metropolitan region for job creation. 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. The planning process established Concept Plan goals and reviewed existing conditions at the time.

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For more information about this project or concerns regarding this notice, please contact: Aquilla Hurd-Ravich, Senior Planner, Community Development Department at 503.691.3028 or ahurd-ravich@ci.tualatin.or.us or visit the Long Range Planning webpage at: www.ci.tualatin.or.us/departments/communitydevelopment/planning.

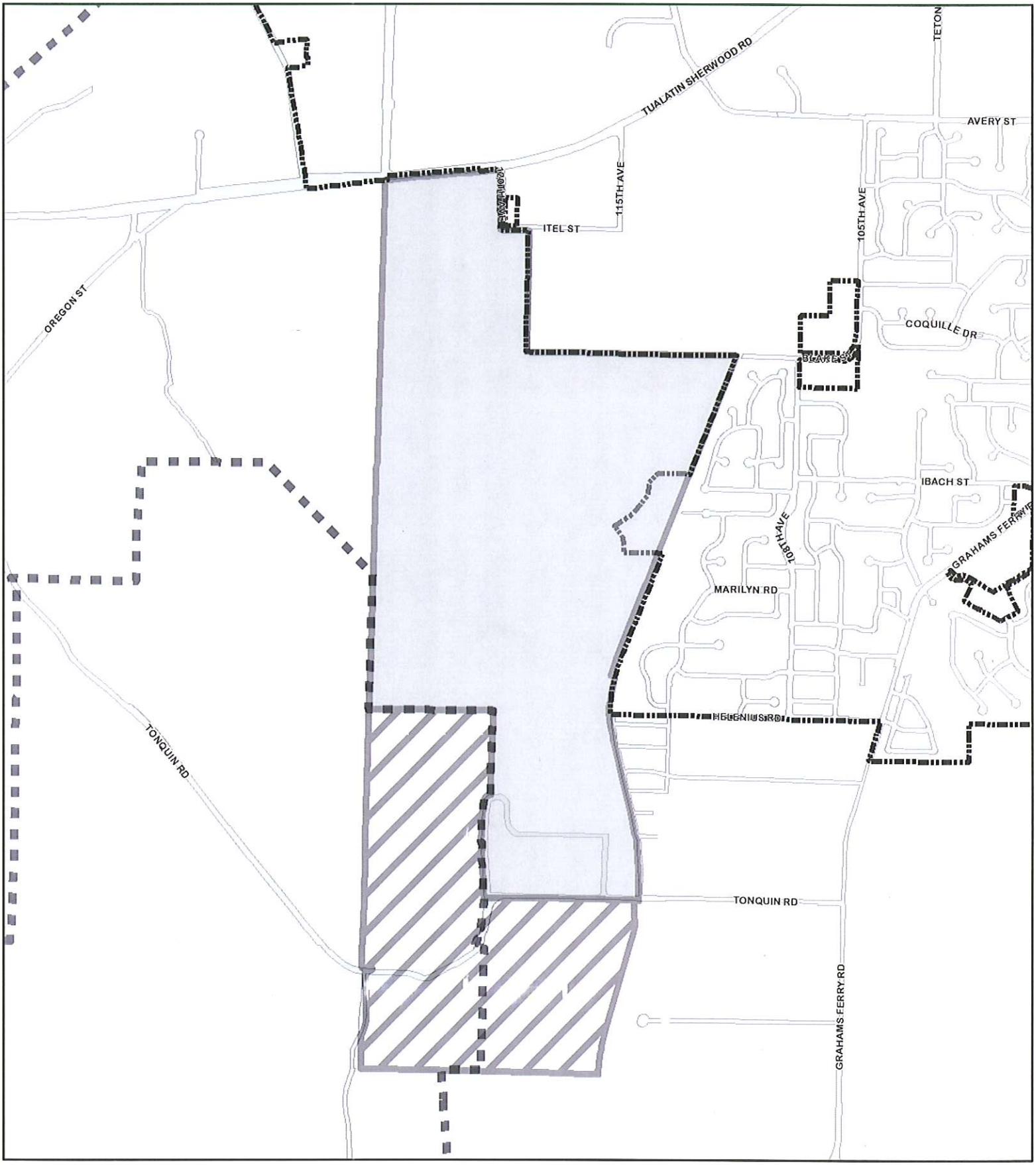
Sincerely,

Aquilla Hurd-Ravich

Aquilla Hurd-Ravich, AICP
Senior Planner
Community Development Department

Southwest Tualatin Concept Plan

TUALGIS



Southwest Concept Plan Area

Expanded Boundary Area

City Boundary

Urban Growth Boundary

RF 1:16,700

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Plotted 12/11/2009

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KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
610 SW Alder Street, Suite 700, Portland, OR 97205 P 503.228.5230 F 503.273.8169

TECHNICAL MEMORANDUM

Date: September 8, 2010 Project #: 10599

To: Doug Rux and Aquilla Hurd-Ravich, City of Tualatin

From: Paul Ryus, P.E.
Project: Southwest Tualatin Concept Plan
Subject: 2010 Concept Plan Alternatives Without a Southern Arterial Connection

INTRODUCTION

The transportation analysis for the 2010 Southwest Tualatin Concept Plan update (June 25, 2010) included an analysis of the traffic impacts of the Concept Plan area from the perspective of Oregon's Transportation Planning Rule (TPR), as well as an analysis of transportation infrastructure needs for the Concept Plan area at build-out, when approximately 4,100 jobs would be located within the area. An update to this analysis (July 27, 2010) investigated build-out impacts to the transportation system if Blake Street were not to be connected between SW 108th and SW 115th Avenues.

At the request of various stakeholders in the concept planning process, we have conducted additional analysis that investigates the impacts to the roadways in the vicinity of the Concept Plan area if the Southern Arterial option for the I-5/99W Connector were not to be constructed before the Concept Plan area was built out. In addition, we have estimated traffic growth on selected roadways external to the Concept Plan area. This additional analysis is provided for information only; as described in our June 25, 2010 analysis, (1) the trip generation potential of the Concept Plan area was incorporated into the Portland region's transportation planning model as far back as the 2020 version of the model and (2) the updated Concept Plan anticipates the area developing more slowly than assumed in the 2020, 2030, and 2035 regional models. Therefore, the site's traffic impacts have already been accounted for in the traffic volume forecasts used to develop city and county transportation system plans for the area.

ANALYSIS SCENARIOS

Three additional scenarios are analyzed in this memo. All three scenarios assume no Southern Arterial and no Blake Street connection. With the exception of Scenario 2, SW 124th Avenue would end at Tonquin Road. SW Concept traffic with origins or destinations for I-5 south would use Tonquin Road, Grahams Ferry Road, Day Road, and Boones Ferry Road to access I-5 at the North Wilsonville interchange (#286). The following is a description of each scenario:

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- **Scenario 1:** This scenario assumes an employment level within the Concept Plan that is consistent with what was assumed in the 2030 regional model (3,510 employees). As discussed in our June 25, 2010 memo, this employment level is likely to be reached at some point beyond 2030.
- **Scenario 2:** This scenario is intended to be used only for infrastructure planning purposes within the SW Concept planning area as it assumes the maximum employment density that is likely to be achieved within the SW Concept Plan (similar to Scenario 3 below), but assumes the 77-acre Parcel L (see Figure 1) remains outside the Portland metropolitan area Urban Growth Boundary in 2030 horizon year. In this scenario, the assumed employment level is 3,350 employees. Further, SW 124th Avenue would end at the east-west collector street located between Parcels G and L. While the horizon year for modeling purposes is 2030, as discussed in our June 25, 2010 memo, this employment level is likely to be reached at some point beyond 2030.
- **Scenario 3:** This scenario is for infrastructure planning within the SW Concept planning area as it assumes the maximum employment density that is likely to be achieved within the SW Concept Plan (4,100 employees). Similar to Scenario 2, while the horizon year for modeling purposes is 2030, as discussed in our June 25, 2010 memo, this employment level is likely to be reached at some point beyond 2030.

For comparison purposes, the results of the "base build-out" Concept Plan area scenario used in the June 25, 2010 analysis is also presented. The base build-out scenario assumed "build-out" of the Concept Plan at 4,100 employees (with a 2030 modeling horizon) and the existence of a Southern Arterial. SW 124th Avenue was assumed to end at the Southern Arterial in both scenarios. The modeling performed for the Southern Arterial did not assume an interchange between the Southern Arterial and I-5; instead, traffic used Boones Ferry Road to travel between the Southern Arterial and the North Wilsonville interchange. The base scenario results presented here have been adjusted from the original version to remove a proposed collector street south of the Tonquin Employment Area and west of SW 124th Avenue (in the vicinity of the Tri-County Gun Club) and reassigning traffic accordingly. This was done to be consistent with the City of Sherwood's planning for the Tonquin Employment Area.

Updated results of the "base build-out without Blake" scenario used for the July 27, 2010 analysis are also presented for comparison purposes. This scenario differs from the base build-out scenario only in that no Blake Street connection is assumed. The redistribution of trips from Blake Street has been adjusted slightly from the July analysis, taking advantage of the refined modeling information available from the model runs for the new scenarios, particularly the refined street network. Compared to the results presented in the July 27, 2010 memo, the delay and volume-to-capacity ratio results change slightly for most intersections, but the level of service (LOS) results do not change, except at SW 115th Avenue/Tonquin Road (went from LOS B to LOS C) and at SW 115th Avenue/Blake Street (went from LOS B to LOS A).

For ease of comparison between scenarios, a roundabout continues to be assumed at the SW 115th Avenue/Blake Street intersection. As discussed in the June 25, 2010 analysis, a traffic signal or four-way stop could also be applied here, but with higher levels of delay.

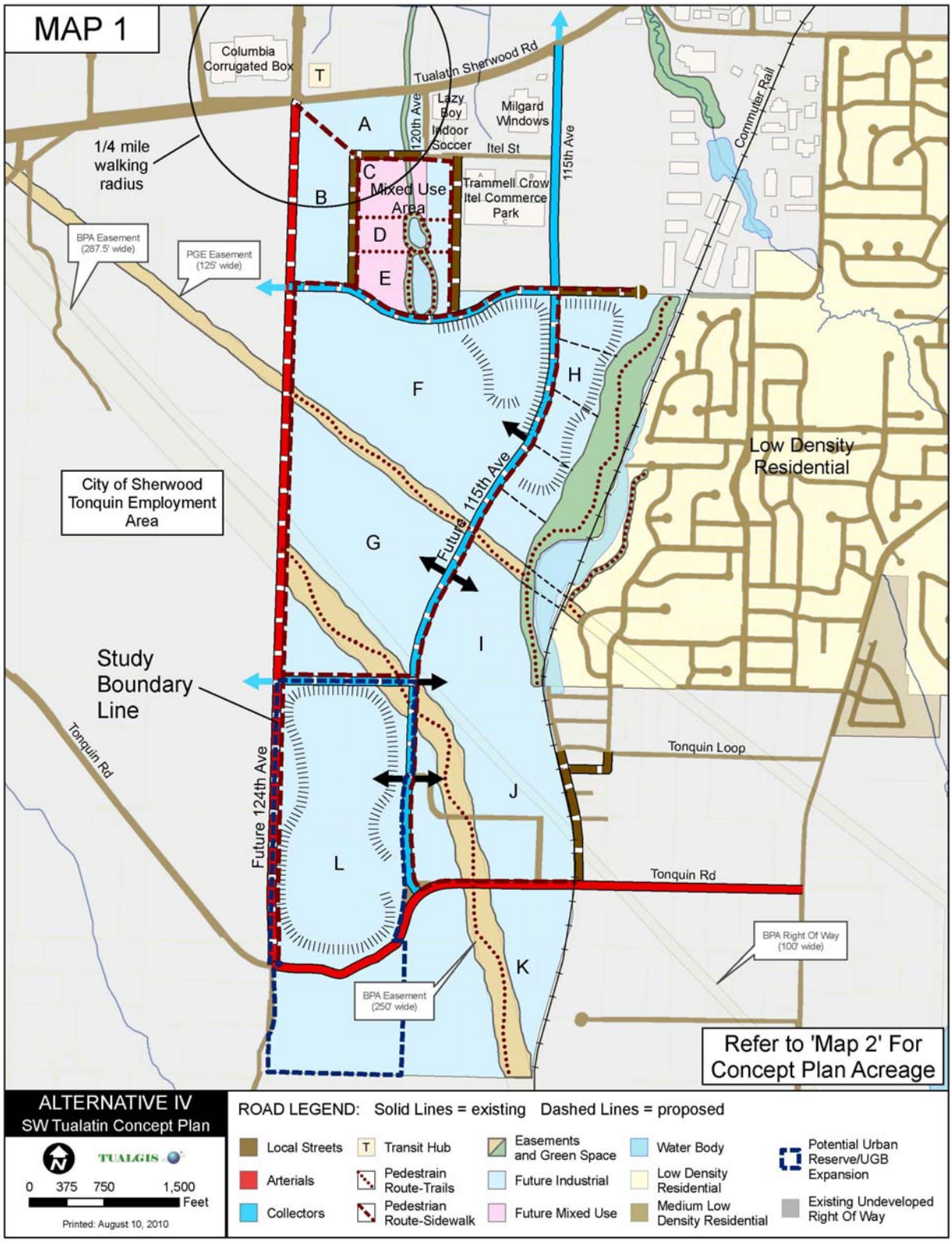


Figure 1. Southwest Tualatin Concept Plan Area

ANALYSIS RESULTS

Table 1 summarizes the 2030 weekday p.m. peak hour average delay, LOS, and volume-to-capacity (v/c) ratios at each of the study intersections, for each of the scenarios.

Table 1. Year 2030 Weekday P.M. Peak Hour Study Area Intersection Operations

Intersection	Delay (sec) / LOS / Volume-to-Capacity Ratio				
	Base Build-out Scenario	Base Build-out without Blake Scenario	New Scenario 1	New Scenario 2	New Scenario 3
SW 115th Ave./ Tualatin-Sherwood Rd.	12.8/B/0.55	14.9/B/0.56	27.0/C/0.62	32.7/C/0.87	27.9/C/0.62
SW 115th Ave./ Blake St.	5.3/A/0.36 [a]	5.2/A/0.39 [a]	7.3/A/0.53 [a]	7.4/A/0.57 [a]	6.8/A/0.53 [a]
SW 115th Ave/ East-West Collector	19.7/C/0.26 [b]	23.8/C/0.31 [b]	11.7/B/0.18 [b]	28.3/C/0.72	11.6/B/0.18 [b]
SW 115th Ave/ Tonquin Rd.	21.9/D/0.60	25.5/C/0.71	27.9/C/0.90	30.2/C/0.90	30.8/C/0.92
SW 124th Ave./ Tualatin-Sherwood Rd.	48.1/D/0.90	50.6/D/0.94	52.9/D/0.83 42.3/D/0.88 [c,d]	54.6/D/0.83 41.3/D/0.88 [c,d]	52.9/D/0.83 41.9/D/0.88 [c,d]
SW 124th Ave./ Blake St.	45.3/D/0.77	49.6/D/0.77	40.6/D/0.55 46.7/D/0.72 [c]	41.2/D/0.61 46.2/D/0.77 [c]	39.4/D/0.52 43.2/D/0.68 [c]
SW 124th Ave./ East-West Collector	17.4/B/0.74	17.5/B/0.76	19.9/B/0.31 17.2/B/0.48 [c]	--	21.9/C/0.33 19.2/B/0.50 [c]
SW 124th Ave./ Tonquin Rd.	34.3/C/0.83	35.3/D/0.83	36.9/D/0.86	--	36.5/D/0.86
SW 124th Ave./ Southern Arterial WB	34.0/C/0.86	34.0/C/0.86	--	--	--
SW 124th Ave./ Southern Arterial EB	32.1/C/0.72	32.1/C/0.72	--	--	--

All intersections are signalized and results given are intersection averages, unless indicated otherwise.
-- Intersection does not exist in this scenario.
WB = westbound, EB = eastbound.
[a] Roundabout.
[b] Two-way stop-controlled intersection (eastbound stop-controlled); results shown are for the worst movement.
[c] Assumes three-lane cross-section on SW 124th Avenue
[d] Assumes two northbound left-turn lanes on SW 124th Avenue

As Table 1 shows, there is generally little variation in results among the intersections between the various scenarios and all of the intersections would meet Tualatin's LOS D operational standard and Washington County's 0.99 v/c ratio operational standard. The following points stand out from the analysis:

- In any of the three scenarios without a Southern Arterial, Tonquin Road, Grahams Ferry Road, and Day Road become much more heavily used routes between Wilsonville and both the Concept Plan area and Sherwood. East of SW 115th Avenue.

- In Scenarios 1-3, without the Southern Arterial, the analysis results show that a three-lane cross-section would be adequate to meet the projected demands, though at SW 124th/SW Tualatin-Sherwood Road, two northbound left turn lanes would be required to meet the City's LOS "D" operating standard.
- In Scenario 2, although the SW 115th Avenue/Tonquin Road intersection would meet Tualatin's and Washington County's operational standards with just one southbound left-turn lane, two left-turn lanes would be recommended to better manage southbound left-turning queues. In Scenario 2, traffic that would otherwise use SW 124th Avenue to access Tonquin Road is diverted to SW 115th Avenue, instead.
- In Scenario 2, the SW 115th Avenue/East-West Collector intersection would need to be signalized to accommodate the volume of traffic diverted from SW 124th Avenue.
- In Scenarios 1 and 3, the East-West Collector plays a relatively minor role in the Concept Plan area's circulation. In the base scenario, Concept Plan area traffic uses the east-west collector both to head south on SW 124th Avenue (eventually bound for Highway 99W south) and north on SW 124th Avenue (bound for Highway 99W north, Sherwood, and Washington County points northwest of Sherwood). In Scenarios 1 and 3, the east-west collector is only used by traffic to and from the north on SW 124th Avenue. In Scenario 2, the east-west collector serves as a continuation of SW 124th Avenue for traffic headed to and from Wilsonville.
- In Scenario 2, the SW 124th Avenue/SW Tualatin-Sherwood Road intersection would be just at the lower boundary of Tualatin's LOS D standard.

TRAFFIC VOLUMES ON SELECTED AREA ROADWAYS

Total traffic volumes were evaluated for three locations along the edges of the Concept Plan area—SW 124th Avenue south of Tualatin-Sherwood Road, SW 115th Avenue south of Tualatin-Sherwood Road, and SW 115th Avenue north of Tonquin Road—and one internal location, along the East-West Collector. Figure 2 compares 2030 weekday p.m. peak hour volumes (sum of both directions) along these roadways for each of the scenarios.

Figure 2 shows that without the Southern Arterial, traffic volumes are approximately 40% lower along SW 124th Avenue in all of the new scenarios and about 50% lower along the East-West Collector in Scenarios 1 and 3. In Scenario 2, where SW 124th Avenue ends at the East-West Collector, traffic volumes on the East-West Collector and SW 115th Avenue north of Tonquin Road are substantially higher than in the other scenarios. Figure 2 also shows that traffic volumes are also substantially higher on SW 115th Avenue south of Tualatin-Sherwood Road in the new scenarios; however, this is an artifact of the modeling process, which explicitly modeled SW 115th Avenue in the new scenarios, but did not in the base scenarios. The presence or absence of the Southern Arterial would not be expected to significantly impact the northern section of SW 115th Avenue, while the absence of Blake Street would affect volumes to the extent shown by the difference in the two base scenario volumes.

Future traffic growth was also evaluated for five roadways beyond the Concept Plan area that were requested by stakeholders in the concept planning process. These roadways are: Highway 99W north of SW 124th Avenue, Highway 99W south of Sherwood, Grahams Ferry Road north of

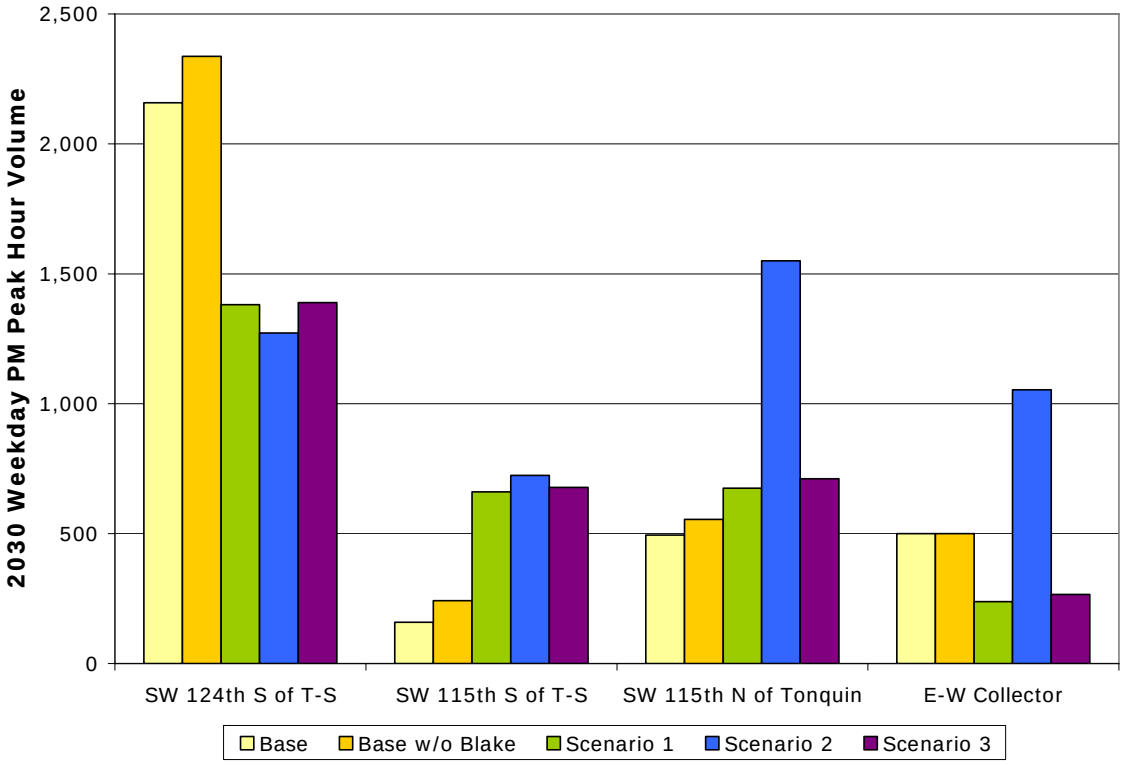


Figure 2. Traffic Volumes at Selected Locations Within the Concept Plan Area

Day Road, Day Road between Grahams Ferry Road and Boones Ferry Road, and Boones Ferry Road north of the North Wilsonville I-5 interchange. Table 2 presents the results of this evaluation and includes a comparison of total weekday p.m. peak hour volume, SW Concept Plan traffic volumes, and the percentage contribution of SW Concept Plan represents of the total traffic. The volumes in Table are for Scenario 1 discussed earlier in this memorandum, which represents the 3,510 employment level within the SW Concept Plan. This employment level is consistent with the level assumed within the 2030 Regional Model. This scenario assumes no Southern Arterial. As indicated in Table 2, with Scenario 1, the SW Concept Plan contributes between two and 10 percent of the total traffic on the various roadway links. Once again, it is important to note that the 3,510 employment level within the SW Concept Plan is not anticipated to be reached until some time beyond the 2030 horizon year.

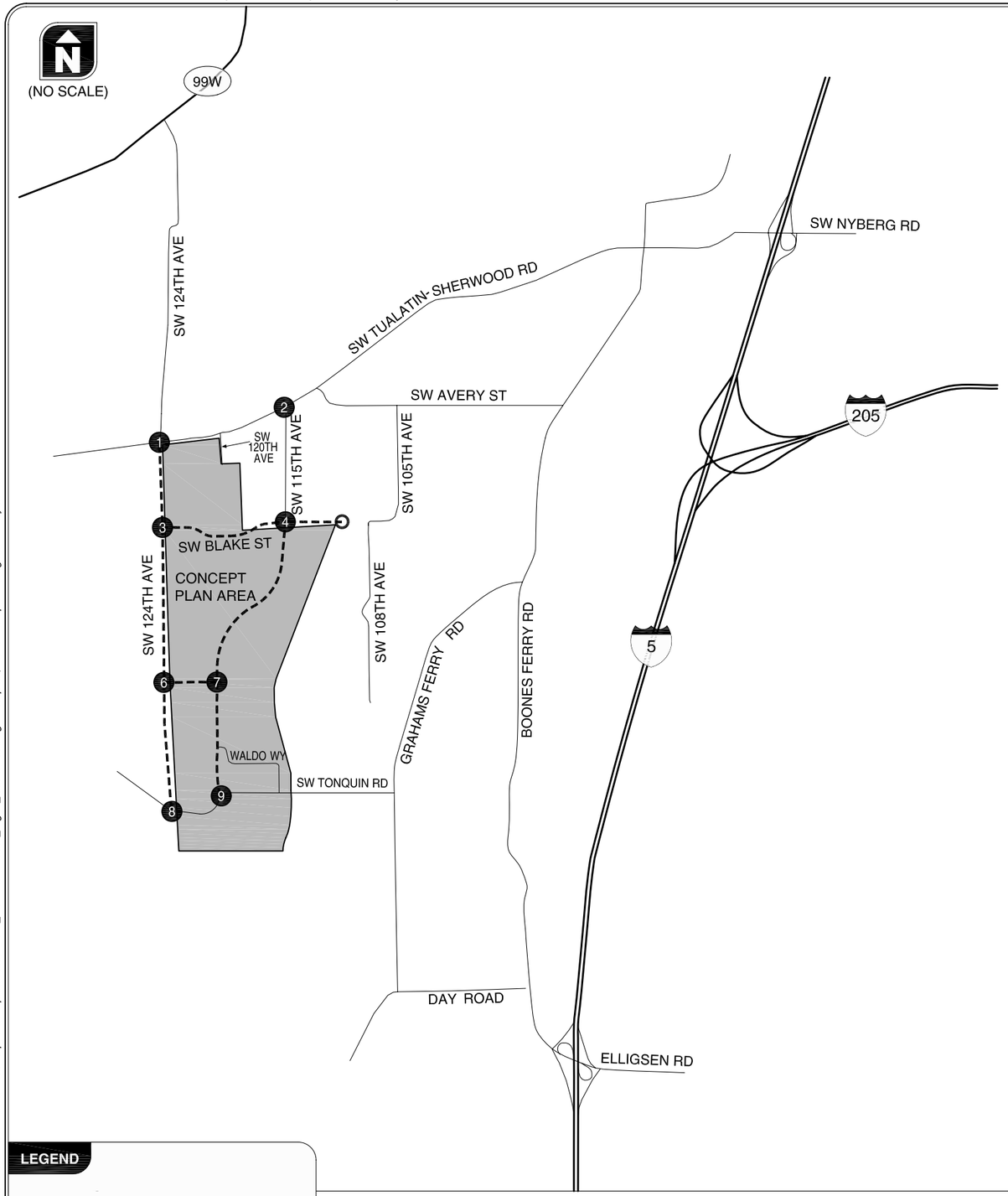
Table 2. Weekday P.M. Peak Hour Traffic Volumes on Selected Area Roadways in 2030

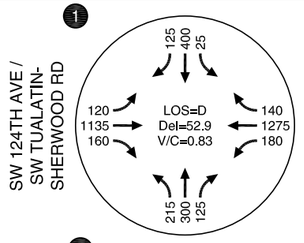
	SW Concept Plan Link Volume Contribution				
	99W North	99W South	Graham's Ferry	Day Road	Boones Ferry
Total Traffic	4853	4547	2092	1746	2908
SW Concept Plan Traffic	88	96	206	136	131
SW Concept % of Total	2%	2%	10%	8%	5%[a]

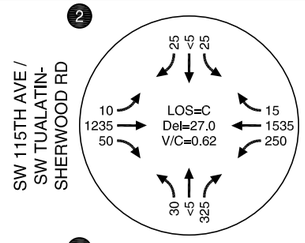
[a] As the SW Concept Plan approaches the I-5 Interchange the SW Concept plan traffic would distribute to the south (to and from I-5) and to the east (using Stafford Road).

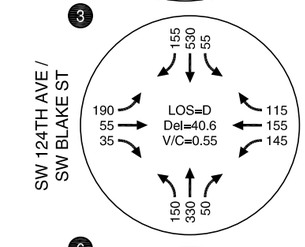
Attachments

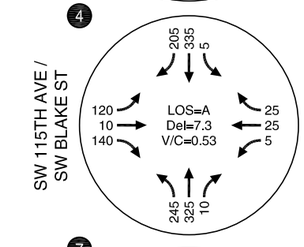
Figure A. Scenario 1
Figure B. Scenario 2
Figure C. Scenario 3
Figure D. Base Build-out Scenario
Figure E. Base Build-out Scenario (no Blake Street connection)

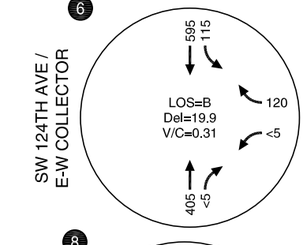


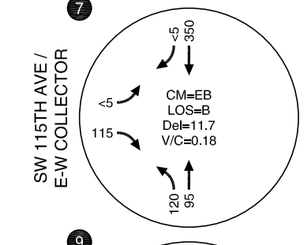


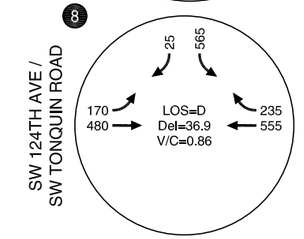


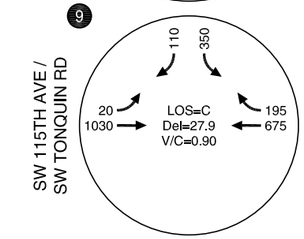










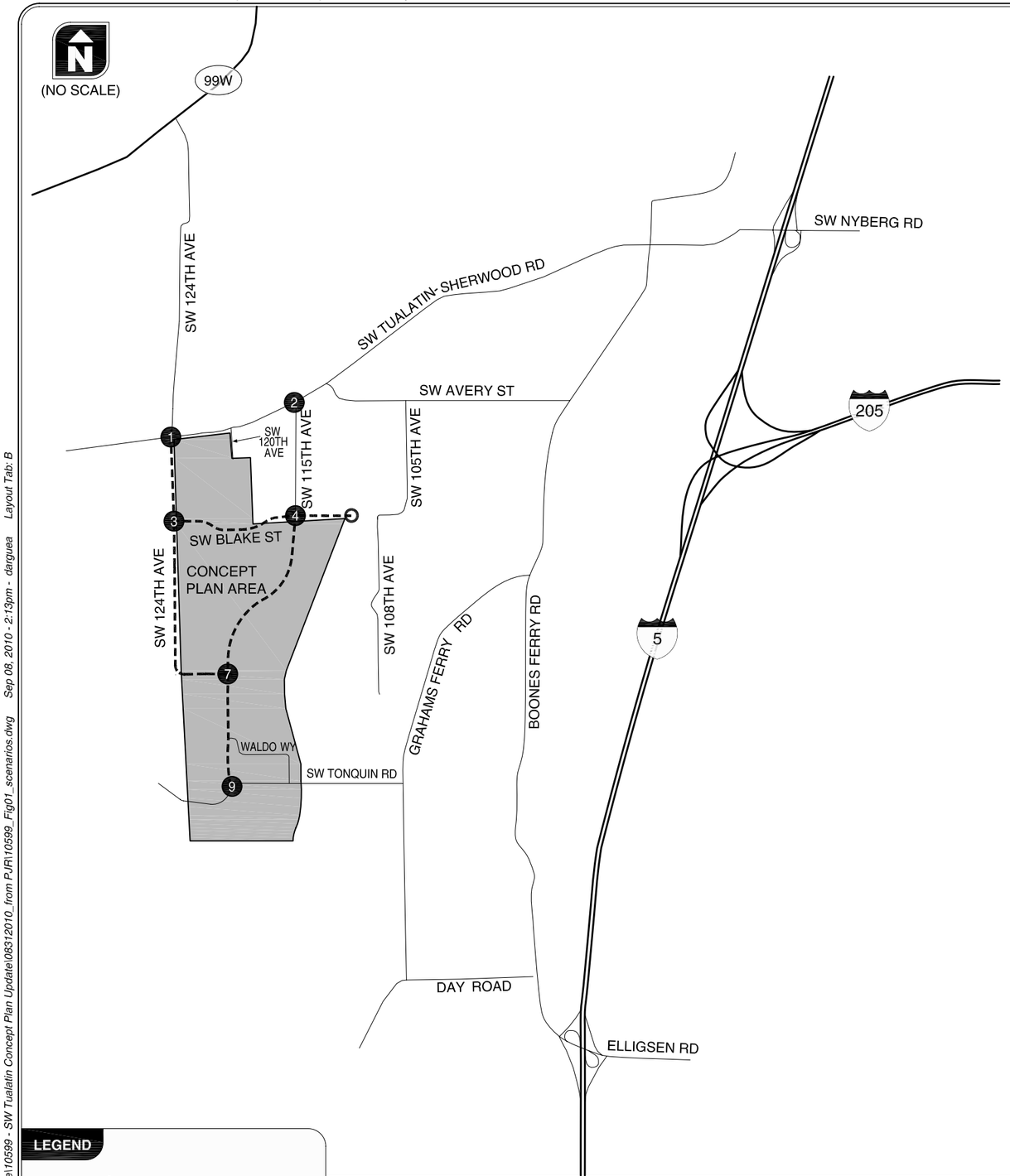


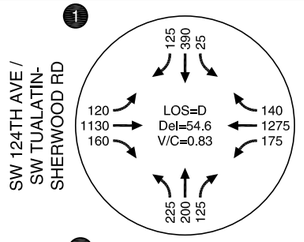
LEGEND

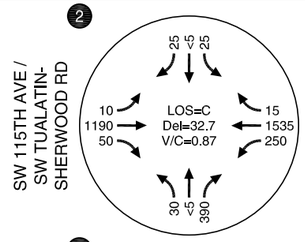
----- - PROPOSED ROADWAYS

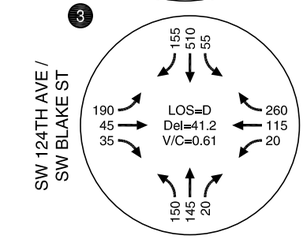
YEAR 2030 FORECAST TRAFFIC OPERATIONS - SCENARIO 1
WEEKDAY PM PEAK HOUR
TUALATIN, OREGON

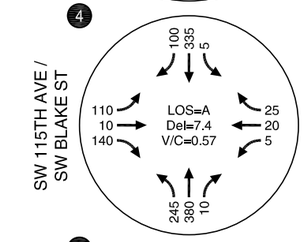
FIGURE **A**

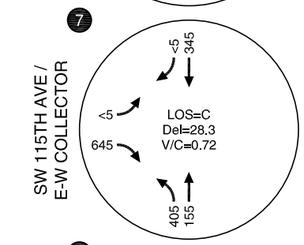


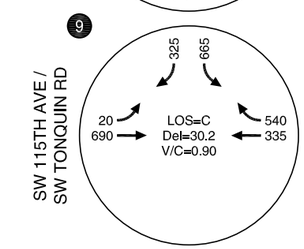












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YEAR 2030 FORECAST TRAFFIC OPERATIONS - SCENARIO 2
WEEKDAY PM PEAK HOUR
TUALATIN, OREGON

FIGURE **B**

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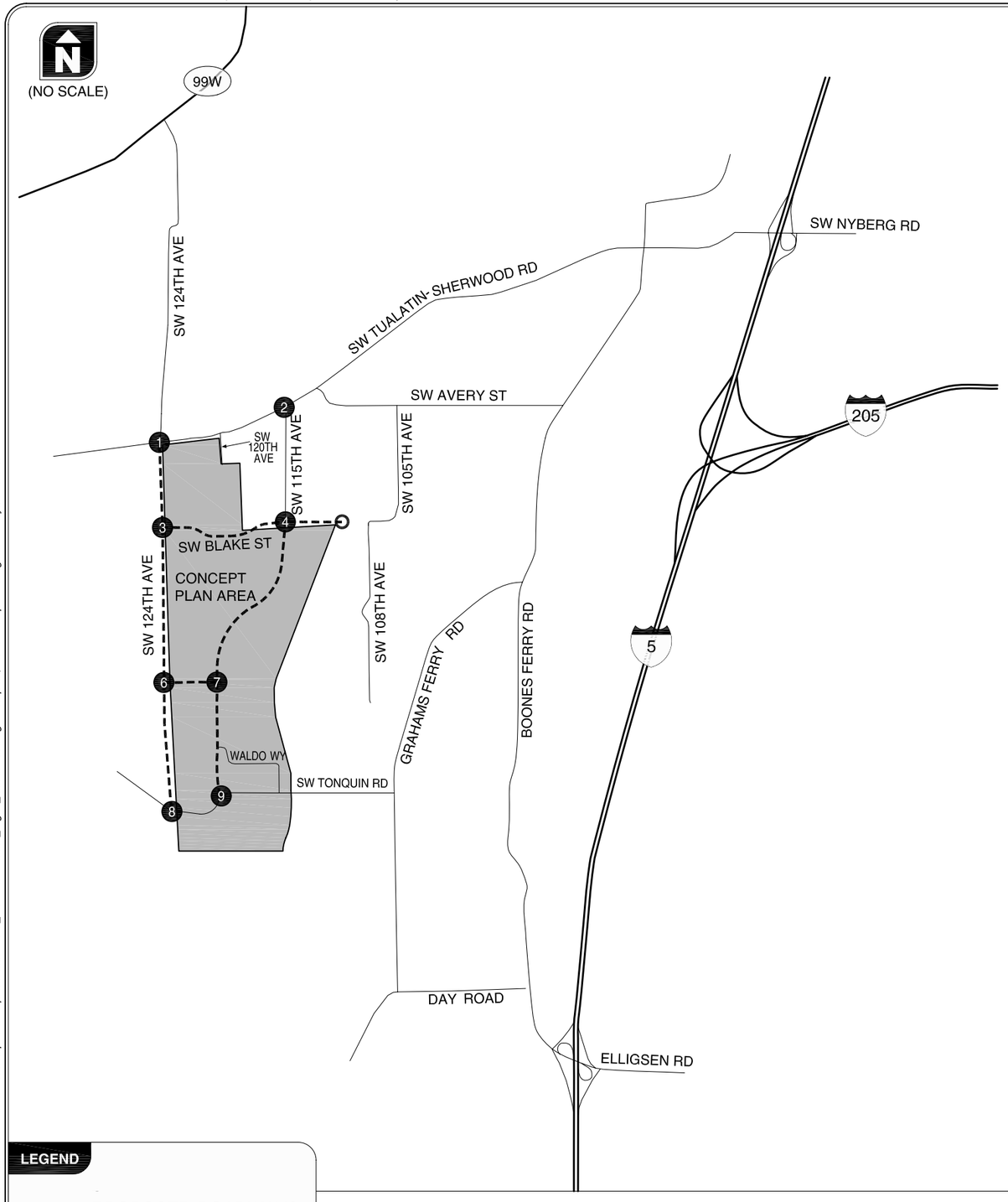
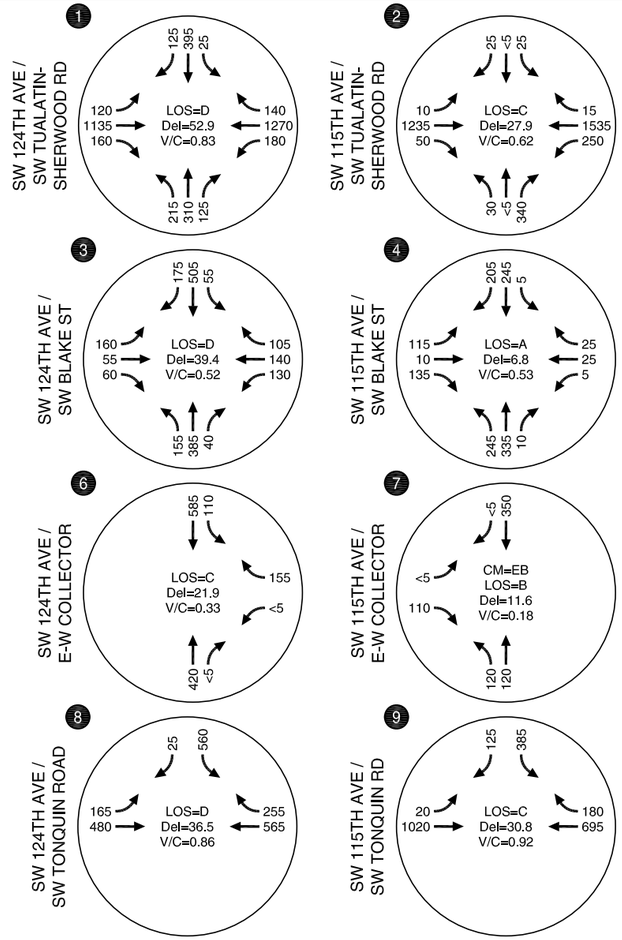


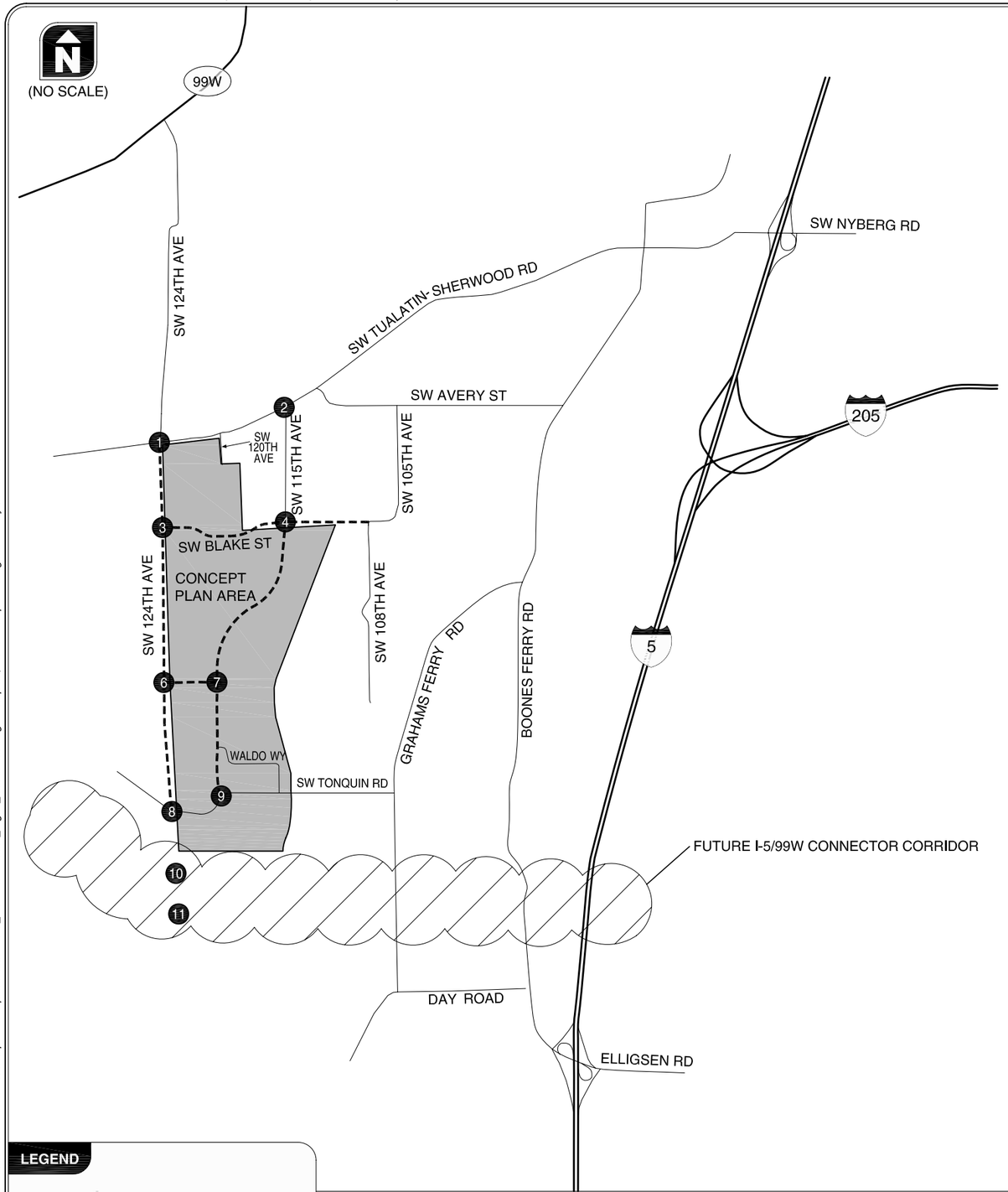


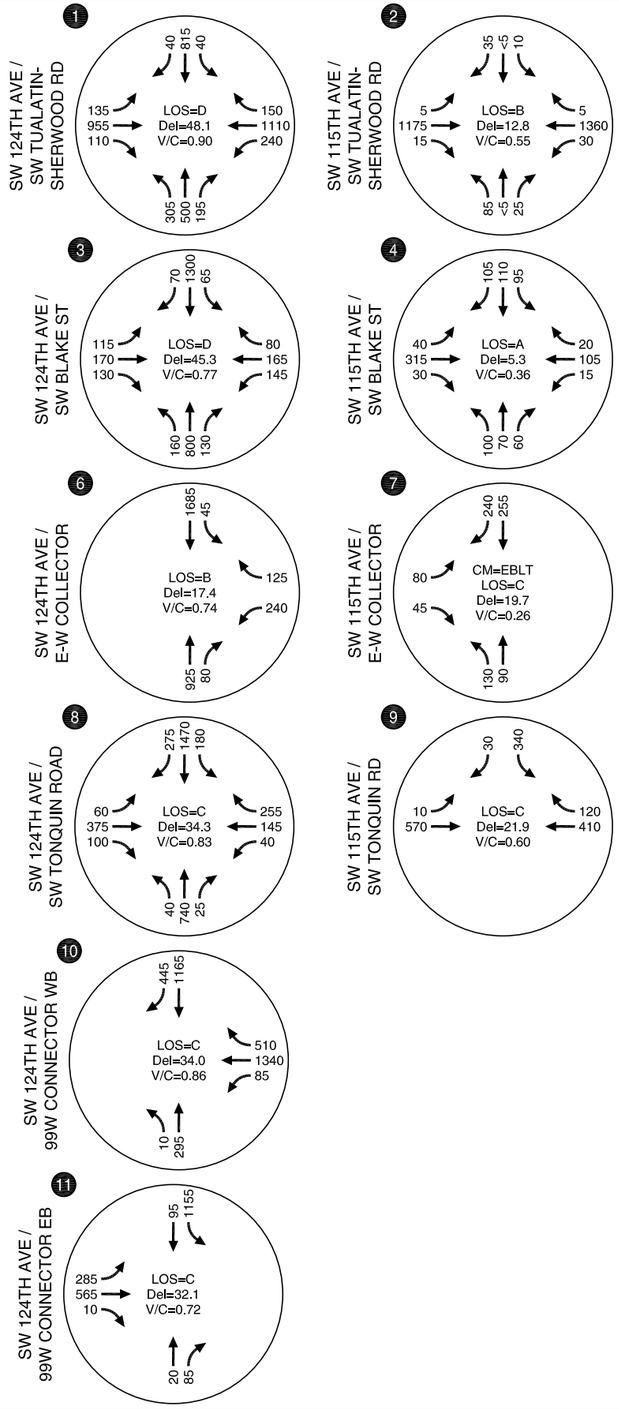
LEGEND

----- - PROPOSED ROADWAYS

YEAR 2030 FORECAST TRAFFIC OPERATIONS - SCENARIO 3
WEEKDAY PM PEAK HOUR
TUALATIN, OREGON

FIGURE **C**





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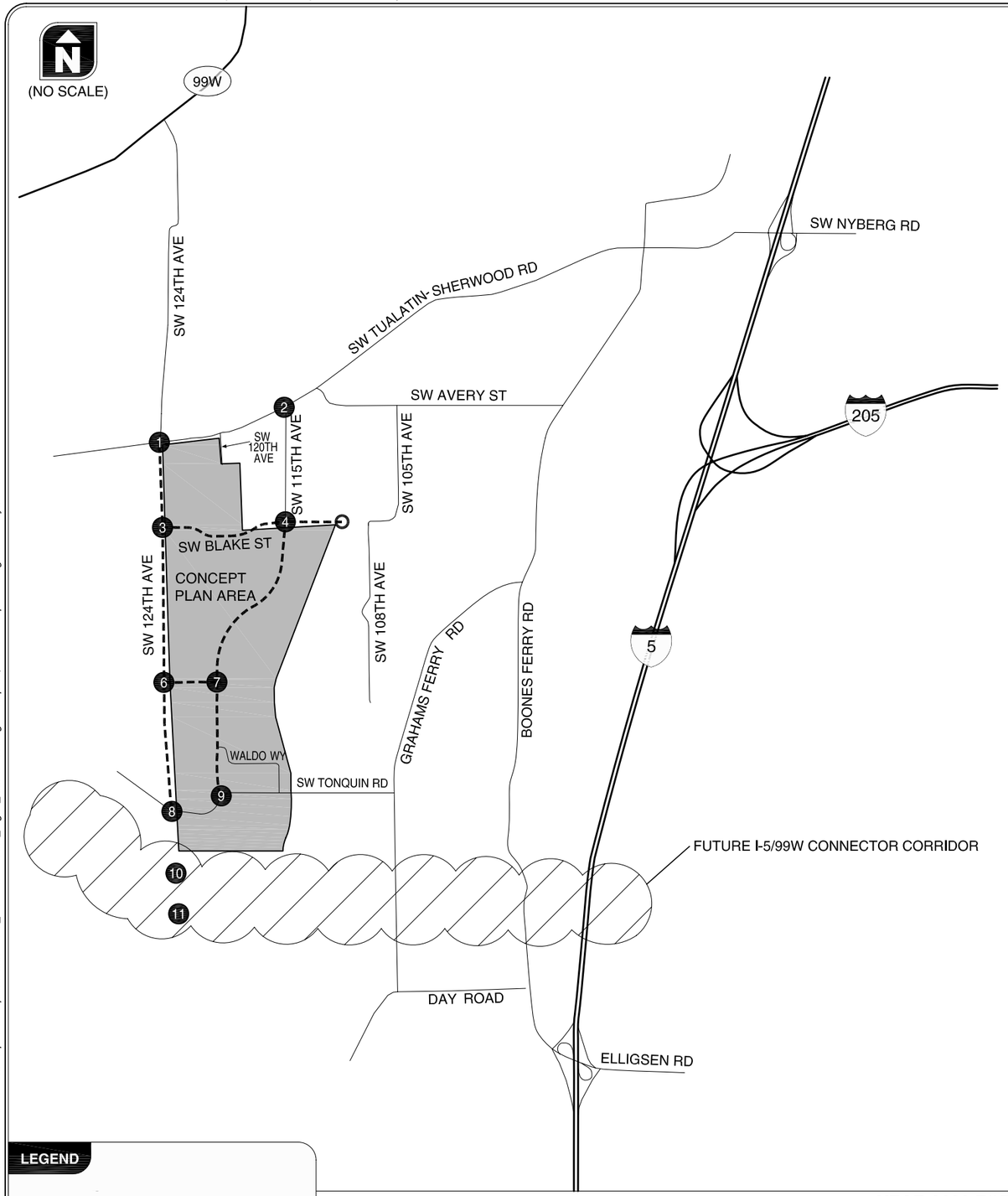
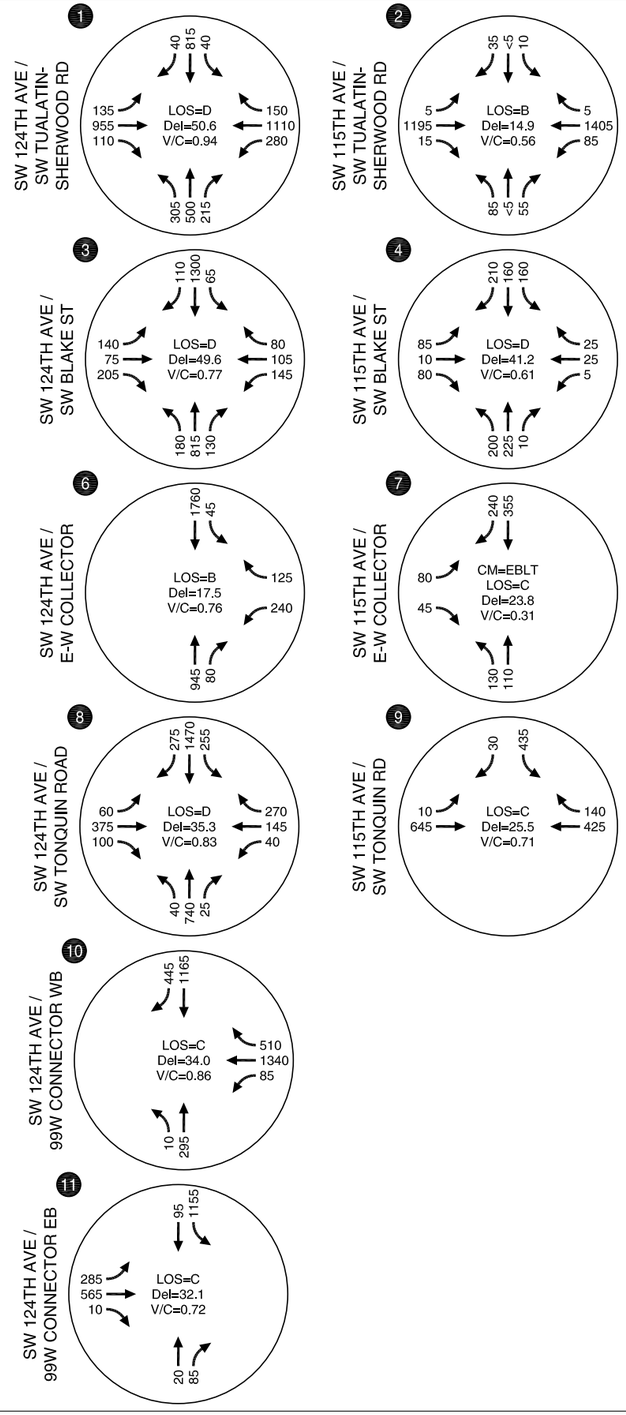
----- - PROPOSED ROADWAYS

YEAR 2030 FORECAST TRAFFIC OPERATIONS - BASE BUILDOUT CONCEPT PLAN
WEEKDAY PM PEAK HOUR
TUALATIN, OREGON

FIGURE **D**





LEGEND

----- - PROPOSED ROADWAYS

YEAR 2030 FORECAST TRAFFIC OPERATIONS - BASE BUILDOUT CONCEPT PLAN (WITHOUT BLAKE STREET CONNECTION)
WEEKDAY PM PEAK HOUR
TUALATIN, OREGON

FIGURE **E**

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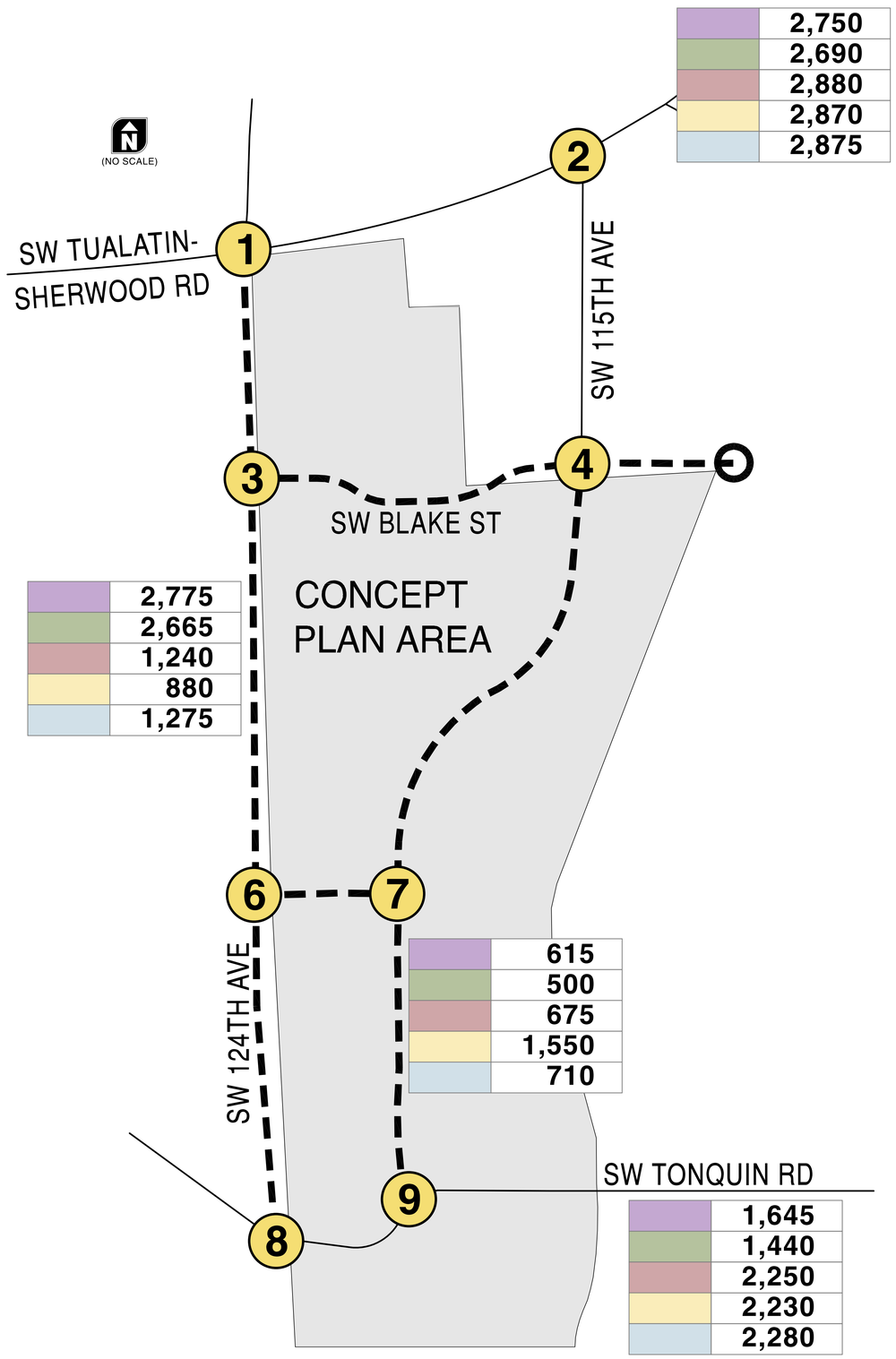
Year 2030 Forecast Traffic Operations – Scenario 1
Weekday PM Peak Hour



1 SW 124TH AVE/ SW TUALATIN-SHERWOOD RD

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D
D
D
D

2 SW 115TH AVE/ SW TUALATIN-SHERWOOD RD

B
B
C
C
C

3 SW 124TH AVE/ SW BLAKE ST

D
D
D
D
D

4 SW 115TH AVE/ SW BLAKE ST

A
A
A
A
A

6 SW 124TH AVE/ E-W COLLECTOR

B
B
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C

7 SW 115TH AVE/ E-W COLLECTOR

C
C
B
C
B

8 SW 124TH AVE/ SW TONQUIN RD

D
C
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NA
D

9 SW 115TH AVE/ SW TONQUIN

C
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C
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C

- Base-Buildout (with S. Arterial)
- Base-Buildout without Blake (with S.Arterial)
- Scenario 1 (3,510 Employees)
- Scenario 2 (3,350 Employees)
- Scenario 3 (4,100 Employees)

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TECHNICAL MEMORANDUM

Date: July 27, 2010 Project #: 10599

To: Doug Rux and Aquilla Hurd-Ravich, City of Tualatin

From: Paul Ryus, P.E.
Project: Southwest Tualatin Concept Plan
Subject: 2010 Concept Plan Alternative Without a Blake Street Connection

INTRODUCTION

The current Tualatin Transportation System Plan (TSP) includes a future extension of Blake Street west from SW 108th Avenue, connecntig to SW 124th Avenue. The 2005 Southwest Tualatin Concept Plan transportation analysis assumed this connection, as did the 2010 Concept Plan update (described in our June 25, 2010 memo) and the Tonquin Employment Area study. However, at an open house held in mid-July, neighbors expressed concern about truck and commuter traffic passing through the neighborhood as a result of the Blake Street extension.

This memo analyzes long-term (year 2030) traffic operations at key intersections within and adjacent to the Southwest Tualatin Concept Plan area, if Blake Street was not constructed between SW 108th Avenue and the railroad tracks. The memo also discusses the amount of traffic forecast to use the Blake Street extension, if it were constructed.

PLANNING AREA BUILD-OUT ANALYSIS WITHOUT BLAKE STREET CONNECTION

This analysis identifies transportation system needs in the year 2030, assuming full build-out of the Southwest Tualatin Concept Plan area without a Blake Street connection between SW 108th and the Concept Plan area. Blake Street would still be constructed within the Concept Plan area, but would only serve a local traffic function, instead of the collector function proposed by the Tualatin TSP. This is a conservative analysis, as our June 25, 2010 memo showed that the Concept Plan area is expected to be only about 68% built out by 2030, based on the City's experience with the growth of the Leveton Employment Area. As was the case in the June 25, 2010 memo, the purpose of the build-out analysis is to determine the ultimate size of the transportation infrastructure needed to serve the Concept Plan area.

All assumptions regarding land use, future road network, and trip generation remain the same as described in the June 25, 2010 memo, except that Blake Street is not assumed to be extended between SW 108th Avenue and the railroad tracks. The June 25, 2010 analysis forecast that the Blake Street connection would be used by approximately 355 vehicles during the 2030 weekday p.m. peak hour. Further, the Metro model results show that of the trips generated within the SW Tualatin Concept Plan and Tonquin Employment Area that would be using Blake Street, approximately two-thirds would be bound for the Sagert Street overcrossing of I-5 and points east. The model indicates that the remaining one-third of site-generated trips using Blake Street would be bound for the Norwood Road overcrossing of I-5 and points east. Other traffic using Blake Street would consist of traffic generated in the neighborhoods on both sides of Boones Ferry Road between Avery Street and Tonquin Road that uses Blake Street as a way to travel to and from Sherwood.

For the purposes of this analysis, site-generated traffic traveling to and from the Sagert Street overcrossing was assumed to use Tualatin-Sherwood Road and Avery Road instead. Neighborhood traffic using the Blake Street extension was also assumed to use this route. Site-generated traffic traveling to the Norwood Road overcrossing was assumed to use Tonquin Road instead. Table 1 summarizes the average delay, level of service (LOS), and volume-to-capacity (v/c) ratio for the 2030 weekday p.m. peak hour for this trip distribution pattern.

Table 1. Year 2030 Weekday P.M. Peak Hour Study Area Intersection Operations

Intersection	Average Delay (sec)	LOS	v/c Ratio
SW 115th Avenue/Tualatin-Sherwood Road	14.1	B	0.57
SW 115th Avenue/Blake Street	11.2	B	0.10
SW 115th Drive/East-West Collector	18.1	C	0.28
SW 115th Drive/Tonquin Road	16.0	B	0.63
SW 124th Avenue/Tualatin-Sherwood Road	52.2	D	0.94
SW 124th Avenue/Blake Street	47.3	D	0.74
SW 124th Avenue/East-West Collector	24.4	C	0.67
SW 124th Avenue/Tonquin Road	35.5	D	0.83
SW 124th Avenue/Westbound I-5-99W Connector	34.0	C	0.86
SW 124th Avenue/Eastbound I-5-99W Connector	32.1	C	0.72

Comparing the results shown in Table 1 to the results in Table 2 of the June 25, 2010 memo, most intersections would experience increased traffic and relatively small increases in delay. However, all intersections would continue to meet City of Tualatin standards (LOS 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 standard of a v/c ratio of 0.99 or less. If the I-5/99W Connector were to become a state highway, its intersections with SW 124th Avenue would also meet ODOT standards for the Portland Metro area (v/c ratio of 0.99 or less).

BLAKE STREET USE WITH A CONNECTION

The June 25, 2010 analysis forecast that the Blake Street connection would be used by approximately 355 vehicles during the weekday p.m. peak hour in 2030. Of these, about 215 vehicles would be generated by the Concept Plan area, while the remainder would be generated by the Tonquin Employment Area and/or by the neighborhoods east of the Concept Plan Area. About three-quarters of the traffic exiting the Concept Plan area during the 2030 weekday p.m. peak hour are forecast to turn south on SW 108th Avenue.

Truck traffic volume on Blake Street would be expected to be minimal for several reasons:

- SW 115th Avenue would provide a shorter, more direct truck route to Tualatin-Sherwood Road and I-5 north than Blake Street and SW 105th Avenue, which involves going up and down a hill and around sharp curves.
- SW 124th Avenue would provide a faster, easier truck route to I-5 south (via the I-5/99W Connector) than would a route through the neighborhood.
- Truck traffic to and from the east would be expected to be going to and from I-5, rather than over it. The Metro model indicates that site-generated traffic using the Blake Street connection would be headed to overpasses leading over I-5, rather than onto it.
- The 2005 Concept Plan proposed several treatments to further discourage use of Blake Street by trucks; these included:
    - A narrower ("Cb") minor collector cross-section for Blake Street between SW 108th and SW 115th Avenues, as compared to a major collector cross-section west of SW 115th Avenue.
    - A "gateway treatment" for Blake Street to indicate the transition from the employment area to the residential area; this could consist of a roundabout at the Blake Street/SW 115th Avenue intersection or a median island in Blake Street to further narrow the perceived street width.

CONCLUSIONS

Intersections within and adjacent to the Southwest Tualatin Concept Plan area would operate within their respective jurisdictions' standards in 2030, if the Concept Plan area was fully built out at that time and if a Blake Street connection between SW 108th and SW 115th Avenues was not constructed.

About 60% of the traffic using the Blake Street connection during the 2030 weekday p.m. peak hour would be generated by the Concept Plan area, and about three-quarters of this traffic would pass through the neighborhood via SW 108th Avenue. The remaining traffic would be generated either by the Tonquin Employment Area and/or by the neighborhoods east of the Concept Plan area. Truck traffic would not be expected to use Blake Street, as it provides a slower route to Tualatin-Sherwood Road than SW 115th Avenue, no truck destinations are readily accessed

through the neighborhoods, and planned street design features would further discourage any possible truck use.

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DRAFT TECHNICAL MEMORANDUM

Date: June 25, 2010 Project #: 10599

To: Doug Rux and Aquilla Hurd-Ravich, City of Tualatin

From: Paul Ryus, P.E.
Project: Southwest Tualatin Concept Plan
Subject: 2010 Concept Plan Transportation Analysis

INTRODUCTION

The Southwest Tualatin Concept Plan addresses the future development of a 614-acre area bounded by the future SW 124th Avenue extension on the west, SW Tonquin Road on the south, the Portland & Western railroad on the east, and portions of Tualatin-Sherwood Road, SW 120th Avenue, and the future Blake Street extension on the north. Figure 1 shows the location of the Concept Plan area. A 431-acre subset of this area (areas A–J in Figure 1) was brought within the Portland Urban Growth Boundary (UGB) as a result of decisions made by Metro in December 2002 and June 2004, and was added to Tualatin's Urban Planning Area by the Washington County Board of Commissioners in October 2009. This area was the subject of a concept planning process in 2005, which included a transportation analysis.[1] The Tualatin City Council "accepted" the results of the 2005 planning process, but deferred making any final action until the Tualatin Tomorrow community visioning process was completed.

The transportation analysis for the 2010 Concept Plan differs from the 2005 plan as follows:

- It considers the trip-generation potential of an additional 183 acres north and south of Tonquin Road, adjacent to the southern edge of the 2005 concept planning area (areas K and L in Figure 1);
- It considers the traffic-redistribution effects of the preferred roadway network from the I-5/99W Connector study;
- It accounts for changes to Oregon's Transportation Planning Rule (TPR) since 2005;
- It uses a horizon year of 2030, rather than the 2020 horizon year used in 2005; and
- It coordinates with concept planning efforts for the adjacent Tonquin Employment Area in Sherwood.

[1] Kittelson & Associates, Inc. *Southwest Tualatin Concept Plan: Future Alternatives Traffic Analysis,* Portland, Ore., June 12, 2005.

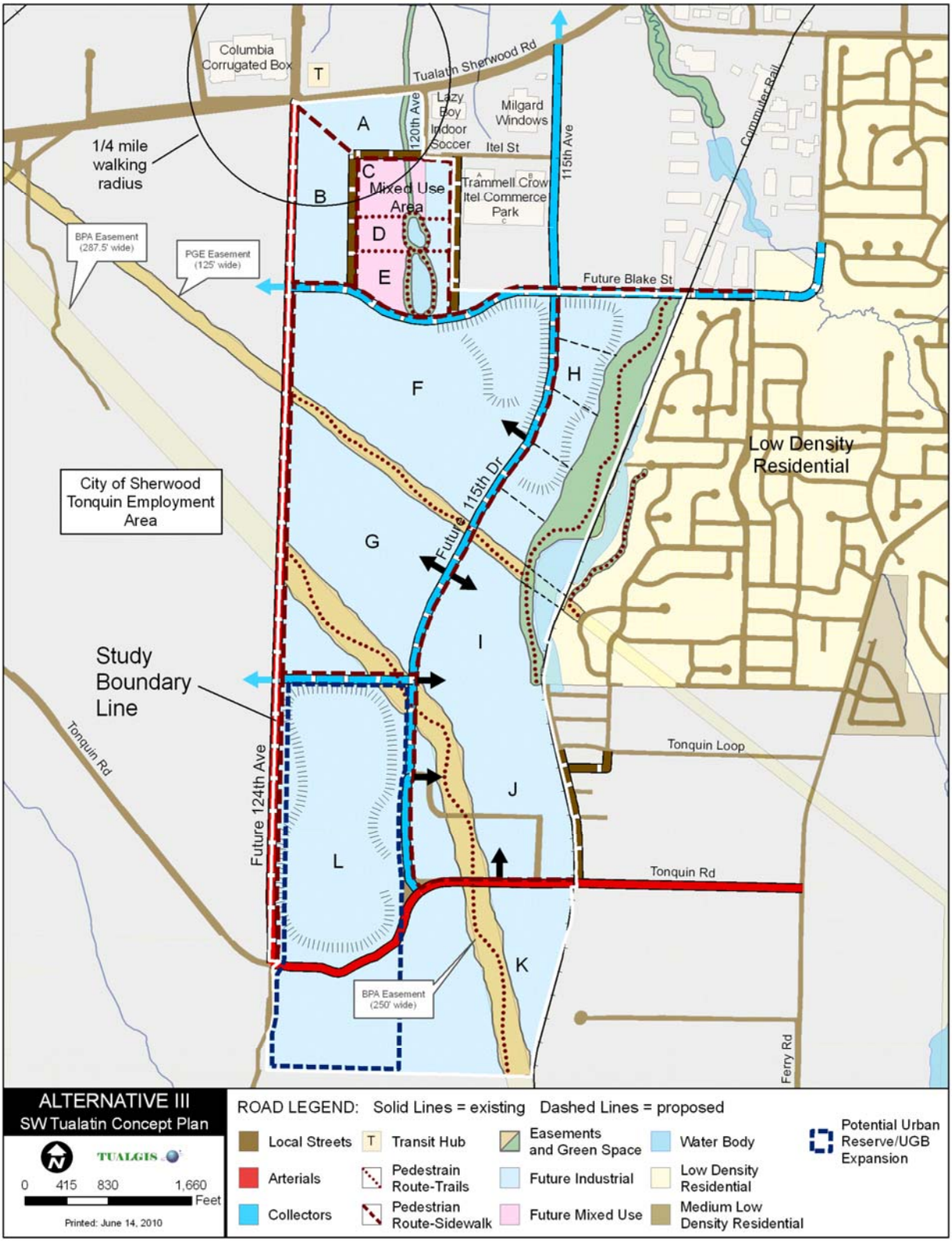


Figure 1. Southwest Tualatin Concept Plan Area

The City of Tualatin must adopt planning district designations for the portion of the Concept Plan area within its Urban Planning Area by amending the Tualatin Development Code. This amendment, in turn, triggers the need to investigate whether the traffic generated by the land uses allowed by the amendment will create a TPR "significant effect" on the area's planned transportation system. In addition, a desired outcome of the concept planning process is to determine the ultimate infrastructure (including transportation infrastructure) required to serve the entire concept planning area. Therefore, this memorandum presents two transportation analyses: (1) an analysis following the requirements of the TPR, and (2) a longer-term analysis looking at full build-out of the area.

The City of Sherwood is conducting a similar planning exercise for the adjacent Tonquin Employment Area on the west side of SW 124th Avenue. Although the two studies have coordinated with each other, the assumptions used in each study have out of necessity differed from each other in certain respects:

- Tualatin's TPR analysis for the Southwest Tualatin Concept Plan area demonstrates that the current Tualatin and Washington County Transportation System Plans (both of which have horizon years of 2020) and Metro's Regional Transportation Plan (with a horizon year of 2030) have already accounted for the future rezoning and urbanization of the Concept Plan area. Therefore, the planned transportation system already accounts for the impacts of new traffic from the Concept Plan area and a detailed TPR analysis was not required.
- Sherwood's TPR analysis[2] found that current TSPs have not accounted for the future development of the Tonquin Employment Area. Therefore, Sherwood has conducted a detailed traffic analysis consistent with TPR requirements, including assuming only the future roadway projects contained in the financially constrained 2030 Regional Transportation Plan, and assuming the job growth for the Concept Plan area used in the accepted 2005 Southwest Tualatin Concept Plan (approximately 5,700 jobs).
- For the purposes of identifying future infrastructure needs, this memo includes an analysis of the area's transportation system needs when the Concept Plan area and Tonquin Employment Area are built out, which in the case of the Concept Plan area, is expected to occur after 2030. This build-out analysis assumes the future construction of projects identified in the I-5/99W Connector study's preferred alternative (Alternative 7).

Tualatin's and Sherwood's TPR analyses reached similar conclusions; namely, that the planned transportation system was capable of accommodating anticipated growth through the horizon years studied in the respective TPR analyses. The build-out analysis finds that additional improvements would be needed beyond current plans' horizon years.

[2] Angelo Planning Group, DKS Associates, CH2M Hill, and Leland Associates. *Tonquin Employment Area Concept Plan: Preferred Concept Report*. Stakeholder review draft, June 2010.

TRANSPORTATION PLANNING RULE ANALYSIS

Transportation Planning Rule Requirements

The 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. A significant effect occurs when a change to a land use plan would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

(b) Change standards implementing a functional classification system; or

(c) As measured at the end of the planning period identified in the adopted transportation system plan:

(A) Allow land uses or levels of development that would result in types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(B) Reduce the performance of an existing or planned transportation facility below the minimum acceptable performance standard identified in the TSP or comprehensive plan; or

(C) Worsen the performance of an existing or planned transportation facility that is otherwise projected to perform below the minimum acceptable performance standard identified in the TSP or comprehensive plan.

The Oregon Land Use Board of Appeals (LUBA) has ruled that "implicit in [the TPR] is a causative element that triggers application of the rule only when the amendments (1) allow uses that generate more traffic than uses allowed under the unamended plan and zoning and (2) the additional traffic would reduce a facility's performance standards below the minimum acceptable level. Where the amended plan and zoning would generate less traffic than the unamended plan and zoning, then the amendment cannot significantly affect a transportation facility within the meaning of [the TPR]. Mason v. City of Corvallis, 49 Or LUBA 199 (2005)."

LUBA has also ruled that "If the adopted transportation system plan assumes that property will be rezoned in the future to allow more intense development, the city may assume at the time of the rezoning that the zone change has no significant impact on transportation facilities. However, a city may not assume that its rezoning decision will have no significant impact on transportation facilities where (1) it has not adopted the transportation system plan required by the transportation planning rule and (2) the transportation plan the city has adopted does not assume the property will be developed under the more intense zoning. Just v. City of Lebanon, 49 Or LUBA 180 (2005)."

Affected Plans and Horizon Years

There are three transportation plans that could be affected by the eventual Tualatin Development Code amendment that will result from the Southwest Tualatin Concept Plan: the City of Tualatin Transportation System Plan (TSP), the Washington County TSP, and Metro's Regional Transportation Plan (used for evaluating impacts to ODOT facilities). The City and County TSPs have horizon years of 2020, while the adopted Regional Transportation Plan for state and regional planning purposes at the time this work was conducted had a horizon year of 2030. (The Metro council adopted a new non-federal RTP, with a horizon year of 2035, on June 10, 2010.) The current version of the regional transportation model maintained by Metro has a horizon year of 2035.

Future Land Use

According to information provided by City of Tualatin staff, the Southwest Tualatin Concept Plan area contains 614 gross acres, of which 448 acres are considered developable, after accounting for constrained land and land required for public rights-of-way. The majority of the Concept Plan area lies within the Portland region's UGB and was required by Metro to be designated as industrial land. This analysis assumes that the remaining area will also be developed as industrial land, if it is brought into the UGB in the future.

Tualatin's Leveton Employment Area, which was established in 1985, can be used as a guide for how the Concept Plan area may develop over time. During Leveton's first 20 years (1985–2005), approximately 305 acres developed and 2,792 jobs were added in the area, based on information provided by City of Tualatin staff. Employment grew at a high rate of 140 jobs per year during this time. Appendix A provides the details.

Applying a similar employment growth rate to the Concept Plan area, the area would be expected to have approximately 1,400 employees after 10 years (year 2020) and 2,800 employees after 20 years (year 2030), when it would be approximately 68% built out. If the assumed job growth rate continued through the year 2035, the area would contain approximately 3,500 employees after 25 years.

The 2020 version of the Metro model used for both the City of Tualatin and Washington County TSPs assumed that urbanization would occur within the Concept Plan area, even though not all of the area had yet been brought into the UGB. The 2005 Concept Plan's future alternatives traffic analysis calculated the number of jobs the model assigned to the Concept Plan area as follows (Kittelson & Associates, June 12, 2005):

> "The land use assumptions built into the version of Metro's 2020 model used for the Tualatin TSP (as well as the Tualatin Town Center Plan) anticipated some development occurring within the Concept Plan Area. The Concept Plan Area includes portions of traffic analysis zones (TAZs) 371, 372, and 395. …
>
> "Metro's Regional Land Information System (RLIS) was used to identify the percentage of undeveloped land within each TAZ that fell within the Concept Plan Area. The

> Concept Plan Area includes about 11% of the total undeveloped land within TAZ 371, which was forecast to add 969 non-retail jobs by 2020. When looking only at undeveloped land that was either within the UGB in 2000, or falls within the Concept Plan Area (i.e., the land most likely to develop first), the Concept Plan Area accounts for 16% of TAZ 371's undeveloped land, which corresponds to 155 jobs.
>
> "The Concept Plan Area includes about 38% of the undeveloped area of TAZ 372, all of which was already in the UGB in 2000. As this TAZ was forecast to add 684 non-retail jobs, 38% of this amount corresponds to 260 jobs. The Concept Plan Area also covers about 29% of the total area of TAZ 395, none of which was within the UGB. All of TAZ 395's 2020 non-retail jobs—a total of 1,395 jobs—were assigned to the Concept Plan Area, under the assumptions that development would occur in the Concept Plan Area first and that existing quarry jobs would be replaced by any new industrial development that might occur. Thus, the 'base future' traffic volumes already include the traffic from 1,810 jobs the regional model assumes will exist in the Concept Plan Area."

In 2005, the Concept Plan area was the only portion of TAZ 395 planned to urbanize. However, one 12-acre tax lot west of the future SW 124th Avenue alignment is now included within the Tonquin Employment Area planning area and is part of TAZ 395. In comparison, the Southwest Tualatin Concept Plan area includes 511 acres within TAZ 395, or approximately 98% of the TAZ area is likely to develop to urban levels within the two plans' horizon years. If 98% of the non-retail jobs assumed for TAZ 395 in 2020 are assigned to the Concept Plan area, this results in 1,367 jobs from TAZ 395 and an overall total of 1,782 jobs in the year 2020 from the portions of the three TAZs included in the Concept Plan area.

Table 1 compares the household and employment assumptions from the 2020, 2030, and 2035 versions of Metro's regional model with the Concept Plan's projected employment for the same years. The 2020 model data were developed as explained above, while the 2030 and 2035 data were developed by DKS Associates in conjunction with their work for the Tonquin Employment Area. The 2020 model includes the land use assumptions and financially constrained roadway network used in the version of the RTP adopted in 2000. The 2030 model is based on the 2007 federal RTP land use assumptions and financially constrained network, while the 2035 model provides the land use assumptions used in the development of the 2010 non-federal RTP.

Table 1. Comparison of Metro Model and Southwest Tualatin Concept Plan Land Use Assumptions

Analysis Year	Households	Retail Employment[3]	Non-retail Employment
2020 (Metro model)	256	0	1,782
2020 (Concept Plan)	0	0	1,400
2030 (Metro model)	68	183	3,333
2030 (Concept Plan)	0	140	2,660
2035 (Metro model)	77	195	3,540
2035 (Concept Plan)	0	175	3,325

Comparing the Concept Plan employment projections for 2020 in Table 1 to the Metro model projections used during the preparation of the Tualatin and Washington County TSPs, it can be seen that fewer jobs and households are forecast to be located within the Concept Plan area than were assumed in the preparation of the TSPs. Fewer jobs and households equates to less trip generation than assumed in the preparation of those plans. Similarly, a comparison of the 2030 projections shows that fewer jobs and households are forecast to be located within the Concept Plan area than were assumed in the preparation of the Regional Transportation Plan.

TPR Findings

Based on the analysis given above, the following findings are made:

- The adopted Tualatin and Washington County TSPs and the adopted Regional Transportation Plan assumed that urbanization would occur in the Southwest Tualatin Concept Plan area prior to those three plans' respective horizon years.
- The three plans' traffic analyses were based on data from Metro's regional transportation model that included the trip-generation effects of urbanization in the Concept Plan area.
- The level of development now anticipated within the Concept Plan area by the three plans' horizon years is less than the level of development assumed in the Metro model versions for the same horizon years.

Therefore, since all three plans (1) have been adopted, (2) assumed the Concept Plan area would be rezoned in the future to allow urban levels of development, and (3) assumed a more intense level of urbanization by their respective horizon years than is reasonably likely to occur, it is concluded that amending the Tualatin Development Code to incorporate community planning district designations for the Southwest Tualatin Concept Plan area will not create a TPR significant effect, on the basis of LUBA's rulings in Mason v. City of Corvallis and Just v. City of Lebanon.

[3] The retail employment is assumed to be approximately 5 percent of the total employment within the Concept Plan.

PLANNING AREA BUILD-OUT ANALYSIS

This portion of this analysis looks at transportation system needs in the year 2030, assuming full build-out of the Southwest Tualatin Concept Plan area. This is a conservative analysis, as the TPR analysis above showed that the area is expected to only be about 68% built out by 2030, based on the City's experience with the growth of the Leveton Employment Area. The purpose of the build-out analysis is to determine the ultimate size of the transportation infrastructure needed to serve the Concept Plan area.

Future Land Use

As noted previously in the TPR analysis, 305 acres of Tualatin's Leveton Employment Area has developed, with a total of 2,792 jobs, for an average of 9.16 jobs per acre. Assuming that the same average employment density will develop over time in the Concept Plan area, at full build-out, the Concept Plan area's 448 developable acres would contain approximately 4,100 jobs, of which 3,895 are forecast to be non-retail jobs and 205 are forecast to be retail jobs supporting employment uses in the area (e.g., small office supply stores, copy centers, coffee outlets). No residential development is assumed, given Metro's requirement that the Concept Plan area be given a "Regionally Significant" industrial designation when the area was brought into the UGB. Development in the Tonquin Employment Area was assumed to provide 2,176 non-retail jobs and 114 retail jobs.[4] All other land use was as modeled in the version of the Metro 2030 model used for the I-5/99W Connector project.

Future Road Network

The version of the Metro 2030 model used for the I-5/99W Connector project's Alternative 7 was used for this analysis. The road network used in this model assumed the following future projects:

- Constructing the I-5/99W 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 five lanes between Tualatin and Sherwood.
- Extending SW 124th Avenue as a 5-lane arterial from Tualatin-Sherwood Road to the I-5/99W Connector, with right- and left-turn lanes provided at signalized intersections.

[4] DKS Associates, *Tonquin Employment Area TPR Analysis,* Portland, Ore., May 18, 2010.

- Extending Lower Boones Ferry Road over the Tualatin River to Tualatin Road and widening the Lower Boones Ferry/Tualatin Road corridor to five lanes between I-5 and Herman Road.[5]
- Extending Herman Road as a 3-lane arterial from Cipole Road to Highway 99W.
- Extending Blake Street through the Concept Plan area to SW 124th Avenue, and then continuing east as a collector street into the Tonquin Employment Area and Sherwood.

It should be noted that of the above projects, only the Tualatin-Sherwood Road and SW 124th Avenue projects are included in the current financially constrained Regional Transportation Plan. However, all of the above improvements are consistent with the outcome of the I-5/99W Connector Study.

The collector street network used in the 2005 Southwest Tualatin Concept Plan was also assumed for this analysis. This network consisted of completing SW 115th Avenue through the Concept Plan area to connect Tualatin-Sherwood Road and Tonquin Road, and an east-west collector street connecting SW 115th Avenue to SW 124th Avenue between Blake Street and Tonquin Road. It was assumed that the east-west collector would intersect SW 124th Avenue south of the BPA right-of-way. The Tonquin Employment Area study raised the possibility of a collector street in Sherwood that would intersect SW 124th Avenue just north of the BPA right-of-way (i.e., at the southern edge of the Tonquin Employment Area). However, it would not be possible to continue that alignment into the Southwest Tualatin Concept Plan area as the required right-of-way would reduce Lot G (see Figure 1) to less than 50 acres, and it is a Metro requirement of the industrial area that large lots (i.e., 50 acres or larger) not be reduced in size to less than 50 acres.

Trip Generation and Distribution

Given the size of the study area and the fact that many of the study roadways have not yet been constructed, the City of Tualatin and other stakeholders in the process agreed that the Metro model would be used to generate and distribute trips from the Concept Plan area. (A similar process was used for Tonquin Employment Area planning.) The land use assumptions built into the model for the Concept Plan area and the Tonquin Employment Area were described above in the "Future Land Use" subsection. Turning movements at individual intersections were developed from the link volumes entering and exiting the intersections, with adjustments made to shift trips to the closest intersection where the model's zone connectors intersected major streets at locations other than those assumed in the Concept Plan. Adjustments to link volumes were also made to account for the construction of the SW 115th Avenue extension and the east-west collector, which were not included in the I-5/99W Connector model.

[5] The City intends to eliminate this connection in their next TSP update. The current Metro RTP includes a requirement that the City address this loss of connectivity with an alternative treatment in the next update to the City's TSP.

Study Intersections

The study intersections consisted of the arterial/collector, arterial/arterial, and collector/collector intersections within and along the periphery of the Concept Plan area. These intersections are:

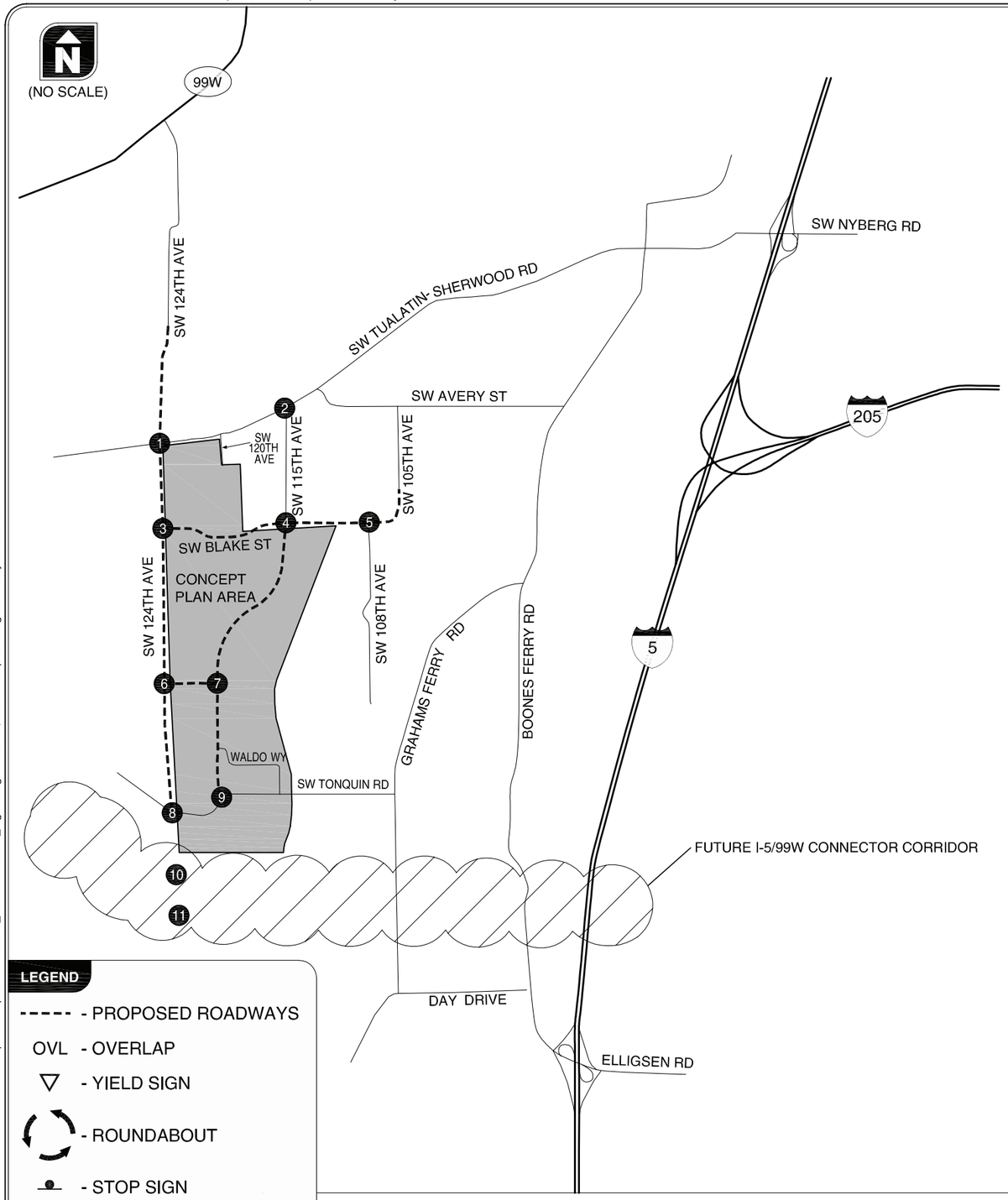
- SW 108th Avenue/Blake Street,
- SW 115th Avenue/Tualatin-Sherwood Road,
- SW 115th Avenue/Blake Street,
- SW 115th Drive/East-West Collector,
- SW 115th Drive/Tonquin Road,
- SW 124th Avenue/Tualatin-Sherwood Road,
- SW 124th Avenue/Blake Street,
- SW 124th Avenue/East-West Collector,
- SW 124th Avenue/Tonquin Road, and
- SW 124th Avenue/I-5-99W Connector.

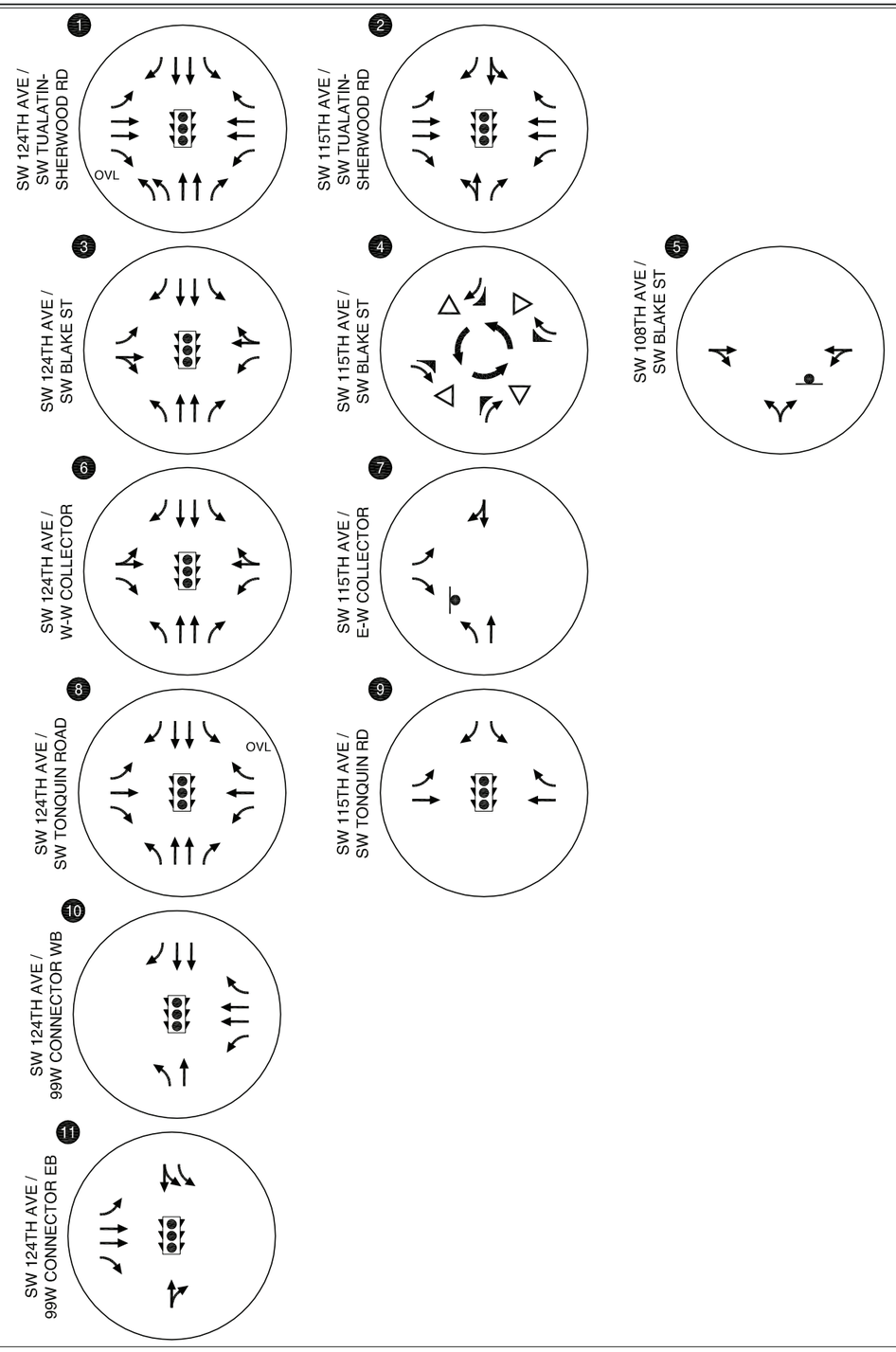
Figure 2 shows the locations of these intersections, the assumed lane configurations, and the assumed traffic control.

A roundabout was assumed at SW 115th Avenue/Blake Street for consistency with the Tualatin TSP amendments proposed by the 2005 Southwest Tualatin Concept Plan. The 2005 plan identified a "gateway treatment" at this location (e.g., a roundabout as the intersection control, or constructing a median island in Blake Street), in combination with a narrower ("Cb") minor collector cross-section for Blake Street east of SW 115th Avenue. The intent of these treatments was to discourage truck traffic from using Blake Street to enter the residential neighborhood to the east. The roundabout would be usable by trucks, through the provision of a truck apron around the central island. Other unsignalized intersection forms could also be used here, but would create more vehicular delay (roundabout: 5 seconds average delay, SW 115th Avenue stop-controlled: 12 seconds average delay, four-way stop control: 13 seconds average delay).

The SW 108th Avenue/Blake Street intersection was assumed as a stop-controlled intersection, with SW 108th Avenue stop-controlled. The Tualatin TSP identifies the potential for a roundabout here (again, to discourage through truck traffic in the residential neighborhood); however, due to the area's topography, it is not known at present whether a roundabout would be feasible to construct. Therefore, a stop-controlled intersection was used as a worst case.

A preliminary analysis found that the SW 124th Avenue/I-5-99W Connector intersection would fail as a single large arterial/arterial intersection. Therefore, it was assumed that the roadways would intersect at two separate intersections, with the Connector facility being divided into eastbound and westbound roadways that would follow the on- and off-ramp alignments for a future diamond interchange at this location. This design produces good levels of service at the two intersections and would facilitate the eventual construction of an interchange.





2030 LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES
TUALATIN, OREGON

FIGURE **2**

Year 2030 Intersection Operations

Table 2 summarizes the average delay, level of service (LOS), and volume-to-capacity (v/c) ratio for the 2030 weekday p.m. peak hour for each study intersection.

Table 2. Year 2030 Weekday P.M. Peak Hour Study Area Intersection Operations

Intersection	Average Delay (sec)	LOS	v/c Ratio
SW 108th Avenue/Blake Street	10.9	B	0.15
SW 115th Avenue/Tualatin-Sherwood Road	12.8	B	0.55
SW 115th Avenue/Blake Street	5.2	A	0.35
SW 115th Drive/East-West Collector	19.7	C	0.26
SW 115th Drive/Tonquin Road	14.6	B	0.54
SW 124th Avenue/Tualatin-Sherwood Road	48.1	D	0.90
SW 124th Avenue/Blake Street	40.4	D	0.82
SW 124th Avenue/East-West Collector	23.8	C	0.63
SW 124th Avenue/Tonquin Road	34.3	C	0.83
SW 124th Avenue/Westbound I-5-99W Connector	34.0	C	0.86
SW 124th Avenue/Eastbound I-5-99W Connector	32.1	C	0.72

All intersections would meet City of Tualatin standards (LOS 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 standard of a v/c ratio of 0.99 or less. If the I-5/99W Connector were to become a state highway, its intersections with SW 124th Avenue would also meet ODOT standards for the Portland Metro area (v/c ratio of 0.99 or less).

Appendix B provides the traffic analysis worksheets.

Conclusions

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. Specific lane configurations are shown in Figure 2. The intersection of SW 124th Avenue with the I-5/99W Connector would require separate intersections with the eastbound and westbound Connector roadways, preferably located where future interchange ramps would intersect SW 124th Avenue.

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.

Appendix A
Leveton Area Analysis –
Employment Data

Appendix A: Leveton Area Analysis — Employment Data

Year	Number of Employees	% Annual Increase in Employees	% Increase in Employees, 1999-2009	Bldg Sq Ft	Emp / Sq Ft	Notes	Acres in Business Tax Lots	Emp / Acre	Emp Growth Rate (jobs/yr)
1985	283	--	--	436,395	0.001	All Bldg Sq Ft in Study Area	41.18	6.9	
1999	2,310	--	--	--	--	--	--	--	--
2000	2,365	2.4%	--	--	--	--	--	--	139
2001	2,382	0.7%	--	--	--	--	--	--	--
2002	2,891	21.4%	--	--	--	--	--	--	--
2003	2,682	-7.2%	--	--	--	--	--	--	--
2004	2,739	2.1%	--	--	--	--	--	--	--
2005	3,075	12.3%	--	--	--	--	--	--	140
2006	3,143	2.2%	--	--	--	--	--	--	--
2007	3,156	0.4%	--	--	--	--	--	--	--
2008	3,171	0.5%	--	--	--	--	--	--	--
2009	3,077	-3.0%	33.2%	3,359,294	0.001	All Bldg Sq Ft in Study Area	345.99	8.9	--

Source: City of Tualatin GIS. Employment data has been calculated from business license applications.

Appendix B
Year 2030 Traffic
Operations Worksheets

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Intersection Volume Report
Base Volume Alternative

		Northbound			Southbound			Eastbound			Westbound		
Node	Intersection	L	T	R	L	T	R	L	T	R	L	T	R
8	Tualatin-Sher	304	498	195	40	813	40	135	956	110	238	1109	150
20	SW 124th/Blak	122	815	131	63	1298	68	102	168	132	146	163	80
28	T-S/SW 115th	87	1	26	9	1	35	4	1175	14	30	1361	5
34	SW 124th/E-W	42	885	80	44	1487	5	17	5	198	240	5	126
39	SW 115th/Blak	100	72	60	95	112	105	38	315	30	16	103	18
40	SW 124th Ave/	40	740	25	180	1472	273	58	377	100	40	143	255
41	SW 124th Ave/	10	295	0	0	1167	445	0	0	0	85	1342	510
42	SW 124th Ave/	0	20	85	1157	95	0	285	567	10	0	0	0
43	Tonquin/SW 11	0	0	0	339	0	28	9	572	0	0	410	119
44	E-W Collector	131	89	0	0	257	240	80	0	44	0	0	0
45	SW 108th/Blak	37	0	66	0	0	0	0	48	171	104	100	0

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to KITTELSON, PORTLAND

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Tualatin-Sherwood/SW 124th

Cycle (sec):	120	Critical Vol./Cap.(X):	0.904	
Loss Time (sec):	16	Average Delay (sec/veh):	48.1	
Optimal Cycle:	131	Level Of Service:	D	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Ignore		
Min. Green:	5	31	0	5	31	0	5	34	0	5	34	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	0 1	1	0 2	0 1	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	304	498	195	40	813	40	135	956	110	238	1109	150
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	304	498	195	40	813	40	135	956	110	238	1109	150
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	304	498	195	40	813	40	135	956	110	238	1109	150
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.00
PHF Volume:	320	524	205	42	856	42	142	1006	116	251	1167	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	320	524	205	42	856	42	142	1006	116	251	1167	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	320	524	205	42	856	42	142	1006	116	251	1167	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	0.90	0.81	0.90	0.90	0.81	0.90	0.90	0.81	0.90	0.90	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3334	3437	1537	1718	3437	1537	1718	3437	1537	1718	3437	1900
Capacity Analysis Module:												
Vol/Sat:	0.10	0.15	0.13	0.02	0.25	0.03	0.08	0.29	0.08	0.15	0.34	0.00
Crit Moves:	****				****			****		****		
Green/Cycle:	0.11	0.33	0.33	0.05	0.28	0.28	0.09	0.32	0.43	0.16	0.39	0.00
Volume/Cap:	0.90	0.46	0.41	0.46	0.90	0.10	0.87	0.90	0.18	0.90	0.87	0.00
Delay/Veh:	78.5	32.2	31.8	58.8	53.9	32.5	89.9	47.9	18.3	79.8	37.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.5	32.2	31.8	58.8	53.9	32.5	89.9	47.9	18.3	79.8	37.0	0.0
LOS by Move:	E	C	C	E	D	C	F	D	B	E	D	A
HCM2kAvgQ:	7	8	6	2	20	1	8	22	2	10	20	0

Note: Queue reported is the number of cars per lane.

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Tualatin-Sherwood/SW 124th

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
HCM Ops Adjusted Lane Utilization Module:																								
Lanes:	2	0	2	0	1		1	0	2	0	1		1	0	2	0	1		1	0	2	0	1	
Lane Group:	L		T		R		L		T		R		L		T		R		L		T		R	
#LnsInGrps:	2		2		1		1		2		1		1		2		1		1		2		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		12		12		12		12		12		12		12		12		12		12	
CrsswalkWid:	8						8						8						8					
% Hev Veh:	5						5						5						5					
Grade:	0%						0%						0%						0%					
Parking/Hr:	No						No						No						No					
Bus Stp/Hr:	0						0						0						0					
Area Type:	< < < < < < < < < < < < < < < Other >																							
Cnft Ped/Hr:	0						0						0						0					
ExclusiveRT:	Include						Include						Include						Include					
% RT Prtct:	0						0						0						0					
HCM Ops f(lt) Adj Case Module:																								
f(lt) Case:	1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx				1	xxxx	xxxx			
HCM Ops Saturation Adj Module:																								
Ln Wid Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			xxxxx
Hev Veh Adj:	0.95	0.95	0.95				0.95	0.95	0.95				0.95	0.95	0.95				0.95	0.95	0.95			xxxxx
Grade Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			xxxxx
Parking Adj:	xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	xxxx			xxxxx
Bus Stp Adj:	xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	1.00				xxxx	xxxx	xxxx			xxxxx
Area Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			xxxxx
RT Adj:	xxxx	xxxx	0.85				xxxx	xxxx	0.85				xxxx	xxxx	0.85				xxxx	xxxx	xxxx			xxxxx
LT Adj:	0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx				0.95	xxxx	xxxxx			
PedBike Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
HCM Sat Adj:	0.90	0.95	0.81				0.90	0.95	0.81				0.90	0.95	0.81				0.90	0.95	1.00			
Usr Sat Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Sat Adj:	0.97	0.95	1.00				1.00	0.95	1.00				1.00	0.95	1.00				1.00	0.95	1.00			
Fnl Sat Adj:	0.88	0.90	0.81				0.90	0.90	0.81				0.90	0.90	0.81				0.90	0.90	1.00			
Delay Adjustment Factor Module:																								
Coordinated:	< < < < < < < < < < < < < < < Yes >																							
Signal Type:	< < < < < < < < < < < < < Semi-Actuated >																							
Street Type:	Side						Side						Main						Main					
Green/Cycle:	0.11	0.33	0.33				0.05	0.28	0.28				0.09	0.32	0.43				0.16	0.39	0.00			
ArrivalType:	3						3						4						4					
DelAdjFctr:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	0.97	0.86				1.00	0.90	0.00			

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Tualatin-Sherwood/SW 124th

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.11	0.33	0.33	0.05	0.28	0.28	0.09	0.32	0.43	0.16	0.39	0.00
ArrivalType:		3			3			4			4	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.97	0.77	0.99	0.95	1.00
Q1:	5.4	7.3	5.3	1.4	14.5	1.0	4.6	16.5	1.8	8.1	18.0	0.0
UpstreamVC:	0.54	0.54	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.69	0.00
UpstreamAdj:	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.66	0.00
EarlyArrAdj:	0.24	0.50	0.45	1.00	1.00	1.00	1.00	1.00	1.00	0.25	0.44	0.00
Q2:	1.4	0.4	0.3	0.8	5.1	0.1	3.1	5.4	0.2	1.6	2.4	0.0
HCM2KQueue:	6.8	7.7	5.6	2.1	19.6	1.2	7.7	21.8	2.0	9.7	20.4	0.0
70th%Factor:	1.18	1.18	1.19	1.19	1.16	1.20	1.18	1.16	1.20	1.18	1.16	1.20
HCM2k70thQ:	8.1	9.1	6.7	2.5	22.7	1.4	9.2	25.3	2.4	11.5	23.7	0.0
85th%Factor:	1.54	1.53	1.55	1.58	1.46	1.59	1.53	1.45	1.58	1.52	1.45	1.60
HCM2k85thQ:	10.5	11.8	8.7	3.4	28.5	1.8	11.9	31.5	3.2	14.8	29.6	0.0
90th%Factor:	1.68	1.67	1.70	1.76	1.55	1.78	1.67	1.53	1.76	1.65	1.54	1.80
HCM2k90thQ:	11.5	12.9	9.5	3.7	30.4	2.1	12.9	33.5	3.6	16.0	31.5	0.0
95th%Factor:	1.91	1.89	1.94	2.03	1.70	2.06	1.89	1.68	2.04	1.85	1.69	2.10
HCM2k95thQ:	13.1	14.6	10.9	4.3	33.3	2.4	14.6	36.6	4.2	18.0	34.5	0.0
98th%Factor:	2.29	2.25	2.35	2.55	1.92	2.61	2.25	1.89	2.55	2.17	1.91	2.70
HCM2k98thQ:	15.7	17.4	13.2	5.4	37.6	3.0	17.4	41.1	5.2	21.1	38.9	0.0

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Fuel Consumption and Emissions
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 Tualatin-Sherwood/SW 124th

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:		30 MPH			30 MPH			30 MPH			30 MPH	
NumOfStops:	79.1	104	39.8	10.2	206	7.8	35.1	232	15.4	61.5	244	0.0

Name: year 1995 composite fleet
Fuel Consumption: 214.937 pounds
34.820 gallons
Carbon Dioxide: 670.604 pounds
Carbon Monoxide: 55.130 pounds
Hydrocarbons: 10.790 pounds
Nitrogen Oxides: 2.330 pounds

Name: year 2000 composite fleet
Fuel Consumption: 214.937 pounds
34.820 gallons
Carbon Dioxide: 670.604 pounds
Carbon Monoxide: 55.130 pounds
Hydrocarbons: 10.790 pounds
Nitrogen Oxides: 2.330 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 SW 124th/Blake

Cycle (sec):	120					Critical Vol./Cap.(X):						0.824					
Loss Time (sec):	16					Average Delay (sec/veh):						40.4					
Optimal Cycle:	99					Level Of Service:						D					
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	5	0	0			5	0	0			5	31	0			5	31	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	0	1	0	1	0	0	1	0
Volume Module:																				
Base Vol:	122	815	131			63	1298	68			102	168	132			146	163	80		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	122	815	131			63	1298	68			102	168	132			146	163	80		
Added Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	122	815	131			63	1298	68			102	168	132			146	163	80		
User Adj:	1.00	1.00	0.67			0.67	1.00	1.00			1.00	1.00	1.00			0.67	0.67	0.67		
PHF Adj:	0.95	0.95	0.95			0.95	0.95	0.95			0.95	0.95	0.95			0.95	0.95	0.95		
PHF Volume:	128	858	92			44	1366	72			107	177	139			103	115	56		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	128	858	92			44	1366	72			107	177	139			103	115	56		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	128	858	92			44	1366	72			107	177	139			103	115	56		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.90	0.90	0.81			0.90	0.90	0.81			0.93	0.92	0.92			0.90	0.91	0.91		
Lanes:	1.00	2.00	1.00			1.00	2.00	1.00			1.00	0.56	0.44			1.00	0.67	0.33		
Final Sat.:	1718	3437	1537			1718	3437	1537			1769	974	765			1718	1154	566		
Capacity Analysis Module:																				
Vol/Sat:	0.07	0.25	0.06			0.03	0.40	0.05			0.06	0.18	0.18			0.06	0.10	0.10		
Crit Moves:	****						****					****				****				
Green/Cycle:	0.09	0.46	0.46			0.08	0.45	0.45			0.06	0.26	0.26			0.07	0.26	0.26		
Volume/Cap:	0.87	0.54	0.13			0.33	0.87	0.10			0.98	0.70	0.70			0.87	0.38	0.38		
Delay/Veh:	94.3	23.5	18.5			53.9	35.5	18.8			134.1	45.3	45.3			102.1	36.6	36.6		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	94.3	23.5	18.5			53.9	35.5	18.8			134.1	45.3	45.3			102.1	36.6	36.6		
LOS by Move:	F	C	B			D	D	B			F	D	D			F	D	D		
HCM2kAvgQ:	5	12	2			1	23	1			7	12	12			6	5	5		

Note: Queue reported is the number of cars per lane.

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #20 SW 124th/Blake

Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HCM Ops Adjusted Lane Utilization Module:																				
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	0	1	0	1	0	0	1	0
Lane Group:	L		T		R	L		T		R	L		RT			RT	L		RT		RT
#LnsInGrps:	1		2		1	1		2		1	1		1			1	1		1		1
HCM Ops Input Saturation Adj Module:																				
Lane Width:	12		12		12	12		12		12	12		12		12	12	12		12		12
CrsswalkWid:			8					8					8						8		
% Hev Veh:			5					5					2						5		
Grade:			0%					0%					0%						0%		
Parking/Hr:			No					No					No						No		
Bus Stp/Hr:			0					0					0						0		
Area Type:	< < < < < < < < < < < < < < < Other >																				
Cnft Ped/Hr:			0					0					0						0		
ExclusiveRT:			Include					Include					Include						Include		
% RT Prtct:			0					0					0						0		
HCM Ops f(lt) Adj Case Module:																				
f(lt) Case:	1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx			1	xxxx	xxxx		
HCM Ops Saturation Adj Module:																				
Ln Wid Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Hev Veh Adj:	0.95	0.95	0.95			0.95	0.95	0.95			0.98	0.98	0.98			0.95	0.95	0.95		
Grade Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Parking Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00		
Bus Stp Adj:	xxxx	xxxx	1.00			xxxx	xxxx	1.00			xxxx	1.00	1.00			xxxx	1.00	1.00		
Area Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
RT Adj:	xxxx	xxxx	0.85			xxxx	xxxx	0.85			xxxx	0.93	0.93			xxxx	0.95	0.95		
LT Adj:	0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx			0.95	xxxx	xxxxx		
PedBike Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
HCM Sat Adj:	0.90	0.95	0.81			0.90	0.95	0.81			0.93	0.92	0.92			0.90	0.91	0.91		
Usr Sat Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Sat Adj:	1.00	0.95	1.00			1.00	0.95	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Fnl Sat Adj:	0.90	0.90	0.81			0.90	0.90	0.81			0.93	0.92	0.92			0.90	0.91	0.91		
Delay Adjustment Factor Module:																				
Coordinated:	< < < < < < < < < < < < < < < Yes >																				
Signal Type:	< < < < < < < < < < < < < Semi-Actuated > > > > > > > > > > > > > > > > >																				
Street Type:	Main					Main					Side					Side				
Green/Cycle:	0.09	0.46	0.46			0.08	0.45	0.45			0.06	0.26	0.26			0.07	0.26	0.26		
ArrivalType:		3					3					3					3			
DelAdjFctr:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #20 SW 124th/Blake

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.09	0.46	0.46	0.08	0.45	0.45	0.06	0.26	0.26	0.07	0.26	0.26
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	4.2	10.8	1.8	1.4	21.7	1.4	3.6	9.5	9.5	3.4	4.7	4.7
UpstreamVC:	0.49	0.49	0.49	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.87	0.87	0.87	0.31	0.31	0.31	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.22	0.64	0.58	0.07	0.22	0.20	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.1	0.7	0.1	0.0	1.4	0.0	3.5	2.1	2.1	2.8	0.6	0.6
HCM2KQueue:	5.3	11.5	1.8	1.4	23.1	1.4	7.1	11.6	11.6	6.2	5.3	5.3
70th%Factor:	1.19	1.17	1.20	1.20	1.16	1.20	1.18	1.17	1.17	1.19	1.19	1.19
HCM2k70thQ:	6.3	13.5	2.2	1.7	26.7	1.7	8.4	13.7	13.7	7.3	6.2	6.2
85th%Factor:	1.55	1.50	1.58	1.59	1.44	1.59	1.54	1.50	1.50	1.54	1.55	1.55
HCM2k85thQ:	8.2	17.3	2.9	2.3	33.3	2.2	10.9	17.5	17.5	9.5	8.2	8.2
90th%Factor:	1.71	1.62	1.76	1.77	1.53	1.77	1.68	1.62	1.62	1.69	1.71	1.71
HCM2k90thQ:	9.1	18.7	3.3	2.6	35.3	2.5	11.9	18.9	18.9	10.5	9.0	9.0
95th%Factor:	1.95	1.82	2.04	2.05	1.67	2.06	1.90	1.81	1.81	1.93	1.95	1.95
HCM2k95thQ:	10.3	20.9	3.8	3.0	38.5	2.9	13.5	21.1	21.1	11.9	10.2	10.2
98th%Factor:	2.37	2.11	2.57	2.60	1.87	2.60	2.28	2.11	2.11	2.32	2.37	2.37
HCM2k98thQ:	12.5	24.3	4.7	3.7	43.2	3.6	16.1	24.5	24.5	14.4	12.5	12.5

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Fuel Consumption and Emissions
2000 HCM Operations Method
Future Volume Alternative

Intersection #20 SW 124th/Blake

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:		30 MPH			30 MPH			30 MPH			30 MPH	
NumOfStops:	31.7	154	13.2	10.5	309	10.2	26.8	40.1	31.5	25.5	23.5	11.5

Name: year 1995 composite fleet
Fuel Consumption: 132.200 pounds
21.416 gallons
Carbon Dioxide: 412.463 pounds
Carbon Monoxide: 33.480 pounds
Hydrocarbons: 6.420 pounds
Nitrogen Oxides: 1.453 pounds

Name: year 2000 composite fleet
Fuel Consumption: 132.200 pounds
21.416 gallons
Carbon Dioxide: 412.463 pounds
Carbon Monoxide: 33.480 pounds
Hydrocarbons: 6.420 pounds
Nitrogen Oxides: 1.453 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 T-S/SW 115th

Cycle (sec):	120					Critical Vol./Cap.(X):						0.546				
Loss Time (sec):	12					Average Delay (sec/veh):						12.8				
Optimal Cycle:	48					Level Of Service:						B				

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	31	0		0	31	0		5	0	0		5	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	1	0	0	1	0	1	0	0	1	1	0	2	0	1	
Volume Module:																
Base Vol:	87	1	26		9	1	35		4	1175	14		30	1361	5	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	87	1	26		9	1	35		4	1175	14		30	1361	5	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	87	1	26		9	1	35		4	1175	14		30	1361	5	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95	
PHF Volume:	92	1	27		9	1	37		4	1237	15		32	1433	5	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	92	1	27		9	1	37		4	1237	15		32	1433	5	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	92	1	27		9	1	37		4	1237	15		32	1433	5	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.68	0.68	0.81		0.81	0.81	0.81		0.90	0.90	0.81		0.90	0.90	0.81	
Lanes:	0.99	0.01	1.00		0.90	0.10	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	1271	15	1537		1389	154	1537		1718	3437	1537		1718	3437	1537	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.07	0.02		0.01	0.01	0.02		0.00	0.36	0.01		0.02	0.42	0.00	
Crit Moves:		****							****					****		
Green/Cycle:	0.26	0.26	0.26		0.26	0.26	0.26		0.04	0.58	0.58		0.07	0.60	0.60	
Volume/Cap:	0.28	0.28	0.07		0.03	0.03	0.09		0.06	0.63	0.02		0.28	0.69	0.01	
Delay/Veh:	36.0	36.0	33.7		33.3	33.3	33.9		55.6	11.3	6.9		54.6	10.5	5.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	36.0	36.0	33.7		33.3	33.3	33.9		55.6	11.3	6.9		54.6	10.5	5.5	
LOS by Move:	D	D	C		C	C	C		E	B	A		D	B	A	
HCM2kAvgQ:	3	3	1		0	0	1		0	10	0		1	13	0	

Note: Queue reported is the number of cars per lane.

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #28 T-S/SW 115th

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HCM Ops Adjusted Lane Utilization Module:																
Lanes:	0	1	0	0	1	0	1	0	0	1	1	0	2	0	1	
Lane Group:	LT	LT	R		LT	LT	R		L	T	R		L	T	R	
#LnsInGrps:	1	1	1		1	1	1		1	2	1		1	2	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	12		12	12	12		12	12	12		12	12	12	
CrsswalkWid:		8				8				8				8		
% Hev Veh:		5				5				5				5		
Grade:		0%				0%				0%				0%		
Parking/Hr:		No				No				No				No		
Bus Stp/Hr:		0				0				0				0		
Area Type:	< < < < < < < < < < < < < < < Other >															
Cnft Ped/Hr:		0				0				0				0		
ExclusiveRT:		Include				Include				Include				Include		
% RT Prtct:		0				0				0				0		
HCM Ops f(lt) Adj Case Module:																
f(lt) Case:	5	5	xxxx		5	5	xxxx		1	xxxx	xxxx		1	xxxx	xxxx	
HCM Ops Saturation Adj Module:																
Ln Wid Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Hev Veh Adj:	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95	
Grade Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Parking Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Bus Stp Adj:	xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00		xxxx	xxxx	1.00	
Area Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
RT Adj:	xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85		xxxx	xxxx	0.85	
LT Adj:	0.71	0.71	xxxxx		0.85	0.85	xxxxx		0.95	xxxx	xxxxx		0.95	xxxx	xxxxx	
PedBike Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
HCM Sat Adj:	0.68	0.68	0.81		0.81	0.81	0.81		0.90	0.95	0.81		0.90	0.95	0.81	
Usr Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Sat Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Fnl Sat Adj:	0.68	0.68	0.81		0.81	0.81	0.81		0.90	0.90	0.81		0.90	0.90	0.81	
Delay Adjustment Factor Module:																
Coordinated:	< < < < < < < < < < < < < < < Yes > > > > > > > >> > > > > > > > >															
Signal Type:	< < < < < < < < < < < Semi-Actuated > > > > > > > > > > > > > > >															
Street Type:	Side				Side				Main				Main			
Green/Cycle:	0.26	0.26	0.26		0.26	0.26	0.26		0.04	0.58	0.58		0.07	0.60	0.60	
ArrivalType:		3				3				4				4		
DelAdjFctr:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.63	0.63		1.00	0.58	0.58	

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
2000 HCM Operations Method
Future Volume Alternative

Intersection #28 T-S/SW 115th

Approach:	North	South	East	West
Cycle Length, C:	120	120	xxxxxx	xxxxxx
Actual Green Time Per Lane Group, G:	31.00	31.00	xxxxxx	xxxxxx
Effective Green Time Per Lane Group, g:	31.00	31.00	xxxxxx	xxxxxx
Opposing Effective Green Time, go:	31.00	31.00	xxxxxx	xxxxxx
Number Of Opposing Lanes, No:	1	1	xxxxxx	xxxxxx
Number Of Lanes In Lane Group, N:	1	1	xxxxxx	xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:	92	9	xxxxxx	xxxxxx
Proportion of Left Turns in Lane Group, Plt:	0.99	0.90	xxxxxx	xxxxxx
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left Turns Per Cycle, LTC:	3.05	0.32	xxxxxx	xxxxxx
Adjusted Opposing Flow Rate, Vo:	11	93	xxxxxx	xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:	0.37	3.10	xxxxxx	xxxxxx
Opposing Platoon Ratio, Rpo:	1.00	1.00	xxxxxx	xxxxxx
Lost Time Per Phase, tl:	4.00	4.00	xxxxxx	xxxxxx
Eff grn until arrival of left-turn car, gf:	0.35	17.07	xxxxxx	xxxxxx
Opposing Queue Ratio, qro:	0.74	0.74	xxxxxx	xxxxxx
Eff grn blocked by opposing queue, gq:	0.00	0.85	xxxxxx	xxxxxx
Eff grn while left turns filter thru, gu:	30.65	13.93	xxxxxx	xxxxxx
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Left-turn Saturation Factor, fs:	0.87	0.82	xxxxxx	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	0.99	0.90	xxxxxx	xxxxxx
Through-car Equivalents, el1:	1.42	1.54	xxxxxx	xxxxxx
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	xxxxxx
Minimum Left Turn Adjustment Factor, fmin:	0.13	0.12	xxxxxx	xxxxxx
Single Lane Left Turn Adjustment Factor, fm:	0.71	0.85	xxxxxx	xxxxxx
Left Turn Adjustment Factor, flt:	0.71	0.85	xxxxxx	xxxxxx

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #28 T-S/SW 115th

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.26	0.26	0.26	0.26	0.26	0.26	0.04	0.58	0.58	0.07	0.60	0.60
ArrivalType:		3			3			4			4	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.68	0.55	0.98	0.66	0.50
Q1:	2.5	2.5	0.7	0.3	0.3	0.9	0.1	9.7	0.1	1.0	11.3	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.90	0.90	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.31	0.31	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	0.05	0.26	0.23	1.00	1.00	1.00
Q2:	0.4	0.4	0.1	0.0	0.0	0.1	0.0	0.4	0.0	0.4	2.2	0.0
HCM2KQueue:	2.8	2.8	0.8	0.3	0.3	1.0	0.1	10.2	0.1	1.4	13.5	0.0
70th%Factor:	1.19	1.19	1.20	1.20	1.20	1.20	1.20	1.18	1.20	1.20	1.17	1.20
HCM2k70thQ:	3.4	3.4	0.9	0.3	0.3	1.2	0.2	12.0	0.1	1.6	15.8	0.0
85th%Factor:	1.57	1.57	1.59	1.60	1.60	1.59	1.60	1.51	1.60	1.59	1.49	1.60
HCM2k85thQ:	4.5	4.5	1.2	0.5	0.5	1.6	0.2	15.4	0.2	2.1	20.1	0.1
90th%Factor:	1.75	1.75	1.79	1.79	1.79	1.78	1.80	1.64	1.80	1.77	1.60	1.80
HCM2k90thQ:	5.0	5.0	1.4	0.5	0.5	1.8	0.2	16.7	0.2	2.4	21.6	0.1
95th%Factor:	2.01	2.01	2.08	2.09	2.09	2.07	2.10	1.84	2.10	2.06	1.78	2.10
HCM2k95thQ:	5.7	5.7	1.6	0.6	0.6	2.1	0.3	18.7	0.3	2.8	24.1	0.1
98th%Factor:	2.50	2.50	2.64	2.68	2.68	2.62	2.69	2.16	2.69	2.60	2.05	2.70
HCM2k98thQ:	7.1	7.1	2.0	0.8	0.8	2.7	0.4	21.9	0.3	3.5	27.7	0.1

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Fuel Consumption and Emissions
2000 HCM Operations Method
Future Volume Alternative

Intersection #28 T-S/SW 115th

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:	30 MPH			30 MPH			30 MPH			30 MPH		
NumOfStops:	18.3	0.2	5.2	1.8	0.2	7.0	1.0	130	1.0	7.5	141	0.3

Name: year 1995 composite fleet
Fuel Consumption: 58.622 pounds
9.497 gallons
Carbon Dioxide: 182.901 pounds
Carbon Monoxide: 13.344 pounds
Hydrocarbons: 2.150 pounds
Nitrogen Oxides: 0.656 pounds

Name: year 2000 composite fleet
Fuel Consumption: 58.622 pounds
9.497 gallons
Carbon Dioxide: 182.901 pounds
Carbon Monoxide: 13.344 pounds
Hydrocarbons: 2.150 pounds
Nitrogen Oxides: 0.656 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 SW 124th/E-W Collector

Cycle (sec):	120	Critical Vol./Cap.(X):	0.634
Loss Time (sec):	12	Average Delay (sec/veh):	23.8
Optimal Cycle:	53	Level Of Service:	C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Permitted						Permitted					
Rights:	Include						Include						Include						Include					
Min. Green:	5	0	0				5	0	0				5	31	0				5	31	0			
Y+R:	4.0	4.0	4.0				4.0	4.0	4.0				4.0	4.0	4.0				4.0	4.0	4.0			
Lanes:	1	0	2	0	1		1	0	2	0	1		0	1	0	0	1		1	0	0	1	0	
Volume Module:																								
Base Vol:	42	885		80			44	1487		5			17		5	198			240		5	126		
Growth Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00	1.00			1.00		1.00	1.00		
Initial Bse:	42	885		80			44	1487		5			17		5	198			240		5	126		
Added Vol:	0	0		0			0	0		0			0		0	0			0		0	0		
PasserByVol:	0	0		0			0	0		0			0		0	0			0		0	0		
Initial Fut:	42	885		80			44	1487		5			17		5	198			240		5	126		
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00	1.00			1.00		1.00	1.00		
PHF Adj:	0.95	0.95		0.95			0.95	0.95		0.95			0.95		0.95	0.95			0.95		0.95	0.95		
PHF Volume:	44	932		84			46	1565		5			18		5	208			253		5	133		
Reduct Vol:	0	0		0			0	0		0			0		0	0			0		0	0		
Reduced Vol:	44	932		84			46	1565		5			18		5	208			253		5	133		
PCE Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00	1.00			1.00		1.00	1.00		
MLF Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00	1.00			1.00		1.00	1.00		
FinalVolume:	44	932		84			46	1565		5			18		5	208			253		5	133		
Saturation Flow Module:																								
Sat/Lane:	1900	1900		1900			1900	1900		1900			1900		1900	1900			1900		1900	1900		
Adjustment:	0.90	0.90		0.81			0.90	0.90		0.81			0.77		0.77	0.81			0.71		0.81	0.81		
Lanes:	1.00	2.00		1.00			1.00	2.00		1.00			0.77		0.23	1.00			1.00		0.04	0.96		
Final Sat.:	1718	3437		1537			1718	3437		1537			1138		335	1537			1355		59	1489		
Capacity Analysis Module:																								
Vol/Sat:	0.03	0.27		0.05			0.03	0.46		0.00			0.02		0.02	0.14			0.19		0.09	0.09		
Crit Moves:	****							****													****			
Green/Cycle:	0.04	0.56		0.56			0.09	0.60		0.60			0.26		0.26	0.26			0.26		0.26	0.26		
Volume/Cap:	0.62	0.49		0.10			0.32	0.76		0.01			0.06		0.06	0.52			0.72		0.34	0.34		
Delay/Veh:	71.8	16.4		12.6			52.8	19.3		9.6			33.6		33.6	39.5			47.8		36.8	36.8		
User DelAdj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00	1.00			1.00		1.00	1.00		
AdjDel/Veh:	71.8	16.4		12.6			52.8	19.3		9.6			33.6		33.6	39.5			47.8		36.8	36.8		
LOS by Move:	E	B		B			D	B		A			C		C	D			D		D	D		
HCM2kAvgQ:	2	11		1			1	21		0			1		1	7			10		4	4		

Note: Queue reported is the number of cars per lane.

```
Default Scenario           Wed Jun 16, 2010 11:54:21                Page 10-1
--------------------------------------------------------------------------------
                   SW Tualatin Concept Plan -- Project 6689
                      2030 PM Peak Hour--Alternative III
                         Kittelson & Associates, Inc.
--------------------------------------------------------------------------------
                 Level Of Service Detailed Computation Report
                          2000 HCM Operations Method
                           Future Volume Alternative
********************************************************************************
Intersection #34 SW 124th/E-W Collector
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  2  0  1    1  0  2  0  1    0  1  0  0  1    1  0  0  1  0
Lane Group:    L    T     R     L    T     R    LT   LT     R     L   RT     RT
#LnsInGrps:     1    2     1     1    2     1     1    1     1     1    1     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           5                5                5                5
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     5    5  xxxx     2 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx 0.86  0.86
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.81 0.81 xxxxx  0.75 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.90 0.95  0.81  0.90 0.95  0.81  0.77 0.77  0.81  0.71 0.81  0.81
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.95  1.00  1.00 0.95  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 0.90 0.90  0.81  0.90 0.90  0.81  0.77 0.77  0.81  0.71 0.81  0.81
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
********************************************************************************

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```
Default Scenario           Wed Jun 16, 2010 11:54:21                Page 10-2
--------------------------------------------------------------------------------
                   SW Tualatin Concept Plan -- Project 6689
                      2030 PM Peak Hour--Alternative III
                         Kittelson & Associates, Inc.
--------------------------------------------------------------------------------
  Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
                          2000 HCM Operations Method
                           Future Volume Alternative
********************************************************************************
Intersection #34 SW 124th/E-W Collector
********************************************************************************
Approach:                                       North    South    East     West
Cycle Length, C:                               xxxxxx   xxxxxx      120      120
Actual Green Time Per Lane Group, G:           xxxxxx   xxxxxx    31.00    31.00
Effective Green Time Per Lane Group, g:        xxxxxx   xxxxxx    31.00    31.00
Opposing Effective Green Time, go:             xxxxxx   xxxxxx    31.00    31.00
Number Of Opposing Lanes, No:                  xxxxxx   xxxxxx        1        1
Number Of Lanes In Lane Group, N:              xxxxxx   xxxxxx        1        1
Adjusted Left-Turn Flow Rate, Vlt:             xxxxxx   xxxxxx       18      253
Proportion of Left Turns in Lane Group, Plt:   xxxxxx   xxxxxx     0.77     1.00
Proportion of Left Turns in Opp Flow, Plto:    xxxxxx   xxxxxx   xxxxxx   xxxxxx
Left Turns Per Cycle, LTC:                     xxxxxx   xxxxxx     0.60     8.42
Adjusted Opposing Flow Rate, Vo:               xxxxxx   xxxxxx      138       23
Opposing Flow Per Lane Per Cycle, Volc:        xxxxxx   xxxxxx     4.60     0.77
Opposing Platoon Ratio, Rpo:                   xxxxxx   xxxxxx     1.00     1.00
Lost Time Per Phase, tl:                       xxxxxx   xxxxxx     4.00     4.00
Eff grn until arrival of left-turn car, gf:    xxxxxx   xxxxxx    12.86     0.00
Opposing Queue Ratio, qro:                     xxxxxx   xxxxxx     0.74     0.74
Eff grn blocked by opposing queue, gq:         xxxxxx   xxxxxx     3.39     0.00
Eff grn while left turns filter thru, gu:      xxxxxx   xxxxxx    18.14    31.00
Max opposing cars arriving during gq-gf, n:    xxxxxx   xxxxxx   xxxxxx   xxxxxx
Proportion of Opposing Thru & RT cars, ptho:   xxxxxx   xxxxxx   xxxxxx   xxxxxx
Left-turn Saturation Factor, fs:               xxxxxx   xxxxxx     0.79     0.86
Proportion of Left Turns in Shared Lane, pl:   xxxxxx   xxxxxx     0.77     1.00
Through-car Equivalents, el1:                  xxxxxx   xxxxxx     1.61     1.33
Single Lane Through-car Equivalents, el2:      xxxxxx   xxxxxx   xxxxxx   xxxxxx
Minimum Left Turn Adjustment Factor, fmin:     xxxxxx   xxxxxx     0.11     0.13
Single Lane Left Turn Adjustment Factor, fm:   xxxxxx   xxxxxx     0.81     0.75
Left Turn Adjustment Factor, flt:              xxxxxx   xxxxxx     0.81     0.75
********************************************************************************

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```

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #34 SW 124th/E-W Collector

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.04	0.56	0.56	0.09	0.60	0.60	0.26	0.26	0.26	0.26	0.26	0.26
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.4	10.0	1.3	1.5	20.2	0.1	0.6	0.6	6.0	7.7	3.7	3.7
UpstreamVC:	0.28	0.28	0.28	0.87	0.87	0.87	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.97	0.97	0.97	0.36	0.36	0.36	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.16	0.80	0.72	0.09	0.31	0.28	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.2	0.7	0.1	0.0	1.0	0.0	0.1	0.1	1.1	2.2	0.5	0.5
HCM2KQueue:	1.7	10.7	1.4	1.5	21.1	0.1	0.6	0.6	7.0	9.9	4.3	4.3
70th%Factor:	1.20	1.18	1.20	1.20	1.16	1.20	1.20	1.20	1.18	1.18	1.19	1.19
HCM2k70thQ:	2.0	12.6	1.7	1.8	24.5	0.1	0.8	0.8	8.3	11.6	5.1	5.1
85th%Factor:	1.58	1.51	1.59	1.59	1.45	1.60	1.59	1.59	1.54	1.52	1.56	1.56
HCM2k85thQ:	2.7	16.2	2.2	2.4	30.6	0.1	1.0	1.0	10.8	15.0	6.6	6.6
90th%Factor:	1.77	1.63	1.77	1.77	1.54	1.80	1.79	1.79	1.68	1.64	1.72	1.72
HCM2k90thQ:	3.0	17.5	2.5	2.6	32.5	0.1	1.2	1.2	11.8	16.2	7.3	7.3
95th%Factor:	2.05	1.83	2.06	2.05	1.69	2.10	2.08	2.08	1.91	1.85	1.97	1.97
HCM2k95thQ:	3.5	19.6	2.9	3.1	35.6	0.2	1.3	1.3	13.4	18.2	8.4	8.4
98th%Factor:	2.58	2.14	2.60	2.59	1.90	2.69	2.65	2.65	2.28	2.17	2.42	2.42
HCM2k98thQ:	4.4	22.9	3.6	3.9	40.1	0.2	1.7	1.7	16.0	21.4	10.3	10.3

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Fuel Consumption and Emissions
2000 HCM Operations Method
Future Volume Alternative

Intersection #34 SW 124th/E-W Collector

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:		30 MPH			30 MPH			30 MPH			30 MPH	
NumOfStops:	10.9	142	9.9	10.9	287	0.5	3.4	1.0	44.7	57.6	1.1	27.0

Name: year 1995 composite fleet
Fuel Consumption: 94.802 pounds
15.358 gallons
Carbon Dioxide: 295.783 pounds
Carbon Monoxide: 22.953 pounds
Hydrocarbons: 4.079 pounds
Nitrogen Oxides: 1.082 pounds

Name: year 2000 composite fleet
Fuel Consumption: 94.802 pounds
15.358 gallons
Carbon Dioxide: 295.783 pounds
Carbon Monoxide: 22.953 pounds
Hydrocarbons: 4.079 pounds
Nitrogen Oxides: 1.082 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

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SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #39 SW 115th/Blake

Average Delay (sec/veh): 4.7 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Yield Sign			Yield Sign			Yield Sign		
Lanes:	1			1			1			1		
Volume Module:												
Base Vol:	100	72	60	95	112	105	38	315	30	16	103	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	72	60	95	112	105	38	315	30	16	103	18
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	72	60	95	112	105	38	315	30	16	103	18
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	72	60	95	112	0	38	315	30	16	103	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	72	60	95	112	0	38	315	30	16	103	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	72	60	95	112	0	38	315	30	16	103	18
PCE Module:												
AutoPCE:	100	72	60	95	112	0	38	315	30	16	103	18
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	100	72	60	95	112	0	38	315	30	16	103	18
Delay Module: >> Time Period: 0.25 hours <<												
CircVolume:	448			219			223			210		
MaxVolume:	958			1082			1080			1087		
PedVolume:	0			0			0			0		
AdjMaxVol:	958			1082			1080			1087		
ApproachVol:	232			207			383			137		
ApproachV/C:	0.24			0.19			0.35			0.13		
ApproachDel:	5.0			4.1			5.2			3.8		
ApproachLOS:	A			A			A			A		
Queue:	0.9			0.7			1.6			0.4		

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #40 SW 124th Ave/Tonquin Rd

Cycle (sec): 120 Critical Vol./Cap.(X): 0.830
Loss Time (sec): 16 Average Delay (sec/veh): 34.3
Optimal Cycle: 101 Level Of Service: C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Protected						Protected					
Rights:	Include						Include						Include						Ovl					
Min. Green:	5		0		0		5		0		0		5		31		0		5		31		0	
Y+R:	4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0	
Lanes:	1	0	2	0	1		1	0	2	0	1		1	0	1	0	1		1	0	1	0	1	
Volume Module:																								
Base Vol:	40		740		25		180		1472		273		58		377		100		40		143		255	
Growth Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	40		740		25		180		1472		273		58		377		100		40		143		255	
Added Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
PasserByVol:	0		0		0		0		0		0		0		0		0		0		0		0	
Initial Fut:	40		740		25		180		1472		273		58		377		100		40		143		255	
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.95		0.95		0.95		0.95		0.95		0.95		0.95		0.95		0.95		0.95		0.95		0.95	
PHF Volume:	42		779		26		189		1549		287		61		397		105		42		151		268	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
Reduced Vol:	42		779		26		189		1549		287		61		397		105		42		151		268	
PCE Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
MLF Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
FinalVolume:	42		779		26		189		1549		287		61		397		105		42		151		268	
Saturation Flow Module:																								
Sat/Lane:	1900		1900		1900		1900		1900		1900		1900		1900		1900		1900		1900		1900	
Adjustment:	0.90		0.90		0.81		0.90		0.90		0.81		0.90		0.95		0.81		0.90		0.95		0.81	
Lanes:	1.00		2.00		1.00		1.00		2.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Final Sat.:	1718		3437		1537		1718		3437		1537		1718		1809		1537		1718		1809		1537	
Capacity Analysis Module:																								
Vol/Sat:	0.02		0.23		0.02		0.11		0.45		0.19		0.04		0.22		0.07		0.02		0.08		0.17	
Crit Moves:	****								****						****				****					
Green/Cycle:	0.04		0.38		0.38		0.19		0.52		0.52		0.04		0.26		0.26		0.04		0.26		0.44	
Volume/Cap:	0.59		0.59		0.04		0.59		0.86		0.36		0.85		0.85		0.27		0.59		0.32		0.39	
Delay/Veh:	68.6		30.5		23.4		47.8		29.0		16.9		116.0		56.0		35.8		68.6		36.4		22.9	
User DelAdj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
AdjDel/Veh:	68.6		30.5		23.4		47.8		29.0		16.9		116.0		56.0		35.8		68.6		36.4		22.9	
LOS by Move:	E		C		C		D		C		B		F		E		D		E		D		C	
HCM2kAvgQ:	2		12		1		7		28		6		4		16		3		2		5		7	

Note: Queue reported is the number of cars per lane.

```
Default Scenario           Wed Jun 16, 2010 11:54:21               Page 13-1
-------------------------------------------------------------------------------
                  SW Tualatin Concept Plan -- Project 6689
                     2030 PM Peak Hour--Alternative III
                        Kittelson & Associates, Inc.
-------------------------------------------------------------------------------
                Level Of Service Detailed Computation Report
                         2000 HCM Operations Method
                          Future Volume Alternative
*******************************************************************************
Intersection #40 SW 124th Ave/Tonquin Rd
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  1  0  1    1  0  1  0  1
Lane Group:     L    T     R     L    T     R     L    T     R     L    T     R
#LnsInGrps:     1    2     1     1    2     1     1    1     1     1    1     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8               8                8                8
% Hev Veh:           5               5                5                5
Grade:              0%              0%               0%               0%
Parking/Hr:         No              No               No               No
Bus Stp/Hr:          0               0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0               0                0                0
ExclusiveRT:      Include          Include          Include          Include
% RT Prtct:          0               0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Hev Veh Adj: 0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
Grade Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Parking Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00
Area Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
RT Adj:      xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx xxxx  0.85
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.90 0.95  0.81  0.90 0.95  0.81  0.90 0.95  0.81  0.90 0.95  0.81
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 0.95  1.00  1.00 0.95  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 0.90 0.90  0.81  0.90 0.90  0.81  0.90 0.95  0.81  0.90 0.95  0.81
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
*******************************************************************************

  Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to KITTELSON, PORTLAND
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Default Scenario           Wed Jun 16, 2010 11:54:21               Page 13-2
-------------------------------------------------------------------------------
                  SW Tualatin Concept Plan -- Project 6689
                     2030 PM Peak Hour--Alternative III
                        Kittelson & Associates, Inc.
-------------------------------------------------------------------------------
      Level Of Service Detailed Computation Report (HCM2000 Queue Method)
                         2000 HCM Operations Method
                          Future Volume Alternative
*******************************************************************************
Intersection #40 SW 124th Ave/Tonquin Rd
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.04 0.38  0.38  0.19 0.52  0.52  0.04 0.26  0.26  0.04 0.26  0.44
ArrivalType:        3                3                3                3
ProgFactor:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Q1:           1.4 10.9   0.6   5.8 23.5   5.6   2.0 12.6   2.8   1.4  4.1   6.0
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
EarlyArrAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Q2:           1.1  1.4   0.0   1.4  4.7   0.5   2.2  3.9   0.4   1.1  0.5   0.6
HCM2KQueue:   2.5 12.3   0.6   7.1 28.3   6.1   4.2 16.5   3.2   2.5  4.5   6.7
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.19 1.17  1.20  1.18 1.15  1.19  1.19 1.17  1.19  1.19 1.19  1.18
HCM2k70thQ:   3.0 14.5   0.7   8.4 32.5   7.3   5.0 19.2   3.8   3.0  5.4   7.9
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.58 1.50  1.59  1.54 1.42  1.54  1.56 1.47  1.57  1.58 1.56  1.54
HCM2k85thQ:   3.9 18.5   1.0  11.0 40.0   9.5   6.6 24.3   4.9   3.9  7.1  10.3
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.75 1.62  1.79  1.68 1.50  1.69  1.72 1.58  1.74  1.75 1.72  1.69
HCM2k90thQ:   4.3 19.9   1.1  12.0 42.3  10.4   7.2 26.0   5.5   4.3  7.8  11.2
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.02 1.80  2.08  1.90 1.62  1.93  1.98 1.74  2.00  2.02 1.97  1.91
HCM2k95thQ:   5.0 22.2   1.2  13.6 45.9  11.8   8.3 28.7   6.3   5.0  8.9  12.8
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.53 2.09  2.65  2.28 1.81  2.32  2.42 1.98  2.48  2.53 2.41  2.30
HCM2k98thQ:   6.3 25.8   1.6  16.3 51.2  14.3  10.2 32.6   7.8   6.3 10.9  15.3

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```

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Fuel Consumption and Emissions
2000 HCM Operations Method
Future Volume Alternative

Intersection #40 SW 124th Ave/Tonquin Rd

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:	30 MPH			30 MPH			30 MPH			30 MPH		
NumOfStops:	10.3	156	4.1	43.4	335	42.0	15.2	94.3	21.0	10.3	30.4	45.2

Name: year 1995 composite fleet
Fuel Consumption: 141.590 pounds
22.938 gallons
Carbon Dioxide: 441.762 pounds
Carbon Monoxide: 35.395 pounds
Hydrocarbons: 6.637 pounds
Nitrogen Oxides: 1.582 pounds

Name: year 2000 composite fleet
Fuel Consumption: 141.590 pounds
22.938 gallons
Carbon Dioxide: 441.762 pounds
Carbon Monoxide: 35.395 pounds
Hydrocarbons: 6.637 pounds
Nitrogen Oxides: 1.582 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #41 SW 124th Ave/Connector WB

Cycle (sec):	120			Critical Vol./Cap.(X):			0.861					
Loss Time (sec):	12			Average Delay (sec/veh):			34.0					
Optimal Cycle:	101			Level Of Service:			C					

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	1	0 0	0	0	2	0 1	0	0	0	0 0	1	0	2	0 1
Volume Module:																
Base Vol:	10	295	0	0	1167	445	0		0	0	0		85	1342	510	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	10	295	0	0	1167	445	0		0	0	0		85	1342	510	
Added Vol:	0	0	0	0	0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0	0	0	0	0		0	0	0		0	0	0	
Initial Fut:	10	295	0	0	1167	445	0		0	0	0		85	1342	510	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.00	
PHF Volume:	11	311	0	0	1228	468	0		0	0	0		89	1413	0	
Reduct Vol:	0	0	0	0	0	0	0		0	0	0		0	0	0	
Reduced Vol:	11	311	0	0	1228	468	0		0	0	0		89	1413	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
FinalVolume:	11	311	0	0	1228	468	0		0	0	0		89	1413	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.95	1.00	1.00	0.90	0.81	1.00		1.00	1.00	1.00		0.81	0.90	1.00	
Lanes:	1.00	1.00	0.00	0.00	2.00	1.00	0.00		0.00	0.00	0.00		1.00	2.00	1.00	
Final Sat.:	1718	1809	0	0	3437	1537	0		0	0	0		1537	3437	1900	
Capacity Analysis Module:																
Vol/Sat:	0.01	0.17	0.00	0.00	0.36	0.30	0.00		0.00	0.00	0.00		0.06	0.41	0.00	
Crit Moves:	****				****									****		
Green/Cycle:	0.01	0.42	0.00	0.00	0.42	0.42	0.00		0.00	0.00	0.00		0.48	0.48	0.00	
Volume/Cap:	0.86	0.41	0.00	0.00	0.86	0.73	0.00		0.00	0.00	0.00		0.12	0.86	0.00	
Delay/Veh:	240.9	24.5	0.0	0.0	37.5	33.9	0.0		0.0	0.0	0.0		17.5	32.7	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	240.9	24.5	0.0	0.0	37.5	33.9	0.0		0.0	0.0	0.0		17.5	32.7	0.0	
LOS by Move:	F	C	A	A	D	C	A		A	A	A		B	C	A	
HCM2kAvgQ:	1	8	0	0	24	16	0		0	0	0		2	27	0	

Note: Queue reported is the number of cars per lane.

```
--------------------------------------------------------------------------------
                   SW Tualatin Concept Plan -- Project 6689
                      2030 PM Peak Hour--Alternative III
                         Kittelson & Associates, Inc.
--------------------------------------------------------------------------------
                 Level Of Service Detailed Computation Report
                          2000 HCM Operations Method
                           Future Volume Alternative
********************************************************************************
Intersection #41 SW 124th Ave/Connector WB
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  1  0  0   0  0  2  0  1   0  0  0  0  0   1  0  2  0  1
Lane Group:    L    T   xxxx  xxxx   T     R   xxxx xxxx  xxxx    L    T     R
#LnsInGrps:     1    1     0     0    2     1     0    0     0     1    2     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8               8               8               8
% Hev Veh:           5               5               5               5
Grade:              0%              0%              0%              0%
Parking/Hr:         No              No              No              No
Bus Stp/Hr:          0               0               0               0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0               0               0               0
ExclusiveRT:     Include         Include         Include         Include
% RT Prtct:          0               0               0               0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx    2r xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00 xxxxx  xxxx 1.00  1.00  xxxx xxxx xxxxx  1.00 1.00 xxxxx
Hev Veh Adj: 0.95 0.95 xxxxx  xxxx 0.95  0.95  xxxx xxxx xxxxx  0.95 0.95 xxxxx
Grade Adj:   1.00 1.00 xxxxx  xxxx 1.00  1.00  xxxx xxxx xxxxx  1.00 1.00 xxxxx
Parking Adj: xxxx 1.00 xxxxx  xxxx xxxx  1.00  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Bus Stp Adj: xxxx 1.00 xxxxx  xxxx xxxx  1.00  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Area Adj:    1.00 1.00 xxxxx  xxxx 1.00  1.00  xxxx xxxx xxxxx  1.00 1.00 xxxxx
RT Adj:      xxxx xxxx xxxxx  xxxx xxxx  0.85  xxxx xxxx xxxxx  xxxx xxxx xxxxx
LT Adj:      0.95 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  0.85 xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 0.90 0.95  1.00  1.00 0.95  0.81  1.00 1.00  1.00  0.81 0.95  1.00
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 0.95  1.00  1.00 1.00  1.00  1.00 0.95  1.00
Fnl Sat Adj: 0.90 0.95  1.00  1.00 0.90  0.81  1.00 1.00  1.00  0.81 0.90  1.00
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > > >
>
DelAdjFctr:  1.00 1.00  0.00  0.00 1.00  1.00  0.00 0.00  0.00  1.00 1.00  0.00
********************************************************************************
```

```
--------------------------------------------------------------------------------
                   SW Tualatin Concept Plan -- Project 6689
                      2030 PM Peak Hour--Alternative III
                         Kittelson & Associates, Inc.
--------------------------------------------------------------------------------
      Level Of Service Detailed Computation Report (HCM2000 Queue Method)
                          2000 HCM Operations Method
                           Future Volume Alternative
********************************************************************************
Intersection #41 SW 124th Ave/Connector WB
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.01 0.42  0.00  0.00 0.42  0.42  0.00 0.00  0.00  0.48 0.48  0.00
ArrivalType:         3               3               3               3
ProgFactor:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Q1:           0.4  7.2   0.0   0.0 19.6  13.1   0.0  0.0   0.0   1.7 22.0   0.0
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
EarlyArrAdj: 1.00 1.00  0.00  0.00 1.00  1.00  0.00 0.00  0.00  1.00 1.00  0.00
Q2:           1.0  0.7   0.0   0.0  4.6   2.5   0.0  0.0   0.0   0.1  4.7   0.0
HCM2KQueue:   1.4  7.9   0.0   0.0 24.2  15.6   0.0  0.0   0.0   1.8 26.7   0.0
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.18  1.20  1.20 1.15  1.17  1.20 1.20  1.20  1.20 1.15  1.20
HCM2k70thQ:   1.7  9.3   0.0   0.0 27.9  18.2   0.0  0.0   0.0   2.1 30.7   0.0
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.59 1.53  1.60  1.60 1.43  1.48  1.60 1.60  1.60  1.58 1.42  1.60
HCM2k85thQ:   2.2 12.1   0.0   0.0 34.7  23.1   0.0  0.0   0.0   2.8 38.0   0.0
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.77 1.67  1.80  1.80 1.52  1.58  1.80 1.80  1.80  1.77 1.51  1.80
HCM2k90thQ:   2.5 13.2   0.0   0.0 36.7  24.7   0.0  0.0   0.0   3.2 40.2   0.0
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.06 1.89  2.10  2.10 1.66  1.75  2.10 2.10  2.10  2.04 1.64  2.10
HCM2k95thQ:   2.9 14.9   0.0   0.0 40.1  27.3   0.0  0.0   0.0   3.7 43.7   0.0
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.60 2.24  2.70  2.70 1.86  2.00  2.70 2.70  2.70  2.57 1.83  2.70
HCM2k98thQ:   3.6 17.7   0.0   0.0 44.9  31.2   0.0  0.0   0.0   4.6 48.8   0.0
```

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Fuel Consumption and Emissions
2000 HCM Operations Method
Future Volume Alternative

Intersection #41 SW 124th Ave/Connector WB

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:	30 MPH			30 MPH			30 MPH			30 MPH		
NumOfStops:	2.6	54.1	0.0	0.0	279	98.5	0.0	0.0	0.0	12.4	313	0.0

Name: year 1995 composite fleet
Fuel Consumption: 127.620 pounds
20.675 gallons
Carbon Dioxide: 398.176 pounds
Carbon Monoxide: 31.876 pounds
Hydrocarbons: 5.958 pounds
Nitrogen Oxides: 1.437 pounds

Name: year 2000 composite fleet
Fuel Consumption: 127.620 pounds
20.675 gallons
Carbon Dioxide: 398.176 pounds
Carbon Monoxide: 31.876 pounds
Hydrocarbons: 5.958 pounds
Nitrogen Oxides: 1.437 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #42 SW 124th Ave/Connector EB

Cycle (sec): 120 Critical Vol./Cap.(X): 0.716
Loss Time (sec): 12 Average Delay (sec/veh): 32.1
Optimal Cycle: 64 Level Of Service: C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Split Phase						Split Phase						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0	0	0				0	0	0				0	0	0				0	0	0			
Y+R:	4.0	4.0	4.0				4.0	4.0	4.0				4.0	4.0	4.0				4.0	4.0	4.0			
Lanes:	0	0	0	1	0		1	1	0	0	0		1	0	2	0	1		0	0	0	0	0	
Volume Module:																								
Base Vol:	0	20	85	1157	95	0	285	567	10	0	0	0												
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Initial Bse:	0	20	85	1157	95	0	285	567	10	0	0	0												
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0												
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0												
Initial Fut:	0	20	85	1157	95	0	285	567	10	0	0	0												
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95												
PHF Volume:	0	21	89	1218	100	0	300	597	11	0	0	0												
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0												
Reduced Vol:	0	21	89	1218	100	0	300	597	11	0	0	0												
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
FinalVolume:	0	21	89	1218	100	0	300	597	11	0	0	0												
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900												
Adjustment:	1.00	0.85	0.85	0.91	0.91	1.00	0.81	0.90	0.81	1.00	1.00	1.00												
Lanes:	0.00	0.19	0.81	1.85	0.15	0.00	1.00	2.00	1.00	0.00	0.00	0.00												
Final Sat.:	0	307	1305	3196	262	0	1537	3437	1537	0	0	0												
Capacity Analysis Module:																								
Vol/Sat:	0.00	0.07	0.07	0.38	0.38	0.00	0.20	0.17	0.01	0.00	0.00	0.00												
Crit Moves:		****			****		****																	
Green/Cycle:	0.00	0.10	0.10	0.53	0.53	0.00	0.27	0.27	0.27	0.00	0.00	0.00												
Volume/Cap:	0.00	0.72	0.72	0.72	0.72	0.00	0.72	0.64	0.03	0.00	0.00	0.00												
Delay/Veh:	0.0	67.5	67.5	22.6	22.6	0.0	45.3	39.9	32.0	0.0	0.0	0.0												
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
AdjDel/Veh:	0.0	67.5	67.5	22.6	22.6	0.0	45.3	39.9	32.0	0.0	0.0	0.0												
LOS by Move:	A	E	E	C	C	A	D	D	C	A	A	A												
HCM2kAvgQ:	0	5	5	19	19	0	11	11	0	0	0	0												

Note: Queue reported is the number of cars per lane.

```
-------------------------------------------------------------------------------
                  SW Tualatin Concept Plan -- Project 6689
                     2030 PM Peak Hour--Alternative III
                        Kittelson & Associates, Inc.
-------------------------------------------------------------------------------
                Level Of Service Detailed Computation Report
                         2000 HCM Operations Method
                         Future Volume Alternative
*******************************************************************************
Intersection #42 SW 124th Ave/Connector EB
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        0  0  0  1  0    1  1  0  0  0    1  0  2  0  1    0  0  0  0  0
Lane Group:  xxxx  RT     RT   LT   LT   xxxx    L    T     R   xxxx xxxx  xxxx
#LnsInGrps:     0    1     1     2    2     0     1    2     1     0    0     0
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           5                5                5                5
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:  xxxx xxxx  xxxx     4    4  xxxx    2r xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  xxxx 1.00  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00  xxxx xxxx xxxxx
Hev Veh Adj: xxxx 0.95  0.95  0.95 0.95 xxxxx  0.95 0.95  0.95  xxxx xxxx xxxxx
Grade Adj:   xxxx 1.00  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00  xxxx xxxx xxxxx
Parking Adj: xxxx 1.00  1.00  1.00 1.00 xxxxx  xxxx xxxx  1.00  xxxx xxxx xxxxx
Bus Stp Adj: xxxx 1.00  1.00  1.00 1.00 xxxxx  xxxx xxxx  1.00  xxxx xxxx xxxxx
Area Adj:    xxxx 1.00  1.00  1.00 1.00 xxxxx  1.00 1.00  1.00  xxxx xxxx xxxxx
RT Adj:      xxxx 0.89  0.89  xxxx xxxx xxxxx  xxxx xxxx  0.85  xxxx xxxx xxxxx
LT Adj:      xxxx xxxx xxxxx  0.96 0.96 xxxxx  0.85 xxxx xxxxx  xxxx xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 1.00 0.85  0.85  0.91 0.91  1.00  0.81 0.95  0.81  1.00 1.00  1.00
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 0.95  1.00  1.00 1.00  1.00
Fnl Sat Adj: 1.00 0.85  0.85  0.91 0.91  1.00  0.81 0.90  0.81  1.00 1.00  1.00
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > > >
>
DelAdjFctr:  0.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  0.00 0.00  0.00
*******************************************************************************
```

```
-------------------------------------------------------------------------------
                  SW Tualatin Concept Plan -- Project 6689
                     2030 PM Peak Hour--Alternative III
                        Kittelson & Associates, Inc.
-------------------------------------------------------------------------------
      Level Of Service Detailed Computation Report (HCM2000 Queue Method)
                         2000 HCM Operations Method
                         Future Volume Alternative
*******************************************************************************
Intersection #42 SW 124th Ave/Connector EB
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.00 0.10  0.10  0.53 0.53  0.00  0.27 0.27  0.27  0.00 0.00  0.00
ArrivalType:        3                3                3                3
ProgFactor:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Q1:           0.0  3.6   3.6  16.6 16.6   0.0   9.0  9.2   0.3   0.0  0.0   0.0
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
EarlyArrAdj: 0.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00  0.00 0.00  0.00
Q2:           0.0  1.9   1.9   2.4  2.4   0.0   2.2  1.6   0.0   0.0  0.0   0.0
HCM2KQueue:   0.0  5.5   5.5  19.0 19.0   0.0  11.2 10.9   0.3   0.0  0.0   0.0
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.19  1.19  1.16 1.16  1.20  1.18 1.18  1.20  1.20 1.20  1.20
HCM2k70thQ:   0.0  6.5   6.5  22.0 22.0   0.0  13.2 12.8   0.3   0.0  0.0   0.0
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.60 1.55  1.55  1.46 1.46  1.60  1.51 1.51  1.60  1.60 1.60  1.60
HCM2k85thQ:   0.0  8.5   8.5  27.7 27.7   0.0  16.9 16.4   0.5   0.0  0.0   0.0
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.80 1.70  1.70  1.55 1.55  1.80  1.63 1.63  1.79  1.80 1.80  1.80
HCM2k90thQ:   0.0  9.3   9.3  29.5 29.5   0.0  18.3 17.7   0.5   0.0  0.0   0.0
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.10 1.94  1.94  1.71 1.71  2.10  1.82 1.83  2.09  2.10 2.10  2.10
HCM2k95thQ:   0.0 10.6  10.6  32.4 32.4   0.0  20.5 19.9   0.6   0.0  0.0   0.0
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.70 2.36  2.36  1.93 1.93  2.70  2.12 2.13  2.68  2.70 2.70  2.70
HCM2k98thQ:   0.0 12.9  12.9  36.7 36.7   0.0  23.8 23.2   0.8   0.0  0.0   0.0
```

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Fuel Consumption and Emissions
2000 HCM Operations Method
Future Volume Alternative

Intersection #42 SW 124th Ave/Connector EB

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:	30 MPH			30 MPH			30 MPH			30 MPH		
NumOfStops:	0.0	5.1	21.7	230.3	18.9	0.0	67.8	131	1.9	0.0	0.0	0.0

Name: year 1995 composite fleet
Fuel Consumption: 81.256 pounds
13.164 gallons
Carbon Dioxide: 253.520 pounds
Carbon Monoxide: 20.202 pounds
Hydrocarbons: 3.753 pounds
Nitrogen Oxides: 0.913 pounds

Name: year 2000 composite fleet
Fuel Consumption: 81.256 pounds
13.164 gallons
Carbon Dioxide: 253.520 pounds
Carbon Monoxide: 20.202 pounds
Hydrocarbons: 3.753 pounds
Nitrogen Oxides: 0.913 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #43 Tonquin/SW 115th

Cycle (sec):	100	Critical Vol./Cap.(X):	0.541
Loss Time (sec):	0	Average Delay (sec/veh):	14.6
Optimal Cycle:	50	Level Of Service:	B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	0	0	0		1	0	0	0	1		1	0	1	0	0		0	0	1	0	1	
Volume Module:																								
Base Vol:	0	0	0				339	0	28				9	572	0				0	410	119			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	0	0	0				339	0	28				9	572	0				0	410	119			
Added Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	0	0	0				339	0	28				9	572	0				0	410	119			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.95	0.95	0.95				0.95	0.95	0.95				0.95	0.95	0.95				0.95	0.95	0.95			
PHF Volume:	0	0	0				357	0	29				9	602	0				0	432	125			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Reduced Vol:	0	0	0				357	0	29				9	602	0				0	432	125			
PCE Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
FinalVolume:	0	0	0				357	0	29				9	602	0				0	432	125			
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900				1900	1900	1900				1900	1900	1900				1900	1900	1900			
Adjustment:	1.00	1.00	1.00				0.90	1.00	0.81				0.90	0.95	1.00				1.00	0.95	0.81			
Lanes:	0.00	0.00	0.00				1.00	0.00	1.00				1.00	1.00	0.00				0.00	1.00	1.00			
Final Sat.:	0	0	0				1718	0	1537				1718	1809	0				0	1809	1537			
Capacity Analysis Module:																								
Vol/Sat:	0.00	0.00	0.00				0.21	0.00	0.02				0.01	0.33	0.00				0.00	0.24	0.08			
Crit Moves:							****							****					****					
Green/Cycle:	0.00	0.00	0.00				0.38	0.00	0.38				0.01	0.62	0.00				0.00	0.60	0.60			
Volume/Cap:	0.00	0.00	0.00				0.54	0.00	0.05				0.40	0.54	0.00				0.00	0.40	0.14			
Delay/Veh:	0.0	0.0	0.0				24.8	0.0	19.4				59.4	11.6	0.0				0.0	10.6	8.7			
User DelAdj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
AdjDel/Veh:	0.0	0.0	0.0				24.8	0.0	19.4				59.4	11.6	0.0				0.0	10.6	8.7			
LOS by Move:	A	A	A				C	A	B				E	B	A				A	B	A			
HCM2kAvgQ:	0	0	0				9	0	1				1	11	0				0	7	2			

Note: Queue reported is the number of cars per lane.

```
--------------------------------------------------------------------------------
                  SW Tualatin Concept Plan -- Project 6689
                     2030 PM Peak Hour--Alternative III
                        Kittelson & Associates, Inc.
--------------------------------------------------------------------------------
                Level Of Service Detailed Computation Report
                         2000 HCM Operations Method
                          Future Volume Alternative
********************************************************************************
Intersection #43 Tonquin/SW 115th
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        0  0  0  0  0   1  0  0  0  1   1  0  1  0  0   0  0  1  0  1
Lane Group:  xxxx xxxx  xxxx    L  xxxx    R     L    T   xxxx  xxxx   T     R
#LnsInGrps:     0    0     0    1    0     1     1    1     0     0    1     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12    12    12   12    12    12   12    12
CrsswalkWid:         8                8                8                8
% Hev Veh:           0                5                5                5
Grade:              0%               0%               0%               0%
Parking/Hr:         No               No               No               No
Bus Stp/Hr:          0                0                0                0
Area Type:    < < < < < < < < < < < < < < Other  > > > > > > > > > > > > > > > >
>
Cnft Ped/Hr:         0                0                0                0
ExclusiveRT:     Include          Include          Include          Include
% RT Prtct:          0                0                0                0
------------|---------------||---------------||---------------||---------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:  xxxx xxxx  xxxx     1 xxxx  xxxx     1 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  xxxx xxxx xxxxx  1.00 xxxx  1.00  1.00 1.00 xxxxx  xxxx 1.00  1.00
Hev Veh Adj: xxxx xxxx xxxxx  0.95 xxxx  0.95  0.95 0.95 xxxxx  xxxx 0.95  0.95
Grade Adj:   xxxx xxxx xxxxx  1.00 xxxx  1.00  1.00 1.00 xxxxx  xxxx 1.00  1.00
Parking Adj: xxxx xxxx xxxxx  xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx xxxx  1.00
Bus Stp Adj: xxxx xxxx xxxxx  xxxx xxxx  1.00  xxxx 1.00 xxxxx  xxxx xxxx  1.00
Area Adj:    xxxx xxxx xxxxx  1.00 xxxx  1.00  1.00 1.00 xxxxx  xxxx 1.00  1.00
RT Adj:      xxxx xxxx xxxxx  xxxx xxxx  0.85  xxxx xxxx xxxxx  xxxx xxxx  0.85
LT Adj:      xxxx xxxx xxxxx  0.95 xxxx xxxxx  0.95 xxxx xxxxx  xxxx xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
HCM Sat Adj: 1.00 1.00  1.00  0.90 1.00  0.81  0.90 0.95  1.00  1.00 0.95  0.81
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj: 1.00 1.00  1.00  0.90 1.00  0.81  0.90 0.95  1.00  1.00 0.95  0.81
------------|---------------||---------------||---------------||---------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < <  No  > > > > > > > > > > > > > > > > > >
>
Signal Type:  < < < < < < < < < < < <     Actuated     > > > > > > > > > > > > > >
>
DelAdjFctr:  0.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  0.00  0.00 1.00  1.00
********************************************************************************

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--------------------------------------------------------------------------------
                  SW Tualatin Concept Plan -- Project 6689
                     2030 PM Peak Hour--Alternative III
                        Kittelson & Associates, Inc.
--------------------------------------------------------------------------------
      Level Of Service Detailed Computation Report (HCM2000 Queue Method)
                         2000 HCM Operations Method
                          Future Volume Alternative
********************************************************************************
Intersection #43 Tonquin/SW 115th
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Green/Cycle: 0.00 0.00  0.00  0.38 0.00  0.38  0.01 0.62  0.00  0.00 0.60  0.60
ArrivalType:         3                3                3                3
ProgFactor:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Q1:           0.0  0.0   0.0   7.7  0.0   0.5   0.3  9.6   0.0   0.0  6.3   1.5
UpstreamVC:  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
UpstreamAdj: 0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00  0.00 0.00  0.00
EarlyArrAdj: 0.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  0.00  0.00 1.00  1.00
Q2:           0.0  0.0   0.0   1.1  0.0   0.1   0.5  1.2   0.0   0.0  0.7   0.2
HCM2KQueue:   0.0  0.0   0.0   8.8  0.0   0.6   0.8 10.8   0.0   0.0  6.9   1.7
------------|---------------||---------------||---------------||---------------|
70th%Factor: 1.20 1.20  1.20  1.18 1.20  1.20  1.20 1.18  1.20  1.20 1.18  1.20
HCM2k70thQ:   0.0  0.0   0.0  10.4  0.0   0.7   0.9 12.7   0.0   0.0  8.2   2.0
------------|---------------||---------------||---------------||---------------|
85th%Factor: 1.60 1.60  1.60  1.52 1.60  1.59  1.59 1.51  1.60  1.60 1.54  1.58
HCM2k85thQ:   0.0  0.0   0.0  13.5  0.0   0.9   1.2 16.3   0.0   0.0 10.6   2.6
------------|---------------||---------------||---------------||---------------|
90th%Factor: 1.80 1.80  1.80  1.66 1.80  1.79  1.78 1.63  1.80  1.80 1.68  1.77
HCM2k90thQ:   0.0  0.0   0.0  14.7  0.0   1.0   1.4 17.6   0.0   0.0 11.6   2.9
------------|---------------||---------------||---------------||---------------|
95th%Factor: 2.10 2.10  2.10  1.87 2.10  2.08  2.07 1.83  2.10  2.10 1.91  2.05
HCM2k95thQ:   0.0  0.0   0.0  16.5  0.0   1.2   1.6 19.7   0.0   0.0 13.2   3.4
------------|---------------||---------------||---------------||---------------|
98th%Factor: 2.70 2.70  2.70  2.21 2.70  2.66  2.64 2.14  2.70  2.70 2.29  2.58
HCM2k98thQ:   0.0  0.0   0.0  19.5  0.0   1.5   2.0 23.0   0.0   0.0 15.8   4.3

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SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Fuel Consumption and Emissions
2000 HCM Operations Method
Future Volume Alternative

Intersection #43 Tonquin/SW 115th

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:	30 MPH			30 MPH			30 MPH			30 MPH		
NumOfStops:	0.0	0.0	0.0	69.3	0.0	4.6	2.3	86.7	0.0	0.0	56.4	13.6

Name: year 1995 composite fleet
Fuel Consumption: 34.246 pounds
5.548 gallons
Carbon Dioxide: 106.848 pounds
Carbon Monoxide: 7.906 pounds
Hydrocarbons: 1.289 pounds
Nitrogen Oxides: 0.399 pounds

Name: year 2000 composite fleet
Fuel Consumption: 34.246 pounds
5.548 gallons
Carbon Dioxide: 106.848 pounds
Carbon Monoxide: 7.906 pounds
Hydrocarbons: 1.289 pounds
Nitrogen Oxides: 0.399 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #44 E-W Collector/SW 115th

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: C[16.6]

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	1	0	1	0	0		0	0	0	1	0		1	0	0	0	1		0	0	0	0	0	
Volume Module:																								
Base Vol:	131	89	0	0			257	240	80	0	44		0	0	0									
Growth Adj:	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00									
Initial Bse:	131	89	0	0			257	240	80	0	44		0	0	0									
Added Vol:	0	0	0	0			0	0	0	0	0		0	0	0									
PasserByVol:	0	0	0	0			0	0	0	0	0		0	0	0									
Initial Fut:	131	89	0	0			257	240	80	0	44		0	0	0									
User Adj:	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00									
PHF Adj:	0.95	0.95	0.95	0.95			0.95	0.95	0.95	0.95	0.95		0.95	0.95	0.95									
PHF Volume:	138	94	0	0			271	253	84	0	46		0	0	0									
Reduct Vol:	0	0	0	0			0	0	0	0	0		0	0	0									
FinalVolume:	138	94	0	0			271	253	84	0	46		0	0	0									
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			6.4	xxxx	6.3	xxxxx	xxxx	xxxxx										
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx			3.5	xxxx	3.3	xxxxx	xxxx	xxxxx										
Capacity Module:																								
Cnflict Vol:	523	xxxx	xxxxx	xxxx	xxxx	xxxxx			766	xxxx	397	xxxx	xxxx	xxxxx										
Potent Cap.:	1028	xxxx	xxxxx	xxxx	xxxx	xxxxx			366	xxxx	646	xxxx	xxxx	xxxxx										
Move Cap.:	1028	xxxx	xxxxx	xxxx	xxxx	xxxxx			329	xxxx	646	xxxx	xxxx	xxxxx										
Volume/Cap:	0.13	xxxx	xxxx	xxxx	xxxx	xxxx			0.26	xxxx	0.07	xxxx	xxxx	xxxx										
Level Of Service Module:																								
2Way95thQ:	0.5	xxxx	xxxxx	xxxx	xxxx	xxxxx			1.0	xxxx	0.2	xxxx	xxxx	xxxxx										
Control Del:	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx			19.7	xxxx	11.0	xxxxx	xxxx	xxxxx										
LOS by Move:	A	*	*	*	*	*			C	*	B	*	*	*										
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx										
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										
Shared LOS:	*	*	*	*	*	*			*	*	*	*	*	*										
ApproachDel:	xxxxxx			xxxxxx					16.6			xxxxxx												
ApproachLOS:	*			*					C			*												

Note: Queue reported is the number of cars per lane.

SW Tualatin Concept Plan -- Project 6689
2030 PM Peak Hour--Alternative III
Kittelson & Associates, Inc.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #45 SW 108th/Blake

Average Delay (sec/veh): 3.7 Worst Case Level Of Service: B[10.9]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1	0	0 0
Volume Module:												
Base Vol:	37	0	66	0	0	0	0	48	171	104	100	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	37	0	66	0	0	0	0	48	171	104	100	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	0	66	0	0	0	0	48	171	104	100	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	39	0	69	0	0	0	0	51	180	109	105	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	39	0	69	0	0	0	0	51	180	109	105	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	465	465	141	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	231	xxxx	xxxxx
Potent Cap.:	556	495	907	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1320	xxxx	xxxxx
Move Cap.:	518	451	907	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1320	xxxx	xxxxx
Volume/Cap:	0.08	0.00	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.08	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	715	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Shrd ConDel:	xxxxx	10.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		10.9		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		B		*			*			*		

Note: Queue reported is the number of cars per lane.

SW Tualatin Concept Plan Update - Estimate Revisions

PREPARED FOR: City of Tualatin

PREPARED BY: Darren Hippenstiel/PDX

REVIEWED BY: Dave Simmons/PDX

DATE: July 27, 2010

PROJECT NO.: 398395.48.01

The objective of this memorandum is to document revised assumptions for the development of infrastructure within the area southwest of the City of Tualatin known as the SW Tualatin Area. The total revised cost estimated for the development of infrastructure in the SWTCP area is **$141,597,000**. A summary of the revised assumptions per major infrastructure category follows:

Transportation:

Collector 1 shown in SWTCP update memo dated 06/25/2010 is revised to end approximately 200' east of Collector 2 (SW 115th Ave.). A cul-de-sac type treatment is now assumed. This revised assumption eliminates the bridge to cross the Portland and Western Railroad line, walls assumed necessary to retain the fill from adjacent properties, embankment material, and roadway materials. These revisions reduce the estimated cost for Collector 1 from $12,410,000 to $3,400,000, a reduction of $9,010,000

Additionally the reconstruction of the curve on SW Blake Street from SW 105th to SW 108th is removed from consideration. The costs update those prepared as part of the SW Tualatin Concept Plan (SWTCP) in 2005 and subsequent updates from this project. This revision reduces the total for transportation infrastructure by $1,500,000.

The total revised cost to provide transportation infrastructure in the SW Tualatin Area is **$69,424,000**, a total reduction of $10,510,000.

Stormwater Regional Facilities:

The reduction in impervious surfaces has a negligible effect on the sizing requirements for regional stormwater facilities and has no effect on the location of regional facilities. The cost for providing regional stormwater facilities for the SWTCP area is unchanged.

Water Systems and Sanitary:

The base assumption for water systems at bridge crossings is that the piping will be bored under the crossing rather than hung from the bridge.

There are no sanitary crossings in this location assumed. Any sanitary service west of the rail crossing would flow the west and connect to the trunk line assumed on SW 115th Ave.

Given these base assumptions already used in developing the SWTCP infrastructure development estimate updates, the estimate is unchanged.

SW Tualatin Concept Plan Update - Estimate Summary

PREPARED FOR: City of Tualatin

PREPARED BY: Darren Hippenstiel/PDX
Joe Broberg/PDX
Brittany Garton/PDX

REVIEWED BY: Rick Attanasio/PDX
Dave Simmons/PDX

DATE: June 25, 2010

PROJECT NO.: 398395.48.01

The objective of this memorandum is to summarize the updated planning level costs to provide public infrastructure (water, wastewater, stormwater and streets) within the area SW of the City of Tualatin known as the SW Tualatin Area. The costs update those prepared as part of the SW Tualatin Concept Plan (SWTCP) in 2005. The limits of the study area for infrastructure development have been revised to include an area SW of the original SWTCP area shown in the attached graphics as the Urban Reserve area, and an area SE of the SWTCP area shown in the attached graphics as Area 1. The total cost estimated for the development of infrastructure in the revised SWTCP area is **$152,107,000**.

The following is a break down by sub-area and infrastructure type updated planning level costs have been developed for the infrastructure development within the revised SWTCP area and are separated by sub-area:

Infrastructure		Cost
2005 SWTCP Area		
Wastewater		$11,790,000
Water		$9,020,000
Transportation		$79,934,000
Stormwater Regional Facilities		$1,177,000
	Subtotal	$101,921,000
Urban Reserve Area		
Wastewater		$1,705,000
Water		$1,550,000
Transportation		$33,766,000
Stormwater Regional Facilities		$357,000
	Subtotal	$37,378,000

Area 1		
Wastewater		$1,835,000
Water		$1,260,000
Transportation		9,590,000
Stormwater Regional Facilities		$123,000
	Subtotal	$12,808,000
	Project Total	**$152,107,000**

Attached to this memorandum is supporting documentation that outlines the assumptions and analysis used in developing these planning level costs. Wastewater and water are contained with Appendix A, Streets is contained in Appendix B, and Stormwater in Appendix C.

APPENDIX A – Water/Wastewater

SW Tualatin Concept Plan Update
Water and Wastewater Systems

PREPARED FOR: City of Tualatin

PREPARED BY: Joe Broberg

DATE: June 21, 2010

PROJECT NUMBER: 398395

Purpose

This memorandum updates the water and sanitary sewer portions of the 2005 Southwest Tualatin Concept Plan (SWTCP). The update included:

1. Reviewing the assumptions used to prepare the 2005 Concept Plan. Those assumptions were documented in a memorandum prepared by CH2M HILL dated August 3, 2005.
2. Revising those assumptions to cover an expanded study area.
3. Assessing the impact of future development of approximately 645 acres of vacant land south of Tualatin on the study area, including estimating the cost of conveying wastewater from the area south of Tualatin south to Wilsonville.
4. Developing a revised water and sewer infrastructure plan for the area within the 2005 Southwest Tualatin Concept Plan and the expanded study area.
5. Developing updated cost estimates for water and sewer infrastructure in the expanded study area and organizing the cost estimates by portion of the study area.

Expanded Study Area

This memorandum updates the infrastructure plan for the 2005 study area, and adds infrastructure plans for two areas adjacent to the 2005 study area, Area 1 and the Urban Reserve Area. In addition, the impact of future land use in the area south of Tualatin (Area 2) was used to assess infrastructure impacts on the study area.

Figure 1 shows the limits of the 2005 Southwest Tualatin Concept Plan study area and the areas added for this update. The 2005 study area included approximately 431 acres. The expanded study area includes approximately 614 acres, of which 448 acres have been identified as developable:

1. The 2005 Southwest Tualatin Concept Plan study area. The 2005 study area contains a total of approximately 431 acres, of which 352 acres are developable in light

industrial and business park land uses. The 2005 plan assumed that a "wet" industry would occupy 88 acres of the light industrial development. The area is currently occupied by a sand and gravel mine.

2. Area 1, a future industrial area of Tualatin immediately south of the 2005 study area. Area 1 is within the Urban Growth Boundary. Area 1 contains 66 acres, 19 of which the City of Tualatin Planning Department has identified as being developable in industrial uses. The type of industrial development has not been identified. When developed, the City of Tualatin projects a total of 248,292 square feet of building area and 361 employees in Area 1.

3. The Urban Reserve Area, a future industrial area immediately southwest of the 2005 study area. Area 2 is outside the Urban Growth Boundary. Area 2 contains 117 acres, 77 of which the City of Tualatin has identified as being developable or re-developable in industrial uses. The type of industrial development has not been identified. When developed, the City of Tualatin projects a total of 1,006,236 square feet of building area and 1,108 employees in Area 2.

The impact of future land uses south of Tualatin (Area 2 on Figure 1) on the study area was also assessed. Area 2 contains 645 acres, 442 of which the City of Tualatin has identified as being developable in a mixture of industrial, commercial, and residential uses. The City of Tualatin projects that Area 2 will be developed with a total of 1,500,000 square feet of industrial building area and 1,652 industrial employees; 10 acres of commercial development and 420 commercial employees; and 314 acres of residential development with up to 2,008 dwelling units and up to 5,261 residents.

Wastewater Improvements

The 2005 Concept Plan listed several assumptions used to develop a wastewater infrastructure plan for the 2005 SWTPC area. The two most important assumptions were:

1. All flow from the 2005 SWTCP area would be conveyed to the Durham WWTP; This assumption remains unchanged

2. The proposed collection system was designed to only serve the area within the concept plan area

Since the 2005 concept plan was completed, the concept plan area has been expanded to include two additional areas shown on Figure 1, Area 1 and the Urban Reserve Area, and the impact of conveying sewage from Area 2 to the Durham WWTP through the wastewater conveyance system in the Concept Plan Area. In addition, the estimates from 2005 need to be adjusted for the impact of construction price increases over the last four years.

The proposed wastewater system serving the revised SWTCP area is shown on Figure 2. A small ridge runs through the SWTCP area, dividing the area into two watersheds. Wastewater from approximately the northern 40 percent of the study area drains to the north to the Bluff/Cipole lateral, the Bluff/Cipole Trunk Line, and then to the Clean Water Services wastewater conveyance system. Wastewater from the southern portion would naturally flow to the south edge of the study area.

The wastewater system shown on Figure 2 conveys wastewater from the southern portion of the SWTCP area to a new lift station that would be located on the south edge of the study area. Wastewater would be pumped north from the lift station through a new force main. The force main would discharge to a gravity sewer flowing to the Bluff/Cipole Trunk Sewer. Area 2 could be served by conveying wastewater from Area 2 to the lift station proposed to be constructed along the south edge of the study area. This approach is consistent with the Tualatin Sewer Master Plan. If wastewater from Area 2 is conveyed through the lift station, force main and gravity lines, the size of those facilities will need to be increased to handle the additional flow. Wastewater conveyance lines from individual lots to the lift station and trunk sewers have not been shown. The proposed improvements include an interim wastewater lift station that would initially serve the northern portion of the concept plan area.

Table 1 summarizes the wastewater improvements needed to serve the 2005 SWTCP area, Area 1, and the Urban Reserve Area, as well as the impacts of conveying wastewater from Area 2 through the SWTCP area. The design flow for the 2005 SWTCP area was 2.75 mgd and was based on 88 acres of wet industry and 182 acres of light industrial development, with an allowance for inflow and infiltration and a peaking factor of 2. The design flows for Area 1 and the Urban Reserve Area are based on light industrial and residential land uses, with an allowance for inflow and infiltration and a peaking factor of 2. The design flow for Area 2 was obtained from the Wastewater Master Plan and a peaking factor of 2 was applied to the average daily flow.

Table 2 summarizes the estimated cost of serving the SWTCP area, including the estimated cost impacts of serving Area 2. The total estimated costs for providing wastewater service to various combinations of the 2005 SWTCP area, Area 1, and the Urban Reserve Area and the cost impact to the SSWTCP area for providing wastewater service to Area 2 are:

- 2005 SWTCP Area - $9.5 million (based on 2005 utility memo and inflated to 2009)
- 2005 SWTCP Area plus Area 1 - $11.3 million
- 2005 SWTCP Area plus Urban Reserve Area – $11.2 million
- 2005 SWTCP Area plus Area 1 and Urban Reserve Area -$13.0 million
- 2005 SWTCP Area plus Area 1,Urban Reserve Area, and impacts from serving Area 2 - $15.3 million

The estimated costs include an allowance for construction of local sewers. The estimated costs do not include the costs of area-wide improvements to the Bluff/Cipole Trunk Sewer, Clean Water Service trunk sewer system or treatment plant improvements needed to serve the additional wastewater load.

Alternatively, rather than conveying wastewater from Area 2 through the SWTCP area, wastewater from Area 2 could be conveyed south following the natural drainage to Wilsonville. Approximately 3 miles of 15-inch trunk sewer would need to be constructed at an estimated cost of approximately $5.3 million to convey wastewater from Area 2 to a WWTP discharging to the Willamette. This cost estimate does not include the costs of expanding the Wilsonville WWTP to treat the additional flow.

TABLE 1
Wastewater System Improvements Needed to Serve SWTCP Area, Including Impact of Area 2

Improvement	Length/Capacity
2005 SWTCPA Area – Total Wastewater Flow Including Inflow and Infiltration (88 acres of wet industry @ 25,500 gpd/acre plus 182 acres of light industry @ 1,150 gpd/acre plus 300 gpd/acre I&I)– 2.75 mgd	
18-in Trunk Sewer (PVC)	9,100 LF
8-in Gravity Sewer	18,150 LF
12-in Force Main	10,300 LF
Lift Station	2.3 mgd
Bluff/Cipole Lateral – Varies from 18-in to 36-in (Serves General Area Which Includes SWTCP)	4,675 LF
Bluff/Cipole Trunk – Varies from 36 to 42-in (Serves General Area Which Includes SWTCP)	8,075 LF
Additional Wastewater System Improvements to Serve Area 1 (19 Developable Acres and 361 Employees @ 1,150 gpd/acre plus 300 gpd/acre I&I, Light Industrial Land Uses) – 0.03 mgd	
Additional 8-in Gravity Sewers	7,500 LF
Additional 12-in Force Main	2,300 LF
Additional Lift Station Capacity at Peaking Factor of 2	0.06 mgd
Bluff/Cipole Lateral – Varies from 18-in to 36-in (Serves General Area Which Includes SWTCP)	Included in SWTCP Area Costs
Bluff/Cipole Trunk – Varies from 36 to 42-in (Serves General Area Which Includes SWTCP)	Included in SWTCP Area Costs
Additional Wastewater Improvements Needed to Serve Urban Reserve Area (77 Developable Acres and 110 Acres @1,150 gpd/acre plus 300 gpd/acre I&I – Light Industrial Land Uses) - 0.113 mgd	
Additional 8 in Gravity Sewers	10,000 LF
Additional 12-in Force Main	2,300 LF (Same as Needed for Area 1)
Additional Lift Station Capacity at Peaking Factor of 2	0.226 mgd
Additional Wastewater Improvements Needed to Address Impact of Serving Area 2 – 1.8 mgd (From Wastewater Master Plan)	
Parallel 12-in Force Main	10,300 LF
Additional Lift Station Capacity at Peaking Factor of 2	1.8 mgd
Bluff/Cipole Lateral – Varies from 18-in to 36-in (Serves General Area Which Includes SWTCP)	Part of Master Plan Improvements for Area
Bluff/Cipole Trunk – Varies from 36 to 42-in (Serves General Area Which Includes SWTCP)	Part of Master Plan Improvements for Area

Note: Estimated costs do not include the costs of area-wide improvements to the Bluff/Cipole Trunk Sewer, Clean Water Service trunk sewer system or treatment plant improvements needed to serve the additional wastewater load.

TABLE 2
Estimated Costs of Wastewater Service for SWTCP Area and Area 2

Scenario	Improvements	Length/Capacity	Unit Cost (Includes Contingencies and Engineering, Administrative, and Legal Costs)	Item Cost (Rounded)	Subtotal for Scenario (Rounded)
Serve 2005 SWTCP Area ($8.6 million from 2005 study Inflated by 2% per year for Increases From 2005-2009) (Includes interim lift station, local sewers, trunk sewers, and Bluff/Cipole Lateral Improvements)					$9,500,000
Additional Cost for Wastewater Service for Area 1					
	Additional 8-in Local Sewers	7,500 LF	$145/ft	$1,100,000	
	Additional 12-in Force Main	2,300 LF	$105/ft	$35,000	
	Additional Lift Station Capacity at Peaking Factor of 2 + Replacement Capacity for Interim Lift Station	0.06 mgd + Interim Capacity	Lump Sum	$700,000	
Subtotal of Additional Costs for Wastewater Service for Area 1					$1,835,000
Additional Cost for Wastewater Service for Urban Reserve Area					
	Additional 8 in Local Sewers	10,000 LF	$145/ft	$1,450,000	
	Additional 12-in Force Main	2,300 LF (Same as Needed for Area 1)	$105/ft	$35,000	
	Additional Lift Station Capacity at Peaking Factor of 2	0.226 mgd	Lump Sum	$220,000	
Subtotal of Additional Costs for Wastewater Service for Urban Reserve Area					$1,705,000
Cost Impact to SWTCP area for Wastewater Service for Area 2					
	Parallel 12-in Force Main	10,300 LF	$105/ft	$1,090,000	
	Additional Lift Station Capacity at Peaking Factor of 2	1.8 mgd	Lump Sum	$1,200,000	
Subtotal of Cost Impact to SWTCP Area for Wastewater Service to Area 2					$2,290,000

Water System Improvements

The 2005 Concept Plan listed several assumptions used to develop a water infrastructure plan for the 2005 SWTPC area. The most important assumption is that the area will be served by the Level B distribution zone. Additional storage needed to serve the SWTCP area will be added to a new Level B storage reservoir that will be constructed just east of the SWTCP area.

Since the 2005 concept plan was completed, the concept plan area has been expanded to include two additional areas shown on Figure 1, Area 1 and the Urban Reserve Area, and the impact of providing water service to Area 2 through the water system in the Concept Plan Area. In addition, the estimates from 2005 need to be adjusted for the impact of construction price increases over the last four years.

The proposed water system serving the revised SWTCP area is shown on Figure 2. The proposed improvements include the new Level B storage reservoir, a 16-inch diameter water main forming a loop through the SWTCP area to connect the water distribution system to the new Level B storage reservoir, and 10-inch diameter water mains along the major roads through the SWTCP area.

For the 2005 utility memo indicated, the water system was sized to deliver a maximum day demand of 2.7 mgd to development in the 2005 Concept Plan Area. The majority of this maximum day demand (2 mgd) was created by 88 acres of wet industry. The remainder of the demand (0.5 mgd) was created by light industrial demand. Water mains were sized to deliver the maximum day demand and fire flow of 3,500 gpm, with a minimum size of 10-inches.

The estimated cost of constructing water system improvements to serve the 2005 Concept Plan Area was $8.2 million, including 1.9 MG of additional storage and 22,850 LF or piping, with contingencies and design, administration, and legal costs.

Additional storage and water distribution system piping would be needed to serve Area 1 and the Urban Reserve Area. The development of Area 2 would have major cost impacts on the City of Tualatin water system overall, but relatively low impact on development of the SWTCP area, since the water improvements needed to serve Area 2 would not be constructed in the SWTCP area. Table 3 summarizes the costs of providing water service to the SWTCP area, Area 1, and the Urban Reserve Area, and the impact on the SWTCP area for providing water service to Area 2. The total estimated costs for providing water service to various combinations of the 2005 SWTCP area, Area 1, and the Urban Reserve Area and the cost impact to the SWTCP area for providing water service to Area 2 are:

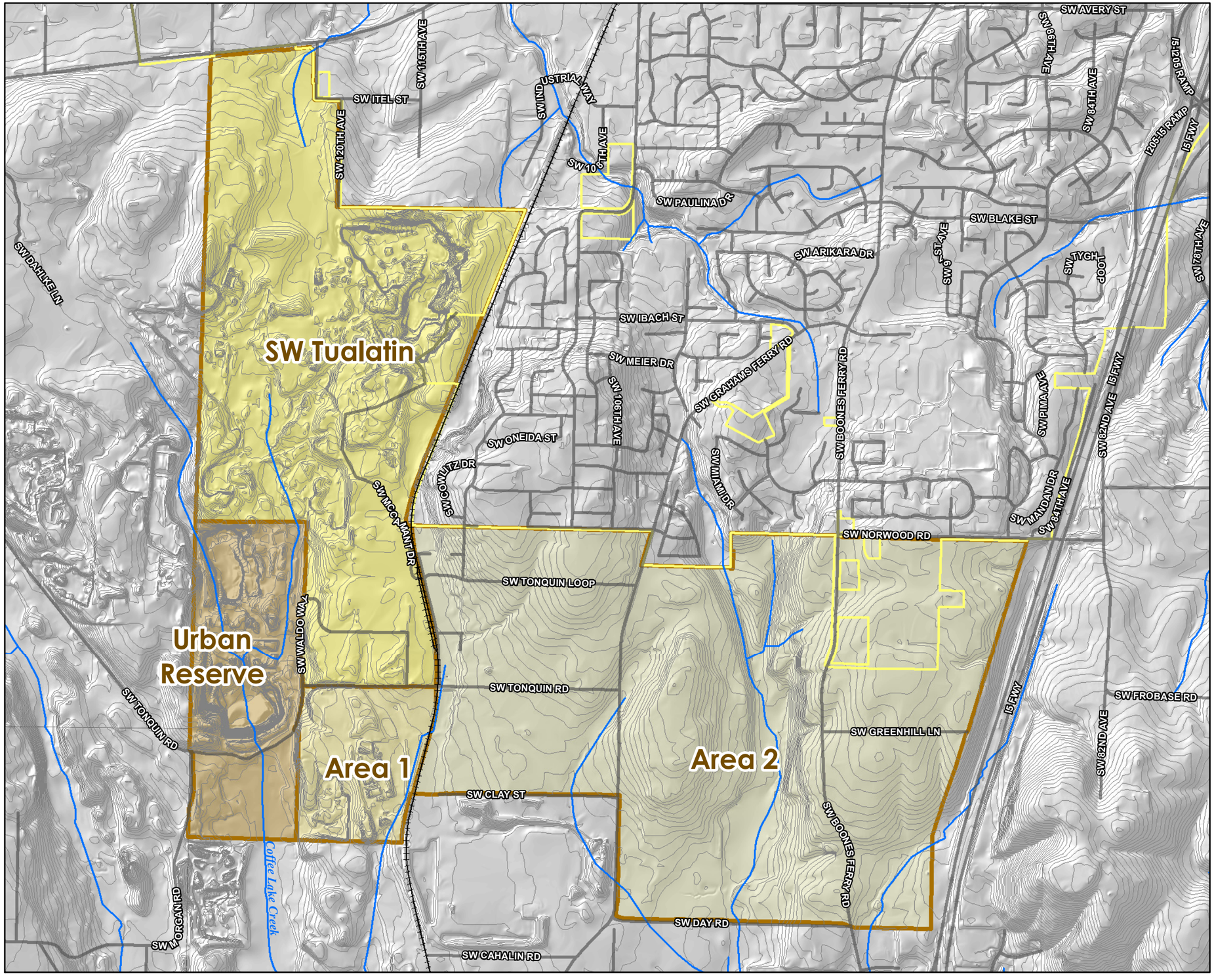
- 2005 SWTCP Area - $9.0 million (based on 2005 utility memo and inflated to 2009)
- 2005 SWTCP Area plus Area 1 - $10.3 million
- 2005 SWTCP Area plus Urban Reserve Area – $10.6 million
- 2005 SWTCP Area plus Area 1 and Urban Reserve Area -$11.9 million
- 2005 SWTCP Area plus Area 1,Urban Reserve Area, and impacts from serving Area 2 - $11.9 million

These estimated costs do not include the costs of system-wide improvements such as source development, Level B system pumping, or treatment plant improvements needed to serve the additional water demand.

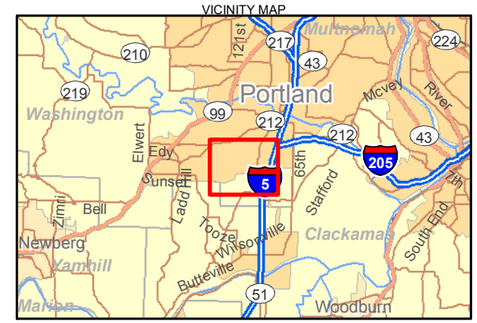
TABLE 3
Estimated Costs of Water Service for SWTCP Area and Area 2

Scenario	Improvements	Length/Capacity	Unit Cost (Includes Contingencies and Engineering, Administrative, and Legal Costs)	Item Cost (Rounded)	Subtotal for Scenario (Rounded)
Serve 2005 SWTCP Area ($8.2 million from 2005 study Inflated by 2% per year for Increases From 2005-2009) (Includes transmission system improvements, local water mains, and Level B Reservoir Improvements))					$9,020,000
Additional Cost for Water Service for Area 1 (19 Developable Acres @ 2,000 gpd/acre maximum day demand, fire flow at 3,500 gpm (assume fire flow already provided for in Level B storage capacity), and incremental storage at 0.5 times maximum day demand)					
	Storage	19,000 gallons	$0.66/gallon	$13,000	
	Additional 10-in Water Mains	7,500 LF	$150/ft	$1,130,000	
Subtotal of Additional Costs for Water Service for Area 1					$1,260,000
Additional Cost for Water Service for Urban Reserve Area (77 Developable Acres @ 2,000 gpd/acre maximum day demand, fire flow at 3,500 gpm (assume fire flow already provided for in Level B storage capacity), and incremental storage at 0.5 times maximum day demand)					
	Storage	77,000 gallons	$0.66/MG	$51,000	
	Additional 10-in Water Mains	10,000 LF	$150/ft	$1,500,000	
Subtotal of Additional Costs for Water Service for Urban Reserve Area					$1,550,000
Cost Impact to SWTCP area for Water Service for Area 2					
No impact to SWTCP area identified for development of Area 2					
Subtotal of Cost Impact to SWTCP Area for Water Service to Area 2					**None indentified**

Note: Estimated costs do not include the costs of system-wide improvements such as source development, Level B system pumping, or treatment plant improvements needed to serve the additional water demand



VICINITY MAP



LEGEND

Concept Plan Area Boundaries

- Area 1
- Area 2
- SW Tualatin
- Urban Reserve
- 5-Foot Contours
- City Boundary

N

0 250 500 1,000
Feet

FIGURE 1
Study Area
Southwest Tualatin Concept Plan

Note: Bluff/Cipole lateral improvements not shown

Note: 8" gravity wastewater collection lines not shown

Level B Reservoir

Interim Lift Station

Lift Station

SW Tualatin

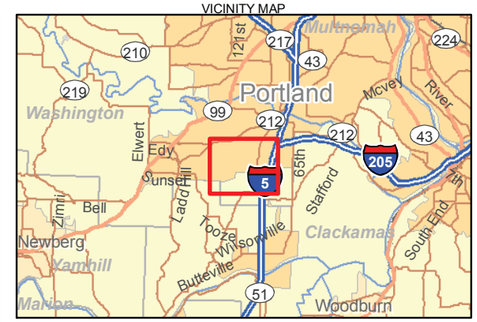
Urban Reserve

Area 1

Area 2

SW ITEL ST
SW 115TH AVE
SW 120TH AVE
SW 108TH AVE
SW PAULINA DR
SW BLAKE ST
SW IBACH ST
SW MEIER DR
SW GRAHAMS FERRY RD
SW BOONES FERRY RD
SW 105TH AVE
SW ONEIDA ST
SW TONQUIN LOOP
SW WALDO WAY
SW TONQUIN RD
SW CLAY ST
SW DAY RD
SW CAHALIN RD
SW MORGAN RD
SW NORWOOD RD
SW MAYDAN DR
SW 84TH AVE
SW 82ND AVE
SW FROBASE RD
SW GREENHILL LN
SW PIMA AVE
SW 78TH AVE
SW 65TH AVE
SW TYGH LOOP
SW AVERY ST
I-5 FWY
I-205 RAMP
I-205/I-5 RAMP
SW DAHLKE LN
Coffee Lake Creek

VICINITY MAP



LEGEND

Proposed Water and Wastewater Improvements (with diameter in inches)

- Wastewater
- Water
- Proposed Facilities
- Proposed Roadways

Concept Plan Area Boundaries

- Area 1
- Area 2
- SW Tualatin
- Urban Reserve
- 5-Foot Contours
- City Boundary

N

0 250 500 1,000
Feet

FIGURE 2
Proposed Water and Wastewater Improvements
Southwest Tualatin Concept Plan

APPENDIX B -Streets

Southwest Tualatin Concept Plan Update - Streets

PREPARED FOR: City of Tualatin

PREPARED BY: Geoffrey Hunsaker/CH2M HILL

COPIES: Dave Simmons
Darren Hippenstiel

DATE: June 25, 2010

PROJECT NUMBER: 398395

The objective of this memorandum is to establish a basis for developing conceptual level transportation infrastructure capital costs associated with the development of the SW Tualatin Area.

Summary

This technical memorandum documents the assumptions and analysis of the street network development associated with the SW Tualatin Area. This is an update to the SW Tualatin Concept Plan developed by CH2M HILL, Otak Inc., and Kittelson and Assoc. in May 2005. Generally the area is divided by two types of roadways: arterials and collectors. Estimates were developed separately for each roadway within a sub-area and combined for a total sub-area cost. The sub-area costs were then combined for a revised concept plan area total. See figure 1 for the revised areas and roadway locations. The planning level cost for developing the transportation infrastructure network in the revised SW Tualatin Area is estimated to be **$123,290,000**.

Approach

The previous cost information developed by Otak in 2005 presented the cost estimates for three alternatives. This updated assumes Alternative 3 as the basis for roadway lengths and locations. All roadway lengths were calculated using ArcGIS.

The capital costs for all roadway segments except SW 124th Ave. and SW Blake Rd. were developed using a planning level roadway cost estimating tool that uses per mile and lane-mile unit costs based on local and regional experience.

SW 124th Avenue

Costs for SW 124th Ave. segments were taken from a 2007 cost estimate prepared by the City of Tualatin as part of the Metro 2035 Regional Transportation Plan (RTP) update. The estimate does include costs for ROW, Agency administration, and risk contingencies. The estimate was escalated at 2% per year to adjust from 2007 to 2009 dollars.

SW Blake Road

SW Blake Road will be reconstructed to meet current City standards as part of the SW Tualatin Area Concept Plan area development. Costs for reconstructing SW Blake Rd. from

SW 108th Ave. to a point on SW 105th Ave. north of the curve were prepared by the City of Tualatin in 2004. The estimate was escalated at 2% per year to adjust from 2004 to 2009 dollars.

Assumptions

The following Table 1 and subsequent sub-sections outline the assumptions made for developing the costs included in this memo.

TABLE 1
General Street Plan Assumptions

Asphalt Concrete Section for arterials assumed 8" HMAC/12" Agg.
Asphalt Concrete Section for collectors 6" HMAC/10" Agg.
4' of balanced earthwork assumed for all section. Additional earthwork added per roadway project as needed.
10% Mobilization
2.5% Construction Enginering
2% Erosion Control
TP&DT varies 5%-8% depending on project complexity and future traffic assumed levels.
40% Contingency added to all projects.
Costs provided are in 2009 dollars.

Material Costs

Unit cost assumptions are provided in the Appendix.

Roadway

These preliminary cost estimates assume typical design sections for both collector and arterial roads as referenced in the City's adopted TSP.

TABLE 2

No.	Roadway Description	Length (MI)	Lane-MI
124 SA	SW 124th Ave (Tualatin-Sherwood to Collector 3)	1.10	6.60
124 SB	SW 124th Ave (Collector 3 to Tonquin)	0.54	3.24
A1 SA	Arterial 1 (124th to Urban Reserve Boundary)	0.36	2.16
A1 SB	Arterial 1 (Urban reserve Boundary to Willis)	0.31	1.86
C1	Collector 1 (124th to SW Tualatin Boundary)	0.79	3.16
C2 SA	Collector 2 (Collector 1 to Waldo)	0.99	3.96
C2 SB	Collector 2 (Waldo to Tonquin)	0.22	0.88
C3	Collector 3 (124th to Collector 2)	0.26	1.04

Collector roads assume a standard major collector cross section (Cb&t) to include 2-12' lanes, 14' median/turn lane, 6' bike lanes, 6' sidewalks, 6' planter strips, and street illumination. The total roadway width is 74'.

Arterial roads assume a standard major arterial (Eb&t) to include 4-12' lanes, 14' median/turn lane, 6' bike lanes, 6' sidewalks, 6' planter strips, and street illumination. The total roadway width is 98'.

Bridges

Two bridges will need to be constructed as part of the capital improvements. These bridges will grade separate rail crossings along Collector 1 and Arterial 1, Section b. It is assumed that the two bridges will have a 140 foot clear span structure and a cross section width according to the roadway classification.

Signals

One new signal is assumed at the intersection of Collector 2 Segment B and Arterial 1 Segment B.

Signals assumed along the SW 124th Ave. corridor are included as part of the 2007 RTP estimate.

Roundabouts

One two lane roundabout is assumed at the intersection of Collector 1 and SW 115th Ave. The roundabout will be in lieu of a signalized intersection. The assumed inscribed diameter is 150'. Curbs, drainage and sidewalk are included in the estimate for the roundabout.

Earthwork

A standard assumption for earthwork is included in the per lane mile roadway cost. The standard assumption is for a balanced cut/fill with roadway construction generally following existing contours.

It is assumed that Tigard Sand and Gravel and Knife River sites will remediate the quarry areas to pre-mining conditions prior to development of the SW Tualatin Area. For the purpose of this estimate additional earthwork above the standard assumption to construct roads in the vicinity of the existing quarry's was quantified as zero since the quarry will be filled in, leaving the terrain relatively flat.

The cost estimating tool accounts for typical earthwork quantities for roadway projects, but a review of 5-foot contours indicates two areas would require additional earthwork that is not covered by the lane-mile unit costs. One of these areas is located along Collector 2 just south of the intersection with SW McCamant Dr. The other area is located along Arterial 1, Sec B near the Urban Reserve Area boundary where the SW Tonquin Rd. alignment would be relocated.

Right of Way

Right-of-way costs are not included in this estimate update.

Capital Cost Estimate

Total capital costs for roads, intersections, and bridges in the SW Tualatin Concept Plan are estimated at approximately $123.3 million. As shown in Table 3, the breakdown by areas are $79.9 million to develop the SW Tualatin area, $33.8 million to develop the Urban Reserve area, and $9.6 million to develop Area 1.

Blake Rd. will be reconstructed to current City standards and will be necessary as part of the SW Tualatin Concept Area development. The City has already prepared cost estimates for this work in 2004 with the limits of work beginning at SW 108th and extending east and north to SW 105th. The estimate for the work is $1.5 million and has been adjusted to 2009 dollars.

Pedestrian Paths and Trails were estimated as part of the 2005 SWTCP study. The limits of the trails have not changed with all trails being located within the original SWTCP area. Therefore, the 2005 estimate for the development of park trails will be used and adjusted from 2005 to 2009 dollars. The cost for the development of pedestrian/trails is $1,075,000.

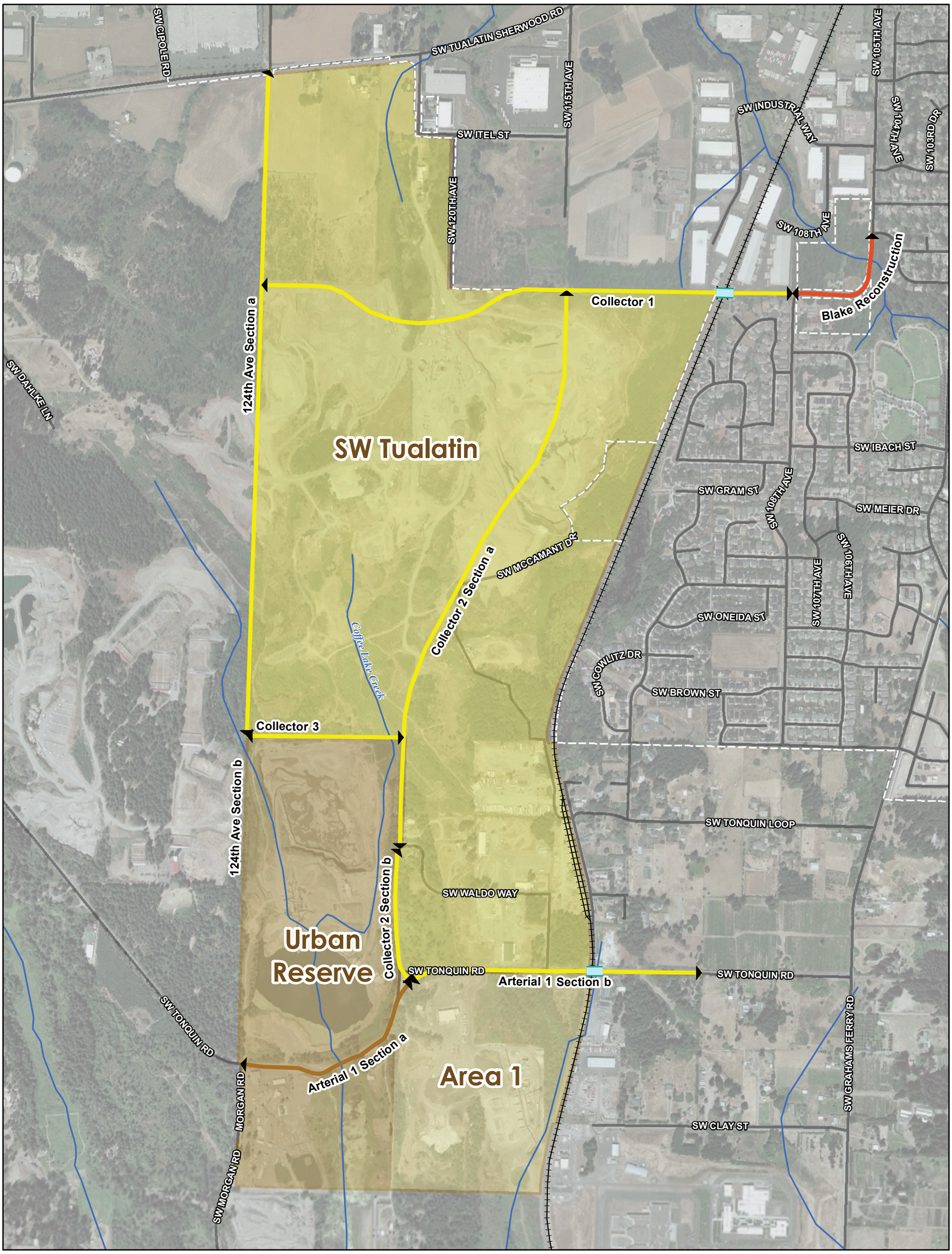
Costs for SW 124th Ave. segments were taken from a 2007 cost estimate prepared by the City of Tualatin as part of the Metro 2035 Regional Transportation Plan (RTP) update. The estimate does include costs for ROW, Agency administration, and risk contingencies. The 2007 estimate was $82,415,000 and was escalated at 2% per year to adjust from 2007 to 2009 The estimate in 2009 dollars is $85,745,000. The entire SW 124th Ave. corridor crosses to area boundaries with 5,805 lineal feet of roadway in the SWTCP area, and 2,857 lineal feet of roadway in the Urban Reserve Area therefore the cost was split proportionally between the areas.

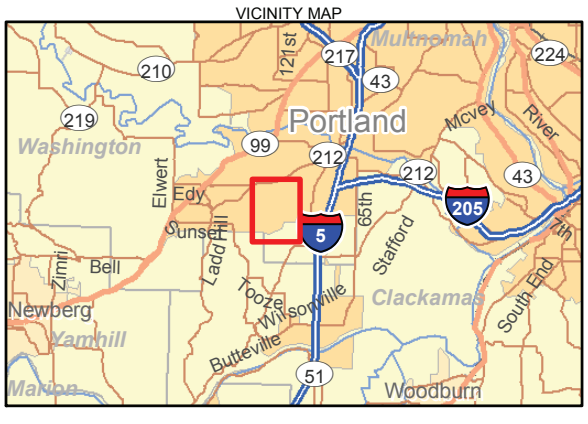
TABLE 3

Preliminary Capital Cost Estimates, SW Tualatin Concept Plan

ROAD	TYPE	LENGTH (ft)	TOTAL COST
SW Tualatin			
124th Ave, Section A	Arterial	5,805	$57,449,000
Collector 1*	Collector	4,176	$12,410,000
Collector 2, Section A	Collector	5,207	$5,990,000
Collector 3	Collector	1,367	$1,510,000
Blake Road Extension			$1,500,000
Pedestrian/Trails			$1,075,000
	Subtotal	**16,555**	**$79,934,000**
Urban Reserve			
124th Ave, Section B	Arterial	2,857	$28,296,000
Arterial 1, Section A	Arterial	1,921	$3,800,000
Collector 2, Section B	Collector	1,153	$1,670,000
	Subtotal	**5,931**	**$33,766,000**
Area 1			
Arterial 1, Section B*	Arterial	1,617	$9,590,000
	Subtotal	**1,617**	**$9,590,000**
	TOTAL	**24,103**	**$123,290,000**

* Includes bridge/RR crossing costs





LEGEND

Proposed Roadways
- Blake Reconstruction
- SW Tualatin
- Urban Reserve

Concept Plan Area Boundaries
- Area 1
- SW Tualatin
- Urban Reserve

- Proposed Grade Separation Structure
- City Boundary

N

0 250 500
Feet

FIGURE 1
Proposed Roadways
Roadway Memorandum
Southwest Tualatin Concept Plan

APPENDIX C - Stormwater

Southwest Tualatin Concept Plan Update- Stormwater System

PREPARED FOR:	City of Tualatin
PREPARED BY:	Brittany Garton/CH2M HILL
THROUGH:	Richard Attanasio, PE/CH2M HILL
DATE:	February 12, 2010
PROJECT NUMBER:	398395.48.01

Purpose

This memorandum updates the stormwater portions of the 2005 Southwest Tualatin Concept Plan. The updates include:

1. Review of the assumptions used to prepare the 2005 Concept Plan.
2. Revising those assumptions to cover an expanded study area.
3. Developing a stormwater infrastructure plan for the area within the 2005 Southwest Tualatin Concept Plan and the expanded study area.
4. Developing updated cost estimates for stormwater infrastructure in the expanded study area and organizing the cost estimates by portion of the study area.

Expanded Study Area

Figure 1 shows the limits of the 2005 Southwest Tualatin Concept Plan study area and the two areas added for this update. The expanded study area includes:

1. The 2005 Southwest Tualatin Concept Plan study area. The 2005 study area contains approximately 431 acres, of which 352 acres are developable in light industrial and business park land uses.
2. Area 1, a future industrial area of Tualatin immediately south of the 2005 study area. Area 1 is within the Urban Growth Boundary. Area 1 contains 66 acres, 19 of which the City of Tualatin Planning Department has identified as being developable in industrial uses.
3. The Urban Reserve Area, a future industrial area immediately southwest of the 2005 study area. This area is outside the Urban Growth Boundary. The Urban Reserve Area contains 117 acres, 77 of which the City of Tualatin has identified as being developable or re-developable in industrial uses.

This memorandum updates the infrastructure plan for the 2005 study area, and adds infrastructure plans for Area 1 and the Urban Reserve Area.

Background

Stormwater infrastructure will be needed to serve the industrial development of a 448 acre area currently outside the southwestern corner of the City of Tualatin. The area drains to two different receiving waters: Coffee Lake Creek to the south and Hedges Creek to the north. An analysis of stormwater system improvements needed as a result of development of the area has been completed for each subarea and is consistent with the concepts presented in the Southwest Tualatin Concept Plan for the City of Tualatin (Draft August 2005) and Clean Water Services' (CWS) Design and Construction Standards (June 2007). It is recommended that low impact development approaches (LIDA) for stormwater quality and detention purposes are implemented. The appropriate LIDA will minimize stormwater runoff generated from the development and ensure there are no adverse downstream drainage impacts. LIDA shall be designed and constructed in accordance with CWS's 2007 Design and Construction Standards Section 4.07. With 448 acres of industrial development expected in the study area, regional stormwater facilities were sized for each drainage basin in each subarea using LIDA and planning level cost estimates have been included. This analysis addresses major publicly-owned stormwater management facilities.

Methodology

Topography, soil type, the amount of impervious area, and storm intensity and duration are important parameters for determining stormwater runoff volume and peak flow rates. To be consistent with CWS Standards, the Santa Barbara Urban Hydrograph Method (SBUH) was used to estimate runoff volume and peak flow rates for the 25-year, 24-hour and 100-year, 24-hour storms. CWS provides an equation for use in calculating the water quality peak flow rate and total water quality volume in Section 4.05.6 of the 2007 Design and Construction Standards.

Developable acreage in each subarea was provided by the City of Tualatin. All of the developable acreage is assumed to be developed for industrial use. To be consistent with the Southwest Tualatin Concept Plan for the City of Tualatin (Draft August 2005), 80-percent of the development area was assumed to be impervious. The Soil Conservation Service (SCS) Technical Release 55 (TR-55) associates land use with a percentage of impervious area and a Curve Number (CN), based on hydrologic soil type. Hydrologic soil types B, C, and D are present in the study area. See Table 1 for a summary of the land use, associated impervious area percentage, and CNs that were used for the analysis.

TABLE 1: PERCENT IMPERVIOUSNESS AND CN BASED ON LAND USE

Land Use	Percent Imperviousness	Curve Number for Hydrologic Soil Groups			
		A	B	C	D
Industrial	80%*	81	88	91	93

TABLE 1: PERCENT IMPERVIOUSNESS AND CN BASED ON LAND USE

Land Use	Percent Imperviousness	Curve Number for Hydrologic Soil Groups			
		A	B	C	D
Open Space (grass cover >75%)	10%	39	61	74	80

*: TR-55 percent of imperviousness for industrial area is 72%. 80% was used to be consistent with assumptions in the Southwest Tualatin Concept Plan.

The three subareas analyzed were Southwest Tualatin, Urban Reserve, and Area 1. See Figure 1 for their location. All of the subareas have basins that drain to Coffee Lake Creek. However, the Southwest Tualatin subarea also has a basin that drains to Hedges Creek. A regional stormwater facility for each drainage basin within each subarea was sized. See Figure 1 for a map of the drainage basins within the subareas.

The regional facility for the Hedges Creek drainage basin was sized for water quality purposes only. Water quality facilities utilize the infiltration capabilities of the soil in the basin to effectively remove pollutants from stormwater runoff. Therefore, the facility was designed to convey the water quality storm (dry weather storm event totaling 0.36 inches of precipitation falling in 4 hours with an average annual storm return period of 96 hours), in accordance with CWS requirements. Detention was considered unnecessary due to the capacity in this area to infiltrate flows through both regional and LID facilities.

The regional facilities for the Coffee Lake Creek drainage basin were sized for water quality and detention purposes. The facilities were sized for water quality to filter out pollutants stormwater runoff and also sized for detention due to Coffee Lake Creek's limited capacity to absorb more flow. These facilities were designed to convey the 25-year, 24-hour storm (storm event totaling 3.9 inches of precipitation falling in 24 hours), in accordance with CWS requirements.

The Santa Barbara Urban Hydrograph (SBUH) method was used to produce stormwater runoff volumes and peak flow rates for the 25-year, 24-hour and 100-year, 24-hour storms. Rainfall volumes for the 25-year event were consistent with CWS standards; 3.9-inches in 24 hours for the 25-year event and 4.5-inches in 24 hours for the 100-year event. See Table 2 for the results.

TABLE 2: SBUH RESULTS SUMMARY

Subarea	Drainage Basin	Impervious Area in Drainage Basin[1] (acres)	WQ Storm Peak Design Flow Rate (cfs)	WQ Storm Total Runoff Volume (ft^3)	25-Year, 24-Hour Storm Peak Design Flow Rate (cfs)	25-Year, 24-Hour Storm Total Runoff Volume (ft^3)	100-Year, 24-Hour Storm Peak Design Flow Rate (cfs)	100-Year, 24-Hour Storm Total Runoff Volume (ft^3)

TABLE 2: SBUH RESULTS SUMMARY

Subarea	Drainage Basin	Impervious Area in Drainage Basin[1] (acres)	WQ Storm Peak Design Flow Rate (cfs)	WQ Storm Total Runoff Volume (ft^3)	25-Year, 24-Hour Storm Peak Design Flow Rate (cfs)	25-Year, 24-Hour Storm Total Runoff Volume (ft^3)	100-Year, 24-Hour Storm Peak Design Flow Rate (cfs)	100-Year, 24-Hour Storm Total Runoff Volume (ft^3)
Southwest Tualatin	Hedges Creek	144.6	13.12	188,923	133.75	2,468,023	158.21	2,913,359
	Coffee Lake Creek	144.7	13.13	189,055	114.17	2,443,676	135.26	2,886,515
Urban Reserve	Coffee Lake Creek	65.6	5.95	85,726	56.3	1,214,787	67.59	1,447,879
Area 1	Coffee Lake Creek	19.9	1.81	26,005	28.97	529,238	36.31	648,804

NOTE 1: Impervious area in each drainage basin was calculated based on 80% imperviousness for parcels specified for industrial development and 10% imperviousness for parcels specified as open space. Total impervious area within the basin is shown.

CWS requires detention facilities to be designed to capture runoff so the post-development runoff rates from the site do not exceed the pre-development runoff rates from the site. The three regional detention facilities that drain to Coffee Lake Creek were sized to accommodate the 25-year, 24-hour storm, with the outflow to not exceed that of the pre-developed condition. Table 3 provides a summary of the pre- and post-development flows for the facilities design for detention.

TABLE 3: SUMMARY OF DETENTION FLOW REQUIREMENTS FOR COFFEE LAKE CREEK FACILITIES

Subarea	25-year, 24-hour Pre-Development Runoff Rate (cfs)	25-year, 24-hour Post-Development Runoff Volume (cf)	25-year, 24-hour Post-Development Runoff Rate (cfs)	25-year, 24-hour Post-Development Runoff Volume (cf)
Southwest Tualatin	51.01	1,345,139	114.17	2,443,676
Urban Reserve	28.19	733,588	56.3	1,214,787
Area 1	20.96	415,232	28.97	529,238

Needed Improvements

Four regional stormwater facilities were sized based on the peak flows and runoff volumes provided by the previously described analysis. Each facility is an extended dry basin, designed to CWS standards. The facilities that drain to Coffee Lake Creek have been designed to provide detention, while the facility that drains to Hedges Creek has been design to provide only water quality treatment. The area required for each extended dry

basin footprint is shown by subarea and basin in Table 4 below. These areas do not include the area required for access roads and maintenance activities. Each facility has been given a facility identifier (shown in Table 4).

TABLE 4: AREA OF REGIONAL STORMWATER FACILITY BY BASIN

Subarea	Drainage Basin	Facility Identifier	Required Area for Regional Stormwater Facility (acres)
Southwest Tualatin	Hedges Creek	HC-1	1.67
	Coffee Lake Creek	CLC-1	2.68
Urban Reserve	Coffee Lake Creek	CLC-2	1.14
Area 1	Coffee Lake Creek	CLC-3	0.21

Facilities were located at a regional low point in each basin for schematic purposes. For locations of the facilities, see Figure 2. It should be noted that the locations shown on Figure 2 are meant to show the amount of area needed in each basin to properly treat stormwater to CWS standards. The facility sizes and locations are subject to change during final design (i.e. several smaller facilities could be used throughout the basin eliminating the need for one large regional facility).

Planning Level Cost Estimates

Cost estimates for the stormwater infrastructure projects in each basin are summarized in Table 5. They include construction costs for regional facilities. It should be noted that conveyance costs are included in the construction costs for roadway development.

TABLE 5: STORMWATER INFRASTRUCTURE COST ESTIMATES BY SUBAREA

Item No.	Description	Total
	Southwest Tualatin Stormwater Infrastructure Costs	
1	19,000 CY of Excavation and Grading	$380,000
2	4.35 AC Landscaping and Temporary Irrigation	$130,500
3	1,300 LF Access Road	$65,000
4	2,800 LF Access Control Fencing	$70,000
5	Pre-Treatment (Sedimentation MH)	$20,000
6	Inlet and Outlet Structures	$35,000
7	5% Erosion Control	$35,025
	Total Estimated Construction Cost	$735,525

TABLE 5: STORMWATER INFRASTRUCTURE COST ESTIMATES BY SUBAREA

Item No.	Description	Total
	60% Contingency, Administration, and Engineering	$441,315
	Total Estimated Project Cost	$1,176,840
		$1,177,000
	Urban Reserve Stormwater Infrastructure Costs	
1	5,000 CY of Excavation and Grading	$100,000
2	1.14 AC Landscaping and Temporary Irrigation	$34,200
3	480 LF Access Road	$24,000
4	1,060 LF Access Control Fencing	$26,500
5	Pre-Treatment (Sedimentation MH)	$10,000
6	Inlet and Outlet Structures	$17,500
7	5% Erosion Control	$10,610
	Total Estimated Construction Cost	$222,810
	60% Contingency, Administration, and Engineering	$133,686
	Total Estimated Project Cost	$356,496
		$357,000
	Area 1 Stormwater Infrastructure Costs	
1	925 CY of Excavation and Grading	$18,500
2	0.21 AC Landscaping and Temporary Irrigation	$6,300
3	200 LF Access Road	$10,000
4	430 LF Access Control Fencing	$10,750
5	Pre-Treatment (Sedimentation MH)	$10,000
6	Inlet and Outlet Structures	$17,500
7	5% Erosion Control	$3,653
	Total Estimated Construction Cost	$76,703
	60% Contingency, Administration, and Engineering	$46,022
	Total Estimated Project Cost	$122,724
		$123,000

Summary

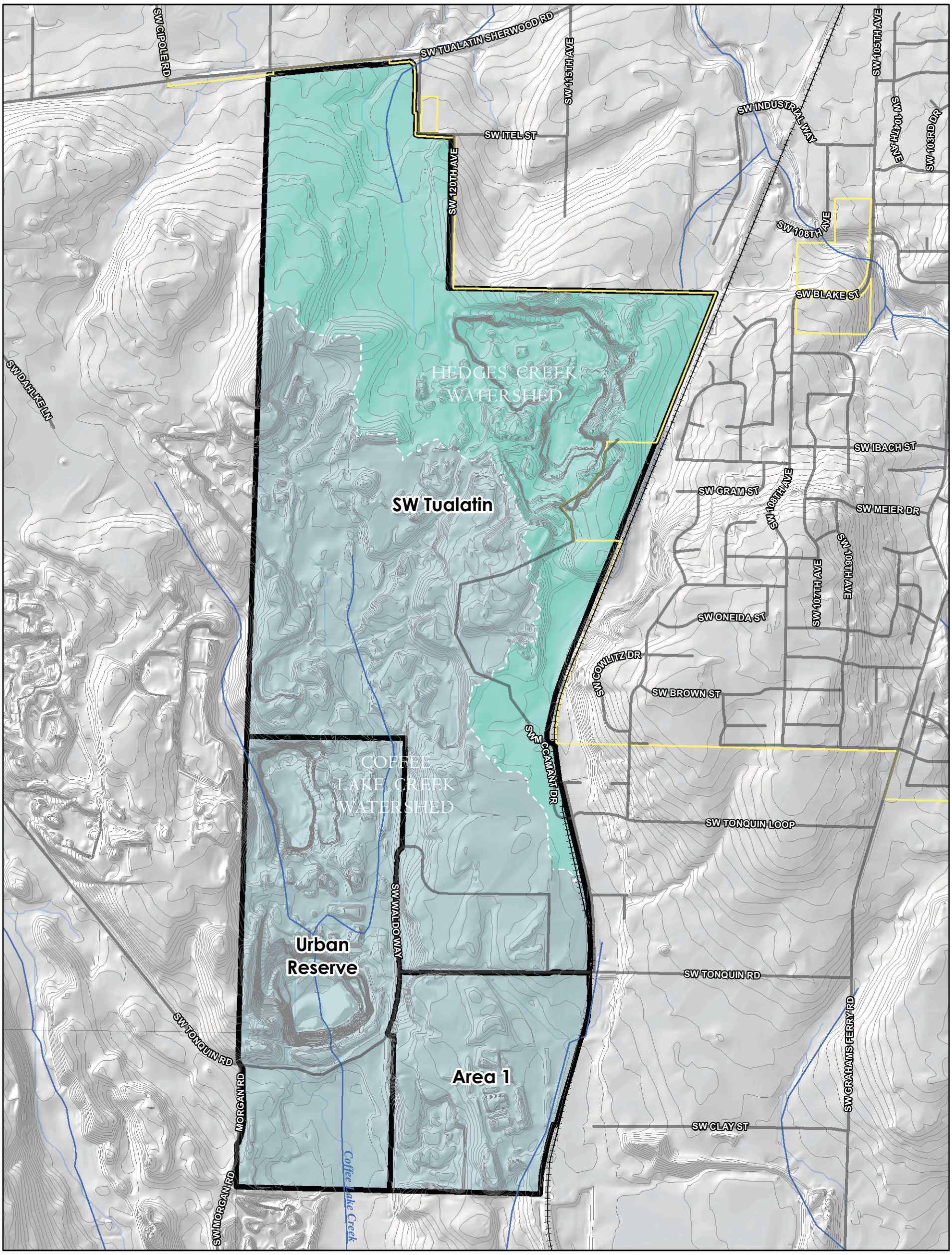
Stormwater infrastructure will be needed to serve the industrial development of a 448 acre area currently outside the southwestern corner of the City of Tualatin. The area drains to two different receiving waters: Coffee Lake Creek and Hedges Creek. An analysis of stormwater system improvements needed as a result of development of the area has been completed for each subarea and is consistent with the concepts presented in the Southwest

Tualatin Concept Plan for the City of Tualatin (Draft August 2005) and Clean Water Services' (CWS) Design and Construction Standards (June 2007).

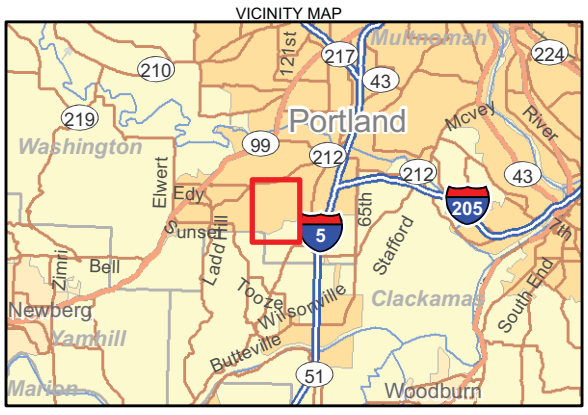
Four regional stormwater facilities were sized based on the peak flows and runoff volumes. Each facility is an extended dry basin, designed to CWS standards. The facilities that drain to Coffee Lake Creek have been designed to provide water quality treatment and detention, while the facility that drains to Hedges Creek has been design to provide only water quality treatment. Table 6 provides a summary of the facilities, their intended functions, and the total cost expected to develop stormwater infrastructure in each subarea.

TABLE 6: SUMMARY OF STORMWATER INFRASTRUCTURE

Subarea	Facility Identifier	Function Provided by Facility	Area required for Facility (ac)	Total cost by Subarea
Southwest Tualatin	HC-1	Water Quality	1.67	$1,177,000
	CLC-1	Water Quality and Detention	2.68	
Urban Reserve	CLC-2	Water Quality and Detention	1.14	$357,000
Area 1	CLC-3	Water Quality and Detention	0.21	$123,000



VICINITY MAP



LEGEND

- Concept Plan Areas
- Streams (Metro 2009)

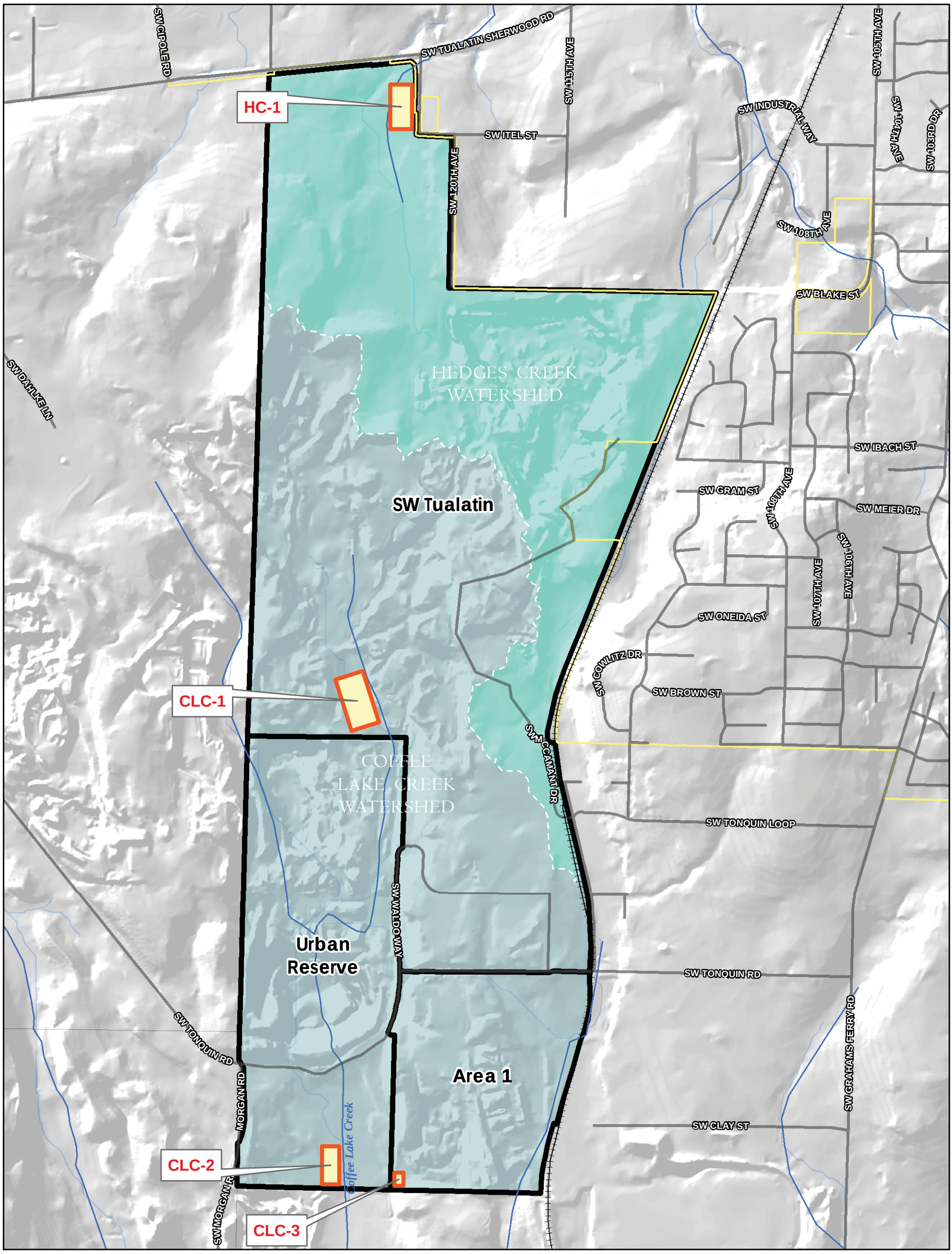
Watersheds

- Coffee Lake Creek
- Rock Creek
- 5-Foot Contours
- City Boundary

N

0 250 500
Feet

FIGURE 1
Concept Plan Area Boundaries and Watersheds
Stormwater Concept Plan Update
Southwest Tualatin Concept Plan



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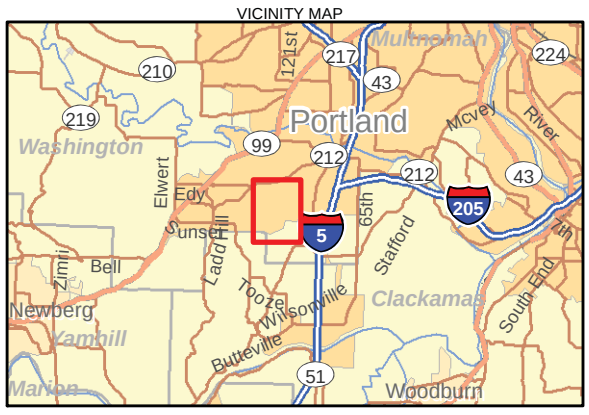

LEGEND

- Concept Plan Areas
- Streams (Metro 2009)
- City Boundary

Watersheds

- Coffee Lake Creek
- Hedges Creek
- Proposed Water Quality Facilities

N

0 250 500
Feet

FIGURE 2
Proposed Water Facilities
Stormwater Concept Plan Update
Southwest Tualatin Concept Plan

MEMORANDUM
CITY OF TUALATIN

TO: 2010 Update Southwest Tualatin Concept Plan

FROM: Aquilla Hurd-Ravich, Senior Planner *AHR*

DATE: August 11, 2010, Plan accepted on October 11, 2010

SUBJECT: SOUTHWEST TUALATIN CONCEPT PLAN (ALTERNATIVE IV)
FISCAL IMPACT ANALYSIS 2010 UPDATE

BACKGROUND

The Southwest Tualatin Concept Plan (SWCP) is a guide for the industrial development of a 614-acre area currently located outside the city that will be part of the city in the future when properties are annexed into Tualatin's boundary. It is south of Tualatin-Sherwood Road and generally between 115th and 124th Avenues. The area extends south to Tonquin Road and is located in the vicinity of the Tigard Sand and Gravel quarry. The original planning area was 431 acres and in November 2009 the Technical Advisory Committee (TAC) and the City expanded the boundary to include land south of Tonquin Road and west of the railroad tracks adding 183 acres.

In 2005 an *Annexation Cost Impact Analysis* July 13, 2005 was conducted by Otak and Todd Chase to determine the cost and revenues generated by development in the area when property annexes to the City of Tualatin. The study analyzed revenue from property tax, franchise fees, and other potential revenue sources and compared that estimate to the costs the City could incur. This update is based on the original analysis included in the Concept Plan Document.

METHODOLOGY

This memo updates tables 1-13, 15 and 16. Tables 1-13 were updated using 2009-2010 budget information and 2010 data. Table 14 was not updated as it assumed that potential funding sources have not changed since 2005. Tables 15 and 16 were updated using the most recent information from 2009 and 2010 and reflect updates to the plan itself. The update followed the methodology used in 2005 (Appendix II Part N) and the methodology used in a previous fiscal impact analysis conducted in 2000 by ECONorthwest and OTAK for the portion of the Stafford area known then as Urban Reserve Area 34. The basic methodology used in 2005 and later updated in 2010 included the following steps:

1. Determine the land use pattern, employment, population and assessed land value.
2. Estimate revenues associated with land values, employment and population.
3. Estimate costs of providing services.

4. Compare costs and revenues
5. Estimate the capital costs of sewer, water, storm sewer, and street systems, upon annexation
6. Estimate the costs of operation and maintenance (O & M) upon annexation.
7. Estimate the costs of revenues generated to serve this area.
8. Compare revenues and costs.

ASSUMPTIONS

The same assumptions from the 2005 plan were made in the 2010 update.

STUDY AREA LAND USE PATTERNS

The 614 gross acres in the study area could have a Planning District designation of Business Park and will allow light industrial uses once properties are annexed into the City. This district will allow more focused types of light industrial, high-tech clean technology, and campus employment users, with strict limitations on commercial development. Such a designation will help meet Metro's goals regarding regionally significant industrial and other industrial development. This planning district concept is intended to be a good transition zone between residential areas to the east and industrial areas. It would require high quality landscaping, buffering, and design standards intended to alleviate and or mitigate potential impacts on adjacent Residential Districts, while promoting industrial activities within a campus-like setting. Assumed future uses in the area include a mix of light industrial (printing, material testing, and assembly of data processing equipment) and Business Park uses (flex-type space for technology companies). Additionally, a node of commercial services serving the industrial uses will generate new jobs. In order to be consistent with the 2005 analysis tables 1-13 assume business park or light industrial uses for the entire SWCP area. The mixed use portion constitutes approximately 2 percent of the entire area. However, tables 15 and 16 reflect mixed uses and general light industrial uses to accurately approximate potential revenues from transportation development taxes and system development charges.

Tualatin's Leveton Employment Area, established in 1985, was uses 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 (City of Tualatin, Economic Development Division, *Leveton Tax Increment Plan- April 2002* Tualatin, Oregon). 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 and it is reasonable to assume that similar growth patterns could occur in the area. Based on this analysis, the SWCP area is assumed to be 68% built out by the year 2030. A total of 244 net acres was assumed to be evenly divided between light industrial and business park uses at 122 acres each by 2030.

Table 1 SWCP Preliminary Land Use Pattern (2010 Update)

Land Use	Acres
Gross Acres	614
Gross Buildable Acres[1]	448
Less Public Facilities[2]	90
Net Buildable Acres	358
Acres Developed by 2030[3]	244
Net Buildable Acres Developed by 2030	
Light Industrial	122
Business Park	122

Source: Compiled by City of Tualatin Community Development February 2010

1. Gross Buildable Acres is also net buildable acres and follows Tualatin's Net Acre definition

2. Assumes 20% of gross buildable acres allotted to local street ROW

3. Estimate by City of Tualatin that site is 68% built out by 2030

EMPLOYMENT AND POPULATION

The employment number shown in Table 2 is an estimated 2,234 jobs. There is no residential land assumed for the area and therefore no population is estimated in the study area.

Table 2 SWCP Employment Forecast (2010 Update)

Land use	Acres	Employees
Business park (9.16 jobs per acre) [1]	122	1,116
Light Industrial (9.16 jobs per acre)	122	1,116
Total Employees		2,232

Source: Todd Chase, Otak Task 6. Final Draft Annexation Cost Impact Analysis, SW Tualatin Concept Plan July 13, 2005; Compiled by City of Tualatin Community Development February 2010

1. Jobs per acre from calculations preformed by Kittelson & Associates, Inc for the 2010 Southwest Tualatin Concept Plan Transportation Analysis (DRAFT) June 25, 2010.

ASSESSED LAND VALUES

Assessed values were derived from Washington County and Clackamas County 2009 on-line assessor information. The assessed values were used to determine revenue from property taxes and other sources. Table 3 shows assessed value based on comparison buildings in the region for a Business Park Planning District. Comparisons were used to emulate the type of uses desired in the study area. Light industrial assessed value was determined by looking at comparison sites in the City of Tualatin. The assessed value of the comparison buildings was used to calculate the assessed value for the study area as shown in Table 6.

Table 3 2009 Assessed Valuation using Comparison Buildings (2010 Update)

Land Use	2009 $AV/ Acre	Average Building Sq Ft./ Acre	Comparison
Business Park	$ 1,371,950.84	21,500.00	JAE, Radisys, IDT, Mentor Graphics
Light Industrial	$ 801,632.14	15,250.00	Light Speed, Portland Mill Work, Suburban Door

Source: Washington County and Clackamas County On-line Assessor data; Compiled by City of Tualatin Community Development February 2010

Table 4 indicates the annual change of assessed value from 1999 to 2009. 1999 was used in the 2005 analysis as the base year for measurement. The average annual change over 10 years is actually 9% which exceeds the State limited increase of 3%. The increase in total assessed value is a result of new development and growth over the last ten years. The original analysis and this update are intended to be consistent with Oregon property tax Measures 5, 47 and 50 which limit future property tax increases to new assessed valuation and existing overall assessed valuation to 3% per year.

Table 4. Percent Change in Assessed Value, City of Tualatin (2010 Update)

1999 AV	2009 AV	Annual Change (%) Actual	Annual Change (%) Compliant with state regulations
$ 1,726,074,147.00	$ 3,227,698,540.00	9%	3%

Source: Source: 2009-2010 City of Tualatin Budget and Todd Chase, Otak Task 6. Final Draft Annexation Cost Impact Analysis, SW Tualatin Concept Plan July 13, 2005 Compiled by City of Tualatin Community Development, February 2010

Table 5 below indicates the assessed value per acre in 2009 for Business Park uses and Light Industrial uses. As in Table 3 these values are based on similar uses located in the region and in Tualatin.

Table 5. Assessed - 2009 (Comparison Buildings) (2010 Update)

Land use	2009 $AV/Acre
Business Park	$ 1,371,950.84
Light Industrial	$ 801,632.14

Source: Washington County and Clackamas County GIS Assessor data 2009; Compiled by City of Tualatin Community Development February 2010

Total assessed value in 2030 when the SWCP is 68% built out could total an estimated $265 million.

Table 6. Assessed Value Calculation by Land Use SWCP, Year 2030 (2010 Update)

Business Park	
Acres	122
2009 $AV/ Acre	$ 1,371,950.84
Subtotal	$ 167,180,442.07
Light Industrial	
Acres	122
2009 $AV/ Acre	$ 801,632.14
Subtotal	$ 97,683,685.95
Grand Total	
Acres	244
AV	$ 264,864,128

Source: Tables 1 & 5; Compiled by City of Tualatin Community Development, February 2010

REVENUE ESTIMATES

Revenue is estimated using a driver which determines the amount of revenue generated. For property tax, franchise fees and land use fees the driver is either assessed or real market property value. For business licensing and court fines the driver is employment. For State shared revenue and subdivision fees the driver is population. Because there is no residential zoning for this area the fees and revenue are zero. After obtaining the revenue driver, a per unit revenue driver estimate is obtain from the City Budget and multiplied by the analogous driver for the area to obtain the revenue estimate for the study area under 68% of full development.

Revenue estimates by source, assuming a 68% build out on a 20 year time horizon and constant 2009 dollars are presented in Table 7.

Table 7. Annual Revenue Forecast SWCP, Year 2030 (2010 Update)

Revenue Source	**Annual Revenue**
Property Tax	$ 598,593
Franchise Fees	$ 8,714
State Shared Revenues	0
Cigarette Tax	0
OLCC	0
Hotel/Motel Tax	0
Court Fines	$ 42,725
Business License Fee	$ 14,966
Land Use Fee	$ 150.40
Total Annual Revenues	$ 665,148

Table 7. Annual Revenue Forecast SWCP, Year 2030 (2010 Update)

Revenue Source	Annual Revenue

Source: City of Tualatin Budget 2009-2010; Compiled by City of Tualatin Community Development, February 2010

COST ESTIMATES

Three types of fiscal costs are estimated in this analysis: annual administrative, annual operating and maintenance (associated with new infrastructure and facilities) and capital costs associated with new public roads, open space, trails and utilities. Table 8 presents the total cost of providing administrative services excluding any capital costs and operating or maintenance costs which are analyzed later in table 10 and 11 respectively. Only costs covered by general fund revenue and not user fees are included in this analysis. The total annual administrative costs at 68% build out in 2030 is $ 102,000 per year.

Table 8. Annual Administrative Cost Summary at 68% of Total Build out SWCP, Year 2030 (2010 Update)

Category	Annual Costs
Police[1,2]	$ 50,000.00
Operations-Park Administration[3]	$ 11,000.00
Community Services- Library and Recreation	0
General Government Administration[4]	$ 41,043
Planning	$ 911
Annual Administrative Cost	**$ 102,954**

*Source: 2009-2010 City of Tualatin Budget**;** Compiled by City of Tualatin Community Development February 2010*

1. Information came from Chief Kent Barker 8/12/09 based on a recent study that salary and benefits range from $82,000-$118,000.

2. Appendix F of the SWCP indicates that one part time (.5) police officers will be needed for the area

3. The 2005 SWCP Appendix F allocated $10,000 in public administrative staff time to parks, trails, and public open space that cost was increased by 2% per year to account for inflation.

4. Predicted Additional Employment is based on narrative in Final Draft Annexation Cost Impact Analysis, SW Tualatin Concept Plan July 13, 2005. The narrative estimated the need for an additional part-time officer and one additional general government administration employee.

FISCAL ANALYSIS

A comparison of the cost and revenue information from the preceding sections is presented in Table 9 and demonstrates the net fiscal impact to the City when the area is annexed and developed. Results are in constant 2009 dollars. Total revenue is $665,000 when the area is 68% developed. Total Administrative costs are $102,000. The area will therefore run a surplus of $562,000 at 68% of full development.

Table 9. Annual Average Revenue and Cost Summary SW Tualatin Concept Plan to Year 2030

(2010 Update)

Annual Revenue Source	2015	2020	2025	2030
Property Tax	$ 149,648.23	$ 299,296.46	$ 448,944.70	$ 598,592.93
Franchise Fees	$ 2,178.53	$ 4,357.06	$ 6,535.59	$ 8,714.12
State Shared Revenues				$ -
Cigarette Tax				$ -
OLCC				$ -
Hotel/Motel Tax				$ -
Court Fines	$ 10,681.18	$ 21,362.35	$ 32,043.53	$ 42,724.70
Business License Fee	$ 3,741.43	$ 7,482.86	$ 11,224.29	$ 14,965.72
Land Use Fee	$ 37.60	$ 75.20	$ 112.80	$ 150.40
Total Annual Revenues	**$ 166,286.97**	**$ 332,573.93**	**$ 498,860.90**	**$ 665,147.87**
Annual Admin Costs	**2015**	**2020**	**2025**	**2030**
Police	$ 12,500.00	$ 25,000.00	$ 37,500.00	$ 50,000.00
Operations-Park Administration	$ 2,750.00	$ 5,500.00	$ 8,250.00	$ 11,000.00
Community Services- Library and Recreation				$ -
General Government Administration	$ 10,260.82	$ 20,521.64	$ 30,782.46	$ 41,043.28
Planning	$ 227.74	$ 455.49	$ 683.23	$ 910.98
Annual Administrative Cost	**$ 25,738.56**	**$ 51,477.13**	**$ 77,215.69**	**$ 102,954.26**
Surplus (Deficit)	**$ 140,548.40**	**$ 281,096.81**	**$ 421,645.21**	**$ 562,193.61**
Source: Compiled by City of Tualatin Community Development, February 2010				

CAPITAL COSTS

Total capital costs for most major roads, sewer, water, and storm water systems have been estimated for complete (100%) build out of the area. Capital costs were prepared by CH2M Hill and include arterial and collector roads, trunk line systems for water and sewer facilities and regional storm water management. Using the 2005 Fiscal Impact Analysis as a model, all major infrastructure projects were assumed to be fully constructed by 2030 to support the 68% build out. Total capital costs are estimated at $152.6 million.

Table 10. Capital Costs (2010 Update)

System	Cost[1]
Arterials[2]	$ 13,390,000
124th[3]	$ 85,745,000
Collectors[4]	$ 12,570,000
Bridge Structures	Included in arterial estimate
Intersections/ Signals	Included in SW 124th and collector estimate.
Pedestrian Trails	$ 1,075,000
Water	$ 11,830,000

Table 10. Capital Costs (2010 Update)

System	Cost[1]
Sanitary Sewer	$ 15,330,000
Storm water Drainage	$ 1,657,000
Bluff/ Cipole upsize	$ 2,270,000
Total Capital Costs	**$ 143,867,000**
Right-of-Way Costs[5]	$ 8,782,452
Total Costs Capital and ROW	**$ 152,649,452**

Source: CH2M Hill Infrastructure Analysis Update 2010; Compiled by City of Tualatin Community Development February 2010

1. All costs stated in constant 2009 dollars, at complete (100%) build out. Does not include any right-of-way costs.

2. Includes a bridge/ RR crossing cost on Tonquin Road.

3. Includes signal costs associated with SW 124th Avenue and right-of-way costs.

4. Includes cost of one signal at the intersection of SW 115th Avenue and SW Tonquin Road and a cost of one round about.

5. Right-of-way costs for arterial and collectors other than SW 124th Avenue developed by the City of Tualatin Community Development in constant 2009 dollars. Costs range from $8,575,266 – $8,989,638.

OPERATIONS AND MAINTENANCE

There will be additional costs to maintain the expanded road, sewer, water and storm water systems. The City will be responsible for maintaining the public streets and storm drain systems, and is the likely provider for water, sewer, parks and trails.

Table 11. Summary of Annual Operation and Maintenance Cost Elements SWCP- (2010 Update)

Operations and Maintenance Cost Element	Needed Units	Units	Cost/ Unit	Additional O&M Costs
Water	4.6	miles	$ 23,881.46	$ 109,854.71
Sanitary	4.6	miles	$ 50,061.46	$ 230,282.73
Road	4.6	miles	$ 18,903.87	$ 86,957.80
Trails [1]	2.3	miles	$ 7,022.91	$ 16,152.69
Special Maintenance	Allowance			$ 50,000.00
Total Estimated O & M Costs				**$ 493,247.93**

Source: 2009-2010 Budget; Compiled by City of Tualatin Community Development February 2010

1. An operation and maintenance cost or utility fund expenditure for trails was not part of the 2009-2010 budget, therefore the Cost per unit- 2010 was estimated by using the average percentage increase from 2005-2010 for the Water, Sanitary and Road System -30% and applying that increase to the trail maintenance increase. This approximated a cost per unit in 2010.

CONSTRUCTION IMPACTS

In addition to direct fiscal impacts on the City of Tualatin, there would be economic benefits to the region and the state from the creation of direct and indirect construction and permanent employment.

For study purposes, the direct construction impacts have been calculated based on estimated costs of providing infrastructure (roads, water, sewer, storm drainage, trails, etc.) and private construction of buildings, parking areas and open spaces. As seen in Table 12 it is assumed that total public investments of $152.6 million could leverage $718 million in private development of on-site improvements. The total public and private investment of $871 million is expected to generate an estimated $323 million in regional material expenditures and an estimated $395 million in direct construction payroll over the next 20 years. The payroll is expected to support over 3,700 person years of construction employment in the next 20 years or 187 jobs per year.

Table 12 Summary of Preliminary Construction Impacts SW Tualatin Concept Plan[1] (2010 Update)

Public Infrastructure	$ 152,649,452
Private Development	$ 718,593,638
Grand Total Cost	**$ 871,243,090**
Direct Materials Expenditures[2]	$ 323,367,137
Direct Construction Payroll[3]	$ 395,226,501
Est. Construction Jobs	3,746
Avg. Annual Construction Jobs (20 year time period 2010 to 2030)	187

Source: Compiled by City of Tualatin Community Development February 2010

1. All costs are in 2009 dollars at 100% build out. Assumes construction of planned public arterials, collectors, sewer and water facilities and storm water regional facilities needed to serve the SWCP, Urban Reserve and Area 1 at 100% build out.

2. 45% of Private Development is estimated to be material expenditures

3. 55% of Private Development is estimated to labor expenditures

4. Assumes 5.6 million square feet at 100% build out at a cost of $128.00 per square foot. (Source: compiled by FCS GROUP, based on construction cost assumptions documented in Rider Levett Bucknall, Quarterly Construction Cost Report (Portland region), and industry standards).

PERMANENT IMPACTS

The permanent impacts of development in the SWCP area are derived from the additional jobs accommodated on site in newly developed private buildings. It is conservatively assumed that the site would support 2,232 jobs by the year 2030. These new jobs would primarily be in relatively high paying industrial sectors, which typically include manufacturing, high technology, transportation, communication, utilities, and distribution sectors. Tualatin Community Development staff estimated the average annual wages based on Oregon Employment Department Oregon Labor Market Information System

Occupation Center for wages in Washington and Multnomah counties in 2009. For the purposes of this study the average wage rate is expected to be $69,000 for light industrial and $57,000 for business parks.

The total direct annual payroll from these jobs is expected to be $140 million in 2030. The indirect impact from these wages circulating in the economy is $211 million and the total economic impact of the SWCP area is estimated to be $ 352 million dollars a year after the year 2030.

If these jobs are assumed to be net new to the State of Oregon and if current personal state income tax remained constant, the total induced state income tax revenues would be approximately $10 million per year. Finally, if the area is included in the Tri-Met Service District the added revenues would be estimated at almost $1.4 million per year.

Table 13 SWCP Year 2025 Permanent Economic Impacts (2010 Update)

	Light Industrial	Business Park	Total
Employment FTE jobs	1,116	1,116	2,232
Average Wage Rate*	$ 69,088.60	$ 57,081.87	$ 63,085.23 (average wage)
Direct Annual Payroll	$ 77,116,762	$ 63,714,834	$ 140,831,596
Indirect Regional Impact			$ 211,247,394
Total Regional Economic Impact[1]			$ 352,078,990
Estimated Annual Tri-Met Tax Revenues[2]			$ 1,408,316
Estimated Annual State Income Tax Revenues[3]			$ 9,858,212

Source: Compiled by City of Tualatin Community Development February 2010
1. Regional Impact assumes multiplier of 2.5 based on 2005 analysis
2. Tri-Met payroll tax calculated at 1% based on the 2005 analysis and the 2010 Tri-Met payroll tax of 0.6818 percent
3. Oregon State Tax Revenues based on a tax rate of 7% from the Oregon Department of Revenue, Personal Income Tax, Tax Rate Charts for estimating 2009 Oregon tax rate web site February 2010.
** Average Wages Source: OED, Oregon Labor Market Information System; Occupation Information Center 2009; Light Industrial: manufacturing, trades, transportation, communication, utilities; Business Park: light industrial, service, retail*

OTHER INFORMATION

The 2005 fiscal impact analysis included a discussion on the following funding strategies:

- System development charges,
- Urban renewal,
- Local improvement district,
- Zone of benefit recovery district,
- Metro transportation improvement program,
- Washington County metropolitan street transportation improvement program,
- ODOT Statewide Transportation Improvement program,

- ODOT industrial rail spur program,
- Oregon immediate opportunity program,
- Revenue bonds,
- Special public works fund,
- Community block grant,
- Oregon industrial revenue bond program,
- Oregon transportation infrastructure bank, and
- Advanced financing agreements.

TRANSPORTATION DEVELOPMENT TAX AND SYSTEM DEVELOPMENT CHARGES

The City of Tualatin and Washington County Transportation Development Tax (TDT) methodology could be amended to include capital facilities such as the collector and arterial system. SW 124th Avenue, SW 115th Avenue, Blake Street, the unnamed east-west collector and Tonquin Road are all required to accommodate planned urban growth. The SWCP area can be broken two areas one small area in northwest portion that will accommodate mixed uses such as restaurants, banks, small stores and general offices. The balance of the area will accommodate general light industrial uses such as printing, material testing and assembly of data processing equipment. General light industrial can also accommodate flex-type space for technology companies. Based on an assumption of uses and 2010 TDT rates, development in the SWCP area could generate approximately $11.5 million in revenues by 2030 when the area is 68% developed.

Table 15. Estimate of Transportation Development Tax Revenues; SWCP Year 2030 (2010 Update)

Code[1]	Retail/ Services:	Average Trip generation rate		Square Feet/ Employees[2]	Total Trips	TDT Rate[3]	TDT Revenues
933	Fast Food Restaurant without Drive-through Window	52.4	Trip Generation per 1,000 sqft Gross Floor Area, Weekday P.M. Peak Hour Generator	3,000 sqft	157.2	$ 15,897.00	$ 2,499,008.40
852	Convenience Market (Open 15-16 Hours)	36.22	Trip Generation per 1,000 sqft Gross Floor Area, Weekday P.M. Peak Hour Generator	1,000 sqft	36.22	$ 15,418.00	$ 558,439.96
912	Drive-in Bank	11.77	Trip Generation per Employee, Weekday P.M. Peak Hour of Generator	18 employees	211.86	$ 15,897.00	$ 3,367,938.42
710	General Office Building	1.49	Trip Generation per 1,000 sq. ft Gross Floor Area, Weekday P.M. Peak Hour	20,000 sqft	29.8	$ 5,246.00	$ 156,330.80

Table 15. Estimate of Transportation Development Tax Revenues; SWCP Year 2030 (2010 Update)

Code[1]	Retail/ Services:	Average Trip generation rate		Square Feet/ Employees[2]	Total Trips	TDT Rate[3]	TDT Revenues
110	General Light Industrial	0.51	Trip Generation per Employee, Weekday P.M. Peak Hour of Generator	2,660 employees	1356.6	$ 3,620.00	$ 4,910,892.00
Total TDT Revenue anticipated in 2030							**$ 11,492,609.58**
1. ITE Trip Generation 7th Edition, TDT rates are based on the 7th Edition.							
2. The amount of square footage is assumed and based on what is allowed under Metro Code 3.07.420 *Protection of Regionally Significant Industrial Areas*. The Drive-in Bank 18 employees is based on the number of employees reported on the 2010 Business License renewal application for Wells Fargo Bank on 18975 SW Martinazzi Avenue Tualatin, OR 97062 also a drive-in bank with walk up ATMs and services inside the building. The number of employees in the General Light Industrial is based on expected job growth for horizon year 2030.							
3. TDT Rates were taken from the Transportation Development Tax Table 11 Discount Schedule as October 20, 2009 from the column Rates 7/1/2010-6/30/2011 With 10% Discount.							

Additional SDC revenue will be collected from water, sewer and storm drain connections. The City of Tualatin currently charges SDCs on all new development that requires a water meter. Water quality SDCs are based on the Clean Water Services rate structure for storm and surface water service charges. Sewer connections fees are based on Clean Water Services rates for industrial uses. Based on 2010 rates, development in 2030 when the area is 68% developed could generate $19 million in revenue.

Table 16. Estimate of Total System Development Charge Revenues Water, Water Quality, and Sewer Fees

	Factor[1]	Units	Development Assumption		SDC Revenue
Water Connection Fees		Meter Size	Users[2]	Meter Installation Charges[3]	
Fast Food Restaurant	$ 15,576.00	1.5"	3	$ 450.00	$ 47,178.00
Convenience Mkt	$ 15,576.00	1.5"	1	$ 450.00	$ 16,026.00
Drive-in Bank	$ 3,115.00	.75"	1	$ 115.00	$ 3,230.00
General Office	$ 15,576.00	1.5"	1	$ 450.00	$ 16,026.00
Wet Industrial	$ 49,842.00	3"	1	$ 742.90	$ 50,584.90
General Light Industrial	$ 24,921.00	2"	12	$ 646.00	$ 299,698.00
				Subtotal	**$ 432,742.90**
Water Quality (storm drain fee)[4]					
SWCP Area	$ 500.00	ESU	6,184	ESU in SWCP area	$ 3,092,000.00

				Subtotal	**$ 3,092,000.00**
Sanitary Sewer SDC					
Retail/ Services[5]					
Wet Industrial[6, 7]	$ 4,100.00	DUE	3590	DUE	$ 14,719,000.00
General Light Industrial[6,7]	$ 4,100.00	DUE	177	DUE	$ 725,700.00
				Subtotal	**$ 15,444,700.00**
				Total	**$ 18,969,442.90**

1. City of Tualatin System Development Charges as of February 1, 2010.

2. Two retail/ service users per lot were assumed to occupy the mixed use area. One wet industrial user was assumed and the remaining lots were assumed to each have one user per lot.

3. Meter Installation Charges based on City of Tualatin Resolution 4819-08 Appendix 13 of the Municipal Code

4. 375 acres of impervious area according to CH2M Hill *Southwest Tualatin Concept Plan Update- Stormwater System* February 12, 2010. 16,326,288 square feet of impervious area. One ESU (Equivalent Service Unit) per 2,640 square feet of impervious surface- Clean Water Service Rates and Charges Resolution and Order No. 10-9 Fiscal Year July 1, 2010 to June 30, 2011. 2,640sqft per ESU/16,326,288 sqft. = 6,184 ESU. Total SDC $500.00/ ESU

5. Sewer SDCs were not calculated for retail/service uses because the charges are based on the number of connections per business which cannot be accurately represented in this analysis. The mixed use area represents about 2% of the total land in the SWCP area.

6. Sanitary Sewer Calculations

Acres/ Land Use*		Total Gallons per day	1 DUE= 625 gallons per day average value; **
88 acres of wet industry	25,500 gpd/ acre	2,244,000	3,590.40 DUE
182 acres of light industry	1,150 gpd/acre	209,300	334.88 DUE
19 acres of light industry	1,150 gpd/acre	21,850	34.96 DUE
77 acres of light industry	1,150 gpd/acre	88,550	141.68 DUE

* From CH2M Hill Table 1 SW Tualatin Concept Plan Update Water and Wastewater Systems, June 21, 2010

** Clean Water Services Rates and Charges Resolution and Order No. 10-9 FY 7/1/2010- 6/30/2011

7. $4,100 per DUE (Dwelling Unit Equivalent) per Clean Water Services Rates and Charges Resolution and Order No. 10-9 FY 7/1/2010- 6/30/2011

CONCLUSIONS

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 development. It is highly probable that the actual fiscal costs and revenues will vary from these long-range estimates, during any point in time. However, the long-range estimates are considered to be adequate for planning purposes.

While there would definitely be some redistribution of the fiscal and economic benefits from development of the SWCP area, over the long-term 20-year planning horizon, it is fair to say that the added jobs and investment would be net new to the region and the state. Hence, if we assume 68% of the site is developed by year 2030, the general conclusions that can be reached by this analysis include:

- Total assessed value (AV) of development would increase by at least $265 million over current AV (at 68% build out in year 2030);
- 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 (before deducting annual administration and infrastructure O&M costs);
- Annual governmental administration costs for police, planning and general government 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, which is currently funded though the City's street maintenance fund (and ODOT formula disbursements to local agencies);
- There would also be added maintenance costs for the sewer, storm drainage and water systems of approximately $340,000 per year, but that would likely be "covered" by rate collections;
- Major on- and off-site public infrastructure items including roads, trails, water, sewer, and storm water facilities are estimated to cost approximately $152.6 million;
- The City in conjunction with Metro, ODOT and private property owners/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, and/or zone of benefit district;
- Significant positive economic impacts are anticipated from the 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; and
- The added permanent income of $141 million is expected to support over $9.8 million in additional state income tax revenues and $1.4 million in Tri-Met tax revenues.
- Based on the current structure of Transportation Development Taxes, local TDTs are anticipated to generate about $ 11.5 million in revenues and existing sewer/ water/ storm drain system development charges are anticipated to generate about $ 19 million in fee revenue (at 68% of build out). SDC revenues typically go into local funding accounts to help pay for bonds that have been issued for specific

capital improvements (may or may not be for facilities that directly serve the SWCP area).

MEMORANDUM
CITY OF TUALATIN

TO: 2010 Update Southwest Tualatin Concept Plan

FROM: Aquilla Hurd-Ravich, Senior Planner *AHR*

DATE: August 10, 2010; Plan accepted October 11, 2010

SUBJECT: SOUTHWEST CONCEPT PLAN (ALTERNATIVE IV)
RECOMMENDED CHANGES TO THE TSP 2010 UPDATE

This memorandum is an update to the July 11, 2005 memorandum from Kittelson & Associates titled *Recommended Changes to the Tualatin Transportation System Plan*. The original document can be found in Appendix O.

This document presents recommended changes to Chapters 11 (Transportation) and 75 (Access Management on Arterial Streets) of the Tualatin Development Code (TDC), resulting from concept planning for a 614-acre area south of Tualatin-Sherwood Road and west of the Portland & Western railroad tracks, which Metro added to the Portland Regional Urban Growth Boundary through a series of decisions in 2002 and 2004. The technical analysis supporting these recommendations is presented in a memo from Kittelson & Associates entitled *"2010 Concept Plan Transportation Analysis"* Appendix C.

Text proposed to be added to the TDC is shown in **bold** type, while text proposed to be deleted is shown in ~~strikeout~~ type. Descriptions of proposed map revisions are shown in *italic* type. Commentary is provided for each proposed change. The 2010 proposed changes are reflective of amendments to the Oregon Transportation Planning Rule since 2005.

TDC Language	Commentary
11.600 (4)(b) The City of Tualatin, in conjunction with ODOT, initiated a study of a 431-acre area south of SW Tualatin-Sherwood Road and west of the Portland & Western railroad tracks in 2004. In 2010 the City analyzed this area plus an additional 183-acres south of the Concept Plan area. The Southwest Tualatin Concept Plan addressed the impacts of developing this area for industrial uses, particularly the portion of the area designated as a "regionally significant industrial area." A technical analysis was prepared for the	Section 11.600(1)-(3) provides background about the development of the original TSP from 1999-2001. Section 11.600(4) addresses the planning processes used to study UGB expansions affecting the Tualatin Planning Area. Acronyms defined earlier in this section (e.g., ODOT, DLCD, TSP, TPR) have not been spelled out again.

TDC Language	Commentary
Concept Plan, following the requirements of the TPR that specifically addressed the transportation needs associated with developing the Concept Plan area at urban densities. Development of the Concept Plan was guided by input from a 31-member TAC that met 12 times during the planning process. The TAC included representatives from the Cities of Tualatin, Sherwood, and Wilsonville; Metro; ODOT; DLCD; Washington County; Portland General Electric (PGE); Bonneville Power Administration (BPA); Clean Water Services (CWS); Oregon Department of Geology and Mineral Industries; Coffee Creek Correctional Facility; Tualatin Valley Fire and Rescue; TriMet; Genesee and Wyoming Railroad; and property owners from the Tonquin Industrial Group, the Itel properties area and from Tigard Sand & Gravel. Mailings to stakeholders and four public open houses were used to obtain community feedback on the draft plan. The TSP amendments relating to the Southwest Tualatin Concept Plan area were accepted by City Council on (insert date).	
Figure 11-1, Functional Classification Plan *Amend map to show the new Planning Area boundary.* *Amend map to extend SW 124th Avenue as a future Eb&t roadway to a point aligned with the south edge of the Concept Plan area Tonquin Road and or a future I-5/99W Connector.* *Delete the north-south portion of the I-5/ 99W Connector.* *Extend the Connector west as a future F roadway to intersect SW 124th Avenue, with an arrow continuing west past 124th.* *Change the designation of SW 115th Avenue to Cb&t. Extend as a future roadway (SW 115th Avenue) south to SW Tonquin Road.* *Delete the SW Blake Street B-CI designation from SW 108th Avenue west to the railroad tracks.* *Add a new SW Blake Street as a future Cb&t*	Deleting the north-south portion of the Connector reinforces the City's preferred southern alignment; SW 124th Avenue provides the north-south link previously shown for the Connector. The arrow depicting the continuation of the Connector to the west could serve either a northern or southern alignment. Based on feedback from the open houses, the residential area east of the Concept Plan area does not want SW Blake Street to cross the railroad and connect to the industrial area. In response to public comments this connection should be deleted from the maps. However, SW Blake Street is called for in the Concept Plan to connect SW 115th

TDC Language	Commentary
connecting SW 115th to SW 124th Avenue. Extend this road east of SW 115th terminating approximately 350 feet west of the railroad tracks as a future B-CI. The totality of this road should occur just north of areas labeled H and G. *Extend SW Itel Street west as a future B-CI roadway, turning south as SW 122nd Avenue to connect to a new Blake Street.* *Add SW 117th Avenue as a future B-CI roadway connecting SW Itel Street and the east west collector level road directly south of Itel.* *Add a collector (Cb&t) connecting SW 115th Avenue and SW 124th Avenue in between areas G and L as labeled on the Concept Plan graphic.* *Show the portion of Tonquin Road within the Concept Plan area (from SW 124th Avenue to the Portland & Western Railroad) as a minor arterial (Db&t).*	Avenue with SW 124th Avenue. This road could extend easterly terminating at the railroad tracks as a local level road because it will provide access to properties north and south of the road. The Concept Plan calls for SW 115th Avenue to be the main north-south route through the Concept Plan area for access. SW 124th Avenue, as a major arterial, will have access restricted to SW Blake Street and the future collector to the south. The B-CI streets that are called out are depicted on the Concept Plan map. TDC 11.630(2) allows additional B-CI (local commercial industrial streets) to be developed as needed to serve parcels. The Tonquin Road minor arterial classification is consistent with Washington County's classification.
Table 11-2, Street Functional Classification Summary Major Arterials (Eb&t) SW 124th Avenue— Hwy 99 to ~~Tualatin-Sherwood Road~~ **I-5/ 99W Connector** Minor Arterials (Db&t) **Tonquin Road— Portland & Western Railroad west to the planning area boundary (intersecting with SW 115th Avenue and SW 124th Avenue)** Major Collectors (Cb&t) **SW 115th Avenue—Tualatin-Sherwood Road to Tonquin Road intersecting with Blake Street** **Blake Street—SW 124th Avenue to SW 115th Avenue** **Unnamed east/west roadway south of Blake St.—SW 124th Avenue to SW 115th Drive** Local Commercial Industrial (B-CI) SW 120th Avenue~~—south of~~ Tualatin-Sherwood Road to ~~Blake Street ext.~~ **Itel Street** ~~SW 115th Avenue- Tualatin Sherwood Road to McCamant Road~~	Text versions of the map changes described for Figure 11-1. As the TSP generally only addresses collector and arterial facilities, potential local street changes (e.g., realigning Waldo Way and vacating McCamant Drive) are not covered here.

TDC Language	Commentary
~~Blake Street—west of SW 105th Avenue to SW 120th Avenue extension~~ ~~unnamed east/west roadway~~ **Itel Street—SW 122nd Avenue** ~~east of SW 120th Avenue~~ past SW 115th Avenue **SW 117th Avenue—Itel Street to Blake Street** **SW 122nd Avenue—Itel Street to Blake Street**	
Figure 11-2, Metro Regional Street Design System *Amend map to show the new Planning Area boundary. Amend map to continue the Urban Road designation for SW 124th Avenue south to the UGB boundary.*	Housekeeping change.
Figure 11-3, Local Street Plan *Amend map to show the new Planning Area boundary.*	Housekeeping change.
Figure 11-4, Tualatin Pedestrian Plan *Amend map to show the new Planning Area boundary. Add possible Tonquin Trail alignments. Add a north-south trail running the length of the linear greenway (west of the railroad tracks), continuing north of Blake Street to the pond. Amend map to delete a future pedestrian connection on Blake Street from SW 108th Street to SW 115th Street. Add trails running the length of public utility easements (BPA and PGE) in the boundary of the SWCP area.*	Possible Tonquin Trail alignments could pass through this area. It is shown on the Regional Trails and Greenways Map. The north-south trail is shown in the City's Greenways Plan.
Figure 11-5, Tualatin Bicycle Plan *Amend map to show the new Planning Area boundary. Show the following new roads as "roads with bike lanes": SW 124th Avenue south of Tualatin-Sherwood Road, SW 115th Avenue, SW Blake Street, the unnamed collector between areas G and L and Tonquin Road. Add potential Tonquin Trail alignments.*	Updates the map to depict the roadways within the Concept Plan area that will have bicycle lanes, and add possible Tonquin Trail alignments.
Section 11.650 Bicycle Plan The bicycle plan establishes a network of bicycle lanes and routes that connect the City's bicycle trip generators to provide a safe, inter-connected bicycle system. Bicycle lanes are designated on arterial and collector street	Corrects a typo in this section.

TDC Language	Commentary
segments with anticipated future volumes of over 3,000 daily vehicles. Bicycle routes, where bicyclists share a lane with other vehicles, are designated on other lower-volume collector streets, and certain local streets that provide connectivity within neighborhoods or to future multi-use recreation paths. Figure 11-5 shows the City's bicycle plan. As portions of the City's streets are widened, either through adjacent development or ~~a~~ public works projects, bicycle lanes will be provided where indicated on the plan.	
Figure 11-6, Tualatin Transit Plan *Amend map to show the new Planning Area boundary.*	Housekeeping change.
Figure 11-7, Tualatin Truck Routes *Amend map to show the new Planning Area boundary. Revise the alignments for SW 124th Avenue and Tonquin Road and/or a future I-5/99W Connector per Figure 11-1 and show as "future truck routes." Show SW 115th Avenue, SW Blake Street west of SW 115th Avenue and the unnamed collector toward the south end of the Concept Plan area as "future truck routes."*	Updates the map to depict the roadways within the Concept Plan area that are intended to serve through truck movements.
Table 11-3, Transportation Improvement Program Summary 11-20 Years **#43; SW 124th Avenue; new street, Tualatin-Sherwood Road to Tonquin Road and /or a future I-5/99W Connector, traffic signals at Blake Street and unnamed east/west collector; auto, ped, bike, freight movement; connectivity, reduce truck delays; $85,745,000** Development-Related **#44; SW 115th Avenue; new or widened street, Blake Street to Tonquin Road; auto, ped, bike; connectivity, facilitate development; $11,162,520; Development** **#45; Blake Street; new street, west of the railroad to SW 124th Avenue, auto, ped, bike; connectivity, facilitate development; $15,846,088; Development**	The SW 124th Avenue extension was included in the modeling for the TSP, but not shown on maps as it was outside the UGB. With the new UGB boundary, it is now appropriate to show it on maps. SW 115th Avenue will serve access needs within the Concept Plan area. New streets within the Southwest Tualatin Concept Plan Area, other than the SW 124th Avenue extension, are identified as being funded by development or possible urban renewal funding.

TDC Language	Commentary
#46; Tonquin Road; new or widened street, bridge over the railroad crossing and a signal at SW 115th Avenue; auto, ped, bike; to provide connectivity and facilitate development; $15,985,600	
Table 11-3, Transportation Improvement Program Summary - continued Development-Related - continued **#47; unnamed east-west collector; new street between SW 115th Avenue and SW 124th Avenue; auto, ped, bike; connectivity, facilitate development; $2,258,244; Development** **#48; Itel Street and SW 122nd Avenue; new or widened street between SW 120th Avenue and Blake Street; auto, ped, bike; connectivity, facilitate development; $3,190,000[1]; Development** **#49; SW 117th Avenue; new street between Itel Street and Blake Street; auto, ped, bike; connectivity, facilitate development; $1,540,000[2]; Development**	Projects #47-#49 provide additional roads to serve the Concept Plan Area. Additional local commercial-industrial streets could be developed later, depending on the needs of future development.
Figures 11-8a to 11-8d, Financially Constrained TSP Projects *Amend maps to show new Planning Area boundary.* *Amend Figure 11-8c to add project #43 (extension of SW 124th Avenue)* *Amend Figure 11-8d to add new project #44 (SW 115th Avenue).* *Amend Figure 11-8d to add new project #45 (Blake Street).* *Amend Figure 11-8d to add new project #46 (Tonquin Road).* *Amend Figure 11-8d to add new project #47 (unnamed east-west collector).* *Amend Figure 11-8d to add new project #48 (Itel Street-SW 122nd Avenue).* *Amend Figure 11-8d to add new project #49 (SW 117th Avenue).*	Maps the projects described above in Table 11-3.

[1] Increased 2005 estimate by 10% to account for inflation. This methodology is consistent with estimates in the capital cost memo from CH2M Hill *Southwest Tualatin Concept Plan Update- Streets* June 25, 2010
[2] See previous foot note.

TDC Language	Commentary
11.730(2) Financially Constrained Capital Project Summary (q) SW 124th Avenue Extension – ~~Southern~~ **Central** Segment (Table 11-3, No. 17) SW 124th Avenue should be extended south from ~~Myslony Street to~~ Tualatin-Sherwood Road, providing an alternate truck route into the industrial area. Sidewalk**s**, bike lanes, and a traffic signal at Tualatin-Sherwood Road should be included. SW 124th Avenue should be extended as a five-lane roadway. **(ff) SW 124th Avenue Extension – Southern Segment (Table 11-3, No. 43)** **SW 124th Avenue should be extended south from Tualatin-Sherwood Road to Tonquin Road and or a future I-5/ 99W Connector, providing an alternate truck route into the industrial area. Sidewalks, bike lanes, and traffic signals at Blake Street and the east-west collector street south of Blake Street should be included. This segment will eventually have a five-lane cross-section.**	Text descriptions of the projects described above in Table 11-3, which are being added to the TSP's financially constrained list. Project #17 (SW 124th Avenue extension) is renamed "central segment" to allow new project #43 to become the "south segment".
~~(ff)~~**(gg)** Development**-**Related Improvement Projects In addition to the above list of improvement projects, additional transportation improvement projects have been identified that would most likely be constructed as a result of development**-**related projects. Some of these projects include: (i) Construct SW 125th Place. (ii) A new east**-**west street connecting SW 108th Avenue to SW 112th Avenue (Table 11-3, no. 34). This project provides connectivity within a future residential development. (iii) Signalizing the Tualatin Road/SW 108th Avenue intersection (Table 11-3, No. 37). The signal would be warranted based on increasing traffic volumes and poor sight distance for northbound traffic. (iv) Signalizing the SW Cummins Street/SW Cipole Road intersection. (Table 11-3, No. 38)	Text descriptions of the development-related projects described above in Table 11-3.

TDC Language	Commentary
(v) Improve SW 72nd Avenue as part of the Durham Quarry project. (vi) SW Cipole Road widening (Table 11-3, No. 41). Widen to the Cb&t standard from Highway 99W to SW Cummins Street, provide three northbound lanes & modified signal phasing at Highway 99W intersection. (vii) SW Herman Road/SW Cipole Road Intersection (Table 11-3, No. 42). Realign, signalize intersection, provide two inbound lanes on each approach, railroad interconnect. **(viii) SW 115th Avenue (Table 11-3, No. 44). Construct a new roadway to the Cb&t standard between Blake Street and Tonquin Road.** **(ix) SW Blake Street (Table 11-3, No. 45). Construct to the Cb&t standard between SW 115th Avenue and SW 124th Avenue.** **(x) East-west Collector (Table 11-3, No. 46). Construct to the Cb&t standard between SW 115th Avenue and SW 124th Avenue.** **(xi) New Streets in the Southwest Tualatin Concept Plan Area (Table 11-3, No's. 47 and 48). To help facilitate development within the Southwest Tualatin Concept Plan Area, several new streets should be constructed to the local commercial-industrial (B-CI) standard. These streets include a westerly extension of Itel Street, SW 117th Avenue, and SW 122nd Avenue.** ~~(gg)~~**(hh)** For the purposes of applying the Oregon Transportation Planning Rule's section 660-012-0060(4), future development-related land use amendments may not rely on the existence of projects listed in subsection ~~(ff)~~**(gg)**. Projects in subsection ~~(ff)~~**(gg)** are intended to be conditioned on developments contributing to the need for	

TDC Language	Commentary
them.	
Table 11-4, Projects Unfunded or Requiring New Funding Sources Recreation SDC or Bond **Tonquin Trail (SW Tualatin Concept Plan Area); ped, bike; recreation; $880,000**[3]	Adds the Tonquin Trail (which passes through the Concept Plan Area and is on Metro's Regional Trails and Greenways map). Also adds the north-south trail on the east side of the Concept Plan Area.
Figure 11-9, Priority TSP Projects *Amend map to show the new Planning Area boundary. Add the portion of the Tonquin Trail within the planning area boundary.*	Adds projects described in Table 11-4.
Figure 11-10, Traffic Signal Plan *Amend map to show new Planning Area boundary. Delete the traffic signal at Tualatin-Sherwood Road/SW 120th Avenue. Add traffic signals at the intersections of SW 124th Avenue with Blake Street, the unnamed east-west collector and SW 115th Avenue and Tonquin Road.*	The SW 120th Avenue signal is deleted to improve signal spacing on T-S Road and because it serves a relatively small portion of the Concept Plan area. The two new signals provide access to SW 124th Avenue from the Concept Plan area. The signal at SW 115th Avenue and Tonquin Road facilitates through traffic.
Section 75.030 Freeways, Expressways and Arterials Defined. (g) 124th Avenue from Highway 99**W** south to ~~Tualatin-Sherwood Road~~ **Tonquin Road and/ or a future I-5/ Highway 99W Connector**;	Extends access control on SW 124th Avenue adjacent to the Concept Plan area.
Section 75.120 Existing Streets. Tualatin-Sherwood Road <u>Avery Street/112th to Cipole Road</u>: On the north side of Tualatin-Sherwood Road between 112th Avenue and Cipole Road the area will be served by the following streets or driveways: 1) An intersection with 115th Avenue approximately 1100 feet west of the intersection of Tualatin-Sherwood Road and 112th Avenue which will extend north and east to an intersection at 112th Avenue a minimum	The traffic analysis conducted for the Concept Plan found that the SW 120th Avenue intersection at Tualatin-Sherwood Road would operate at LOS F by the year 2025 and would need to be restricted to right-in, right-out movements. The Concept Plan's street network provides connections to SW 115th Avenue, which will provide a signalized intersection for making left-turn movements to and from Tualatin-Sherwood Road.

[3] Increased 2005 estimate by 10% to account for inflation. This methodology is consistent with estimates in the capital cost memo from CH2M Hill *Southwest Tualatin Concept Plan Update- Streets* June 25, 2010

TDC Language	Commentary
of 150 feet north of Tualatin-Sherwood Road. 2) An intersection approximately 1300 feet east of the intersection of Tualatin-Sherwood Road and 124th Avenue which will extend north and west to an intersection at 124th Avenue approximately 800 feet north of Tualatin-Sherwood Road. 3) 124th Avenue. 4) Cipole Road. The exact location and configuration of the streets or driveways shall be determined by the City Engineer. On the south side of Tualatin-Sherwood Road between Avery Street and 120th Avenue the area will be served by the following street system: 1) An intersection with 115th Avenue approximately 1100 feet west of Avery Street. 2) A street intersection at 120th Avenue**, which may be restricted to right-in, right-out movements in the future**. The exact location and configuration of the streets shall be determined by the City Engineer. No driveways will be constructed in this area and existing driveways will be removed. Select Sales (2S1 27B/800) shall have a cross access to 115th Avenue. 124th Avenue **<u>Tualatin-Sherwood Road to Tonqun Road and/or a future I-5/Highway 99W Connector</u>: Between Tualatin-Sherwood Road and Tonquin Road and/ or a future I-5/Highway 99W Connector, access to 124th Avenue shall be limited to street intersections at Blake Street and the unnamed east-west collector street. Depending on when this segment of 124th Avenue is constructed, and where and when the Connector is constructed, a (possibly interim) connection to Tonquin Road may also be provided.**	The two access points to SW 124th Avenue have been located to achieve, to the extent possible, the desired half-mile intersection spacing along arterial streets, while providing for the large industrial lot sizes mandated by Metro.

MEMORANDUM
CITY OF TUALATIN

TO: 2010 Update Southwest Tualatin Concept Plan

FROM: Aquilla Hurd-Ravich, Senior Planner *AHR*

DATE: August 10, 2010; Plan accepted October 11, 2010

SUBJECT: SOUTHWEST CONCEPT PLAN (ALTERNATIVE IV) RECOMMENDED CHANGES TO THE TUALATIN DEVELOPMENT CODE

The following list represents potential plan text and plan amendments that occur in the Tualatin Development Code (TDC). These amendments are preliminary in nature and could be refined upon more detailed exploration of the adoption process.

It is important to note that the City of Tualatin is following a two track process in the development of the Southwest Concept Plan. The first track is to develop a plan and representative map of the SWCP area which the City Council can accept by resolution. The second track is the adoption phase which will follow the typical City process to adopt plan text and plan map amendments.

Possible Amendments to the Tualatin Development Code (TDC)	**Commentary**
Plan Text Amendments could occur in the following chapters of the Tualatin Community Plan: • Chapter 1 *Administrative Provisions*- Definitions • Chapter 2 *Introduction*- Planning Area Description • Chapter 4 *Community Growth*- General Growth Objectives • Chapter 6 *Commercial Planning Districts*- Commercial Planning District Objectives • Chapter 7 *Manufacturing Planning Districts* – Manufacturing Planning District Objectives • Chapter 11 *Transportation*- Changes to this chapter are identified in the August 10, 2010 memorandum titled *Recommended Changes to the TSP 2010 Update*	The potential amendments identified here are examples of what could likely occur. Possible amendments are not limited to this preliminary discussion of potential areas of change. Specific changes to Chapter 7 will most likely occur to Section 7.040 Manufacturing Planning District Objectives where a Business Park District could be added.

Possible Amendments to the Tualatin Development Code (TDC)	**Commentary**
• Chapter 12 *Water Service*- Update to reflect the Southwest Concept Plan • Chapter 13 *Sewer Service*- Update to reflect the Southwest Concept Plan • Chapter 14 *Drainage Plan and Surface Water Management*- Update to reflect the Southwest Concept Plan.	
Potential Plan Map Amendments: • Chapter 9 *Plan Map*- Add a description of the Southwest Concept Plan Area Amend Maps: • 9-1 *Community Plan Map* • 9-2 *Neighborhood Planning Area* • 9-4 *Design Type Boundaries*	This is a preliminary list of map amendments and could change upon more detailed exploration. Amendments will be proposed to reflect the area of the Southwest Concept Plan.
Plan Text Amendments could occur in the following Planning District Standards: • Chapter 64 *Business Park* • Chapter 73 *Community Design Standards*- Design Standards, Landscaping, Off-Street Parking Lot Landscaping • Chapter 74 *Public Improvement Requirements*- Street Improvements	Chapter 64 could be a new chapter to describe the Business Park Planning District described in the Concept Plan. In Chapter 73 there are general categories of standards. Specific amendments will be proposed in each category that could apply to the Southwest Concept Plan. In Chapter 74, a potential amendment could occur in the Street Improvements section. In subsection (15) of 74.420 Tonquin Road could be added as a certain arterial street that development is not allowed to directly access. As the plan amendment process develops, it may be necessary to amend other portions of Chapter 74. All amendments described above are preliminary and could change upon more detailed exploration.

Comparision of Select Goals and Strategies from *Tualatin Tomorrow* to Elements of the 2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
	GHT = Growth, Housing and Towncenter			***Land Use and Development***	
1	GHT 1	Strong Community Identity. Maintain a strong community identity in Tualatin that integrates new residents by creatively responding to growth issues, making good choices and setting priorities, and wisely expanding its infrastructure.			
2	Action GHT 1.2	Community Identity Development Strategy. Develop and communicate a unique identity for the City of Tualatin. (For similar or related Actions, see also GHT 13.1)			
3	GHT 2	Dynamic Growth Strategy. Develop a dynamic growth strategy for Tualatin that addresses the interest of surrounding communities and promotes mutually beneficial cooperation on common interests such as Tualatin Police Department, fire, water, sewer and transit.			
4	Action GHT 2.1	Regional Government Forum. Develop venues and opportunities to discuss regional issues of mutual concern such as convening periodic forums of city representatives from communities surrounding Tualatin and the City of Tualatin.			
5	GHT 3	Coherent Development Plan. Develop and implement a clear and coordinated plan for the coherent development of all aspects of Tualatin, including housing, businesses, recreation, roads, etc., with flexibility to deal with changing circumstances over time.			

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	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
6	Action GHT 3.1	City Action Plan Implementation. Formalize city implementation of Tualatin Tomorrow Vision and Action Plan actions. Integrate Actions into ongoing City operations and planning through processes such as: • Prioritizing development planning based on analysis of actions provided by the Tualatin Tomorrow Vision and Action Plan • Revising the City of Tualatin's development plans for land-use mix to reflect implementation of the Vision and Action Plan.			
7	GHT 4	Development Choices. Build on Tualatin's strong community identity, priorities and values to drive development choices, directing new developments to provide local benefits – even if inviting to outside interests.			
8	Action GHT 4.1	Sustainable Development Practices. Review and update existing land use City development regulations to encourage and foster sustainable development practices.			
9	GHT 6	Proactive Intergovernmental Communications. Take steps to exert greater control over Tualatin's destiny, proactively communicating and representing the community's interests with external governments, including Metro and the State of Oregon.			
10	Action GHT 6.1	Community Issues Forums. Convene open public forums with City, regional, state and federal representatives, as needs arise, to discuss issues of major concern to the community such as: major roads projects, metro and local population density goals and neighborhood parks proposals.			

Comparision of Select Goals and Strategies from *Tualatin Tomorrow* to Elements of the 2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
11	GHT 7	City Expansion. Proactively expand the City of Tualatin as appropriate, basing its boundary on available lands in collaboration with other local governments and Metro.		Land Use and Development	Zoning: When the Concept Plan area was added to the UGB, Metro conditioned the land to be used for two types of industrial purposes: Regionally Significant Industrial Area and Industrial. *SWCP p9*
12	Action GHT 7.1	Balanced-Use Expansion. As part of Periodic Review and Metro Urban Growth Boundary expansions, update long-range planning forecasts and policy to proactively plan for Tualatin's future growth, including: • Determining available lands within the City's sphere of influence • Creating a development plan considering mixed-use, open space and development impacts.		Land Use and Development	Zoning: Create a new Business Park Designation that will allow more focused types of light industrial, high-tech and campus employment users, with strict limitations on commercial development. **Future Urban Expansion**: When the concept plan area is annexed into the City of Tualatin, it will form the southwestern city limits. The Concept Plan area is bound on a portion of the east side by the Tualatin City limits. The land west, south and partially on the eastern side of the Concept Plan area is within unincorporated Washington County. However, these areas will become urbanized in the future. Adjacent to the SWCP are is the 354-acre "Quarry Area" and on the southeast the 645-acre (approximate) "Basalt Creek" brought into the UGB by Metro in June 2004 for future industrial and residential development. *SWCP pp9-10*
13	Action GHT 7.2	Neighboring Development Coordination. Proactively collaborate and where appropriate coordinate City of Tualatin long-range planning issues and items of mutual interest with neighboring communities, including Clackamas and Washington Counties and surrounding local governments.		Land Use and Development	Zoning: The Business Park designation is intended to be a good transition zone between residential areas to the east and industrial areas. 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. *SWCP p9*

Comparision of Select Goals and Strategies from *Tualatin Tomorrow* to Elements of the 2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
14	GHT 8	City Boundary Management. Maintain Tualatin's unique identity from surrounding cities by managing the impacts of Urban Growth Boundary expansion and protecting the community's open space, natural areas and wetlands.		Land Use and Development	Developable Area: Approximately 448 acres within the Concept Plan area are considered to be gross buildable acres (net of existing/ planned public arterial and collector street right-of-way, wetlands, and 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%). *SWCP pp9-10*
15	Action GHT 8.1	Greenbelt for City Delineation. Consider development of a greenbelt within the Urban Growth Boundary expansion plans to provide delineation of city limits and preserve open space/natural areas.		Land Use and Development	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. *SWCP p9*
16	GHT 9	Funding for Infrastructure. Develop a strong system of infrastructure funding including System Development Charges (SDCs) to help cover the capital costs, maintenance and improvements of schools, roads and other infrastructure required as Tualatin grows and develops.		Infrastructure: Water, Sewer and Storm Drainage	Water System, Sewer System, Storm Drainage: The Concept Plan must be in the City of Tualatin prior to extending services. The Water and Sewer master plans include the Concept Plan Area. The Concept Plan is currently outside of the Clean Water Services service area and will either have be brought into their area or new development must meet CWS requirements. *SWCP pp16-17*
17	Action GHT 9.1	Infrastructure Funding Options. Explore and evaluate the feasibility of using innovative funding methods and sources for City infrastructure funding.			

Comparision of Select Goals and Strategies from
Tualatin Tomorrow **to Elements of the**
2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
18	GHT 10	Addressing Construction Impacts. Address the impacts of ongoing construction in the community through clear and frequent communication with contractors and the public, ensuring safety of all forms of transportation (vehicles, bicycles, pedestrians), and regulating the impact on community livability (hours, noise, etc.).			
19	Action GHT 10.1	Construction Impact Mitigation. Assess and, wherever feasible, develop venues to improve community information, development oversight and continuation of traffic flow such as: • Including more information on the City's website • Creating a brochure addressing blasting and the use of explosives • Attending Home Builders Association (HBA) and contractor meetings to review our rules and regulations; increase enforcement by creating a Code Enforcement position • Involving the Legal Department in more enforcement issues • Maintaining pedestrian and bicycle traffic during construction • Re-evaluating ability to work on weekends • Requiring contractors to address neighborhood impacts • Developing information sheets for contractors with rules and requirements • Considering restricted hours of construction on main road(s) (i.e., holidays, special events), or night work only • Maintaining all through lanes on certain roads.			

Comparision of Select Goals and Strategies from
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2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
20	GHT 17	Commercial Traffic Diversion. Utilize a variety of means to minimize the impact of commercial through-traffic in Tualatin, diverting a significant portion of this traffic out of the Tualatin Town Center and neighborhoods.			
21	Action GHT 17.1	Freight Transportation Alternatives. Develop incentives to reduce large truck travel, especially at peak hours, on streets surrounding Town Center and neighborhood roads. Incentives could include: • Development of a toll for peak-hour road usage • Establishment of defined truck routes.			
22	Action GHT 17.2	124th Avenue Development. Develop an alternative north-south connection by extending 124th Avenue south to Tonquin Road upon adoption and implementation of the Southwest Tualatin Concept Plan (SWCP) and based on available funding.		Transportation	Primary access to the Concept Plant 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 would follow the City's major arterial street section as defined in the Tualatin Development Code. *SWCP p2*
23	GHT 18	Urban Design Standards. Develop enhanced, flexible standards to promote ongoing community attractiveness in Tualatin and a cohesive urban design.			
24	GHT 21	Beautiful Streetscapes. Ensure beautiful streetscapes throughout Tualatin, promoting the ongoing maintenance of street easements through a variety of means.			

Comparision of Select Goals and Strategies from *Tualatin Tomorrow* to Elements of the 2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
25	Action GHT 21.1	Street Trees Program and Standards. Expand and strengthen the City of Tualatin Street Trees program including: • Researching current best practice streetscape standards • Applying improved standards, unique and recognizable, to City entrances and Town Center.			
26	GHT 22	Community Gateways. Develop distinct gateways at key entry points into Tualatin, promoting the community's identity and distinguishing it from surrounding cities. Utilize structures, art, signage and landscaping to enhance these gateways.			
27	Action GHT 22.2	Identity Support – City Entrances. Create City entryways at strategic locations that reflect the community's identity.			
28	GHT 23	A Quiet Community. Strengthen and enhance City codes and regulations regarding noise, reducing excessive or unacceptable noises and maintaining the community's status as a peaceful, quiet community.			
29	Action GHT 23.1	Noise Abatement. Continue support of noise ordinances in the City of Tualatin. Evaluate current ordinance and update if necessary.			
30	GHT 24	Planning for Economic Growth. Proactively plan for economic growth in Tualatin, promoting a sustainable local economy and a balanced response to external economic influences.			
31	Action GHT 24.1	Developer Outreach. Develop marketing strategies and materials to attract environmentally concerned, sustainable builders and businesses. Coordinate incentives to promote best practices.			

Comparision of Select Goals and Strategies from *Tualatin Tomorrow* to Elements of the 2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
32	Action GHT 24.2	Targeted Industry Outreach. Target specific niche industries, such as animation and high technology companies, to locate in Tualatin.			
33	GHT 25	Healthy Business Climate. Enhance the Tualatin community by attracting a diverse, stable mix of business and clean industries.		Land Use and Development	Land use would be a mix of light industrial and high-tech uses in a corporate campus setting. 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. *SWCP p2*
34	Action GHT 25.1	City – Business Strategic Benefits. With input from existing businesses, establish a desired-business profile of targeted businesses and industry sectors the City would like to attract. The profile includes: • Benefits such a business will bring to Tualatin • Impacts such a business will have on the community • Benefits Tualatin will provide to such a business • Develop an outreach strategy to businesses that provide a good costs/benefits balance.			
35	GHT 26	Proactive Business Recruitment. Attract and retain businesses that are good corporate citizens and involved in the community, providing family-wage jobs and use green practices.			

Comparision of Select Goals and Strategies from
***Tualatin Tomorrow* to Elements of the**
2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
36	Action GHT 26.1	Business Engagement. Develop and promote opportunities for existing businesses to become more involved in and supportive of community programs, events and activities. For example: • Maintain/enhance a Tualatin business leaders' roundtable, with City representation, to discuss issues of mutual concern • Convene a business forum to identify, and develop programs to attract, businesses that reflect the values of Tualatin. Provide venues for public involvement • Revive annual (or semi-annual) Chamber of Commerce/City Council dinner program and extend attendance to other business clubs/organizations.			
37	GHT 27	Living-Wage Jobs. Promote the creation of jobs in Tualatin that pay living wages, allowing more people who work in Tualatin to live in the city.			
38	Action GHT 27.1	Living-wage Job Enhancement. Research best practices in other cities to attract businesses offering living-wage jobs. Apply lessons learned to targeted-business outreach and marketing efforts to increase availability of living-wage (including healthcare benefits) opportunities.			
	PRN=Parks, Recreation and Natural Areas			***Natural Resources***	
1	PRN 1	Clean Waterways. Promote clean waterways in Tualatin suitable for swimming, fishing and animal habitat. Work with upstream communities to influence the protection of waterways and enforcement of clean water laws.			

Comparision of Select Goals and Strategies from *Tualatin Tomorrow* to Elements of the 2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
2	Action PRN 1.1	Location and Resource Assessment. Assess and support identification of those lands and other resources in Tualatin that require environmental regulation oversight.		Land Use and Development	The Concept Plan 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. The local resources in the Natural Resources Map would be protected, where appropriate and enhanced as a condition for new development. *SWCP p10*
3	Action PRN 1.2	Regional Waterways Protection. Work with other communities to coordinate enforcement efforts for protection and enhancement of local waterways in Tualatin.			
4	PRN 2	Land Use Regulations and Management. Work with the City of Tualatin's land use regulations and management to promote improved water quality in the Tualatin River system.		Natural and Cultural Resources	Natural resources in the Concept Plan area have been highly modified by historical and current land use. Development Issues- Protection of waters and wetlands will constrain many land uses because regulated areas are scattered across the plan area. *SWCP p17-18*
5	Action PRN 2.1	Stormwater System Inventory. Inventory and assess condition of existing stormwater systems in Tualatin.			
6	Action PRN 2.2	Environmentally Sound Development Practices. Research and promote best practices to design, develop and manage new construction in a more environmentally sound manner.			

Comparision of Select Goals and Strategies from
***Tualatin Tomorrow* to Elements of the**
2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
7	Action PRN 2.3	Water Quality Retrofitting. Develop or expand existing land use regulations to require retrofitting of commercial/industrial and community water systems to improve water quality. Retrofitting could include actions such as: • Requiring a larger percentage of native vegetation versus lawns • Replacing impervious surfaces, for example using pavers • Creating bioswales.			
	TTC= Traffic, Transportation and Connectivity			***Transportation***	
1	TTC 2	Improved Access and Connections. Improve pedestrian and bicycle routes and selective roadway connections in Tualatin in order to link divided portions of the city and improve overall access and movement in the community.			
2	TTC 5	Improved Traffic Management. Develop and institute an improved traffic management system in Tualatin to optimize traffic signals and mass transit for better traffic flow at consistent speeds throughout the city.			

Comparision of Select Goals and Strategies from *Tualatin Tomorrow* to Elements of the 2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow			Southwest Concept Plan	
	Strategy	Description		Element	Description
3	Action TTC 5.1	Heavy-freight Management. Evaluate innovative ways to address the impacts of heavy truck/freight distribution routes within Tualatin. Consider remedial alternatives such as: • Designating and improving truck routes • Encouraging use of roadways during non-peak hours • Providing incentives to use alternate routes • Providing incentives to shift business hours for freight delivery/receiving • Using street designs such as roundabouts and landscaping features • Considering future resurgence of railroad mode as a freight mover		Land Use and Development	The Portland & Western Railroad right-of-way (owned by ODOT) traverses in a north-south alignment along the eastern boundary of the Southwest Tualatin Concept Plan area. ODOT's Rail Division has indicated that no new public at-grade street or pedestrian crossings would be allowed. Any new crossings would need to be either below or above grade. *SWCP p10*
4	TTC 6	Improved Traffic Flow. Improve the flow of traffic in Tualatin through special routes and lanes, roadway improvements and other measures, relieving traffic congestion and promoting the flow of local residential traffic.		Transportation	**Assumed projects in the regional 2030 model:** 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 or the southern arterial of the I-5 to 99W Connector; 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; Extending Herman Road as a 3-lane arterial from Cipole Road to Highway 99W. *SWCP p12*

Comparision of Select Goals and Strategies from *Tualatin Tomorrow* to Elements of the 2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
5	Action TTC 6.1	Traffic Flow Management. Evaluate Tualatin traffic flow management options such as: • Promoting usage of additional Protected Permissive Phasing (left turn on flashing yellow light) • Establishing regular frequency to evaluate and re-time lights along Tualatin-Sherwood Road • Encouraging staggered dismissal times for public and private schools • Offering incentives for van/car pooling • Exploring feasibility for making a one-way street grid • Exploring one-way loop road • Exploring expansion of Tualatin-Sherwood Road to two lanes in each direction.			The 2010 traffic analysis update studied the following intersections to ensure they will meet the City's standards of Level of Service D or better for signalized intersections: SW 115th Avenue/ Tualatin-Sherwood Road; SW 115th Ave/ Blake Street; SW 115th Ave/ East-West Collector; SW 115th Ave/ Tonquin Road; SW 124th Avenue/ Tualatin-Sherwood Road; SW 124th Ave/ Blake Street; SW 124th Ave/ East-West Collector; SW 124th Ave/ Tonquin Road; and a future SW 124th Ave/ I-5 to 99W Connector. *SWCP p12*
6	TTC 8	Minimal Construction Delays. Work with key government agencies, businesses and citizens to coordinate transportation-related construction, minimizing traffic delays and other community impacts.			
7	TTC 9	I-5/99W Connector. Partner with federal, state, regional and local governments to complete a planned Interstate 5-Highway 99 West connector, separating long-haul and regional commercial-industrial and commuter traffic from local traffic on Tualatin-Sherwood Road.		Transportation	**Assumed regional transportation model in year 2030:** 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. *SWCP p12*

Comparision of Select Goals and Strategies from
***Tualatin Tomorrow* to Elements of the**
2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
8	Action TTC 9.1	Regional Goal Setting. Develop a regional strategy to address the I-5/99W connector to include components such as: • Convening a regional forum to reach consensus on long-term goals. Forum to include the cities of Tualatin, Wilsonville, Sherwood, Tigard and others) • Addressing Metro, County, State and Federal regulatory agencies with a unified proposal and approach • Providing public involvement opportunities throughout the strategy development process • Providing periodic progress reports • Discussing possible alternative I-5 access options including construction of an on/off ramp at SW Norwood.			
9	TTC 10	Local Access to Freeways. Improve local access to freeways in the community through traffic management, roadway improvements and new routes.			
10	TTC 11	Road Maintenance. Develop proactive programs and strategies for the ongoing improvement and maintenance of the City of Tualatin's road system.			
11	TTC 12	Roadside Landscaping. Develop new programs and activities to improve and enhance City standards for and involvement in roadside landscaping.			
12	Action TTC 12.1	Roadside Landscape. Support and expand roadside landscaping. Update to include unique and innovatively designed landscaping requirements with strong aesthetic identify for road-sides adjacent to new developments and re-development projects.			

Comparision of Select Goals and Strategies from
***Tualatin Tomorrow* to Elements of the**
2010 Southwest Concept Plan Alternative IV

	Tualatin Tomorrow		Southwest Concept Plan		
	Strategy	Description		Element	Description
13	TTC 13	Regional Transit Linkage. Strengthen Tualatin's linkages with the regional transit system (bus, rail, etc.), improving transit service and connections within the city and to other parts of the region for the local population at all times of day.			
14	TTC 14	Pedestrian Routes and Crossings. Establish a network of safe, well-designed pedestrian routes and crossings in Tualatin, separating foot traffic from bicycle and vehicular traffic throughout the city.			
15	TTC 15	Walkable Commercial Areas. Promote greater walkability and pedestrian-friendly features in all of Tualatin's commercial areas.			

SOUTHWEST TUALATIN CONCEPT PLAN

Prepared for

City of Tualatin OREGON

In Conjunction With

Oregon Transportation and Growth Management Program

Prepared by

CH2M Hill
Kittelson and Associates
Otak, Inc.

Draft June 2005

CONTENTS

Tables

Figures

Appendices (Located in Volume II)

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The Southwest Tualatin Concept Plan is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by the federal Transportation Equity Act for the 21st Century (TEA-21), local government, and the State of Oregon funds. The contents of this document do not necessarily reflect views or policies of the State of Oregon.

1 INTRODUCTION

The *Southwest Tualatin Concept Plan* (Concept Plan) is a guide for the industrial development of a 431-acre area currently outside the southwestern corner of the City of Tualatin (City). The Concept Plan 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. 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 Southwest Tualatin Concept Plan area is located southwest of Tualatin (Figure 1). The project area is comprised of land brought into the UGB at different times. 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. This portion is designated as Regionally Significant Industrial Area (RSIA) by Metro. The RSIAs 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. The entire area is bounded on the east and north by the City of Tualatin and on the south and west by unincorporated Washington County. The project area touches SW 120th Avenue to the north and SW Tonquin Road and SW Waldo Way to the south. Bonneville Power Administration (BPA) and Portland General Electric (PGE) power lines traverse the area. The Portland and Western Railroad runs on the east side of the project area, providing the potential for future direct rail service.

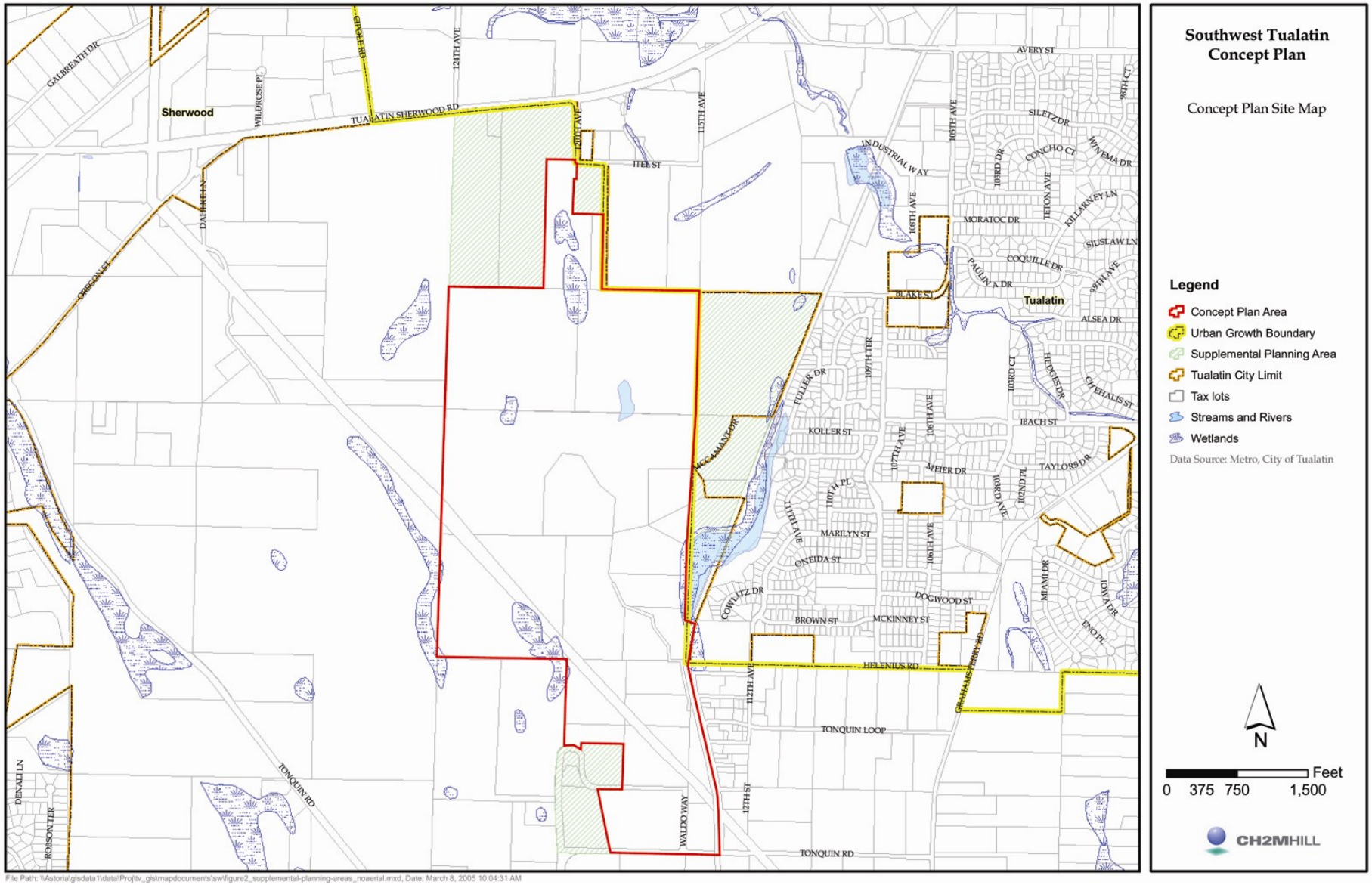
Plan Summary

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

TABLE 1
Concept Plan Summary

Element	Description
Land Use and Development	Land use would 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 would follow the City's major arterial street section as defined in the Tualatin Development Code (Eb&t). SW 115th and the unnamed east-west street between SW 124th and SW 115th will be collectors (Cb&t). The extension of SW Blake Street between SW 115th and SW 124th will be a major collector (Cb&t) and between SW 115th and SW 108th will be a minor collector (Cb). SW 117th Avenue, SW 122nd Avenue, and SW Itel Street would follow the Local Commercial Industrial (B-CI) street section. All streets would be illuminated and landscaped.
Water	A planned 16-inch pipe is identified in the Tualatin Water Master Plan to provide a looped water supply to the Concept Plan area.
Sewer	The Tualatin Sanitary Sewer Master Plan includes a new 24-inch trunk line constructed along Tualatin-Sherwood Road to SW Avery Street. The plan also includes the replacement of the Bluff/Cipole lateral and trunk lines with an 18-inch to 36-inch pipe near the Tualatin-Sherwood Road intersection at Avery Street. New pump stations may be required to serve the south portion of the Concept Plan area.
Storm Drainage	North Half of Concept Plan Area: A new on-site storm drainage system would be created with detention ponds at low points within the area. A portion of the site would also drain north to the collection system along Tualatin-Sherwood Road. South Half of Concept Plan Area: Drainage flows south toward Coffee Lake Creek/Seeley Ditch, which flows to the Willamette River, and thus will involve coordination with downstream areas.
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



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2 PLANNING PROCESS

What is a Concept Plan?

A concept plan guides how land newly 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 Concept Plan 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 this Concept Plan[1]. The requirements for a concept plan are described in more detail in the Metro handbook titled *Livable 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*
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 this Concept Plan is the next step toward future urbanization of this land and annexation into the City.

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 29-member TAC that met seven times during the planning process. 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

[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.

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), Genessee and Wyoming (Portland and Western Railroad), Tigard Sand and Gravel, and the Tonquin Industrial Group. Documentation of the TAC meetings is provided in Appendix A.

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 two public open houses. The public open houses were conducted on March 9, 2005, and June 14, 2005, to allow public review and subsequent revision of the Draft Concept Plan. Documentation of the public open houses is provided in Appendix B. In addition, a Neighborhood 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 1700 property owners.

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.

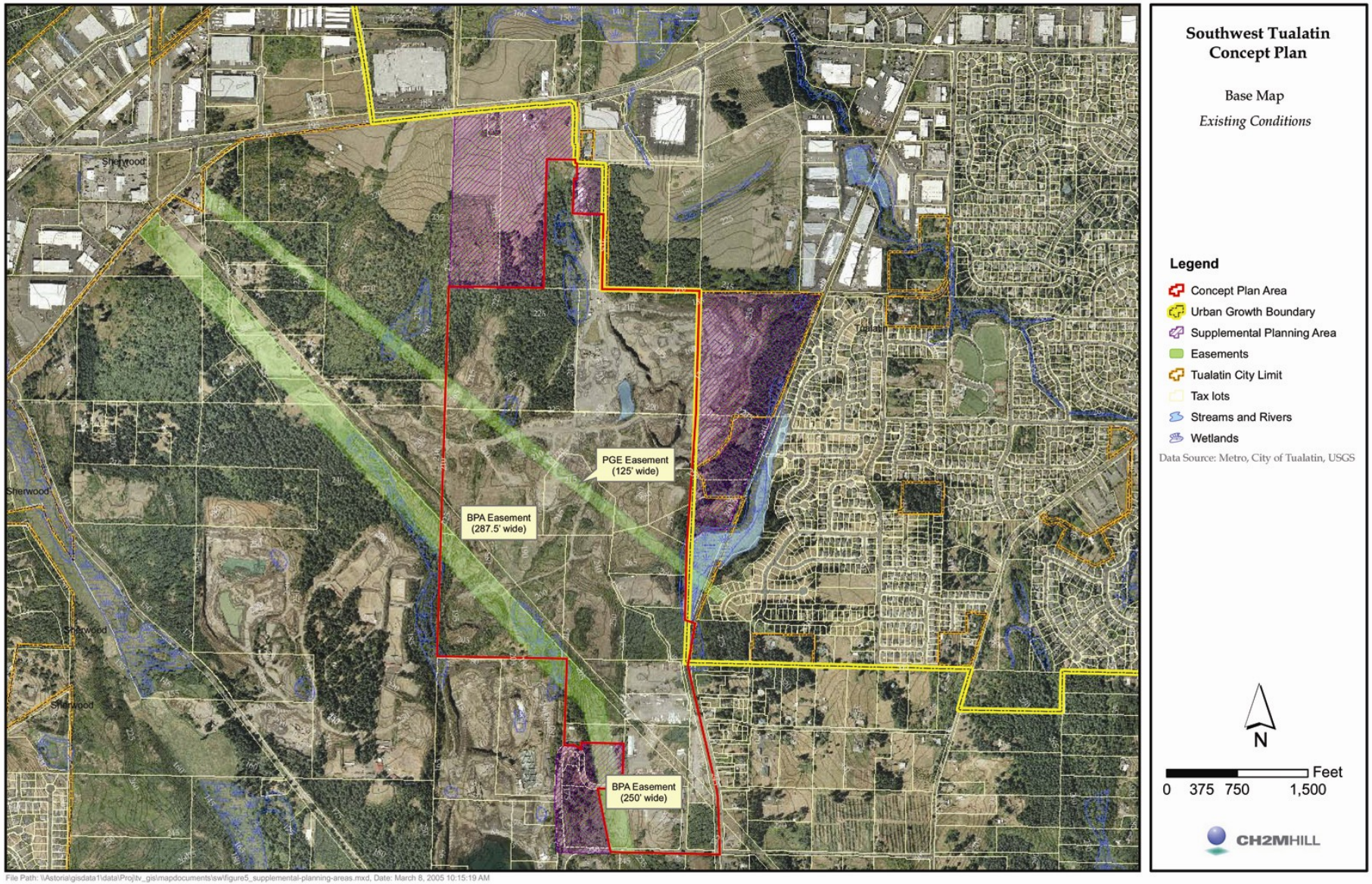
REVIEW OF EXISTING CONDITIONS

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, including a traffic impact assessment, 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 Concept Plan 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 / 99W connector.
E.	Involve broader community in 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 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

In adding the Concept Plan area to the UGB, Metro conditioned the land to be used for two types of industrial purposes: Regionally Significant Industrial Area (RSIA) and Industrial. When land in the Concept Plan area is annexed to the City of Tualatin upon redevelopment, the land use district shall be Business Park (Figure 1). 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 residential areas to the east and industrial areas. 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 on Table 3.

TABLE 3
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: none 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 431 acres in the Concept Plan area, the actual developable area is reduced by the following factors or development requirements:

- Approximately 352 acres within the Concept Plan area are considered to be gross buildable acres (net of existing/planned public arterial and collector street right-of-way, wetlands, and floodways).

- 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).

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

The Portland and Western Railroad right-of-way (owned by ODOT) traverses in a north-south alignment along the eastern boundary of the Southwest Tualatin Concept Plan area. ODOT's Rail Division has indicated that no new public at-grade street or pedestrian crossings would be allowed. Any new crossings would need to be either below or above grade.

FUTURE URBAN EXPANSION

When the Concept Plan area is annexed into the City of Tualatin, it will form the southwestern city limits. The Concept Plan area is surrounded on two sides by land that is currently inside the City of Tualatin city limits. The land to the west and south of the Concept Plan area is currently within unincorporated Washington County. However, this is an area that will become urbanized in the future. Adjacent to the SW Tualatin Concept Plan area on the northwest is the 354-acre "Quarry Area," and on the southeast the 916 acre (approximate) "Tualatin Area" brought into the UGB by Metro in June 2004 for future industrial and residential development.

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 Urban Growth Boundary. This, together with pre-2002 UGB land, makes up the 431-acre Southwest Tualatin Concept Plan area. This 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), agricultural activities, and a small amount of rural industrial and manufacturing uses at the south end of the area. The Southwest Tualatin Concept Plan is identifying land use, transportation, and urban services needs for the Concept Plan area, once mining operations cease and the agricultural, rural industrial, and other non-industrial sites redevelop. The draft preferred conceptual development plan (Alternative 3) is illustrated in Figure 3.

PLANNING PROCESS

The end result of the Concept Plan will be amendments to Tualatin's Development Code and Transportation Plan that will allow the future redevelopment of the Concept Plan area from its current rural industrial agricultural 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). In total, the area could have 5,500 to 5,700 jobs by the year 2025. Approximately 1,800 jobs are already assumed in city, county, and regional transportation plans, meaning

that the traffic impacts of 3,700 to 3,900 additional jobs needed to be addressed.

The transportation system in the year 2025 will not be the same as it is today. City, county, and/or regional transportation plans call for the following projects to be constructed by 2025, all of which provide extra roadway capacity that does not exist today:

- A new roadway connecting I-5 and Highway 99W. Although a new freeway connecting south of Sherwood, with an interchange at SW 124th Avenue, produces the best traffic operations, that alignment requires state approvals that have not yet been obtained. Instead, the Concept Plan work assumes a four-lane arterial along the Urban Growth Boundary that joins Tualatin-Sherwood Road northeast of Sherwood.
- Widening Tualatin-Sherwood Road to 5 lanes from Tualatin to Sherwood.
- A new bridge across the Tualatin River (either an extension of Hall Boulevard or a connection between Lower Boones Ferry Road and Tualatin Road).

The Southwest Tualatin Concept Plan's traffic work is also being coordinated with other planning work in the area, including the Northwest Tualatin Concept Plan (recently completed) and the Tualatin Town Center Plan.

SUMMARY OF RESULTS

The traffic analysis (see Appendix D) found there to be little difference in the overall number of trips generated by the three alternatives. Thus, there was little difference in the traffic operations results between the three alternatives.

The traffic analysis for the Concept Plan area studied the area's immediate vicinity, three key intersections in the Tualatin Town Center, and the North Wilsonville interchange. The traffic analysis found that the following intersections will require attention:

- Nyberg Road/I-5 Northbound Ramps would operate over capacity in the 2025 a.m. peak hour, before the Concept Plan area is redeveloped. Converting the westbound right-turn lane to a free-flowing movement (similar to the North Wilsonville interchange) would provide acceptable operations.

- Nyberg Road/I-5 Southbound Ramps would operate at 98 percent of its capacity in the 2025 a.m. peak hour, before the Concept Plan area is redeveloped. Afterwards, it would operate at 103 to 106 percent of its capacity. Restriping the existing Southbound off-ramp lanes to provide left, left-through-right, and two right-turn lanes (e.g., providing a triple right turn) would allow the intersection to operate at 84 percent of its capacity. Modifications to the interchange would require ODOT approval.

- Tualatin-Sherwood Road/Boones Ferry Road would operate at level of service (LOS) F and over capacity in 2025, before redevelopment of the Concept Plan area. All three alternatives would add more traffic through the intersection. The traffic work for the Tualatin Town Center Plan, which accounted for future traffic to and from the Concept Plan area, found that a combination of projects would be needed to provide LOS D operations in the year 2025. These include prohibiting left turns from Boones Ferry Road onto Tualatin-Sherwood Road and providing new local street connections that provide alternatives to making short trips on Tualatin-Sherwood Road.

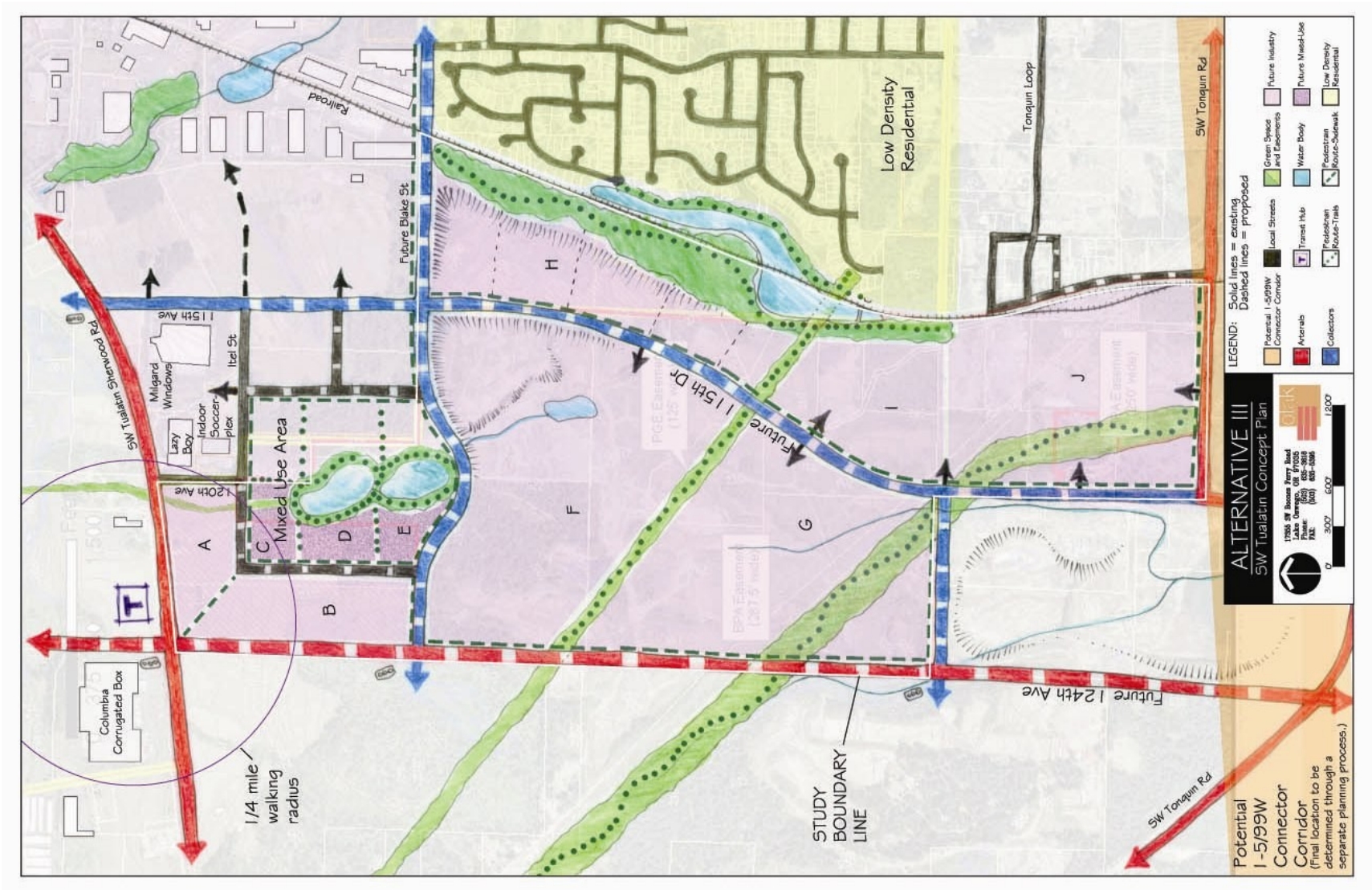
- Tualatin-Sherwood Road/SW 120th Avenue would need to be restricted to right-in, right-out movements upon redevelopment of the Concept Plan area, as left-turning movements would experience lengthy delays.

- Tualatin-Sherwood Road/SW 124th Avenue would operate close to its capacity, if single left-turn lanes were used. A second

northbound left-turn lane would result in operations at 89 percent of the intersection's capacity. Alternatively, developing east-west collector streets between SW 124th Avenue and City of Sherwood would avoid the need to build a second left-turn lane.

All other study intersections would operate acceptably without mitigation in the year 2025.

FIGURE 3. PREFERRED CONCEPT PLAN



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 C, Table ES-1 and Figure ES-1. Figure 4 illustrates the extension of the City's water system to and within the Concept Plan 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.

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 did include the Concept Plan 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/URA 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 trunkline pipe diameters.

For the purposes of allocating offsite infrastructure improvements to the concept plan 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.

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 generally toward the north and toward the 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. Drainage to the south flows toward Coffee Lake Creek/Seely Ditch, 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 that flows north will need to meet Clean Water Services (CWS) design criteria for storm water quality and quantity control. For the portion that flows to the south, design standards necessary for development will need to be

coordinated with those design standards applicable downstream and outside of the SWCP area. 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.

OTHER UTILITIES

The only known utility that crosses the study area is electrical, with the Bonneville Power Administration (BPA) and Portland General electric (PGE) transmission towers crossing the study area. PGE provides electrical service in the Concept Plan area and has the capacity to serve the needs of the study area. PGE operates a 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 Concept Plan area on BPA's right-of-way. This is a regional distribution line that is not used to provide electrical service to the site.

Conversations with BPA staff have indicated that in the future the site 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 study 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 study area. These private utilities shall be funded and constructed privately at development occurs.

Natural and Cultural Resources

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 mensiezii*), 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).

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.

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.

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 at the north end, and wetlands associated with Coffee Lake Creek.

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

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 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. Further analysis of the natural resources in this area will be evaluated by the Tualatin Natural Resource Coordinating Committee.

FIGURE 4. WATER AND WASTEWATER INFRASTRUCTURE

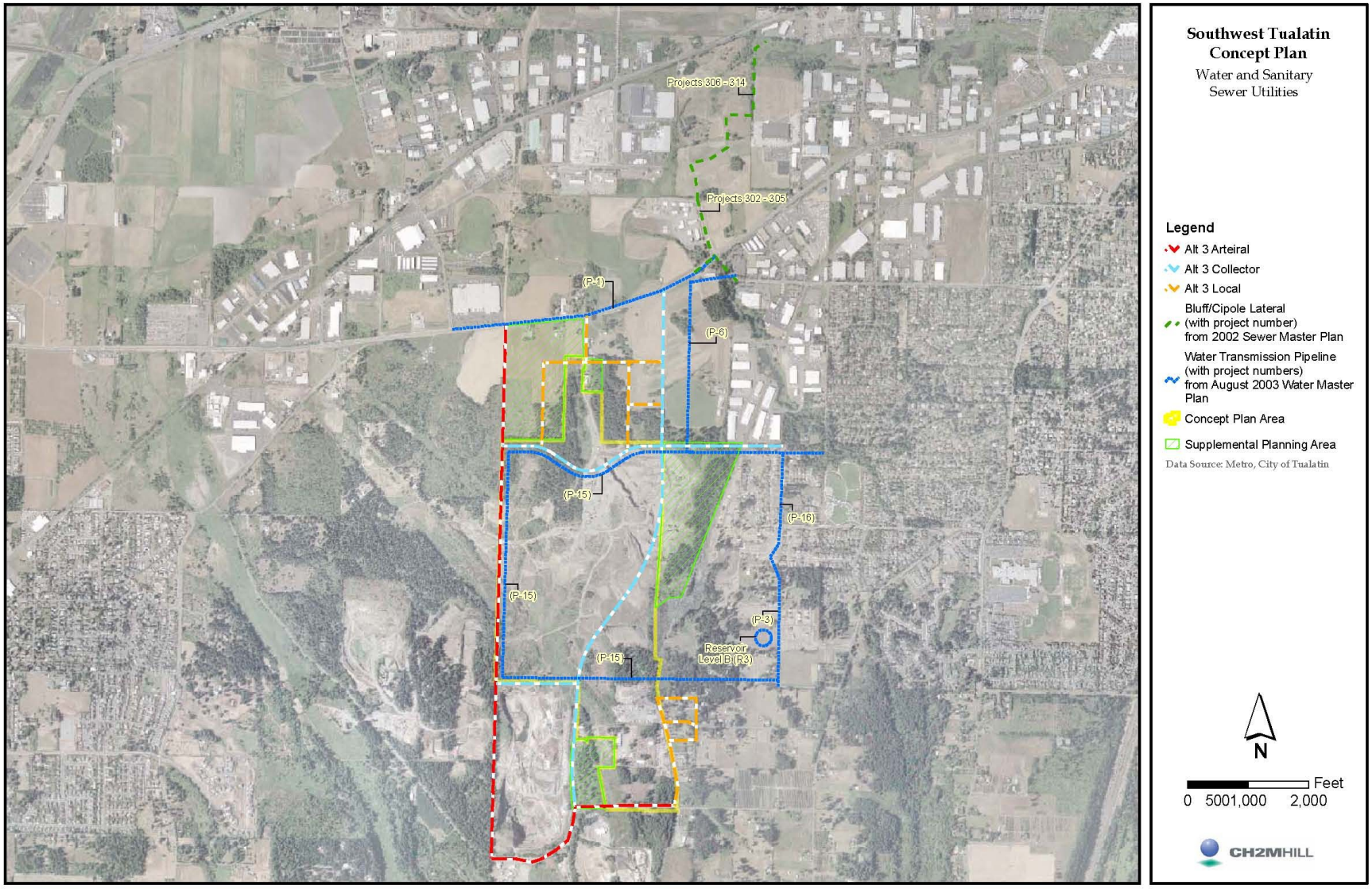
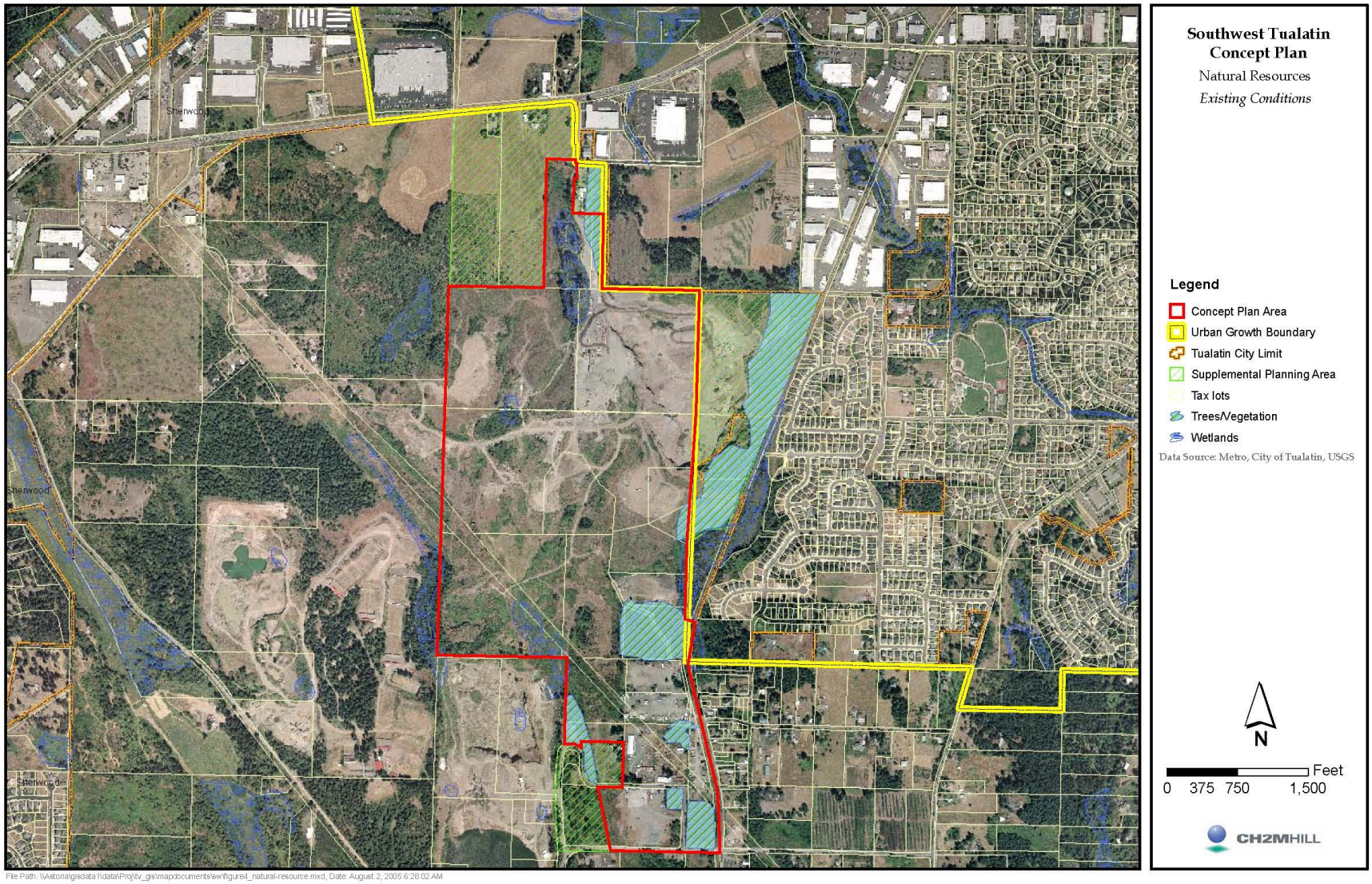


FIGURE 5. NATURAL RESOURCES



4 IMPLEMENTATION

This section addresses five key considerations for Concept Plan 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 local and Metro Regional Transportation Improvement Plan funding sources. 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 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 buildout of the Southwest Tualatin Concept Plan area (see Appendix E.) 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.

The preliminary cost estimates assume typical design sections for collector and arterial street improvements, and do not include any other cost for right of way acquisition, permitting or geotechnical soils work. Other costs may include special environmental mitigation, wetland enhancements and business or residential relocations.

The collector roads are assumed to be two lanes with bike lanes, sidewalks, underground utilities, and street illumination. The arterial road (SW 124th Avenue) is assumed to be four lanes with bike lanes, sidewalks, landscaped median, and street illumination, and a center

turn lane. We have assumed that the pathways would be comprised of soft trails (pervious surface) within the power line easements, and concrete trails around the ponds.

TABLE 4
Estimated Capital Costs

System	Cost
Arterial (124th Avenue)	$20,380,000
Collectors	$12,780,000
Bridge Structures	$5,000,000
Intersection/Signals	$1,687,000
Pedestrian/Trails	$993,000
Water	$8,200,000
Sanitary Sewer	$8,600,000
Regulatory Mitigation	$500,000
Total Capital Costs	**$58,140,000**

Source: Otak, Inc. and CH2M HILL, based on Conceptual Development Alternative 3.

All costs stated in constant year 2005 dollars, at complete build out.

Major on- and off-site public infrastructure items including roads, trails, water, sewer, and storm water facilities are estimated to cost approximately $58.1 million. Existing transportation SDC revenues are only anticipated to generate about $4.7 million in revenue and existing sewer/water/storm drain fees are anticipated to generate about $3.5 million in fee revenue.

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 pubic-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 Southwest Tualatin Concept Plan area. The direct fiscal costs and benefits have been forecasted based on typical growth assumptions for light industrial developments (see Appendix F). If we assume 75 percent of the site is developed by year 2025, the general conclusions that can be reached by this analysis include:

- Total assessed value of development would increase by at least $300 million over current assessed values;

- If annexed by the City of Tualatin, total annual property tax revenues and fees would likely amount to $993,000 of added annual revenue to the City;
- Annual governmental service costs for police, fire and planning would amount to about $82,500 per year;
- The annual cost of maintaining and operating the road and trail system is expected to cost the city over $170,000 per year;
- There would also be added maintenance costs for the sewer and water systems of approximately $360,000 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 the more than 3,700 construction jobs and 5,760 permanent jobs. The direct and indirect payroll that supports these jobs is expected to yield over $320 million in construction expenditures, $248 million in annual direct wages, and $372 million in annual indirect spending.
- The added permanent income of $248 million is expected to support over $11 million in additional state income tax revenues, and over $2 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 12)

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

A summary of key transportation improvements includes:

- SW 124th Avenue, Tualatin-Sherwood Road to southern terminus of SWCP project area or to I-5/99W Connector
- SW 115th Avenue, Tualatin-Sherwood Road to Tonquin Road
- Blake Street, SW 108th Avenue to SW 124th Avenue
- East-West Connector, SW 115th Avenue to 124th Avenue
- Itel Street and SW 122nd, between SW 112th and Blake Street
- SW 112th and New Street, between Blake Street and SW 115th Avenue
- SW 117th Avenue Connector, between Itel Street and Blake Street
- East-West Street, between SW 117th and SW 112th Avenue

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

OTHER

To codify the Concept Plan, 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.

Southwest Tualatin Concept Planning
Technical Advisory Committee #1
October 11, 2004
11:00AM – 1:00PM
Council Chambers – 18884 SW Martinazzi Avenue
Tualatin

A G E N D A

1. Introductions

2. Public Comment

3. Overview
   a. Project Scope of Work
   b. TAC Responsibilities

4. Project Area

5. Goals Discussion

6. Issues Discussion

7. Follow-up Public Comment

8. Schedule next TAC meeting –Early January

1. Introductions

For this, we'd go around the table and introduce ourselves, our agency affiliation and why we think we are at this table. SH lead.

2. Public Comment

For this, if there are folks observing, they would have an opportunity to share thoughts with the TAC. SH lead.

3. Overview
a. Project Scope of Work
b. TAC Responsibilities

In this item, I'll discuss the project scope of work and some history of the project. I'll tentatively touch on the schedule for the project, assuming a 6/30/05 end date. I'll also discuss the TAC responsibilities. This will be very similar to the NW TAC meeting format. SH lead.

4. Project Area

This is an unusual agenda item. While the area added in 2002 will be highlighted on maps, there are surrounding areas that the TAC may choose to include in its planning. For example – and most likely – Tigard Sand & Gravel owns lands to the east, which are already in the UGB but not part of the City. They have an odd history (they were in the city at some point, then TS&G decided to do aggregate extraction, which is not allowed in the City, so they deannexed). The concept plan will likely include this area.

Additionally, Metro added a bunch of land around the concept plan area in 2004 (not yet acknowledged by the state). Parts of these areas are critical for potential infrastructure planning for this area, and may come in to play later.

I'm happy to lead this part of the agenda. Your call.

5. Goals Discussion

A set of draft goals will be distributed at the TAC meeting for discussion. The TAC may choose to add more or rephrase some. This handout is intended to be reshaped some by the TAC. Project manager lead (Dave)

6. Issues Discussion

I liked Tim's format for this for the NW Tualatin TAC #1 meeting and would like to do the same. I can make a flip chart sheet like he created to help shape this discussion. Dave to lead.

7. Follow-up Public Comment

I thought it would be good to give the general public a chance to state anything else on their mind at the end of the meeting as well. This item will allow this to occur.

8. Schedule next TAC meeting –Early January

Southwest Tualatin Concept Planning
Technical Advisory Committee #1 - Minutes
October 11, 2004

In attendance: Stacy Hopkins – Tualatin; Dave Simmons – CH2M Hill; Andrew Johnson – ODOT; Weimin Tung – Portland General Electric (PGE); Jerry Renfro – Tualatin Valley Fire and Rescue (TVF&R); Roger Metcalf – Tigard Sand and Gravel (TS&G); Mark Brown – Tonquin Industrial Group (TIG); Brad King – Tualatin Police; Kaaren Hofmann – Tualatin Engineering; Dan Boss, Tualatin Operations; Craig Dye – Clean Water Services (CWS); Kevin Cronin – Sherwood; Chris Neamtzu – Wilsonville; Steve L. Kelley – Washington County

Also attending: Carl Johnson – TIG; Eric Johnson – TIG; Manny Angulo – PGE; Doug Rux – Tualatin Community Development; Nick Storie – TIG

Stacy welcomed everyone and provided orientation information on the project. This included: the size of the area; how it was brought into the UGB; and how the concept planning process was created and funded.

Everyone **introduced** themselves. During the introductions, people also stated reasons why they were there and involved in the process. Weimin Tung indicated that Manny Angulo will be attending in the future for PGE. The TIG representative will tend to rotate.

The meeting was open for **public comments**. Mr. Carl Johnson expressed satisfaction that this process was occurring.

Stacy described the various tasks of the **project scope of work**, then described the **role of the TAC** in the overall process. Generally, the TAC shall share its expertise with the project management team both in the formulation and the review of planning documents. Stacy also talked about the **project schedule**, highlighting future TAC meetings, noting the increasing frequency of meetings planned in the springtime.

Stacy described the **project study area**, referencing a couple maps that show surrounding cities, nearby lands that Metro added to the urban growth boundary in 2004, transportation networks and landscape features. She highlighted the area to the east of the concept planning area, indicating it was also owned by TS&G and that it could potentially be considered as part of the concept planning area. Roger Metcalf had no immediate concerns about this, but would want to make sure that regulations placed on the concept planning area by Metro or by Concept Plan itself would not also cover this additional area. Doug Rux also indicated that the lands immediately north of the study area may end up under consideration as the concept planning continues. Mark Brown raised questions about how this area would interface with adjacent residential land uses, both within the city and the county.

Dave introduced the draft **goals** written by the project management team and asked for any additions or changes. Two new goals are proposed – one related to water resources and one related to identifying the needed funding for actually implementing the concept plan.

TAC members raised other questions:

- Kevin Cronin asked how Tualatin currently received sewer services – Kaaren and Craig responded that the City maintains the sewer system on pipes up to 21" in diameter and CWS maintains the lines larger than 21" in diameter. City sewage is treated at the CWS Durham Treatment Plant.
- There was discussion on whether this area should connect to Wilsonville's sewage system since the southern half of the concept planning area drains to the south. Chris responded that Wilsonville's service boundary does not extend any further north than the Coffee Creek Corrections Facility and in the past, they have not been open to considering expanding that service area. He indicated that perhaps the City would consider revisiting this topic.
- The TAC discussed the need to identify an adequate water supply, providing both adequate flow and pressure to new developments.
- Mark Brown suggested that this project seek to add a spur to the existing railroad to this area. Around the south end of the study area, Mark suggested that new streets in the vicinity of 115th be located at some separation from a new rail spur to avoid conflicts between the street and rail traffic.
- Mark Brown also raised the issues of topography and the organization of existing roads.
- Dan Boss asked if we will be examining something like an urban renewal district for this area. Doug Rux indicated that it is an option.

Dave highlighted the elements of a concept plan and those items that are relevant to the SW Tualatin Concept Planning project.

Dave led a discussion on **issues** related to the SW Tualatin concept planning. He asked the TAC to think of issues they may have related to transportation, infrastructure, land use, natural resource or other issues.

<u>Infrastructure</u> issues include:

- Need to identify how much water is needed and make sure adequate volume and pressure can be provided for development use and fire protection. Dan indicated that the City currently receives water from the City of Portland Bull Run system, but that that system has limited capacity. The City has a charter in place that drinking water from any other source is not allowed without a vote of the citizens. The City is experimenting with options to increase its storage capacity for use during peak periods, including the use of Aquifer Storage and Recovery (ASR). Other solutions to serve new development include connecting to the City of Wilsonville Willamette River system or the Joint Water Commission Task

system, but the Charter would need to be amended to use sources other than Bull Run for drinking water.
- Need to provide adequate lighting for public safety.
- Identify the 'down stream' needs for water and sewer treatment – including line sizes and treatment facility.
- Consider and plan for adequate telecommunication needs.
- Need to engage BPA and NW Natural in this process.
- Identify the supply and distribution capacity for PGE.
- Need to locate the liquid petroleum line and identify how this, along with the BPA right of way and the PGE easement affect concept planning.
- More growth will require more police officers and equipment to serve the new areas.

Transportation issues include:

- Need to coordinate efforts with the freight rail system.
- Ensure an adequate roadway system for fire and rescue access needs – i.e. need connectivity between this and nearby industrial areas, and access via primary and secondary arterials.
- Need wider streets for fire access and industrial vehicular access.
- Consider the value of a potential stop for commuter rail near Tonquin Road.
- Access to and location of the I-5/99W Connector will be important to develop this area.
- Implementing the proposed arterial of 124th Avenue will be critical to developing this area.
- Need to consider how transit can be provided to this area.
- Development of roads and ownership and maintenance responsibilities will be important to define.
- Development type will influence traffic generated: need to consider how many trips may be generated and where will they go to – I-5 is at capacity. Warehouse and distribution uses would generate significantly greater truck traffic than high technology development.

Land Use issues include:

- Need to consider lands to the north for infrastructure provision.
- Need to consider how this area interfaces with the residential lands to the east and scattered in the rural area.
- Need to keep in mind the lands added by Metro in 2004 when doing rest of concept plan.
- Evaluate the need to accommodate taller structures in code development and in fire and safety services. High tech developments can be 4 or 5 stories tall.
- Identify the down stream effects of different land use options to other systems – i.e. on transportation, sewer, water, etc.
- Define the planning horizon.

- Determine if the lot size requirement – one 100-acre parcel and one 50-acre parcel – is truly feasible.
- Need to maintain individual community identify.

Natural Resource issues include:

- The topography will influence how infrastructure may be provided.
- Kolk pond is a major destination with the regional Tonquin Trail system.
- Need to identify historic resources, like the Tonquin Station.
- Identify the type of fish and wildlife resources located at this site.

Other questions arose as part of this discussion, including:

- Does this concept planning rule out any alternatives with the connector road?
- What exact type of land use is anticipated?
- Is there flexibility in the location of the mainline freight rail line?

Stacy described the **next steps** of the process – to visit the site, develop an existing conditions report and continue sharing information with the broader public.

The **next meeting** is scheduled for Wednesday January 12, 2005, 11:00AM – 1:00PM, same location.

Southwest Tualatin Concept Planning
Technical Advisory Committee Meeting #2
January 12, 2005 11:00 am – 1:00 pm
Council Chambers, 18884 SW Martinazzi Avenue
Tualatin, Oregon

A G E N D A

1. Introductions
2. Public Comment
3. Approval of Minutes from the October 11, 2004, meeting #1
4. Review of Project Goals
5. Draft Existing Condition Report Presentation and Discussion
6. Schedule Next TAC Meeting
7. Wrap-Up – Public Comments

Southwest Tualatin Concept Planning
Technical Advisory Committee #2 - Minutes

January 12, 2005

TAC Attendees:

City of Tualatin:	Doug Rux, Community Development Director
	Kaaren Hofmann, Civil Engineer
	Brad King, Police
	Carol Rutherford, Office Coordinator
CH2M Hill:	Dave Simmons
OTAK:	Todd Chase
BPA:	Dawneen Dostert and Neal Meisner
ODOT:	Andrew Johnson
PGE:	Emanuel (Manny) Angulo
Tigard Sand and Gravel :	Roger Metcalf
Tonquin Industrial Group:	Mark Brown
City of Wilsonville:	Blaise Edmonds and Dave Waffle
Washington County:	Steve L. Kelley

Property Owners:
Donna Albertson; Derek Colby; Ken and Mike Itel; Carl Johnson; Nick Storie

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1. INTRODUCTIONS:

Doug Rux, Community Development Director from the City of Tualatin, welcomed everyone and introduced himself. He will serve as Project Manager, replacing Stacy Hopkins who has accepted a position with DLCD. Other TAC members and property owners introduced themselves.

2. PUBLIC COMMENT:

Derek Colby indicated his interest in learning more about the planning process for the area and to insure that the natural wetland resource area as well as traffic impacts are addressed. He voiced concern over the proposed increased rail activity (i.e. commuter rail) and hopes that money could be spent on roads rather than rails if possible.

Mike Itel indicated his interest in learning about the possible impacts to his property as related to the development of roads as well as the water source since his property is currently on a well.

3. APPROVAL OF MINUTES, OCTOBER 11, 2004, MEETING #1:

There were no comments or changes to the minutes from the October 11th meeting. Mr. Rux noted that there was one change to today's agenda. Item #5 should read, "Draft Existing Conditions Report Presentation and Discussion."

4. REVIEW OF PROJECT GOALS:

Mr. Rux encouraged TAC members to review these goals. This information is available as an attachment to the email sent to all TAC members or in paper form with the minutes of the October 11th meeting. He briefly referenced Tualatin's web site and the location of the updated information for the SW Concept Planning Project. If anyone would prefer a hard copy of the information, please contact Carol Rutherford.

5. DRAFT EXISTING CONDITIONS REPORT PRESENTATION AND DISCUSSION:

Dave Simmons, consultant from CH2M Hill, provided an overview of the Existing Conditions Report as well as a brief overview of the scope of the entire project. The purpose of today's meeting is to review this report.

This report identifies what is included in this study area today including physical existing conditions as well as infrastructure. This report will be used as a baseline for the development of the concept plan. The next step in this process will be to develop evaluation criteria and alternatives based on the goals developed at the October 11th TAC meeting. There is no new information to share with the TAC and property owners today. This report documents current conditions for this study area. Mr. Simmons inquired if there were any questions or concerns. There were none.

Mr. Simmons referenced the Appendix which contains baseline information including traffic analysis and volume studies prepared by Kittelson and Associates in Appendix A. Kittelson looked at key intersections near the study area and developed projections through 2025. In Appendix B, Otak prepared information from a planning context and policy framework that could be applicable to this plan. Todd Chase from Otak commented that the Kittelson Report identified the intersection of SW Boones Ferry Road and SW Tualatin-Sherwood Road as being over capacity in 2025. Other intersections studied (see Table 2 in the Kittelson Report) operate below capacity during the morning and afternoon peak periods, with the exception of the Nyberg Road/I-5

Northbound Ramps. It was noted that this analysis does not include future development within the concept plan area. That analysis will be developed following the development of alternatives.

Steve Kelly from Washington County indicated that this area has not had any jurisdictional review of the land use data used in 2025 Metro EMME2 Model. He foresees problems that may need to be addressed with Metro to determine what assumptions fed into this decision. Mr. Simmons suggested that the 2025 projections were developed from the 2020 model data, but he indicated he would confirm with Kittelson and Associates. Dave Waffle with the City of Wilsonville indicated that model data probably did not include the new industrial area added in North Wilsonville.

Mark Brown, Tonquin Industrial Group, commented that the only road identified in the area of Tonquin Road is Waldo Way. Grahams Ferry is only mentioned by name on page 2. It doesn't appear that it was actually studied. Mr. Simmons indicated that the study went further south, looking at the Wilsonville interchange. Mr. Chase indicated that assumptions made for the Hall Boulevard extension as well as the I5/99W connector need to be clarified in the report.

Mr. Chase provided an overview of this report from a land use perspective. There are currently no numbers for employment in that area. We should have a ballpark figure for use at the next meeting. He provided an overview of the Metro regulations as related to RSIA (Regional Significant Industrial Areas). This is a new designation never used before the first round of the UGB expansion. Metro is concerned about our ability to take larger contiguous sites and reserve them for potentially large employers. This language is under appeal right now because it is too limiting and doesn't include hospitals or non-corporate headquarters. It is also very limited in terms of retail – allowing support services only. "Big box" retail is not permitted in a RSIA nor are commercial offices. Metro's regulations permit corporate headquarters offices if there are at least 1000 employees. The appeal is being heard, and results may be available during this planning process. The SW Tualatin study area will be permitted to have two specific-sized properties, 50 and 100 acre contiguous sites.

Mr. Rux reviewed an additional study area shown in red on the map. Stacy Hopkins had a conversation with Lydia Neill of Metro indicating that some peripheral areas need to be looked at which were not included in our grant since they were not within the UGB at that time. These properties need to be considered to meet the 50 or 100-acre criteria and to address the infrastructure provision.

A discussion was held regarding transportation access into the area. The southern area is driven by a transportation connection to Tonquin Road. The proposed I/5-99W connector will also affect water, sewer etc. Mr. Rux reinforced our commitment to insure that we continue to expand involvement with Itel, TS&G, and other property owners in this area.

A field visit was conducted to the study area last November. Both PGE and BPA have transmission lines across this area, and there may be constraints that could result from those lines. BPA owns right-of-way (ROW) easements which have a combined width of almost 400 feet. Neal Meisner of the BPA indicated that roads are usually allowed to be developed perpendicular across the ROW. Some parking may be permitted in the easement areas, but not in ROW. The BPA would review this on a case-by-case and span-by-span basis.

PGE has a 125-foot wide easement in this area and may have requirements similar to the BPA. Manny Angulo was requested to provide information on the development restrictions within PGE's transmission line easement.

During the tour of this area, Roger Metcalf hosted TAC members for a tour of the quarry section of the property. There is a physical barrier with the railroad tracks in this area, and there is an on-going crushing operation in the pit area. The flattest land is the southern area owned by the Tonquin Industrial Group. There are no flood plains within the study area. The study area is very rural and does not contain much infrastructure. The only public roads are Tualatin-Sherwood Road, Waldo Way and Tonquin Road, and there is very limited access for roads. Water and sewer will have to be brought in. CH2M Hill will review the City's master plans for this area to address water issues and supply. Mr. Meisner suggested that we should not plan to use the right-of-way for pipeline waterways and felt that PGE may be in agreement on this request. There are no plans to underground the high voltage transmission lines. Service districts were briefly discussed.

Mr. Rux stressed the need to insure we are using the most recent language for the RSIA. Mr. Chase indicated that they were referencing language from early 2004. The ordinances drafted in May 2004 were not adopted by Metro. TAC members discussed the possibility of a coding or numbering system to be used consistently throughout this process which will include the peripheral properties to insure uniformity.

Discussion was held regarding the railroad tracks through this area. There are private easements across the railroad tracks. Representatives from ODOT rail have agreed to attend meetings if there is to be a discussion of proposed improvements within 500 feet of the railroad line. The old Tonquin railroad station is considered to be a cultural resource in the area. A brief discussion was held regarding the impact of commuter rail moving through this area and the desire to keep open the possibility of a future stop near Tonquin Road.

Mr. Johnson from ODOT updated TAC members on the status of the I5/99W connector. They are 2-3 years away from having a set alignment. Many public meetings will be scheduled to review options prior to the selection of a location for this roadway. There is a project team meeting next week.

Representatives from the City of Wilsonville inquired about regulations regarding removal of trees and some Goal 5 issues. While they have a tree-cutting ordinance, this code is not applicable to TIG since they are regulated by Washington County at this time.

Mr. Chase indicated that the next step is to develop evaluation criteria prior to the creation of the concept plan and alternatives. This will be both qualitative and quantitative criteria. TAC members provided the following comments for items to be included in the evaluation criteria:

- Job creation
- Ease of service
- Environmental consequences
- Compatibility with adjacent land uses
- Separation of heavy vs. light industrial uses
- Separation of traffic between the railroad and vehicles as much as possible
- Access issues to separate residential from industrial areas
- Impact of commuter rail based on the number of employees in the area. Could a train stop at the Tonquin station be added if a large number of employees utilize this mode of transportation?
- Insure that the concept plan takes into account the restrictions currently on RSIA lands.
- Insure connectivity and avoid truck traffic in the adjacent neighborhoods to maintain a pedestrian friendly area.
- Provide for connection for regional traffic.

Mr. Rux requested that any comments on the Existing Conditions report be submitted to him by January 26th.

6. SCHEDULE NEXT TAC MEETING:

The next TAC meeting is scheduled for Wednesday, March 2nd, from 9:00 – 11:00 a.m. in the City Council Chambers, 18884 SW Martinazzi Avenue. The focus of this meeting will be to draft evaluation criteria and review initial development concepts.

7. WRAP UP – PUBLIC COMMENTS:

Mr. Colby inquired if there were vehicle counts per hour for the intersection of SW Boones Ferry and SW Tualatin-Sherwood Road. He voiced concern about fire and life safety issues, particularly at rush hour after commuter rail begins operations. Police Lieutenant Brad King responded that police vehicles have numerous options for travel throughout that area. TVF&R from King City and Wilsonville also respond to some incidents depending on the location. Lt. King felt that commuter rail trains are short and should have minimal disruption or impact.

Minutes Prepared By: Carol Rutherford, City of Tualatin

Southwest Tualatin Concept Planning
Technical Advisory Committee Meeting #3
March 2, 2005 9:00 am – 11:00 am
Council Chambers, 18884 SW Martinazzi Avenue
Tualatin, Oregon

A G E N D A

1. Introductions
2. Public Comment
3. Approval of Minutes from the January 12, 2005, Meeting #2
4. Final Existing Conditions Memo
5. Draft Evaluation Criteria
6. Draft Concepts
7. Open House, March 9th, 5-7 p.m.
8. Discussion
9. Schedule Next TAC Meeting
10. Wrap-Up – Public Comments

Southwest Tualatin Concept Planning
Technical Advisory Committee #3 - Minutes

March 2, 2005

TAC Attendees:

City of Tualatin:	Doug Rux, Community Development Director
	Dan Boss, Operations Director
	Kaaren Hofmann, Civil Engineer
	Brad King, Police
	Carol Rutherford, Office Coordinator
CH2M Hill:	Dave Simmons
METRO	Mary Weber
OTAK:	Todd Chase; Don Hanson
ODOT:	Andrew Johnson
ODOT Rail:	Michael (Swede) Hays; Dan MacDonald
Tigard Sand and Gravel:	Roger Metcalf
Tonquin Industrial Group:	Mark Brown
City of Sherwood	Kevin Cronin
City of Wilsonville:	Blaise Edmonds
Washington County:	Steve L. Kelley

Property Owners:

Stacey St. Amand; Ken Itel

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1. INTRODUCTIONS

Doug Rux, Community Development Director from the City of Tualatin, welcomed everyone. TAC members and property owners introduced themselves.

2. PUBLIC COMMENT:

Stacey St. Amand, a property owner in the Lake Forest subdivision, distributed a letter outlining her concerns over the illegal harvesting of some trees by Tigard Sand and Gravel (TS&G) along the east side of their property in April 2004. These trees had served as a buffer between the homes in the Lake Forest subdivision and TS&G and

the gun club. Ms. St. Amand indicated that she has pursued the issue of mitigation during the past year with the State Department of Forestry, the Oregon Department of Geology and Mineral Industries (DOGAMI), Washington County, and the City of Tualatin, but nothing has been done. She has letters from her neighbors addressing the need for the tree buffer along the railroad tracks to lessen the noise from the quarry and gun club. There were no monetary ramifications or other punishment associated with this violation. Ms. St. Amand stated that the City of Tualatin granted permission to TS&G to sell the trees within 24 hours of cutting them. Washington County will require TS&G to do some mitigation, but they don't say what it is. They are waiting for Tualatin to advise them. Ms. St. Amand continues to have conversations with both the City and Washington County but feels that they cater to businesses and not to citizens. If the tree buffer is not planted, the homes will look down on the quarry. The homeowners request that these concerns be addressed.

Mr. Rux provided an overview of this situation from the City and County's position. TS&G had a Conditional Use Permit with Washington County and was granted permission to remove trees on the west side of their property. However, some trees were inadvertently removed on the east side. Upon being notified this was occurring, the City immediately contacted Washington County to instruct TS&G to stop. Since that time, Jim Jacks, Special Projects Manager for the City, has been involved with this issue and has been interfacing with Washington County.

At the time the City received the grant for the SW Tualatin Concept Planning project, staff determined it would be in our best interest to link the mitigation on the TS&G property with this process. This would avoid the possibility of mitigation occurring, only to have it changed as an outcome of this project. Currently, our consultants and staff are identifying the natural features to determine what areas should be preserved. When this process is complete, we will communicate back to the county. The other factor to consider in this process is TS&G's request to construct an office building on their property.

In summary, the City would like both processes interlinked. Mr. Rux encouraged Ms. St. Amand to talk to Jim Jacks directly to determine if he has any additional information to share regarding his work with the Enforcement Division at Washington County.

Mr. Rux stressed that he has had numerous conversations with property owners in this area. The City is committed to public involvement in this process. Communication avenues include letters to property owners and surrounding property owners, monthly updates in the City newsletter, and current information posted on the City's website. He has had notes documenting his conversations with the property owners, and this information will be considered as the plans for this area continue to develop. For the benefit of the TAC members, Mr. Rux showed the area in question on the maps prepared by the consultants.

Ken Itel, a property owner south of Tualatin Sherwood Road and 120th Avenue near the future extension of SW 124th Avenue within the study area was introduced. He had no comments at this time.

3. APPROVAL OF MINUTES, JANUARY 12, 2005, MEETING #2:

The TAC indicated their consensus to approve the minutes of the January 12, 2005, meeting.

4. FINAL EXISTING CONDITIONS MEMO

Dave Simmons of CH2M Hill indicated that he received feedback from Wilsonville and additional comments from the staff at the City of Tualatin. There are a few things being updated prior to finalizing this document. Some traffic/transportation issues are being evaluated. The maps of the study area are being updated to include the supplemental area (shaded in purple). His goal is to have the Existing Conditions Memo finalized prior to the open house. Hard copies of the document will be available.

5. DRAFT EVALUATION CRITERIA

The Draft Evaluation Criteria was included in the agenda packet sent via email to all TAC members. Mr. Simmons reviewed the document and solicited feedback. Each goal will be tied to quantitative and/or qualitative evaluation criteria. He reviewed the two alternatives (as shown on the maps displayed on the wall) and indicated that the final product could be either of these alternatives, or we could create a hybrid based on this criterion.

Mr. Cronin from the City of Sherwood inquired if this relates to Metro's Goal 5 which we identified as a goal at the first TAC meeting. Mr. Rux responded that Metro requires that we have to do Goal 5 since it is a condition of approval. He also explained the process that Stacy Hopkins was doing to identify where the natural features are and determine if we need to move roads or infrastructure to accommodate it. After this is accomplished, we will do a full Goal 5 analysis and roll it into our existing Goal 5 or future Goal 5 program region wide.

Mr. Rux reviewed the map and noted stream channels which no longer exist due to quarry activities. Morse Brothers stopped pumping water so the quarry is filling up. He showed the area where some tree massing is already gone. The City and Metro have a lot of background information, but it doesn't accurately represent the physical condition of the land and features found within the plan area today.

Mary Weber from Metro discussed the issue of Goal 5 and Title 11 reporting requirements in the Metro plan and stressed that we should look at the Goal 5 inventory as a concept plan and not a land use action. Any changes to our Comprehensive Plan must comply.

Steve Kelley from Washington County indicated that the TAC discussed the north/south arterial connection, but it is not mentioned as a goal or evaluation criteria. He suggested that this should be addressed when we are evaluating different alternatives. Mr. Rux responded that it should be coordinated with the proposed I5/99W project with the north/south alignments. We could identify that as a goal. After some discussion, Mr. Simmons and Mr. Rux agreed to include this in the evaluation criteria for clarity purposes. It was suggested that the best location may be in the mobility section of Goal C. There needs to be a north/south arterial through this area to north Wilsonville as an alternative to Boones Ferry Road. New criteria under Goal C should be created to insure this north/south connectivity.

Mr. Hays from ODOT Rail provided a comprehensive overview of traffic and pedestrian access planning from the rail standpoint. Bob Melbo, the State Rail Planner, could not attend this meeting but will be a good resource for addressing these issues in the future. Mr. Hays works in the Crossing and Safety Section and his boss, Dan McDonald, is manager of the Railroad Crossing Section. He explained that their office is the State Regulatory Authority over all public crossings in the State. They are taking an interest in this concept planning partially because of the commuter rail project that will skirt the eastern edge of our project area and will be part of commuter rail. With the implementation of commuter rail, we will see a significant increase in rail traffic and the speed of the trains. Their goal is to reduce the number of at-grade crossings in the area along the line. While ODOT rail recognizes the mobility issues into and out of the study area, they discourage new crossings and encouraged the City to use the existing crossings more effectively. He cautioned that new streets could get dangerously close to the railroad tracks and stressed that the best chance of success to obtain approval for a new crossing is to consider a grade separation, either above or under the tracks. As mandated by the legislature, their main focus is safety. This includes the closing of existing grade crossings if possible and to critically evaluate whether new ones should be approved for construction. While it is always a “tough sell” to obtain approval for a new grade crossing, this will be even more so due to the commuter rail project. He welcomed comments either now or at a later time.

A brief discussion was held regarding the evaluation criteria and the qualitative vs. quantitative factors. Mr. Hays indicated that while he doesn’t plan to attend all TAC meetings, he felt that this is good opportunity to advise the TAC of the railroad’s position prior to Bob Melbo joining the group. Mr. McDonald reinforced the mobility issues and stressed the safety element. Mr. Hays will be the point of contact until Bob Melbo is back at work.

Todd Chase from Otak inquired if this should be a criterion for the various options as it could “tip the scale” down the road. The values assigned are very clearly pointing in the direction of either no crossing or a grade separation for new crossings. Mr. Rux confirmed that this information is very consistent with information heard from railroad personnel on other projects.

Mr. Boss commented that there is not a goal addressing the need for natural buffers and separation between the residential and industrial development. He stressed the importance of having this separation and indicated that the City has the most issues in developed areas of the City where the boundary between residential and industrial or manufacturing is abrupt and lacking separation and visual buffers. The residential neighbors to the east of the plan area are very concerned.

Mr. Rux indicated that he has talked with 10-12 property owners and has encouraged the residents to read the newsletter. The City is committed to the public involvement process. The common theme being heard from the residents of the Lake Forest area is the protection of trees, quality of life, visual appearance of the development across the railroad tracks, wetlands, concern over outdoor storage, noise, and the height of the structures. Kolk Pond is identified as a natural feature as well as the Tonquin Trail system. Residents have voiced concern about looking over the industrial buildings, and some want the Gun Club to go away.

Mr. Rux indicated that one approach to alleviate some of their concerns is focusing on knowledge-based industry (i.e. research and development, high tech) similar to those along SW Tualatin Road by 108th Avenue. Concern has also been voiced over traffic, particularly trucks. The homeowners would obviously prefer no development and to protect the natural area. The City's challenge is to take this information and feedback from the Open House and determine how to create a new type of industrial area that looks more commercial then industrial, incorporates the protection of natural features, and addresses the transportation issues including the railroad tracks. The City will also work with Wilsonville and Sherwood on livability issues. Mr. Rux cautioned that we have to be careful on how to write issues with quality of life in consideration of this project. This means something different to everyone.

Ms. Weber stressed that this has happened throughout the area. There is the desire for some type of transition block or buffer between the residential and industrial areas. She suggested going into the Open House with a transition or buffer plan to alleviate some of these concerns. The residents will need to recognize that something has to happen with this area.

Mr. Boss feels that we need this issue to be identified as a goal or as evaluation criteria. Other areas in the City will look at how this study area is handled. Some residents don't trust us because of the tree issue with TS&G as well as Gun Club issues.

Mr. Rux indicated that Ms. St. Amand's statement that the City is more friendly to businesses then residents is not true. We are concerned about all our citizens and businesses. He concurred with establishing a goal regarding the transition between residential and the concept area and then craft evaluation criteria to achieve this goal. Options could include set backs, topography etc. Staff will review the Tualatin Development Code for current regulations since some of these details are already in place. However, the general public is not aware of them. Whether it is building sizes,

noise reduction, etc., the desired outcome would be for the residents to support the process and work with the City.

Returning to the subject of railroad crossings, Mr. Hays encouraged the TAC to think about the value of grade separation. Every rail car is the equivalent of about three trucks on the highway. Maximum use of the rails takes many trucks off our area roads and highways. This addresses quality of life issues in a different way, as it is a means to move large heavy cargo in bulk very efficiently. The railroad tracks can be an asset to the industry in the area.

TAC members agreed to add this new goal and descriptors, subject to change based on the input at the Open House. Staff will be clear about the purpose and limitations of this process, using a hybrid between involvement and the collaboration side to achieve a balance between all the issues and final product. No one individual group has sole approval. The City Council will be the final decision maker.

Andrew Johnson from ODOT suggested additional criteria under "C" to address the railroad grade issue. It would be very easy to quantify this goal.

Mr. Kelley inquired if the railroad crossing at Tonquin is at grade and if there is a private crossing in the mixed-use area. It was confirmed that there are two railroad crossings in the study area. In addition, the TSP identifies one along Blake which may not be an ideal location. Mr. Rux ran some numbers to identify areas where extensive employment opportunities could exist and addressed issues of how the employees could travel into and out of that area to minimize the number if cars and truck traffic in the residential areas. Mr. Boss indicated that it will get noisier with increased train traffic although there is a provision for a quiet zone.

In summary, Mr. Rux reviewed the proposed changes which include criteria for the north/south arterial, criteria to deal with railroad grade crossing issues, buffering and transition area, and Title 11 planning requirements.

6. DRAFT CONCEPTS

Mr. Chase distributed a memorandum outlining two concept alternatives for this area. Additionally, he will take the goals and criteria heard today, "tweak" it, and have additional information available for the open house on Wednesday, March 9th. Don Hanson from OTAK was introduced. Mr. Chase reviewed the memo and identified the preliminary alternatives as related to the goals endorsed by the TAC. He stressed there will be a variety of quality of life issues based on the location of the residents. Our challenge is to insure that our proposed plans incorporate features that will be appealing to the residents, i.e. trails, location of new jobs, etc. We need to be attentive to what it takes to attract high-quality workers to the area. Mr. Chase provided a brief overview of successful mixed-use areas throughout the country.

He then provided a detailed review of both alternatives, noting the similarities as well as the differences in the two alternatives. He pointed out the recommended access location – off of an extension of SW 124th Avenue which could connect to the proposed I5/99WConnector. This will be a heavily traveled corridor. He suggested that the TAC should think about the future; this lends itself well to phasing in from the north end of the site. Both alternatives would accomplish that. Both alternatives provide for the potential for a grade-separated crossing of the rail with the extension of Blake Street. One difference between alternatives is where the north-south collector street would be located. There also is the opportunity for a terraced development in the area. There could be a passive office setting near the neighborhood with a retaining wall and then a step down to the west with another terrace. Water features could be integrated in the area near the ponds. Both alternatives assume a mixed-use employment area. Metro and RSIA design type call for a limited amount of commercial development, i.e. stores and restaurants. The buildings could have multiple stories with mixed use. Alternatives I and II show the location of development sites in two different areas. Alternative II identifies a location for a possible commuter rail stop in the southern area.

Amenities on both alternatives include a trail system with a three-mile loop. The wild life refuge is a big amenity to the west of the plan area. Both alternatives meet or exceed Metro's 50 or 100-acre minimum. The RSIA designation would be the requirement of the property owner to not subdivide below 50 acres.

Mr. Hanson indicated that the requirement for the 100-acre parcel drove the geometry of this site. Open space is good amenity for this district which could attract employers looking for development in a space that offers employees more than just a place to work.

Mr. Chase asked for discussion from the TAC members.

Mr. Kelly voiced concern of the potential interchange location depicted by a dotted line. He recommended removing that dotted line and words since it signifies that something has been decided and that is not the case. Mr. Johnson recommended removing the word "interchange" for the same reasons.

Mr. Boss inquired about the concept of terracing, and how that would affect general drainage into that area. We may need a lake. Where will it go to naturally dissipate? Testing and modeling would need to be done in some places since, while some of the area is porous, it does have a lot of rock. Mr. Rux commented that it could be a good feature for the nearby residential areas.

Mr. Simmons commented that the sewer issues are based on flow and interface with Durham Treatment Plant. This area will need a pump station.

Mr. Metcalf stated that TS&G has material stockpiled on the site and are ready to fill the existing pit.

TAC members further reviewed the mixed-use areas. The pond is already in place in a good central location. It makes sense to have smaller parcels in that area. Alternative II would work if there is a commuter rail station. Safety considerations need to be considered in the design of this area.

Doug Rux indicated that the Metro ordinance adding this area to the UGB stipulated no commercial or retail, but that this doesn't make sense when you look at projected employment numbers for the area. The City has informed Metro about this concern.

Dan MacDonald expressed concern over the number of new rail crossings shown with the alternatives. Counting the trails and roads (3 each), there would be six railroad crossings, and we need to determine if they can be placed over or under the rail tracks. The greenway should connect with public ROW.

Mr. Rux commented that Alternative II could control the uses and lessens dust, noise, etc. Mr. Boss felt that the "stepped" transition provided more options for visual landscaping especially in the quarry area.

Ms. Weber inquired about how we plan to communicate this concept plan to the public on March 9th. Mr. Rux assured her we would be working on it and will identify the benefits of each approach. Photos would be beneficial. We needed feedback from the TAC today prior to working on the Open House. Smaller group interaction with Todd Chase, Dave Simmons and Doug Rux will be encouraged to provide the citizens with more "one on one" dialog. The first open house will be more preliminary and encourage the public to identify their objectives. Mr. Chase stated that we plan to accomplish a lot at the first meeting, allow the public to comment, but provide them with positive examples of possible plans for this area.

7. OPEN HOUSE, MARCH 9th 5 – 7 p.m.

An Open House is scheduled for Wednesday, March 9th, from 5:00 – 7:00 p.m. in the City Council Chambers, 18884 SW Martinazzi Avenue. As indicated earlier in this meeting, notification of this event has been published on the web site, the City newsletter, letters sent to the property owners and surrounding property owners, as well as notices sent to the area newspapers.

8. SCHEDULE NEXT TAC MEETING:

The next TAC meeting will be held on Wednesday, March 30th from 9-11a.m. at the City of Tualatin Council Chambers.

A brief discussion was held regarding walking/biking trails in the area and concern from ODOT rail about the safety of them in the vicinity of the railroad tracks.

9. WRAP UP – PUBLIC COMMENTS

Mr. Itel identified the land within the concept planning area that is owned by him and his parents. He also indicated that he is a land use planner. He recognizes this is a broad concept plan. The TS&G pond and stream runs across SW Tualatin-Sherwood Road and is identified as a Goal 5 resource by Metro. This could become a greenway corridor. The topography of his land is conducive for natural building sites. Going into areas C and E, based on the natural topography, he would recommend a road along the property line or further east skirting the edge of the pond. This could be difficult in terms of time and expense to mine some of the area for a different contour. All of the property added in June 2004 is outside the RSIA area. Does Metro want to add it in or remain outside the RSIA? He indicated that he disagrees with the City's proposal to not permit commercial uses along Tualatin-Sherwood Road and SW 124th Avenue. There is a high traffic volume and visibility in that area. Employees in this area will need some services, and they might not want to travel to the interior of the development. Other properties in this area are already developed. His parents have their property for sale. Mr. Itel feels that greater visibility on the main corner will serve more people in this area.

Mr. Chase commented that we are not thinking of a "Costco" type of commercial structure. Services such as a bank, deli, or restaurant to serve the existing employment base could be integrated without becoming a commercial focal point.

Minutes Prepared By: Carol Rutherford, City of Tualatin

Southwest Tualatin Concept Planning
Technical Advisory Committee Meeting #4
March 30, 2005 9:00 am – 11:00 am
Council Chambers, 18884 SW Martinazzi Avenue
Tualatin, Oregon

A G E N D A

1. Introductions
2. Public Comment
3. Approval of Minutes from the March 2, 2005, Meeting #3
4. Review of Draft Alternatives
5. Review of Open House Public Comments
6. Review of Draft Evaluation Criteria
7. Discussion
8. Schedule Next TAC Meeting
9. Wrap-Up – Public Comments

Southwest Tualatin Concept Planning
Technical Advisory Committee #4 - Minutes
March 30, 2005

TAC Attendees:

City of Tualatin:	Doug Rux, Community Development Director (9:55 a.m.)
	Jason Tuck, Development Coordinator
	Dan Boss, Operations Director
	Kaaren Hofmann, Civil Engineer
	Brad King, Police
	Carol Rutherford, Office Coordinator
CH2M Hill:	Dave Simmons
OTAK:	Todd Chase; Don Hanson
Bonneville Power Admin.	Neal Meisner
PGE	Manny Angulo
Tigard Sand and Gravel:	Roger Metcalf
Tonquin Industrial Group:	Mark Brown; Ed Christie
TVF&R	Jerry Renfro
City of Sherwood	Kevin Cronin

Property Owners/Guests:
Donna Albertson; Tom Aufenthie; Ken Itel

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1. INTRODUCTIONS

Jason Tuck, Development Coordinator from the City of Tualatin, welcomed everyone. TAC members and property owners introduced themselves.

2. PUBLIC COMMENT:

Mr. Tuck suggested that following public comments, we discuss Agenda Item #5, "Comments from the Open House," prior to reviewing the additional Draft Alternative since that item evolved from discussions at the open house.

There were no public comments at this time.

3. APPROVAL OF MINUTES, MARCH 2, 2005, MEETING #3:

The TAC indicated their consensus to approve the minutes of the March 2, 2005, meeting.

4. REVIEW OF DRAFT ALTERNATIVES

Following the discussion of comments from the open house and exit survey, Dave Simmons and Todd Chase reviewed Alternative III which was developed as a result of input at the last TAC meeting and the open house. Mr. Chase explained the methodology used in creating this third concept and compared it to the other alternatives. Alternative III does not provide for future railroad stop north of Tonquin Road. It includes roadway alignments similar to Alternative II, except that the north-south collector extends further west in the lower section of the plan area, creating a better north/south flow than Alternative 1 and similar to Alternative II. There is a tree buffer that has been extended southward along the east side of the plan area. It is 300 feet wide; the City's requirement is 100-150 feet. The trail system includes an alignment for the Tonquin Trail, a regional trail that could follow along the BPA easement, but was originally shown in Alternative II on the PGE easement. The Tonquin Trail is proposed to continue through Sherwood to the Tualatin Refuge. The local east-west street and signal on SW 124th Avenue that is shown on Alternative II is not shown on Alternative III

Mr. Simmons provided input on how the three alternatives would function from an access and traffic flow standpoint. Alternative I includes a north-south collector approximately 600 feet east of the proposed 124th Avenue extension. This places the collector-to-collector street intersections close to the east-west collector street intersections with 124th Avenue, which could lead to congestion from one intersection interfering with the nearby intersection. Traffic flow would be better separated and disbursed with Alternative II and Alternative III. The goal of maximizing access spacing of street intersections on arterials (in this case, 124th Avenue) is best achieved with Alternatives I and III, with Alternative III likely to function the best.

Mark Brown made a point that Alternative III lacked an east-west local street at the south end that the other two alternatives had included, which provided access to several properties along the east side of the study access. It was discussed that the primary purpose of the concept planning process was to locate arterials and collectors. Local Streets could be added to connect land area that might otherwise be cut off.

On behalf of TVF&R, Mr. Renfro stressed his concern about traffic on Tonquin Road to Boones Ferry Road or the eventual connector and inquired how this project fits into the connector. Mr. Simmons commented that it is a "big guessing game" at this point and that we are one or more years away from Washington County refining the corridor study to the point of designating a specific route. Following that decision, environmental studies would need to be done. The SW Concept Planning Project will probably grow from north to south within the study area. Mr. Renfro stressed that the traffic volume is very high on Tualatin-Sherwood Road near the fire station. Accidents frequently occur

near their training facility on Tonquin Road. He would like to see something happening in that area prior to further development. While he voiced concern about the southern portion of the area, he indicated that he liked Alternative III because of its connectivity. In response to Mr. Renfro's inquiry, Mr. Metcalf indicated that Tigard Sand and Gravel could mine for many years (100) for the entire site.

5. REVIEW OF OPEN HOUSE PUBLIC COMMENTS

Mr. Chase provided an overview of the comments obtained from the open house as well as the results of the exit survey where citizens were given the opportunity to provide feedback on Alternatives I and II. This information is posted on the City's web site. Mrs. Rutherford can also provide hard copies of the material. The open house was attended by over 60 people with representation from property owners within the study area and adjacent to this area. The primary concerns are the tree buffer and the tree harvesting on the Tigard Sand and Gravel property last year. Don Hanson described it as the "green curtain" between the residential and industrial areas. Residents asked that the tree buffer be extended further south than depicted on the two initial alternatives. As a result, this suggestion has been incorporated into Alternative III which was created as an option based on information derived at the open house.

Mr. Simmons indicated that concern was noted about roadway connections throughout the area, specifically truck traffic through the residential area instead of using arterial connections. Mr. Chase provided an overview of discussions regarding smaller lots vs. one larger lot near the residential area. After reviewing the data, people were concerned that smaller lots could mean more noise, traffic, lighting and other issues. Property owners liked the proposed shelf approach and the grade change. They also supported the concept of a bigger setback with large lots and a campus-like setting.

Mr. Metcalf stated that he could not attend the open house but voiced concern about the retail market for large lots which may not be economically feasible. Large lots would greatly limit who can afford to purchase the land in the area. Mr. Chase countered that the Metro ordinance for the Regionally Significant Industrial Area, requires one lot of at least 100 acres on and one of at least 50 acres. Once those conditions are met, the remaining portion of the site can be subdivided as the property owner and city deem appropriate. The consultants are suggesting this as an option in the "H" area. Mr. Hanson stated that he found the marketing comments compelling and supports parcels of different sizes. We need some flexibility to divide the parcels and retain larger ones in other areas. He suggested incorporating some dotted lines on the perimeter parcels that could show future partitions or sub-dividing so that we don't deceive anyone. TAC members supported this suggestion. Parcel H is about 40 acres, and could be shown as four sites.

Mark Brown voiced concern that Alternative III does not provide direct access to his property unless the private railroad crossing is utilized. Alternative II and possibly Alternative 1 had connector streets on the west border. He felt that another road to avoid the railroad crossing would be advantageous. Mr. Simmons clarified that there

could be other access in this area but easements would be necessary since it is owned by various individuals. A link to Waldo Way could be created without interfering with other services. Alternative I showed a new road without disturbing the BPA lines. Mr. Hanson proposed a loop in the area through other property owners' land. Mr. Simmons stressed that the concept planning focus is to determine major infrastructure and for transportation, that included siting arterials and collector streets. It does not preclude the development of other local roads. Various scenarios were discussed to accommodate travel flow throughout the area. This information will be blended with options previously discussed and incorporated into Alternative III.

In summary, Mr. Chase indicated that TAC suggestions included the desire to show some the potential subdivision opportunities on Parcel H, addition of local road connections down into Parcel J, and the need to for mitigation improvements on Tonquin Road and Grahams Ferry east to I-5 to address safety issues to support site development.

6. REVIEW OF DRAFT EVALUATION CRITERIA

Mr. Simmons stated that the evaluation criteria has been updated based on information gathered from the Open House and previous TAC meetings. Another open house will be scheduled in June. Following TAC's review of the Evaluation Criteria, the consultants will prepare the first draft of the Concept Plan which will incorporate all the work done by the TAC.

Mr. Simmons reviewed the recent changes made to the Evaluation Criteria which included additional criteria under Goal C to address mobility with arterial-to-arterial or higher street classification connections and minimizing or doing a grade separation for the streets and trail crossing at the railroad tracks.

A new goal ("J") has been added to address the need to preserve significant natural resources. This verbiage evolved from discussions between Todd Chase, Doug Rux and Dave Simmons.

Three new criteria have been added to Goal E to be more specific about community involvement with criteria added to address issues related to visual buffers, design compatibility, including setbacks as well as site amenities and features such as trails, bicycle and pedestrian connectivity, and natural resources for employers and adjacent residential users.

Mr. Simmons commented that he feels we can qualitatively differentiate between the three alternatives. Weighting of the criteria will not be beneficial at this time. All three alternatives will be evaluated. It would be helpful if the TAC could reach a consensus based on these evaluation criteria prior to going to the Tualatin City Council to ask for a recommendation. This will be further discussed at the TAC's May meeting. At that meeting the TAC will apply the criteria and discuss each alternative against the criteria

and decide what is most important. Cost is key component of this project and will also be addressed at the May meeting.

7. DISCUSSION

There was no further discussion

8. SCHEDULE NEXT TAC MEETING:

The next TAC meeting will be held on May 11, 2005 at 9:00 a.m. in the Tualatin City Council Chambers,

9. WRAP UP – PUBLIC COMMENTS

None

Minutes Prepared By: Carol Rutherford, City of Tualatin

Southwest Tualatin Concept Planning
Technical Advisory Committee Meeting #5
May 11, 2005 9:00 am – 11:00 am
Council Chambers, 18884 SW Martinazzi Avenue
Tualatin, Oregon

A G E N D A

1. Introductions
2. Public Comment
3. Approval of Minutes from the March 30, 2005, Meeting #4
4. Review of Modifications to Alternatives
5. Results of Evaluation Criteria Analyses
6. Next Steps
7. Schedule Next TAC Meeting
8. Wrap-Up – Public Comments

Southwest Tualatin Concept Planning
Technical Advisory Committee #5 - Minutes
May 11, 2005

TAC Attendees:

City of Tualatin:	Doug Rux, Community Development Director
	Dan Boss, Operations Director
	Kaaren Hofmann, Civil Engineer
	Carol Rutherford, Office Coordinator
CH2M Hill:	Dave Simmons
Kittelson and Associates	Paul Ryus
OTAK:	Todd Chase
ODOT Rail	Swede Hays; Bob Melbo
PGE	Manny Angulo
City of Sherwood	Kevin Cronin
Tigard Sand and Gravel:	Roger Metcalf
Tonquin Industrial Group:	Donna Albertson; Carl Johnson; Nick Storie
TVF&R	Jerry Renfro
Washington County	Steve Kelley

Property Owners:

Bob and Nita Nelson, Orr Family Farm; Ken and Mike Itel

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1. INTRODUCTIONS

Doug Rux, Community Development Director from the City of Tualatin, welcomed everyone. TAC members and property owners introduced themselves. Mr. Rux announced that we have hired a new Senior Planner, Elizabeth Stepp, who will begin work with the City on May 31st. She will be transitioning into this project between now and it's completion on September 15th. He encouraged TAC members and guests to sign in if they have not already done so.

2. PUBLIC COMMENT

There was no public comment. Mr. Rux stated that guests will have an opportunity to comment at the end of the TAC meeting.

3. APPROVAL OF MINUTES, MARCH 30, 2005, MEETING #4

The TAC indicated their consensus to approve the minutes of the March 30, 2005, meeting. Minutes will be finalized and posted on the website later today.

4. REVIEW OF MODIFICATIONS TO ALTERNATIVES

Mr. Rux turned the meeting over to Dave Simmons, Todd Chase, and Paul Ryus.

Mr. Chase briefly reviewed the three alternatives that were displayed on the wall. Based on discussions held at the last TAC, Alternative 3 has been revised to reflect the potential for local street connections and to reflect that Parcel H could be developed as either one large parcel or several medium sized parcels, as indicated by the addition of the dashed lines. The tree buffer area shown along the east side of Alternatives 1 and 2 were also revised to be consistent in width for all the alternatives, except that the buffer extends further south for Alternative 3.Goal 5 maps from Metro and the TBSC promote "significant resources," and preserving trees incorporates that goal. Mr. Chase asked if there were any questions; there were none.

5. RESULTS OF EVALUATION CRITERIA ANALYSES

Mr. Simmons referenced the Draft Evaluation Criteria dated May 3, 2005 that was included in the email agenda packet. Hard copies are also available. A Technical Memorandum dated May 2, 2005, prepared by Kittelson and Associates was also distributed and will be reviewed by Paul Ryus. The goal in reviewing this material is to obtain feedback on the consultants' rationale and to determine if this criterion makes sense.

Goal A: **Create a plan to guide future development of the project area.** Based on the criteria and findings, Alternative 3 netted the largest acreage by a small amount and would generate the most jobs. The development assumptions for all three alternatives predict that it would be approximately half light industrial with the remainder "Business Park" consisting of flexible buildings and some industrial. Kittelson and Associates ran the traffic projections based on this assumption. The area to the north around the lake is shown as mixed-use in all three alternatives. This equates to 11.4 jobs per acre and 43 jobs per acre for the Business Park that would have a higher density due to multi-story buildings. There would also be a small commercial component. Projected new employment would range from approximately 5,500 jobs in Alternative 1 to 5,800 in Alternative 3. These job numbers drive the traffic generation assumptions.

Goal B: **Ensure Concept Plan meets Metro Ordinance 02-990**. This is basically a "pass/fail" criterion. All alternatives can conform to this. Alternative 3 is a little more open and has more opportunities at the southern end to create different lot sizes.

Goal C: Ensure an adequate & efficient transportation system. This focuses on six evaluation criteria related to ensuring an adequate and efficient transportation system. Mr. Ryus provided an overview of the Traffic Technical Memorandum. The information presented today incorporates the job assumptions identified in the Transportation System Plan (TSP) done four years ago. At that time 1,800 jobs were projected to be created in the Concept Plan area. The three alternatives are projected to generate approximately 3,700-4,000 additional jobs. The street network assumes a connector between I-5 and 99W as well as an arterial to connect to SW Tualatin-Sherwood Road. The proposed configurations will generate additional traffic on SW 124th Avenue, particularly for vehicles making the left turn onto Tualatin Sherwood Road.

In reviewing the memorandum as related to the three alternatives, Mr. Ryus indicated that Alternative 1 focuses traffic from I-5 and central Tualatin and not much north/south connection. Alternatives 2 and 3 reflect a better north/south connection and access to the I-5 connector which reflect a better distribution and overall results

Steve Kelly from Washington County requested clarification on the Introduction to the memorandum with reference to 2025 traffic operations and cited problems with Metro 2025 traffic model. Mr. Ryus clarified that they used the 2020 traffic model and extrapolated to develop 2025 traffic projections.

Mr. Simmons indicated that traffic analysis assumes that the I-5/99W Connector follows a corridor north to either SW 124th Avenue or another street as was defined in the TSP. The actual corridor of the Connector has not been determined. A southern alignment for the Connector would significantly alter the results of the traffic analysis. Mr. Rux reaffirmed this dilemma. Mr. Cronin of Sherwood indicated that they will also be developing a concept plan for the area west of this plan area and his "best guess" is that it will go south of Sherwood. Mr. Kelley suggested removing the proposed connector from the maps to eliminate confusion. A brief discussion evolved around this suggestion since the connector is in the TSP which is an adopted document.

Mr. Rux indicated that the City of Tualatin and the City of Sherwood will be jointly applying for a grant to study the Quarry Area which encompasses 354 acres in the area from SW 124th Avenue west to Oregon Street south to Tonquin Road and out to the Gun Club (Study Area 48).

The City of Sherwood adopted their Transportation System Plan in March 2005, and this document will be helpful in future transportation planning. Kittelson and Associates could review the Sherwood TSP and make additional assumptions based on that data. The current maps show an arrow into the area and didn't assume a Blake Street connection. Tonquin could be realigned with new collector streets and hook up with the

existing road. This is currently not in the modeling. Although the Quarry Area is an additional 354 acres, it is not known what additional road improvements may result.

Mr. Ryus briefly addressed the Level of Service numbers. The intersection at Boones Ferry Road and SW Tualatin-Sherwood Road is currently projected to be a Level of Service F without the additional traffic generated by the Concept Plan area alternatives. The Town Center Plan Project addresses the traffic flow in the downtown Tualatin area in more detail. Some limitations may need to be identified to get the level of service within the standard.

A brief discussion was held regarding entrances/exits along the I-5/99W connector. Mr. Rux commented that there could be very limited access – only one or two connection points between 99W and I-5.

Mr. Simmons summarized the data prepared by Kittelson and Associates and the comparison between alternatives from a qualitative review and a traffic operation perspective. Alternatives 2 and 3 did a better job of street networking and are more disbursed throughout the site than Alternative 1. Fundamentally, the criteria for Goal C focuses on mobility which is why Alternative 3 came out best

Mr. Simmons also provided a summary of the other Evaluation Criteria within Goal C:

Alternate travel routes/modes: Alternative 2 fared best because of the possibility of two transit hubs, which may not be realistic. Alternatives 1 and 2 both suggest a more robust pedestrian/bike trail network.

Connectivity: Alternative 3 came out better in this criteria, although arterial-to-arterial to SW 124th Avenue in Alternatives 1and 3 were essentially the same.

Minimizes or grade separates street/trail crossing of railroad: Alternative 3 ranked highest as it eliminates an existing private crossing north of Tonquin Road.

Accommodates potential rail spur: Alternative 3 provides the best opportunity for this to occur in the southern portion of the study area.

Goal D: **Coordinate with the I-5/99W Connector.** Without information on where the connector will be located, this goal is difficult to evaluate at this time.

Goal E: **Involve broader community in planning process.** This goal focuses on broader community involvement in the planning process. The majority of this evaluation criteria is difficult to rank at this time, as the public has only had the opportunity to review Alternatives 1 and 2 at the open house held last March. Another open house is scheduled for June 14th from 6 – 8 p.m. at the Police Department at which time all three alternatives will be presented, and the public will have an opportunity to comment. A formal presentation will be made at 6:30 p.m.

The evaluation criteria focusing on site amenities and features does rank Alternative 3 highest as it includes the recommendation for visual buffers extending further south along the east side of the project area adjacent to the residential area. Mr. Rux commented that this also focuses on design compatibility issues and the desire to achieve a more campus-like appearance similar to the Leveton area or the Tektronix or In Focus campuses rather than industries along SW Tualatin-Sherwood Road.

Goal F: **Work with BPA and PGE to ensure safe development.** This goal stresses the need to work with both the BPA and PGE to ensure a safe development and is ranked equally for all three alternatives. The information provided from the BPA and PGE will need to be reviewed at the time of development. It was stressed that if the BPA or PGE have any additional comments on the three alternatives that they be submitted between now and the open house on June 14th.

Goal G: **Infrastructure issues and systems.** This criteria focuses on the availability and expandability of sewer, water, and storm water systems. Alternatives 2 and 3 are tied for #1 as they both have a roadway system that distributes public facilities more evenly across the entire site. An inquiry was made if consideration will be given to a tax increment finance district. This decision will be an outcome of Mr. Chase's analysis of the options and funding mechanisms.

Goal H: **Cost.** This addresses the issue of capital costs. All are very similar although Alternative 1 may be slightly higher due to a longer road network. Other infrastructure costs would be similar. Current assumptions are that we would utilize the Bull Run Water System, with new reservoirs extending water service into this area. Mr. Rux commented that the City is currently evaluating future water source options. Mr. Cronin stated that utilization of the Willamette River as a water source is currently on the Sherwood ballot.

Goal I: **Evaluate limited commercial to serve the industrial base.** This goal focuses on the amount of commercial usage in the industrial area and the associated limitations imposed by Metro's RSIA which stipules that we are limited to 20,000 square feet per 50-acre parcel. Mr. Chase stated that we are assuming some ancillary commercial space for uses such as dry cleaners, day care and restaurants. There will be no "big box" retail in this area. While there may be slight differences in the three alternatives, they will all be treated the same way. Alternative 3 ranks slightly higher because it will result in more jobs and more developable land. Opportunities for commercial support will be slightly higher.

Goal J: **Preserve Significant Natural Resources.** This last goal reinforces the desire to preserve significant natural resources. There has been a lot of change in this area over the past few years. Goal 5 resources are not well defined. Alternative 3 preserves the most existing tree network. Mr. Rux stated that available natural resource reports are out dated and do not accurately depict what is currently in the study area.

In summary, both the traffic information as well as the other material can be modified based on input from the TAC. Comments should be directed to Mr. Rux who will then forward them on to Mr. Simmons and the other consultants. From an agency standpoint, it would be advantageous to receive all input prior to the open house.

6. NEXT STEPS

An open house is scheduled for Tuesday, June 14th from 6-8 p.m. at the Police Department. A formal presentation will be made at 6:30 p.m. Individual stations will be set up where citizens can obtain more specific information. As additional draft material is generated, it will be posted on the website. Additional traffic information will be done prior to posting that report on the website. Mr. Chase will continue working on financial data.

7. SCHEDULE NEXT TAC MEETING:

The next TAC meeting will be held on Tuesday, June 28, 2005 from 2:00 – 4:00 p.m. in the Tualatin City Council Chambers. Mr. Rux stated that the timeline for completion of this project has been extended to September 15, 2005. Our goal is to begin public committee work in July.

8. WRAP UP – PUBLIC COMMENTS

Mr. Carl Johnson inquired about how to fund sewer infrastructure. Mr. Rux replied that the City has an Intergovernmental Agreement (IGA) with Clean Water Services (CWS). Development cannot occur in the City unless it is connected to the sewer system. A brief discussion was held regarding the Tonquin area and Tigard Sand and Gravel. Mr. Chase indicated that a Local Improvement District (LID) may be an option. Funding will be an issue for existing property owners, and innovative alternatives (i.e. on-site sewage treatment facilities) will need to be considered.

Mr. Mike Itel posed several questions. The concept plan shows SW 120th Avenue going straight to the pond. He requests that we leave it as is and make no improvements. Mr. Rux indicated that any enhancements to this area would depend on the type of development going into that area. Engineering could require street improvements. Mr. Itel commented that if Itel Street were to go straight through, it could take off 25 feet of his property which would put the street 25 feet closer to his building. Can this street be adjusted south 20 feet to avoid the possibility of him losing several million dollars of his developable property? Mr. Itel requested that this issue be addressed in the SW Concept Plan to avoid the future possibility of it ending up with attorneys to resolve it. Mr. Rux assured Mr. Itel that we will look into it.

Mr. Itel inquired about the timeline for these proposed changes to occur. Mr. Rux replied that staff will go to the City Council in September for any needed changes to the Comprehensive Plan. Once approved, an ordinance is prepared which will take effect 30 days later. After that process is complete, the City could receive a request at any time to annex property into the City. Development of this land will be market driven. Build out could be 20+ years. The area improvements could be 75% developed over that time with the remaining 25% beyond that, possibly 25-30 years or more.

A brief discussion was held with the representatives of ODOT rail regarding a potential rail spur at southern end of this area. Comments from Tonquin Group indicate that they want to preserve rail spur access to directly serve buildings in that area. Commuter rail will also serve that area. This could result in a distribution situation with high volume and clean freight. Rail spurs may be OK in the southern part rather than the northern part of the concept planning area. It was clarified that commuter rail will be Class 4, operating on regular gauge tracks.

Minutes Prepared By: Carol Rutherford, City of Tualatin

Southwest Tualatin Concept Planning
Technical Advisory Committee Meeting #6
June 28, 2005 2:00 pm – 4:00 am
Council Chambers, 18884 SW Martinazzi Avenue
Tualatin, Oregon

A G E N D A

1. Introductions
2. Public Comment
3. Approval of Minutes from the May 11, 2005, Meeting #5
4. Comments from Open House #2
5. Annexation/Cost Impact Analysis – Draft #2
6. Traffic Analysis Technical Memo – Final Draft
7. Evaluation Criteria – Final Draft
8. Selection of Preferred Alternative
9. Concept Plan Discussion
10. Project Schedule Update
11. Public Comment
12. Next Steps
13. Schedule Next TAC Meeting
14. Wrap-Up

Southwest Tualatin Concept Planning
Technical Advisory Committee #6 - Minutes
June 28, 2005

TAC Attendees:

City of Tualatin:	Doug Rux, Community Development Director
	Elizabeth Stepp, Senior Planner
	Dan Boss, Operations Director
	Kaaren Hofmann, Civil Engineer
	Carol Rutherford, Office Coordinator
CH2M Hill:	Dave Simmons
Kittelson and Associates:	Paul Ryus
ODOT:	Andrew Johnson
OTAK:	Todd Chase
City of Wilsonville:	Chris Neamtzu
METRO:	Sherry Oeser
PGE:	Manny Angulo
Tigard Sand and Gravel:	Roger Metcalf
Tonquin Industrial Group:	Mark Brown; Nick Storie; Wayne Mangan

Property Owners/Guests: Donna Albertson, Tom Aufenthie; Ken Itel

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1. INTRODUCTIONS

Elizabeth Stepp, Senior Planner from the City of Tualatin, welcomed everyone and introduced herself, and noted she will be assuming a primary role in the continued development of this project. TAC members and property owners introduced themselves. Ms. Stepp requested that TAC members and guests sign in if they have not already done so. For those people she has not yet met, she encouraged them to introduce themselves to her after the meeting. Updated and new materials were distributed to all attendees.

2. PUBLIC COMMENT

There was no public comment. Guests will also have an opportunity to comment at the end of the TAC meeting.

3. APPROVAL OF MINUTES, MAY 11, 2005, MEETING #5

The TAC indicated their consensus to approve the minutes of the May 11, 2005, meeting. These minutes will be finalized and posted on the website later today.

4. COMMENTS FROM OPEN HOUSE #2

An open house was held on June 14. There were fifteen attendees in addition to the consultants, staff and TAC members. Roger Metcalf and Mark Brown were present. This was the first time that the public had an opportunity to review Alternative 3, which was presented and discussed in detail. An updated traffic analysis was also presented by Paul Ryus of Kittelson & Associates that evening.

Following the Open House presentations, comments were received from 3 to 4 of the attendees, which does not represent a large sample size. Overall, the major issues stated were noise concerns from land development, traffic flow throughout the site, and aesthetics (not wanting to view the back of buildings from the residential area.)

Mr. Chase expanded on these issues. Discussions focused on the alignment of the proposed SW 115th Avenue and land uses planned between 115th Avenue and the adjacent neighborhood. Concern about thru-traffic was noted and its subsequent impact on the neighborhood, if Blake Street were to be extended to the west. Citizens preferred Alternative 1 because traffic on the north/south corridor was further west from the residential area than in Alternative 3. They also preferred Alternative 3 over Alternative 2 because it depicted larger potential building sites rather than a higher number of smaller sites in the eastern portion of the site.

Mr. Metcalf recapped a misconception by some of the attendees that thought SW 115th Avenue would be the only north/south street in the concept planning area. Consultants and staff clarified that these alternatives show just the major roads. As the area develops, there will be smaller streets for circulation throughout the area. The City has more control on setbacks of arterial and collector streets than smaller streets. Mr. Rux stated the design of SW 115th Avenue could include a landscape median in the roadway, bike lanes, and a tree canopy to enhance visual aspects and help to minimize noise. He also gave a thorough overview of options and control aspects of the road system as well as the design elements related to the elevation of buildings and vegetation that can be planted. Southwest 124th Avenue is actually on a high elevation, sitting higher than the railroad tracks; due to this, any traffic noise would more likely be coming from 124th Avenue than from 115th Avenue.

Mr. Chase expanded on the input from citizens, and noted the survey gave a general impression that there was a tie between Alternatives 1 and 3. There were different reasons why respondents liked each of them. No support was received for Alternative 2. Mr. Rux stressed that there needs to be a balancing act between all competing issues. There is no group of people who will get everything they want. Trade offs will occur. Our

goal is to develop something that everyone can live with. Additional discussion and the selection of a preferred alternative will be covered in agenda item #8 this afternoon.

5. ANNEXATION/COST IMPACT ANALYSIS – DRAFT #2

Otak has created an Annexation/Cost Impact Analysis (see attachment). Mr. Chase provided a detailed overview of this information and said it goes beyond Metro's Title 11 requirements for concept planning. The Analysis addresses local fiscal and economic considerations for new conceptual development based on Alternative 3 over the next 20 years. The approach used is similar to that done for other projects and master plan areas and includes a site analysis, a plan for the land use pattern, transportation connections, and the provision for urban facilities (water, sanitary sewer system, storm sewer system).

Mr. Chase provided an overview of the methodology as shown in Figure 1 of his report. Tables depict land use patterns, employment and population information, assessed values as well as annual revenue estimates and administrative costs associated with the development of this area. Table 7 shows an annual revenue estimate of $711,213 for the year 2025. Annual administration costs go up to nearly $70,000 as shown in Table 8. Table 9 highlights revenues that increase over time due to such items as business licenses, property taxes, and fees. Capital costs are reflected in Table 10, while Table 11 illustrates the projected Operating and Maintenance (O & M) costs. What is not included in these tables is the actual capital costs for construction. Funding options need to be explored and could include bonding, limited revenue from System Development Charges, and options for road construction. The largest cost will be the extension of SW 124th Avenue. Limited Metro Transportation Improvement Program (MTIP) funds may be available, but they only do one large project every five years. If Washington County has a program, it could help as well as a 50% local match. It is estimated that $58 million will be needed, as shown in Table 10.

The Annexation/Cost Impact Analysis also looks at economic benefits of the project. As a Regionally Significant Industrial Area (RSIA), it is an important employment center in the Portland region. No other site has this kind of job base, which translates to a lot of money in state income tax revenue. There are many reasons for both the state and county to support this project. Timing could be a critical issue to maximize the option of utilizing MTIP funding. Another option is to apply for funding through grants. Mr. Johnson from ODOT feels that this project will generate interest from multiple State agencies. There is an "immediate opportunity fund" which has funds available with flexible pay back options. He will discuss this with his fundraising sources to identify further options.

Mr. Chase encouraged TAC members and guests to submit any comments on this report to Ms. Stepp by July 8.

Mr. Itel commented that the revenue from property tax in Table 7 seems low. It was clarified that this number is just for Tualatin. The school tax is treated as a "pass

through" to the State. A brief discussion was held with regard to adjustments that could occur to this figure based on changes in assessed value. It is difficult to predict the type of industry that will move into this area. High tech operations generate a high amount while the standard is light industrial which is more on the conservative side. As an example, Mr. Rux cited the tax revenue generated from Novellus. Mr. Metcalf requested that whatever methodology is used, that we insure it is consistent and comparing "apples to apples." It was suggested that this methodology be documented as a footnote only in the Otak report.

6. TRAFFIC ANALYSIS TECHNICAL MEMO – FINAL DRAFT

Paul Ryus from Kittelson & Associates provided an overview of their Technical Memorandum that outlines future alternatives for traffic through this area. The initial draft of this memorandum was provided to the TAC at their May 11th meeting, and this document is a revised version.

Mr. Ryus stated that the major changes include new runs of the Regional Transportation Model. It was Kittelson's goal to keep the findings in this Memorandum consistent with the study his company did as part of Town Center Plan Project. Using new modeling data, the general conclusions are similar to those previously reported. The new model shows less traffic on SW 124th Avenue which, in turn indicates that we will not need as large an intersection at SW Tualatin-Sherwood Road. The major complication is that the intersection of SW Boones Ferry Road and SW Tualatin-Sherwood Road will be over capacity in 20 years. Using the Transportation Planning Rule, the question becomes how to mitigate traffic impacts on the road system. At the May meeting, it was agreed to defer that decision until the Town Center Plan was done. However, as a result of discussions at the City Council meeting last evening, it was decided to put the Town Center Plan on hold until the visioning process is complete. That process could last 12-18 months prior to a "fix" being identified for this area. For this project, it means that we cannot develop a plan which will add more traffic in the area of the SW Boones Ferry Road and SW Tualatin- Sherwood Road intersection until a solution is found.

Mr. Brown inquired if we could begin development in the south end of the concept planning area. The market could drive developers to the south end prior to doing projects in the north. Mr. Rux stated that with the City Council not making a decision on the Town Center Plan, we cannot develop anything that would require changes to the Comprehensive Plan. This includes zoning changes, annexations, and concurrency issues. Transportation into the southern portion is also an issue since the City's TSP and Metro's RTP show a northerly alignment for the I-5/99W connector, whereas a southerly alignment would significantly alter traffic patterns in and around Tualatin. There would be obstacles to overcome on the transportation side of this equation, since to serve development transportation must be adequate. Mr. Rux reviewed the annexation process and related issues including the City's inability to provide City services (e.g. water and sewer) to the southern area without a connection through the northern portion of the concept planning area.

Mr. Chase stated that if we delay addressing these key transportation issues, other nearby areas might develop, which means capacity in the traffic model could diminish if we do not get ahead of it or stay in line with other projects. Some allowance for nearby development has been factored into the model. TAC members and guests discussed this situation and agreed that it will be harder to find a solution if we have to wait a long time to implement this plan. Mr. Ryus stated that some new intersections have also been included in the analysis for operational efficiency. The intersection at SW Tualatin-Sherwood Road and Boones Ferry Road as well as the I-5 south off ramps were major factors in the analysis.

Mr. Rux reconfirmed that in reviewing the 2020 and 2025 projections, the intersection at Boones Ferry and Tualatin-Sherwood Road exceeds capacity, and alternatives must be identified. The south connector will help, but the City requires other circulation patterns that could help bring the level of service back in line with the TSP. Options need to be in place prior to dealing with mitigation. Mr. Rux provided additional information on Council's direction based on last night's meeting and reaffirmed that the City may be 18 months away from those answers. However on the positive side, by that time we may have more direction on the southern alignment and the I-5/99W connector.

Meeting attendees were encouraged to forward any comments on this material to Ms. Stepp by July 8, and she will then forward the information onto to Kittelson.

7. EVALUATION CRITERIA – FINAL DRAFT

Mr. Simmons reviewed the final draft of this material. Minor changes were made to include data in the category regarding public input (Item E) which now reflects a tie between Alternatives 1 and 3. As mentioned by Mr. Chase, there was very limited public input. Alternatives 1 and 3 are very similar in the eyes of the public. This Evaluation Criteria will now be used as a tool for the starting point in the next discussion item.

The TAC was requested to further review the three alternatives as related to the evaluation criteria and make a recommendation on the preferred alternative. After this is decided, the final step will be to make changes to the City's code to implement these changes.

8. SELECTION OF PREFERRED ALTERNATIVE

Mr. Simmons clarified the results show a tie for Alternatives 1 and 3; Alternative 2 has dropped to third place. Mr. Metcalf stated he was under the impression that we were not going to specify lot sizes and inquired if we are making a decision on the actual size as shown on the Alternative maps, and that if there is a decision being made about lot sizes at this time, he noted he had a problem with that. Mr. Rux clarified the report does not get down to that level of detail, but Code language to implement this will require us to look at Metro's requirement of having one 100-acre and one 50-acre parcel, and then establish a minimum lot size as well as other development-related parameters such as structure height, setbacks, type of uses, transportation system, sewer, water, greenway,

wetlands protection/preservation, etc. There was brief discussion regarding the area adjacent to the pond and a preference for mixed use to serve local businesses in the area.

Mr. Rux stated that as an outcome of these discussions today and previous communication with the public, staff will draft additional language to implement the various elements of the preferred alternative. An open house/neighborhood meeting will be scheduled in late July to present further information.

Ms. Stepp reviewed the timeline for the last segment of this process and referred attendees to the Project Schedule shown on the wall and the handout. Mr. Metcalf was encouraged to talk directly with her regarding his suggestions and concerns as related to the Tigard Sand & Gravel property. As part of the research being done to insure the success of this project, Ms. Stepp noted she has been looking at models and code language for other Portland area towns, including Hillsboro and Gresham. As some of Tualatin's existing code language will not work for this area, she is continuing to search for alternate models to better fit the dynamics of this area. Staff also needs to talk to Metro about the size of parcels and how they can be developed/divided. Mr. Rux provided an overview of what area residents have proposed, and noted it is our hope to reach a compromise or hybrid for density trade offs. He explained a variety of options and questions that may be posed.

TAC members discussed the proposed alternatives and how to develop code language for it to happen as well as meet all necessary requirements. Discussions focused on how to provide water and sewer in the southern area. There has been tremendous improvement in that area due to the construction of the prison and growth in Wilsonville. Tonquin Road is busy, in effect serving as a connector between I-5 and 99W. Transportation concerns remain. Even if someone wants to develop in this area, there are some constraints that could prohibit it at this time. A question was raised if water and sewer could be run along the railroad track, taking advantage of their ROW. While technically feasible, this solution would be costly and gaining approval from the railroad to construct the water and sewer infrastructure in railroad right-of-way is unlikely. An annexation report lays out the costs associated with development in this area. While this area is very close to Wilsonville, Tualatin does not have an agreement with Wilsonville regarding shared services. A brief discussion was held regarding an IGA, similar to what was done for Bridgeport Village as well as the agreement the City has with the River Grove area of Lake Oswego. Mr. Boss indicated that we would need a charter exclusion to tap into water sources other than Bull Run.

Mr. Simmons suggested that TAC members, on behalf of their respective agencies, provide pertinent comments. Each member present shared their views:

ODOT: Mr. Johnson stated that with regard to the Transportation Rule, there is not much difference between the alternatives; all three require that mitigation must be done. There is nothing that cannot be addressed. All alternatives tie into the proposed connector in the same general area. He stated a minor preference for Alternatives 2 or

3, with additional collector to distribute traffic in the plan area. Balancing the different pros and cons, he leans toward Alternative 3 or a hybrid of Alternatives 2 and 3.

PGE: Mr. Angulo stated he had no preference. PGE will be able to serve the area regardless of which alternative is selected. No new sub-station is needed. An additional transformer can be added as needed. Any expansion can be handled by the existing Avery Street facility.

***Engineering*:** Ms. Hofmann stated that they can build anything. She is leaning toward Alternative 3 for the transportation system. Lot sizes do not matter from an engineering standpoint.

Operations/Public Works: Mr. Boss stated that he has no preference. His Department can work with anything. From a personal standpoint, he commented that Alternative 3 removes bottleneck issues.

***City of* Wilsonville:** Mr. Neamtzu stated that he personally likes Alternative 2 with the additional transit center and mixed use area in the southern area. Bringing many jobs to this area will require additional transit service and mixed use with commercial services for employees. The trail system is good and provides off-street connections to the south. He likes what he has heard regarding land use.

Mr. Rux stated that early in the discussions there had been talk of an additional Commuter Rail stop option. However, this could not be supported given the speed of the freight trains and space between stops. Mr. Neamtzu commented that the City of Wilsonville has not started the concept planning process for the North Wilsonville area, and they need to think about it in the big picture. He is circulating this information among Wilsonville staff. They have an interest in this project, as Wilsonville is very close to the southern study area. At the time the prison was built, extra capacity for the provision of City services was built in that area by Wilsonville.

Tonquin Industrial Group: Mr. Brown and Mr. Storie feel that Alternatives 2 and 3 are OK. There is a rail spur in Alternative 3, which is important to industry in this area. Mr. Storie suggested that commercial services be located in the northern area to avoid employees traveling to Sherwood or Wilsonville.

Mr. Chase briefly commented on parcel sizes. Areas H, F, and J are intended to be large areas within the Comprehensive Plan. He reviewed these areas on the map and stressed that we can accommodate many different parcel sizes throughout the concept planning area.

Ms. Stepp asked if there were any questions. She explained the next steps in this process and the upcoming interaction with TPAC and Council, both of which continue to be briefed on a monthly basis. Draft code language will be available in August. TAC members and guests indicated that it would be beneficial if the minutes from the July 14th TPAC meeting would be available for review at the next TAC meeting. The

Consultant is responsible for the creation of the Concept Plan with information on how to implement it. There is a lot of work to be done in a short time span.

It was agreed to move forward with Alternative 3. This decision becomes part of the plan with another level of public and TPAC review after which further refinements may be made. Mr. Rux reiterated that Alternative 3 was a hybrid created based on comments from all sources. The TAC stressed its consensus to support Alternative 3 with the caveat that it can be fine-tuned or refined, as needed.

9. CONCEPT PLAN DISCUSSION

Ms. Stepp gave the group a very brief overview of what the concept plan will include. The traffic and fiscal impact analyses and others will become a part of the plan. It will include a description of this process, the conceptual land use alternative and information on how it could be successfully implemented. Staff is scheduled to present this plan to City Council on August 22. Due to timeline constraints, Ms. Stepp reiterated that she would need to receive comments from TAC members regarding the traffic technical memo, the annexation/cost impact memo, and any other draft document for this project handed out previously, on or before **Friday, July 8**.

Mr. Brown stated that he talked to Bob Melbo from ODOT rail. Their permit had expired and is now deeded to ODOT. The crossing for Tri-County Industrial Park is a private crossing, and the permit will be renewed.

10. PROJECT SCHEDULE UPDATE

Ms. Stepp distributed an updated project schedule that highlights the tight timeline to be followed for the remainder of this project. An overview of this project will be presented to the Tualatin Planning Advisory Committee (TPAC) on July 14 at 7:00 p.m. in the City Council Chambers. This is a public meeting, and everyone is invited to attend. City Council will be given a briefing at their July 25 meeting and on August 22, they will be presented with the Concept Plan. The traffic analysis and costs will be integrated into the final concept plan.

11. PUBLIC COMMENT: None.

12. NEXT STEPS:

Ms. Stepp stated that all reports/handouts would be posted on the web site with updated information as it becomes available. She encouraged TAC members and guests to check the site frequently.

13. SCHEDULE NEXT TAC MEETING:

The next TAC meeting will be held on Wednesday, July 20, from 10 a.m. –noon in the Tualatin City Council Chambers.

14. WRAP UP:

Ms. Stepp thanked everyone for attending the meeting.

Minutes prepared by: Carol Rutherford, City of Tualatin

Southwest Tualatin Concept Planning
Technical Advisory Committee Meeting #7
July 20, 2005 10:00 am – 12:00 pm
Council Chambers, 18884 SW Martinazzi Avenue
Tualatin, Oregon

A G E N D A

1. Introductions
2. Public Comment
3. Approval of Minutes from the June 28, 2005, Meeting #6
4. Transportation System Plan - Technical Memo
5. Annexation/Cost Impact Analysis Memo
6. Concept Plan – Draft Document
7. Proposed Changes to the Tualatin Development Code
8. Project Schedule Update
9. Public Comment
10. Next Steps – need to wrap up project by mid-September
11. Wrap-Up

Southwest Tualatin Concept Planning
Technical Advisory Committee #7 - Minutes
July 20, 2005

TAC Attendees:

City of Tualatin:	Doug Rux, Community Development Director
	Elizabeth Stepp, Senior Planner
	Dan Boss, Operations Director
	Kaaren Hofmann, Civil Engineer
	Carol Rutherford, Office Coordinator
CH2M Hill:	Dave Simmons
Kittelson and Associates:	Mark Vandehey
Metro:	Sherry Oeser
ODOT:	Andrew Johnson
City of Wilsonville:	Dave Waffle
Tigard Sand and Gravel:	Roger Metcalf
Tonquin Industrial Group:	Nick Storie

Property Owners/Guests: Ken Itel; Mike Itel; Bruce Watlack

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1. INTRODUCTIONS

Elizabeth Stepp, Senior Planner from the City of Tualatin, welcomed everyone. TAC members, property owners and guests introduced themselves. Doug Rux and Dan Boss are attending another meeting and will join us later this morning.

2. PUBLIC COMMENT

There was no public comment. Guests will also have an opportunity to comment at the end of the TAC meeting.

3. APPROVAL OF MINUTES, JUNE 28, 2005, MEETING #6

The TAC indicated their consensus to approve the minutes of the June 28, 2005, meeting. These minutes will be finalized and posted on the website later today.

4. TRANSPORTATION SYSTEM PLAN – TECHNICAL MEMO

As Paul Ryus is on vacation, Mark Vandehey of Kittelson and Associates reviewed this document. It consists of changes to the Transportation System Plan (TSP). This document is still in draft form and continues to be “tweaked and polished.” However, it will substantially remain the same. A final draft will be done prior to being reviewed by TPAC in August.

Mr. Vandehey solicited comments based on the current layout. Mr. Simmons stressed the importance of wrapping things up. TAC members were requested to provide feedback by Monday, July 25th.

Ms. Oeser stated that she will show this document to the transportation staff at Metro. Mr. Waffle from the City of Wilsonville stated that it is consistent with everything in the works. His concern is that the main focus is on traffic moving north except for SW 124th Avenue to the eventual I-5 connector. An interim effect of this is traffic congestion and volume on Tonquin Road prior to the connector being built. Mr. Vandehey stated that this is a typical issue in doing long-range planning. Once new construction is identified, the developer will still have to go through the standard approval process and will have to address traffic impacts. Our task is to make assumptions of what facilities will be in place. Other interim improvements may be required. The phasing of future improvements analysis is not addressed in this document.

Mr. Johnson from ODOT commented that this is a good document. He will review the report one more time. He appreciated the verbiage addressing connections that "MAY" be provided, and not "SHALL" be provided since we won't know where they will be for many years. He will send a follow-up email for documentation purposes on behalf of ODOT.

5. ANNEXATION/COST IMPACT ANALYSIS MEMO

As Todd Chase from Otak is on vacation, Mr. Simmons reviewed this memo which was prepared by Otak and circulated to the TAC last week. It is a revised version of the memo that was distributed at the June 28th TAC meeting and incorporates comments provided by City staff. The essence and purpose is still the same. It contains updated costs and assessed value information for the type of land use projected for this area. This updated information increased the revenue projections. These future estimates come with a lot of uncertainty, and, as a result, we are taking a very conservative approach.

Ms. Hofmann inquired if the $209,000 allocated for the sanitary sewer system on page 11 includes a pump station. If not, how much would it add on? Currently Clean Water Services maintains all facilities within the City so staff doesn't have that information readily available. Mr. Chase from OTAK would have to provide that figure. Ms. Stepp commented that she likes the format of the report; it is easier to read and navigate through. There were no further questions. Mrs. Stepp encouraged TAC members to provide any additional comments to her by Monday, July 25th.

6. CONCEPT PLAN – DRAFT DOCUMENT

This document was sent out yesterday via email to all TAC members; additional copies are available this morning. Mr. Simmons stated that there is no new information in this document - it is a summary which becomes apparent when reviewing the Table of

Contents. The bulk of information will be in the Plan's appendices that will contain the documents prepared throughout this process (i.e. TAC meeting minutes, open house documentation, Existing Conditions Technical Memorandum, Traffic Analysis, Annexation Cost Impact Analysis and recommended changes to the TSP.)

This plan also contains some more general information about the concept planning process. The plan still has some strikeouts and inconsistencies that need to be cleaned up. A thorough review will be done within the next week to insure consistency throughout the document. Ms. Stepp stated that the information will be changed to reflect that the Itels are not part of the Tonquin Group.

Mr. Johnson commented that any changes to signals or lane configuration would need to be approved by the Statewide Traffic Engineer. In reviewing the traffic information on page 11, the first bullet is OK. Any changes will have to go through the proper channels, and he can't speak to its approval. However, a triple right turn lane will be very difficult to get approved. Neither Mr. Johnson nor Mr. Vandehey are aware of any triple right turn lanes in the Portland area. This may be more of a design issue to be discussed at the time it is required. This concern could be identified by a note in the document.

Ms. Hofmann clarified that when referencing the restriping of lanes that it is on the ramps only and not the highway.

Ms. Stepp thanked everyone for taking the time to review this document and providing comments and asked that TAC members provide any additional comments to her by Monday, July 25th.

7. PROPOSED CHANGES TO THE TUALATIN DEVELOPMENT CODE

Doug Rux, Dave Simmons and Elizabeth Stepp met yesterday to discuss ways to implement the ideas for a light campus park-like setting in this area as well as a mixed-use area. She reviewed potential approaches and asked for suggestions from this group.

The initial approach is to create a new district since the Tualatin Development Code doesn't quite capture the mix of light industrial and high tech land uses in a corporate campus-like setting. She reviewed a design type document that outlines the proposed concept as well as a sketch of the area. Consideration is also given to this being a Regionally Significant Industrial Area (RSIA) and the associated requirements for areas with that designation. Special Code language will be created to attract and encourage this type of use and development standards to include the proposed buffer and adjoining residential area. An Overlay District may be created to focus on small-scale commercial uses to serve employees in this area for the mixed-use area near the ponds.

Ms. Oeser inquired about the size of the proposed parcels. Ms. Stepp stated that Alternative 3 shows Area "F," a 100-acre area, and area "G," a 50-acre+ area. This is to

meet Metro's RSIA requirements. Areas "I" and "J" are smaller, probably about 30-40 acres. Area "H" was shown to suggest that some sites could be developed for smaller scale light industrial uses.

Mr. Metcalf referred to page 9 of the Concept Plan as related to parking requirements and the various ratios. Mr. Rux clarified the information. It was agreed that we don't need to quote a "range," as different industrial uses have different ratios. This will be clarified in the final document. Mr. Johnson suggested that we may want to put in a "minimum" since we don't have maximums to aid in the clarification of these requirements.

Mr. Metcalf inquired about what building setback requirements were typical for Tualatin. He asked what the building setbacks were for the area and if these were similar to requirements in similar districts elsewhere in Tualatin. Ms. Stepp and Mr. Rux stated that setbacks could be up to 100 feet along the border to mitigate the buffer. SW 115th Avenue could be a 50 feet setback while SW 124th Avenue could be 50 feet. Zoning along SW 115th could be General Manufacturing (MG) or Light Manufacturing (ML). TAC members briefly reviewed the possible options. Mr. Rux suggested that we pick a midpoint to split the difference. Flexibility should exist, especially in the commercial area. Mr. Vandehey thought it was a good approach to have an Overlay District near the pond as well as the creation of a subset of standards in that area. Mr. Storie voiced concern about taking 100 feet off his property near Tonquin Road and the railroad. Mr. Rux clarified that this buffer would terminate at Helenius Road. However, things could change if the residential area to the east develops at a future time. At the present time this area is not in the UGB but could receive State approval soon.

Ms. Stepp stated that staff and the consultants will proceed with this approach to encourage industrial uses and provide for commercial services in an Overlay District. Ms. Stepp asked TAC members to send her any ideas or thoughts they might have on approaches to implementing the concept plan.

8. PROJECT SCHEDULE UPDATE

Mr. Simmons announced that there is a Neighborhood/Developer meeting scheduled on Tuesday evening, July 26th, from 6:00 – 8:00 p.m. in the City Council Chambers. Everyone is invited. The format will be very similar to the previous open houses. Some proposed draft Code language will be developed prior to the meeting and shared with attendees. Mr. Rux expanded on this indicating that the draft Code language will be straight forward, similar to what was created for the implementation of the NW Concept Plan. Staff won't have "specifics," and the intent is to explain the concepts and direction we are taking. Recommendations for changes to the TDC will be reviewed by TPAC on August 11th. A special TPAC meeting will be held on August 25th for a final review and recommendation to City Council. Council will also be briefed on this entire process on August 22nd. On September 12, 2005, a formal public hearing will be held on the proposed Plan and Map amendments to implement the recommended changes. The grant requires that the process be completed by September 15, 2005.

Mr. Rux reminded TAC members of the approach taken by our City Council on the Town Center Plan. They voted to accept the plan, but no changes to the Tualatin Development Code were approved, pending the outcome of the Community Visioning process. Mr. Johnson indicated that if Council should choose this approach for the SW Concept Planning Project, it shouldn't pose any problem as long as the big pieces of the project are done.

Ms. Oeser mentioned that we may be invited to Metro Council to provide an overview of this project. This would probably occur in October 2005. A brief discussion was held regarding a modification to the Metro ordinance regarding RSIA since, per the terms of that Ordinance, no commercial uses are permitted in a Regionally Significant Industrial Area. Ms. Oeser indicated that this should not be a problem since we have a solid rationale and justification for the request.

9. PUBLIC COMMENT

Mr. Boss inquired if this group will be meeting at any future time. Mr. Rux stated that this is the last TAC meeting. Updates will continue to be provided to the TAC members via email and the web page. The tasks assigned to the TAC members will be concluded after the TAC members submit any final comments to Ms. Stepp by Monday, July 25th.

10. NEXT STEPS

This was covered under the project schedule update. Ms. Stepp thanked everyone for their participation in this process.

Mr. Johnson commended Dave Simmons, Doug Rux, and Elizabeth Stepp for their efforts in coordinating this project. He stated that it was a very successful process, and he looks forward to its implementation.

Minutes prepared by: Carol Rutherford, City of Tualatin

SW TUALATIN CONCEPT PLANNING

OPEN HOUSE

March 9, 2005
5:00 P.M. – 7:00 P.M.

TUALATIN CITY COUNCIL CHAMBERS
18884 SW MARTINAZZI AVENUE

You are invited to stop by the City of Tualatin to learn more about the draft concept plan being prepared for the urbanization of a 430-acre area for industrial development located south of Tualatin-Sherwood Road, west of the Portland and Western Railroad tracks and north of Tonquin Road in the southwest corner of Tualatin. This area was brought into the Urban Growth Boundary (UGB) in December 2002 and an additional 80 acres brought into the UGB by Metro in June 2004.

The open house is an opportunity for citizens to review the work conducted to date and provide feedback. The concept plan is evaluating where new streets, sewer, and water lines would be located, location of environmental features to be preserved, and the type of industrial uses that could be built in the future as examples.

For more information, contact Doug Rux, Community Development Director, or visit our website at:

http://www.ci.tualatin.or.us/business/planning/sw_concept.cfm

Phone: 503.691.3018 **Email:** drux@ci.tualatin.or.us

Notice sent to all property owners and surrounding property owners as well as the people listed below:

MR GENE MILDREN
MILDREN DESIGN GROUP
7650 SW BEVELAND STREET SUITE 120
TIGARD OR 97223

MR TODD SHEAFFER
SPECHT PROPERTIES
15400 SW MILLIKAN WAY
BEAVERTON OR 97006

MR LANS STOUT
T. M. RIPPEY CONSULTING ENGINEERS
7650 SW BEVELAND STREET SUITE 100
TIGARD OR 97223

Updated: 2/24/05

SW TUALATIN CONCEPT PLANNING

OPEN HOUSE, MARCH 9, 2005

COMMENTS

1. Please protect both the pond and try to enhance it. Also, protect (do not cut them down) the trees of the rock quarry area.

   Do not include additional heavy manufacturing in this development.

2. Most residents attending are probably not well-versed in land-use planning regulations. Simplified communication would be helpful.

   It goes without saying that it's of primary importance to maintain a visual and sound buffer between industrial sites and residential areas to the east of the proposed development area.

3. Leave trees and wetlands intact – do not do anything except add trees and remove dead underbrush. Want entire wooded area to be protected not just large pond – Prefer Alternative 1.

4. Leave trees and wetland in natural state – include entire area bordering Tigard Sand and Gravel not just large pond. Alternative 1 more desirable.

5. Protect the trees. It is the most important thing!

6. Do not cut trees down.

7. Do not cut trees down in the neighborhood (Hedges Park – Fuller Drive)

8. Tigard Sand and Gravel should not cut down the trees in the neighborhood. We will organize and boycott and go to any lengths to stop them.

9. Save the Trees!!!

10. You are going to destroy the property value of a lot of homes if you allow the trees to be cut down.

11. Please maintain all existing trees and wetland areas between the housing areas and an industrial park. It is imperative that this barrier be maintained as both a sound and visual barrier between the two areas.

This issue is new to me, but I will try to be more involved and aware of this process going forward.

12. Please do not cut the trees off of the railroad line in Tualatin. Neither yourselves as a City nor by Washington County, nor by any future property owner on the other side of the railroad buffer area.

    It would keep the residents of Tualatin happy and that would mean less angry housewives daily harassing the above-mentioned entities. Thank you.

13. The majority of the residents including myself are not against industry or development. But as a homeowner, we feel it is very important to keep the green screen of trees to separate development and the residential neighborhood from the eyesore of development. I feel that you would have a lot more community support with your plan if the trees are kept, protecting our property value and the feel of a neighborhood and not an industrial park.

14. The language used concerns me, specifically regarding the trees along the railroad tracks. “The City has not plans to cut the trees . . . “ I understand that because you don’t have jurisdiction over the land, but it sounds like this is a line used to placate people . . . sounds like “the tree will not be cut” but not what is truly being said. My stance is no trees should be cut even to create ‘trails and parks.’ Sounds like another way to placate the people . . . a % of trees will be gone but, look, you have trails. The trees should remain and trees should be replanted. It is an extremely important buffer, sound and visual, between industry and homeowners. Also concerned that the wetland area be protected in its current state.

15. We agree with Alternative Plan 1 - in respect to the road extension N/S with modification to align the road to the west property lines instead of through the center of our property - to connect to the proposed new route via Waldo Way to Tonquin Road and give us access and egress without needing to cross the RR and McCamant Drive for safety issues.

16. (1) Our primary concern is that the trees on the ridge to the east of the area remain as a visual and sound buffer between the industrial area and our neighborhood.

    (2) Our secondary concern is that the industry not be noisy (especially at night) and any buildings not be visible from our neighborhood (at 320-foot elevation to the west). I prefer Plan II with small businesses

as an additional buffer between the neighborhoods to the west and heavier/larger industry.

(3) Thirdly, further development of a pedestrian path around Koch Pond would be a nice amenity along with a path through the trees on the east ridge as long as trees did not need to be cut down to accommodate such a path.

(4) Fourthly, we prefer any plan that would relieve truck traffic congestion away from our neighborhood, away from the center of Tualatin, and away from Boones Ferry Road.

17. This is a prime property for most kinds of industrial development which is badly needed to support jobs and economic conditions in this area as well as the metropolitan area. This is a well-established heavy industrial area, and housing should be kept at a distance that allowed continued operation of similar kinds of industrial development. Unreasonable restrictions on these properties should not be allowed and, if restrictions are made, the property owner should be compensated as in Ballot Measure 37.

18. I am concerned about the traffic flows through town and around Tualatin. Specifically, I am concerned with commercial traffic which Tualatin-Sherwood Road cannot currently support. I am also concerned with the industrial to residential ratio in Tualatin. While industry is important to growth, it should not supplant the quality of life of Tualatin's residents. Community compatibility should be the top priority in planning such as this.

19. Keep all the trees as a buffer between residential and industrial. Extend the tree buffer south of the pond along the railroad track. Extending the tree buffer would be very important to the residents. NO heavy manufacturing. Limit the type of industrial building to "clean" industry.

    Limit the height of industrial buildings.

    Create a housing buffer west of the railroad track.

20. I like Alternative ONE

    I do not want an east/west street or a railroad crossing. I prefer a route OFF the west property lines of the Johnson's, Brown's, Albertson's, McGuire's and Albertson's north piece ending at the Tigard Sand property.

21. I realize that there will be industrial development, but I feel that the trees should remain and additional buffers be installed. For a Tree City, we do not really seem to be much for saving trees.

22. Area G of Alternative 1 should be limited in the amount of fill level to help screen the residential area from the industrial. Also, the pond area and beaver dam located in the southern portion of the lake guaranteed protection regardless of development decisions. Tree and wetland area buffer zone should be required to be donated as park land space for the City and made available for public use – hiking, natural use etc. Railroad tracks could be relocated to the west side of the industrial area.

23. I feel 99-I5 connector needs to be in place before moving on (connecting with 124th)

24. Preserve the wetlands and create animal habitats.

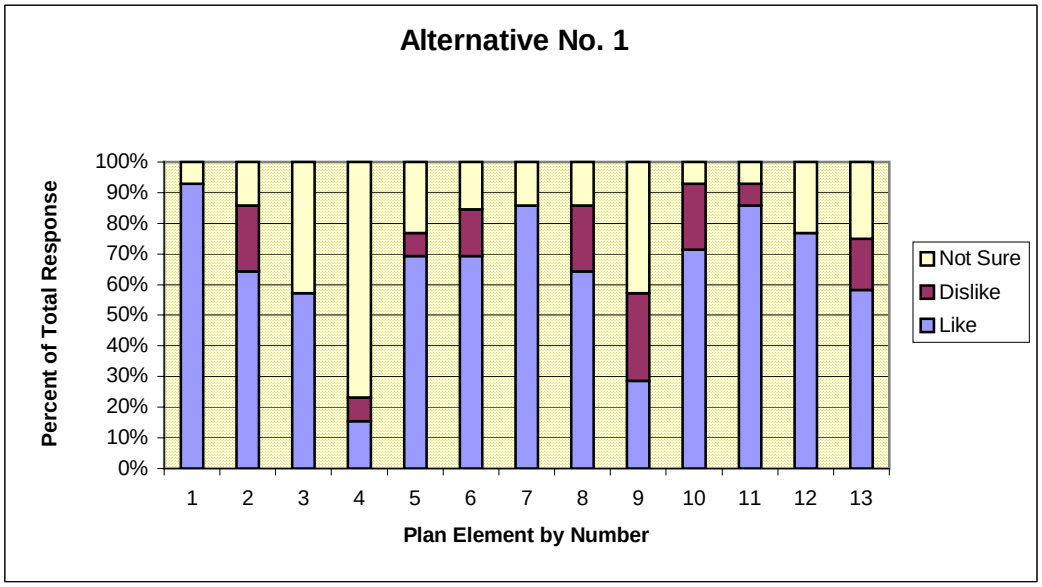
Open House #1 – Results of Exit Survey on Draft Alternatives

Plan Element	Draft Alternative No.	"Like"	"Dislike"	"Unsure"
Primary Access via 124th Ave.	1 2	**93%** **100%**	- -	6% -
Secondary Access via 115th Ave.	1 2	**60%** 30%	26% **50%**	13% 20%
Access spacing along 124th Ave	1	**60%**	-	40%
Access spacing along 124th Ave	2	44%	11%	44%
Site Circulation (Collector System)	1 2	15% 25%	7.5% 25%	**77%** **50%**
Transit Station near NW corner of site	1 2	**71%** **80%**	7% -	21% 20%
Transit Station near SE corner of site - possible commuter rail stop (*Alt. 2 only*)	2	50%	40%	10%
Design / Landscaping & perimeter buffers along E side of site	1 2	**86%** **90%**	- 10%	13% -
Mixed Use area near pond at N portion of site (*Alt. 1 only*)	1	**71%**	14%	14%
Mixed Use area near Transit Center at SE portion of site (*Alt. 2 only*)	2	44%	33%	22%
Trails within power line easements	1 2	**66%** 50%	20% 40%	13% 10%
Potential Rail Spur (*Alt. 1 only*)	1	33%	26%	40%
Large lot industrial sites in central portion of site	1	**73%**	20%	6.5%
Large lot industrial sites in central portion, *with smaller sites along E portion of site* (*Alt. 2 only*)	2	40%	50%	10%
Medium sized lots along 124th Ave. (*Alt. 1 only*)	1	**86%**	6.5%	6.5%
Medium sized lots along E portion of site (*Alt. 2 only*)	2	20%	**50%**	30%
Adjacent Land Use Buffering	1 2	**78%** **55%**	- 11%	21% 33%
Adjacent land use compatibility	1 2	**54%** 50%	23% 10%	23% 40%

Compiled by E Stepp 6/6/05

Average Number of Respondents	
Draft Alternative 1	13.5
Draft Alternative 2	9.6

Summary of Responses to Proposed Alternatives
Tualatin Southwest Concept Plan Project
Open House #1, March 2005



Plan Elements *

1. Primary Access via 124th Ave.
2. Secondary Access via 115th Ave.
3. Access Spacing along 124th Ave.
4. Site Circulation
5. Transit Station near NW corner of site
6. Landscaping / Perimeter Buffer along east side of site
7. Mixed Use Area near pond near NW portion of site
8. Trails Within Powerline Easements
9. Potential Rail Spur
10. Large Lot Industrial Sites in central portion of site
11. Medium Size Lots along 124th Ave.
12. Adjacent Land use Buffering
13. Adjacent Land Use Compatibility

Elements Receiving the Highest Number of "Like" Responses

Primary Access via 124th Ave., Mixed Use Area near pond in NW portion of site, Medium Size Lots along 124th Ave., Adjacent land use buffering

Elements Receiving the Highest Number of "Dislike" Responses

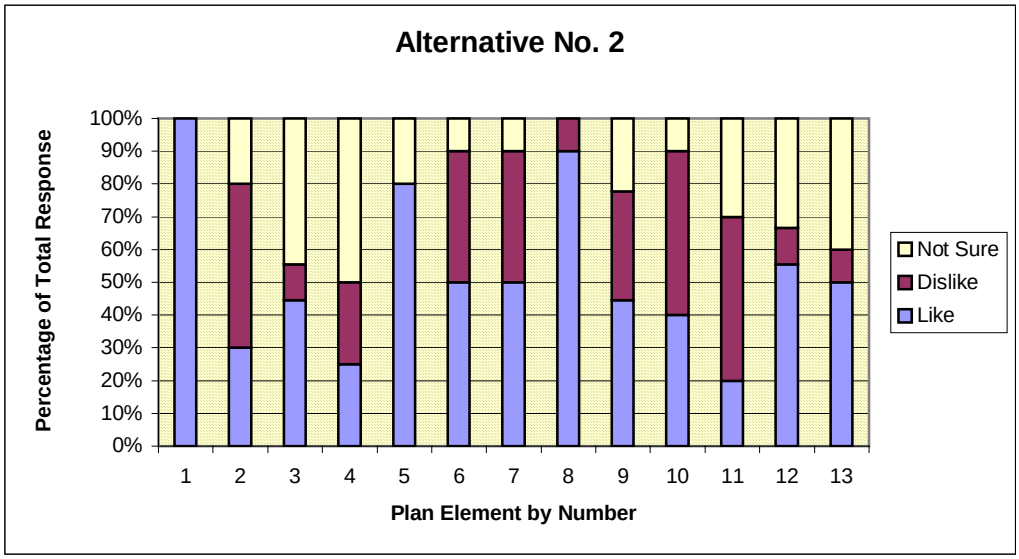
No strong dislikes for this alternative; highest response was to "Potential Rail Spur" (28% of total responses for this element)

Elements Receiving the Highest Number of "Not Sure" Responses

Site Circulation, Potential Rail Spur, Access Spacing along 124th Ave.

* please refer to the alternative plan diagrams to view these plan elements

Summary of Responses to Proposed Alternatives
Tualatin Southwest Concept Plan Project
Open House #1, March 2005



Plan Elements *

1. Primary Access via 124th Ave.
2. Secondary Access via 115th Ave.
3. Access Spacing along 124th Ave.
4. Site Circulation
5. Transit Station near NW corner of site
6. Transit Station near SE corner of site
7. Trails Within Powerline Easements
8. Landscaping / Perimeter Buffer along east side of site
9. Mixed Use Area in SE portion of site
10. Large Lot Industrial Sites in central portion of site
11. Medium Size Lots on eastern portion of site
12. Adjacent Land use Buffering
13. Adjacent Land Use Compatibility

Elements Receiving the Highest Number of "Like" Responses
Primary Access via 124th Ave., Transit Station near NW corner, Landscaping/Perimeter Buffer along east side, Adjacent Land Use Buffering

Elements Receiving the Highest Number of "Dislike" Responses
Secondary Access via 115th Ave., Large Lot Industrial Sites in central portion of site, Medium Size Lots on eastern portion of site

Elements Receiving the Highest Number of "Not Sure" Responses
Site Circulation, Access Spacing along 124th Ave., Adjacent Land Use Compatibility

* please refer to the alternative plan diagrams to view these plan elements

SW TUALATIN CONCEPT PLAN
PUBLIC OPEN HOUSE
EXIT SURVEY ON DRAFT ALTERNATIVES

ALTERNATIVE 1 - Plan Element	**LIKE**	**DISLIKE**	**UNSURE**
Primary Access via 124th Avenue	14		1
Secondary Access via 115th Avenue	9	4	2
Access Spacing Along 124th Avenue *Comment: depends on industry*	9		6
Site Circulation (Collector System)	2	1	10
Transit Station near NW Corner of Site	10	1	3
Design/Landscaping and Perimeter Buffers along East Side of Site *Comment: Very important for residential* *Comment: Needs to be dedicated parkway*	13		2
Mixed Use Area near Pond at North Portion of the Site	10	2	2
Trails Within Power Line Easements	10	3	2
Potential Rail Spur	5	4	6
Large Lot Industrial Sites in Central Portion of the Site	11	3	1
Medium Size Lots Along 124th Avenue	13	1	1
Adjacent Land Use Buffering	11		3
Adjacent Land Use Compatibility *Comment: Too close to residential*	7	3	3

Other: Please Describe

(1) #1 Concern - Save the trees!
(2) Pedestrian trail on east ridge through trees - as long as trees do not need to be cut for the path. Pedestrian trail developed along Koch pond
(3) Favor Alt. #1 with modification as marked on site drawing (broken lines)
(4) Like Alternative #1
(5) Alternative 1 - YES!
(6) Alternative 1 is better than A-2

SW TUALATIN CONCEPT PLANNING

OPEN HOUSE

June 14, 2005
6:00 P.M. – 8:00 P.M.

(Formal Presentation at 6:30 p.m.)

TUALATIN POLICE FACILITY
8650 SW TUALATIN ROAD

The City of Tualatin has scheduled a second open house to provide additional information about the draft concept plan being prepared for the urbanization of a 430-acre area for industrial development located south of Tualatin-Sherwood Road, west of the Portland and Western Railroad tracks and north of Tonquin Road in the southwest corner of Tualatin. This area was brought into the Urban Growth Boundary (UGB) in December 2002 and an additional 80 acres brought into the UGB by Metro in June 2004.

A formal presentation will be made at 6:30 p.m. and will include an overview of three possible alternatives for the development of this area. Citizens can to review the work conducted to date and provide feedback. This concept plan includes an evaluation of where new streets, sewer, and water lines would be located, location of environmental features to be preserved, and the type of industrial uses that could be constructed in the future.

For more information, contact Doug Rux, Community Development Director, or visit our website at:

http://www.ci.tualatin.or.us/business/planning/sw_concept.cfm

Phone: 503.691.3018 **Email:** drux@ci.tualatin.or.us

Alternative 1

Plan Element	Level of Support (Please Check One for Each Element) Like	Dislike	Not Sure
Primary Access via 124th Avenue *Extended south, this road could provide the main access to the area's interior*	☐	☐	☐
Secondary Access via 115th Avenue *Another potential road extension to provide interior access*	☐	☐	☐
Perimeter Buffer *A natural landscape buffer area along the eastern portion of the site*	☐	☐	☐
Natural Features *Includes natural area along a portion of the eastern side, and ponds*	☐	☐	☐
Site Circulation *The proposed street layout and its connections to other roads*	☐	☐	☐
Trails for Bicycles and Pedestrians *Within power line easements, around ponds, and through eastern buffer area*	☐	☐	☐
Transit Station *A proposed transit station near the NW corner of the site could provide a transportation alternative*	☐	☐	☐
Mixed Use Area *In the NW portion, near the ponds*	☐	☐	☐
Potential Rail Spur *Could provide for future flexibility along this commuter rail line*	☐	☐	☐
Central Portion for Large Lot Industrial Sites *Could provide opportunities for Business Park and Light Industrial types of uses*	☐	☐	☐
Medium Size Lots along 124th Avenue *Potential sites for smaller businesses*	☐	☐	☐
Adjacent Land Use Compatibility *Does the proposed conceptual design and layout promote compatibility with adjacent uses?*	☐	☐	☐

Additional Comments:

Alternative 2

Plan Element	Level of Support (Please Check One for Each Element) Like	Dislike	Not Sure
Primary Access via 124th Avenue *Extended south, this road could provide the main access to the area's interior*	☐	☐	☐
Secondary Access via 115th Avenue *Another potential road extension to provide interior access further east*	☐	☐	☐
Perimeter Buffer *A natural landscape buffer area along the eastern portion of the site*	☐	☐	☐
Natural Features *Includes natural area along a portion of the eastern side, and ponds*	☐	☐	☐
Site Circulation *The proposed street layout and its connections to other roads*	☐	☐	☐
Trails for Bicycles and Pedestrians *Within power line easements, around ponds, and through eastern buffer area*	☐	☐	☐
Transit Station – NW *A proposed transit station near the NW corner of the site could provide a transportation alternative*	☐	☐	☐
Mixed Use Area – SE Corner *Near the proposed SE Transit Station*	☐	☐	☐
Transit Station – SE Corner *Near the mixed use area, could provide a possible commuter rail stop*	☐	☐	☐
Central Portion for Large Lot Industrial Sites *Could provide opportunities for Business Park and Light Industrial types of uses*	☐	☐	☐
Small Lots along Eastern Portion & near Ponds *Potential sites for smaller businesses*	☐	☐	☐
Adjacent Land Use Compatibility *Does the proposed conceptual design and layout promote compatibility with adjacent uses?*	☐	☐	☐

Additional Comments:

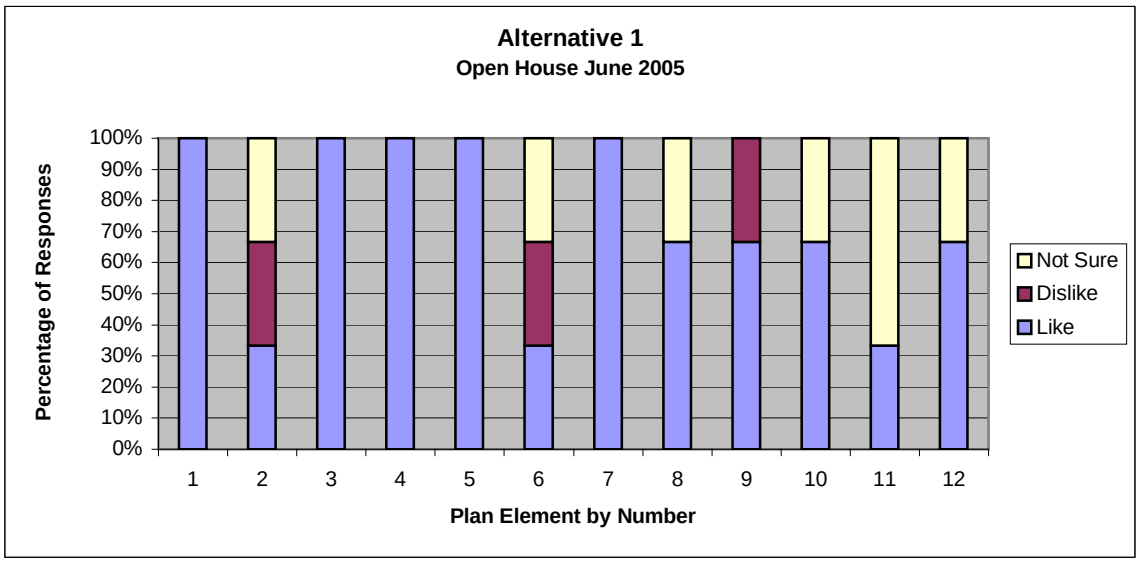
Alternative 3

Level of Support
(Please Check One for Each Element)

Plan Element	Like	Dislike	Not Sure
Primary Access via 124th Avenue *Extended south, this road could provide the main access to the area's interior*	☐	☐	☐
Secondary Access via 115th Avenue *Another potential extension to provide interior access further east*	☐	☐	☐
Perimeter Buffer *A natural landscape buffer area along the eastern portion of the site*	☐	☐	☐
Natural Features *Includes natural area along a portion of the eastern side, and ponds*	☐	☐	☐
Site Circulation *The proposed street layout and its connections to other roads*	☐	☐	☐
Trails for Bicycles and Pedestrians *Within power line easements, around ponds, and through eastern buffer area*	☐	☐	☐
Transit Station *A proposed transit station near the NW corner of the site could provide a transportation alternative*	☐	☐	☐
Mixed Use Area *Near the proposed NW Transit Station, near the ponds*	☐	☐	☐
Potential Rail Spur *Could provide for future flexibility along this commuter rail line*	☐	☐	☐
Central Portion for Large Lot Industrial Sites *Could provide opportunities for Business Park and Light Industrial types of uses*	☐	☐	☐
Smaller Lots along Eastern Portion & near Ponds *Potential sites for smaller businesses*	☐	☐	☐
Adjacent Land Use Compatibility *Does the proposed conceptual design and layout promote compatibility with adjacent uses?*	☐	☐	☐

Additional Comments:

Summary of Responses to Proposed Alternatives
Tualatin Southwest Concept Plan Project
Open House #2, June 2005



Plan Elements - Alternative 1 *

1. Primary Access via 124th Ave.	7. Transit Station near NW corner of site
2. Secondary Access via 115th Ave.	8. Mixed Use Area near pond in NW portion of site
3. Landscaping / Perimeter Buffer along east side	9. Potential Rail Spur
4. Natural Features	10. Large Lot Industrial Sites in central portion of site
5. Site Circulation	11. Medium Size Lots along 124th Ave.
6. Trails for Bikes & Pedestrians	12. Adjacent Land Use Compatibility

Elements Receiving the Highest Number of "Like" Responses **

Primary Access via 124th Ave., Landscaping/Perimeter Buffer, Natural Features, Site Circulation, Transit Station near NW corner

Elements Receiving the Highest Number of "Dislike" Responses **

Secondary Access via 115th Ave. (see also "Neutral" below), Trails for Bikes and Pedestrians (see also "Neutral" below), Potential Railroad Spur

Elements Receiving the Highest Number of "Not Sure" Responses **

Medium Sites along 124th Ave.

Mixed Responses that made the Element "Neutral" **

Secondary Access via 115th Ave., Trails for Bikes & Pedestrians

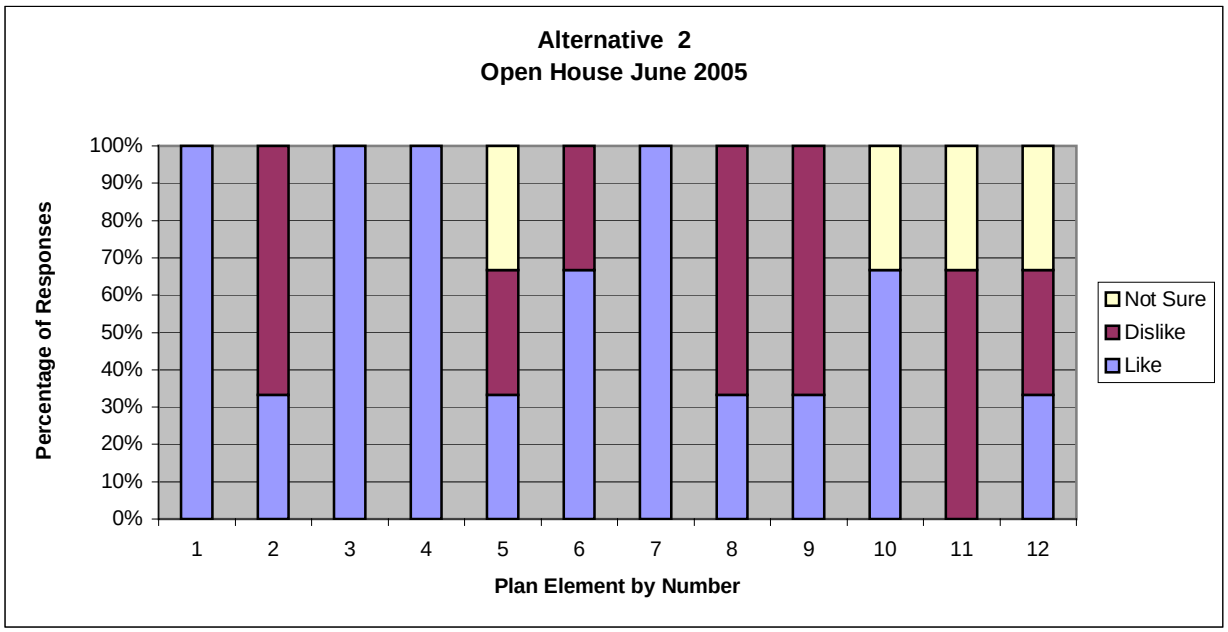
****Note: Total Number of Respondents: 3**

Additional Comments:

1. Tualatin and Sherwood has enough mixed use, and added use of Tualatin-Sherwood Road to this proposed mixed use might be questionable. Also, Tigard Sand might be at the north end a lot longer.
2. Best alternative.

* please refer to the alternative plan diagrams to view these plan elements

Summary of Responses to Proposed Alternatives
Tualatin Southwest Concept Plan Project
Open House #2, June 2005



Plan Elements – Alternative 2 *

1. Primary Access via 124th Ave.	7. Transit Station near NW corner of site
2. Secondary Access via 115th Ave.	8. Mixed Use Area in SE portion of site
3. Landscaping / Perimeter Buffer along east side	9. Transit Station in SE portion of site
4. Natural Features	10. Large Lot Industrial Sites in central portion of site
5. Site Circulation	11. Smaller Size Lots along Eastern portion of site
6. Trails for Bikes & Pedestrians	12. Adjacent Land Use Compatibility

Elements Receiving the Highest Number of "Like" Responses **
Primary Access via 124th Ave., Landscaping/Perimeter Buffer, Natural Features, Transit Station near NW corner

Elements Receiving the Highest Number of "Dislike" Responses **
Secondary Access via 115th Ave., Mixed Use Area in SE Corner, Transit Station in SE Corner, Smaller Size Lots along Eastern portion of site

Elements Receiving the Highest Number of "Not Sure" Responses **
No strong responses; each received one vote each: 5, 10, 11, 12

Mixed Responses that made the Element "Neutral" **
Site Circulation, Adjacent Land Use Compatibility

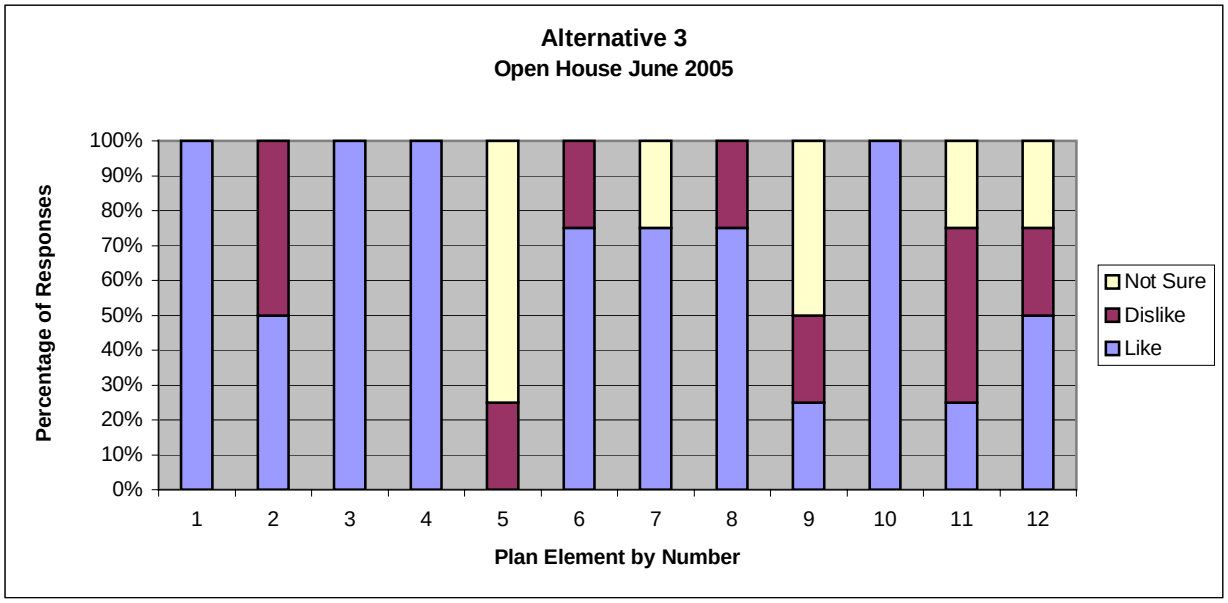
**** Note: Total Number of Respondents: 3; a fourth person responded to Elements 1 and 7.**

Additional Comments:

1. Not this alternative; worst alternative.

* please refer to the alternative plan diagrams to view these plan elements

Summary of Responses to Proposed Alternatives
Tualatin Southwest Concept Plan Project
Open House #2, June 2005



Plan Elements – Alternative 3 *

1. Primary Access via 124th Ave.	7. Transit Station near NW corner of site
2. Secondary Access via 115th Ave.	8. Mixed Use Area near pond in NW portion of site
3. Landscaping / Perimeter Buffer along east side	9. Potential Rail Spur
4. Natural Features	10. Large Lot Industrial Sites in central portion of site
5. Site Circulation	11. Smaller Lots along eastern portion of site & near ponds
6. Trails for Bikes & Pedestrians	12. Adjacent Land Use Compatibility

Elements Receiving the Highest Number of "Like" Responses **

Primary Access via 124th Ave., Landscaping/Perimeter Buffer, Natural Features, Large Lot Industrial Sites in central portion of site

Elements Receiving the Highest Number of "Dislike" Responses **

Secondary Access via 115th (see also below under "Neutral"), Medium Size Lots on eastern portion of site

Elements Receiving the Highest Number of "Not Sure" Responses **

Site Circulation, Potential Rail Spur

Mixed Responses that made the Element "Neutral" **

Secondary Access via 115th

**** Note: Total Number of Respondents: 4**

Additional Comments:

1. Mixed use should be at southeast.
2. Less than 5% of the 5500+ employees in 2025 will live within one mile of jobsite. Blake access is not needed. Keep the natural railroad barrier.
3. Not this alternative. Second best alternative.

* please refer to the alternative plan diagrams to view these plan elements

CITY OF TUALATIN
18880 SW MARTINAZZI AVENUE
TUALATIN, OREGON 97062-7092
(503) 692-2000
TDD 692-0574

NEIGHBORHOOD / DEVELOPER MEETING
Southwest Tualatin Concept Plan

Dear property owners, surrounding property owners and interested parties,

You are cordially invited to attend a Neighborhood/Developer meeting on:

Date:	Tuesday, July 26, 2005
Time:	6:00 – 8:00 p.m.
Location:	Tualatin Council Chambers 18884 SW Martinazzi Avenue

The City of Tualatin has scheduled this meeting to provide additional information about the Southwest Tualatin Concept Plan being prepared for the future urbanization of a 430-acre area proposed for industrial development located south of Tualatin-Sherwood Road, west of the Portland and Western Railroad tracks and north of Tonquin Road in the southwest corner of Tualatin. A portion of this area was already within the Urban Growth Boundary (UGB) prior to 2002. The remaining portions were brought into the UGB by Metro in December 2002 and an additional 80 acres brought into the UGB in June 2004.

The purpose of this meeting is to provide a means for the City and property owners, surrounding property owners, and interested parties to meet and discuss proposed development regulations (zoning, setbacks, landscape requirements, road classifications, etc.).

For more information, contact Elizabeth Stepp, Senior Planner at 503.691.3028, email estepp@ci.tualatin.or.us, or visit our website at http://www.ci.tualatin.or.us/business/planning/sw_concept.cfm.

Regards,

Elizabeth Stepp
Senior Planner

Dear Citizens: ***July 26, 2005***

Welcome, and thank you for coming to the Open House. I hope you find the following information helpful. Please contact me if you have any questions or concerns, or need more information.

Thank you,

Elizabeth Stepp, Senior Planner, City of Tualatin
503.691.3028 email at estepp@ci.tualatin.or.us.

What is the Southwest Tualatin Concept Plan, and why are we doing it?

The Southwest Tualatin Concept Plan (SWCP) area includes about 430 acres slated for future industrial use to meet the region's growing need for industrial land. The SWCP area is located southwest of the present city limits, and is south of Tualatin-Sherwood Road, north of Tonquin Road and west of the Portland & Western railroad tracks.

Begun in November 2004, the SW Concept Plan project is now entering its final phase. City staff is working with a consultant team and with the local property owners, interested agencies and citizens to create this concept plan. Funding for this project is provided through the Transportation Growth Management program through the Oregon Department of Transportation.

In 2002 the regional government, Metro, added about 18,000 acres of land to the Urban Growth Boundary (UGB) to meet the region's 20-year need for residential and employment lands. Of this total, approximately 365 acres were added around Tualatin - with the bulk of it to the city's southwest - to partially meet the region's industrial land needs. The southwest portion contains the Tigard Sand and Gravel (TS&G) operations and the Tonquin Industrial Group (TIG) area, which together total approximately 350 acres. An additional (approximate) 80 acres was added into the UGB by Metro in 2004 for industrial land. This land has also been included in the Southwest Tualatin Concept Planning Project.

Concept planning examines how infrastructure – roads, water service and sewer - could serve an area, and how future land uses may occur in that area. It also involves looking at how opportunities – such as preserving trees – and constraints – such as railroad tracks and bluffs – could be addressed. This preliminary planning must be done before rural land can become urban, and it is designed to make efficient use of existing and future public investments in the improvements needed to serve urban land uses. Ultimately, the added land could be annexed to the City of Tualatin.

Metro's intent is to preserve scarce industrial land for future economic growth and effectively use the public - private investment made in the region's transportation system.

What's been done so far?

A Technical Advisory Committee (TAC) comprised of public agency representatives, property owners and other stakeholders has met to review the consultants' work and address public comments. On-going efforts include regular updates on the City's web page (Check it out at (**http://www.ci.tualatin.or.us/business/planning/sw_concept.cfm**), City newsletter articles, and monthly letters to people on our mailing list. Anyone interested can call me or sign up on the project's webpage to receive updated information via email or regular mail.

An Open House event with approximately 70 citizens attending occurred in March 2005. Two alternatives showing conceptual development scenarios were presented. As a result of feedback from residents and other stakeholders, a third alternative was created. All three alternatives were shown at the second Open House event in June 2005, where 18 citizens attended. *Please see the attached map illustrating Conceptual Development Alternative 3*. The information gathered from this event tonight will be used to further assess the proposed Concept Plan and Conceptual Development Alternative 3.

What is Alternative 3?

Alternative 3 is a future scenario showing how the SWCP area could be served by roads, trails and transit, and how environmental features can be used to enhance the site. Parts of the plan are:

- A mix of light industrial and high-tech uses in a corporate campus setting;
- A trail system utilizing existing power line easements and providing access to natural resource features;
- Proposed protection of a naturally landscaped buffer of trees and wetland on the eastern perimeter;
- A commercial mixed use area clustered around existing ponds, with a mix of small-scale commercial and other business uses serving the needs of employees within the area; and
- A roadway system with primary access via a future extension of SW 124th Ave.

What's next?

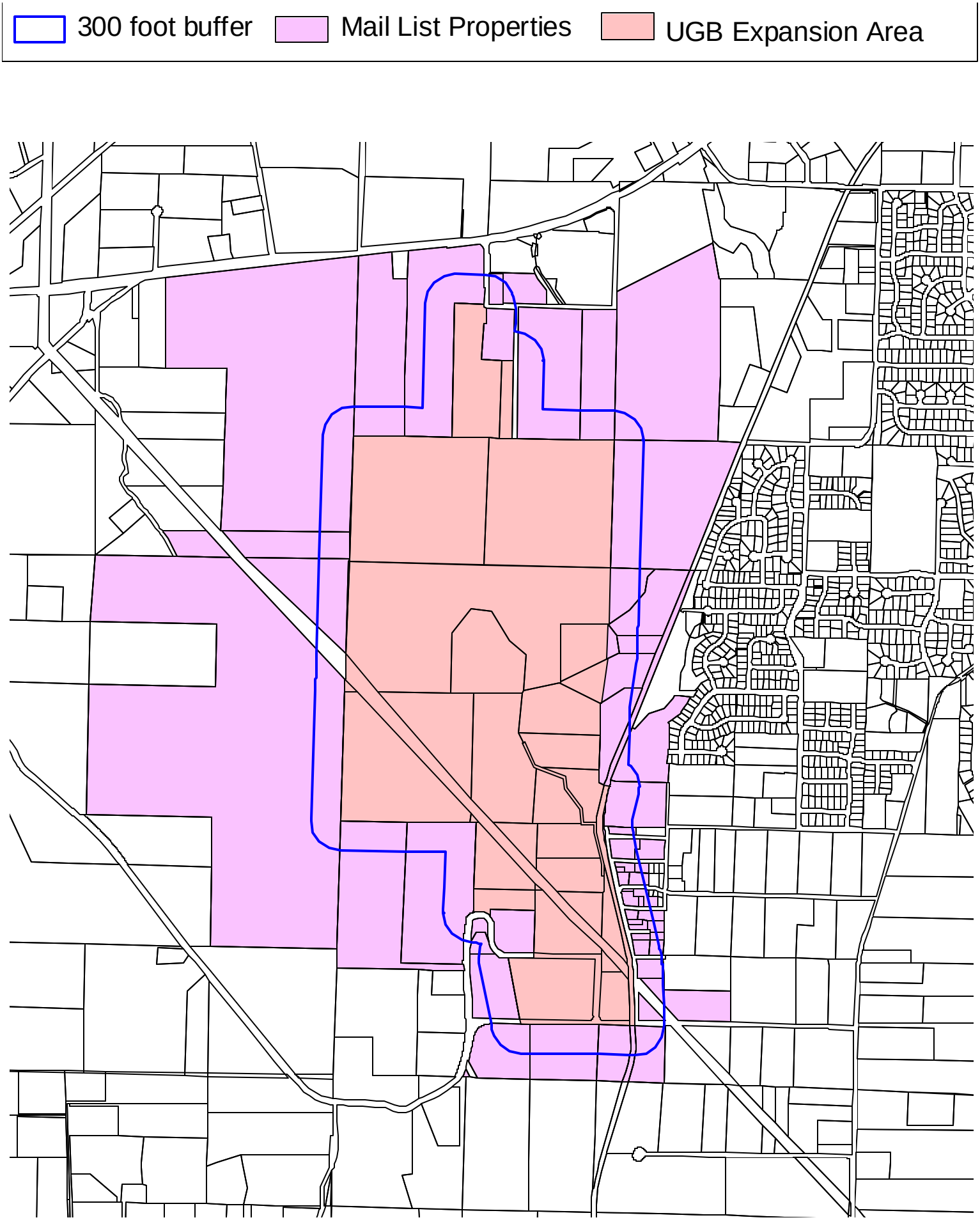
We will continue to refine Conceptual Development Alternative 3 and complete the Concept Plan document. The SWCP project schedule is on the project's webpage. The Tualatin Planning Advisory Committee (TPAC) is scheduled to review the proposed Concept Plan on August 11, 2005. TPAC will meet again on August 25, 2005 to decide on a recommendation for City Council to consider. The Tualatin City Council will review TPAC's recommendation on the proposed Concept Plan on September 12, 2005.

We will begin preliminary work on drafting proposed changes to the Tualatin Development Code that will serve to implement the concept plan in the future. This stage of the project will become a part of the City-wide visioning process that the Council will start soon.

How can I find out more?

- Sign-up tonight to get more information, or to get future updates
- Check out the city's web page: **http://www.ci.tualatin.or.us/business/planning/sw_concept.cfm**
- Sign up on the City's web page for future updates
- Call Elizabeth Stepp at 503-691-3028
- Email Elizabeth Stepp at **estepp@ci.tualatin.or.us**

ES


300 foot buffer
Mail List Properties
UGB Expansion Area

NEIGHBORHOOD / DEVELOPER MEETING:
SOUTHWEST TUALATIN CONCEPT PLAN PROJECT

JULY 26, 2005
6- 8 p.m.
CITY COUNCIL CHAMBERS

Staff: Doug Rux, Community Development Director, Elizabeth Stepp, Senior Planner; Carol Rutherford, Office Coordinator

Guests: Ten citizens. See attached list.

Ms. Stepp welcomed everyone and provided an overview of the project.

The concept planning area encompasses approximately 430 acres just outside of the City limits and includes the Tigard Sand and Gravel operations area and the Tonquin Industrial Group area, and an area to the east that was already within the city's urban planning area. Ms. Stepp referred to an illustration showing the project area on the wall, and also in each person's handout. The land was brought into the Urban Growth Boundary (UGB) in 2002 and 2004 to help meet the region's needs for future economic growth. The land is designated for future industrial land uses.

The City received a grant from ODOT to do the concept planning. Ms. Stepp provided an overview of the concept planning process and the importance of doing this type of planning for the area as a whole and how it can be served efficiently with urban services, rather than being developed in a "piece meal" manner. She provided an overview of the topography of the area that includes trails, ponds and a natural buffer next to existing residential development. She said that concept planning also looks at a site's opportunities – such as the ponds and trees, and it's constraints, such as the railroad tracks.

During the past 9 months, numerous meetings of the Technical Advisory Committee (TAC) and two open house events with residents and property owners from within and near the project area, and other interested persons, were held. The TAC developed two future conceptual development alternatives showing how the area could be served by roads, water, sewer and trails, and what kinds of land uses may be located there. Based on feedback from these sources and further discussions, a hybrid of the two was created, resulting in Alternative 3. This alternative was shown at the second Open House in June, and the TAC selected it as the preferred alternative for this project.

All three alternatives are based on a mix of light industrial and high-tech uses, with a mixed-use commercial area serving the needs of nearby employees, and with main

access to the site via a new southerly extension of SW 124th Ave. A color copy of Alternative 3 was provided in the handout given to all attendees. Ms. Stepp displayed examples of the various light-industrial and high-tech land uses being proposed. There is some mixed use in the northern section with small-scale commercial businesses. The trail system uses existing BPA easements and gives access to natural areas. Protection from the adjacent residential area to the east is provided by a forested natural area along bluffs, proposed to be protected. The proposed roads include a southern extension of SW 124th Avenue and internal connections along SW 115th Avenue to Tonquin and the east-west extension of Blake Street.

Ms. Stepp asked if there were any questions or comments. One attendee inquired if heavy industrial is being excluded. She confirmed that it was being excluded, as the adjacent property owners and surrounding property owners stated that they did not want that type of use. Tigard Sand and Gravel currently does their mining near and east of the pond. Mr. Rux confirmed that the gun club is located to the far southwest and is not included in this study area.

Ms. Stepp reviewed the next steps in this process. She encouraged attendees to provide written comments. The concept plan will be reviewed and discussed by the Tualatin Planning Advisory Committee (TPAC) on August 11th. TPAC will meet again on August 25th to finalize their recommendation, which will then be forwarded to the City Council to consider at their meeting on September 12th. Staff is currently doing preliminary work on changes to the Tualatin Development Code that would implement Alternative 3.

Ms. Stepp and Mr. Rux told the group that this last portion of the project – the implementation – will now be a part of the citywide visioning process that the City Council will undertake soon. Proposed changes to the Development Code will be postponed until the visioning process is complete to insure that the changes are consistent with the community vision. She encouraged attendees to sign up to get updates as this project continues to evolve and to check the city's website as project information is updated regularly.

Mr. Rux provided an overview of the citizen involvement process for this project. Articles have been published in the City newsletter for the past nine months. Letters have been periodically sent to property owners and surrounding property owners as well as individuals requesting email or US mail updates. He also personally discussed the project with many residents. Following an update at the City Council meeting last evening, Council members have requested that staff continue this process. Next week letters will be sent to all residents within an area west of Boones Ferry Road, and south of Avery to Helenius Road. The original goal was to have Code language written for presentation to the Council at their meeting on September 12th. However, it is now likely that this concept planning process will follow the format of the Town Center Planning project and that changes to the Code will be delayed, pending the outcome of the community visioning process. He reinforced that this change in the process is both manageable and doable.

A frequent question posed by the public is when will this area develop, and that is unknown at this time. Mr. Rux provided an in-depth description of the process that needs to be followed that ultimately results in annexation into the city. It requires interaction with various agencies and other jurisdictions, including Washington County. Because of the current lack of water service, sewer and roads, the likely progression for the future annexation and development of this area will be starting at the north end and moving southward, because existing city infrastructure can begin to be extended into this area easiest. Major issues involve identifying where additional water will come from to serve this area, and storm and sanitary sewer lines to provide these essential services. With development starting at the north end, current services could be extended south. If development would first be proposed at the south end of the planning area, obtaining services (sewer/water) from the City of Wilsonville could be an option since they currently provide services to the prison at the north end of Wilsonville. No discussion with Wilsonville has occurred on this option. The cost with extending lines coupled with adhering to State and Wilsonville requirements would have to be researched. Mr. Rux stated that the Tualatin City Council has an on-going discussion on potential water sources to serve Tualatin's future growth.

An attendee who owns property to the southeast of the current planning area, in unincorporated Washington County, inquired about the development of that area. Mr. Rux explained that this area has not been studied by the City as part of this plan and is not required by Metro ordinance until 2011. However, the DLCD has just officially acknowledged this area, and it is now within Metro's Urban Growth Boundary. Another area to the west near Sherwood is now also within the Metro UGB. Mr. Rux stated that additional information is available either on the DLCD website.

Mr. Rux provided a history of the Metro process to determine if the region has enough land to meet housing and employment needs. Yesterday the State issued a decision on the 2004 expansion of the UGB. This information is contained in a 71-page report. The last two pages provide a summary that shows the Tualatin and Quarry Area (west of the SW Concept Planning Area; the gun club is not included) are now in the UGB. There is a remand (sending back) that requires Metro to do additional work on points outlined in the report. These items must be addressed by 12/1/05. Concept planning for the Tualatin area must be done by either 2011 or within two years of the establishment of the I5/99W connector's alignment. Mr. Rux reviewed possible locations for the I-5/99W connector and the requirement that stipulates that the area north of the connector be allocated for residential use while the area south would be industrial. He explained various scenarios and stated that regarding the connector, at the present time there are more questions than answers. Tualatin staff has talked to Wilsonville, and they're not ready to do concept planning. The City of Sherwood and Tualatin have jointly applied for a grant to do concept planning in the Quarry Project area. If we do not receive grant funding, it will be difficult to do a study of this magnitude.

The location of future roads in this area will also affect Wilsonville and Sherwood. Representatives from those two cities served on the TAC for this project, although it is

possible that residents of those two cities have not yet been exposed to it. Neither Washington County nor Sherwood wanted control of the SWCP project area land. Tualatin's City Council decided that it was strategic for Tualatin to determine the future planning for this area adjacent to current city limits, rather than someone else, and we are proactive in keeping our citizens informed.

Mr. Christie inquired if DLCD has signed off on our area. Mr. Rux affirmed that DLCD has already accepted the areas brought into the UGB in 2002 by Metro, including most of the SWCP area. The recent DLCD action deals with land brought into the UGB in 2004, and that those smaller portions of the SWCP area and another area south of Tualatin have also been acknowledged as OK by DLCD. However, DLCD has asked Metro to re-look at other areas, and that staff has not yet had a chance to read the entire decision as it came out earlier today. Mr. Rux provided a brief overview of the transportation modeling for this area and the current Transportation System Plan and the proposed changes.

Mr. Aufenthie inquired about the items to be included in Tualatin's visioning process. Mr. Rux replied that a final decision has not yet been made, but Council has been advised that it could include many components (area, sewer system, education, social services, parks, greenway, recreation, etc.).

Mr. Rux reviewed the map shown in Alternative 3. The area shown in purple is in the UGB and is eligible for annexation in the future. Washington County rezoned this area to FD20 (future development 20-acre parcel size) and has a modified list of uses that can occur here. There are regulatory controls in place, and developers will have to go to the county to obtain land use approval. Tigard Sand and Gravel currently has approval for their mining operation.

The next step is to complete the concept plan to set the framework of what will happen in the future. He stressed that Alternative 3 shows the general alignment of roads, trails and other elements, and is not specific at this time. The consultants have developed a fiscal analysis to tie in the proposed infrastructure improvements shown in Alternative 3 with projected costs. These costs can ultimately be funded by private developers or by public funds, or a combination of public and private. There are also zoning issues associated with this process. In addition to the light industrial/high-tech land uses, we are proposing a "business park" type of setting with stipulations on lot size, landscaping, set backs, building heights etc. Any changes to the TDC will also go through an extensive review process by TPAC and the City Council and, upon approval, will be adopted by ordinance. The next step after this implementation is done is annexation, which is done by the potential developer submitting an application to the City. However, the changes to the Code, necessary to set the stage for any eventual annexations, are going to be delayed pending the outcome of the community visioning process.

To concept plan the "Tualatin" area under normal circumstances, the timeframe for this entire process can be 1-2 years. The I-5/99W connector could be a factor in terms of timing, and, pending a decision on its location, could accelerate the concept planning

process. Another variable in this process is that the property owners could say that they want to do their own concept planning and then "shop it" to potential jurisdictions, and forward it on to Metro for review and approval. This scenario, however, is a relatively remote possibility.

Mr. Aufenthie inquired if the City has had any interest from developers. Mr. Rux stated that the property owner drives development proposals. Mr. Rux reiterated that the area is more likely to develop first at the northern portion, due to the proximity to existing sewer and water infrastructure.

Mr. Rux reviewed the proposed street configuration. The blue lines identify connector streets, red are the arterials, and black lines depict the local streets. Mr. Rux discussed possible options for the extension of Blake Street. Local residents have no desire for truck traffic in that area, so staff is proposing design features be addressed to discourage through truck traffic, such as a roundabout or street narrowing. The railroad will not permit an "at grade crossing" – it must go over or under the tracks. A brief discussion was held on the lack of satisfactory east/west connectivity in Tualatin. Mr. Rux provided an overview of long-range plans in the city's Transportation System Plan for other road connections into Tualatin that include a bridge over the Tualatin River connecting to Hall Blvd. or through the PacWest property north of the downtown area. The Hall Blvd. proposal could actually make traffic worse from Tigard into downtown Tualatin. These projects are in the $30-40 million dollar range in today's dollars. It was also mentioned that the development of the other "Bridgeport" projects may have a heavy impact for traffic in Tualatin. Mr. Rux briefly described the current road project to extend SW 124th Avenue down to Tualatin-Sherwood Road that will provide a north/south link from 99W.

Mr. Auftenthie thanked Mr. Rux for his presentation. Ms. Stepp inquired if there were any other questions and thanked the audience for their attendance. Ms. Stepp again encouraged people to submit their comments on this proposal, to check the City's webpage, and that all this information plus her contact information was on the handout that they can take for future reference.

Minutes Prepared by: Carol Rutherford

Southwest Tualatin Concept Plan: Existing Conditions Memorandum

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COPIES: Andrew Johnson/ODOT

DATE: April 1, 2005

Contents

Figure ES-1: City of Tualatin Water Master Plan Update—Capital Improvements

Section 5: City of Tualatin Sanitary Sewer System Master Plan—Recommended Improvements and Financial Planning

Appendix D: Southwest Tualatin Concept Plan - Metro Regional Transportation Plan Designations

- Regional Motor Vehicle System
- Regional Street Design System
- Regional Freight System
- Regional Bicycle System
- Regional Pedestrian System

Appendix E: Southwest Tualatin Concept Plan—Washington County Tax Assessor Maps

- SW 1/4 Section 27 T2S R1W
- NW 1/4 Section 34 T2S R1W
- SW 1/4 Section 34 T2S R1W
- SE 1/4 Section 34 T2S R1W

Introduction

The Southwest Tualatin Concept Plan area is southwest of Tualatin (Figure 1). Metro added this land to the UGB in December 2002. The project area was added in two parts: The area known as the Tonquin Industrial Group (TIG), consisting of approximately 50 acres, was added through Metro Ordinance 02-969B; the area known as Tigard Sand and Gravel (TSG), consisting of approximately 252 acres, was added through Metro Ordinance 02-990A. It is bounded on the east and north by the City of Tualatin and on the south and west by unincorporated Washington County. The project area touches SW 120th Avenue to the north and SW Tonquin Road and SW Waldo Way to the south. Bonneville Power Administration (BPA) and Portland General Electric (PGE) power lines traverse the area. The Portland and Western Railroad runs on the east side of the project area, opening the area up for direct rail service.

Figure 1
Site Vicinity

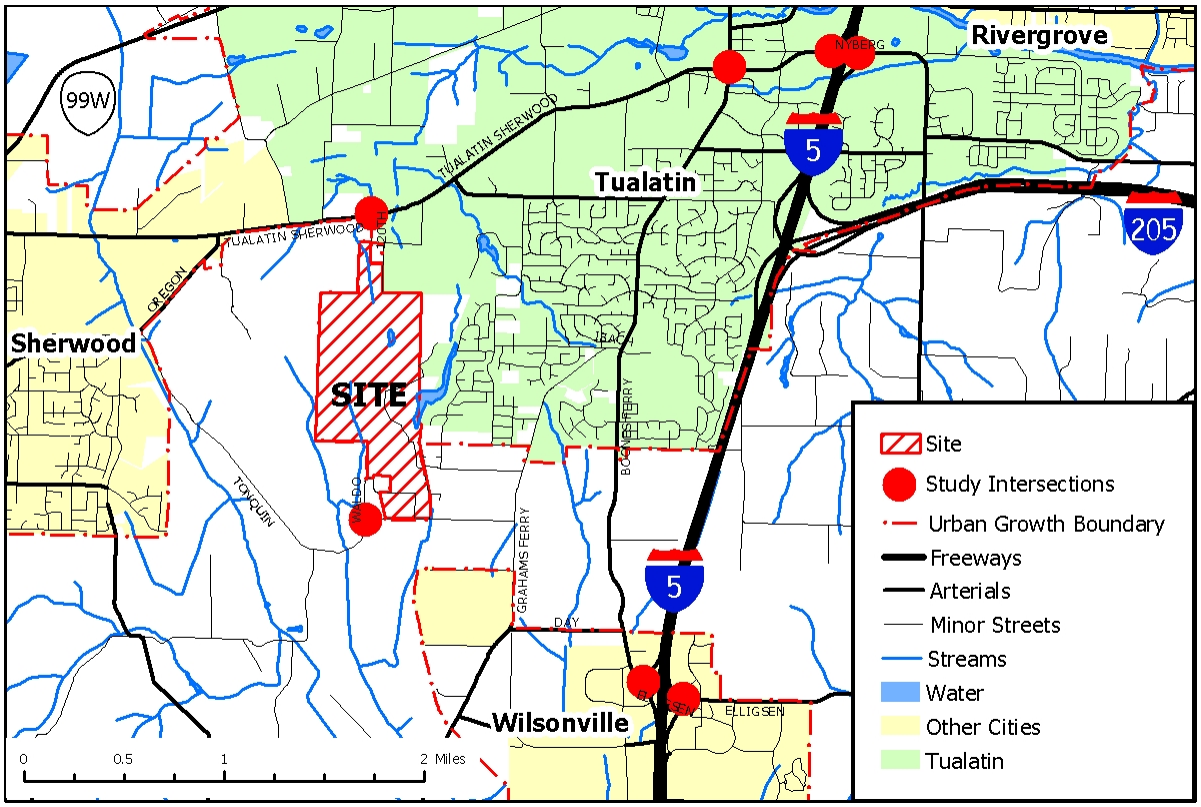


Figure 2 identifies the Concept Plan boundary as well as nine adjacent parcels consisting of approximately 103 acres that were added to the UGB in 2004 or are already in the City's planning boundary but outside the City limits. Based on discussions with ODOT and Metro, these supplemental areas outside the plan area will also be considered in the concept planning process.

This memorandum describes existing conditions of the *Southwest Tualatin Concept Plan* (Concept Plan) area as well as the supplemental areas noted in Figure 2. The memo is divided into two major sections:

- Document review summary
- Existing conditions and infrastructure needs

Supporting tables and maps are located in the appendix. The transportation analysis performed by Kittelson and Associates is provided in Appendix A.

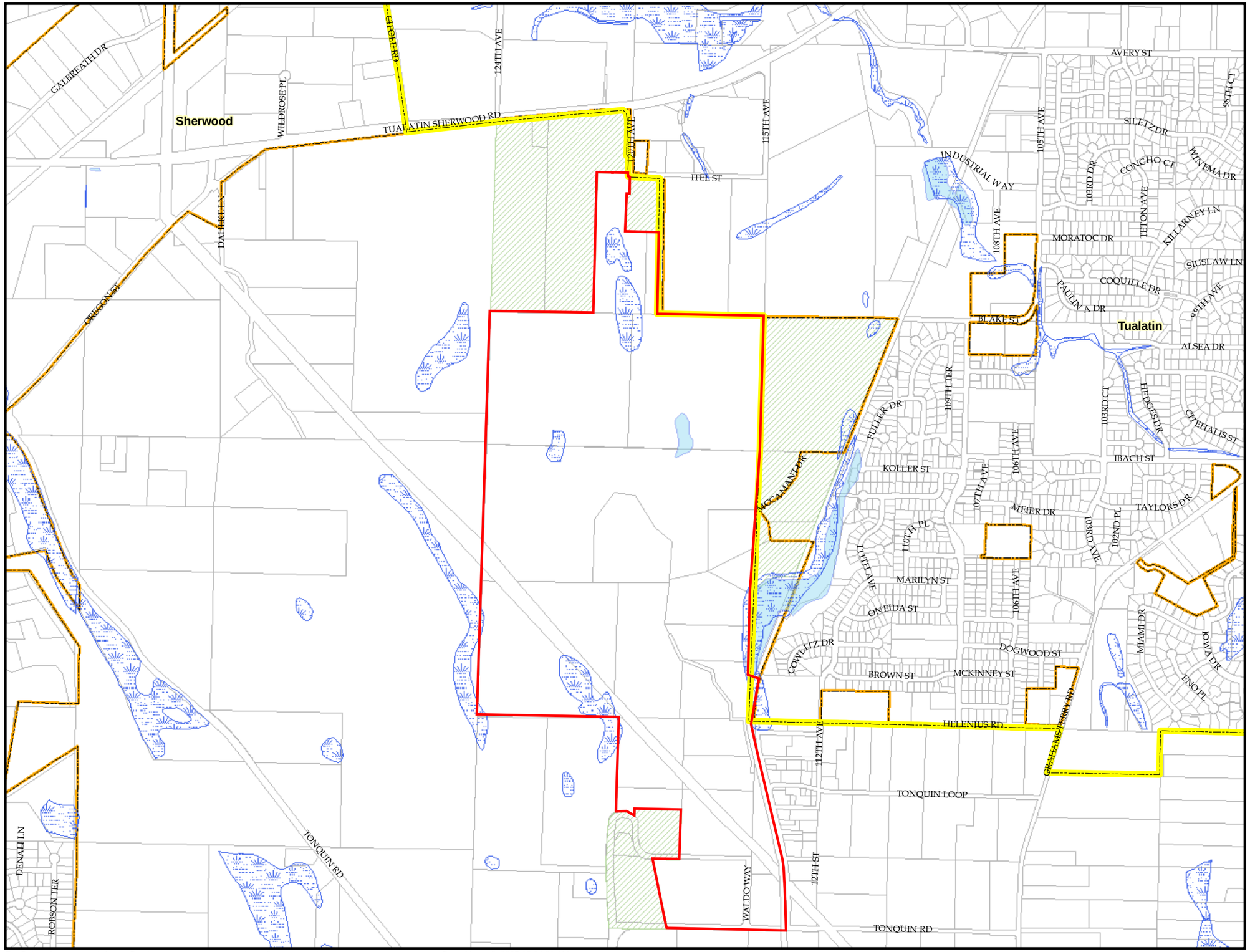
Document Review Summary

This section summarizes documents that are relevant to the Concept Plan area. A summary of each document is provided, along with a description of its relevance to the Concept Plan area and a discussion of key transportation and development issues.

Southwest Tualatin Concept Plan

Figure 2

Concept Plan Site Map



Legend

- Concept Plan Area
- Urban Growth Boundary
- Supplemental Planning Area
- Tualatin City Limit
- Tax lots
- Streams and Rivers
- Wetlands

Data Source: Metro, City of Tualatin

N

0 375 750 1,500 Feet

CH2MHILL

File Path: \\Astoria\gisdata1\data\Proj\tv_gis\mapdocuments\sw\figure2_supplemental-planning-areas_noaerial.mxd, Date: March 8, 2005 10:04:31 AM

Figure 2
Concept Plan Site Map (11x17)

Land Use and Development

Tualatin Development Code (TDC)

Summary: The City of Tualatin's (City) Development Code guides development on land within the City's jurisdiction.

Relevance to Concept Plan: The Concept Plan area could be annexed into the City in phases corresponding to redevelopment or alternatively annexed as one large area. The TDC includes chapters related to planning and zoning, provision of infrastructure, and development processes.

Transportation and Development Issues: The Concept Plan area currently is conditioned to be zoned industrial. Three existing planning districts may apply to the Concept Plan area: the Light Manufacturing (ML – Chapter 60), General Manufacturing (MG—Chapter 61), or Manufacturing Park (MP – Chapters 62 and 63). For additional context, Appendix B provides summaries of other relevant chapters of the code.

An alternative to the current planning districts could involve creating a new industrial planning district to be incorporated into the TDC.

Washington County Development Code

Summary: Washington County's Development Code guides development on land within the County's jurisdiction.

Relevance to Concept Plan: The land that includes the Concept Plan area is currently located in Washington County. The portion of the Washington County Development Code most relevant to the Concept Plan area is Chapter 308 on the Future Development 20 Acre District (FD-20). Washington County B—Engrossed Ordinance No. 615 applied this designation to the Concept Plan area and Future Development 10 Acre District (FD-10) to the supplemental area on the east side of the Concept Plan. This is the interim zoning designation for the Concept Plan area. The supplemental area to the north of the Concept Plan boundary is currently zoned Exclusive Farm Use (EFU) and the supplemental area on the south side of the Concept Plan boundary is Agricultural and Forest 20 Acre (AF-20) or Agricultural and Forest 5 Acre (AF-5).

Transportation and Development Issues: As stated in the Washington County Code and in the ordinance, the FD-20 district "recognizes the desirability of encouraging and retaining limited interim uses until the urban comprehensive planning for future urban development of these areas is complete. The provisions of this District are also intended to implement the requirements of Metro's Urban Growth Management Functional Plan." This zoning will apply to the Concept Plan area until such a time when the properties in the Concept Plan area are annexed into the City. The supplemental areas currently zoned EFU or AF designated will likely be changed to an interim zoning designation similar to FD-20.

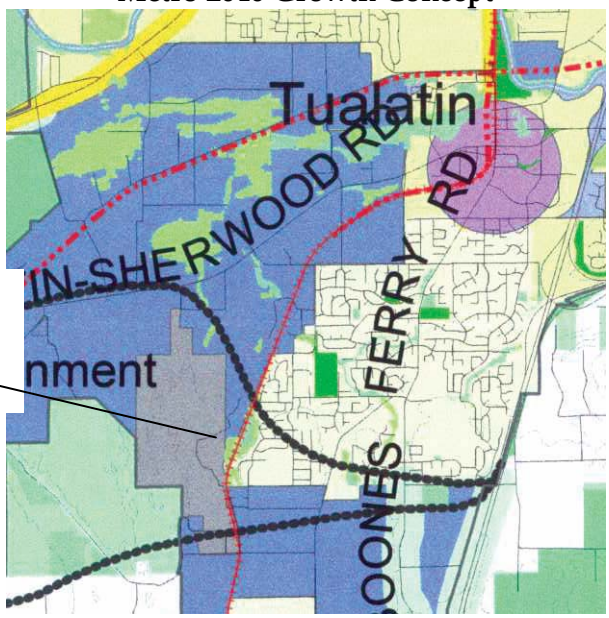
Metro Urban Growth Management Functional Plan

Summary: The purpose of Metro's Functional Plan, which is Section 3.07 of the Metro Code, is to implement regional goals and objectives adopted by Metro, in particular the Metro 2040 Growth Concept and the Regional Framework Plan. Cities and counties are required to

comply with the Functional Plan, including making changes to their Comprehensive Plans and implementing regulations.

Relevance to Concept Plan: As shown in Figure 3, the design type applied to the Southwest Tualatin Concept Plan is Regionally Significant Industrial Area (RSIA). Surrounding the study area, are Industrial Areas to the north and south, Resource Land to the southwest, and Outer Neighborhood to the east.

Figure 3
Metro 2040 Growth Concept



Regionally Significant Industrial Areas (RSIAs) are those areas near the region's most significant transportation facilities for the movement of freight and other areas most suitable for movement and storage of goods. Each city and county with land use planning authority over RSIAs shown on the Employment and Industrial Areas Map shall derive specific plan designation and zoning district boundaries of RSIAs within its jurisdiction from the Map, taking into account the location of existing uses that would not conform to the limitations on non-industrial uses in this section and the need to achieve a mix of employment uses.

According to Section 3.07.170, the average density levels for employment design types are recommended to consist of 20 persons per acre in Employment Areas, 9 employees per acre in Industrial Areas, and 9 employees per acre in RSIA.

According to Section 3.07.420 (revised by Metro per Exhibit B to Ordinance No. 04-140B), "Regionally Significant Industrial Areas are areas that are intended to offer the best opportunities for family-wage industrial jobs near the region's most significant transportation facilities for the movement of freight and other areas most suitable for movement and storage of goods."

According to Section 3.07.420 (B), in Regionally Significant Industrial Areas, "cities and counties shall review their land use regulations and revise them, if necessary, to include measures to limit the size and location of new buildings for retail commercial uses, such as stores and restaurants and retail and professional services that cater to daily customers -

such as financial, insurance, real estate, legal, medical and dental offices - to ensure that they serve primarily the needs of workers in the area. One such measure shall be that new buildings for stores, branches, agencies, or other outlets for these retail uses and services shall not occupy more than 3,000 square feet of sales or service area in a single outlet, or multiple outlets that occupy more than 20,000 square feet of sales or service area in a single building or in multiple buildings that are part of the same development project, with the following exceptions:

1. Within the boundaries of a pubic use airport…
2. Training facilities, whose primary purpose is to provide training to meet industrial need."

"After determining the boundaries of RSIAs pursuant to subsections A and B, cities and counties shall adopt implementing ordinances that limit the development in the areas to industrial uses, uses accessory to industrial uses, offices for industrial research and development and large corporate headquarters in compliance with Section E, utilities, and those non-industrial uses necessary to serve the needs of businesses and employees of the areas. Cities and counties shall include measures to limit the siting and location of new buildings for the uses described in subsection B and for non-industrial uses that do not cater to daily customers—such as bank or insurance processing centers—to ensure that such uses do not reduce off-peak performance on Main Roadway Routes and Roadway connectors shown on Metro's Freight Network Map, November 2003, below standards set in the 2004 Regional Transportation Plan or require added road capacity to prevent falling below the standards." [Section 3.07.420 (C)].

"Within an RSIA, a city or county shall not approve:

1. A commercial retail use with more than 20,000 square feet of retail sales area in a single building or in multiple buildings that are part of the same development project; or
2. Commercial retail uses that would occupy more than 5% of the net developable portion of all contiguous RSIAs. No city or county shall amend its land use regulations that apply to lands shown as RSIA on the Employment and Industrial Areas Map to authorize uses described in subsection B that were not authorized prior to July 1, 2004." [Section 3.07.420 (D)].

"As provided in subsection C of this section, a city or county may approve an office or industrial research and development or a large corporate headquarters if:

1. The office is served by public or private transit;
2. If the office is for a corporate headquarters, it will accommodate for the initial occupant at least 1,000 employees." [Section 3.07.420 (E)].

"Cities and counties may allow division of lots or parcels into smaller lots or parcels as follows:

1. Lots or parcels smaller than 50 acres may be divided into any number of smaller lots or parcels;

2. Lots or parcels larger than 50 acres may be divided into smaller lots and parcels pursuant to a master plan approved by the city or county so long as the resulting division yields at least one lot or parcel of at least 50 acres in size;

3. Lots or parcels 50 acres or larger, including those created pursuant to paragraph (2) of this subsection, may be divided into any number of smaller lots or parcels pursuant to a master plan approved by the city or county so long as at least 40% of the area of the lot or parcel has been developed with industrial uses or uses accessory to industrial use, and no portion has been developed, or is proposed to be developed, with uses described in subsection B.

4. Notwithstanding paragraph 2 and 3 of this subsection, any lot or parcel may be divided into smaller lots or parcels or made subject to rights-of-way for the following purposes:

    a. To provide public facilities and services;

    b. To separate a portion of a lot or parcel in order to protect a natural resource, to provide a public amenity, or to implement a remediation plan for a site identified by the Oregon Department of Environmental Quality pursuant to ORS 465.225;

    c. To separate a portion of a lot or parcel containing a nonconforming use from the remainder of the lot or parcel in order to render the remainder more practical for a permitted use; or

    d. To allow the creation of a lot for financing purposes when the created lot is part of a master planned development. [Section 3.07.420 (D)].

"A city or county may allow the lawful use of any building, structure, or land existing at the time of adoption of this ordinance to implement this section to continue and to expand to add up to 20% more floor area and 10% more land area." [Section 3.07.420 (E)].

The City of Tualatin, as part of compliance with Section 3.07.1120 of the Urban Growth Management Functional Plan, shall derive comprehensive land use plan designation and zoning district designations/boundaries to ensure that development in Regionally Significant Industrial Areas is consistent with the Functional Plan.

Another relevant portion of the Functional Plan is Title 11 (Metro Code Sections 3.07.1105 - 3.07.1140), entitled "Planning for New Urban Areas." The purpose of this section is to guide planning for land brought into the UGB for conversion from rural to urban use. This is the document that outlines the content of and requirements for a concept plan.

Transportation and Development Issues: Title 11 lists provisions that need to be addressed in the local jurisdiction's comprehensive plan element, including an urban growth plan diagram and policies consistent with the Regional Framework Plan and adopted 2040 Growth Concept design types. The basic parts of a concept plan, in brief, are listed below. Only those in italics apply to the Concept Plan area.

1. *An annexation plan*.

2. Residential densities of at least 10 dwelling units per net residential acre.

3. Provision for a diversity of housing stock.
4. Provisions for affordable housing.
5. *Provisions for commercial and industrial land suited to the area.*
6. *A conceptual transportation plan.*
7. *A natural resource protection and restoration plan.*
8. *A public facilities plan.*
9. A plan for schools.
10. *An overall urban growth diagram.*
11. *Coordination among city, county, school districts, and other districts.*

The requirements for a concept plan have since been described in more detail in *Livable New Communities* (Metro, 2002).

Transportation

Summary: This section summarizes the transportation projects, policies, and standards that affect the site, based on the 1999 Oregon Highway Plan, Metro's Regional Transportation Plan (RTP), and the City of Tualatin and Washington County Transportation System Plans (TSPs). Rather than examining these document by document, this section is organized by issue. Issue topics include functional classification, traffic operations standards, access management standards, and planned projects.

Functional Classification

The functional classification of the roads in the Concept Plan area are as follows.

ODOT. There are currently no ODOT facilities near the Concept Plan area. Washington County is currently leading a study to determine potential corridors for a potential I--5/99W Connector, which may become an ODOT facility. Because no alignment for the Connector has been adopted yet, the transportation work for this site's alternatives analysis will assume a southerly alignment similar to that shown in the RTP, which has the Connector following the urban growth boundary (UGB) south of Tualatin and Sherwood. (Note that the attached "base future" transportation analysis assumes the northern alignment shown in the Tualatin TSP.)

Washington County. Tualatin-Sherwood Road, north of the Concept Plan area, and Tonquin Road, south of the Concept Plan area, are maintained by Washington County. Washington County classifies both facilities as arterials.

City of Tualatin. The Tualatin TSP identifies a future *expressway,* following a southerly extension of SW 124th from Tualatin-Sherwood Road to Tonquin Road. This is intended to represent the northern alignment of the Connector as shown in the RTP. The TSP notes that a southern alignment is preferred, but because it lies outside the UGB, was not shown.

The Tualatin TSP classifies Tualatin-Sherwood Road as a *major arterial*. According to the City TSP, this road is planned to have a five-lane cross section, with bicycle lanes, sidewalks, and

landscape strips. This road currently has a three-lane cross section with bike lanes and sidewalks north of the Concept Plan area.

Metro. The RTP governs long-range transportation planning within the Portland region. Local TSPs must be consistent with the RTP, thus ensuring the consistent implementation of the regional transportation vision. The RTP serves both as a policy document and as a plan outlining the regional transportation projects (1) that are needed over the 20-year planning horizon, and (2) for which funding is expected to be available during that timeframe. Specific standards are set by other documents such as the Oregon Highway Plan or the local TSPs.

The RTP must meet both federal and state requirements for content and time between updates; the portions used for federal funding decisions are updated every 3 years (most recently in summer 2004), while the portions used for Oregon land-use planning are updated every 6 years, with the next major update scheduled for 2007. Because the RTP is between major updates, some projects shown in the 2004 federal version of the RTP are not included in the 2000 plan that must be used for land use decision-making.

Metro's 2040 Growth Concept assigns the following designations to Tualatin-Sherwood Road and the Connector near the Concept Plan area:

- **Regional Street Design System**. The Regional Street Design System designates Tualatin-Sherwood Road near the site as an *Urban Road.* These streets carry significant vehicle traffic with some transit, bicycle, and pedestrian travel. They serve industrial areas and new urban areas. They have some public street connections, but few driveways. The Connector is designated as a proposed *Highway* with both a northerly and southerly alignment shown. These facilities usually have four to six vehicle lanes divided with a median and at-grade or grade-separated intersections.
- **Regional Motor Vehicle System.** The Regional Motor Vehicle System designates Tualatin-Sherwood as a *Minor Arterial.* These streets provide motor vehicle connections between town centers, corridors, main streets, and neighborhoods. Freight movement should also be provided with a balance of access and mobility. The Connector is designated as a *Principal Arterial*, which functions as a major freight route with mobility emphasized.

Traffic Operations Standards

The City and County have each developed traffic operations standards for intersections under their jurisdiction.

Washington County. Washington County's Code Section 60.55.10 states that intersections must have an average peak hour control delay no greater than 65 seconds per vehicle, using a signal cycle length no greater than 120 seconds. In addition, the peak hour v/c ratio for each lane group should be no greater than 0.98.

City of Tualatin. The City's operations standards are LOS D for signalized intersections (representing no more than 55 seconds of average control delay per vehicle) and LOS E for

unsignalized intersections (representing no more than 50 seconds of average control delay per vehicle on the worst approach).

Access Management Standards

ODOT. ODOT's access spacing rules are contained in OAR 734-051. However, no ODOT facilities would provide direct access to the Concept Plan area.

Washington County. Washington County's Community Development Code (501-8.5(3)) permits land uses with at least 150 feet of frontage to access a collector roadway, with a minimum access spacing of 100 feet. Minimum street and driveway access spacing is 600 feet along arterials.

City of Tualatin. The City's access management standards are contained in Chapter 75 of the Tualatin Development Code and generally apply to arterial streets. Section 75.070 indicates that new intersections on arterial streets shall be spaced 1/2 mile apart.

Planned Projects

ODOT. The I-5/99W Connector, depending on the functional classification and route selected, may be an ODOT facility.

Metro. The RTP governs long-range transportation planning within the Portland region. Local TSPs must be consistent with the RTP, thus ensuring the consistent implementation of the regional transportation vision. The RTP serves both as a policy document and as a plan outlining the regional transportation projects that are (1) needed over the 20-year planning horizon, and (2) for which funding is expected to be available during that timeframe. Specific standards are set by other documents such as the Oregon Highway Plan or by the local TSPs.

The RTP must meet both federal and state requirements for content and time between updates. The portions used for federal funding decisions are updated every 3 years (most recently in summer 2004), while the portions used for Oregon land-use planning are updated every 6 years, with the next major update scheduled for 2007. Because the RTP is between major updates, some projects shown in the 2004 federal version of the RTP are not included in the 2000 plan that must be used for land-use decision-making. One such project is the Tonquin Trail, a new recreational trail that would parallel SW Tonquin Road in the Concept Plan area.

Regional transportation improvement projects identified in the 2000 RTP in the vicinity of the Concept Plan area include: widening Tualatin-Sherwood Road to five lanes between Teton Avenue and 99W; and providing peak-hour commuter rail service from Wilsonville to Beaverton. These projects are included in the financially constrained system in the 2000 RTP, which is the version used for land-use planning.

Washington County. The Washington County TSP identifies the following future transportation projects:

- Widening SW Tualatin-Sherwood Road
- Wilsonville-Beaverton commuter rail.

City of Tualatin. The Tualatin TSP identifies the following long-term project needs in the site vicinity:

- Widening SW Tualatin-Sherwood Road.
- Wilsonville-Beaverton commuter rail.
- Extending SW 124th Avenue south from 99W to intersect SW Tualatin-Sherwood Road at a new traffic signal.
- Extending new alignments for SW 115th and 120th Avenue south from Tualatin-Sherwood Road through the plan area, along with an extension of Blake Street, all designated as Local Industrial Streets.

Water System

Tualatin Water Master Plan Update (August 2003)

Summary: This is the City of Tualatin's master plan for providing water infrastructure in the City. Most recently updated in 2003, it provides a forecast for future water supply needs under 2010 demand conditions.

Relevance to Concept Plan: The Concept Plan area is immediately adjacent to the southwestern City limits but is outside the City. There are currently no public water lines located within the Concept Plan area. The water master plan did include the Concept Plan area (referenced as the "Tualatin Sand and Gravel Area") in the hydraulic modeling and capital improvement project (CIP) identification tasks (see Table ES-1 and Figure ES-1 in Appendix C). The supplemental areas to the north and south were not included. Project Number P-15, 13,000 linear feet of 16-inch-diameter pipe, was identified in the master plan as a 2007 project to provide a looped water supply to the Concept Plan area. A new Level A reservoir (CIP Project R-1) and pipeline projects P-6 and P-16 are needed to provide water to the Concept Plan area. These projects were identified for construction ahead of project P-15. The fully modeled water supply would not be provided until the build-out year (2010), when the new Level B reservoir (R-3) and pipeline system (P-3) are completed.

Development Issues: Water supply to the Concept Plan area is not scheduled to be available until 2007. The Plan area must be annexed into the City of Tualatin prior to receiving water service. Actual development needs should be evaluated against the water master plan on a case-by-case basis to determine if the planned water infrastructure will be adequate.

Sewer System

Tualatin Sanitary Sewer System Master Plan (December 2002)

Summary: This is the City of Tualatin's master plan for providing sewer infrastructure in the City. Most recently updated in 2002, it provides a forecast for future sewer system needs under 2005 and 2010 demand conditions.

Relevance to Concept Plan: The Concept Plan area is immediately adjacent to the southwestern City limit but is outside the City. However, the sewer master plan did include the Concept Plan area in the hydraulic modeling and CIP identification tasks (see attached

Table 5-1 and Figures F-1, F-8, and F-9 in Appendix C). The supplemental areas to the north and south were not included. Three recommended CIP projects were identified to provide sanitary sewer service to the Concept Plan area and an adjacent urban reserve area (Tualatin-Sherwood URA). The recommended projects are:

1. Tualatin-Sherwood Extension: A new 24-inch pipeline located in Tualatin-Sherwood Road, extending from the Concept Plan area/URA easterly to SW Avery Street;
2. Bluff/Cipole Lateral: Increase existing 12- to 21-inch pipe to 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
3. Bluff/Cipole Trunk Improvements: Upsize existing trunk line pipe diameters.

Estimated construction schedule for the recommended projects are 2010 for the Tualatin-Sherwood Extension project, 2008 for the Bluff/Cipole Lateral project, and 2003 for the Bluff/Cipole Trunk line project.

Development Issues: No sanitary sewer systems of adequate size currently exist near the Concept Plan area. The recommend improvement projects identified in the master plan to provide sewer service to this area will not be constructed until 2010. The Concept Plan area must be annexed into the City of Tualatin prior to receiving sewer service.

Storm Drainage

Clean Water Services (CWS) Design and Construction Standards for Sanitary Sewer and Surface Water Management (February 3, 2004)

Summary: This document provides standards for sewer and surface water management relevant to the design and construction of sites and facilities within the CWS service area.

Relevance to Concept Plan: The Concept Plan area is outside the current CWS service area. However, it is assumed that the plan area would fall within the CWS service area about the time of annexation. Rules apply to construction of sanitary sewer and storm system components, and to all activities with potential to cause erosion. CWS regulation of land uses within Water Quality Sensitive Areas (Sensitive Areas) and Vegetated Corridors protects water quality and restricts development options.

Development Issues: Prior to development or redevelopment, CWS requires a natural resources assessment to identify the type, location, size, and condition of surface water resources under its jurisdiction. The agency usually defers to federal and state wetland removal/fill permitting agencies if re/development will affect Sensitive Areas, unless CWS has sole jurisdiction. Based in part on the results of the natural resources assessment and possible alternatives analysis, the Design and Construction Standards establish allowable uses and setbacks for development around drainage ways. If impacts to CWS jurisdictional areas are unavoidable, the rules direct appropriate mitigation of impacts.

Prior to obtaining a building permit or site development permit, CWS reviews the site plan to ensure the plan meets the District's requirements for water quality protection and issues a Service Provider Letter followed by a Stormwater Connection Permit Authorization.

Natural and Cultural Resources

The review of relevant natural and cultural resource documents that follows is divided into the following subsections:

- Statewide Planning Goal 5 Resources (natural resources, threatened and endangered species, cultural resources)
- Floodplains
- Stormwater

Statewide Planning Goal 5 Resources

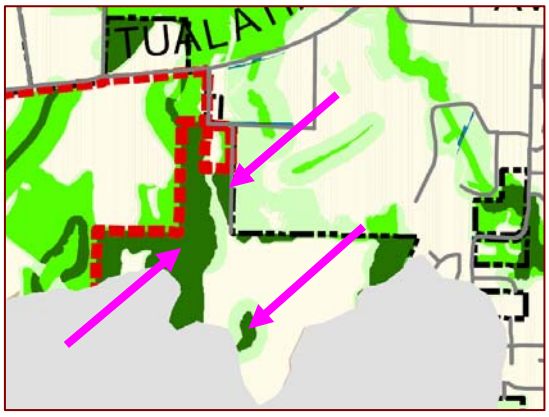
Summary: Goal 5 resources generally are Natural Resources, Scenic and Historic Areas, and Open Spaces. Goal 5 encompasses 12 different types of resources, including wildlife habitats, mineral resources, wetlands, and waterways. It establishes a process through which resources must be inventoried and evaluated. The following documents were reviewed for this section: Tualatin Development Code, Washington County Rural/Natural Resource Plan, Metro Inventory of Regionally Significant Habitat, Tualatin Basin Partners for Natural Places Materials, and USGS topographic map.

Relevance to Concept Plan: If a resource or site is found to be important, the local government has three policy choices: to preserve the resource, to allow the proposed uses that conflict with it, or to establish some sort of a balance between the resource and those uses that would conflict with it.

Development Issues: Map 72-1 (Natural Resource Protection Overlay and Greenway Locations) of the Tualatin Development Code excludes the Southwest Tualatin Concept Plan study area from consideration of Goal 5 resources because the site is outside the Planning Area Boundary.

Washington County's Rural/Natural Resource Plan indicates that all of the plan area is designated as a significant natural resource. Most of the area is in a Mineral and Aggregate Overlay—about three-fourths in District A, which is for aggregate production, and about one-fourth is in District B, which is a 1,000-foot-wide buffer to reduce conflicting land uses. A small resource area at the southeastern corner of the plan area—an old railroad station—is designated as Historic and Cultural Resources. No water, wetland, fish or wildlife habitat, or scenic resources are designated in the plan area.

Figure 4
Metro Goal 5 Resources



Metro's Inventory of Regionally Significant Habitat: The current Goal 5 inventory by Metro and the Tualatin Basin Natural Resources Coordinating Committee (Committee) does not cover the entire site. The northern part of the site appears to contain land that Metro and the Committee have designated as "strictly limit" for development (see green areas in Figure 4). Partial coverage may provoke Metro to extend its inventory and ESEE analysis to the entire

plan area. Washington County is not in the process of conducting new ESEE analysis for areas currently outside the UGB, and future plans are uncertain. If Metro does not do this, then the fallback is either the existing Washington County Goal 5 designations and applicable Community Development Codes (applicable to plan area prior to annexation), or a new ESEE analysis to be performed for the plan area (which would be needed for the Tualatin comprehensive plan). Metro is accepting map change requests if inventoried resources are in error. Recommendation of future UGB boundaries requires examination of a larger area than the 352-acre plan area.

The Tualatin Basin Partners for Natural Places has adopted Metro's Inventory of Regionally Significant Habitat for the Tualatin basin and has proposed Goal 5 program. In the Concept Plan area, the relative levels of protection—the Allow-Limit-Prohibit program recommendations—apply to the Metro-inventoried significant natural resources as follows: the Class 2 riparian habitat has a "strictly limit" designation, the Class 3 riparian habitat has a "moderately limit" designation, and the "impact area" has a "lightly limit" designation. The Tualatin Basin Partners for Natural Places are in the process of defining the relative levels of protection at this time. Proposed Statewide Planning Goal 5 protection measures would impose "lightly limit", "moderately limit", and "strictly limit" development restrictions where significant natural resources occur. Passage of Ballot Measure 37 is causing the Partners to rethink their draft designations in light of perceived impacts to property development interests and land valuation.

USGS Topographic Map: 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 generally toward the north and toward the south. The plan area is within the geologically unique Tonquin Scablands. The Tonquin Scablands were formed between 15,000 and 13,000 years ago when catastrophic floods, known as the Bretz floods, carved a series of 14 channels in a low basalt divide near the town of Tonquin between Sherwood and Tualatin. The resulting scabland topography contains disjunct, higher elevation areas where soil has been scraped away, exposing irregular areas of the underlying basalt. The map shows Coffee Lake Creek/Seely Ditch, which flows to Wilsonville, as existing water quality and natural resources.

Threatened and Endangered Species Database

Summary: The Oregon Natural Heritage Information Center (ONHIC) maintains a database of known occurrences of threatened and endangered species.

Relevance to Concept Plan: The presence of threatened and endangered species at the Concept Plan area or vicinity could present constraints on future development.

Development Issues: To date, an ONHIC database search has not been conducted for the Concept Plan area, but is recommended prior to development. A May 21, 2002 database search performed for the City of Tualatin Reservoir Project covered the plan area. The search yielded only one record of special status species within a mile or two: bald eagle (*Haliaeetus leucocephalus*). Lack of recorded special status species in the database does not assure that such species are not present at the plan area. Appropriately timed field survey(s) should be conducted prior to site development for a more definitive assessment of species' presence.

Cultural Resources

Summary: This section summarizes known information on cultural resources as relevant to future development of the Concept Plan area.

Relevance to Concept Plan: Presence of cultural resources could be a constraint to development of the Concept Plan area. The project area is occupied by quarries, a few commercial and residential structures, and woodlands. Borrow areas, gravel access roads, and previously graded fields are the major disturbances in the study area.

Development Issues: It is recommended that a records search be conducted for historical and cultural resources. Contact with the State Historic Preservation Office (SHPO) would reveal any known cultural resource sites or archaeological sites located within the Concept Plan area. However, few areas have been surveyed for cultural resource. SHPO guidance and state law provide that if any cultural material is encountered during project development, all work should cease immediately and an archaeologist contacted to assess the discovery. Cultural (archaeological) resources may exist at areas that were not previously surface-disturbed. Because of poor ground visibility on the site, exploratory subsurface probing is advised prior to re/development to ensure that these activities do not impact potential buried cultural resources. Documented archeological sites occur in the City of Tualatin.

Homes and structures older than 50 years would meet the minimum age criteria for potential eligibility for listing on the National Register of Historic Places. The four National Historic Preservation Act eligibility criteria for an historic property:

A. Property is associated with events that have made a significant contribution to the broad patterns of our history.

B. Property is associated with the lives of persons significant in our past.

C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

D. Property has yielded, or is likely to yield, information important in prehistory or history.

If any of the properties are eligible and are impacted (directly or indirectly), the development's impacts on these resources would be determined according to the guidance established in Section 106 of the National Historic Preservation Act. If the home or property were eligible, mitigation would be required if the home were to be removed or otherwise impacted. The status of the old railroad station—a county-designated Historic and Cultural Resource at the southeastern corner of the plan area—should be further investigated. A farm house located in the supplemental area north of the plan area should also be investigated.

Floodplains

FEMA Flood Insurance Rate Maps

Summary: FEMA publishes maps of flood plains. The Tualatin Development Code is based on the 1987 Flood Insurance Rate Maps (FIRM).

Relevance to Concept Plan: FEMA map community-panel number 4100238 0575 B covers the Concept Plan area. It does not show floodplains in the plan area. The City of Tualatin will utilize updated flood plain maps when FEMA approves them.

Development Issues: The lack of mapped floodplains in the Concept Plan and supplemental areas indicates floodplains are not a constraint on future development.

Stormwater

Anecdotal Information

Summary: Little surface water leaves the TSG property. Instead, it infiltrates the fractured rock below ground. Water used in quarry operations is discharged to onsite ponds; water is not pumped outside the quarry (unlike the Morse Bros. quarry operation, which discharges water to Coffee Lake Creek). Withdrawal of well water by Morse Bros. for quarry operations has impacted water levels in domestic wells in the vicinity. Rates of groundwater withdrawal have diminished accordingly.

Relevance to Concept Plan: The plan will need to address stormwater management under build-out conditions, and guide the development of a functional system as site grading and phased development occur.

Development Issues: Stormwater quality and quantity will need to be managed and treated prior to discharge to receiving waters.

Existing Conditions and Infrastructure Needs

This section of the memorandum describes existing conditions of the Concept Plan area and discusses potential constraints and opportunities to future development and infrastructure needs.

The infrastructure analysis is based on the assumptions and planning horizons in the City of Tualatin's existing adopted infrastructure plans (Water System Master Plan, Sanitary Sewer Master Plan,, Transportation System Plan) and on the assumption that the site will be zoned for industrial use. This memo identifies general infrastructure needs; more specific needs (for example, pipe sizes, cost estimates) will be developed as part of the Draft Concept Plan.

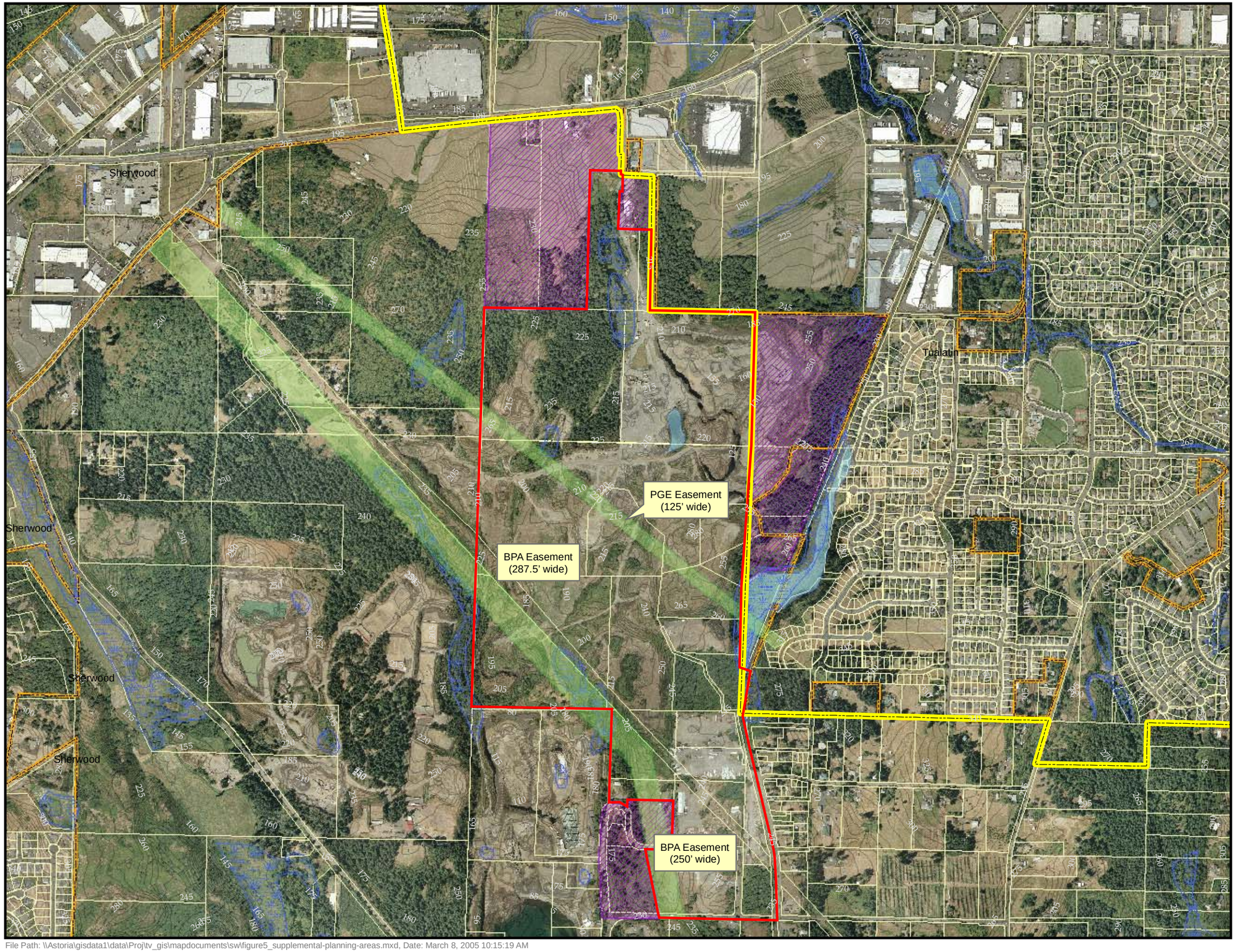
Land Use and Development

Existing Conditions: The Concept Plan area consists of 21 parcels with 7 property owners. Uses include aggregate extraction, asphalt pavement production, industrial (trucking, wrecking yard, construction material storage) and limited residential (see Figure 5). The BPA holds a 100-foot-wide right-of-way along with two permanent easements that vary in width from 250 feet wide to 287.5 feet wide that run diagonally along the southerly portion of the study area. PGE also holds a 125-foot-wide permanent easement that run diagonally across the middle of the study area. The adjacent land uses are as follows: north = agricultural; west = rural/forest land; east = residential; south = aggregate extraction/industrial/rural. The supplemental areas north, east, and south consists of nine parcels with six property owners.

Southwest Tualatin Concept Plan

Figure 5
Base Map

Existing Conditions



Legend

- Concept Plan Area
- Urban Growth Boundary
- Supplemental Planning Area
- Easements
- Tualatin City Limit
- Tax lots
- Streams and Rivers
- Wetlands

Data Source: Metro, City of Tualatin, USGS

N

0 375 750 1,500 Feet

CH2MHILL

File Path: \\Astoria\gisdata1\data\Proj\tv_gis\mapdocuments\sw\figure5_supplemental-planning-areas.mxd, Date: March 8, 2005 10:15:19 AM

Figure 5 slip sheet (11x17)

Copies of tax assessment maps are provided in the Figures section of this report.

Development Issues: The Concept Plan area includes approximately 302 acres of land anticipated to be zoned and developed for industrial use. The study area is south of Tualatin-Sherwood Road, which connects to I-5 and Highway 99W. South of the study area is adjacent to Tonquin Road. The site is located at the western edge of the Portland Metropolitan UGB and is anticipated to be incorporated into the City of Tualatin in the future. The supplemental areas include approximately 103 acres of land directly adjacent to the Concept Plan area, which are anticipated to be developed for industrial use.

The BPA right-of-way and easements and the PGE easement areas are not developable as it is reserved for transmission line use. BPA rules limit the proximity of buildings to transmission towers to no less than 25 feet. Transportation and parking facilities within this land is acceptable. The potential presence of hazardous materials on the Concept Planning area is unknown.

Infrastructure Needs: See transportation, water, sewer, etc., below.

Transportation

Existing Conditions: There are no existing paved roads or public streets within the study area with the exception of Waldo Way and Tonquin Road, located at the southern end. Several gravel and dirt roads cross the parcels within the study area. There is no transit service provided near the study area. Tualatin-Sherwood Road does include bicycle lanes and sidewalks. No bicycle or pedestrian facilities are provided on Tonquin Road or Waldo Way.

Development Issues: Access to and within the Concept Plan area would require new alignments for both public and private roads. Constraints include topography, transmission lines, wetlands, and other natural resources.

Infrastructure Needs: Preliminary evaluations of the Concept Plan area have identified the following public street assumptions:

- Extensions of 124th, 120th, and 115th Avenues would be constructed north-south from Tualatin-Sherwood Road to Tonquin Road or the future Connector. Blake and Helenius Streets would be constructed east-west from 124th Avenue to 115th Avenue. Extending Helenius Street west from its current termini may prove difficult, due to terrain and the need to cross the railroad tracks.
- 124th Avenue would follow the City's Eb&T street section as defined in the Tualatin Development Code; 120th, 115th, Blake, and Helenius would follow the B-CI street section.
- All streets would be illuminated and landscaped.

Sight distance improvements will be required at the SW Tonquin Road/SW Waldo Way west intersection.

Once development assumptions have been specified, additional offsite needs can be identified.

Water System

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

Development Issues: Water supply to the Concept Plan area is not scheduled to be available until 2007. 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 "Tualatin Sand and Gravel Area") in the hydraulic modeling and CIP identification tasks (see Table ES-1 and Figure ES-1 in Appendix C). Project Number P-15, 13,000 linear feet of 16-inch-diameter pipe, was identified in the master plan as a 2007 project to provide a looped water supply to the Concept Plan area. A new Level A reservoir (CIP Project R-1) and pipeline projects (P-6 and P-16) are needed to provide water to the Concept Plan area. These projects were identified for construction ahead of project P-15. The fully modeled water supply would not be provided until the build-out year (2010), when the new Level B reservoir (R-3) and pipeline system (P-3) are completed.

Once development assumptions have been specified, more specific estimates of future infrastructure needs can be made.

Sewer System

Existing Conditions: No sanitary sewer systems of adequate size currently exist near the Concept Plan area.

Development Issues: The recommend improvement projects identified in the master plan to provide sewer service to this area will not be constructed until 2010. The Concept Plan area must be in the City of Tualatin prior to receiving sewer service.

Infrastructure Needs: The sewer master plan did include the Concept Plan area in the hydraulic modeling and CIP identification tasks (see attached Table 5-1 and Figures F-1, F-8, and F-9 in Appendix C). Three recommended CIP projects were identified to provide sanitary sewer service to the Concept Plan area and an adjacent urban reserve area (Tualatin-Sherwood URA). The recommended projects are:

1. Tualatin-Sherwood Extension: A new 24-inch pipeline located in Tualatin-Sherwood Road, extending from the Concept Plan area/URA easterly to SW Avery Street;
2. Bluff/Cipole Lateral: Increase existing 12- to 21-inch pipe to 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
3. Bluff/Cipole Trunk Improvements: Upsize existing trunk line pipe diameters.

Estimated construction schedule for the recommended projects are 2010 for the Tualatin-Sherwood Extension project, 2008 for the Bluff/Cipole Lateral project, and 2003 for the Bluff/Cipole Trunk line project.

Storm Drainage

Existing Conditions: No stormwater 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 generally toward the north and toward the 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. Drainage to the south flows toward Coffee Lake Creek/Seely Ditch, which flows to Wilsonville.

Infrastructure Needs: Runoff from future streets or access roads and development will need to meet Clean Water Services (CWS) design criteria for stormwater 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.

Other Utilities

The only known utility that crosses the study area is electrical, with BPA and PGE transmission towers crossing the site. PGE provides electrical service in the Concept Plan area. A 115-kV electrical transmission line runs diagonally across the middle of the study area.

A 115-kV electrical transmission line (referred to as the Keeler Oregon City No. 2, Oregon City Stub) crosses the Concept Plan area on the BPA property. This is a regional distribution line that is not used to provide electrical service to the site. Conversations with BPA staff have indicated that in the future the site 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 the other sites. 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 property.

Natural and Cultural Resources

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

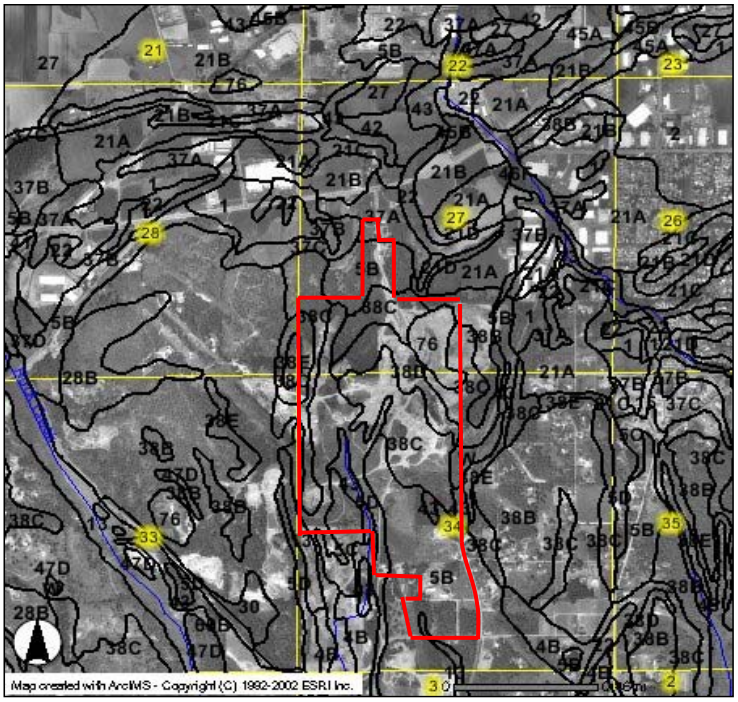
The plant community consists predominantly of scrub-shrub vegetation with remnant patches of forested habitat. Shrub vegetation is dominated by oceanspray (*Holodiscus discolor*) and poison oak (*Rhus diversiloba*). Dominant trees include madrone (*Arbutus mensiezii*), Scouler's willow (*Salix scouleriana*), 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. Representative species are listed in Table 1. Introduction and dispersal of weeds is prevalent, facilitated by high truck traffic and the electrical transmission rights-of-way (i.e., BPA).

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.

The Washington County soil map (Figure 6) indicates that most of the plan area is covered by Saum sil 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.

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 at the north end, and wetlands associated with Coffee Lake Creek. 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 active quarry operations, potentially isolated wetlands, drainage ditch wetlands, and artificial ponds.

Figure 6
Washington County Soil Map



Development Issues: According to Washington County, the greatest resource value is for mineral and aggregate sources, and historical. Protection of waters and wetlands will constrain many land uses because regulated areas are scattered across the plan area. 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. Kendra Smith/CWS suggested that development should consider

100 percent stormwater infiltration and no surface discharge from the plan area, other than natural flows. Future development has the opportunity to incorporate stormwater management facilities and approaches that maximize interception and evapotranspiration by vegetation, soil infiltration, onsite detention though bioswales, ecoroofs, pervious paving, and other factors.

Infrastructure Needs: Stormwater system (see discussion above).

TABLE 1. REPRESENTATIVE PLANT SPECIES AT THE SOUTHWEST TUALATIN CONCEPT PLAN AREA

Scientific Name	Common Name	Scientific Name	Common Name
Acer macrophyllum	Big-leaf maple	*Polystichum munitum*	Sword fern
Agrostis stolonifera	Creeping bentgrass	*Populus balsamifera*	Black cottonwood
Alnus rubra	Red alder	*Prunus* sp.	Domestic cherry
Amelanchier alnifolia	Serviceberry	*Psuedotsuga menziesii*	Douglas-fir
Arbutus mensiezii	Pacific madrone	*Pteridium aquilinum*	Bracken fern
Carex obnupta	Slough sedge	*Quercus garryana*	Oregon white oak
Chrysanthemum leucanthemum	Oxeye daisy	*Rhamnus purshiana*	Cascara buckthorn
Cirsium arvense	Canada thistle	*Rhus diversiloba*	Poison oak
Corylus cornuta	Beaked hazelnut	*Rosa gymnocarpa*	Baldhip rose
Cytisus scoparius	Scotch broom	*Rosa nutkana*	Nootka rose
Dipsacus fullonum	Teasel	*Rubus discolor*	Himalayan blackberry
Epilobium angustifolium	Fireweed	*Rubus laciniatus*	Evergreen blackberry
Fragaria virginianum	Wild strawberry	*Rubus parviflora*	Thimbleberry
Fraxinus latifolia	Oregon ash	*Rubus spectabilis*	Salmonberry
Galium aparine	Bedstraw	*Rumex acetosella*	Sheep sorrel
Galtheria shallon	Salal	*Salix scouleriana*	Souler's willow
Geranium molle	Dovefoot geranium	*Sambucus racemosa*	Red elderberry
Geranium robertianum	Robert's geranium	*Spirea douglasii*	Douglas' spirea
Holcus lanatus	Velvet grass	*Symphoricarpos albus*	Snowberry
Holodiscus discolor	Oceanspray	*Trifolium dubium*	Small hop-clover
Hypochaeris radicata	Hairy cat's ear	*Trifolium repens*	White clover
Juncus effusus	Common rush	*Trifolium wormskjoldii*	Springbank clover
Juncus patens	Spreading ruch	*Vaccinium* sp.	Huckleberry
Lathyrus nevadensis	Purple peavine	*Vicia americana*	American vetch
Lonicera ciliosa	Western trumpet honeysuckle	*Vicia cracca*	Bird vetch
Physocarpus capitatus	Pacific ninebark	*Vicia sativa*	common vetch

APPENDIX A

Southwest Tualatin Concept Plan Transportation Analysis (Kittelson & Associates)

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING
610 SW ALDER, SUITE 700 • PORTLAND, OR 97205 • (503) 228-5230 • FAX (503) 273-8169

TECHNICAL MEMORANDUM

Southwest Tualatin Concept Plan
Existing and Base Future Traffic Analysis

Date: December 9, 2004 **Project #:** 6689

To: David Simmons, CH2M HILL

From: Paul Ryus, P.E.

cc: Stacy Hopkins, City of Tualatin

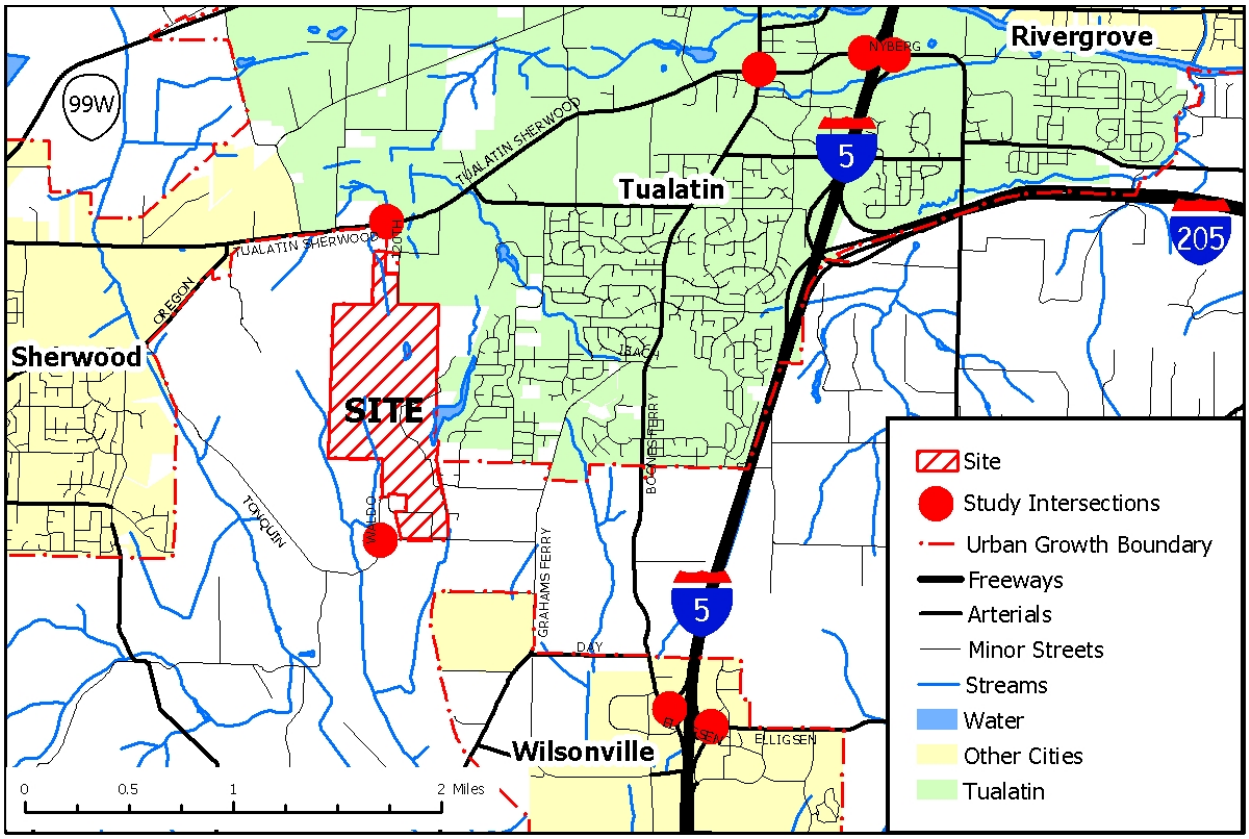
Introduction

In December 2002, Metro added two areas south of SW Tualatin-Sherwood Road and west of the current Tualatin city limits to the Portland regional Urban Growth Boundary (UGB). These areas are now within Tualatin's Planning Area boundary, meaning that they are intended to be annexed into the city in the future. Current land uses in the planning area consist of aggregate mining (the majority of the area) and a small amount of industrial and manufacturing uses at the south end of the area. Through the Southwest Tualatin Concept Plan, the City of Tualatin is identifying land use, transportation, and urban services needs for the Concept Plan area, once mining operations cease and existing industrial uses redevelop. This memorandum evaluates existing traffic operations at seven key intersections that could be impacted by Concept Plan area traffic, as well as year 2025 traffic operations, assuming no change in the current uses. This analysis is a first step toward evaluating the potential traffic impacts of various land use alternatives for the Concept Plan area, which will occur later in the project.

Study Area

The 352-acre Concept Plan area is illustrated in Figure 1. The area is generally located between SW Tualatin-Sherwood Road on the north and SW Tonquin Road on the south, west of the Portland & Western railroad. Access to the site is from SW 120th Avenue on the north, and SW Waldo Way and SW Tonquin Loop on the south.

Figure 1
Site Vicinity



SW Tualatin-Sherwood Road is maintained by Washington County and is designated as an *arterial* and an *existing through-truck route.* East of SW Teton Avenue, it has a 5-lane cross-section. West of SW Teton Avenue, it currently has a three-lane cross-section, but is planned to eventually be widened to a 4- or 5-lane cross-section. The Tualatin Transportation System Plan (TSP) designates it as a *major arterial* and *truck route.* Just west of I-5, SW Tualatin-Sherwood Road joins SW Nyberg Road, which has the same designations the rest of the way to the interchange.

SW Tonquin Road is maintained by Washington County and is designated as an *arterial.* A short section northwest of Morgan Road cuts a corner of Clackamas County, which designates it as a *local road.* The portion of the road within Washington County northwest of Morgan Road is designated as an *existing through-truck route,* while the portion east of Morgan Road is designated as a *proposed through-truck route.* The road has a 2-lane cross-section, which is planned to remain through Washington County's 2020 planning horizon. SW Tonquin Road connects southeast to I-5 via SW Grahams Ferry Road, Day Street, and SW Boones Ferry Road.

SW Grahams Ferry Road is maintained by Washington County, which designates the section providing the connection as an *arterial.* North of SW Tonquin Road and south of Day Street, it is designated as a *collector.* All of the road is designated as an *existing through-truck route.* The road has, and is planned to continue to have, 2 lanes. Wilsonville designates the road as a *major collector.*

Day Street is designated as an *arterial* by Washington County and a *major collector* by Wilsonville. It was recently widened to 3 lanes in conjunction with the development of the Coffee Creek Correctional Facility. Washington County also designates it as an *existing through-truck route.*

The portion of SW Boones Ferry Road between Tualatin's south city limits and I-5 is maintained by the Oregon Department of Transportation (ODOT) as part of Beaverton-Tualatin Highway #141. ODOT designates the road as a *district highway.* Washington County designates all of the road as an *arterial* and *existing through-truck route.* Wilsonville designates the portion within its city limits as a *major arterial.* The City of Tualatin maintains SW Boones Ferry Road within Tualatin; south of SW Tualatin-Sherwood Road, it is designated as a *major arterial* and *truck route,* and to the north as a *minor arterial* and *truck route.* Within Tualatin, and between Tualatin and Wilsonville, the road has a 2-3 lane cross-section. South of Day Street in Wilsonville, the road has a 4-5 lane cross-section. The various city and county plans anticipate the entire roadway eventually being widened to 4-5 lanes south of SW Tualatin-Sherwood Road; north of SW Tualatin-Sherwood Road, the road would have a 2-3 lane cross-section between intersections. East of I-5, SW Boones Ferry Road becomes Elligsen Road.

SW 120th Avenue, SW Waldo Way, and SW Tonquin Loop are all maintained by Washington County as *local roads.* They all have 2-lane cross-sections (not always full-width or striped).

Study Intersections

The following intersections were studied, per the project work scope:

- SW Nyberg Road/I-5 northbound ramps;
- SW Nyberg Road/I-5 southbound ramps;
- SW Tualatin-Sherwood Road/SW Boones Ferry Road;
- SW Tualatin-Sherwood Road/SW 120th Avenue;
- SW Tonquin Road/SW Waldo Way (west intersection);
- SW Boones Ferry Road/I-5 southbound ramps; and
- SW Elligsen Road/I-5 northbound ramps.

Figure 1 shows the locations of these intersections.

Existing Conditions

Traffic counts were conducted on Wednesday, November 17, 2004, between 6:00 and 9:00 a.m., and 3:30 and 6:30 p.m. The count sheets are attached to this memorandum. The I-5/SW Nyberg Road interchange (#289) was being widened at the time of the counts, but all lanes were open to traffic during construction. Results presented below for the ramp terminal intersections reflect the conditions that will exist following the completion of construction.

Traffic operations at the study intersections were analyzed using the procedures given in the *Highway Capacity Manual 2000.* Results are reported both in terms of level of service

(LOS) and volume-to-capacity ratio. Level of service is reported as a letter from A (best) to F (worst), and is based on the delay experienced by motorists. At signalized intersections, LOS is based on the average delay experienced by all motorists using the intersection, while at unsignalized intersections, it is based on the average delay experienced by the worst, or *critical,* movement. Volume-to-capacity (v/c) ratio represents the percentage of an intersection's capacity being used.[1] Table 1 presents existing traffic operations at the study intersections. The analysis worksheets are attached to this memorandum.

Table 1
Existing Conditions Traffic Operations

Location	A.M. Peak Hour		P.M. Peak Hour	
	LOS	v/c	LOS	v/c
SW Nyberg Road/I-5 Northbound Ramps	C	0.91	C	0.69
SW Nyberg Road/I-5 Southbound Ramps	C	0.69	C	0.76
SW Tualatin-Sherwood Road/SW Boones Ferry Road	D	0.78	D	0.85
SW Tualatin-Sherwood Road/SW 120th Avenue	D	0.22	D	0.16
SW Tonquin Road/SW Waldo Way (west)	C	0.07	B	0.06
SW Boones Ferry Road/I-5 Southbound Ramps	C	0.93	B	0.64
SW Elligsen Road/I-5 Northbound Ramps	B	0.53	B	0.43

LOS: level of service, v/c: volume-to-capacity ratio

As a follow-up to the site visit, sight distance measurements were made at the west intersection of SW Tonquin Road/SW Waldo Way. This intersection is located on a curve, with westbound SW Tonquin Road passing through a cut on its approach to the intersection. Based on the posted speed of 45 mph on SW Tonquin Road, the desired sight distance is 450 feet. Motorists on the SW Waldo Way approach who stop at the stop bar have 430 feet of sight distance to the left, slightly less than the standard. Many vehicles were observed stopping farther back, in order to improve drivers' views of the road to the left. Vehicles making a left turn from SW Tonquin Road to SW Waldo Way have only 230 feet of sight distance available, much less than the standard. Sight distance improvements at this intersection should be considered as part of the Concept Plan process.

Year 2025 Traffic Volume Forecasts

The year 2025 was selected as the horizon year for this analysis, as the most recent Metro model will be used later in the project to test the transportation impacts of different land use scenarios. For the purposes of developing weekday p.m. peak hour "base future" volumes (year 2025 traffic assuming no change in land use in the Concept Plan area), several sources were used:

- For intersections within the City of Tualatin, year 2020 traffic volume forecasts were taken from the modeling work done for the Tualatin TSP's "New Scenario #1" (Appendix G of the TSP), which most closely corresponds to the projects included in the final adopted TSP. In particular, this scenario includes a northern expressway alignment for the I 5/Highway 99W Connector running between I-5 and Tualatin-Sherwood Road, and an extension of Hall Boulevard over the Tualatin River.

[1] For future conditions analysis, the v/c ratio is technically a demand-to-capacity ratio, reflecting the number of vehicles that would like to use the intersection during a given hour. By definition, volume cannot exceed capacity. Demand in excess of capacity would appear as queues of cars unable to get through a traffic signal in a single cycle, assuming that no other bottlenecks existed upstream that would meter the flow of traffic to the downstream signal.

Weekday p.m. peak hour turning movement volumes were estimated using the process described in *NCHRP Report 255*,[2] which compensates for conditions where modeled volumes do not match existing volumes. Finally, the turning movement volumes were adjusted to 2025 conditions based on average 20-year growth rates.

- For the SW Tonquin Road/SW Waldo Way intersection, SW Waldo Way volumes were kept at current levels (reflecting no change in land use), while SW Tonquin Road volumes were increased by 41%, reflecting the average forecast change in minor arterial volume given in Washington County's TSP.[3]
- For the North Wilsonville interchange, year 2020 volumes were taken from work performed during the development of Wilsonville's TSP[4] and were then adjusted to 2025 conditions based on average 20-year growth rates.

During the alternatives analysis, these forecasts will be rechecked, once data from the 2025 model are available. However, as there were no "borderline" results in the future-year analysis, no significant change in the results is anticipated.

Because the Metro model does not forecast weekday a.m. peak hour volumes, a different methodology was used to estimate these volumes. An average annual growth rate was determined for each intersection based on the growth forecast for the weekday p.m. peak hour. Twenty years of this growth was then added onto the existing weekday a.m. peak hour traffic volumes to arrive at the 2025 forecasted weekday a.m. peak hour volumes.

Planned Projects

The following intersection-specific projects were assumed in the base future analysis:

- SW Tualatin-Sherwood Road/SW Boones Ferry Road: second westbound left-turn lane (Tualatin TSP)
- SW Boones Ferry Road/I-5 Southbound Ramps: restripe southbound center lane to allow all movements (Wilsonville TSP)
- SW Tualatin-Sherwood Road/SW 120th Avenue: five-lane cross-section on SW Tualatin-Sherwood Road (Tualatin TSP)

Two other projects included in the Tualatin TSP, the I-5/Highway 99W Connector (north alignment) and the SW Hall Boulevard extension over the Tualatin River, result in shifts in traffic patterns compared to current conditions. The effects are most noticeable at the I-5 Tualatin (#289) interchange and on SW Tualatin-Sherwood Road at SW 120th Avenue, where future volumes are not that much greater than current volumes (and for some movements, are lower). The north alignment of the I-5/Highway 99W Connector runs through the Concept Plan area, joining SW Tualatin-Sherwood Road at the location of the future extension of SW 124th Avenue.

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[2] JHK & Associates, "Highway Traffic Data for Urbanized Area Project Planning and Design," *NCHRP Report 255*, Transportation Research Board, National Research Council, Washington, DC (1982).

[3] DKS Associates, Inc., "Technical Appendix B-1," *Washington County2020 Transportation Plan.*

[4] Entranco, Inc., *City of Wilsonville Transportation Systems Plan,* January 2003 Public Draft.

Base Future Conditions

Table 2 presents base future traffic operations at the study intersections. The analysis worksheets are attached to this memorandum.

Table 2
Base Future Conditions Traffic Operations

Location	A.M. Peak Hour		P.M. Peak Hour	
	LOS	v/c	LOS	v/c
SW Nyberg Road/I-5 Northbound Ramps	E	1.17	C	0.75
SW Nyberg Road/I-5 Southbound Ramps	C	0.77	C	0.84
SW Tualatin-Sherwood Road/SW Boones Ferry Road	F	1.08	F	1.32
SW Tualatin-Sherwood Road/SW 120th Avenue	C	0.16	C	0.14
SW Tonquin Road/SW Waldo Way (west)	C	0.12	C	0.12
SW Boones Ferry Road/I-5 Southbound Ramps	C	0.89	B	0.73
SW Elligsen Road/I-5 Northbound Ramps	B	0.71	B	0.54

LOS: level of service, v/c: volume-to-capacity ratio

The Metro model shows SW Nyberg Road/I-5 Northbound Ramps intersection being impacted in the morning (and, to a lesser extent, in the evening) by traffic using SW Borland Road to avoid congestion on I-205. If this traffic were to materialize, providing a free-flow right-turn lane from westbound SW Nyberg Road to northbound I-5 (similar to the one at the SW Elligsen Road/I-5 Northbound Ramps intersection) would address the traffic operations problem, resulting in LOS C operations and a v/c ratio of 0.62.

The SW Tualatin-Sherwood Road/SW Boones Ferry Road intersection is constrained by the railroad tracks to the west, development elsewhere, and a general desire to not cut off the Tualatin Commons area from the remainder of downtown Tualatin by continuing to widen roads. Prohibiting left turns from SW Boones Ferry Road to SW Tualatin-Sherwood Road, and providing two through lanes in each direction, could provide LOS D and under-capacity operations; however, the effects of the diverted traffic on other streets would need to be assessed (for example, as part of the upcoming Tualatin Town Center study).

APPENDIX B

Southwest Tualatin Concept Plan Policy Review

(Otak)

M e m o r a n d u m

Date: March 1 2005

To: Dave Simmons, CH2M-Hill

cc: File 12621

From: Todd Chase and Charlotte Larson, Otak, Inc.

Subject: Southwest Tualatin Concept Plan, Policy Review (revised)

Introduction

The Southwest Tualatin Concept Plan is being conducted to help meet the industrial jobs land demand in the City of Tualatin and the greater Portland metropolitan region for the next 20 years. The plan will include a site analysis and a plan for the land use pattern, transportation system connections and the provision of urban facilities (water, sanitary sewer system, storm sewer system). The plan will also result in an amendment to the Tualatin Development Code (TDC) and an addendum to the Tualatin Transportation Plan as seen in Chapter 11 of the TDC. Ultimately, the project area will be annexed into the City with the City providing urban services.

Metro added the Southwest Tualatin study area to the Metro UGB in December 2002. According to Metro Ordinance 02-969B, there are two main portions within the study area: the 290-acre area known as the Tigard Sand and Gravel site; and the 62-acre area called the Tonquin Industrial Group site.

This memorandum provides a summary of the existing local and regional land use and economic development policy documents, which pertain to the Concept Plan area, including:

- Tualatin Development Code (amended)
- Tualatin Economic Development Action Plan (June 2001)
- Metro Urban Growth Management Functional Plan (effective 9/24/03)
- Washington County Community Development Code (amended)
- Washington County Comprehensive Framework (2003)

Tualatin Development Code (amended)

This overall guiding policy document for the City of Tualatin establishes general comprehensive plan policies for land use, transportation, public facilities, housing, economic development, citizen involvement and related items. Relevant portions of the plans are described below.

Chapter 4 of the Tualatin Development Code deals with Community Growth. Key policies include:

- *Section 4.050 (1 and 2)* General Growth Objectives indicates that the Community Plan "will accommodate a population range of 22,000 to 29,000 people" and that the

city shall "cooperate with Metro to reach regional consensus on population growth within the Tualatin area".

- *Section 4.050 (6)* states that the city shall "arrange the various land uses so as to minimize land use conflicts and maximize the use of public facilities as growth occurs."
- *Section 4.050 (9)* indicates that the city shall "prepare a balanced plan providing a variety of living and working environments."
- *Section 4.050 (10)* states that the city shall "encourage the highest quality physical design for future development."
- *Section 4.050 (18)* states that the city shall "fully develop the industrial area located in Washington County west of the city only when adequate transportation facilities are available and the area has been annexed to the City and served with water and sewer services".
- *Section 4.050 (19)* states that the city shall "cooperate with Washington County to study methods available for providing transportation, water and sewer service to the industrial area west of the City, designating this area as a special study area".

Chapter 7 Manufacturing Planning Districts focuses on industrial land uses. Key policies include:

- *Section 7.020 (1)* "Encourage new industrial development."
- *Section 7.020 (2)* "Provide increased local employment opportunity, moving from 12 percent local employment to 25 percent, while at the same time making the City, and in particular the Western Industrial District, a major regional employment center."
- *Section 7.020 (3)* "Improve the financial capability of the City, through an increase in the tax base and the use of creative financing tools."
- *Section 7.020 (4)* "Preserve, with minor exceptions, the City's existing industrial land."
- *Section 7.020 (5)* "Cooperate with Washington County, METRO, and the State of Oregon to study the methods available for providing transportation, water, and sewer services to the Western Industrial District".
- *Section 7.020 (6)* "Fully develop the Western Industrial District, providing full transportation, sewer, and water services prior to or as development occurs."
- *Section 7.020 (7)* "Improve traffic access to the Western Industrial District from the Interstate 5 freeway through a new interchange at Norwood Road or a suitable and adequate alternative".
- *Section 7.020 (8)* "Cooperate with the Department of Environmental Quality and METRO to meet applicable air quality standards by 1987. "
- *Section 7.020 (9)* "Construct a north/south major arterial street between Tualatin Road and Tualatin-Sherwood Road in the 124th Avenue alignment to serve the industrial area."
- *Section 7.020 (10)* "Rebuild the Tualatin Road/Pacific Highway intersection to allow for substantially greater traffic flows."
- *Section 7.020 (11)* "Provide truck routes for industrial traffic that provide for efficient movement of goods while protecting the quality of residential areas."
- *Section 7.020 (12)* "Protect residential, commercial, and sensitive industrial uses from the adverse environ-mental impacts of industrial use."

- *Section 7.020 (13)* Protect adjacent land uses from noise impacts by adopting industrial noise standards.
- *Section 7.020 (14)* "Continue to protect the Hedges Creek Wetland and Tonquin Scablands from adverse impacts of adjacent development".
- *Section 7.020 (15)* "Continue to administer specific and enforceable architectural and landscape design standards for industrial development."
- *Section 7.020 (16)* Encourage industrial firms to use cogeneration as a means to utilize waste heat from industrial processes and consider solar access when designing industrial facilities
- *Section 7.020 (17)* "Protect wooded areas identified on the Natural Features Map found in the Technical Memorandum by requiring their preservation in a natural state or by integrating the major trees into the design of the parking lots, buildings, or more formal landscaping areas of an industrial development. If it is necessary to remove a portion or all of the trees, the replacement landscape features shall be subject to approval through the Architectural Review"

Section 15 Parks and Recreation is a very important policy element within the Development Code. Key sections that may apply to the Concept Plan area include:

- *Section 15.020 (2)* "Provide a high-quality park and recreation system to offset the environmental impact of large areas of commercial and industrial development."
- *Section 15.020 (3)* "Create a park and recreation system that provides diverse recreation opportunity."
- *Section 15.020 (6)* "Preserve as greenways, specific City creeks and drainage swales to provide sufficient area for stormwater runoff, enhance water quality, preserve fish and wildlife habitat and provide, where appropriate, public pedestrian and bicycle access.
- *Section 15.020 (7)* "Preserve greenways, as much as possible, in their natural state."
- *Section 15.020 (8)* "Preserve designated historic resources through public purchase or encouragement of compatible private reuse."
- *Section 15.020 (9)* "Link the park and recreation system with a system of greenways and bicycle/pedestrian facilities."
- *Section 15.020 (10)* "Develop design standards for development adjacent to greenways and natural areas."
- *Section 15.020 (12)* "Encourage developers to utilize residential density transfers, landscaping credits, system development charge credits, reduction of minimum setback requirements, and other incentives for greenway, bikeway and pedestrian path purposes."

Tualatin Economic Development Action Plan (June 2001)

As stated in the Economic Development Action Plan, the overall goal of the plan is "To become one of the premier economic activity centers of the metropolitan area, achieving commercial and industrial growth within the framework of high environmental standards and excellence in urban design".

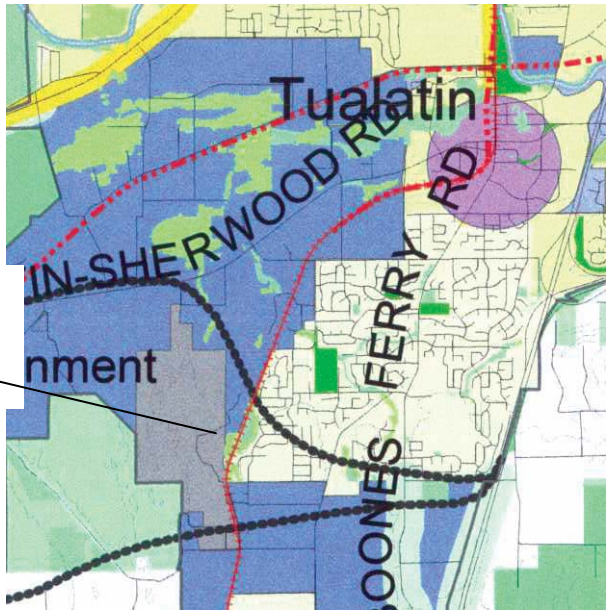
The Economic Development Action Plan Objectives include:

- Objective 3. Continue working with State, County and Regional agencies to guarantee that the I-5/99W Connector becomes a reality.
- Objective 8. Be prepared to address urbanization of areas adjacent to the City of Tualatin (i.e. Study Areas 12B [Stafford Basin], 14A [south of Tualatin] and 14G [southwest Tualatin]. Strategy A: Continue to participate in discussions at the regional and local levels on the viability of urbanization of land to the east, south and southwest of the City and the impacts urbanization would have on the existing community.

The Metro Urban Growth Management Functional Plan (effective 9/24/03)

This regional land use policy document identifies design types and density levels for local governments within Metro's jurisdiction and seeks to improve the region's economy by providing and protecting a supply of sites for employment. As shown in Figure 1, the design type applied to the Southwest Tualatin Concept Plan is Regionally Significant Industrial Area (RSIA). Surrounding the study area, are Industrial Areas to the north and south, Resource Land to the southwest and Outer Neighborhood to the east.

Figure 1
Metro 2040 Growth Concept



Regionally Significant Industrial Areas (RSIAs) are those areas near the region's most significant transportation facilities for the movement of freight and other areas most suitable for movement and storage of goods. Each city and county with land use planning authority over RSIAs shown on the Employment and Industrial Areas Map shall derive specific plan designation and zoning district boundaries of RSIAs within its jurisdiction from the Map, taking into account the location of existing uses that would not conform to the limitations on non-industrial uses in this section and the need to achieve a mix of employment uses.

According to section 3.07.170, the average density levels for employment design types are recommended to consist of 20 persons per acre in Employment Areas, 9 employees per acre in Industrial Areas and 9 employees per acre in RSIA.

According to Section 3.07.420 (revised by Metro per Exhibit B to Ordinance No. 04-140B), *"Regionally Significant Industrial Areas are areas that are intended to offer the best opportunities for family-wage industrial jobs near the region's most significant transportation facilities for the movement of freight and other areas most suitable for movement and storage of goods."*

According to Section 3.07.420 (B), in Regionally Significant Industrial Areas, "cities and counties shall review their land use regulations and revise them, if necessary to include measures to limit the size and location of new buildings for retail commercial uses, such as stores and restaurants and retail and professional services that cater to daily customers – such as financial, insurance, real estate, legal, medical and dental offices – to ensure that they serve primarily the needs of workers in the area. One such measure shall be that new buildings for stores, branches, agencies or other outlets for these retail uses and services shall not occupy more than 3,000 square feet of sales or service area in a single outlet, or multiple outlets that occupy more than 20,000 square feet of sales or service area in a single building or in multiple buildings that are part of the same development project, with the following exceptions:

- Within the boundaries of a pubic use airport…
- Training facilities, whose primary purpose is to provide training to meet industrial need."

"After determining the boundaries of RSIAs pursuant to subsections A and B, cities and counties hall adopt implementing ordinances that limit the development in the areas to industrial uses, uses accessory to industrial uses, offices for industrial research and development and large corporate headquarters in compliance with Section E, utilities, and those non-industrial uses necessary to serve the needs of businesses and employees of the areas. Cities and counties shall include measures to limit the siting and location of new buildings for the uses described in subsection B and for non-industrial uses that do not cater to daily customers—such as bank or insurance processing centers—to ensure that such uses do not reduce off-peak performance on Main Roadway Routes and Roadway connectors shown on Metro's Freight Network Map, November 2003, below standards set in the 2004 Regional Transportation Plan or require added road capacity to prevent falling below the standards." [Section 3.07.420 (C)].

"Within an RSIA, a city or county shall not approve:

1. A commercial retail use with more than 20,000 square feet of retail sales area in a single building or in multiple buildings that are part of the same development project; or
2. Commercial retail uses that would occupy more than 5% of the net developable portion of all contiguous RSIAs. No city or county shall amend its land use regulations that apply to lands shown as RSIA on the Employment and Industrial Areas Map to authorize uses described in subsection B that were not authorized prior to July 1, 2004." [Section 3.07.420 (D)].

"As provided in subsection C of this section, as city or county may approve an office or industrial research and development or a large corporate headquarters if:

1. The office is served by public or private transit;
2. If the office is for a corporate headquarters, it will accommodate for the initial occupant at least 1,000 employees." [Section 3.07.420 (E)].

"Cities and counties may allow division of lots or parcels into smaller lots or parcels as follows:

1. Lots or parcels smaller than 50 acres may be divided into any number of smaller lots or parcels;
2. Lots or parcels larger than 50 acres may be divided into smaller lots and parcels pursuant to a master plan approved by the city or county so long as the resulting division yields at least one lot or parcel of at least 50 acres in size;
3. Lots or parcels 50 acres or larger, including those created pursuant to paragraph (2) of this subsection, may be divided into any number of smaller lots or parcels pursuant to a master plan approved by the city or county so long as at least 40% of the area of the lot or parcel has been developed with industrial uses or uses accessory to industrial use, and no portion has been developed, or is proposed to be developed, with uses described in subsection B.
4. Notwithstanding paragraph 2 and 3 of this subsection, any lot or parcel may be divided into smaller lots or parcels or made subject to rights-of-way for the following purposes:
    a. To provide public facilities and services;
    b. To separate a portion of a lot or parcel in order to protect a natural resource, to provide a public amenity, or to implement a remediation plan for a site identified by the Oregon Department of Environmental Quality pursuant to ORS 465.225;
    c. To separate a portion of a lot or parcel containing a nonconforming use from the remainder of the lot or parcel in order to render the remainder more practical for a permitted use; or
    d. To allow the creation of a lot for financing purposes when the created lot is part of a master planned development. [Section 3.07.420 (D)].

"A city or county may allow the lawful use of any building, structure, or land existing at the time of adoption of this ordinance to implement this section to continue and to expand to add up to 20% more floor area and 10% more land area." [Section 3.07.420 (E)].

The City of Tualatin, as part of compliance with Section 3.07.1120 of the Urban Growth Management Functional Plan, shall derive comprehensive land use plan designation and zoning district designations/boundaries to ensure that development in Regionally Significant Industrial Areas is consistent with the Functional Plan.

Washington Community Development Code (amended)

The Southwest Tualatin Concept Plan study area is currently regulated by the Washington County Community Development Code. The purpose of the Code is "to implement the Washington County Comprehensive Plan through the adoption and

coordination of planning and development regulations which provide for the health, safety and general welfare of the citizens of Washington County".

The study area is designated Future Development-20 (FD-20) which applies to the unincorporated urban lands added to the urban growth boundary by Metro through a Major or Legislative Amendment process after 1998. The FD-20 District recognizes the desirability of encouraging and retaining limited interim uses until the urban comprehensive planning for future urban development of these areas is complete. The provisions of this District are also intended to implement the requirements of Metro's Urban Growth Management Functional Plan.

Washington County Comprehensive Framework Plan (2003)

The Washington County Comprehensive Framework Plan provides the basis for the future growth and development of the County. Policy 20, Urban Area Economy, presents strategies for Washington County "to encourage and participate in activities which strengthen the local economy". Among the strategies stated under Policy 20, are the following:

- "Help create a healthy climate for economic development by designating an adequate amount of serviced commercial and industrial land to ensure choice in the regional market place. The supply will be subject to periodic review to ensure that the economy is not harmed due to the fact that there is not enough land or that the size and location of remaining land does not meet market needs."

Next Steps

Otak will work closely with the project team to prepare draft land use and transportation alternatives for the study area. The alternatives will then be subjected to subjective and objective evaluation criteria and a refined preferred hybrid plan shall be identified for implementation.

APPENDIX C

Southwest Tualatin Concept Plan Water and Sewer Master Plan Documents

TABLE ES-1
Water System Capital Improvement Plan to Serve Buildout Demand Projections
City of Tualatin Water Master Plan

Category	Project No.	Project Description	Project Purpose	Projected Year Needed	Construction Cost	Engineering, Administration, Legal, Contingencies 35%	Total Project Cost
Storage	R-1	Construct new Service Level A (A-2)10-MG reservoir.	Existing storage deficit, peaking storage	2003	$3,000,000	$1,050,000	$4,050,000
	R-2	Construct new Service Level C (C-2) 1-MG reservoir.	Storage for future growth	2005	$445,000	$156,000	$601,000
	R-3	Construct new Service Level B (B-2) 1.9-MG reservoir.	Storage for future growth	2010	$880,000	$308,000	$1,188,000
						Storage Subtotal	**$5,839,000**
Source and Pumping	S-1	Increase MDD source capacity from 10.8 mgd to buildout MDD of 17.2 mgd. Aquifer storage and recovery is the assumed water source.	Capacity for future growth	2005			$13,300,000
	S-2	Norwood Pump Station upgrade from 700 gpm firm capacity to 1,000 gpm firm capacity. Replacement of two pumps.	Capacity for future growth	2005	$300,000	$105,000	$405,000
	S-3	Seismic upgrade of pump stations, reservoirs and PRVs.	System protection	2003	$1,200,000	$420,000	$1,620,000
	S-4	Construct a 3.5-mgd pump station near the Avery PR/PS.	Redundant supply to Service Level B	2006	$2,200,000	$770,000	$2,970,000
						Source and Pumping Subtotal	**$18,295,000**
Transmission/Distribution System	P-1	2,000 feet of 18-inch-diameter pipe from the new Level A reservoir to the intersection of SW Cipole Road and SW Tualatin-Sherwood Road. 1,100 feet of 12-inch-diameter pipe from the intersection of SW Cipole Road and SW Tualatin-Sherwood Road. 4,600 feet of 16-inch-diameter pipe from the intersection of SW Cipole Road and SW Tualatin-Sherwood Road east along SW Tualatin-Sherwood Road to the existing 12-inch-diameter pipe north of the Avery PRV.	Service Level A storage, future fire flows, and PHD	2003	$2,444,000	$855,000	$3,299,000
	P-2	700 feet of 12-inch-diameter pipe at I-5 crossing on Norwood Road. Assume boring under freeway.	Service Level C fire flow and future growth and connection to Frobase	2005	$378,000	$132,000	$510,000
	P-3	2,200 feet of 16-inch-diameter pipe on SW 108th Avenue from new Service Level B reservoir to existing the 12-inch-diameter main on SW Ibach Street.	Service Level B storage, future fire flows, and PHD	2010	$528,000	$185,000	$713,000
	P-4	1,900 feet of parallel 12-inch-diameter pipe on SW Sagert Street from SW Boones Ferry Road to SW Martinazzi Avenue.	Service Level B future fire flow and growth	2005	$342,000	$120,000	$462,000
	P-5	1,900 feet of 16-inch-diameter pipe on SW 124th Avenue from SW Herman Road north to existing 16-inch-diameter pipe on SW 124th Avenue.	Service Level A future fire flow and growth	2003	$456,000	$160,000	$616,000
	P-6	3,600 feet of 12-inch-diameter pipe grid west of SW 105th Avenue and south of SW Avery Street for future development.	Service Level B future growth	2005	$432,000	$151,000	$583,000
	P-7	1,200 feet of 12-inch-diameter pipe along SW Iowa Drive from SW Lumbee Lane to SW Grahams Ferry Road for future development and redundancy.	Service Level C future growth	2008	$216,000	$76,000	$292,000
	P-8	Parallel 4,500 feet of existing 12-inch-diameter pipe leading to the Norwood tanks in Service Level B with 12-inch-diameter piping or replace with a 16-inch-diameter pipe.	Future growth and reservoir refill of Norwood tanks	2005	$1,080,000	$378,000	$1,458,000
	P-9	700 feet of 12-inch-diameter pipe along easement between SW Leveton Street and SW 115th Avenue to complete connection.	Service Level A future growth	2010	$126,000	$44,000	$170,000

Other Improvements
P-14: Install 3 fire hydrants located adjacent to Tualatin High School and served from Level B.
S-1: Increase in source capacity from 11 MGD to 17.2 MGD.
S-2: Norwood Pump Station upgrade from 700 gpm firm capacity to 900 gpm.
S-3: Siesmic Upgrade of Pump Stations, Reservoirs and PRVs.
S-4: New 3.5 MGD A to B level pump station near the Avery PRPS
M-1: SCADA System Improvements
M-2: Implement recommendations from Vulnerability Assessment

Abbreviations:
FCV - Flow Control Valve
PRV - Pressure Reducing Valve
PS - Pump Station
PRPS - Pressure Relief/ Pressure Sustaining Valve
PWB - Portland Water Bureau

Legend

Facility
- FCV-PRV
- PRPS
- PS
- Emergency Intertie
- Existing Reservoir
- Proposed Reservoir
- City Boundary
- Planning Area Boundary
- Pipeline Improvement
- Railroad
- Tax Lot

Pipe (in)
- 4
- 6
- 8
- 10
- 12
- 16
- 18
- 24
- 36

Service Level
- A
- B
- C

Labels
R-1: Reservoir Improvement
P-1: Pipeline Improvement
S-1: Source and Supply Improvement

N W E S

1,000 500 0 1,000 2,000 Feet

Tualatin.mxd July 30, 2003

Figure ES-1
Capital Improvements
City of Tualatin
Water Master Plan Update

CH2MHILL

CITY OF TUALATIN

SECTION 5

Recommended Improvements and Financial Planning

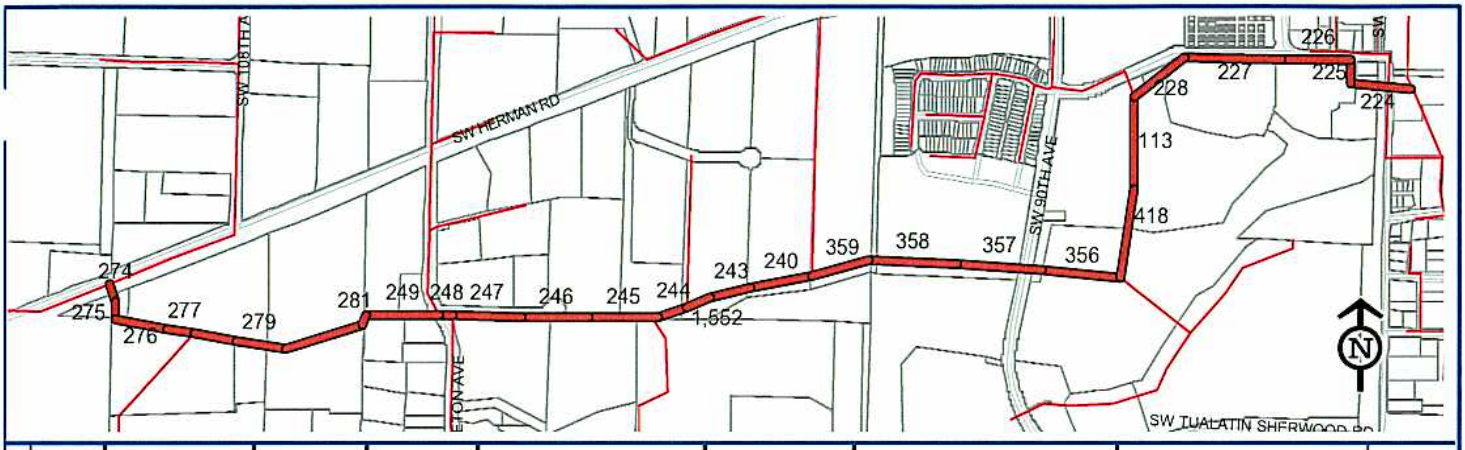
5.1 Recommended Improvements

The recommended improvements are listed in Table 5-1 with proposed construction years and order-of-magnitude cost estimates. The estimates are for costs to the City of Tualatin only. Total project costs, which are shared by Clean Water Services (CWS) for some projects, are shown in Table 4-2 in Section 4—Development and Evaluation of Sewer System Improvement Alternatives. For project locations, refer to Figure 4-1; for detailed maps of the projects, see Figures 4-2 through 4-11.

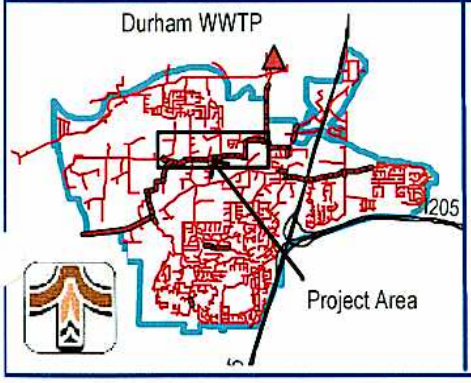
TABLE 5-1
City of Tualatin Sewer System Capital Improvement Project Cost Estimates
(includes costs to City of Tualatin; does not include CWS cost share)

Qualifies for Improvement[a]	Proposed Construction Year[b]	Summary Description of Projects[c]	Total Cost
2002	2003	Bluff/Cipole Trunk Line: Increase existing 18–24" line to 36–42" line	$153,000
	2003	Boones Ferry Road Line: Increase existing 8–12" line to 12–15" line[d]	$330,000
	2004	65th Avenue Lateral Line: Increase existing 8" line to 18" line	$31,000
	2005	Lower Tualatin Interceptor: Increase existing 30" line to 48" line	NA[e]
	2004	Nyberg Trunk Line: Increase existing 18" line to 24–30" line	$1,624,000
	2003	Boones Ferry Road Lateral: Increase of existing 8" line to 10" line	$42,000
2005	2005	SW Killarney Lane Septic System Replacement: Replace existing septic systems with new sanitary collection system and service laterals[f]	$450,000
2010	2008	Bluff/Cipole Lateral: Increase of existing 12–21" line to 18–36" line	$391,000
	2010	Extension of Tualatin-Sherwood Trunk Line to URAs, 24" new line[g]	$1,406,000
	2006	Tualatin River Crossing Siphon	NA[e]
	2009	SW 103rd Avenue: Increase existing 8" line to 10–12" line	$45,000
Total			**$4,472,000**

[a] Qualifies for improvement for the modeling scenarios developed for the 2002, 2005, and 2010 planning years. Based on hydraulic modeling for the 5-year 24-hour storm and CWS HGL criteria. Year 2002 represents existing population and land use conditions.
[b] Proposed construction years were developed based on the HGL priority ranking of the project and other factors such as logistics, magnitude of the project, and coordination with other projects. These are estimates only to use for financial planning.
[c] Projects are listed in order of highest to lowest priority ranking.
[d] Approximately 80 percent of flow during design event in portion of line requiring improvements originates in City of Durham.
[e] CWS is responsible for this project, although City may elect to accelerate schedule and split cost.
[f] Not related to HGL criteria analysis.
[g] Needed to serve projected growth in Urban Reserve Areas (URAs).



G_ID	EXSTG DIAM	LENGTH	SLOPE	DESIGN FLOW (2010)	DESIGN DIAM	CWS MP BLDOUT FLOW	CWS MP BLDOUT DIAM
113	24	469.862	0.00078	17	42	11	30
224	21	307.794	0.00295	18	42	11	24
225	24	114.969	0.00104	18	42	11	24
226	24	356.964	0.001	18	42	11	27
227	24	502.473	0.00081	18	42	11	30
228	24	329.102	0.00085	18	42	11	30
240	21	325.284	0.00368	17	36	10	21
243	21	212.51	0.00117	17	36	10	27
244	21	158.561	0.00126	17	36	10	27
245	21	361.924	0.00121	16	36	10	27
246	21	349.1	0.00117	17	36	10	27
247	21	355.209	0.00157	17	36	10	27
248	21	78.6444	0.00216	15	36	8	24
249	21	376.853	0.00124	15	36	8	24
274	18	100.162	0.00109	4	36	4	32
275	18	86.7603	0.00115	4	36	4	18
276	18	266.459	0.0012	4	36	4	21
277	18	149.897	0.0012	4	36	5	21
278	21	215.419	0.00097	15	36	8	27
279	21	270.007	0.00096	15	36	8	27
280	21	412.29	0.00099	15	36	8	27
281	21	59.1381	0.0049	15	36	8	21
356	24	409.658	0.0008	17	42	11	30
357	24	449.169	0.0008	17	42	11	30
358	24	452.485	0.00081	17	42	11	30
359	24	317.353	0.00081	17	42	11	30
418	24	455.476	0.00079	17	42	11	30
1,552	21	131.643	0.00113	17	36	10	27



Legend

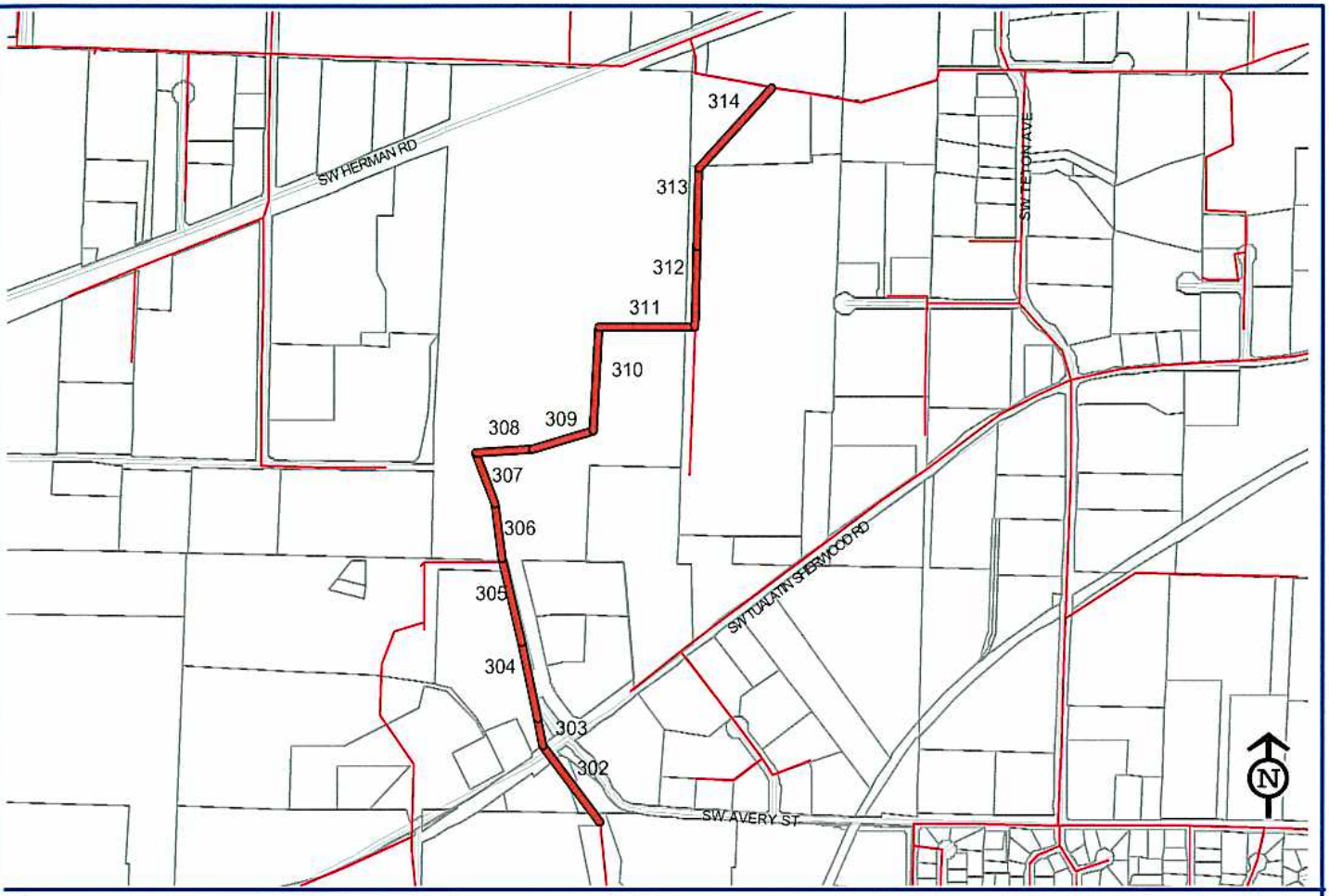
- Existing Pipe, No Work
- 100 — Existing Pipe w/ G_ID, Improvements Recommended
- Planning Area

FIGURE F-1

BLUFF/CIPOLE TRUNK

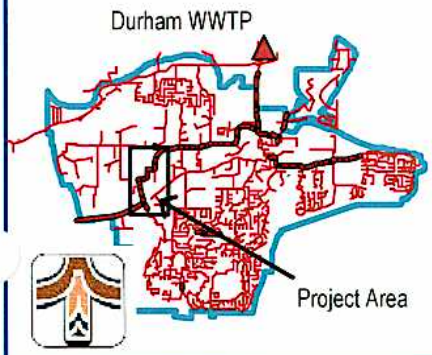
Recommended Capital Improvements

CH2MHILL



G_ID	EXSTG DIAM	LENGTH	SLOPE	DESIGN FLOW (2010)	DESIGN DIAM	CWS MP BLDOUT FLOW	CWS MP BLDOUT DIAM
302	15	500	0.00749	7.6	18	3.1	15
303	12	154	0.0173	10.2	18	3.1	12
304	12	415	0.01742	12.5	18	3.1	12
305	12	448	0.0174	12.8	18	3.1	12
306	21	292	0.00099	12.8	36	3.1	21
307	21	287	0.001	12.8	36	3.1	21
308	21	316	0.00101	12.8	36	3.1	21
309	21	336	0.00101	12.8	36	3.1	21
310	21	546	0.001	12.8	36	3.1	21
311	21	514	0.00087	12.9	36	3.4	21
312	21	421	0.0013	12.9	36	3.5	16
313	21	420	0.00116	12.9	36	3.6	21

Note: The location and sizing of specific improvements for this project are largely dependent on the magnitude and location of flows from Tualatin-Wilsonville, Tualatin-Sherwood and Tigard Sand and Gravel URA's. Alternative routing may be appropriate.



Legend

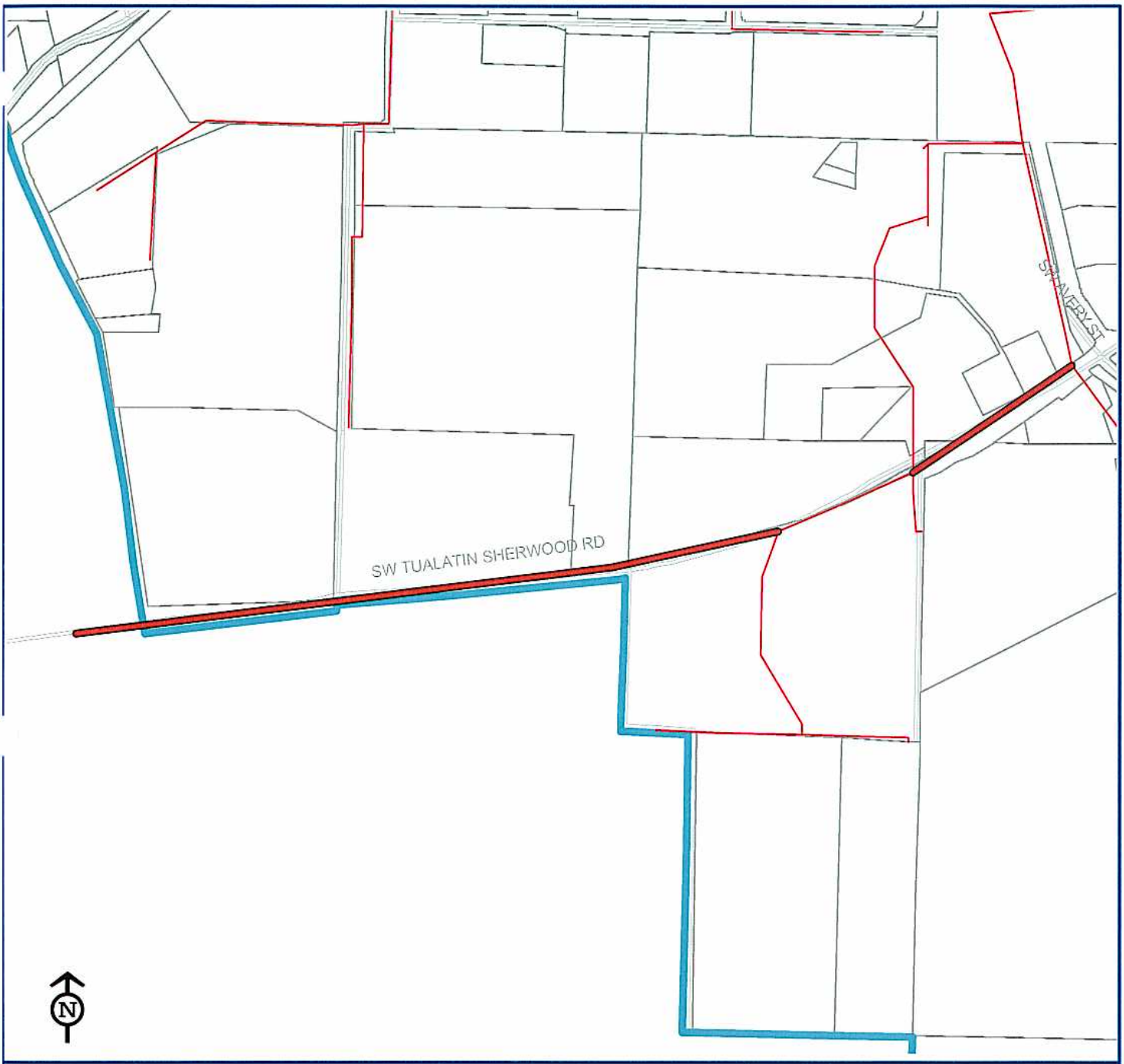
- Existing Pipe, No Work
- 100 Existing Pipe w/ G_ID, Improvements Recommended
- Planning Area

FIGURE F-8

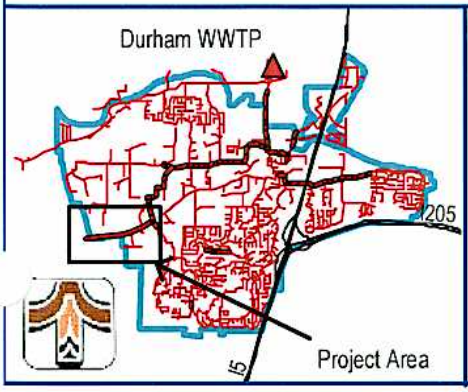
BLUFF/CIPOLE LATERAL

Recommended Capital Improvements

CH2MHILL



Note: This project is dependent on the routing and magnitude of flows from URA developments. A portion of the expected flow will be accommodated by the 115th Avenue alignment. A flow split and additional line capacity will be required to meet demands. The design diameter is 24", based on expected land use demands.



Legend

- Existing Pipe, No Work
- New Pipe, Recommended
- Planning Area

FIGURE F-9

TUALATIN-SHERWOOD EXTENSION

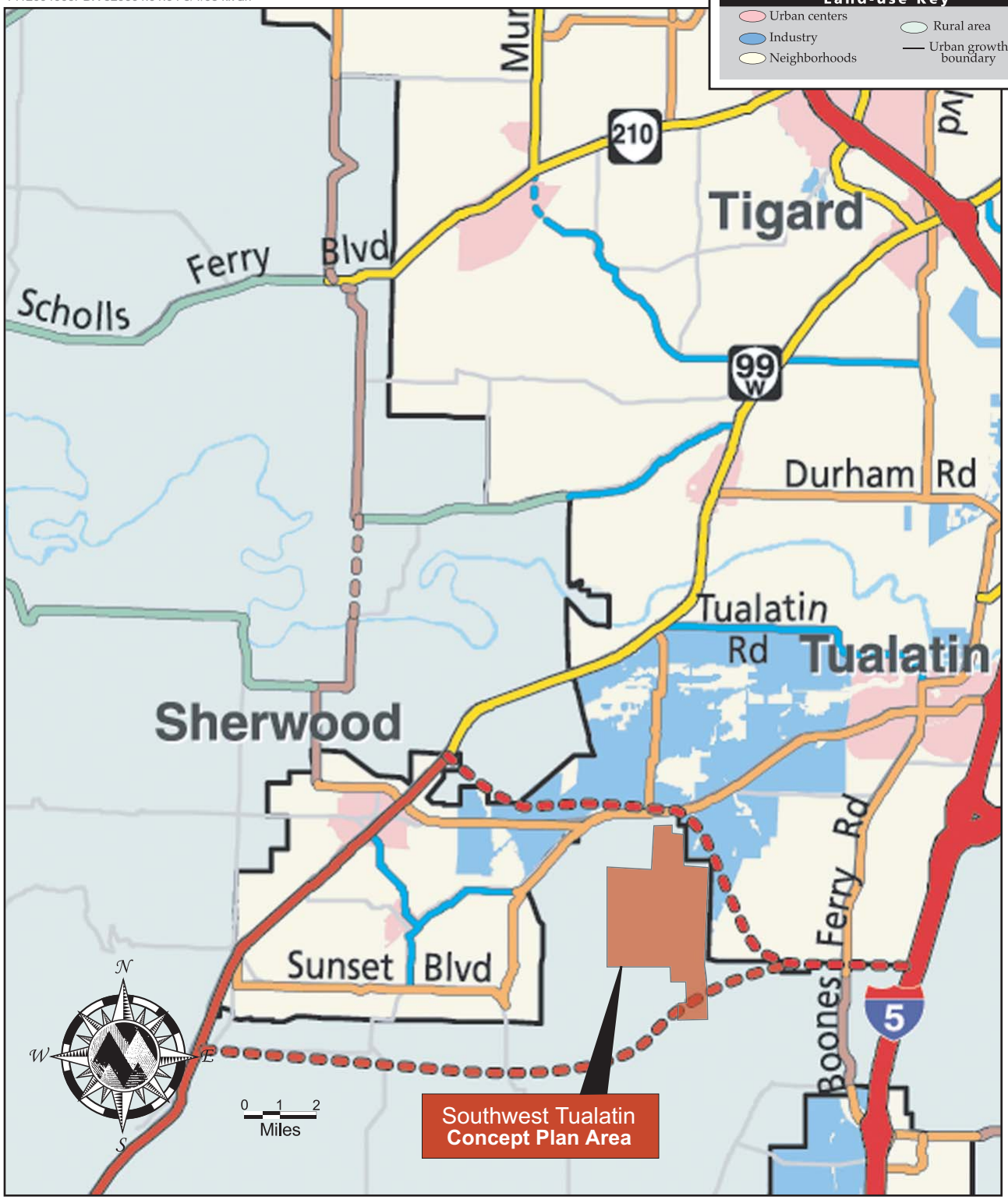
Recommended Capital Improvements

CH2MHILL

APPENDIX D

Southwest Tualatin Concept Plan Metro Regional Transportation Plan Designations

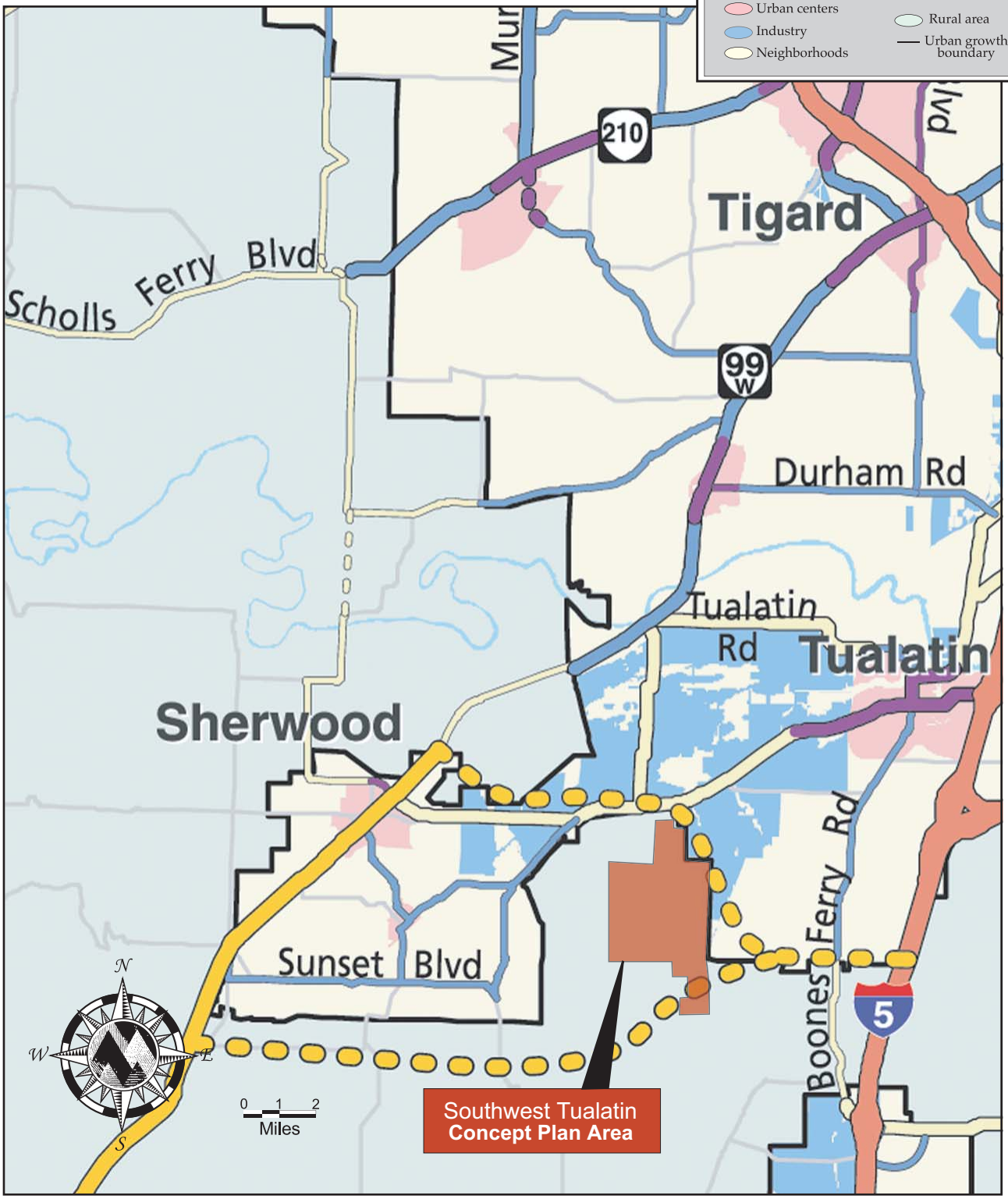
T112004006PDX 320604.01.04 3/4/05 kk an



SOURCE: 2000 Regional Transportation Plan, 2004 Update (Metro)

Regional Motor Vehicle System

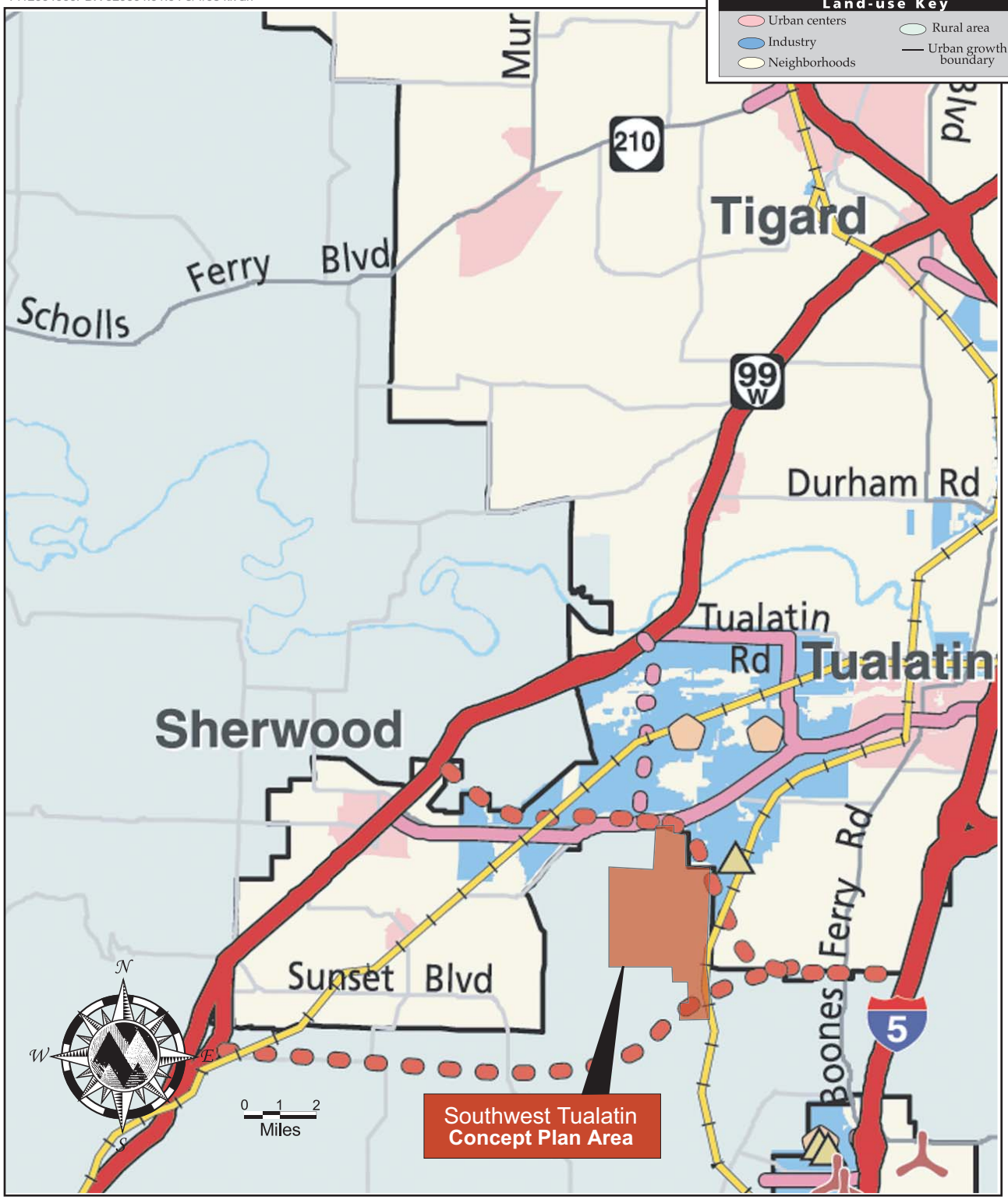
T112004006PDX 320604.01.04 3/4/05 kk an



SOURCE: 2000 Regional Transportation Plan, 2004 Update (Metro)

Regional Street Design System

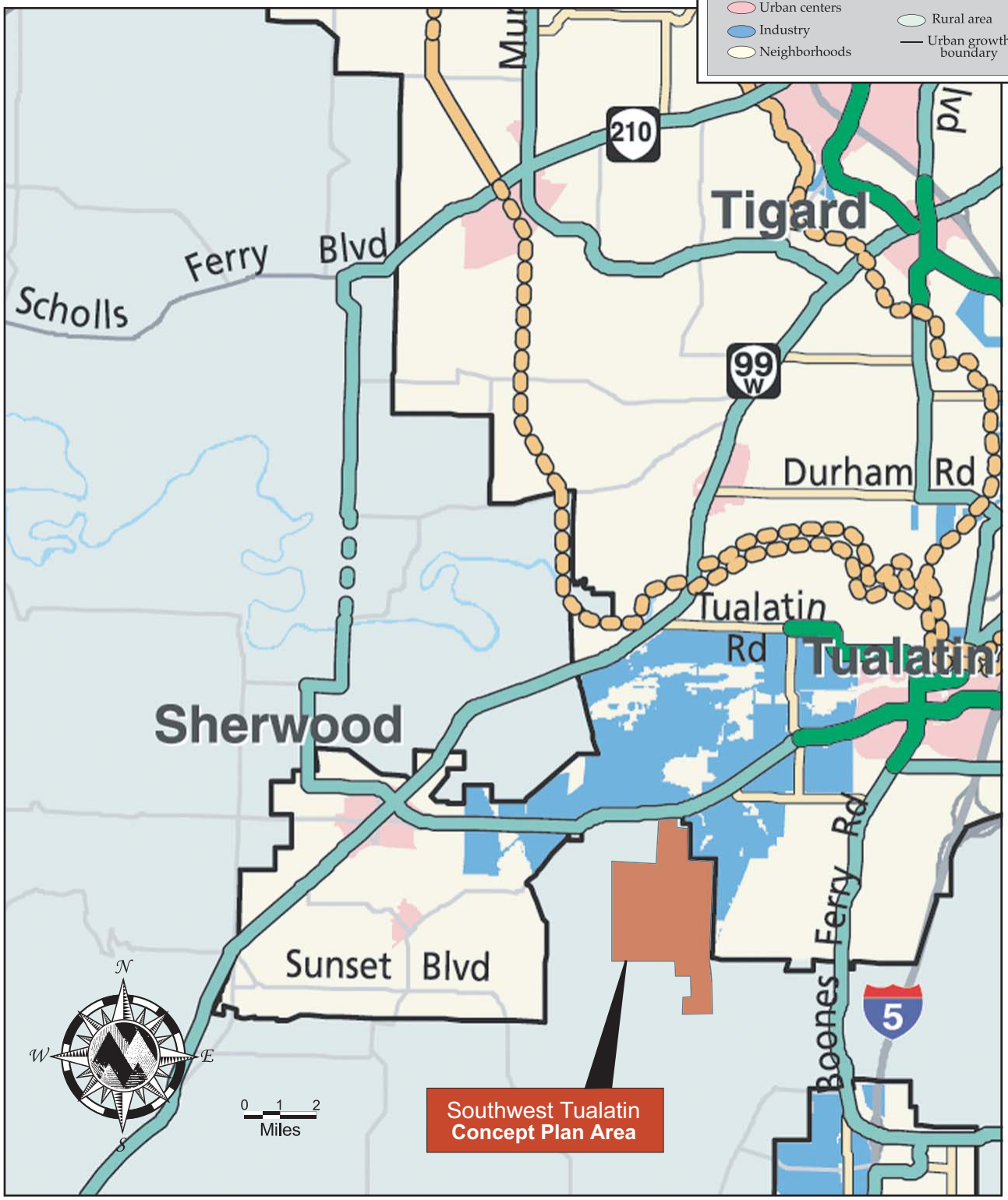
T112004006PDX 320604.01.04 3/4/05 kk an



SOURCE: 2000 Regional Transportation Plan, 2004 Update (Metro)

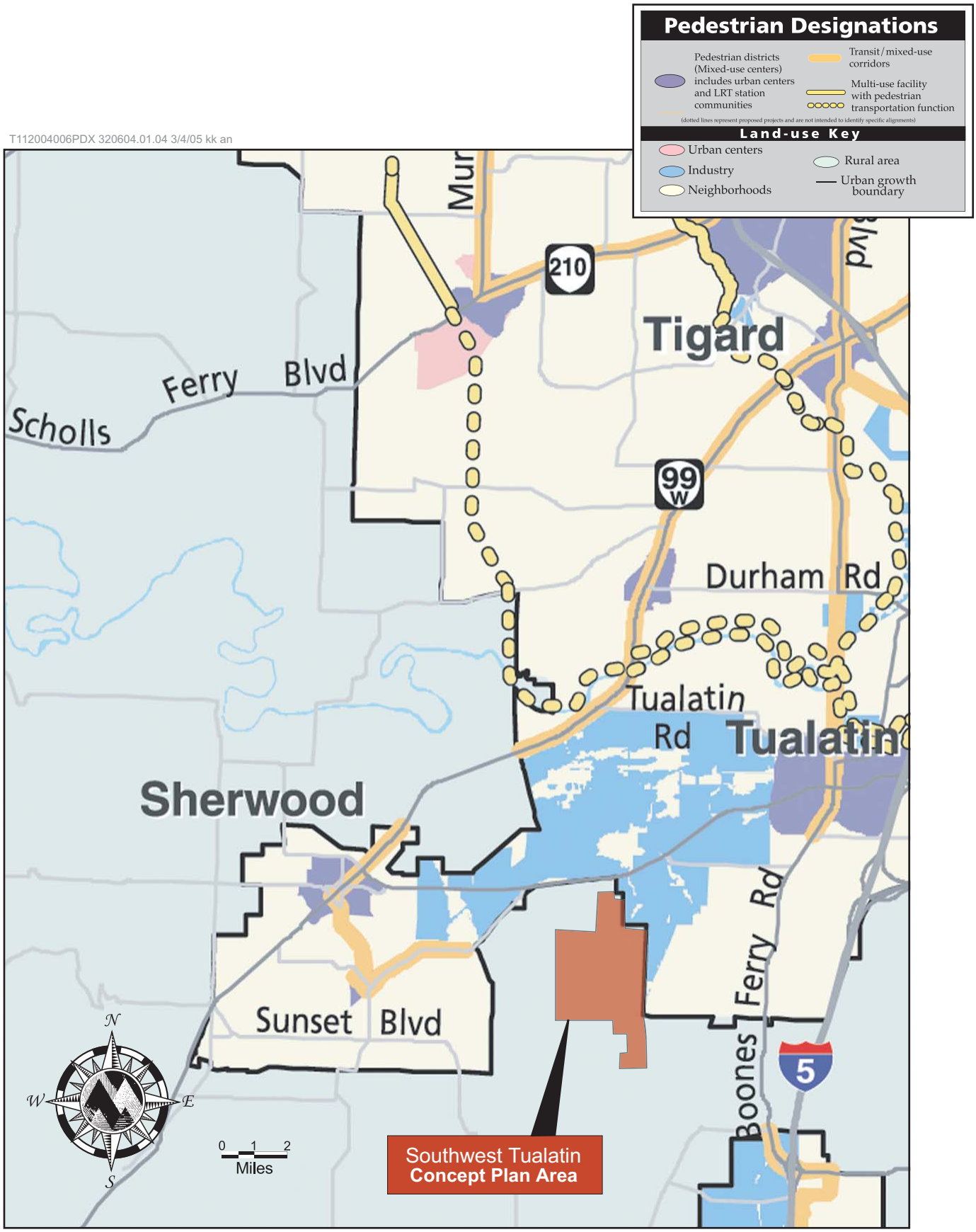
Regional Freight System

T112004006PDX 320604.01.04 3/4/05 kk an



SOURCE: 2000 Regional Transportation Plan, 2004 Update (Metro)

Regional Bicycle System

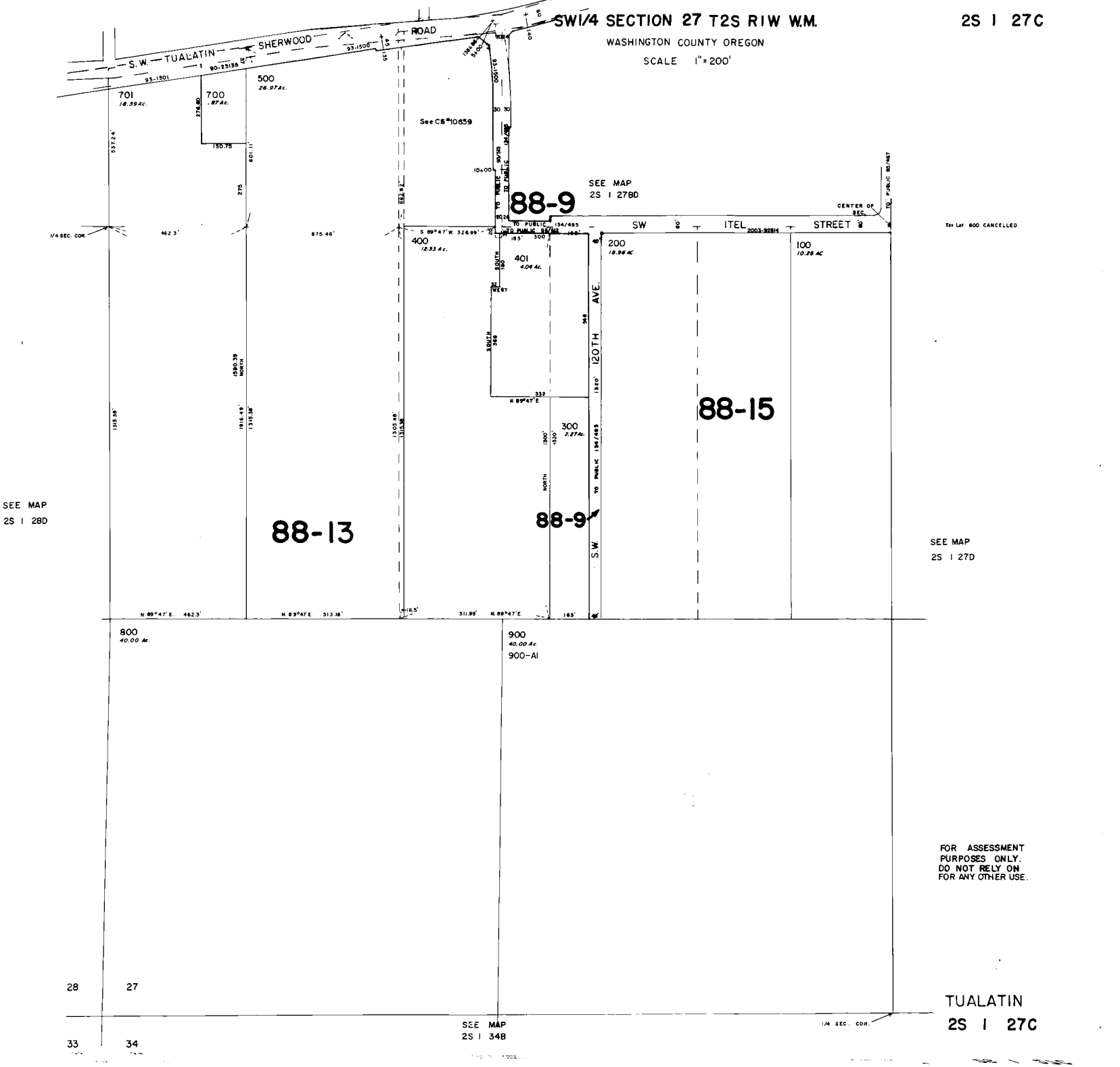


SOURCE: 2000 Regional Transportation Plan, 2004 Update (Metro)

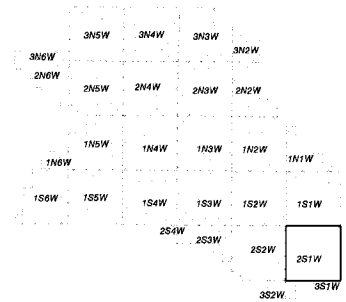
Regional Pedestrian System

APPENDIX E

Southwest Tualatin Concept Plan
Washington County Tax Assessor Maps


SW1/4 SECTION 27 T2S R1W W.M.
2S 1 27C
WASHINGTON COUNTY OREGON
SCALE 1" = 200'
S.W. TUALATIN — SHERWOOD ROAD
701
18.39 Ac.
700
.87 Ac.
500
26.97 Ac.
See CS #10659
88-9
SEE MAP
2S 1 27BD
SW ITEL STREET
CENTER OF SEC.
1/4 SEC. COR.
462.3'
875.46'
S 89°47' W. 326.99'
400
12.33 Ac.
401
4.04 Ac.
200
18.96 AC
100
10.28 AC
120TH AVE.
88-15
88-13
88-9
300
2.27 Ac.
SEE MAP
2S 1 28D
SEE MAP
2S 1 27D
N 89°47' E. 462.3'
N. 89°47' E 513.16'
511.99'
N. 89°47' E.
800
40.00 Ac.
900
40.00 Ac
900-A1
FOR ASSESSMENT
PURPOSES ONLY.
DO NOT RELY ON
FOR ANY OTHER USE.
28
27
33
34
SEE MAP
2S 1 34B
1/4 SEC. COR.
TUALATIN
2S 1 27C

2S 1 27DC



WASHINGTON COUNTY OREGON
SW1/4 SE1/4 SECTION 27 T2S R1W W.M.
SCALE 1" = 100'

36	31	32	33	34	35	36	31
1	6	5	4	3	2	1	6
12	7	8	9	10	11	12	7
13	18	17	16	15	14	13	18
24	19	20	21	22	23	24	19
25	30	29	28	27	26	25	30
36	31	32	33	34	35	36	31
1	6	5	4	3	2	1	6

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.washington.or.us

BB BA AB AA
B A
BC BD AC AD

SECTION 27

CB CA DB DA
C D
CC CD DC DD

CARTOGRAPHY

PLOT DATE: November 20, 2002

FOR ASSESSMENT PURPOSES ONLY - DO NOT RELY ON FOR OTHER USE

Map areas delineated by either gray shading or a cross-hatched pattern are for reference only and may not indicate the most current property boundaries. Please consult the appropriate map for the most current information.

TUALATIN
2S 1 27DC

2S 1 27DC

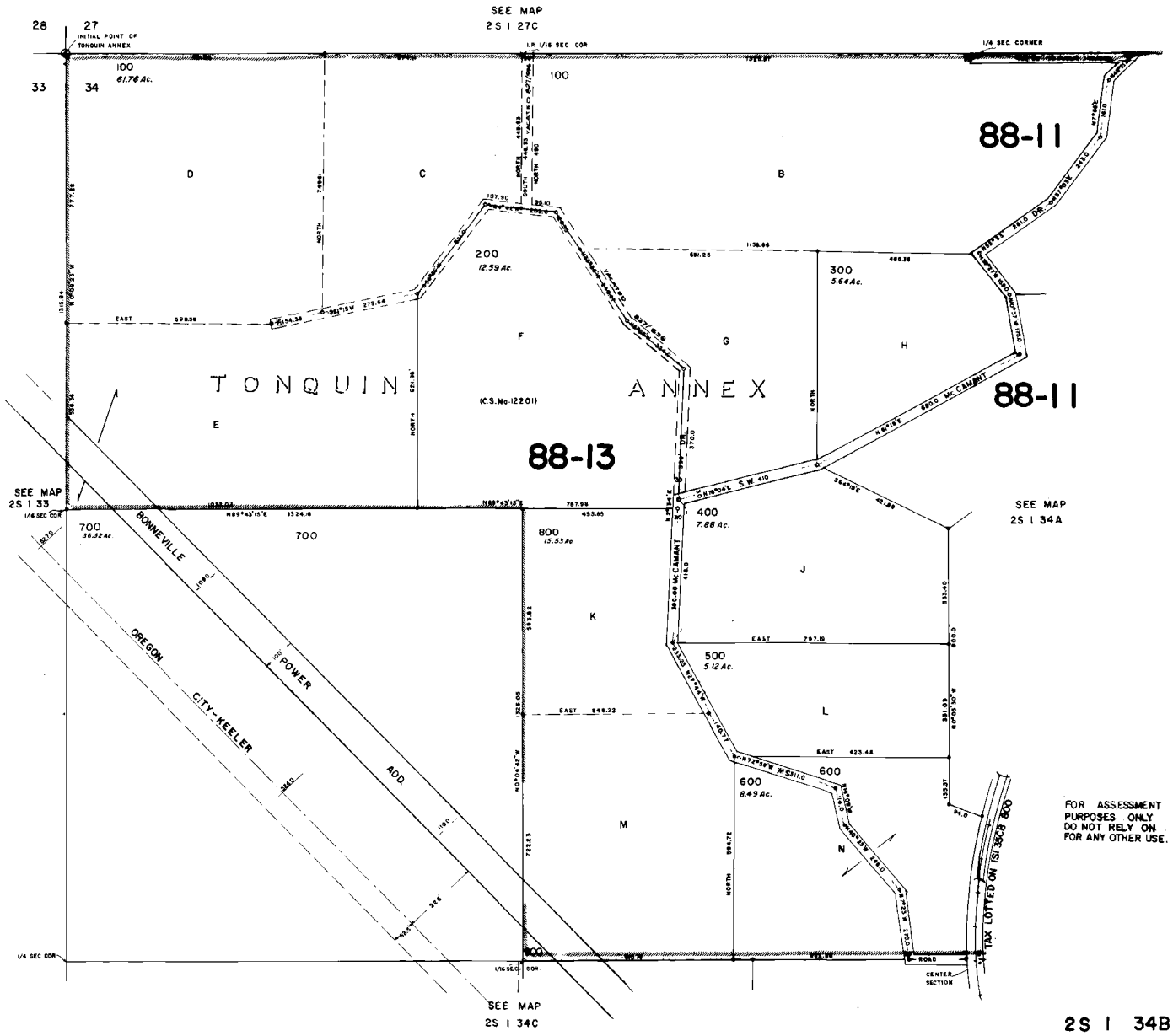
dig2s1w27

NW 1/4 SECTION 34 T2S R1W W.M.

WASHINGTON COUNTY OREGON

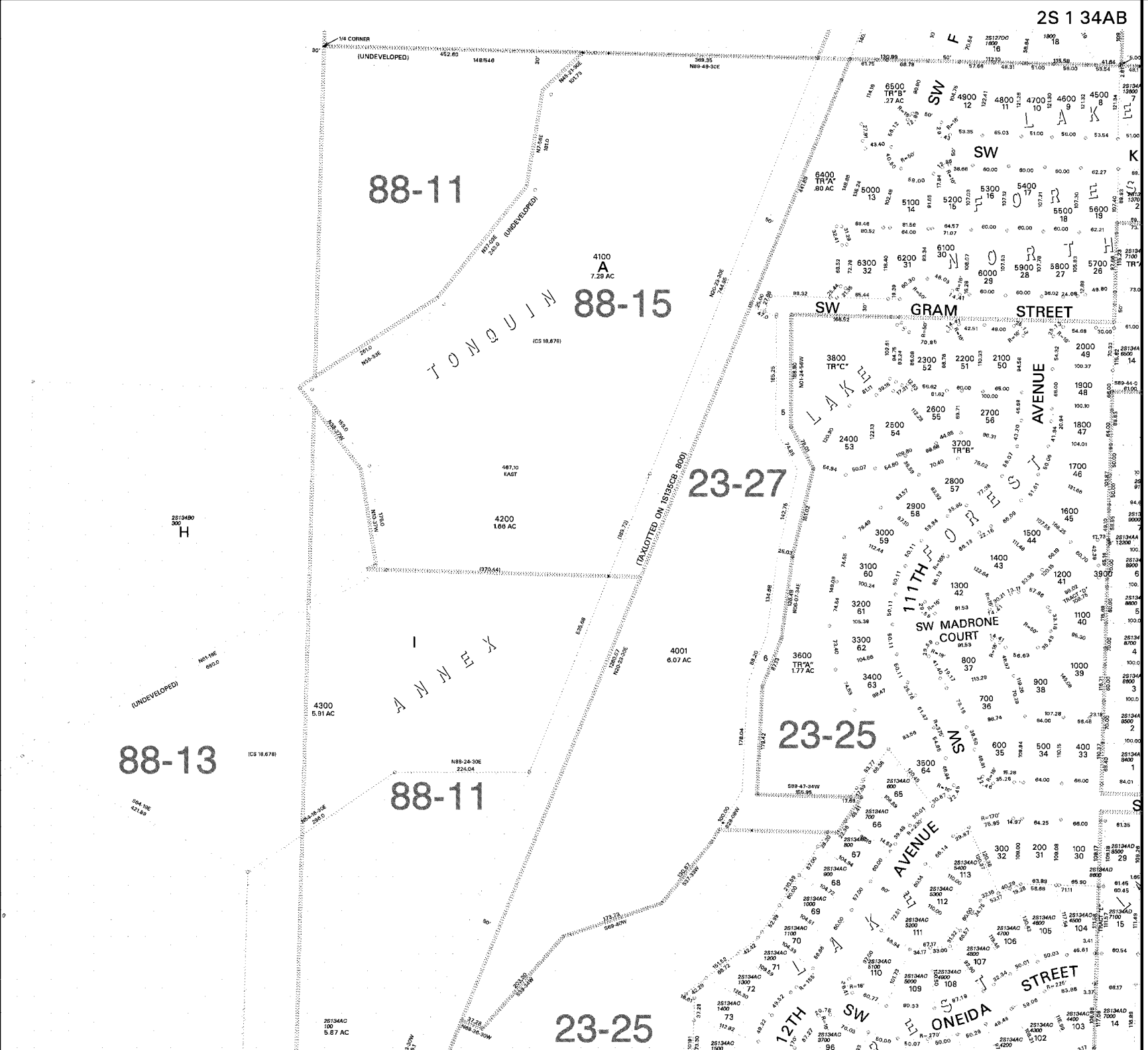
SCALE 1"= 200'

2S 1 34B



FOR ASSESSMENT PURPOSES ONLY. DO NOT RELY ON FOR ANY OTHER USE.

2S 1 34B



2S 1 34AB

3N5W 3N4W 3N3W 3N2W
2N6W 2N5W 2N4W 2N3W 2N2W
1N6W 1N5W 1N4W 1N3W 1N2W 1N1W
1S6W 1S5W 1S4W 1S3W 1S2W 1S1W
2S4W 2S3W 2S2W 2S1W
3S2W 3S1W

WASHINGTON COUNTY OREGON
NW1/4 NE1/4 SECTION 34 T2S R1W W.M.
SCALE 1" = 100'

36	31	32	33	34	35	36	31
1	6	5	4	3	2	1	6
12	7	8	9	10	11	12	7
13	18	17	16	15	14	13	18
24	19	20	21	22	23	24	19
25	30	29	28	27	26	25	30
36	31	32	33	34	35	36	31
1	6	5	4	3	2	1	6

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.washington.or.us

BB BA AB AA
B A
BC BD AC AD

SECTION 34

CB CA DB DA
C D
CC CD DC DD

Cancelled Taxlots For: 2S134AB
4000,4002,4400,

CARTOGRAPHY

PLOT DATE: October 20, 2003
FOR ASSESSMENT PURPOSES ONLY - DO NOT RELY ON FOR OTHER USE

Map areas delineated by either gray shading or a cross-hatched pattern are for reference only and may not indicate the most current property boundaries. Please consult the appropriate map for the most current information.

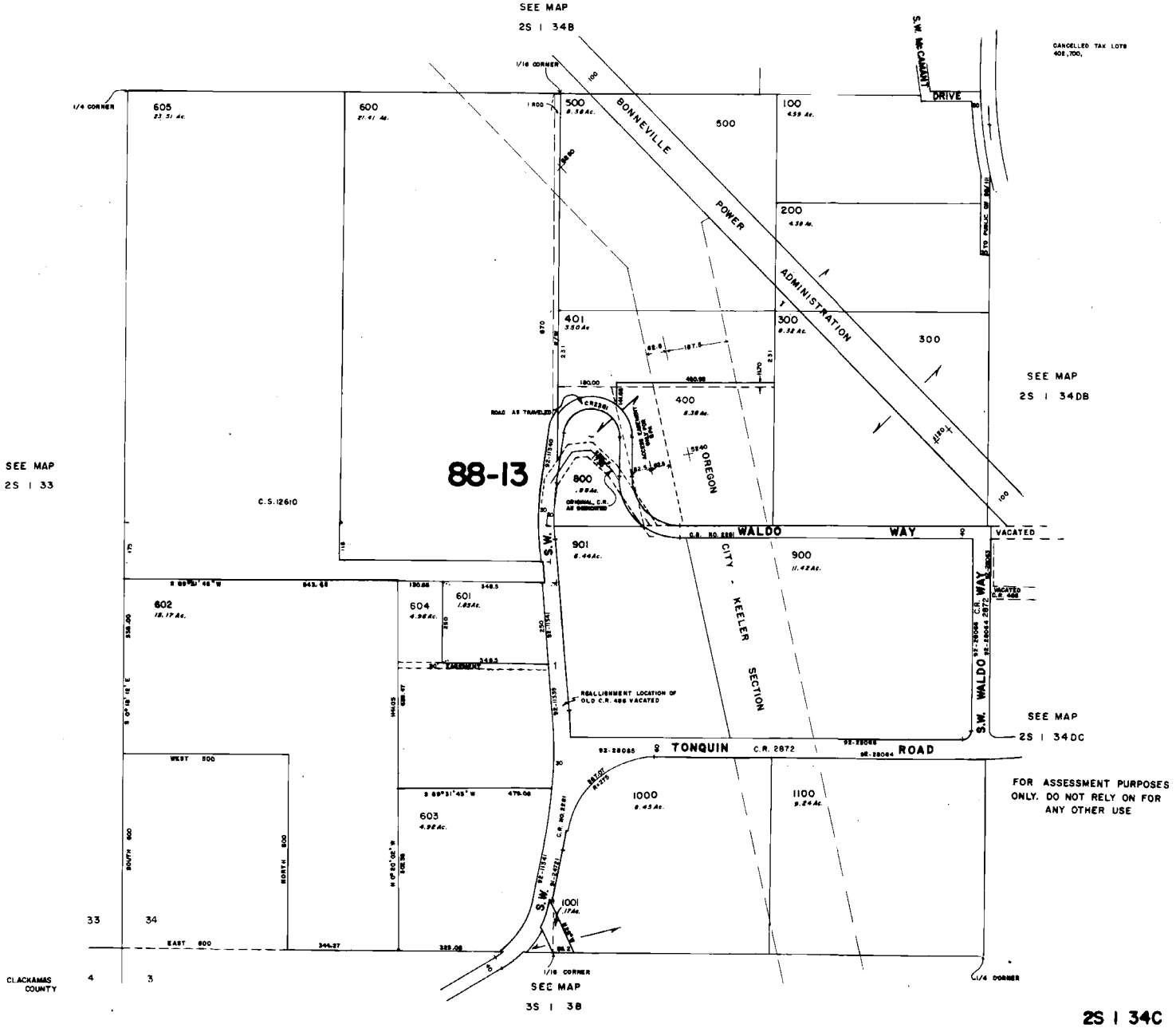
TUALATIN
2S 1 34AB

SW1/4 SECTION 34 T2S R1W W.M.

WASHINGTON COUNTY OREGON

SCALE 1"=200'

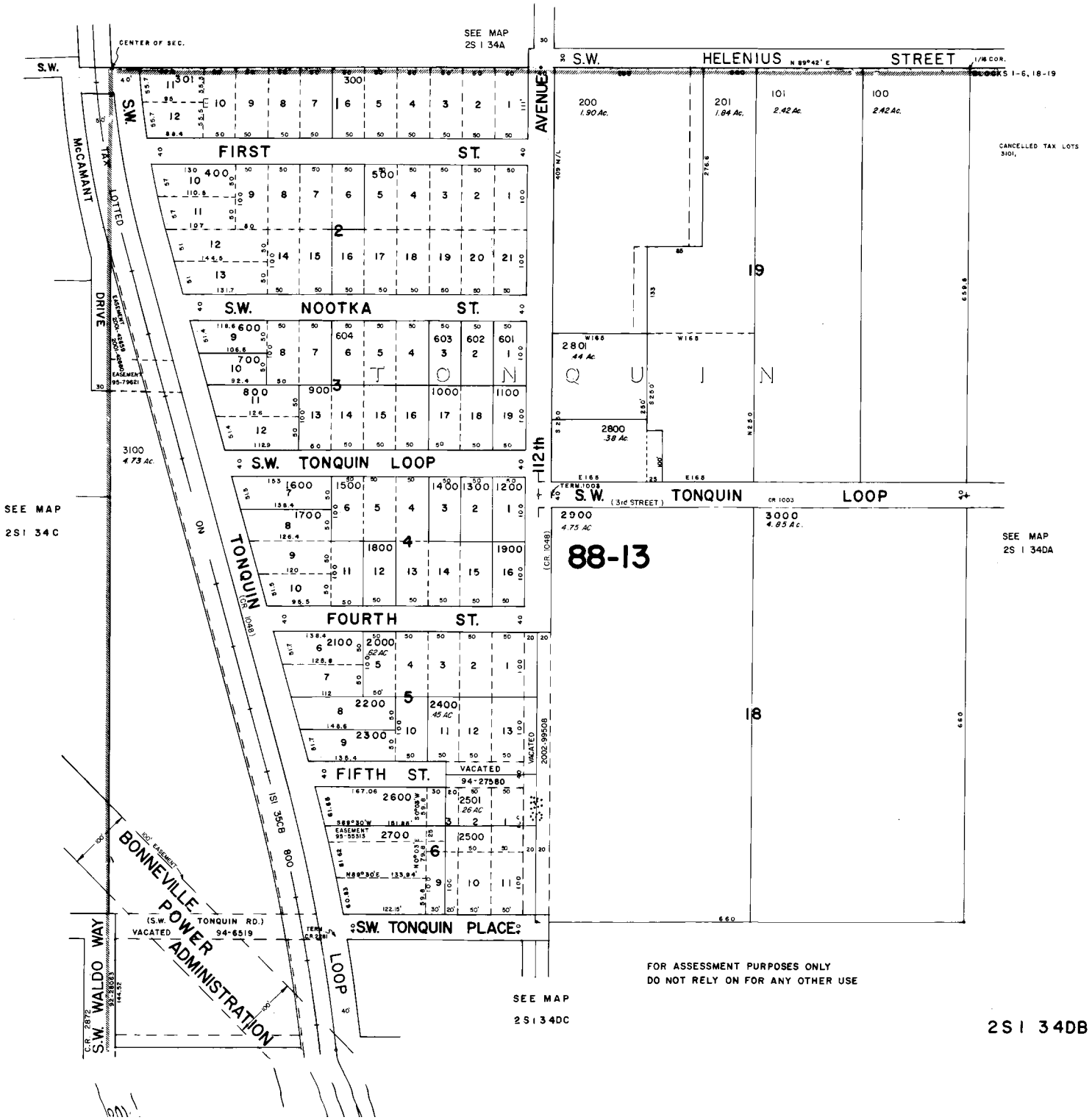
2S 1 34C



2S 1 34C

WASHINGTON COUNTY OREGON

SCALE 1"=100'



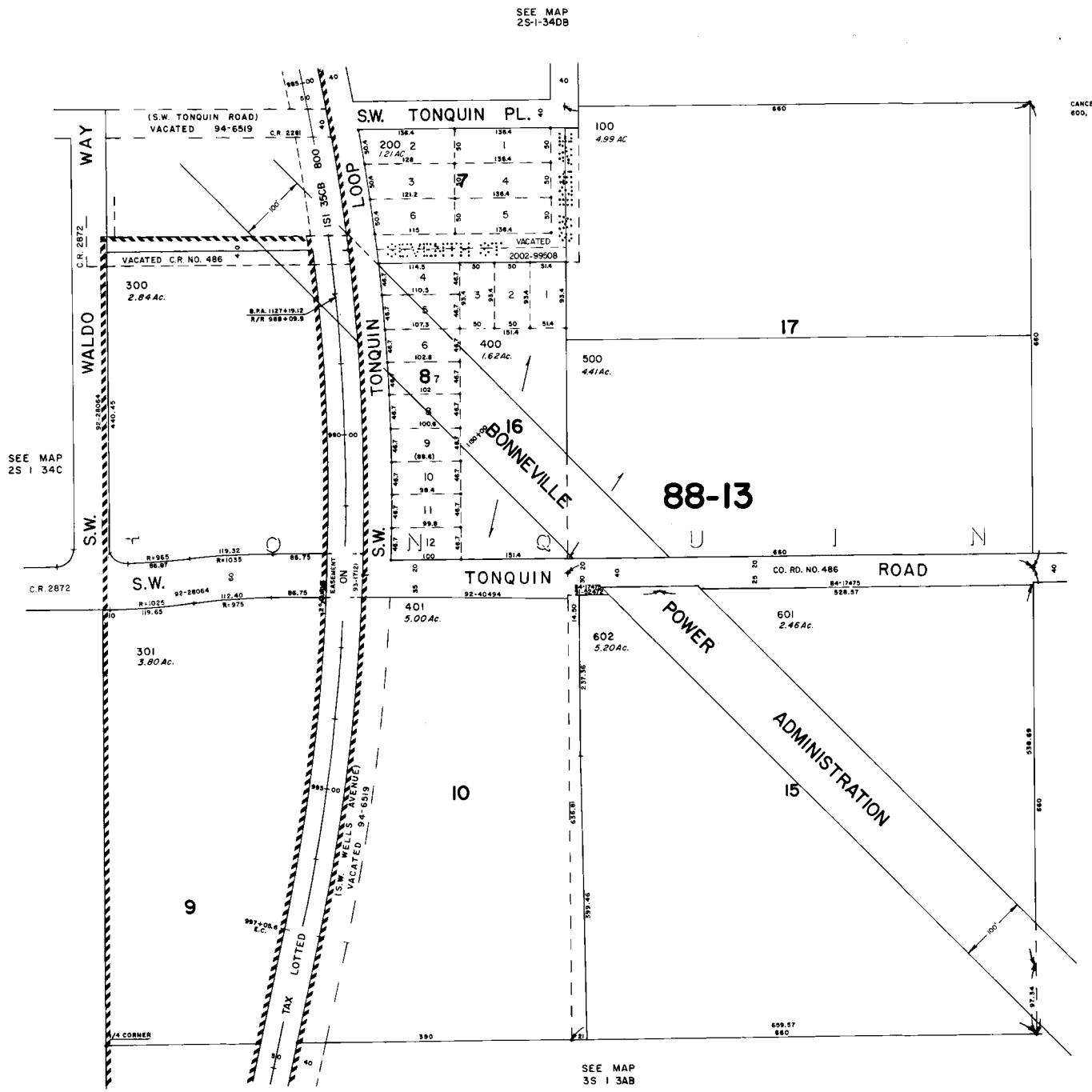
FOR ASSESSMENT PURPOSES ONLY
DO NOT RELY ON FOR ANY OTHER USE

2S 1 34DB

SW 1/4 SE 1/4 SECTION 34 T2S R1W W.M.

WASHINGTON COUNTY OREGON
SCALE 1"= 100'

2S 1 34DC



FOR ASSESSMENT PURPOSES ONLY
DO NOT RELY ON FOR ANY OTHER USE

2S 1 34DC

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING
610 SW ALDER, SUITE 700 • PORTLAND, OR 97205 • (503) 228-5230 • FAX (503) 273-8169

TECHNICAL MEMORANDUM

Southwest Tualatin Concept Plan
Future Alternatives Traffic Analysis

Date: May 2, 2005 (updated June 12, 2005) **Project #:** 6689

To: David Simmons, CH2M Hill
From: Paul Ryus, P.E.

cc: Doug Rux, City of Tualatin

Background

In December 2002, Metro added two areas south of SW Tualatin-Sherwood Road and west of the current Tualatin city limits to the Portland regional Urban Growth Boundary (UGB). These areas are now within Tualatin's Planning Area boundary, meaning that they are intended to be annexed into the city in the future. Current land uses in the planning area consist of aggregate mining (the majority of the area) and a small amount of industrial and manufacturing uses at the south end of the area. Through the Southwest Tualatin Concept Plan, the City of Tualatin is identifying land use, transportation, and urban services needs for the Concept Plan area, once mining operations cease and the sites redevelop.

Several other ongoing or future planning efforts have been incorporated into the traffic analysis work for the Southwest Tualatin Concept Plan. These consist of:

- The Northwest Tualatin Concept Plan, which addressed a similar, but much smaller, UGB expansion near the Highway 99W/Cipole Road intersection;
- The Tualatin Town Center Plan, which includes a refinement plan for addressing traffic issues in the heart of Tualatin;
- The area between a future extension of SW 124th Avenue and Sherwood (i.e., the area immediately west of the Southwest Tualatin Concept Plan area), which was added more recently to the UGB and which is planned to be studied in 2005-06; and
- The future I-5/Highway 99W Connector.

Final decisions have not been made on any of these plans, with the exception of the Northwest Tualatin Concept Plan. The results presented in this memo should therefore be considered preliminary and subject to change, depending on decisions made through the other planning efforts. The traffic analysis work described in this memo presents reasonable worst-case assumptions with respect to the other plans: the Tualatin Town Center's preferred alternative, no street connections through the area west of SW 124th Avenue, and a "northern arterial" alignment of the Connector. As pointed out at various points in this memorandum, a different set of assumptions (e.g., east-west street connections to Sherwood and a "southern freeway" Connector alignment) could result in better traffic conditions than presented here.

The work described in this memorandum has been coordinated with the Tualatin Town Center plan—that is, the additional traffic that could be generated from the Southwest Tualatin Concept Plan area has been incorporated into the Town Center traffic analysis work, and the traffic associated with the Town Center Plan's preferred alternative has been incorporated into this memo's traffic forecasts.

Summary of Results

This memorandum evaluates year 2025 traffic operations at eleven key intersections identified in the Concept Plan work scope (intersections in the immediate vicinity of the Concept Plan Area, three key intersections in the Tualatin Town Center, and the North Wilsonville interchange). The memo studies a "no-build" scenario based on the area's current land use plan, as well as three alternative land use scenarios that were developed for the area through the Concept Plan process. Existing traffic conditions and year 2025 no-build conditions were evaluated in our December 9, 2004 memo. New modeling information developed through the Town Center Plan process has been incorporated into the analysis described in this memo and, as a result, the no-build results presented here are somewhat different than those presented previously.

The Concept Plan Area was enlarged from 352 to 431 acres between the time the existing conditions and future alternatives memos were produced. It was also originally anticipated that the future alternatives analysis would be based on Metro's 2025 regional traffic model. However, not all members of the Concept Plan's Technical Advisory Committee accepted the land use assumptions being used in that model. It was therefore agreed that the traffic analysis presented in this memorandum would be based on the 2020 version of the regional model, with traffic volumes increased to reflect an additional five years of growth.

This analysis finds that the amount of development assumed in land use Alternative I, in combination with the street patterns used in Alternatives II and III, results in the best overall transportation system performance in the year 2025. However, there is little difference in the overall site trip generation between the three alternatives and, thus, little difference in the traffic operations results for the three alternatives.

As a preferred alternative for the Concept Plan area is developed, the following intersections will require attention:

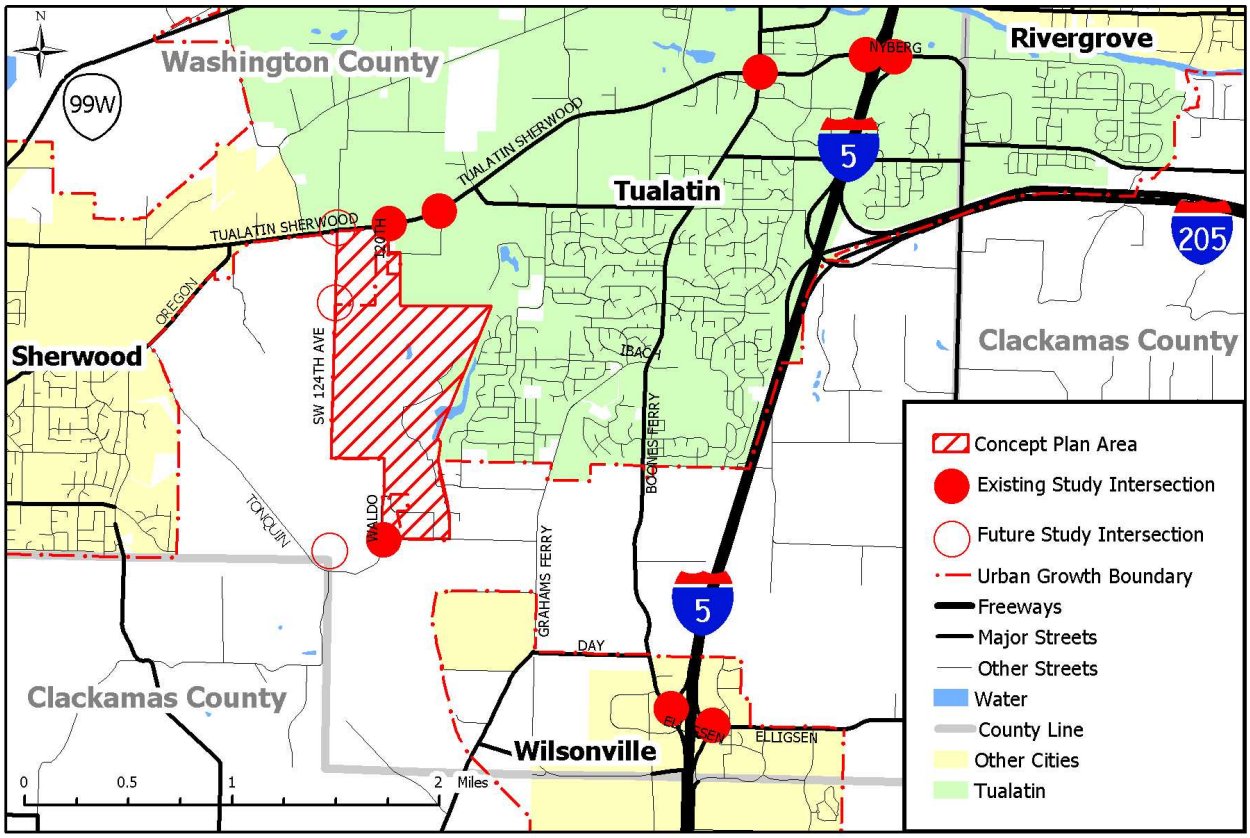
- **SW Nyberg Road/I-5 Northbound Ramps** would operate over capacity in the 2025 weekday a.m. peak hour without redevelopment of the Concept Plan Area. Converting the westbound right-turn lane to a free-flowing movement (similar to the North Wilsonville interchange) would address this issue.
- **SW Nyberg Road/I-5 Southbound Ramps** would operate at 98% of capacity in the 2025 weekday a.m. peak hour without redevelopment of the Concept Plan Area, and at 103-106% of capacity with redevelopment. Restriping the existing lanes to provide left, left-through-right, and 2 right-turn lanes (e.g., providing a triple right turn) would allow the intersection to operate at 84% of capacity.
- **SW Tualatin-Sherwood Road/SW Boones Ferry Road** would operate at level of service (LOS) F and over capacity in 2025 without redevelopment of the Concept Plan Area, and all three alternatives add more traffic through the intersection. The traffic work for the Tualatin Town Center Plan, which accounted for future traffic to and from the Concept Plan Area, found that prohibiting left turns on SW Boones Ferry Road (redirecting the turning traffic to other intersections), in combination with other projects (in particular, an extension of SW Lower Boones Ferry Road over the Tualatin River), would result in LOS D operations at the SW Tualatin-Sherwood Road/SW Boones Ferry Road intersection in the year 2025.
- **SW Tualatin-Sherwood Road/SW 120th Avenue** would need to be restricted to right-in, right-out movements upon redevelopment of the Concept Plan Area, as left-turning movements would experience lengthy delays.
- **SW Tualatin-Sherwood Road/SW 124th Avenue** would operate close to its capacity, if single left-turn lanes were used. A second northbound left-turn lane would result in operations at 89% of the intersection's capacity, or better. Alternatively, developing east-west collector streets between SW 124th Avenue and Sherwood would avoid the need for a second left-turn lane.

All other study intersections would meet their owning jurisdictions' standards in the year 2025.

Study Area

The Concept Plan area is illustrated in Figure 1. The area is generally located between SW Tualatin-Sherwood Road on the north and SW Tonquin Road on the south, and west of the Portland & Western Railroad. Access to the site at present is from SW 120th Avenue on the north, and SW Waldo Way and SW Tonquin Loop on the south. In the future, the extension of SW 124th Avenue to the I-5/99W Connector will serve as a main access route.

Figure 1
Site Vicinity



SW Tualatin-Sherwood Road is maintained by Washington County and is designated as an *arterial* and an *existing through-truck route*. East of SW Teton Avenue, it has a 5-lane cross-section. West of SW Teton Avenue, it currently has a three-lane cross-section, but is planned to be widened eventually to a 5-lane cross-section. The Tualatin Transportation System Plan (TSP) designates it as a *major arterial* and *truck route*. Just west of I-5, SW Tualatin-Sherwood Road joins SW Nyberg Road, which has the same designations the rest of the way to the interchange.

SW Tonquin Road is maintained by Washington County and is designated as an *arterial*. A short section northwest of Morgan Road cuts a corner of Clackamas County, which designates it as a *local road*. The portion of the road within Washington County northwest of Morgan Road is designated as an *existing through-truck route*, while the portion east of Morgan Road is designated as a *proposed through-truck route*. The road has a 2-lane cross-section, which is planned to remain through Washington County's 2020 planning horizon. SW Tonquin Road connects southeast to I-5 via SW Grahams Ferry Road, Day Street, and SW Boones Ferry Road.

SW Grahams Ferry Road is maintained by Washington County, which designates the section providing the connection as an *arterial*. North of SW Tonquin Road and south of Day Street, it is designated as a *collector*. All of the road is designated as an *existing through-truck route*. The road has, and is planned to continue to have, 2 lanes. Wilsonville designates the road as a *major collector*.

Day Street is designated as an *arterial* by Washington County and a *major collector* by Wilsonville. It was recently widened to 3 lanes in conjunction with the development of the Coffee Creek Correctional Facility. Washington County also designates it as an *existing through-truck route*.

The portion of SW Boones Ferry Road between Tualatin's south city limits and I-5 in North Wilsonville, and from the Tualatin River north, is maintained by the Oregon Department of Transportation (ODOT) as part of Beaverton-Tualatin Highway #141. ODOT designates the road as a *district highway*. Washington County designates all of the road as an *arterial* and *existing through-truck route*. Wilsonville designates the portion within its city limits as a *major arterial*. The City of Tualatin maintains SW Boones Ferry Road between Tualatin's south city limits and the south abutment of the Tualatin River Bridge. South of SW Tualatin-Sherwood Road, Tualatin designates the road as a *major arterial* and *truck route*. To the north, Tualatin designates it as a *minor arterial* and *truck route*. Within Tualatin, and between Tualatin and Wilsonville, the road has a 2- to 3-lane cross-section. South of Day Street in Wilsonville, the road has a 4- to 5-lane cross-section. The various city and county plans anticipate the entire roadway eventually being widened to 4-5 lanes south of SW Tualatin-Sherwood Road. North of SW Tualatin-Sherwood Road, Boones Ferry Road would have a 2-4 lane cross-section between intersections. East of I-5, SW Boones Ferry Road becomes Elligsen Road.

SW 120th Avenue, SW Waldo Way, and SW Tonquin Loop are all maintained by Washington County as *local roads*. They all have 2-lane cross-sections (not always full-width or striped).

Study Intersections

The following existing intersections were studied, as specified in the project work scope:

- SW Nyberg Road/I-5 Northbound Ramps;
- SW Nyberg Road/I-5 Southbound Ramps;
- SW Tualatin-Sherwood Road/SW Boones Ferry Road;
- SW Tualatin-Sherwood Road/SW 120th Avenue;
- SW Tonquin Road/SW Waldo Way (west intersection);
- SW Boones Ferry Road/I-5 Southbound Ramps; and
- SW Elligsen Road/I-5 Northbound Ramps.

The following future intersections were also studied, as specified in the project work scope or as identified during the land use alternatives development process:

- SW Tualatin-Sherwood Road/SW 115th Avenue;
- SW Tualatin-Sherwood Road/SW 124th Avenue;
- SW Blake Street/SW 124th Avenue; and
- Connector/SW 124th Avenue.

Figure 1 showed the locations of these intersections.

Year 2025 Base Traffic Volume Forecasts

The year 2025 was selected as the horizon year for this analysis. However, because not all members of the Concept Plan's Technical Advisory Committee accept Metro's 2025 land use forecasts, Metro's 2020 model was used as the base, with the volumes factored up to represent year 2025 conditions. The following process was used to develop weekday p.m. peak hour "base future" traffic volumes (i.e., year 2025 traffic volumes, assuming no change in land use in the Concept Plan Area):

- For intersections within the City of Tualatin, year 2020 traffic volume forecasts were taken from the new modeling work done for Tualatin Town Center Plan, using the model run for the Town Center Plan's preferred alternative. This model run includes a "northern arterial" alignment of the Connector that joins SW Tualatin-Sherwood Road between SW Cipole Road and SW Oregon Street. The model run also includes an extension of SW Lower Boones Ferry Road over the Tualatin River.[1] Weekday p.m. peak hour volumes between intersections were estimated using the process described in *NCHRP Report 255,*[2] which compensates for conditions where modeled volumes do not match existing volumes. Adding the adjusted 20-year growth to the year 2004 traffic counts resulted in year 2024 traffic forecasts for roadway segments between major intersections. The 2024 forecasts were then factored up by one year's worth of growth to obtain 2025 traffic forecasts. Turning movement volumes at the study intersections were derived from the year 2025 volumes entering and exiting each intersection and from existing turning movement patterns (for those intersections that currently exist). Volumes were balanced as needed between intersections.

- For the SW Tonquin Road/SW Waldo Way intersection, SW Waldo Way volumes were kept at current levels (reflecting no change in land use), while SW Tonquin Road volumes were increased by 41%, reflecting the average forecast change in minor arterial volume given in Washington County's TSP.[3]

- For the North Wilsonville interchange, year 2020 volumes were taken from work performed during the development of Wilsonville's TSP[4] and were then adjusted to 2025 conditions based on average 20-year growth rates.

- Additional traffic resulting from (1) the Tualatin Town Center's preferred alternative and (2) the Northwest Tualatin Concept Plan area was added to SW Tualatin-Sherwood Road.

Because the Metro model is not used to forecast weekday a.m. peak hour volumes, a different methodology was used to estimate those volumes. A 20-year growth rate was determined for

[1] The Tualatin and Washington County TSPs currently show an extension of SW Hall Boulevard over the river, rather than an extension of SW Lower Boones Ferry Road. The Tualatin Town Center Plan model runs showed virtually no difference in traffic volumes in the vicinity of the Concept Plan area between the two bridge scenarios; however, the SW Hall bridge generated more traffic in the Town Center area, while the SW Lower Boones Ferry bridge removed traffic from the Town Center area.
[2] JHK & Associates, "Highway Traffic Data for Urbanized Area Project Planning and Design," *NCHRP Report 255,* Transportation Research Board, National Research Council, Washington, DC (1982).
[3] DKS Associates, Inc., "Technical Appendix B-1," *Washington County2020 Transportation Plan.*
[4] Entranco, Inc., *City of Wilsonville Transportation Systems Plan,* January 2003 Public Draft.

each intersection for the weekday p.m. peak hour. This same growth rate was then applied to the existing weekday a.m. peak hour volumes to develop the 2025 weekday a.m. peak hour volumes.

Planned Projects

The following roadway improvement projects were assumed to occur by 2025:

- SW Tualatin-Sherwood Road/SW Boones Ferry Road: second westbound left-turn lane and two southbound through lanes (to be constructed this summer);
- SW Boones Ferry Road/I-5 Southbound Ramps: restripe southbound center lane to allow all movements (Wilsonville TSP);
- SW Nyberg Road/I-5 Southbound Ramps: ramp and bridge widening project currently nearing completion, including signal timing changes;
- SW Tualatin-Sherwood Road: widened to five lanes west of SW 90th Avenue (Tualatin TSP);
- SW Lower Boones Ferry Road: extension across the Tualatin River (Tualatin Town Center Plan preferred alternative);
- I-205: auxiliary lanes between Stafford Road and I-205 (financially constrained RTP); and
- I-5/Highway 99W Connector: four-lane arterial with a new interchange on I-5 between I-205 and the North Wilsonville interchange, and at-grade intersections with SW Boones Ferry Road, SW Grahams Ferry Road, and SW 124th Avenue (Tualatin TSP). Based on the Concept Plan's scope of work, the Connector was not assumed to follow SW 124th Avenue as shown in the Tualatin TSP, but would instead connect to SW Tualatin-Sherwood Road between SW Cipole Road and SW Oregon Street.

A preliminary analysis was conducted to identify the implications for the study area if the Connector ran along SW 124th Avenue instead of along a separate alignment. The SW Tualatin-Sherwood Road intersection would require a triple left turn northbound and a free-flowing double right turn eastbound with no redevelopment of the Concept Plan Area. Three lanes would likely be required on SW 124th Avenue in the vicinity of the Concept Plan Area, to provide sufficient capacity for turning movements out of the Concept Plan Area.

Based on the land use alternatives presented, it was assumed that SW Tonquin Road would be cut off in the future in the vicinity of the SW 124th Avenue/Connector intersection. The stubbed sections of Tonquin Road would serve local traffic only, and new street connections would be developed through the Concept Plan Area to link Tonquin Road to SW 124th Avenue.

Trip Generation

The land use assumptions built into the version of Metro's 2020 model used for the Tualatin TSP (as well as the Tualatin Town Center Plan) anticipated some development occurring within the Concept Plan Area. The Concept Plan Area includes portions of traffic analysis zones (TAZs) 371, 372, and 395. Appendix A provides an excerpt from the Tualatin TSP, with maps showing the TAZ locations and a table listing the land use assumptions used.

Metro's Regional Land Information System (RLIS) was used to identify the percentage of undeveloped land within each TAZ that fell within the Concept Plan Area. The Concept Plan Area includes about 11% of the total undeveloped land within TAZ 371, which was forecast to add 969 non-retail jobs by 2020. When looking only at undeveloped land that was either within the UGB in 2000, or falls within the Concept Plan Area (i.e., the land most likely to develop first), the Concept Plan Area accounts for 16% of TAZ 371's undeveloped land, which corresponds to 155 jobs.

The Concept Plan Area includes about 38% of the undeveloped area of TAZ 372, all of which was already in the UGB in 2000. As this TAZ was forecast to add 684 non-retail jobs, 38% of this amount corresponds to 260 jobs. The Concept Plan Area also covers about 29% of the total area of TAZ 395, none of which was within the UGB. All of TAZ 395's 2020 non-retail jobs—a total of 1,395 jobs—were assigned to the Concept Plan Area, under the assumptions that development would occur in the Concept Plan Area first and that existing quarry jobs would be replaced by any new industrial development that might occur. Thus, the "base future" traffic volumes already include the traffic from 1,810 jobs the regional model assumes will exist in the Concept Plan Area.

Based on direction from City of Tualatin staff, the following assumptions were used to develop "reasonable worst case" 2025 development scenarios for each of the three land use alternatives:

- 20% of the gross buildable acres were assumed to be used for public rights-of-way;
- 75% of the Concept Plan Area was assumed to be fully developed by 2025; and
- Development was assumed to be evenly split between "light industrial" uses (e.g., printing, material testing, and assembly of data processing equipment) and "business park" uses (e.g., flex-type space for technology companies).

The Institute of Transportation Engineers (ITE) *Trip Generation* manual, 7th Edition, was used estimate the number of weekday p.m. peak hour trips per acre for the two land uses. ITE data were then used to convert trips per acre to trips per employee. Table 1 summarizes the total number of jobs forecast for 2025 for each land use alternative, along with the net increase in jobs, compared to the Tualatin TSP's 2020 land use forecasts.

The net increase in jobs for each alternative was then converted into a corresponding number of trips, based on ITE rates for each land use and in proportion to the number of jobs contributed by each land use. During the weekday p.m. peak hour, the number of net new trips generated by the Concept Plan Area ranged from 1,475 to 1,570, depending on the alternative. During the weekday a.m. peak hour, the range was 1,665 to 1,770 trips.

Table 1
Job Forecasts

	Alternative I	Alternative II	Alternative III
CONCEPT PLAN AREA			
Gross buildable acres*	337	346	352
Public right-of-way (20%)**	67.4	69.2	70.4
Net buildable acres	269.6	276.8	281.6
Acres developed by 2025 (75%)**	202.2	207.6	211.2
LIGHT INDUSTRIAL			
Net developed acres	101.1	103.8	105.6
Jobs per acre	11.5	11.4	11.4
Jobs	1,164	1,188	1,204
BUSINESS PARK			
Net developed acres	101.1	103.8	105.6
Jobs per acre	43.2	43.2	43.2
Jobs	4,365	4,482	4,560
SUMMARY			
Total jobs by 2025	5,529	5,670	5,764
Tualatin TSP jobs forecast	1,810	1,810	1,810
Net increase in jobs, compared to TSP	3,719	3,860	3,954

*Estimate by OTAK, Inc. **City staff estimate

Trip Distribution

Metro provided select-zone runs from the 2020 version of the regional travel model for TAZs 372 and 395, which respectively cover the northern and southern halves of the Concept Plan Area. These runs were used to forecast the percentage of site-generated trips that would go to or from a particular direction. The two zones produced similar trip distribution patterns, with two exceptions. TAZ 372 had a considerably higher distribution north on SW 124th Avenue than did TAZ 395, while TAZ 395 had a much higher distribution south toward Wilsonville than did TAZ 372. The results of the runs for the two TAZs, both inbound and outbound, were averaged to determine an overall trip distribution for the Concept Plan Area. (The trip distribution was assumed to be the same in the year 2025 as the 2020 distribution produced by the regional model.) Table 2 shows the trip distribution percentages used for this analysis.

Table 2
2025 Trip Distribution

Location	Trip Distribution Percentage
Sherwood via SW Oregon Street	14%
Highway 99W south & Roy Rogers	11%
SW 124th Avenue north	13%
Boones Ferry Road north	2%
I-5 south	13%
North Wilsonville—west of I-5	2%
North Wilsonville—east of I-5	3%
I-5 north	17%
I-205 east	8%
Tualatin Town Center	6%
Tualatin east & south of Town Center	11%

Figures 2-4 show the net new site-generated traffic at each study intersection, for each land use alternative. As explained in the previous section, the "base future" traffic volumes include the traffic associated with 1,810 jobs that the regional model already assumes for the Concept Plan Area, while the land use alternatives result in 3,719 to 3,954 net new jobs. Therefore, the total number of trips associated with the Concept Plan Area, including the trips already included as part of the "base future" volumes, is approximately 50% higher than shown in Figures 2-4.

Future Traffic Operations by Alternative

Base Future Alternative

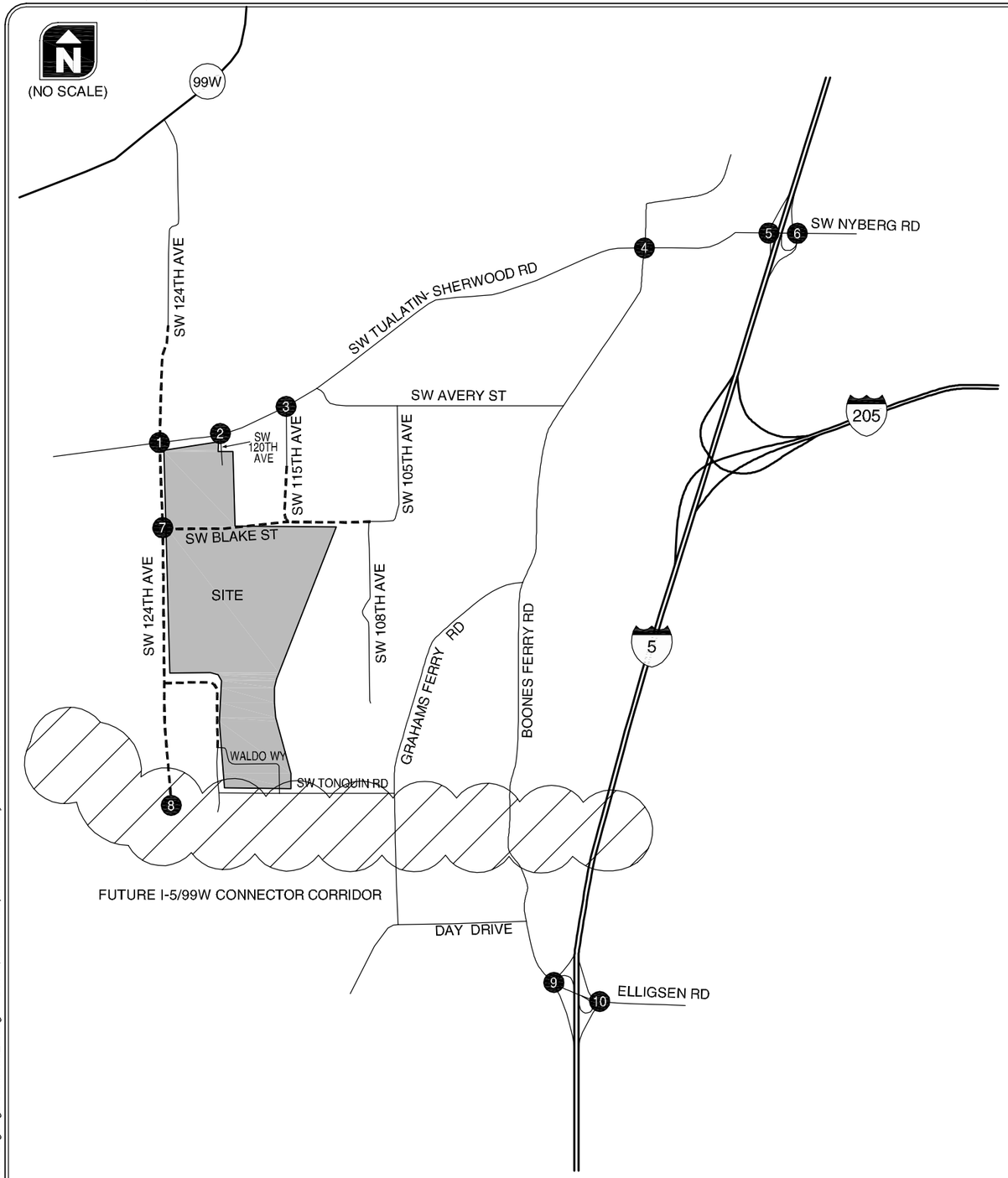
Table 3 and Figure 5 present "base future" traffic operations (without redevelopment of the Concept Plan Area) at the study intersections. The three study intersections within the Tualatin Town Center will operate at or above their respective jurisdictions' traffic operations standards in 2025. All of the other intersections studied will operate within their jurisdictions' standards in the year 2025.

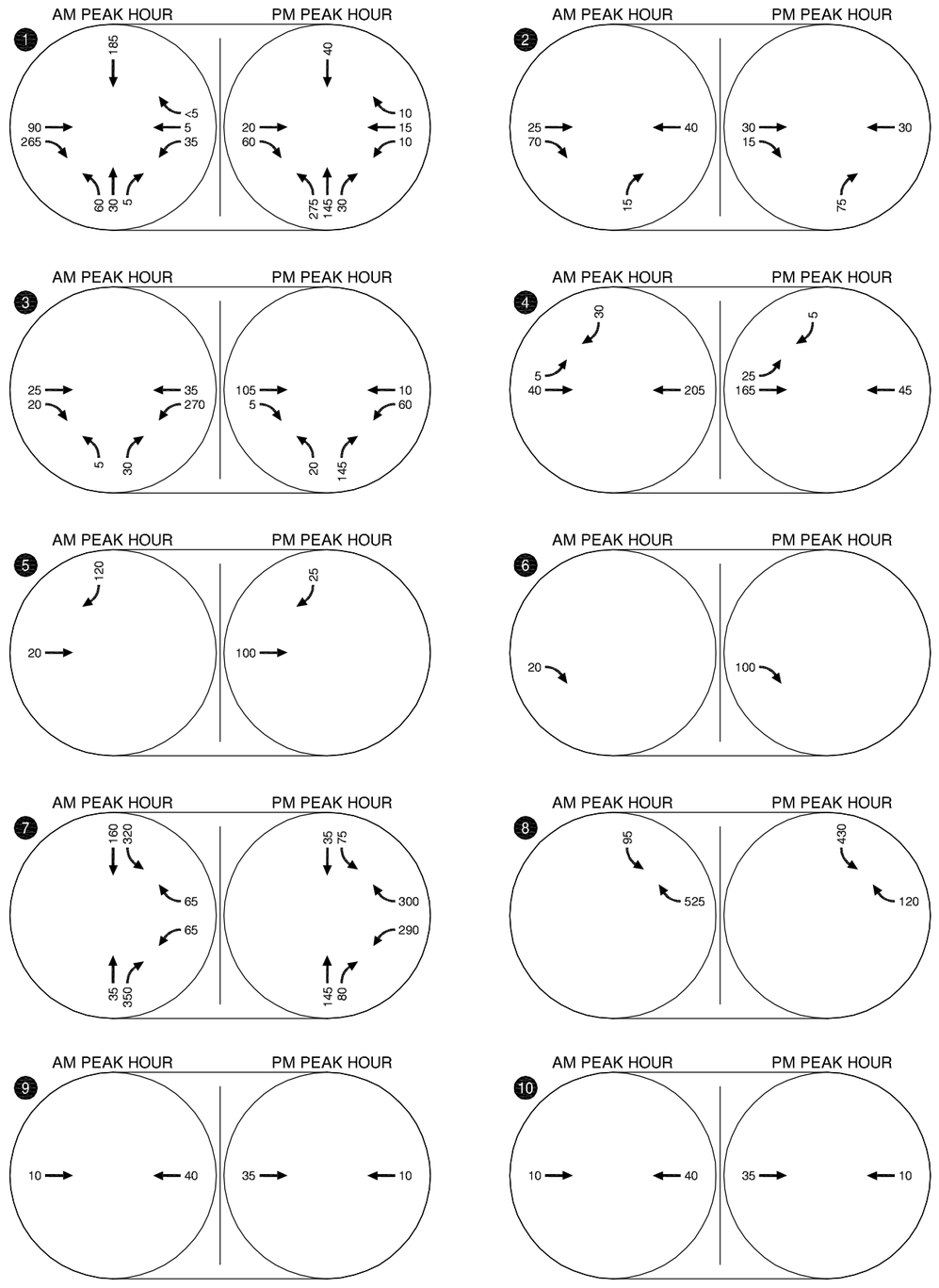
Table 3
"Base Future" Traffic Operations

	A.M. Peak Hour		P.M. Peak Hour	
Location	**LOS**	**v/c**	**LOS**	**v/c**
SW Nyberg Road/I-5 Northbound Ramps	D	1.03	B	0.66
SW Nyberg Road/I-5 Southbound Ramps	D	0.99	C	0.90
SW Tualatin-Sherwood Road/SW Boones Ferry Road	F	1.14	F	1.15
SW Tualatin-Sherwood Road/SW 115th Avenue				
SW Tualatin-Sherwood Road/SW 120th Avenue	D	0.13	D	0.18
SW Tualatin-Sherwood Road/SW 124th Avenue	D	0.87	C	0.76
SW Blake Street/SW 124th Avenue				
Connector/SW 124th Avenue	C	0.83	C	0.80
SW Tonquin Road/SW Waldo Way (west)	C	0.07	C	0.12
SW Boones Ferry Road/I-5 Southbound Ramps	C	0.89	B	0.73
SW Elligsen Road/I-5 Northbound Ramps	B	0.71	B	0.54

LOS: level of service, v/c: volume-to-capacity ratio, shading: intersection does not exist in this alternative

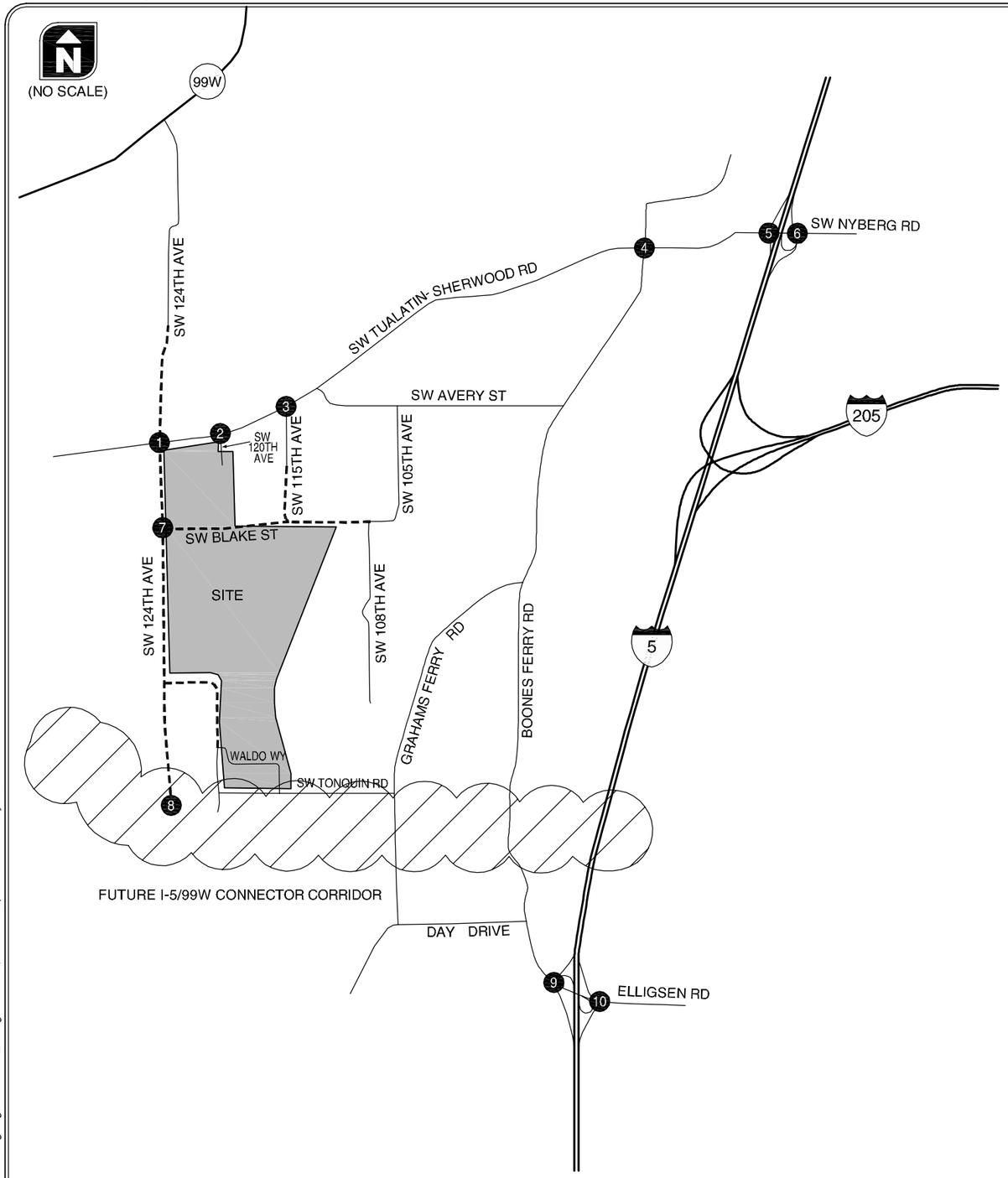
The SW Tualatin-Sherwood Road/SW Boones Ferry Road intersection operates at LOS F and over capacity during both the 2025 weekday a.m. and p.m. peak hours in the "base future" scenario. This intersection is constrained by the railroad tracks to the west, development elsewhere, and a general desire to not cut off the Tualatin Commons area from the remainder of downtown Tualatin by continuing to widen roads. The Tualatin Town Center Plan identifies that this intersection could be mitigated to LOS D by (1) prohibiting left turns northbound and southbound on SW Boones Ferry Road, (2) providing new local street connections to serve the diverted left-turning traffic, and (3) extending SW Lower Boones Ferry Road over the Tualatin River to provide another east-west route into Tualatin's industrial area. A decision on how to mitigate this intersection will be made through the Town Center Plan process.

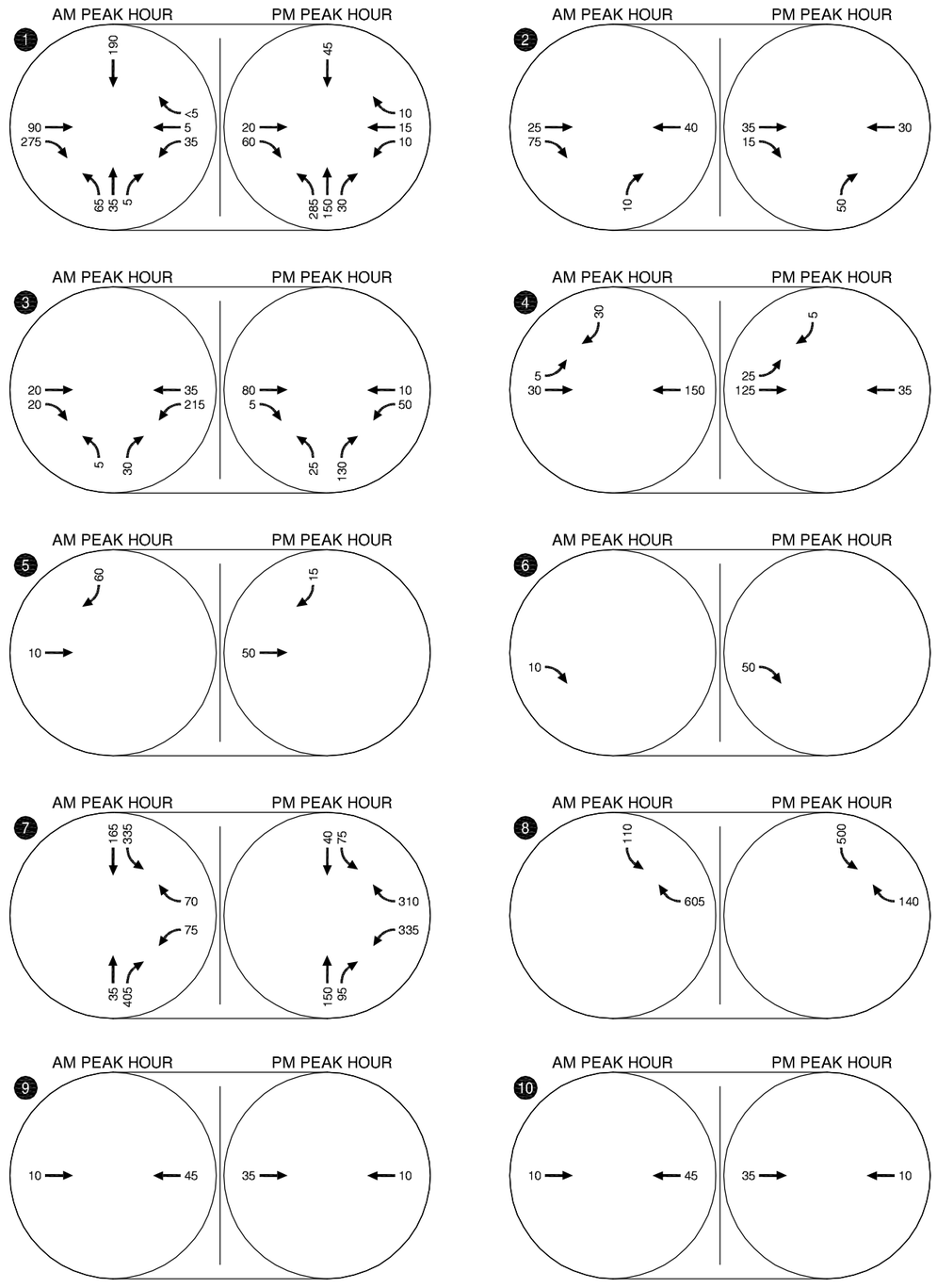




2025 SITE-GENERATED TRAFFIC VOLUMES - ALTERNATIVE I
WEEKDAY AM AND PM PEAK HOURS
TUALATIN, OREGON

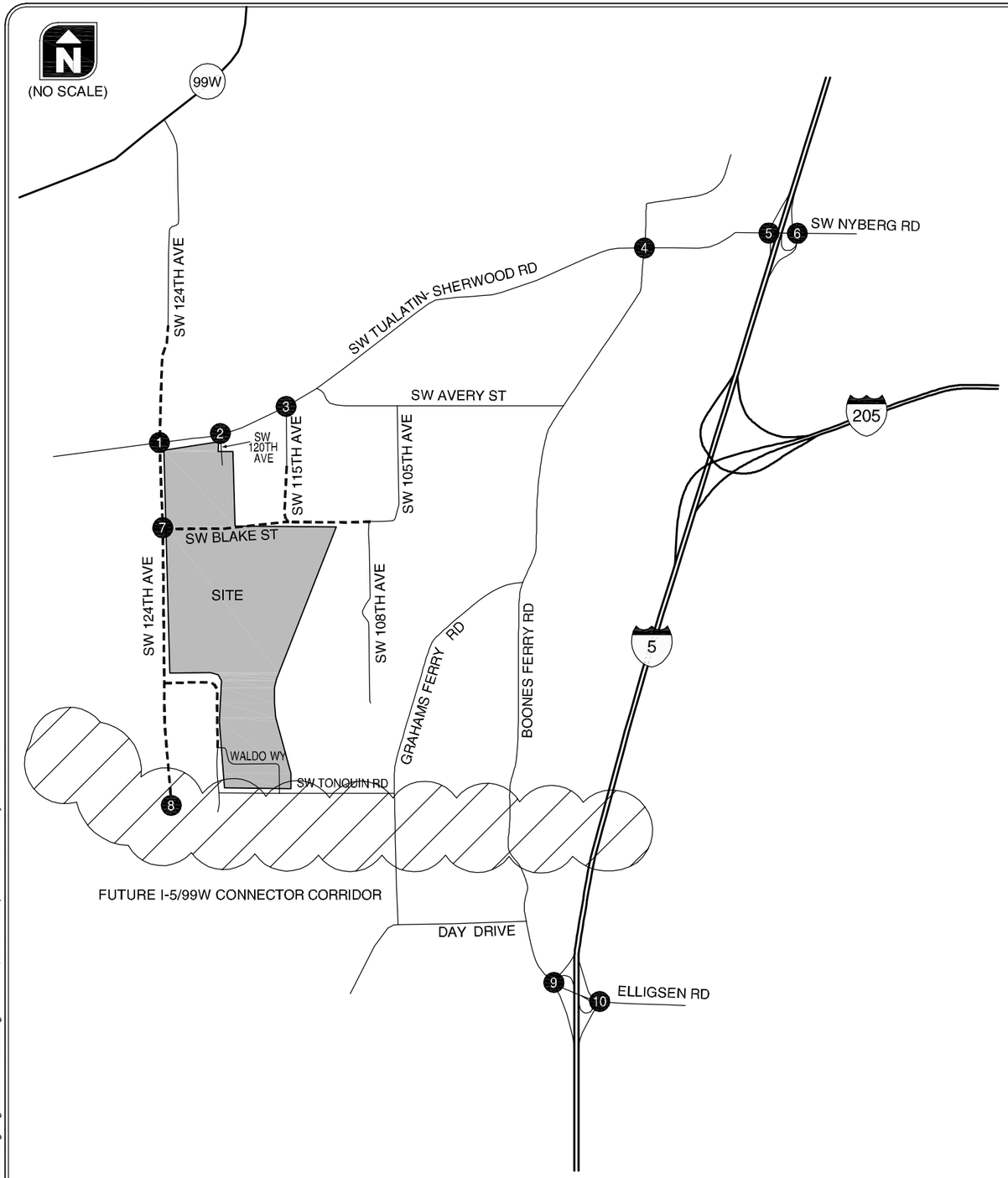
FIGURE **2**

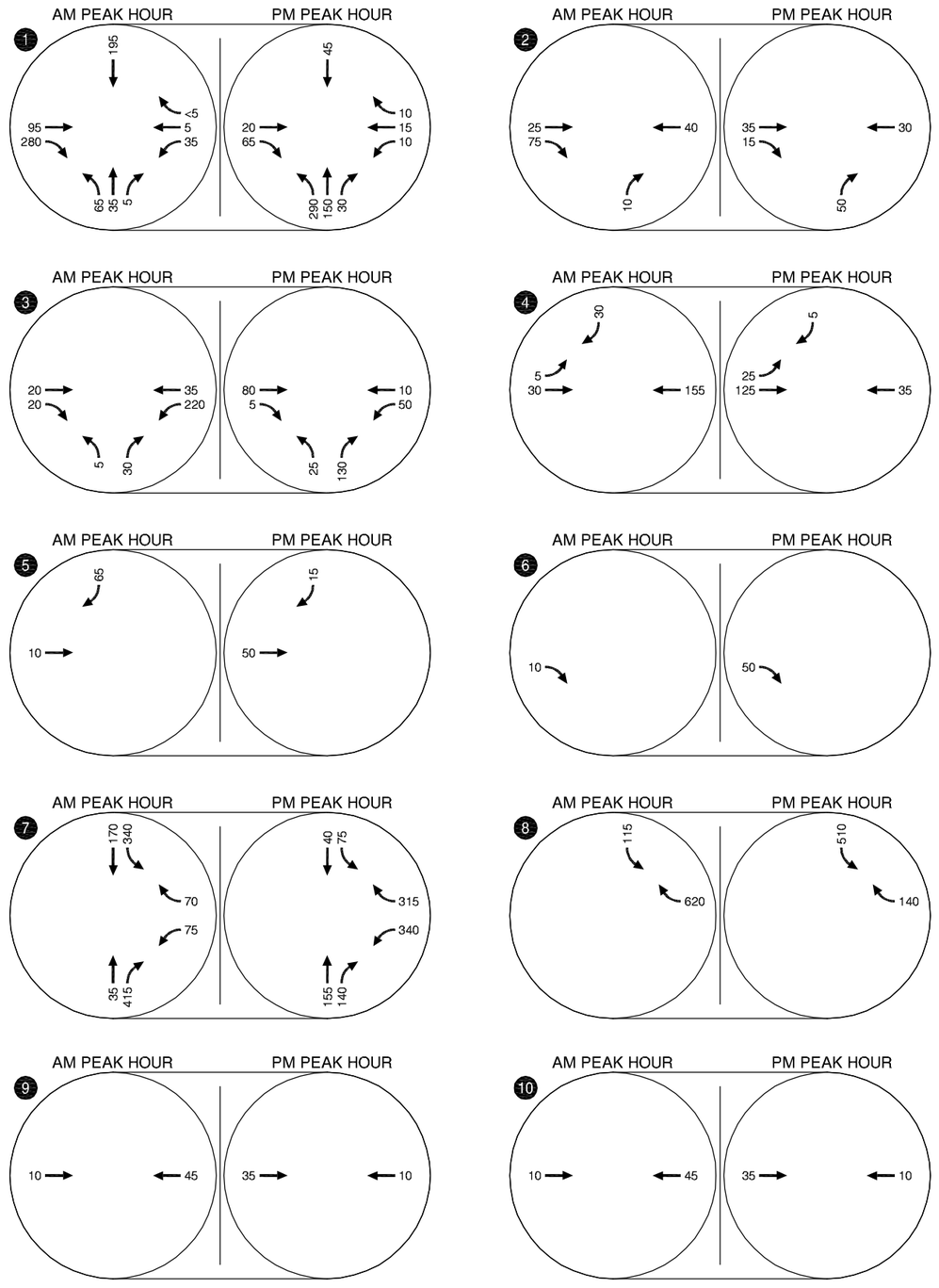




2025 SITE-GENERATED TRAFFIC VOLUMES - ALTERNATIVE II
WEEKDAY AM AND PM PEAK HOURS
TUALATIN, OREGON

FIGURE 3





2025 SITE-GENERATED TRAFFIC VOLUMES - ALTERNATIVE III
WEEKDAY AM AND PM PEAK HOURS
TUALATIN, OREGON

FIGURE 4

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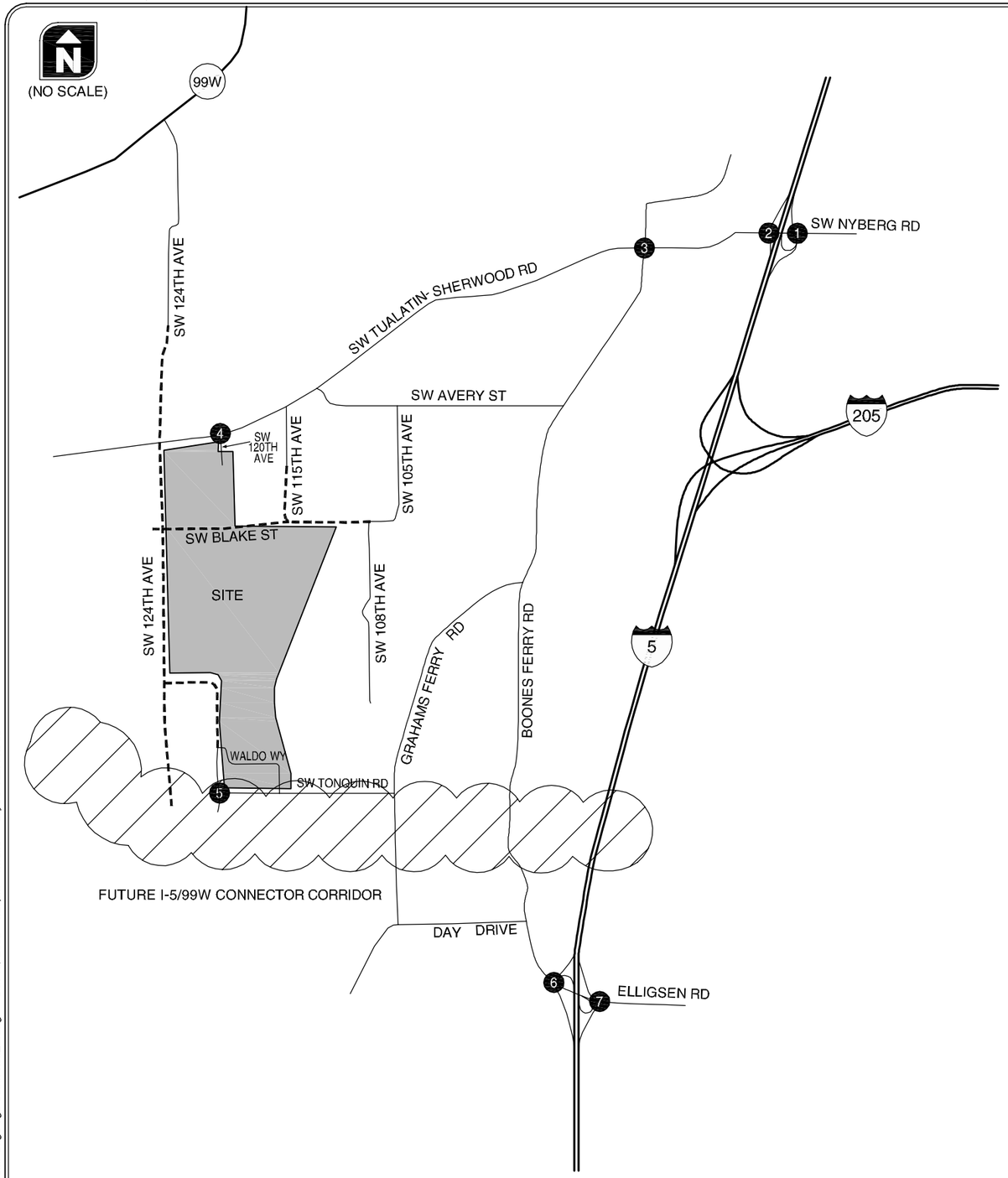
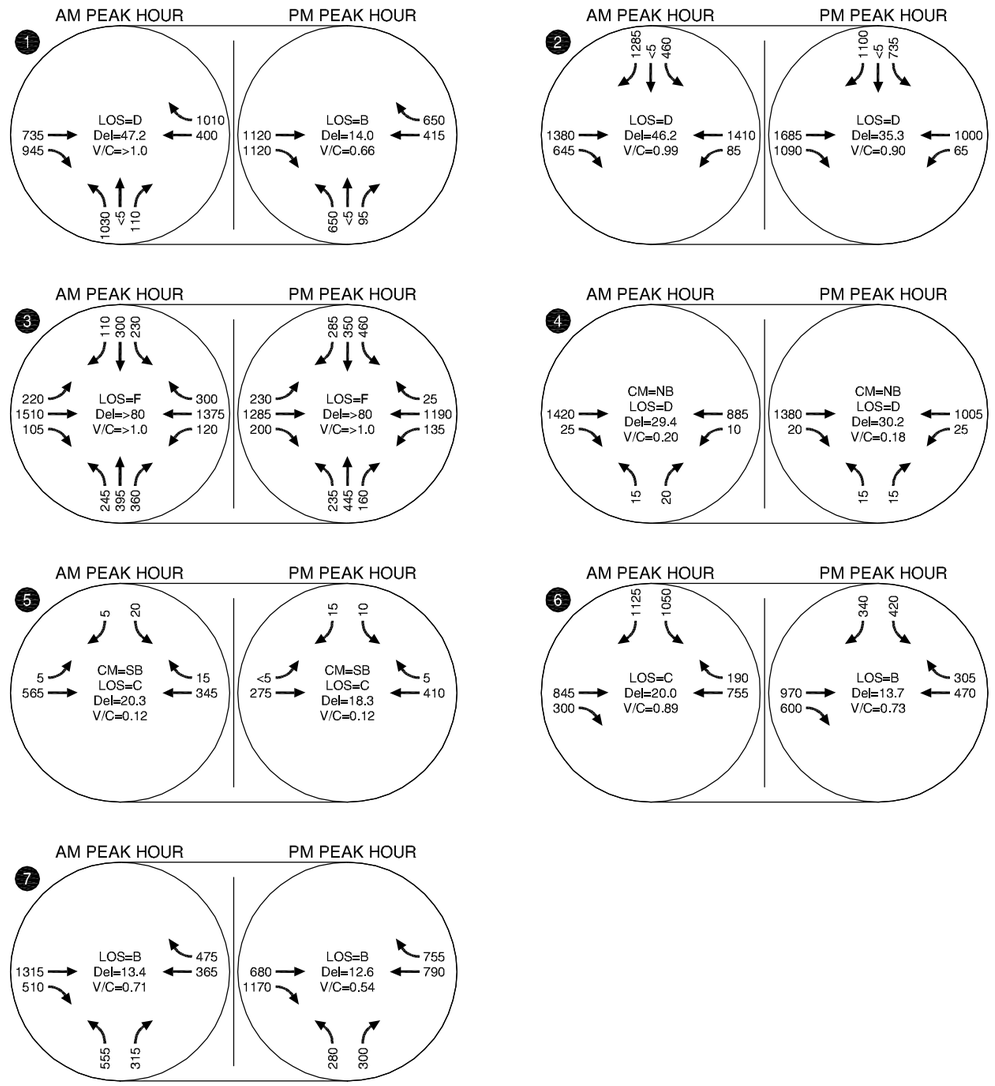




2025 BASE FUTURE TRAFFIC CONDITIONS
WEEKDAY AM AND PM PEAK HOURS
TUALATIN, OREGON

FIGURE 5

The SW Nyberg Road/I-5 Northbound Ramps intersection operates over capacity during the 2025 weekday a.m. peak hour, due to the high right-turning volume from westbound Nyberg Road onto northbound I-5. Providing a free-flow right-turn lane for this movement (similar to the one at the SW Elligsen Road/I-5 Northbound Ramps intersection) would address this traffic operations issue, resulting in LOS C operations and a v/c ratio of 0.52.

The SW Nyberg Road/I-5 Sorthbound Ramps intersection operates near capacity during the 2025 weekday a.m. peak hour, due to the high right-turning volume exiting I-5. Restriping the existing lanes to provide left, left-through-right, and 2 right-turn lanes (i.e., providing a triple right turn) would result in LOS C operations and a v/c ratio of 0.84.

New Intersection Assumptions

New signalized intersections were sized to provide LOS D and under-capacity conditions during peak hours. The following lane assumptions were used for the new signalized intersections:

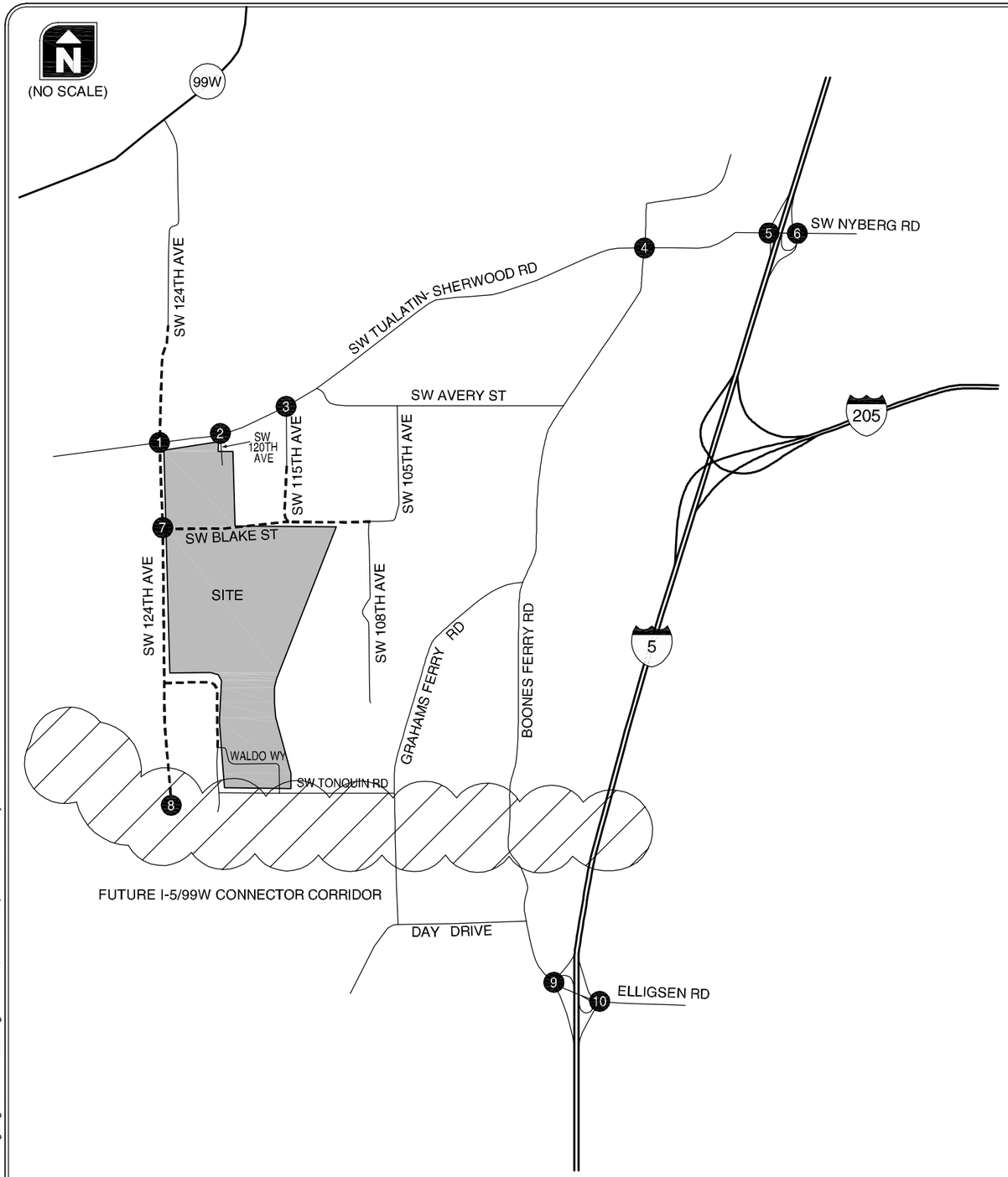
- **SW Tualatin-Sherwood Road/SW 115th Avenue:** Separate left- and right-turn lanes northbound, left-turn lane westbound.
- **SW Tualatin-Sherwood Road/SW 124th Avenue:** Left- and right-turn lanes on all approaches.
- **SW Blake Street/SW 124th Avenue:** Separate left- and right-turn lanes westbound, left-turn lane southbound, right-turn lane northbound.
- **Connector/SW 124th Avenue:** Left- and right-turn lanes and 2 through lanes eastbound and westbound (with the westbound right-turn free-flowing), 2 left-turn and a through-right lane southbound, and a left-turn and through-right lane northbound.

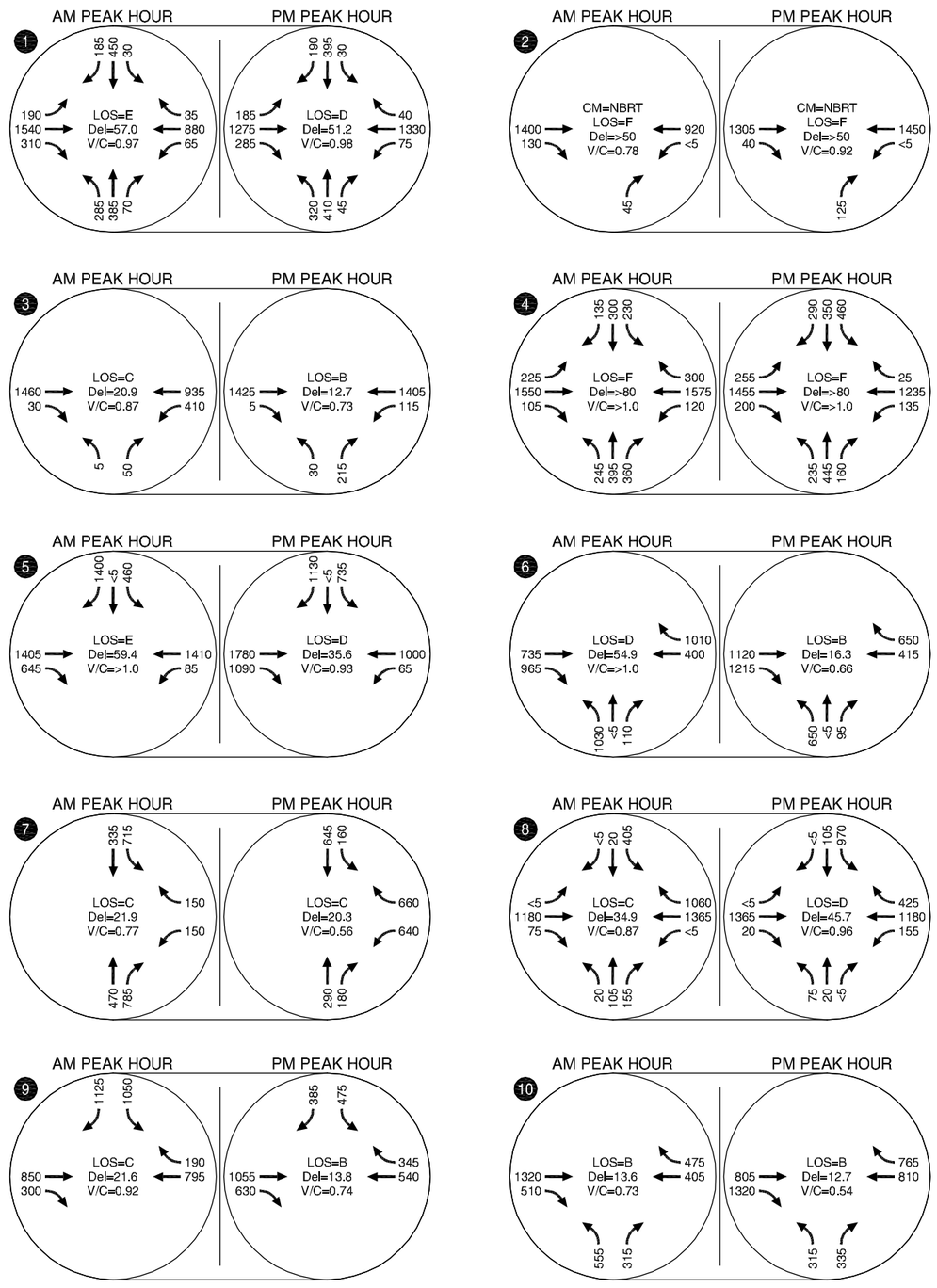
Alternative I

In Alternative I, north-south circulation within the Concept Plan Area is provided by a collector street paralleling SW 124th Avenue on the west side of the area. SW Blake Street extends east-west through the area, connecting with SW 124th Avenue at a new signalized intersection. SW Tonquin Road is realigned to intersect SW 124th Avenue at a new unsignalized intersection between SW Blake Street and the Connector. The road network in this alternative tends to focus traffic patterns more toward SW Tualatin-Sherwood Road than in the other two alternatives.

A preliminary analysis of the SW Tualatin-Sherwood/SW 120th Avenue intersection found that it would quickly drop to LOS F conditions as left- and right-turn volumes increased. As a result, it was assumed that this intersection would be restricted to right-in, right-out movements in the future under any land use alternative. It was also assumed that SW Blake Street would serve two-thirds of the site traffic wishing to use SW 124th Avenue, while the realigned SW Tonquin Road (not evaluated) would serve the other one-third.

Table 4 and Figure 6 provide the traffic operations results associated with Alternative I. Analysis worksheets are provided in Appendix B.





2025 TOTAL TRAFFIC CONDITIONS - ALTERNATIVE I
WEEKDAY AM AND PM PEAK HOURS
TUALATIN, OREGON

FIGURE 6

Table 4
Future Traffic Operations: Alternative I

Location	A.M. Peak Hour		P.M. Peak Hour	
	LOS	v/c	LOS	v/c
SW Nyberg Road/I-5 Northbound Ramps	D	1.07	B	0.66
SW Nyberg Road/I-5 Southbound Ramps	E	1.06	D	0.93
SW Tualatin-Sherwood Road/SW Boones Ferry Road	F	1.26	F	1.18
SW Tualatin-Sherwood Road/SW 115th Avenue	C	0.87	B	0.73
SW Tualatin-Sherwood Road/SW 120th Avenue	F	0.78	F	0.92
SW Tualatin-Sherwood Road/SW 124th Avenue	E	0.97	D	0.98
SW Blake Street/SW 124th Avenue	C	0.77	C	0.56
Connector/SW 124th Avenue	C	0.87	D	0.96
SW Tonquin Road/SW Waldo Way (west)				
SW Boones Ferry Road/I-5 Southbound Ramps	C	0.92	B	0.74
SW Elligsen Road/I-5 Northbound Ramps	B	0.73	B	0.54

LOS: level of service, v/c: volume-to-capacity ratio, shading: intersection does not exist in this alternative

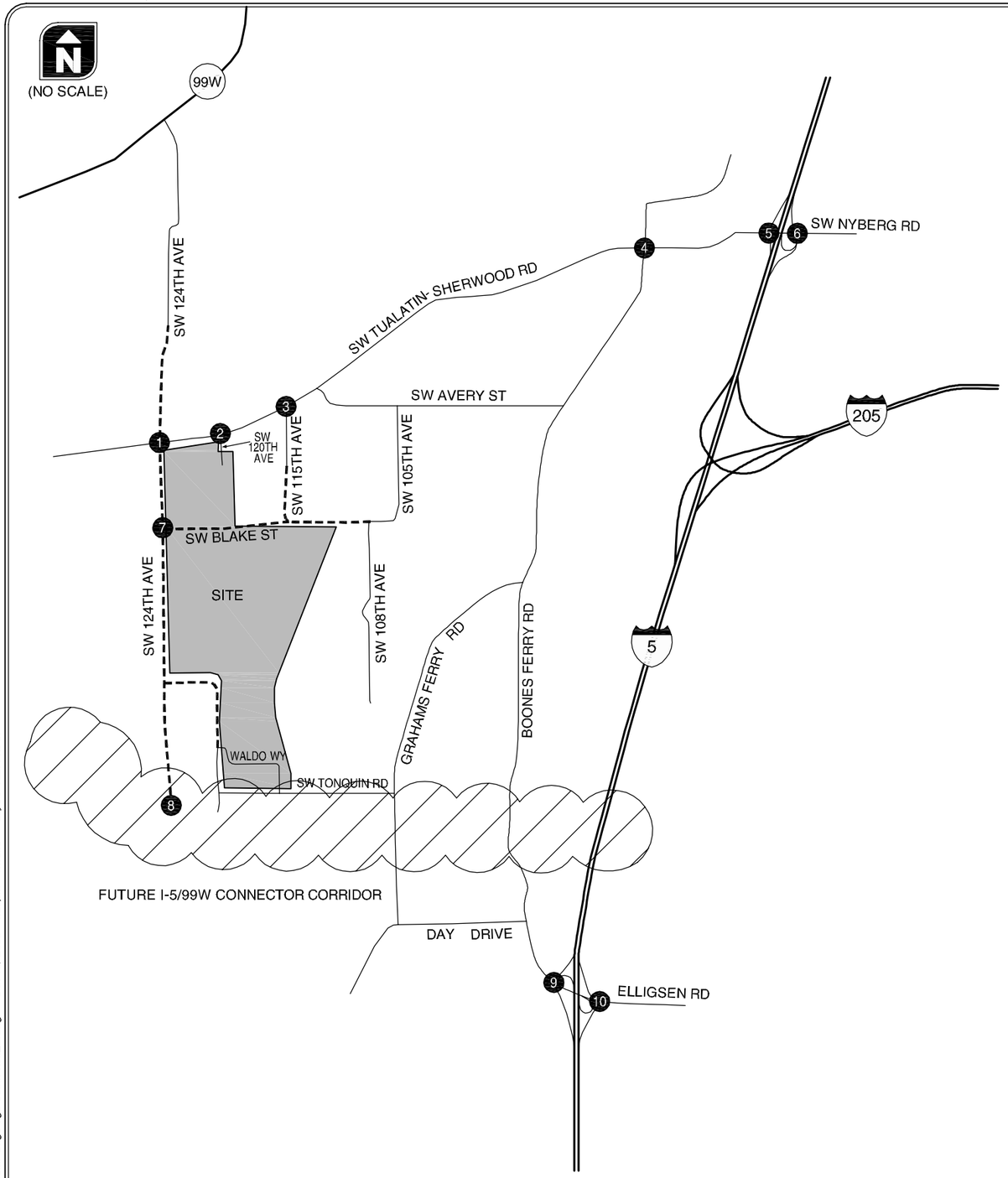
The operations at the intersections within the Town Center area worsen as a result of the added traffic. However, all can be mitigated as described previously in the "base future" section. Additionally, the SW Tualatin-Sherwood Road/SW 124th Avenue intersection would operate at LOS E and near capacity during the 2025 weekday a.m. peak hour under this alternative. Providing a second northbound left-turn lane would result in LOS D operations and a v/c ratio of 0.87. The SW Tualatin-Sherwood Road/SW 120th Avenue intersection would operate at LOS F for northbound right-turning traffic; however, the SW 115th Avenue traffic signal would be available as an alternative route.

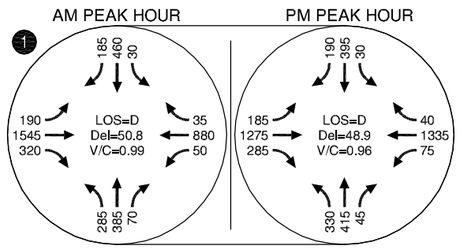
Alternative II

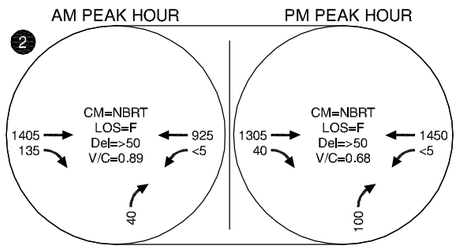
In Alternative II, north-south circulation within the Concept Plan Area is provided by a collector street (SW 115th Avenue) along the east side of the area. SW Blake Street extends east-west through the area, connecting with SW 124th Avenue at a new signalized intersection. SW Tonquin Road is realigned to intersect SW 124th Avenue at a new unsignalized intersection between SW Blake Street and the Connector.

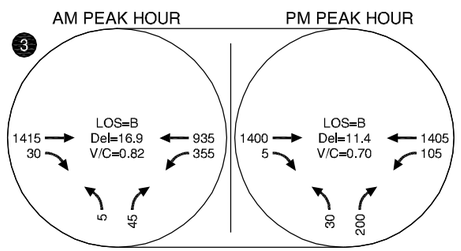
This alternative includes a commuter rail station in the southeast portion of the Concept Plan Area. In the absence of a "southern freeway" Connector, which would bring traffic from Highway 99W directly past the Concept Plan Area, it is assumed that the station would mostly serve residential neighborhoods in southwest Tualatin and not be a significant park-and-ride draw. Commuters from the south on I-5 would find the Wilsonville station more convenient, while commuters from Highway 99W would find staying on SW Tualatin-Sherwood Road to the downtown Tualatin station more convenient.

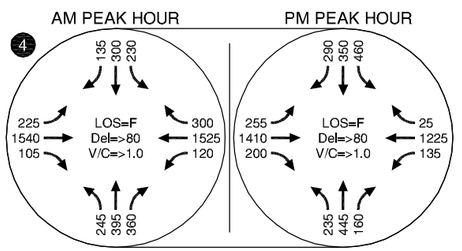
Table 5 and Figure 7 provide the traffic operations associated with Alternative II. Analysis worksheets are provided in Appendix C.

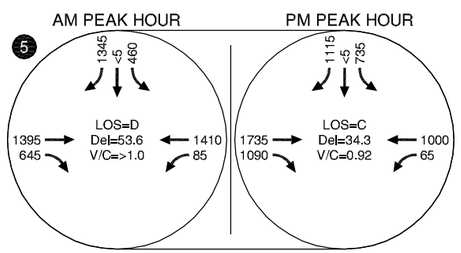


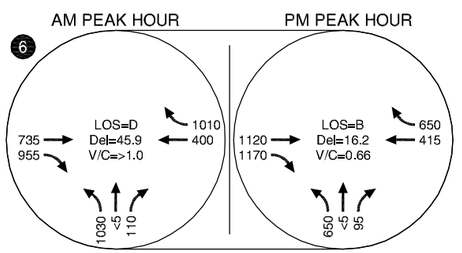


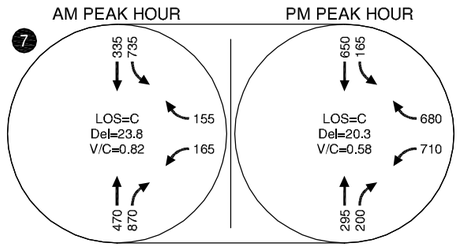


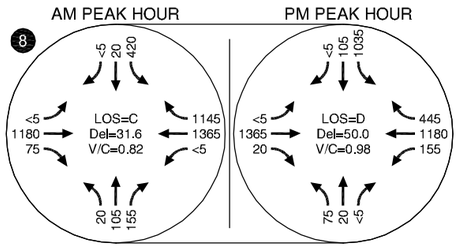


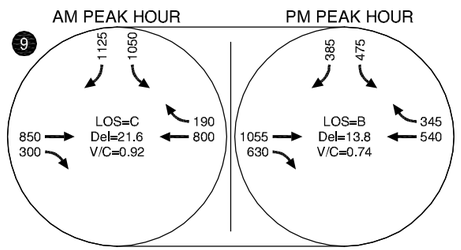


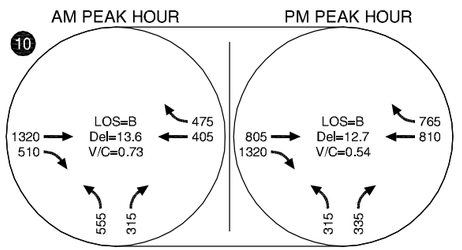












2025 TOTAL TRAFFIC CONDITIONS - ALTERNATIVE II
WEEKDAY AM AND PM PEAK HOURS
TUALATIN, OREGON

FIGURE 7

Table 5
Future Traffic Operations: Alternative II

Location	A.M. Peak Hour		P.M. Peak Hour	
	LOS	v/c	LOS	v/c
SW Nyberg Road/I-5 Northbound Ramps	D	1.03	B	0.66
SW Nyberg Road/I-5 Southbound Ramps	D	1.03	C	0.92
SW Tualatin-Sherwood Road/SW Boones Ferry Road	F	1.24	F	1.18
SW Tualatin-Sherwood Road/SW 115th Avenue	B	0.82	B	0.70
SW Tualatin-Sherwood Road/SW 120th Avenue	F	0.78	F	0.65
SW Tualatin-Sherwood Road/SW 124th Avenue	D	0.99	D	0.96
SW Blake Street/SW 124th Avenue	C	0.82	C	0.58
Connector/SW 124th Avenue	C	0.82	D	0.98
SW Tonquin Road/SW Waldo Way (west)				
SW Boones Ferry Road/I-5 Southbound Ramps	C	0.92	B	0.74
SW Elligsen Road/I-5 Northbound Ramps	B	0.73	B	0.54

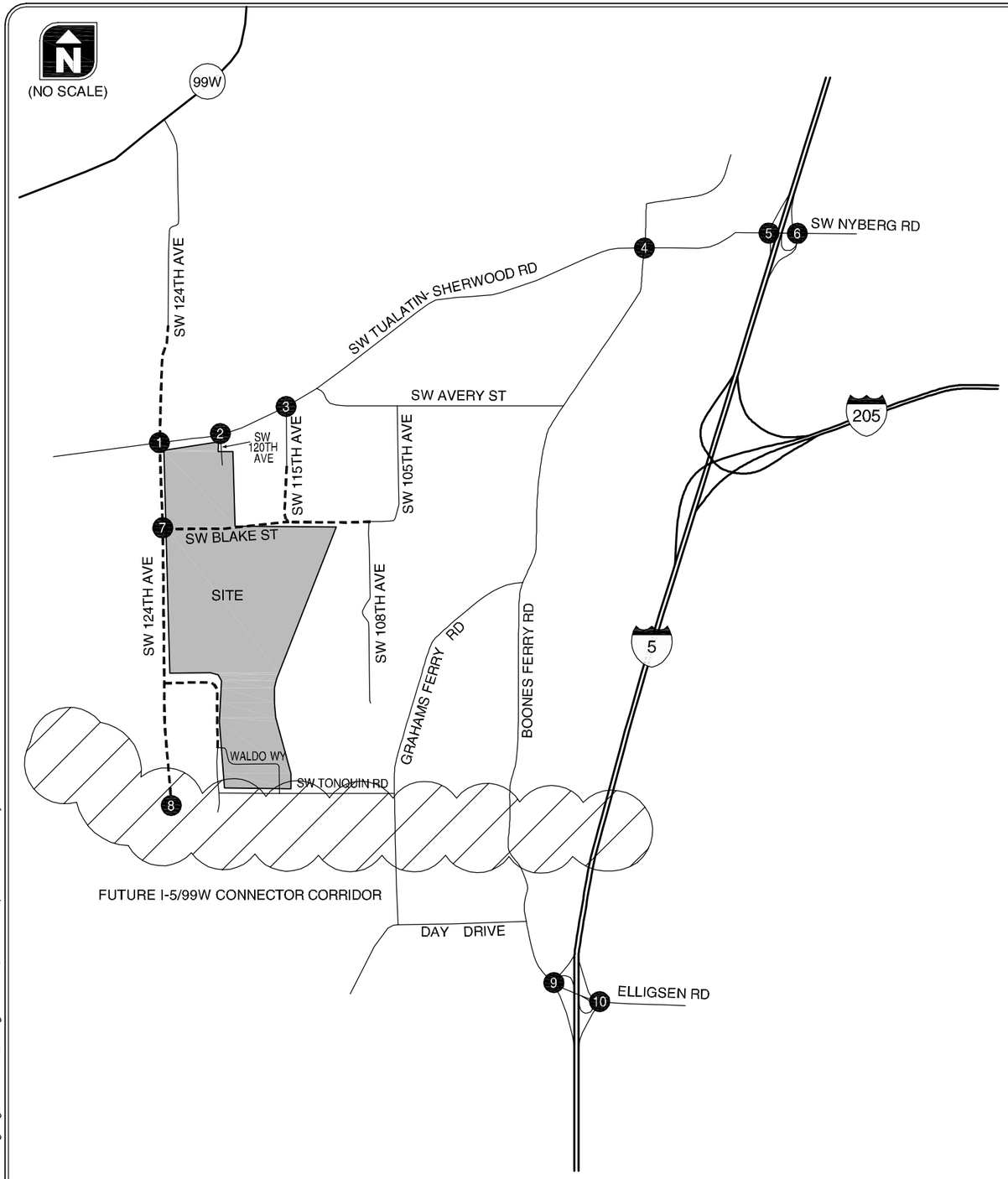
LOS: level of service, v/c: volume-to-capacity ratio, shading: intersection does not exist in this alternative

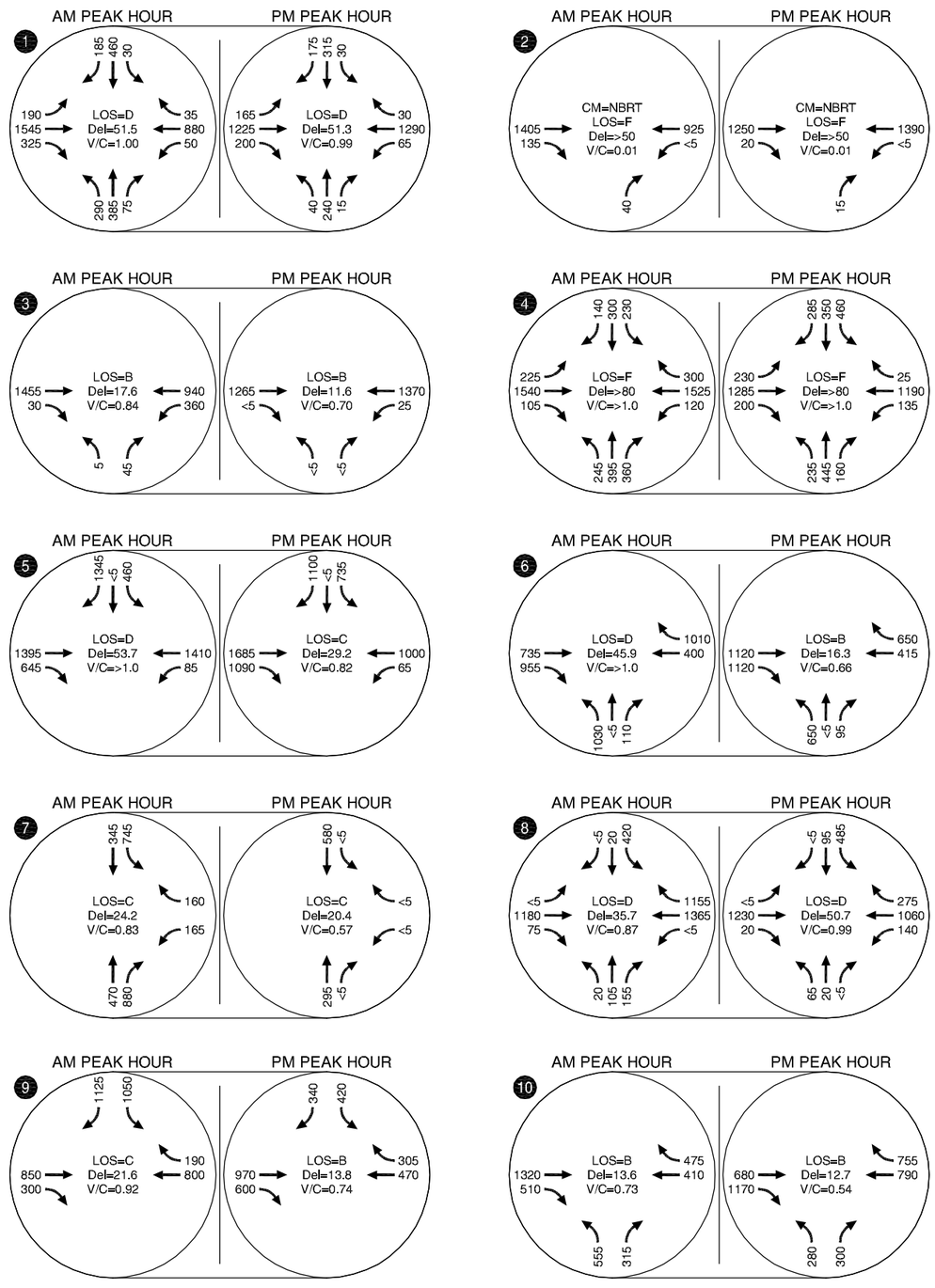
Alternative II's improved accessibility to SW 124th Avenue results in a greater of proportion of site traffic using the Collector instead of SW Tualatin-Sherwood Road, compared to Alternative I; however, this benefit is somewhat offset by Alternative II's larger amount of developed area and correspondingly higher trip generation. The same intersection issues noted previously generally also apply to Alternative II; however, unlike Alternative I, the SW Tualatin-Sherwood Road/SW 124th Avenue intersection meets operations standards without requiring a second northbound left-turn lane.

Alternative III

In Alternative III, north-south circulation within the Concept Plan Area is provided by a collector street (SW 115th Avenue) along the east side of the area. SW Blake Street extends east-west through the area, connecting with SW 124th Avenue at a new signalized intersection. Tonquin Road is realigned to intersect SW 124th Avenue at a new unsignalized intersection between SW Blake Street and the Connector. Lot sizes south of SW Blake Street are generally larger, and there are no local street connections within this portion of the Concept Plan Area.

Table 6 and Figure 8 provide the traffic operations associated with Alternative III. Analysis worksheets are provided in Appendix D.





2025 TOTAL TRAFFIC CONDITIONS - ALTERNATIVE III
WEEKDAY AM AND PM PEAK HOURS
TUALATIN, OREGON

FIGURE 8

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING / TRAFFIC ENGINEERING

Table 6
Future Traffic Operations: Alternative III

Location	A.M. Peak Hour		P.M. Peak Hour	
	LOS	v/c	LOS	v/c
SW Nyberg Road/I-5 Northbound Ramps	D	1.03	B	0.66
SW Nyberg Road/I-5 Southbound Ramps	D	1.03	C	0.82
SW Tualatin-Sherwood Road/SW Boones Ferry Road	F	1.24	F	1.21
SW Tualatin-Sherwood Road/SW 115th Avenue	B	0.84	B	0.70
SW Tualatin-Sherwood Road/SW 120th Avenue	F	0.89	F	0.68
SW Tualatin-Sherwood Road/SW 124th Avenue	D	1.00	D	0.99
SW Blake Street/SW 124th Avenue	C	0.83	C	0.57
Connector/SW 124th Avenue	C	0.87	D	0.99
SW Tonquin Road/SW Waldo Way (west)				
SW Boones Ferry Road/I-5 Southbound Ramps	C	0.92	B	0.74
SW Elligsen Road/I-5 Northbound Ramps	B	0.73	B	0.54

LOS: level of service, v/c: volume-to-capacity ratio, shading: intersection does not exist in this alternative

Alternative III's traffic impacts are similar to Alternative II's, but slightly worse, owing to its greater amount of developed area and correspondingly greater trip generation. The SW Tualatin-Sherwood Road/SW 124th Avenue intersection would operate at capacity.

Intersection Mitigation Needs

All of the land use alternatives result, or can result, in acceptable traffic operations in 2025 at the study intersections. Each study intersection is discussed below.

SW Nyberg Road/I-5 Interchange (#289). The Northbound Ramps intersection would require mitigation (a free-flowing westbound right turn) by 2025 regardless of what happens in the Concept Plan Area. The traffic added by any of the Concept Plan's land use alternatives would generate the need to restripe the southbound approach to the Southbound Ramps intersection to provide left, left-through-right, and 2 right-turn lanes (e.g., a triple left turn).

SW Tualatin-Sherwood Road/SW Boones Ferry Road. This intersection will operate at LOS F and over capacity in 2025, without redevelopment of the Concept Plan Area. All three alternatives will add more traffic through the intersection, worsening connections. The Tualatin Town Center Plan identified a set of projects (in particular, prohibiting northbound and southbound left turns at the intersection, developing new local street connections in the Town Center, and extending SW Lower Boones Ferry Road over the Tualatin River) that collectively would result in LOS D operations in 2025. A final decision on this intersection's mitigation would be made through Tualatin Town Center Plan process.

SW Tualatin-Sherwood Road at SW 115th and 120th Avenues. All three land use alternatives assume the continued existence of these intersections, with the SW 115th Avenue intersection being signalized in the future. Under all land use alternatives, the SW 120th Avenue intersection will have LOS F delays, although the critical movements will operate below their capacities. The SW 115th Avenue traffic signal would operate at LOS B under all alternatives. SW 115th Avenue is located approximately 1,000 feet west of the SW Avery Street intersection, which is already

signalized. The resulting signal spacing would be less than the desirable ½ mile, but should be long enough to be workable. In conjunction with redevelopment of the Concept Plan Area, SW 120th Avenue would need to be converted to a right-in, right-out configuration because of the long delays associated with making left turns in and out. All of the land use alternatives provide a direct east-west connection from SW 120th Avenue to SW 115th Avenue, minimizing the out-of-direction travel required. As a result, motorists would be able to avoid the delays associated with the northbound right-turn movement, if they so desired.

SW Tualatin-Sherwood Road/SW 124th Avenue. This intersection would operate near or at its capacity in 2025 under all of the land-use alternatives. The intersection's operations could be improved by providing a second northbound left-turn lane, or by providing east-west collector street connections west of SW 124th Avenue into Sherwood (to provide an alternate route to SW Tualatin-Sherwood Road for motorists traveling between Sherwood and the Concept Plan Area).

SW Blake Street/SW 124th Avenue. This intersection would operate at LOS C and under capacity during weekday peak hours in 2025 under all of the land use alternatives.

Connector/SW 124th Avenue. This intersection would operate at LOS D and under capacity in 2025 under any of the land-use alternatives, although it would operate near capacity during weekday p.m. peak hours. To provide additional capacity, a third southbound left-turn lane would be required, along with an extra lane eastbound on the Connector for a short distance east of the intersection (just long enough to allow traffic to merge into two lane). Alternatively, a grade-separated interchange could be provided, which is the assumed configuration if a "southern freeway" alignment for the Connector is eventually chosen.

North Wilsonville Interchange (#287). Most of the site-related traffic headed to or from the south would use the Connector to I-5 and would therefore avoid this interchange. For this analysis, it was assumed that traffic to or from North Wilsonville would get off the Connector at SW Boones Ferry Road and would follow that road into Wilsonville. As a result, traffic to and from the west side of I-5 in Wilsonville would not pass through the interchange, but traffic to and from the east side of I-5 would. All of the land use alternatives result in LOS C or better traffic operations during weekday peak hours, with the intersections operating at 92% of capacity or better.

Next Steps

The information presented in this memorandum will be an input into the development of a preferred land use alternative. Once that alternative is selected, this memorandum will be updated to reflect the future traffic conditions associated with that alternative, and how that alternative complies with Oregon's Transportation Planning Rule.

Southwest Tualatin Concept Plan
Water and Sanitary Sewer Assessment

PREPARED FOR: City of Tualatin

PREPARED BY: Tim Yamada/CH2M HILL

COPIES: File

DATE: May 11, 2005; Revised August 3, 2005

Background

This technical memorandum (TM) presents the development, analysis and recommendations for the water and sanitary sewer systems required to meet the needs of the Southwest Tualatin Concept Plan (SWTCP). Some off-site utility improvements will be required to meet the demands from the future developments, based on several assumptions discussed in this TM.

The SWTCP includes the Tonquin Industrial Group (TIG) and Tigard Sand & Gravel (TS&G) properties; roughly located by Tualatin-Sherwood Road to the north, Tonquin Road to the south, 124th Avenue on the west, and 115th Avenue on the east. These properties were added to the Urban Growth Boundary (UGB) by Metro in December 2002, to help meet the industrial land demand for this region in the next 20 years. Ultimately, the project area will be annexed into the City with the City providing urban services.

Three conceptual alternatives have been developed for the SWTCP. There are slight variations to the gross developable acreage for the alternatives; Alternative 1 has 337 acres, Alternative 2 has 346 acres and Alternative 3 has 352 acres. Alternative 3 will be used for the water and sanitary sewer systems assessment.

Several assessments of the civil utilities for the SWTCP area have been performed in the recent past. In August 2002, the Tualatin-Sherwood Triangle - Phase 1 project assessed the wastewater, water and stormwater infrastructures for the Tigard Sand and Gravel and the Tualatin/Sherwood properties. Also, the City of Tualatin completed the wastewater and water master plans that included the SWTCP area, in December 2002 and August 2003 respectively.

The buildout areas and land-use assumptions used in the SWTCP differs from those used in the previous studies. Therefore, updates to the flow calculation models will be required to identify the impacts or deficiencies to the off-site utilities; e.g. sewer trunklines, water reservoirs, water transmission pipeline, etc. Since updating the models is beyond the scope of this assessment, the off-site improvement (outside of the SWTCP area) identified in the previous studies will be carried forward into this assessment without edit. Pipe lengths within the SWTCP area were updated to reflect the roadway lengths shown for Alternative 3.

Civil Utility Assessment

Several assumptions had to be made to complete this assessment since the future development of the properties within the SWTCP is not known and the conceptual alternatives have not been fully developed. The following is a list of general assumptions that apply to all of the utilities. Assumptions made for the specific utilities are included in corresponding sections below.

General Assumptions

1. Net developable area is 270 acres. SWTCP assumed ratio of 0.8 (Net Acres/Gross Acres)

2. Net developable area will be 50% light industrial and 50% business parks

3. A microchip manufacturer(s) or similar wet industry will be 65% of the Light industrial developable area (88 acres). This percentage is based on the previous study that assumed 200 acres (wet industry area) of the 310 acres (developable area) would be wet industry.

4. Currently the SWTCP area is a sand and gravel mining operation. Consequently, the final topography and its potential influence on gravity utility systems are not currently known. Metro RLIS topography for the area was used for determining how particular parcels of the SWTCP area could be served.

5. Master Plan improvement including water reservoir, water transmission pipeline and sanitary sewer trunkline are shown on Figure 1, attached. On-site (within SWTCP) pipelines were not laid out for this assessment. Instead, the lengths of Alternate 3 roadways were used for pipe lengths.

6. Gravity line sizing was based on Clean Water Services (CWS) current design criteria: a minimum velocity of 2 ft/s at half full and a maximum depth of 0.9 d/D at design flow. Pipe is assumed a Manning's roughness of 0.013. Slope was assumed to average 0.12% due to the following assumption regarding topography. Pressure pipelines were sized using a velocity between 8 fps maximum and 3 fps minimum.

7. Costs are based on technical information from CH2M HILL field experience and Oregon Department of Transportation average price bids. Unit costs are a function of depth of bury and pipe diameter. Manholes and lateral connections are included for average installations. No additional allowance is made for special crossings, borings, permits or special surface restoration or remediation beyond standard compaction and seeding or paving. Detailed cost estimates should be developed during planning and final design phases.

Wastewater System Assessment

Wastewater System Assumptions

The following assumptions were used for developing capital improvements and related costs associated with annexing the SWTCP area into the City of Tualatin sanitary sewer service area.

1. Novellus (currently served by the City of Tualatin) was used as a model for calculating an average flow generation of 25,500 gpad for this type of manufacturing.

2. Peak infiltration and inflow was assumed to be 300 gpad (from Section 3.1.9, 2002 Sewer Master Plan).

3. A peaking factor of 2 was used for light industrial flows. The wet industry flows were assumed to be close to constant; no peaking factor was applied for gravity line sizing within the SWTCP area.

4. Onsite lines were sized for maximum day (average flow x peaking factor) plus peak infiltration and inflow.

5. Downstream lines were sized using the HYDRA hydraulic model and accompanying methodology used for the Tualatin Sewer Master Plan. It was assumed that the wet industry user would create a smooth diurnal curve with a peaking factor of no more than 1.1 x the average demand. Average demand plus peak I & I with the same diurnal curve were used in the model for the remaining light industrial area.

6. The remaining 182 acres will be developed as light industrial land or business park use with associated standard average flow characteristics of 1,150 gpad (from Section 2.5.2 2002 Sewer Master Plan).

7. The proposed collection system was designed only to serve parcels within the SWTCP area. Collection system alignments followed proposed roadways.

8. Due to the difficulty of determining what land use each part of the SWTCP area would develop with, the following approach was used for sizing pipes: 33% of the total needed gravity lines were sized to carry the entire 270 acre developed flow. 66% of the gravity lines were sized to carry the 182 acres of standard light industrial flows. Total gravity flow pipe length is equal to the collector and local roadway lengths in Alternative 3; 27,100 lf total. The force main was sized to carry the 88-acre wet industry developed flow and will equal the arterial length in Alternative 1; 10,300 lf.

9. The impacts to downstream trunk and interceptor lines have been evaluated based on the 2015 planning scenario for the City of Tualatin Sewer Master Plan. This scenario includes URGA 34, located east of I-5 near Stafford Road, URAs located on the west side of Tualatin (Tualatin-Wilsonville, Tualatin Sherwood and Tigard Sand and Gravel

URAs) and a number of proposed developments within the current UGB. This scenario also assumes Novellus is generating flow at maximum permitted volume.

10. All generated flow is assumed to be treated at the Durham WWTP. Only collection system improvements were evaluated. It is possible and likely that improvements to the Durham plant would also be required to accommodate the flows generated from the SWTCP area. This issue should be evaluated for additional costs.

11. Detailed pump station and siphon evaluations were not completed for this preliminary study.

12. The "Extension of Tualatin-Sherwood Trunkline to URAs, 24" new line" (a CIP in the Sanitary Sewer Master Plan) project was not included in this analysis. This capital project was intended to serve the URAs properties on the west side of Tualatin, adjacent to Tualatin-Sherwood Road, including those properties within the SWTCP. However, after reviewing the Alternative 3 conceptual plan and the site topography, it was determined the Tualatin-Sherwood Extension project was not needed for the development of the SWTCP area. A majority of the sanitary flows from the SWTCP can be routed to the northeast corner of the site and connect into the Bluff/Cipole Lateral, making the 24" pipeline extension unnecessary. A smaller version of this extension may be needed if the property to the west of the SWTCP is developed.

Wastewater Demand Projections

Table 1 summarizes the calculated flow generation for different land use components of the SWTCP area.

Table 1

Buildout wastewater demands

Item	Area (acres)	ADD (mgd)	MDD (mgd)	I & I (mgd)	Design Flow (mgd)
Wet Industrial/ Technology Manufacturer	88	2.244	2.244	0.030	2.274
Light Industrial	182	0.209	0.418	0.055	0.473
Total Use:					2.747

ADD = Average day demand
MDD = Maximum day demand
I & I = Infiltration and storm-related inflow
Mgd = Million gallons per day

Table 2 summarizes the new collection system components required to serve the SWTCP area.

Table 2

Sanitary Sewer System New Collection System components

Item	Size (inches)	Manholes	Design Flow (mgd)
Gravity (PVC)	18	32	2.747
Gravity (PVC)	8	62	0.473
Force Main (HDPE)	12	Air/Vac only	2.274
Pump Station	N/A	N/A	2.274

Impacted Existing Sanitary Sewer

Only one alternative was assessed for conveying wastewater flows from the SWTCP area to a regional treatment facility. It was assumed that all flow would be treated at the Durham plant. The closest reasonable location for discharging into the existing collection system was selected. Other options for both treatment and conveyance exist and should be explored more fully for cost savings.

The Tualatin collection system was evaluated under a certain set of conditions pertaining to a 2015 planning scenario developed for the Sanitary Sewer Master Plan. This scenario includes future developments within the current UGB, development of URGA 34, and improvements to the collection system as recommended in the draft Capital Improvements Plan (CIP) consistent with CWS criteria for collection system improvements and prevention of sanitary sewer overflows.

Though the addition of the SWTCP area, particularly wet industry flow generation, puts additional strain on the collection system, the "Bluff/Cipole Lateral" improvement was identified as the only project required because of the additional flows. The "Bluff/Cipole Trunk Line, and Tualatin River Siphon" improvements are either required regardless of whether the SWTCP area is added and were scheduled for completion before the SWTCP begins development. Also after reviewing the Alternative 3 conceptual plan and the site topography, it was determined the Tualatin-Sherwood Extension project was not needed for the development of the SWTCP area. This analysis assumes all contemplated capital improvements have been completed.

Table 3

Necessary Improvements to 2015 Collection System

Line	Projected Pipe Size (Inches)	Needed Pipe Size (Inches)	Depth of Bury	Length
Bluff/Cipole Lateral	12-21	18-36	12-20	4,725

Cost Estimate

Preliminary cost estimates are shown in Table 4. Table 4 summarizes costs associated with new construction within and adjacent to the SWTCP area. The Bluff/Cipole lateral and the Tualatin River siphon were not considered for improvements in the Master Plan.

Costs are based on technical information from CH2M HILL field experience and Oregon Department of Transportation average price bids. Unit costs are a function of depth of bury and pipe diameter. Manholes and lateral connections are included for average installations. No additional allowance is made for special crossings, borings, permits or special surface restoration or remediation beyond standard compaction and seeding or paving. Detailed cost estimates should be developed during planning and final design phases of the sanitary sewer layout.

Table 4

Connection to collection system and onsite Improvements

Item	Quantity	Unit	Unit Cost[1]	Subtotal	Total[4]
18" Gravity (PVC)	9,100	LF	$140	$1,274,000	
8" Gravity (PVC)	18,150	LF	$99	$1,796,850	
12" Force Main (HDPE)	10,300	LF	$73	$751,900	
Pump Station[2]	1	LS		$1,050,000[2]	
Bluff/Cipole Lateral	4,725	LF	Varies with depth and diameter	$1,060,000[3]	
				$5,932,750	$8,600,000

1. Unit cost based on average cover of 5 feet for gravity pipe and 3.5' cover for FM
2. Pump station cost based on U.S. Environmental Protection Agency (EPA) publication EPA-600/162B and City of Portland's cost estimate of [$106,000 + (206,100 x $Q^{0.845}$)] x (ENR CCI/5150). Land acquisition and landscaping cost of $300,000 per pump station has been added. ENR CCI = 7151
3. Unit cost based on difference between 2015 Tualatin Master Plan contemplated improvements and needed improvements to serve the SWTCP area, taken from CWS Master Plan cost matrix, with updated ENR CCI of 6512 (May 2002).
4. Total includes engineering, administration and legal costs and a 20 percent contingent sum

Water System Assessment

Water System Assumptions

The following assumptions were used for developing capital improvements and related costs associated with annexing the SWTCP area into the City of Tualatin water service area.

1. SWTCP area would be served by the Level B distribution zone. The current master plan update has determined a buildout deficiency for storage in this zone of approximately 1 million gallons (MG). Additional storage required to serve the proposed area will be added to this defect and incorporated into the existing plans to service the future needs of Level B.

2. Currently identified growth nodes will exist in addition to new flow generated by the proposed with the exception of the Tigard Sand and Gravel Growth Node because the proposed area overlays this node.

3. No road restoration or surfacing costs are included because it is assumed that the pipelines will be constructed as part of a new road project.

4. No dedicated transmission line will be necessary to serve these users, but only that the existing Boones Ferry PRV station will need to be upgraded.

5. In accordance with the current planning studies, General Light Industrial users will require 1,000 gallons per acre per day (gpad).

6. MDD/ADD peaking factor of 2 will be used.

Definition of Terms

Demand refers to total water use; that is, the sum of consumption (residential, commercial, industrial, and construction) and public uses (for example fire fighting or hydrant flushing), plus water lost to leakage.

The demand at any time includes the sum of the production form the operating wells plus the outflow from storage (or minus the inflow rate into the reservoirs if they are filling).

Other demand terms used in this report include:

Annual Average Demand (AAD): total volume of water produced in a year divided by 365 days

Maximum Month Demand (MMD): total volume of water produced in the highest demand month divided by the number of days in that month

Maximum Day Demand (MDD): maximum water delivered in a single day of a calendar year

Peak Hour Demand (PHD): highest use hour during the MDD.

While the above terms are referred to as 'demands', they are commonly defined in terms of production since it is easier to quantify. The most common units for expressing these demands are millions of gallons per day (mgd). One mgd is equivalent to 695 gallons per minute (gpm) or 1.55 cubic feet per second (cfs).

Water Demand Projections

Water Demand

Novellus, a current City customer, was used to estimate the demand of a "High-Tech" user. The estimated buildout demand for the Novellus facility located on 60-acre site is 1.3million gallons (MG) ADD and 1.5 MG MDD. This demand was used in the Water Master Plan and the Source Option Study.

Novellus ADD = 1.3 MG/60 acres = 21,667 gpad

Novellus MDD = 1.50 MG/60 acres = 25,000 gpad

So the incremental increase is as follows:

(21,667 - 1000) gpad x 88 acres = 1,818,696 gpd ADD

(25,000 – 2000) gpad x 88 acres = 2,024,000 gpd MDD

The "incremental demand" represents the additional flow over and above what would be required if all land was developed as General Light Industrial. A summary of the demands used in this evaluation are presented in Table 5.

Table 5

Water Demands

Land Use	Acres	ADD (gpd)	MDD (gpd)
General Light Industrial	270	270,000	540,000
Incremental "High Tech" Flows	88	1,818,696	2,024,000

Note: Assumes 1,000 gpad General Light Industrial with an incremental increase for up to 88 acres developed with high water use industry such as chip manufacturer or other High Tech user.

Water System Improvements

Storage

Distribution system storage is needed to meet several needs: daily fluctuations in demand, fire flows, and emergencies. Depending on future regulations, storage may be required for disinfection contact time. Although storage must satisfy all criteria, the volume of storage provided, and, therefore, the level of system reliability can vary from system to system. The storage components and the recommended design criteria for each are described in the following paragraphs. Certain storage components are typically sized based on average annual demand (AAD) and/or maximum day demand (MDD).

Equalization Storage

Typically, supply and treatment facilities are sized to meet the design MDD. The difference between the MDD and the peak hour demand is met by the peaking or equalization portion of storage. Equalization storage is used during the daytime high-demand periods and is replenished during the nighttime low-demand period.

The amount of equalization storage that is needed varies from system to system. It depends on factors such as system size and the proportion of industrial, commercial, and residential users. Typically, industrial customers use water at relatively even rates over a 24-hour period.

Fire Storage

The distribution storage provides a reserve for fighting fires. A storage component equal to 3,500 gpm fire flow for an unknown duration is required. In the case of a fire, the demand could be almost unlimited, depending on the severity of the fire, and this demand would be spread out along the community's edge that was closest to the fire.

Emergency Storage

The purpose of emergency or standby storage is to provide a measure of reliability should sources fail or unusual conditions impose higher demands than anticipated. The minimum emergency storage requirement for systems served by one source is typically different than for systems served by multiple sources.

Sizing the distribution storage for emergencies is somewhat subjective. The sizing depends on how vulnerable the system is to failures, and on how much risk the Utility and community are willing to accept. Typical emergency, or standby, storage volumes range from one and one-half the average annual demand (AAD) to one and one-half the MDD. For any given system, this typically represents a wide range in storage volume.

Pipeline

Pipe sizing is based on MDD using nominal pipe diameters. These flows require 10 inch pipe, for the General Light Industrial and High Tech users, respectively. Connections to the loop system will be 10" for both options.

Cost Estimate

Preliminary cost estimates are shown in Table 6. Table 6 summarizes costs associated with new construction within and adjacent to the SWTCP area. Costs for off-site improvements, reservoir and water transmission pipeline, were obtained from the 2003 Water Master Plan.

Table 6

Cost Estimate

Component		Cost Light Industrial
Storage (3, 4)	1.9 MG	$874,000
Distribution Piping (5)	22,850 lf	$2,285,000
Off-Site Piping (6)		$3,148,150
Sub-Total		6,307,150
Design/Administrative/Legal Costs	30%	1,892,150
Total		$8,200,000

Notes:

1. Costs include engineering, administrative costs and contingencies.
2. The Level B Boones Ferry PRV will need to be upgraded to a 16" valve, within a new vault if high tech user option selected. It is assumed that this will cost approximately $200,000.
3. 2003 Water System Master Plan recommends a 1.9 MG reservoir (CIP Project R-3) be constructed
4. Storage cost is based on $0.46/gallon; $0.60/gallon including design and administrative cost
5. 10" distribution pipe within the SWTCP area; $100/lf based on 3.5' cover, ductile iron pipe
6. Includes 2003 Water Master Plan CIP Pipeline Project Numbers P-1 (Partial), P-3, P-6, P-15, P-16
7. The costs include design and administrative costs, as well as 30% contingencies.

Water Source Cost

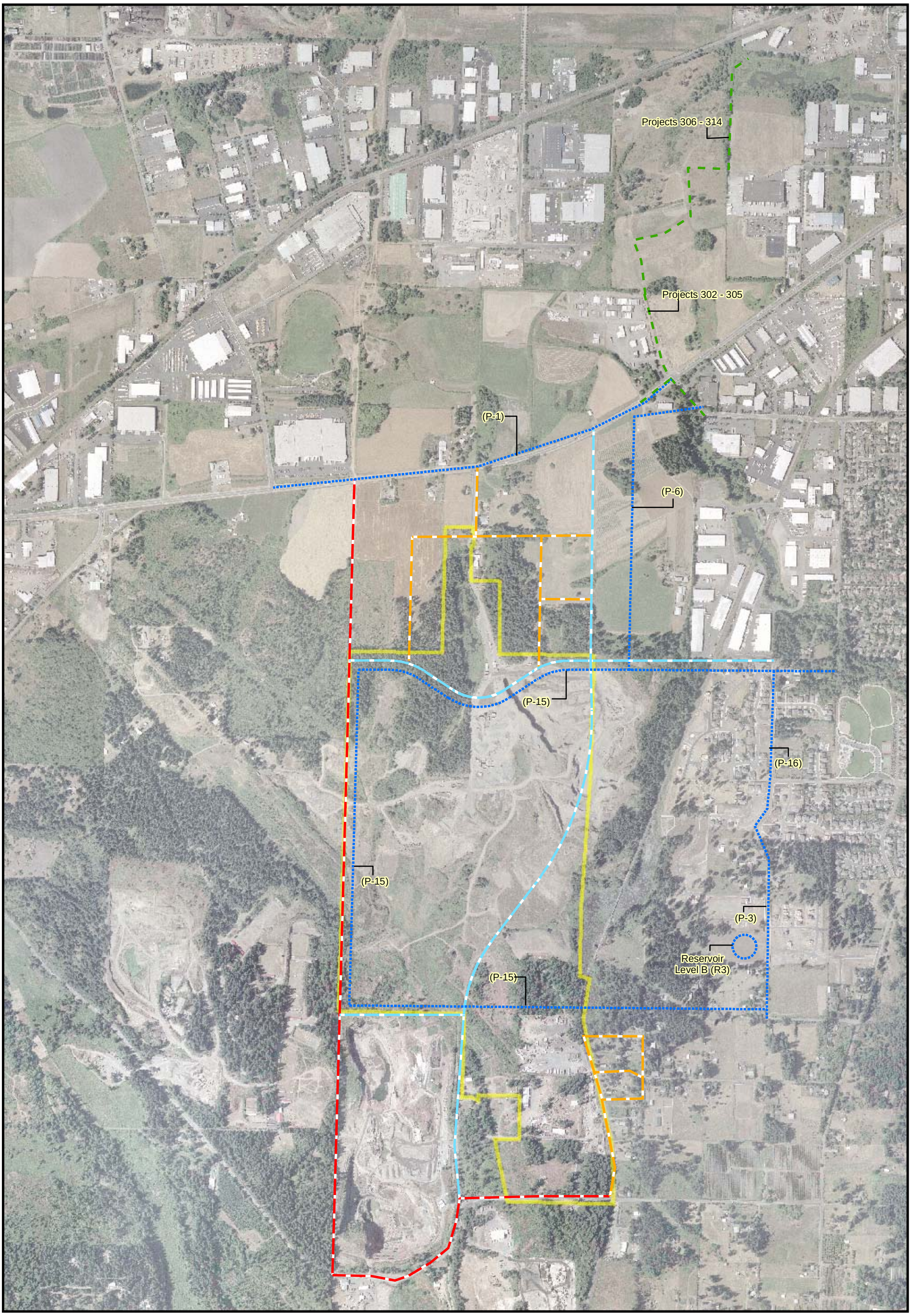
Improvements required to deliver the additional flows to the City are based on the MDD. The *Source Option Study*, by Murray, Smith, and Associates and CH2M HILL, estimated that an additional supply of 9 MG would cost approximately $42,295,000. It is assumed that additional source would be acquired through wholesale purchase from the Portland Water Bureau. These costs include engineering and contingencies. This represents a cost of about $4.70 million per MG. Using this as a unit cost for water supply, Table 7 presents the resulting estimated supply costs for serving the proposed area. Since the cost of new supply to serve a High-Tech user is very high and the provided estimate is an "order-of-magnitude" analysis, a more detailed study is recommended, if this option is to be considered further.

Table 7

Additional Supply Cost

Component	Volume Required (MDD), GPD	Estimated Cost
Light-Industrial	620,000	$2.91 million
Incremental High-Tech	4,600,000	$21.6 million

Notes: Based on $4.70 million per MG new supply including engineering and contingencies.



Legend

- Bluff/Cipole Lateral (with project number) from 2002 Sewer Master Plan
- Water Transmission Pipeline (with project numbers) from August 2003 Water Master Plan

Alternative 3

- Proposed Arterial
- Proposed Local Street
- Proposed Collector
- Concept Plan Area

N

0 375 750 1,500 Feet

Data Source: Metro, CH2M HILL

Figure 1

Water and Sanitary Sewer Utilities

Southwest Tualatin Concept Plan

CH2MHILL

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17355 SW Boones Ferry Rd.
Lake Oswego, OR 97305
Phone (503) 635-3618
Fax (503) 635-5395

Memorandum

Date: May 4, 2005

To: Dave Simmons, CH2M-Hill

cc: Doug Rux, City of Tualatin

From: Todd Chase, Otak, Inc.

Subject: Southwest Tualatin Concept Plan, Task 6.3 Anticipated Capital Costs, Transportation

Introduction

This memorandum identifies a draft set of unit costs for transportation capital improvements associated with the Southwest Tualatin Concept Plan land use/transportation alternatives.

Approach

Three land use and transportation alternatives have been formulated following review by the Technical Advisory Committee and public at large. The three alternatives were evaluated in terms of their on-site and adjacent off-site related roadway and pathway improvements by Otak. The three alternatives are illustrated in the following Concept Plans.

Unit costs were prepared based on local and regional experience with a variety of roadway and pathway projects. Locally, the city recently funded the construction of a 1,000 linear foot segment of 115th Avenue at a cost of approximately $475,390 ($475 per linear foot). This cost funded a half-street improvement, including a new travel lane, one bicycle lane, one sidewalk, street illumination and additional public right of way.

The unit cost assumptions are provided in the Appendix.

Capital Cost Estimates

A preliminary estimate of transportation costs is provided in this memorandum based on planning level unit costs and linear foot estimates from each Concept Plan alternative. This cost analysis does not include extraordinary cost for right of way acquisition, permitting or geotechnical soils work.

The preliminary cost estimates also assume typical design sections for collector and arterial street improvements. The collector roads are assumed to be 2-lanes with bike lanes, sidewalks, underground utilities and street illumination. The arterial road (124th Avenue) is assumed to be four lanes with bike lanes, sidewalks, median/landscaping, and street illumination, and a center turn lane. We have assumed that the pathways would be comprised of soft trails (pervious surface) within the power line easements, and asphalt trails around the lakes.

All of the Concept Plan Alternatives assume two bridges that would function as grade separated rail crossings and provide four travel lanes, bicycle lanes and sidewalks on a single pre cast concrete clear-span structure.

Total capital costs for roads and pathways are estimated to cost approximately $42 million (including full section of 124th Avenue). As indicated in Table 2, the total costs to the City of Tualatin are expected to range from $40.7-$40.8 million for Alternatives 2 and 3 to $42.36 million for Alternative 1.

Table 1
Preliminary Capital Cost Estimates, SW Tualatin Concept Plan*

	Alt. 1	Alt. 2	Alt. 3
Arterial (124th Ave.)	$20,380,000	$20,380,000	$20,380,000
Collectors	$14,640,000	$12,600,000	$12,780,000
North Bridge (RRxing)	$2,500,000	$2,500,000	$2,500,000
South Bridge (RRxing)	$2,500,000	$2,500,000	$2,500,000
Intersections/Signals	$1,462,000	$1,687,000	$1,687,000
Pedestrian/Trails	$878,000	$1,043,000	$993,000
Total	**$42,360,000**	**$40,710,000**	**$40,840,000**

* planning level capital cost, excludes right-of-way acquisition, environmental mitigation, and permitting.
Source: Otak, Inc.

Next Steps

These draft cost estimates shall be revised based upon comments and feedback from the City and ODOT per the contract scope of services. The project team will issue a revised set of costs and apply the criteria to the draft concepts prior to the next TAC meeting and public open house.

APPENDIX TABLES AND FIGURES

Summary of Unit Capital Cost Assumptions
(2005 dollars)

Transp. Improvement	Cost*	Units
New 2-Lane Collector (bike, sidewalks, illumiation)	$1,200	linear foot
New 4-Lane Arterial (median, bike, sidewalks, turnlanes, illumination)	$2,200	linear foot
Widened 2-Lane Collector (bike, sidewalks, turnlanes, illumination)	$900	linear foot
Widened 4-Lane Arterial (median, bike, sidewalks, turnlanes, illumination)	$1,800	linear foot
Traffic Signal (new)	$225,000	each
Traffic Signal (enhanced)	$125,000	each
Pathway (6 ft. softscape)	$50	linear foot
Pathway (8 ft. asphalt)	$90	linear foot
Pedestrian Underpasses	$250,000	each
Bridge (4-lane plus sidewalks and bikelanes for 300 feet)**	$2,500,000	allowance

* planning level capital cost, excludes right-of-way acquisition, environmental mitigation, and permitting.

** Actual cost is expected to be $135 per square foot for the structure, with 50% allowance for design/permitting and 20% contingency. A 140 foot clear span structure is assumed for this analysis.

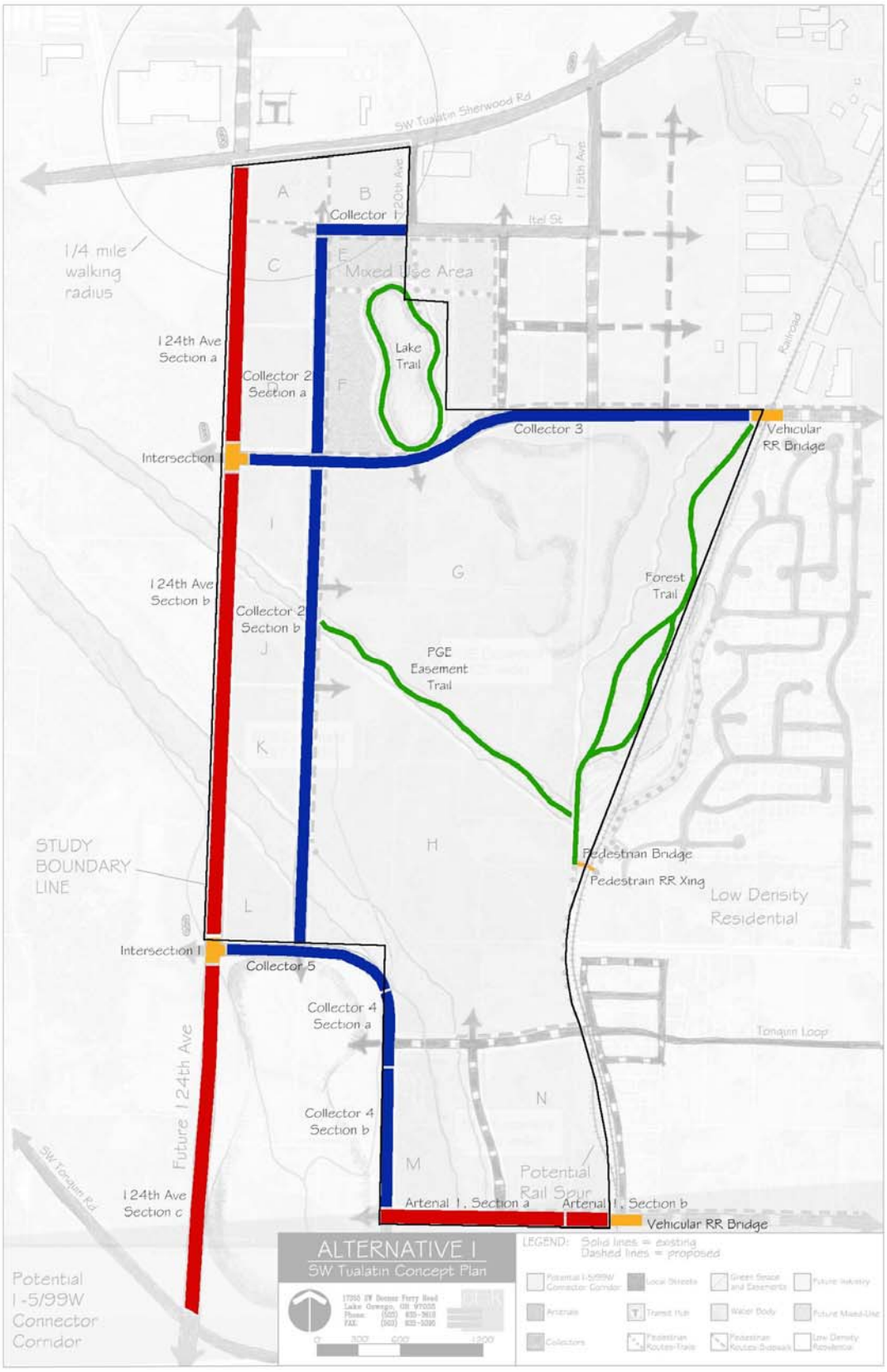
SW Tualatin Concept Plan
Estimated Linear Feet of Collector and Arterial Roads and Pathways
ALTERNATIVE ONE

LOCATION	MEASURE	UNITS	UNIT COST	TOTAL COST
ARTERIALS				
124th Ave (half street)				
Section a**	2000	LF	$2,200	$4,400,000
Section b**	3400	LF	$2,200	$7,480,000
Section c**	2500	LF	$2,200	$5,500,000
Arterial 1				
Section a**	1300	LF	$1,800	$2,340,000
Section b**	300	LF	$2,200	$660,000
Subtotal	**9500**	LF		**$20,380,000**
COLLECTORS				
Collector 1	650	LF	$1,200	$780,000
Collector 2				
Section a	1550	LF	$1,200	$1,860,000
Section b	3450	LF	$1,200	$4,140,000
Collector 3	3600	LF	$1,200	$4,320,000
Collector 4				
Section a	650	LF	$1,200	$780,000
Section b	1050	LF	$1,200	$1,260,000
Collector 5	1250	LF	$1,200	$1,500,000
Subtotal	**10950**			**$14,640,000**
N. Vehicle Bridge	1	ALLOW	$2,500,000	$2,500,000
S. Vehicle Bridge	1	ALLOW	$2,500,000	$2,500,000
Subtotal	**460**			**$5,000,000**
INTERSECTIONS w/Signals				
TRAFFIC SIGNALS	2	ALLOW	$225,000	$450,000
Intersection I	230	LF	$2,200	$506,000
Intersection II	230	LF	$2,200	$506,000
Subtotal				**$1,462,000**
RR Crossing*				
Grade Separated	2	*		
At Grade	1	*		
PEDESTRIAN/TRAILS				
Lake Trail	3200	LF	$90	$288,000
Forest Trail	4400	LF	$50	$220,000
PGE Easement Trail	2400	LF	$50	$120,000
Pedestrian RR Underpass	1	ALLOW	$250,000	$250,000
Subtotal				**$878,000**
Grandtotal				**$42,360,000**

Source: Otak, Inc.

* included with bridge crossings, and other roadway project cost estimates.

** assumes half-street cost borne by City of Tualatin and/or developer.


SW Tualatin Sherwood Rd
120th Ave
115th Ave
Itel St
Railroad
A
B
C
E
Mixed Use Area
F
G
H
I
J
K
L
M
N
1/4 mile walking radius
Collector 1
124th Ave Section a
Collector 2 Section a
Lake Trail
Collector 3
Vehicular RR Bridge
Intersection 1
124th Ave Section b
Collector 2 Section b
Forest Trail
PGE Easement Trail
STUDY BOUNDARY LINE
Pedestrian Bridge
Pedestrain RR Xing
Low Density Residential
Intersection 1
Collector 5
Collector 4 Section a
Collector 4 Section b
Tonquin Loop
Future 124th Ave
SW Tonquin Rd
124th Ave Section c
Potential Rail Spur
Artenal 1, Section a
Artenal 1, Section b
Vehicular RR Bridge
Potential I-5/99W Connector Corridor
ALTERNATIVE I
SW Tualatin Concept Plan
LEGEND: Solid lines = existing
Dashed lines = proposed

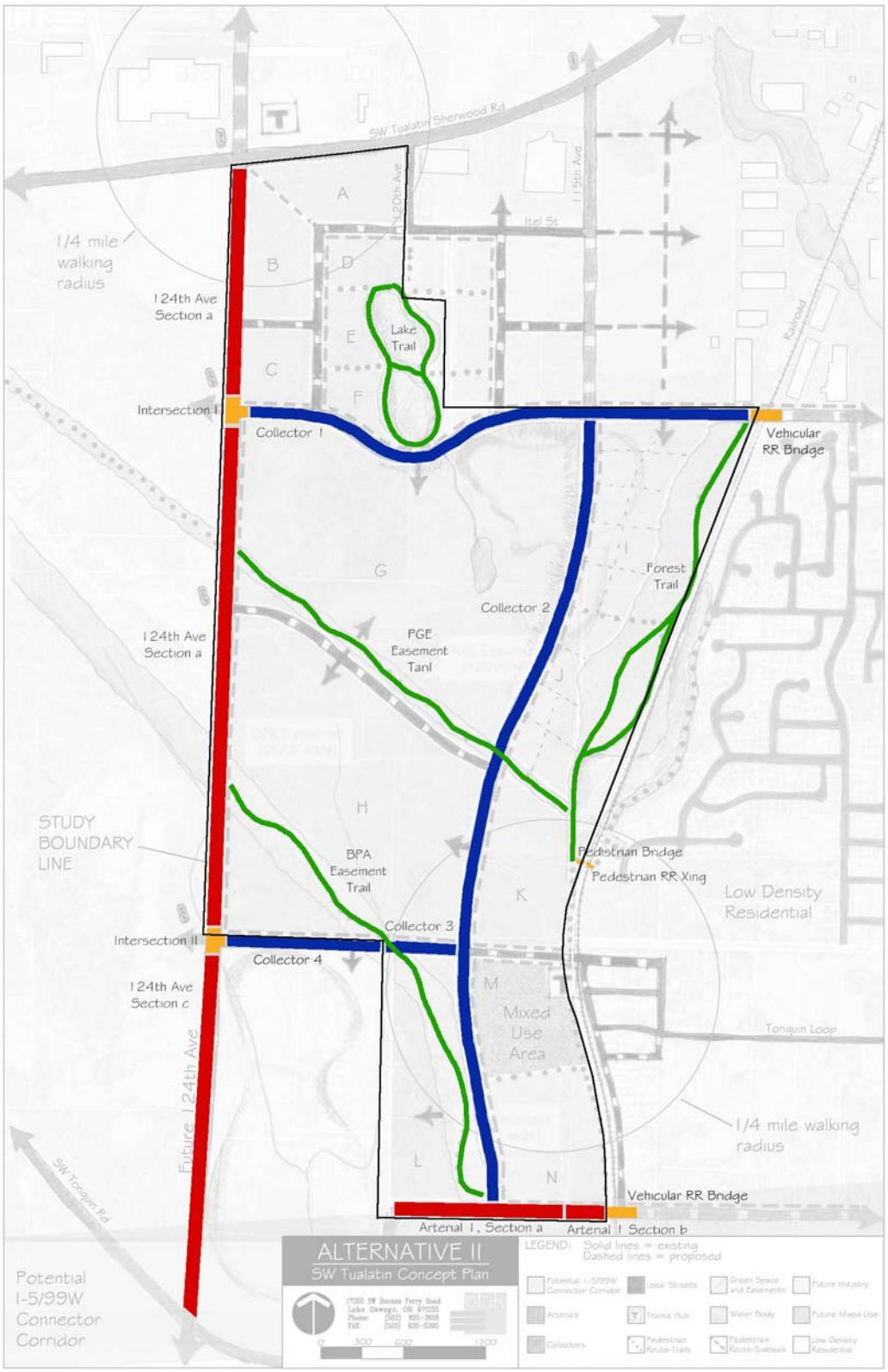
SW Tualatin Concept Plan
Estimated Linear Feet of Collector and Arterial Roads and Pathways
ALTERNATIVE TWO

LOCATION	MEASURE	UNITS	UNIT COST	TOTAL COST
ARTERIALS				
124th Ave				
Section a**	1700	LF	$2,200	$3,740,000
Section b**	3600	LF	$2,200	$7,920,000
Section c**	2600	LF	$2,200	$5,720,000
Arterial 1				
Section a**	1300	LF	$1,800	$2,340,000
Section b**	300	LF	$2,200	$660,000
Subtotal	**9500**			**$20,380,000**
COLLECTORS				
Collector 1	3700	LF	$1,200	$4,440,000
Collector 2	5100	LF	$1,200	$6,120,000
Collector 3	450	LF	$1,200	$540,000
Collector 4	1250	LF	$1,200	$1,500,000
Subtotal	**9250**			**$12,600,000**
N. Vehicle Bridge	1	ALLOW	$2,500,000	$2,500,000
S. Vehicle Bridge	1	ALLOW	$2,500,000	$2,500,000
INTERSECTIONS w/Signals				
TRAFFIC SIGNALS	3	ALLOW	$225,000	$675,000
Intersection I	230	LF	$2,200	$506,000
Intersection II	230	LF	$2,200	$506,000
Subtotal				**$1,687,000**
PEDESTRIAN/TRAILS				
Lake Trail	3200	LF	$90	$288,000
Forest Trail	4400	LF	$50	$220,000
PGE Easement Trail	2400	LF	$50	$120,000
BPA Easement Trail	3300	LF	$50	$165,000
Pedestrian RR Underpass	1	ALLOW	$250,000	$250,000
Subtotal				**$1,043,000**
Grandtotal				**$40,710,000**

Source: Otak, Inc.

* included with bridge crossings, and other roadway project cost estimates.

** assumes half-street cost borne by City of Tualatin and/or developer.


SW Tualatin Sherwood Rd
120th Ave
115th Ave
Itel St
Railroad
1/4 mile walking radius
124th Ave Section a
Lake Trail
Intersection I
Collector 1
Vehicular RR Bridge
Forest Trail
Collector 2
PGE Easement Tanl
124th Ave Section a
STUDY BOUNDARY LINE
BPA Easement Trail
Pedestrian Bridge
Pedestrian RR Xing
Low Density Residential
Intersection II
Collector 3
Collector 4
124th Ave Section c
Mixed Use Area
Tonquin Loop
Future 124th Ave
1/4 mile walking radius
SW Tonquin Rd
Vehicular RR Bridge
Artenal 1, Section a
Artenal 1 Section b
Potential I-5/99W Connector Corridor
ALTERNATIVE II
SW Tualatin Concept Plan
LEGEND: Solid lines = existing
Dashed lines = proposed

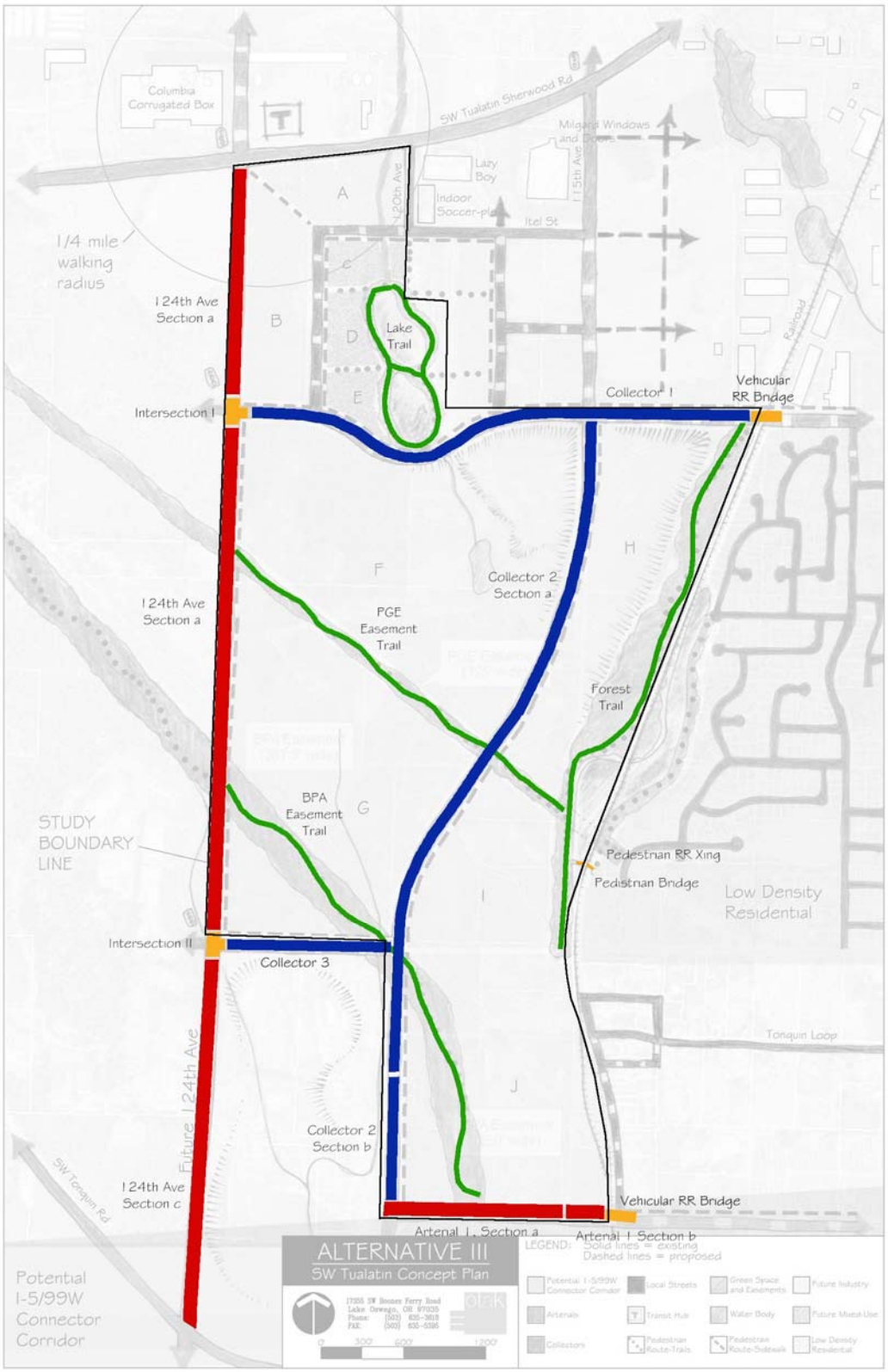
SW Tualatin Concept Plan
Estimated Linear Feet of Collector and Arterial Roads and Pathways
ALTERNATIVE THREE

LOCATION	MEASURE	UNITS	UNIT COST	TOTAL COST
ARTERIALS				
124th Ave				
Section a**	1700	LF	$2,200	$3,740,000
Section b**	3600	LF	$2,200	$7,920,000
Section c**	2600	LF	$2,200	$5,720,000
Arterial 1				
Section a**	1300	LF	$1,800	$2,340,000
Section b**	300	LF	$2,200	$660,000
Subtotal	**9500**			**$20,380,000**
COLLECTORS				
Collector 1	3700	LF	$1,200	$4,440,000
Collector 2				
Section a	4850	LF	$1,200	$5,820,000
Section b	950	LF	$1,200	$1,140,000
Collector 3	1150	LF	$1,200	$1,380,000
Subtotal	**9500**			**$12,780,000**
N. Vehicle Bridge	1	ALLOW	$2,500,000	$2,500,000
S. Vehicle Bridge	1	ALLOW	$2,500,000	$2,500,000
				$5,000,000
INTERSECTIONS w/Signals				
TRAFFIC SIGNALS	3	ALLOW	$225,000	$675,000
Intersection I	230	LF	$2,200	$506,000
Intersection II	230	LF	$2,200	$506,000
Subtotal				**$1,687,000**
PEDESTRIAN/TRAILS				
Lake Trail	3200	LF	$90	$288,000
Forest Trail	4400	LF	$50	$170,000
PGE Easement Trail	2400	LF	$50	$120,000
BPA Easement Trail	3300	LF	$50	$165,000
Pedestrian RR Underpass	1	ALLOW	$250,000	$250,000
Subtotal				**$993,000**
Grandtotal				**$40,840,000**

Source: Otak, Inc.

* included with bridge crossings, and other roadway project cost estimates.

** assumes half-street cost borne by City of Tualatin and/or developer.


Columbia Corrugated Box
SW Tualatin Sherwood Rd
Milgard Windows and Doors
Lazy Boy
Indoor Soccer-plex
Itel St
115th Ave
102th Ave
Railroad
1/4 mile walking radius
124th Ave Section a
Lake Trail
Intersection I
Collector I
Vehicular RR Bridge
Collector 2 Section a
PGE Easement Trail
Forest Trail
BPA Easement Trail
STUDY BOUNDARY LINE
Pedestrian RR Xing
Pedestrian Bridge
Low Density Residential
Intersection II
Collector 3
Tonquin Loop
Future 124th Ave
Collector 2 Section b
124th Ave Section c
SW Tonquin Rd
Vehicular RR Bridge
Artenal I, Section a
Artenal I Section b
Potential I-5/99W Connector Corridor
ALTERNATIVE III
SW Tualatin Concept Plan
LEGEND:
Solid lines = existing
Dashed lines = proposed

Memorandum

17355 SW Boones Ferry Rd.
Lake Oswego, OR 97035
Phone (503) 635-3618
Fax (503) 635-5395

To:	Dave Simmons/CH2M-Hill; Elizabeth Stepp and Doug Rux/City of Tualatin
From:	Todd Chase, AICP
Date:	July 13, 2005
Subject:	Task 6. Final Draft Annexation Cost Impact Analysis, SW Tualatin Concept Plan
Project #:	12621

Background

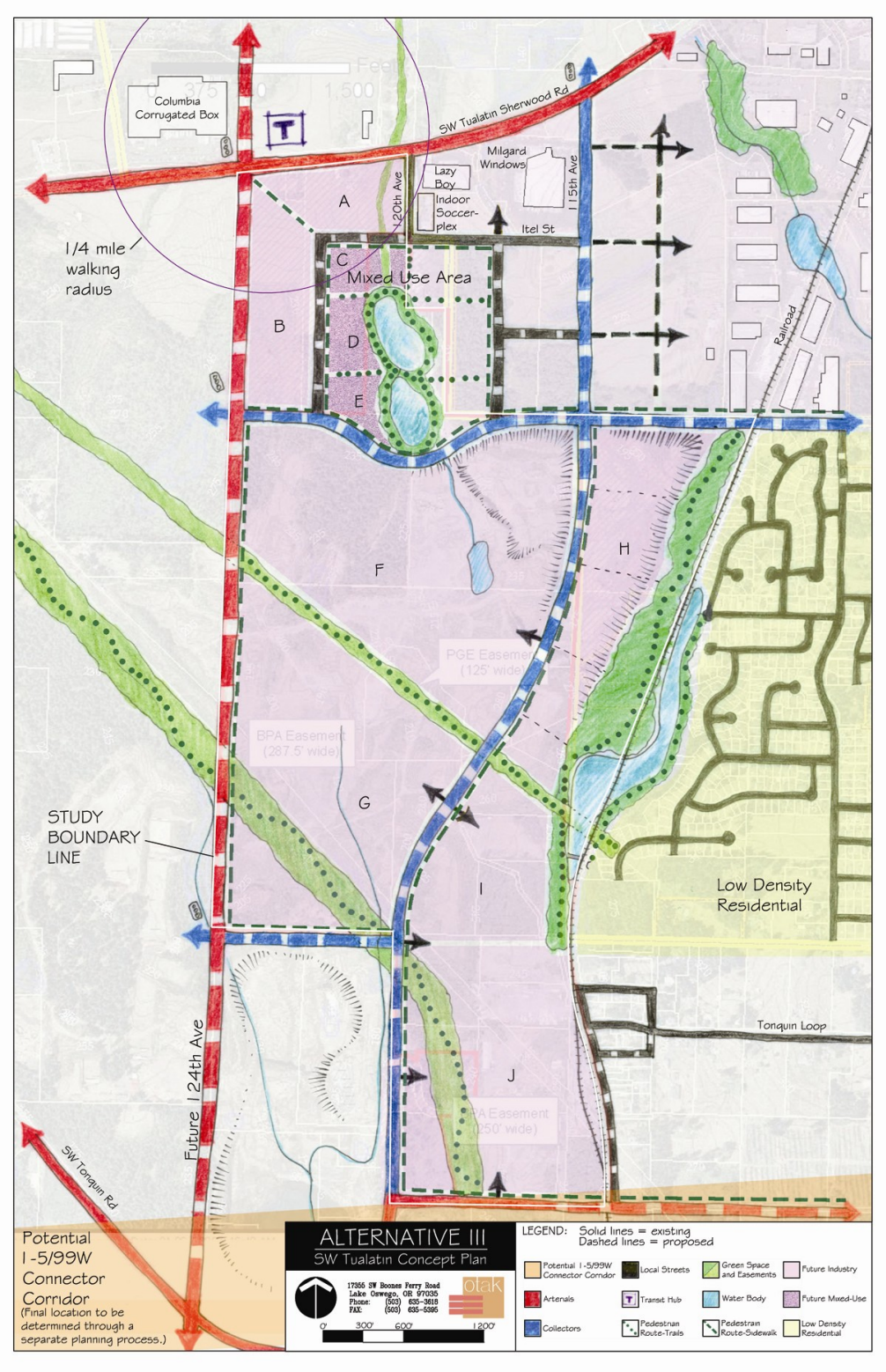
The SW Tualatin Concept Plan will guide the future development of the 431-acre area added to the Urban Growth Boundary (UGB) by Metro in December 2002, to help meet the industrial jobs land demand in the region in the next 20 years. The plan includes a site analysis and a plan for the land use pattern, transportation connections and the provision of urban facilities (water, sanitary sewer system, storm sewer system). The project will also result in an amendment to the Tualatin Development Code (TDC) and an addendum to the Tualatin Transportation System Plan (TSP). Ultimately, the project area will be annexed into the City with the City providing urban services.

The annexation of the area to the City of Tualatin and resulting development will generate revenues and costs for the City. A fiscal impact analysis is contained herein which presents the estimated revenue from property tax, franchise fees, and other revenue sources, if the area is annexed and developed – and compares it to the associated cost of development to the public sector. This analysis is based on Conceptual Development Alternative 3, the Technical Advisory Committee's preferred alternative for the SW Tualatin Concept Plan area.

Methodology

In 2003, the City of Tualatin commissioned a similar analysis of Metro Urban Reserve Study Areas 48 and 49. This report on the SW Tualatin Concept Plan study area is modeled on the previous work. The location of the subject property for the former Urban Reserve Areas 48 and 49 is generally consistent with the current 431-acre area being evaluated in this study, which is illustrated by Figure 1.

Figure 1. SW Tualatin Concept Plan, Alternative 3



General government responsibilities will be transferred to the City of Tualatin once the study area is annexed. With the increase of service responsibilities and costs, the City will receive revenues related to property values and business activities. If costs exceed revenues, a fiscal deficit is incurred; if revenues exceed costs, a surplus is generated. Underlying the analysis is the estimation of revenues and costs associated with annexation and development. Revenue and cost estimates are based on "drivers", which in this analysis are primarily employment, assessed property values or real market values.

The basic methodology includes the following steps:

1. Determine the land use pattern, employment, population, and assessed land value.
2. Estimate revenues associated with land values, employment and population.
3. Estimate costs of providing services.
4. Compare revenues and costs.
5. Estimate the capital costs of sewer, water, storm sewer, and street systems, upon annexation.
6. Estimate the costs of operations and maintenance (O&M) upon annexation.
7. Estimate the costs of revenues generated to serve this area.
8. Compare revenues and costs

This fiscal analysis is intended to be conservative in forecasting local public revenues that result from future development. The analysis assumes that all necessary "major" public transportation, water, and storm water facilities are constructed to serve the future capacity of the Concept Plan area, but only 75% of the site is developed by the year 2025. Revenue forecasts primarily take into account the existing rate structures in the current fiscal environment. Since there is much uncertainty over changing costs, changing revenues, development absorption, and dependency upon property taxes and franchise fees to fund government services, costs have been converted to constant 2005 dollar amounts. Policy makers and interested citizens should be aware that actual year-to-year fiscal performance of the SW Tualatin Concept Plan area may deviate significantly from the assumptions stated in this analysis; however, these assumptions are considered to be adequate for long-range planning purposes.

Assumptions

- This analysis focuses exclusively on the revenues and costs associated with the study area. Secondary impacts within the City that result from the development of the study area, such as increased population and business activity are not included.
- Upon annexation, general government services will transfer from Washington County, to the City of Tualatin, except for functions performed by Tualatin Valley Fire and Rescue, and Clean Water Services.
- The services provided to the study area will be the same (and at the same level) as those currently provided to City property owners, business, and residents.
- The analysis focuses on potential impacts to the City's general fund rather than user fees required to enable enterprise funds (for water, sewer, and parks) to breakeven. Where user fees are charged, it is assumed that the fee revenue will be adjusted as necessary to cover the additional costs of providing these services, which is an inherent requirement of local enterprise funds.

Study Area Land Use Pattern

The preliminary land use/transportation concept assumes a mix of new light industrial and business park industrial development on about 431 acres of existing property in unincorporated Washington County. The preliminary development concept (Alt. 3) is illustrated in Figure 1. The primary site access would be by way of 124th Avenue, with 115th Avenue providing secondary access. 124th Avenue would eventually connect with the planned 99W/I-5 Connector highway with an interchange near the southwest portion of the concept plan area. An employment mixed-use area surrounds the pond south of 120th Avenue. This mixed-use area would provide a combination of limited commercial services (e.g., restaurants, dry cleaning, day care, etc.) and allow limited office uses (could be located above commercial retail), research & development, and light industrial/flex space.

A wide landscape buffer area is located along the east side of the concept plan area to provide visual and noise mitigation for the existing single family housing area east of the rail road. A pedestrian/bicycle trail network provides important multimodal connections between adjacent neighborhoods and the emerging employment center. This network utilizes opportunities afforded by the planned open space buffers, ponds, and existing power line easement corridors.

While there were three development concept alternatives considered, this analysis is based on Alternative 3, which is anticipated to yield the most significant amount of buildable land area and is deemed to be the alternative most consistent with public and stakeholder expectations. Alternative 3 combines elements of Alternatives 1 and 2, and emerged as the preferred alternative at the March Open House based on citizen comments and Technical Advisory Committee (TAC) input, and was updated after the June Open House event.

The preliminary land use pattern is presented in Table 1.

Table 1. SW Concept Plan Preliminary Land Use Pattern*

Land Use	Acres
Gross Acres	431
Gross Buildable Acres*	352
Less Public Facilities**	70.4
Net Buildable Acres	281.6
Acres Developed by 2025***	211.2
Net Buildable Acres Developed by 2025	
Light Industrial	105.6
Business Park	105.6

**Based on Conceptual Development Alternative 3. The difference between gross acres and gross buildable acres accounts for public arterial/collector ROW, and areas restricted by wetlands and easements.*
*** Assumes 20% of gross buildable acres allotted to local street ROW.*
****Estimate by City of Tualatin that site is 75% built out by year 2025.*

Employment and Population

The forecasted year 2025 employment count for the SW Concept Plan area is shown in Table 2, below. The land use pattern assumes no residential development, and as such the study area population is zero.

Table 2. SW Concept Plan Employment Forecast*

Land Use	Acres	Employees
Business Park	105.6	1,204
Light Industrial	105.6	4,560
Total Employees		**5,764**

**Employment estimates provided by the City of Tualatin; assumes site is 75% buildout by year 2025.*

Assessed Land Values

Assessed value calculations were derived from the Study Area 48/49 Reports completed in September 2003. The assessed values (AV) are used to determine revenue from property taxes and other sources. As stated in the 2003 report, "to determine the assessed values, the City assigned values to the area based on the values of established businesses elsewhere in the City that most closely matched the City's assumed land uses for full development." The 2003 report utilized 1999 assessed values. For the purposes of this analysis, the 1999 values were adjusted to 2005 based on the percent change of assessed value for the entire City of Tualatin from 1999 to 2004. Table 3 presents the original 1999 AV from the 2003 report. Table 4 indicates the percent change in AV between 1999 and 2004, and Table 5 includes the adjusted AV for the comparison buildings. The AV of the comparison buildings was used to calculate the assessed values for the study area as shown in Table 6.

Table 3. 2004 Assessed Valuation Using Comparison Buildings

Land Use	2004 AV $/Acre	Average Building Sq. Ft. / Acre	Comparison
Business Park	$2,275,000	21,500	JAE, Radisys, IDT, Mentor Graphics
Light Industrial	$746,000	15,250	Light Speed, Portland Millwork, Suburban Door

Source: Study Area 48 (Partial) Fiscal Impact Analysis, September 22, 200; updated by City of Tualatin.

Table 4. Percent Change in Assessed Value, City of Tualatin 1999-2004

1999 AV	2004 AV	Annual Change (%)
$1,726,074,000	$1,940,993,000	2.5%

Source: Washington County Assessor.

Table 5. Adjusted Assessed Value from 1999 to 2005 (Comparison Buildings)

Land Use	2004 $AV/Acre	Adjusted 2005 $AV/Acre	% Change
Business Park	$2,275,000	$2,332,000	2.5%
Light Industrial	$746,000	$765,000	2.5%

Source: Washington County Assessor.

It should be noted that this analysis is intended to be consistent with Oregon property tax Measures 5, 47 and 50, which limit future property tax increases to new assessed valuation and existing overall assessed valuation to 3.0 percent per year. To keep this analysis conservative and in constant 2005 dollar amounts, we have assumed the existing property tax rate structure is "frozen" at 2005 conversion rates. In reality both assessed values and local government administration and infrastructure O&M costs should generally increase at approximately the same annual rate over the long term.

Table 6. Assessed Value Calculations by Land Use
SW Tualatin Concept Plan, Year 2025 *

Business Park	
Acres	105.6
2005 $AV/Acre	$2,332,000
Subtotal AV	**$246,000,000**
Light Industrial	
Acres	105.6
2005 $AV/Acre	$765,000
Subtotal AV	**$81,000,000**
Grand Total	
Acres	**211.2**
AV	**$327,000,000**

*Source:: Analysis by Otak, Inc. * Based on Conceptual Development Alternative 3 at 75% of total buildout.*

Revenue Estimates

For each revenue estimate, a "driver" is identified which determines the amount of the revenue generated. For property taxes, franchise fees, and land use fees the driver is either assessed or real market property value. For business licensing and court fines, the driver is employment. For the state shared revenue and subdivision fees, the driver is residential population. Given that there is no residential zoning proposed for the study area, these fees are zero. After determining the revenue driver, a per unit revenue driver estimate is obtained based on City of Tualatin budget information, and multiplied by the analogous driver for the area to obtain the revenue estimate for the study area under 75% of full development.

Revenue estimates by source, assuming 75% of full development at a 20-year horizon and constant year 2005 dollars, are presented in Table 7. For the revenue estimates that were taken from the City of Tualatin budget, the budgeted amounts reflect the 2003/2004 fiscal year. For revenue estimates that were taken from the 2003 report (which reflected 1999 revenue estimates), they were adjusted to 2005 figures according the percent change in consumer price index for the 1999-2005 time period. Please note that these preliminary estimates are intended to be conservative annual average forecasts of annual revenues to the City of Tualatin attributed to new development in the SW Tualatin Concept Plan area. It is likely that annual revenues may at times significantly vary from these annual average forecasts. For example, revenues from land use application fees may be much greater than the annual average amount shown during early development years, but taper off as the subject site approaches buildout.

Table 7. Annual Revenue Forecast
SW Tualatin Concept Plan, Year 2025 *

Revenue Source	Annual Revenue
Property Tax	$741,000
Franchise Fees	$173,000
State Shared Revenues	-
Cigarette Tax	-
OLCC	-
Hotel/Motel Tax	-
Court Fines	$31,000
Business License Fees	$38,000
Land Use Fees**	$10,000
Total Annual Revenues	**$993,000**

*Source: Analysis by Otak, Inc. * Based on Conceptual Development Alternative 3 at 75% of total buildout.*
*** Includes fee revenues for land use development applications only, not comprehensive plan amendments and zone changes.*

Cost Estimates

This analysis evaluates three types of fiscal costs: 1) annual administrative (staff) costs; 2) annual operating and maintenance costs (associated with new infrastructure and facilities); and 3) capital costs associated with new public roads, trails, open space and utilities.

The administrative cost of providing services to the SW Tualatin Concept Plan study area is estimated by determining the costs for providing current level of service in Tualatin. The analysis excludes capital costs and operations and maintenance costs, which are summarized in Table 11. Only costs covered by general fund revenues, and not user fees are included in the analysis. The methodology and cost estimates are modeled on the Study Area 48 and 49 reports and parallel the steps presented in the revenue estimate section, above.

The administrative O&M cost assumptions include one additional part-time police officer, and one additional employee for general government administration, and an amount for planning that is equal to the forecasted annual average land use cost associated with development of the study area. It should be noted that a $10,000 allowance has been allocated to Parks Administration, since some time would be required to monitor public trail construction and manage any contractors doing trail

maintenance (note: parks & open space costs are reflected in Table 9). Also, no administrative O&M cost increase has been assumed for community services (library and recreation) since those costs are more directly related to local population, not industrial employment. Table 8 summarizes the annual administration cost estimate.

Table 8. Annual Administrative Cost Summary at 75% of Total Buildout
SW Tualatin Concept Plan, Year 2025 *

Category	Annual Costs
Police	$42,500
Operations-Park Administration**	$10,000
Community Services – Library and Recreation	-
General Government Administration	$20,000
Planning	$10,000
Annual Administrative Costs	**$82,500**

*Source: Analysis by Otak, Inc. * Based on Conceptual Development Alternative 3.*
*** Note, an allowance of $10,000 in public administrative staff time has been allocated to parks, trails and public open space.*

Fiscal Analysis

A comparison of the cost and revenue information from the preceding sections is presented in Table 9 and demonstrates the net fiscal impact to the City of Tualatin if the study area is annexed and developed. The results are shown in constant 2004 dollars. As shown, total revenue sources total $993,000 once the area is 75% developed. Annual operations and maintenance costs total $82,500. The area will therefore run a surplus of $910,500 at 75% of full development.

Table 9. Annual Average Revenue and Cost Summary
SW Tualatin Concept Plan, Years 2005 to 2025 *

Annual Revenue Sources	**2005**	**2010**	**2015**	**2025**
Property Tax	$115,000	$370,000	$555,000	$741,000
Franchise Fee	$43,000	$87,000	$130,000	$173,000
State Shared	-	-	-	-
Cigarette Tax	-	-	-	-
OLCC	-	-	-	-
Hotel/Motel	-	-	-	-
Court Fines	$8,000	$16,000	$23,000	$31,000
Business Licensing	$10,000	$19,000	$29,000	$38,000
Land Use Application Fees	-	$10,000	$10,000	$10,000
Total Annual Revenues	**$176,000**	**$502,000**	**$747,000**	**$993,000**
Annual Admin. Costs	**2005**	**2010**	**2015**	**2025**
Police	$11,000	$21,000	$32,000	$42,500
Operations – Parks Administration	$2,500	$5,000	$7,500	$10,000
Community Service – Recreation and Library	-	-	-	-
General Government Administration	$5,000	$10,000	$15,000	$20,000
Planning	$10,000	$10,000	$10,000	$10,000
Total Annual Costs	**$28,500**	**$46,000**	**$64,500**	**$82,500**
Surplus (Deficit)	**$147,500**	**$456,000**	**$682,500**	**$910,500**

*Source: Analysis by Otak, Inc. * Based on Conceptual Development Alternative 3 at 75% of total buildout.*

Capital Costs

Total capital costs for major roads, sewer, water, and storm water systems have been estimated for complete (100%) buildout of the SW Concept Plan area. Capital cost estimates have been prepared for collector and arterial roads and trunk line systems for sewer and water facilities. Since a project phasing plan has not been developed, we have not attempted to determine which of the "major" public infrastructure facilities would be completed by year 2025, and instead have conservatively assumed that all major facilities would be completed by year 2025 to accommodate the 75% buildout that has been projected for that same time period. For a more detailed description of major public infrastructure costs and facility requirements please refer to separate memoranda on capital costs and infrastructure.

Capital costs are primarily derived based on unit-cost estimates for roads, water and sewer systems. Unit costs were prepared based on local and regional experience with a variety of roadway and pathway projects. Locally, a developer recently funded the construction of a 1,000 linear foot segment of 115th Avenue at a cost of approximately $475,390 ($475 per linear foot) to pay for roadway design and construction (no right of way acquisition). This cost funded a half street improvement, including a new travel lane, one bicycle lane, one sidewalk, street illumination and additional public right-of-way.

The preliminary cost estimates shown in Table 10 assume design, construction, and right-of-way acquisition for collector and arterial street improvements, including roadway, bicycle and pedestrian facilities and storm drainage facilities, and street illumination and signage. The capital cost estimates also reflect major off-site sewer and water systems improvements, and trunk lines along major arterial and collector roads, but do not include extraordinary costs that may or may not be required to complete the "major" public infrastructure systems. Examples of extraordinary costs include special right of way acquisition or easements required for steep slopes and storm drainage outside standard right-of-way design sections, wetland permitting, special geotechnical soils work, special environmental mitigation, wetland enhancements, and business or residential relocations. This approach to cost estimating is considered to be adequate for long-range planning purposes. Please refer to separate technical memoranda on infrastructure requirements and capital costs for a more detailed description of required transportation, and water and sewer utilities.

The preliminary cost estimates also assume typical design sections for collector and arterial street improvements. The collector roads are assumed to be 2-lanes with bike lanes, sidewalks, underground storm drainage, and street illumination. The arterial road (124th) is assumed to be four lanes with bike lanes, sidewalks, landscaped median, street illumination, and a center turn lane. Traffic signals are assumed to be enhanced or added at Tualatin Sherwood Highway and 124th, and along 124th Avenue. We have assumed that the pathways would be comprised of soft trails (pervious surface) within the power line easements, and concrete trails around the ponds.

Table 10. Capital Costs, SW Tualatin Concept Plan *

System	Cost**
Arterial (124th)	$20,380,000
Collectors	$12,780,000
Bridge Structures	$5,000,000
Intersection/Signals	$1,687,000
Pedestrian/Trails	$993,000
Water	$8,200,000
Sanitary Sewer	$8,600,000
Stormwater Drainage	$500,000
Total Capital Costs	**$58,140,000**

*Source: Otak, Inc. and CH2M-Hill. * Based on Conceptual Development Alternative 3.*
*** All costs stated in constant year 2005 dollars, at complete (100%) buildout. Includes "ordinary" right-of-way acquisition and design costs.*

Operations and Maintenance Costs

In addition to the local public administration costs for police, and general government administration/planning, there will be added costs to maintain the expanded road, water, stormwater drainage and sewer systems. The City of Tualatin will be the entity responsible for maintaining the public street and storm drainage system, and is the likely provider for water, sewer, parks and trails.

Table 11. Summary of Annual Operations &Maintenance Cost Elements
SW Tualatin Concept Plan *

Operations & Maintenance Cost Element	Needed Units	Units	Cost/Unit**	Additional O&M Costs
Water System	3.6	Miles	$42,000	$151,000
Sanitary Sewer System	3.6	Miles	$58,000	$209,000
Road System	3.6	Miles	$28,000	$101,000
Trail System	2.3	Miles	$10,000	$23,000
Special Maintenance***	Allowance			$50,000
Total Estimated O & M Costs				**$534,000**

*Source: Analysis by Otak, Inc. * Based on Conceptual Development Alternative 3.*
*** Costs are in year 2005 dollars at 100% buildout.*
****May include public maintenance and/or lease payments for public-easements on designated open space and natural areas.*

Construction Impacts

In addition to the direct fiscal impacts development would have on the City of Tualatin, there would also be local, regional, and state-wide economic impacts from the creation of direct and indirect construction and permanent employment.

For study purposes, the direct construction impacts have been calculated based on estimated costs of providing infrastructure (roads, sewer, water, storm drainage, trails, etc.) and private construction of buildings, parking areas and open spaces. As indicated in Table 12, it is assumed the total public infrastructure investment of $58 million would leverage approximately $262 million in private investment in on-site improvements. Hence, the total public and private investment of $320 million, when spread out over 25 years is expected to generate about $144 million in regional materials expenditures, and $176 million in direct construction payroll. The induced payroll is expected to support over 3,700 person-years of construction employment, or about 187 jobs per year.

There would also be additional indirect jobs, profits and income in the private sector as the direct materials and payroll expenditures circulate within the broader regional economy. These indirect economic benefits have not been included in the analysis of direct fiscal impacts on the city of Tualatin.

To help keep this analysis conservative, the preliminary construction impacts shown in Table 12, assume all of the planned "major" public infrastructure (collector and arterial streets, water, sewer, storm drainage systems, etc.) is constructed by year 2025, but only 75% of the site is developed to its planned capacity.

Table 12. Summary of Preliminary Construction Impacts
SW Tualatin Concept Plan*

Public Infrastructure	$58,140,000
Private Development	$262,200,000
Grand Total Cost	$320,340,000
Direct Materials Expenditures	$144,150,000
Direct Construction Payroll	$176,190,000
Est. Construction Jobs	3,746
Avg. Annual Const. Jobs	187

Source: analysis by Otak, assumes 2.76 million square feet of building area (0.3 FAR) at total value at $95 per square foot.
Also assumes division of cost is 45% to materials, and 55% to labor.
Wage rates based on the Oregon Employment Department, construction worker average wage rates.
**All costs are in year 2005 dollars at 100% buildout. Assumes construction of planned public arterials, collectors, and sewer/water facilities needed to serve the SW Tualatin Concept Plan area to accommodate 100% of planned build out, which exceeds the 20-year absorption forecast (forecasted to be 75% of build out.)*

Permanent Impacts

The permanent impacts of development in the SW Tualatin Concept Plan area are derived from the additional jobs accommodated on the site in newly developed private buildings. It is conservatively assumed that the site would support approximately 5,764 jobs by year 2025. These new jobs would primarily be in relatively high paying industrial sectors, which typically include manufacturing, high technology, transportation, communication, utilities, and distribution sectors. Otak estimates the annual average wage rate in these industrial categories based on Oregon Employment Department, 2003 covered wages for the Portland Metropolitan Statistical Area. For study purposes, the average wage rate is expected to be $44,500 for the light industrial land uses and $37,900 for the business park industrial uses. These data compare to average all industries wage rate of $39,100, as indicated in Table 13.

The total direct annual payroll from these jobs is expected to be $248 million by year 2025. The indirect impact from these wages re-circulating through the regional economy is expected to account for an additional economic impact of $372 million, bring the total economic impact of the SW Concept area development to over $621 million per year after year 2025.

If we assume that all of these jobs would eventually be "net new" to the state of Oregon and if current state personal income tax rates remained constant, the total induced state income tax revenues would be on the order of $11 million per year. If the area is included in the Tri-Met service district, the added revenues to Tri-Met would be more than $2 million per year.

Table 13. SW Tualatin Concept Plan
Year 2025 Permanent Economic Impacts (2005 dollars)

	Light Industrial	Business Industrial	Total
Employment (FTE jobs)	4,560	1,204	5,764
Average Wage Rate	$44,500	$37,917	$41,200
Direct Annual Payroll	$202,920,000	$45,652,000	$248,572,000
Indirect Regional Impact			$372,858,000
Total Annual Regional Economic Impact			**$621,430,000**
Estimated Annual Tri-Met Tax Revenues			**$2,486,000**
Estimated Annual State Income Tax Revenues			**$11,186,000**

Source: analysis by Otak, assumes average wage rates, based on Oregon Employment Department rates for Light Industrial (manufacturing, trades, transportation, communication, and utilities job classifications), and Business Industrial (based on equal blend of Light Industrial, service, retail, and other service job classifications). Regional impact assumes total multiplier of 2.5. Tri-Met payroll tax is calculated at 1.0%. Oregon State tax revenues based on average tax rate of 4.5%, Oregon Department of Revenue.

Funding Strategies

As with most successful large master planned developments, the eventual development of the SW Tualatin Concept Plan into a major employment area will require a mix of public and private funding and financing for on- and off-site improvements. Transportation facilities (and related bicycle, pedestrian, and roadway storm drainage) is by far the largest cost element, and is typically responsible for 70% to 85% of the total public infrastructure costs required to improve large vacant industrial areas on the urban fringe.1

Adequate water and sanitary sewer systems, which are less costly than transportation facilities, can also inhibit development of new industrial areas, especially if off-site facilities cannot easily be expanded to accommodate new demand generated from industrial growth and development. As such, a separate funding strategy is required for each type of public infrastructure: transportation, water, sewer, etc.

Given the overwhelming cost of transportation systems (70% of the "major" public infrastructure elements for the SW Tualatin Concept Plan area), the first step in the funding process entails amendments to local (City of Tualatin and Washington County) Transportation System Plans to identify the facilities identified in the concept plan. After the TSP amendment processes occur (assuming there is support from ODOT, DLCD, Metro, City of Sherwood and various local agencies/stakeholders), the city and county can work with local stakeholders to update local ordinances (such as the City of Tualatin Development Code, capital improvement programs and the Metro Regional Transportation Improvement Program (MTIP), and the ODOT State Transportation Improvement Program (STIP) to designate appropriate improvements for funding.

This memorandum describes a variety of ways to fund transportation and other public infrastructure improvements, including expanded water, sewer and storm water improvements. Since most cities,

1 Otak, Inc. et.al., *Portland-Vancouver PMSA Regional Industrial Land Study, Phase 3*, 2001.

including Tualatin have enterprise funds established to provide and maintain water and sewer systems, those improvements are often funded using a combination of revenue bonds, grants, and "pay as you go" funding approaches, with the costs directly tied to the user fee revenues. Table 14 provides a general description of which funding approach is typically used for certain types of public infrastructure.

Table 14 Selected Potential Funding Sources

Funding Program/Source	Program Description	Applicable Facilities
Grants		
ODOT STIP: Transportation Enhancement Program	Grants for design and construction of transportation facilities that strengthen the cultural, aesthetic or environmental value of transportation systems. Eligible project types are identified in the TEA-21 federal transportation bill. ($ of grant awards: vary) *http://www.odot.state.or.us/techserv/engineer/pdu/ENHANCEMENT/Progrm%20Information/ENHANCEOCT02.htm*	Arterial Streets
Misc. ODOT STIP Programs	The STIP allocates projects by category including: pavement preservation; bridge replacement; modernization; safety; and operations. Additional ODOT and federal funding programs which are allocated through the STIP process include the Congestion Mitigation Air Quality (CMAQ) Program; Transportation Enhancement Program; statewide (bucketed program); Immediate Opportunity Fund; Railroad Crossing Safety Program; Transportation Growth Management Program; Transportation Safety Program; and Maintenance Program (which is allocated annually to local government entities based on a formula disbursement method). *http://www.odot.state.or.us/lgs/funding.html*	Arterial Streets
ODOT STIP: Pedestrian and Bicycle Improvement Grant Program	Grant funds for highways, county roads and local streets where improvements are needed for bicycle and pedestrians and/or bicyclists. Eligible project types include: ADA upgrades; completing short sections of missing sidewalks or bikelanes; street crossing improvements; intersection improvements; and minor widening for bike lanes or shoulders. Grant awards up to $200,000 based on past trends.	Arterial Streets

Funding Program/Source	Program Description	Applicable Facilities
	http://www.odot.state.or.us/techserv/bikewalk/04 grants.htm	
Economic Development Administration Community Development Block Grants	Construction and/or improvement of a wide variety of facilities and infrastructure that will primarily benefit low-moderate income persons. Grants and loans for projects that benefit low and moderate income households. Eligible project types typically include infrastructure and in particular ADA and pedestrian accessibility improvements. ($ of grant awards: vary)	Roads, Sewer, Water, Storm Water Facilities
Oregon Immediate Opportunity Program	ODOT grants up to 50% of project ($500,000 cap) based on job creation. Letter of intent needed. *http://www.odot.state.or.us/lgs/funding.html*	Roads, Sewer, Water, Storm Water Facilities
Special Public Works Fund	Grants awarded in conjunction with a joint loan application for construction and/or improvement of infrastructure needs to support industrial, manufacturing and certain types of commercial development. *http://www.econ.state.or.us/spwf.htm#fund*	Roads, Sewer, Water, Storm Water Facilities
Low Interest Loans		
Oregon Transportation Infrastructure Bank	The OTIB is a statewide revolving available to port districts to fund long-term (up to 30-years) low interest loans designed to promote innovative transportation funding solutions. Project must be Federal-Aid eligible (this may require re-designation of access road to achieve appropriate status). Eligible costs include engineering, environmental permitting, right-of-way, construction and project management. *http://www.odot.state.or.us/fsbpublic/otib.htm#Timeframes*	Collector and Arterial Streets

Funding Program/Source	Program Description	Applicable Facilities
Special Public Works Fund	A loan for construction and/or improvement of infrastructure needs to support industrial, manufacturing and certain types of commercial development. Loans provided for long terms and at or below-market rates. *http://www.econ.state.or.us/spwf.htm#fund*	Roads, Sewer, Water, Storm Water Facilities
Local/Regional		
Metropolitan Portland Surface Transportation Improvement Program	Metro awards grant funding on a competitive basis to member jurisdictions for roads, pedestrian & bicycle facilities, transit, and freight movement improvements.	Collector and Arterial Streets and regional trails
Local Property Tax Levies	City and/or County can fund roads, schools, parks, and other facilities though voter-approved referendums, subject to Oregon law. Not usually a viable of funding for single projects that cost less than $2,000,000.	Roads, Sewer, Water, Storm Water Facilities & Parks
Local System Development Charges	Development impact fees, directly related to the proportional share of capital costs. Applicable to sewer and water systems.	Roads, Sewer, Water, Storm Water Facilities & Parks
Zone of Benefit Recovery or Reimbursement District	Public or private entities that build road or utility systems can be compensated by future developers at a proportional rate, as development occurs. This mechanism can be useful for public/private developments	Roads, Sewer, Water, Storm Water Facilities
Advanced Financing Agreements	Private entities that build public facilities can be compensated by the city as development occurs. Limited to private construction of public facilities, this mechanism is useful for public/private developments.	Roads, Sewer, Water, Storm Water Facilities & Parks
Local Improvement Districts (LID)	LIDs can be formed by petition and subsequent legislative action under Oregon Law. They are often used to finance public infrastructure (roads, sewer, water, etc.) using guaranteed payments from affect properties with a lien placed on those properties until the LID share is paid off. They typically require at least 51% of affected properties to approve the LID.	Roads, Sewer, Water, Storm Water Facilities & Parks
Urban Renewal District	Urban Renewal Districts can be formed by legislative action under Oregon law (with acknowledgment of an Urban Renewal Plan). Project financing is secured through dedication of increases in tax increment revenues in the affected	Roads, Sewer, Water, Storm Water Facilities & Parks

Funding Program/Source	Program Description	Applicable Facilities
	district.	

As local plan amendments are adopted, funding sources should be identified. Potential local funding sources may include the following:

Local Systems Development Charges—The City of Tualatin/Washington County SDC methodology could be amended to include capital facilities such as the new arterial and collector facilities, including the extension of 124th Avenue, and extension of 115th Avenue. Both of these facilities are required to accommodate planned urban growth. A preliminary analysis summarized in Table 15, indicates that the existing SDC rate system, if applied to the anticipated level of development within the SW Concept Plan Employment Area, could be expected to generate approximately $4.7 million in total revenue by year 2025 (at 75% of buildout), assuming the existing SDC rate structure and with no SDC waivers.

Table 15. Estimate of Transportation System Development Charge Revenues, SW Tualatin Concept Plan, Year 2025 Forecast*

Development Assumptions	
Business Park Jobs	1,204
Light Industrial Jobs	4,560
Trip Generation Assumptions (trips/job)*	
Business Park	3.50
Light Industrial	3.02
Blended Average Rate (for study purposes)	**3.26**
SDC Rate	
Industrial Use (rate per avg. weekday trip)	$259.00
SDC Revenues	**$4,658,,000**

** Based on SW Tualatin Concept Plan, Alternative 3 at 75% of buildout.; dollars stated in 2005 dollar amounts..*

Additional SDC revenue will be collected from water and sewer and storm drain connections. The City of Tualatin currently charges SDCs on all new development that requires a water meter and calculates sewer rates based on fixture units in developments and storm water on amount of impervious area. The estimated year 2025 development in the SW Tualatin Concept Plan, shown in Table 16 is expected to generate approximately $1.3 million in water collection fees, $1.1 million in water quality fees, and $1.2 million in sewer fee collections. These rates assume the current rate structure that is applied to urbanized properties within the City of Tualatin. It should be noted that these rates assume the development is connected with the Clean Water Services and City of Tualatin service districts. Actual rates will vary, depending how the city chooses to update its SDC formula methodology, and whether a portion of the development is served by Wilsonville sewer or water. . It should be noted that this SDC analysis is conservatively based on the existing Tualatin SDC rate structure. Actual SDC charges will be based upon a recalculated local SDC rate that includes a new list of 20-year capital improvements and growth assumptions.

Table 16. Estimate of Total System Development Charge Revenues
Water, Water Quality, and Sewer Fees
SW Tualatin Concept Plan, Year 2025 Forecast

	Factor	Units	Development Assumptions**** (Conceptual Development Alt. 3)		SDC Revenue
Water Connection Fees					
Light Industrial (standard)	$22,902	meter size*	35	users	$376,000
Light Industrial (large lot)	$45,805	Per Employee	18	users	$898,000
Subtotal					**$1,274,000**
Water Quality (storm drain fee)					
Light Industrial (standard)	$225	Per ESU**	2,351	ESU	$530,000
Light Industrial (large lot)	$225	Per ESU**	2,351	ESU	$530,000
Subtotal					**$1,060,000**
Sewer Connection Fee* **					
Light Industrial (standard)	$15,900	avg. collection fee	35	users	$560,000
Light Industrial (large lot)	$35,000	avg. collection fee	18	users	$620,000
Subtotal					**$1,180,000**

**Rate depends upon meter size. Total rate = meter fee (based on size) + drop in fee. Avg. industrial user calculated at 2" meter size, and large user calculated at 3" meter size. Assumes average user requires 3 acres, and large user requires 10 acres. Also assumes $5000 drop in fee.*

*** ESU (Equivalent Surface Unit) = new impervious square feet developed/2,640, estimated at 12,414,000 sf/2,640=4,702 ESU.*

**** Sewer connection fee assumed to average $15,900 for standard user and $35,000 for large user; comparable to Lazy Boy; and Milgard, respectively. Actual fees will be based on sewer discharge calculations.*

***** 75% Build-Out of Conceptual Development Alternative 3.*

Source: City of Tualatin and Otak, Inc.

Urban Renewal Plan District

Tualatin may consider creating a new urban renewal district area for a portion or all of the SW Concept Plan Area. Notwithstanding the challenge of meeting state and local planning approval regulations regarding the formation of urban renewal plans (please refer to ORS 457.085), there are significant funding resources that could be obtained using Tax Increment Financing.

Local Improvement District (LID)

This approach assumes formation of a local improvement district in accordance with local ordinance and state statutes. A LID can be initiated by either the local jurisdiction or affected property owners for specific capital improvements with consent of at least 51% of affected property owners in the LID. LID assessments result in a lien placed on properties by the local jurisdiction until the assessment is paid in full

Zone of Benefit Recovery District (ZBR)

This approach is similar to the LID financing method, but is almost always initiated by the private sector and does not require a lien on properties for the assessment.

Combination of LID or ZBR and SDCs
Tualatin can combine LID, ZBR and SDCs for the construction financing of new collector roads. Hence, this is a likely funding approach.

Metro Transportation Improvement Program
Selected arterial improvements, such as 124th Avenue, and selected regional pathway improvements *may* be funded through the Metro TIP process. However, there is increasing competition for MTIP funds, and it is not possible to predict when necessary funds would become available.

Washington County Metropolitan Street Transportation Improvement Program (MSTIP)
Selected arterial and collector improvements, such as 124th Avenue, and selected regional pathway improvements may be funded through the County MSTIP program, if the County Board of Commissioners and local voters agree to pass a new bond measure. However, the City of Tualatin and Washington County currently has no plans for a major street projects bond issue for several years.

ODOT Statewide Transportation Improvement Program (STIP)
State highway facilities are eligible for funding through updates to the STIP. Recent preference for improvements required to address freight mobility requirements and dedication of funds from federal and state programs (such as Oregon Transportation Infrastructure Act) can help raise the priority of improvements that benefit industrial job growth. It is anticipated that ODOT will need to become the lead participant to leverage Federal, state, Metro and local funding contributions to construct the Hwy. 99 to I-5 Connector improvement, which is now being analyzed. In addition to ODOT STIP funding for the planned Connector improvement, it is possible that ODOT STIP funds could be retained for local streets and pedestrian improvements if new improvements are shown to address congestion on parallel state facilities, mitigate safety issues, or provide important pedestrian access improvements. In most cases, funding through the STIP is highly competitive within the state/region. Hence it is expected that Tualatin would have a slight chance at receiving up to $2 million for roadway and pedestrian facilities, not directly tied to the Hwy. 99/I-5 Connector.

ODOT Industrial Rail Spur Program
ODOT grants up to 50% of project ($500,000 cap) for new or improved industrial rail spurs or bridge crossings designed to promote freight mobility and access.

Oregon Immediate Opportunity Program
ODOT grants up to 50% of project ($500,000 cap) based on job creation. Letter of intent from future private employers is required.

Revenue Bonds
Water, sewer, drainage and parks facilities are often funded through special district bond issues paid for by revenues from user charges. Utility districts, such as the Clean Water Services are expected to provide major trunk line improvements to provide urban sanitary sewer and drainage services in the SW Concept Plan Employment Area.

Special Public Works Fund
The Oregon Economic and Community Development Department (OECDD) provides grants awarded in conjunction with a joint loan application for construction and/or improvement of infrastructure to support industrial, manufacturing and certain types of commercial development.

This grant program typically covers up to $5,000 per job (may require letters of intent from prospective private employers). OECDD also loans up to $10 million at a rate of approximately 4.5%+/-. OECDD grant awards are based on a financial analysis of the applicant and a debt carrying capacity assessment (size of grants are subject to anticipated full time non-retail jobs and are subject to various project loan application ratios).

Community Block Grant Program

Oregon Economic and Community Development (OECDD) is also the Oregon funding agency that distributes federal Housing and Urban Development CDBG grants for infrastructure improvements needed to support a business that will create or retain permanent jobs, the majority of which will be made available to low and moderate income communities. For public infrastructure projects, the ratio is $20,000 of public grant funding per full time non-retail job supported by new private development.

Oregon Industrial Development Revenue Bond Program

Administered by the Oregon Economic and Community Development Department (OECDD) this program is focused on non-retail job creation. Bonds may be issued for manufacturing, processing and tourism facilities. Eligible companies may borrow $500,000 to $10 million though this program, and are obligated to pay back the bondholders.

Oregon Transportation Infrastructure Bank

Administered by the Financial Services division of ODOT, the OTIB program is a revolving loan fund designed to promote innovative funding solutions for transportation projects. Eligible borrowers include cities, counties, special service districts, state agencies, and not-for-profit entities. While rates are offered at tax-exempt levels, all relevant federal administrative requirements apply (i.e., National Environmental Policy Act, Uniform Relocation Act, Davis-Bacon Act, Brooks Act, Buy America, etc.).

Advance Financing Agreements

In addition to these funding sources, major development projects often include advanced financing agreements between private developers and local jurisdictions. With advanced financing agreements, private entities that build public facilities can be compensated by the city as development occurs. Tualatin and Washington County will be required to work with Metro staff, local service providers, and developers/property owners to identify financing strategies for specific improvements.

Conclusions

It is anticipated there will substantial direct economic benefits and costs associated with the planned light industrial development in the SW Concept Plan area. The direct fiscal costs and benefits have been forecasted based on typical growth assumptions for light industrial developments. It is highly probable that the actual fiscal costs and revenues will vary significantly from these long-range estimates, during any point in time. However, the long-range estimates are considered to be adequate for planning purposes.

While there would definitely be some redistribution of the fiscal and economic benefits from development of the SW Concept Plan area, over the long-term 20-year planning horizon, it is fair to say that the added jobs and investment would be net new to the region and the state. Hence, if we assume 75% of the site is developed by year 2025, the general conclusions that can be reached by this analysis include:

- Total assessed value (AV) of development would increase by at least $300 million over current AV (at 75% buildout in year 2025);
- If annexed by the City of Tualatin, total annual property tax revenues and fees would likely amount to $993,000 of added annual revenue to the City (before deducting annual administration and infrastructure O&M costs);
- Annual governmental administration costs for police, planning and general government would amount to about $82,500 per year;
- The annual cost of maintaining and operating the road and trail system is expected to cost the city over $170,000 per year, which is currently funded though the City's street maintenance fund (and ODOT formula disbursements to local agencies);
- There would also be added maintenance costs for the sewer, storm drainage and water systems of approximately $360,000 per year, but that would likely be "covered" by rate collections;
- Major on- and off-site public infrastructure items including roads, trails, water, sewer, and storm water facilities are estimated to cost approximately $58.1 million;
- Local System Development Charge rates may need to be revised after the SW Tualatin Concept Plan area is annexed into the City of Tualatin. Existing transportation SDC revenues are anticipated to generate about $4.7 million in revenue and existing sewer/water/storm drain fees are anticipated to generate about $3.5 million in fee revenue (at 75% of buildout). SDC revenues typically go into local funding accounts to help pay for bonds that have been issued for specific capital improvements (may or may not be for facilities that directly serve the SW Tualatin Concept Plan area);
- The City in conjunction with Metro, ODOT and private property owners/developers can fund the capital projects with a combination of traditional and innovative pubic/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, and/or zone of benefit district;
- Significant positive economic impacts are anticipated from the more than 3,700 construction jobs and 5,760 permanent jobs. The direct and indirect payroll that supports these jobs is expected to yield over $320 million in construction expenditures, $248 million in annual direct wages, and $372 million in annual indirect spending; and
- The added permanent income of $248 million is expected to support over $11 million in additional state income tax revenues, and over $2 million in Tri-Met tax revenues.

Please contact us with any questions or comments regarding these findings.

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DRAFT MEMORANDUM

Date: July 11, 2005 **Project #:** 6689

To: Dave Simmons, CH2M-HILL

cc: Elizabeth Stepp, City of Tualatin

From: Paul Ryus, P.E.

Project: Southwest Tualatin Concept Plan

Subject: Recommended Changes to the Tualatin Transportation System Plan

This memorandum presents recommended changes to Chapters 11 (Transportation) and 75 (Access Management on Arterial Streets) of the Tualatin Development Code (TDC), resulting from concept planning for a 431-acre area south of Tualatin-Sherwood Road and west of the Portland & Western railroad tracks, which Metro recently added to the Portland Regional Urban Growth Boundary. The technical analysis supporting these recommendations is presented in our June 12, 2005 memo entitled "Southwest Tualatin Concept Plan: Future Conditions Traffic Analysis."

Text proposed to be added to the TDC is shown in **bold** type, while text proposed to be deleted is shown in ~~strikeout~~ type. Descriptions of proposed map revisions are shown in *italic* type. Commentary is provided for each proposed change. The proposed changes reflect the latest amendments to the Oregon Transportation Planning Rule, adopted by the Oregon Department of Land Conservation and Development on March 16, 2005.

TDC Language	*Commentary*
11.600 (4)(b) The City of Tualatin, in conjunction with ODOT, initiated a study of a 431-acre area south of SW Tualatin-Sherwood Road and west of the Portland & Western railroad tracks in 2004. The Southwest Tualatin Concept Plan addressed the impacts of developing this area for industrial uses, particularly the portion of the area designated as a "regionally significant industrial area." A technical analysis was prepared for the Concept Plan, following the requirements of the TPR, that specifically addressed the transportation needs associated with developing the Concept Plan area at urban densities. Development of the Concept Plan was guided by input from a 17-member TAC that met seven times during the planning process. The TAC included representatives from the Cities of Tualatin, Sherwood, and Wilsonville; Metro; ODOT; DLCD; Washington County; Portland General Electric (PGE); Bonneville Power Administration (BPA); Clean Water Services (CWS); Oregon Department of Geology and Mineral Industries; Coffee Creek Correctional Facility; Tualatin Valley Fire and Rescue; TriMet; Genessee and Wyoming Railroad; and property owners from the Tonquin Industrial Group, the Itel properties area and from Tigard Sand & Gravel. Mailings to stakeholders and two public open houses were used to obtain community feedback on the draft plan. The TSP amendments relating to the Southwest Tualatin Concept Plan area were accepted by City Council on (insert date).	Section 11.600(1)-(3) provides background about the development of the original TSP from 1999-2001. Section 11.600(4) addresses the planning processes used to study UGB expansions affecting the Tualatin Planning Area. Acronyms defined earlier in this section (e.g., ODOT, DLCD, TSP, TPR) have not been spelled out again.

Figure 11-1, Functional Classification Plan *Amend map to show the new Planning Area boundary.* *Amend map to extend SW 124th Avenue as a future Eb&t roadway to a point aligned with the south edge of the Concept Plan area.* *Delete the north-south portion of the I-5/ 99W Connector.* *Extend the Connector west as a future F roadway to intersect SW 124th Avenue, with an arrow continuing west past 124th.* *Change the designation of SW 115th Avenue to Cb&t. Extend as a future roadway (SW 115th Drive) south to SW Tonquin Road.* *Change the SW Blake Street designation to future Cb between SW 108th Avenue and SW 115th Avenue. Extend the road west as a future Cb&t to SW 124th Avenue.* *Extend SW Itel Street west as a future B-CI roadway, turning south as SW 122nd Avenue to connect to SW Blake Street.* *Add SW 117th Avenue as a future B-CI roadway connecting SW Itel Street and SW Blake Street.* *Add an unnamed future Cb&t street between SW 115th Drive and SW 124th Avenue, at the point where the Concept Plan area boundary departs SW 124th Avenue.* *Show the portion of Tonquin Road within the Concept Plan area (east of SW 115th Drive) as a minor arterial (Db&t).*	The SW 124th Avenue extension would occur under either a northern or southern Connector alignment. Deleting the north-south portion of the Connector reinforces the City's preferred southern alignment; SW 124th Avenue provides the north-south link previously shown for the Connector. The arrow depicting the continuation of the Connector to the west could serve either a northern or southern alignment. Based on feedback from the open houses, the residential area east of the Concept Plan area does not want SW Blake Street to turn into a truck route. The minor collector designation east of SW 115th Avenue provides a narrower street design that serves employee trips to/from the neighborhood, but discourages truck trips. The new TSP projects discussed later on include other features to discourage truck trips into the neighborhood. The Concept Plan calls for SW 115th Avenue/ Drive to be the main north-south route through the Concept Plan area for access. SW 124th Avenue, as a major arterial, will have access restricted to SW Blake Street and the future collector to the south. The B-CI streets that are called out are depicted on the Concept Plan map. TDC 11.630(2) allows additional B-CI (local commercial industrial streets) to be developed as needed to serve parcels. The Tonquin Road minor arterial classification is consistent with Washington County's classification.

Table 11-2, Street Functional Classification Summary Major Arterials (Eb&t) SW 124th Avenue—Hwy 99W to ~~Tualatin-Sherwood Road~~**I-5/ Highway 99W Connector** Minor Arterials (Db&t) **Tonquin Road—SW 115th Drive east to the planning area boundary** Major Collectors (Cb&t) **SW 115th Avenue—Tualatin-Sherwood Road to Blake Street** **SW 115th Drive—Blake Street to Tonquin Road** **Blake Street—SW 124th Avenue to SW 115th Avenue** **unnamed east/west roadway south of Blake St.—SW 124th Avenue to SW 115th Drive** Minor Collectors (Cb) **Blake Street—SW 115th Avenue to SW 108th Avenue** Local Commercial Industrial (B-CI) SW 120th Avenue~~—south of~~ Tualatin-Sherwood Road to ~~Blake Street ext.~~**Itel Street** ~~SW 115th Avenue—Tualatin-Sherwood Road to McCamant Road~~ ~~Blake Street—west of SW 105th Avenue to SW 120th Avenue extension~~ ~~unnamed east/west roadway~~**Itel Street—SW 122nd Avenue**~~east of SW 120th Avenue~~ past SW 115th Avenue **SW 117th Avenue—Itel Street to Blake Street** **SW 122nd Avenue—Itel Street to Blake Street**	Text versions of the map changes described for Figure 11-1. As the TSP generally only addresses collector and arterial facilities, potential local street changes (e.g., realigning Waldo Way and vacating McCamant Drive) are not covered here.
Figure 11-2, Metro Regional Street Design System *Amend map to show the new Planning Area boundary. Amend map to continue the Urban Road designation for SW 124th Avenue south to the UGB boundary.*	Housekeeping change.

Figure 11-3, Local Street Plan *Amend map to show the new Planning Area boundary.*	Housekeeping change.
Figure 11-4, Tualatin Pedestrian Plan *Amend map to show the new Planning Area boundary. Add the Tonquin Trail. Add a north-south trail running the length of the linear greenway (west of the railroad tracks), continuing north of Blake Street to the pond.*	The Tonquin Trail is shown on the Regional Trails and Greenways Map. The north-south trail is shown in the City's Greenways Plan.
Figure 11-5, Tualatin Bicycle Plan *Amend map to show the new Planning Area boundary. Show the following new roads as "roads with bike lanes": SW 124th Avenue south of Tualatin-Sherwood Road, SW 115th Avenue/Drive, SW Blake Street, and the unnamed collector toward the south end of the Concept Plan area. Add the Tonquin Trail.*	Updates the map to depict the roadways within the Concept Plan area that will have bicycle lanes, and adds the Tonquin Trail.
Section 11.650 Bicycle Plan The bicycle plan establishes a network of bicycle lanes and routes that connect the City's bicycle trip generators to provide a safe, inter-connected bicycle system. Bicycle lanes are designated on arterial and collector street segments with anticipated future volumes of over 3,000 daily vehicles. Bicycle routes, where bicyclists share a lane with other vehicles, are designated on other lower-volume collector streets, and certain local streets that provide connectivity within neighborhoods or to future multi-use recreation paths. Figure 11-5 shows the City's bicycle plan. As portions of the City's streets are widened, either through adjacent development or ~~a~~ public works projects, bicycle lanes will be provided where indicated on the plan.	Corrects a typo in this section.

Figure 11-6, Tualatin Transit Plan *Amend map to show the new Planning Area boundary.*	Housekeeping change.
Figure 11-7, Tualatin Truck Routes *Amend map to show the new Planning Area boundary. Revise the alignments for SW 124th Avenue and the I-5/99W Connector per Figure 11-1 and show as "future truck routes." Show SW 115th Avenue/Drive, SW Blake Street west of SW 115th Avenue and the unnamed collector toward the south end of the Concept Plan area as "future truck routes."*	Updates the map to depict the roadways within the Concept Plan area that are Updates the map to depict the roadways within the Concept Plan area that are intended to serve through truck movements.
Table 11-3, Transportation Improvement Program Summary 11-20 Years **#43; SW 124th Avenue; new street, Tualatin-Sherwood Road to I-5/99W Connector, traffic signals at Blake Street and unnamed east/west collector; auto, ped, bike, freight movement; connectivity, reduce truck delays; $17,400,000** Development-Related **#44; SW 115th Avenue & SW 115th Drive; new or widened street, Tualatin-Sherwood Road to Tonquin Road, signal at Tualatin-Sherwood Road; auto, ped, bike; connectivity, facilitate development; $9,400,000; Development** **#45; Blake Street; new street, SW 108th Avenue to SW 124th Avenue, new railroad crossing, possible roundabout at SW 108th Avenue and gateway treatment at SW 115th Avenue; auto, ped, bike; connectivity, facilitate development; $8,300,000; Development**	The SW 124th Avenue extension was included in the modeling for the TSP, but not shown on maps as it was outside the UGB. With the new UGB boundary, it is now appropriate to show it on maps. SW 115th Avenue/Drive will serve access needs within the Concept Plan area. Right-of-way exists for Blake Street between SW 108th Avenue and the railroad tracks. The gateway treatment and possible roundabout are intended to discourage truck use of Blake Street into the neighborhood to the east; the possible roundabout would also serve to slow vehicles on SW 105th/108th Avenues. A separate project already exists in the TSP (#22) to realign the 108th/Blake/105th curves. New streets within the Southwest Tualatin Concept Plan Area, other than the SW 124th Avenue extension, are identified as being funded by development.

Table 11-3, Transportation Improvement Program Summary - continued Development-Related - continued **#46; unnamed east-west collector; new street between SW 115th Drive and SW 124th Avenue; auto, ped, bike; connectivity, facilitate development; $1,400,000; Development** **#47; Itel Street and SW 122nd Avenue; new or widened street between SW 112th Avenue and Blake Street; auto, ped, bike; connectivity, facilitate development; $2,900,000; Development** **#48; SW 117th Avenue; new street between Itel Street and Blake Street; auto, ped, bike; connectivity, facilitate development; $1,400,000; Development**	Projects #46-#48 provide additional roads to serve the Concept Plan Area. Additional local commercial-industrial streets could be developed later, depending on the needs of future development.
Figures 11-8a to 11-8d, Financially Constrained TSP Projects *Amend maps to show new Planning Area boundary.* *Amend Figure 11-8c to add project #43 (extension of SW 124th Avenue)* *Amend Figure 11-8d to add new project #44 (SW 115th Avenue/Drive).* *Amend Figure 11-8d to add new project #45 (Blake Street).* *Amend Figure 11-8d to add new project #46 (unnamed east-west collector).* *Amend Figure 11-8d to add new project #47 (Itel Street-SW 122nd Avenue).* *Amend Figure 11-8d to add new project #48 (SW 117th Avenue).*	Maps the projects described above in Table 11-3.

11.730(2) Financially Constrained Capital Project Summary (q) SW 124th Avenue Extension – ~~Southern~~ **Central** Segment (Table 11-3, No. 17) SW 124th Avenue should be extended south from Myslony Street to Tualatin-Sherwood Road, providing an alternate truck route into the industrial area. Sidewalk**s**, bike lanes, and a traffic signal at Tualatin-Sherwood Road should be included. SW 124th Avenue should be extended as a three-lane roadway with right-of-way reserved for five lanes. **(gg) SW 124th Avenue Extension – Southern Segment (Table 11-3, No. 43)** **SW 124th Avenue should be extended south from Tualatin-Sherwood Road to the I-5/Highway 99W Connector, providing an alternate truck route into the industrial area. Sidewalks, bike lanes, and traffic signals at Blake Street and the east-west collector street south of Blake Street should be included. This segment will eventually have a five-lane cross-section.**	Text descriptions of the projects described above in Table 11-3, which are being added to the TSP's financially constrained list. Project #17 (SW 124th Avenue extension) is renamed "central segment" to allow new project #43 to become the "south segment".

~~(gg)~~**(hh)** Development-Related Improvement Projects In addition to the above list of improvement projects, additional transportation improvement projects have been identified that would most likely be constructed as a result of development-related projects. Some of these projects include: (i) Construct SW 125th Place. (ii) A new east-west street connecting SW 108th Avenue to SW 112th Avenue (Table 11-3, no. 34). This project provides connectivity within a future residential development. (iii) Signalizing the Tualatin Road/SW 108th Avenue intersection (Table 11-3, No. 37). The signal would be warranted based on increasing traffic volumes and poor sight distance for northbound traffic. (iv) Signalizing the SW Cummins Street/SW Cipole Road intersection. (Table 11-3, No. 38) (v) Improve SW 72nd Avenue as part of the Durham Quarry project. (vi) SW Cipole Road widening (Table 11-3, No. 41). Widen to the Cb&t standard from Highway 99W to SW Cummins Street, provide three northbound lanes & modified signal phasing at Highway 99W intersection. (vii) SW Herman Road/SW Cipole Road Intersection (Table 11-3, No. 42). Realign, signalize intersection, provide two inbound lanes on each approach, railroad interconnect. (viii) **SW 115th Avenue & Drive (Table 11-3, No. 44). Widen to the Cb&t standard north of Itel Street and construct a new roadway to the Cb&t standard between Itel Street and Tonquin Road.**	Text descriptions of the development-related projects described above in Table 11-3.

(ix) SW Blake Street (Table 11-3, No. 45). Construct to the Cb standard between SW 108th Avenue and SW 115th Avenue, possibly with a roundabout at SW 108th Avenue and a gateway treatment at SW 115th Avenue to discourage truck traffic and to slow traffic entering the residential neighborhood. Construct to the Cb&t standard between SW 115th Avenue and SW 124th Avenue. **(x) East-west Collector (Table 11-3, No. 46). Construct to the Cb&t standard between SW 115th Avenue and SW 124th Avenue.** **(xi) New Streets in the Southwest Tualatin Concept Plan Area (Table 11-3, No's. 47 and 48). To help facilitate development within the Southwest Tualatin Concept Plan Area, several new streets should be constructed to the local commercial-industrial (B-CI) standard. These streets include an westerly extension of Itel Street, SW 117th Avenue, and SW 122nd Avenue.** ~~(hh)~~**(ii)** For the purposes of applying the Oregon Transportation Planning Rule's section 660-012-0060(4), future development-related land use amendments may not rely on the existence of projects listed in subsection ~~(gg)~~**(hh)**. Projects in subsection ~~(gg)~~**(hh)** are intended to be conditioned on developments contributing to the need for them.	

Table 11-4, Projects Unfunded or Requiring New Funding Sources Recreation SDC or Bond **Tonquin Trail (SW Tualatin Concept Plan Area); ped, bike; recreation; $800,000**	Adds the Tonquin Trail (which passes through the Concept Plan Area and is on Metro's Regional Trails and Greenways map). Also adds the north-south trail on the east side of the Concept Plan Area.
Figure 11-9, Priority TSP Projects *Amend map to show the new Planning Area boundary. Add the portion of the Tonquin Trail within the planning area boundary.*	Adds projects described in Table 11-4.
Figure 11-10, Traffic Signal Plan *Amend map to show new Planning Area boundary. Delete the traffic signal at Tualatin-Sherwood Road/SW 120th Avenue. Add traffic signals at the intersections of SW 124th Avenue with Blake Street and the unnamed east-west collector.*	The SW 120th Avenue signal is deleted to improve signal spacing on T-S Road and because it serves a relatively small portion of the Concept Plan area. The two new signals provide access to SW 124th Avenue from the Concept Plan area.

Section 75.030 Freeways, Expressways and Arterials Defined. (g) 124th Avenue from Highway 99**W** south to ~~Tualatin-Sherwood Road~~**the I-5/ Highway 99W Connector**;	Extends access control on SW 124th Avenue adjacent to the Concept Plan area.
Section 75.120 Existing Streets. Tualatin-Sherwood Road Avery Street/112th to Cipole Road: On the north side of Tualatin-Sherwood Road between 112th Avenue and Cipole Road the area will be served by the following streets or driveways: 1) An intersection with 115th Avenue approximately 1100 feet west of the intersection of Tualatin-Sherwood Road and 112th Avenue which will extend north and east to an intersection at 112th Avenue a minimum of 150 feet north of Tualatin-Sherwood Road. 2) An intersection approximately 1300 feet east of the intersection of Tualatin-Sherwood Road and 124th Avenue which will extend north and west to an intersection at 124th Avenue approximately 800 feet north of Tualatin-Sherwood Road. 3) 124th Avenue. 4) Cipole Road. The exact location and configuration of the streets or driveways shall be determined by the City Engineer. On the south side of Tualatin-Sherwood Road between Avery Street and 120th Avenue the area will be served by the following street system: 1) An intersection with 115th Avenue approximately 1100 feet west of Avery Street. 2) A street intersection at 120th Avenue**, which may be restricted to right-in, right-out movements in the future**. The exact location and configuration of the streets shall be determined by the City Engineer. No driveways will be constructed in this area and existing driveways will be removed. Select Sales (2S1 27B/800) shall have a cross access to 115th Avenue.	The traffic analysis conducted for the Concept Plan found that the SW 120th Avenue intersection at Tualatin-Sherwood Road would operate at LOS F by the year 2025 and would need to be restricted to right-in, right-out movements. The Concept Plan's street network provides connections to SW 115th Avenue, which will provide a signalized intersection for making left-turn movements to and from Tualatin-Sherwood Road.

Section 75.120 Existing Streets. - continued 124th Avenue **<u>Tualatin-Sherwood Road to I-5/Highway 99W Connector</u>: Between Tualatin-Sherwood Road and the I-5/Highway 99W Connector, access to 124th Avenue shall be limited to street intersections at Blake Street and the unnamed east-west collector street. Depending on when this segment of 124th Avenue is constructed, and where and when the Connector is constructed, a (possibly interim) connection to Tonquin Road may also be provided.**	The two access points to SW 124th Avenue have been located to achieve, to the extent possible, the desired half-mile intersection spacing along arterial streets, while providing for the large industrial lot sizes mandated by Metro.

Itel House
12150 SE Tualatin-Sherwood Road
Tualatin, OR 97062

ANALYSIS:

A. The site or structure shall have a primary or secondary ranking. A structure less than 50 years of age may be designated a landmark upon application by the owner; and

Findings: The structure has a secondary ranking being constructed in 1950. The date of construction makes the structure approximately 55 years old.

Conclusion: This criterion has been met.

B. The site or structure shall meet one or more of the following:

(i) The resource was listed on the National Historic Register of Historic Places.

Findings: The structure is not listed on the National Historic Register of Historic Places.

Conclusion: This criterion has not been met.

(ii) The site or structure is associated with the life of a person significant in local, state or national history.

Findings: No information could be found indicating that this structure is associated with the life of a person significant in local, state or national history.

Conclusion: This criterion has not been met.

(iii) The site or structure is associated with events that have significantly affected past social or economic activities in the community, state or nation.

Findings: No information could be found indicating significant social or economic activities occurring at this location.

Conclusion: This criterion has not been met.

(iv) The structure is in its original setting and remains essentially as originally constructed.

Findings: Available information indicates that the structure is in its original location, and has not been modified.

Conclusion: This criterion has been met.

(v) The structure embodies the distinctive characteristic of a type, period or method of construction that was used in the past.

Findings: This structure is representative of the early ranch style, and is simple and functional, thereby lacking distinctive characteristics. However, it does embody the characteristics of that style and the construction methods used in the 1950s.

Conclusion: This criterion has been met.

(vi) The structure's original workmanship and material remain to show the construction technique and stylistic character of a given period.

Findings: Available information indicates that this structure has not been modified. The original construction and material from circa 1950 appear to remain, including metal window awnings.

Conclusion: This criterion has been met.

(vii) The structure represents the work of a master, i.e., is a noteworthy example of the work of a craftsman, builder, architect or engineer significant in local, state or national history.

Findings: No information has been found that the builder of this structure was a master craftsman, builder, architect or engineer.

Conclusion: This criterion has not been met.

(viii) The structure possesses high artistic values in its workmanship and materials.

Findings: The early ranch style is simple and functional. Inspection of this structure indicates that no significant artistic values are apparent.

Conclusion: This criterion has not been met.

(ix) The immediate setting of the site retains the planting scheme, plant materials or land uses of the relevant historic period or the landscaping is consistent with that period.

Findings: The original setting was agricultural. While the site remains in agricultural use, the immediate setting has been modified to industrial development, and vacant land adjacent to the east and north is zoned industrial. Plant materials surrounding the structure, including ornamental shrubs, Douglas fir and vegetable garden are commonly associated with suburban and rural houses and not necessarily with the relevant historical period.

Conclusion: This criterion has not been met.

(x) The site or structure yields or may be likely to yield information important in history or prehistory.

Findings: No information can be found to support this criterion.

Conclusion: This criterion has not been met.

(xi) The site or structure is significant as a visual landmark.

Findings: The structure and its associated outbuildings are located on the south side of SW Tualatin-Sherwood Road, and is in an area that was once farmland and is now transitioning to industrial uses. The one-story structure, detached barn and outbuilding are simple and functional and lack elements or visual significance that make them distinctive.

Conclusion: This criterion has not been met.

CONCLUSION

Review of the Itel House against the 12 criteria indicates that the basic 50 year requirement along with the criterion iv, v and vi have been met. This is 4 of the 12 criteria. Therefore, the historical importance of this structure is not significant.

RECOMMENDATION

Based on the staff report and information gathered through inspection and research, staff recommends that the Itel House not be designated as a landmark.

Respectfully submitted,

Elizabeth Stepp
Senior Planner

OREGON INVENTORY OF HISTORIC PROPERTIES
HISTORIC RESOURCE SURVEY FORM
COUNTY: WASHINGTON

SHPO Inventory No.: Local ID:

Historic Name:		Date of Construction:	1950
Common Name:	Itel House	Original use:	Residence
Address:	12150 SW Tualatin-Sherwood Rd	Pres. Use:	Residence
City:	Tualatin (outside City Limits)	Architect:	Unknown
Owner Name:	Ken & Barbara Itel Irrevocable Trust	Builder:	Unknown
Address1:	12155 SW Tualatin-Sherwood Rd	Theme:	20th Century
Address2:		Style1:	Early Ranch
City/State/Zip:	Tualatin OR 97062	Style2:	
T/R/S:	2S1W 27C 00701	Object:	Building
Parcel:		Style Notes:	
Addition:	NA		
Block:	NA Lot: NA	Quad:	

Plan Type/Shape:	Irregular	No. of Stories:	1.0
Primary Foundation Material:	unknown	Basement:	N
Second Foundation Material:			
Roof Form:	Gable with gable dormers	Roof Material:	Comp Shingle
Wall Construction:	Wood	Structural Frame:	Wood stud
Primary Window Type:	1/1 double hung sash		
Exterior Surfacing Material:	Shake		
Decorative Features:	None		
Other notes:	Picture windows		
Condition:	Good	Moved Y/N: N	Date:

Exterior Alternations/Additions (date): Unknown
Comments:

Noteworthy Landscape Features: None

Associated structures: Wood frame barn with shed roof addition, attached carport, detached unfinished garage, additional 1-story wood frame agricultural outbuilding

Known Archaeological Features: None

Setting: South side of Tualatin-Sherwood Road set back from the roadway and surrounded by agricultural fields. Currently zoned Rural EFU.

Sources: Washington County Department of Assessment and Taxation

Statement of Significance (comments): Architectural: None.
Historical: The house is owned by a member of the Itel family, who are longtime local farmers in the Tualatin area.

Recorded by: Elizabeth Stepp
Date: 06-29-05
Designation:

Graphic sources: Elizabeth Stepp

Digital Image Name / No.: ITELHOUSE.JPG

Itel House
12150 SW Tualatin-Sherwood Road

Image Name: ITELHOUSE.JPG

Thompson House
12350 SE Tualatin-Sherwood Road
Tualatin, OR 97062

ANALYSIS:

A. The site or structure shall have a primary or secondary ranking. A structure less than 50 years of age may be designated a landmark upon application by the owner; and

Findings: The structure has a secondary ranking being constructed in 1918. The date of construction makes the structure approximately 87 years old.

Conclusion: This criterion has been met.

B. The site or structure shall meet one or more of the following:

(i) The resource was listed on the National Historic Register of Historic Places.

Findings: The structure is not listed on the National Historic Register of Historic Places.

Conclusion: This criterion has not been met.

(ii) The site or structure is associated with the life of a person significant in local, state or national history.

Findings: No information could be found indicating that this structure is associated with the life of a person significant in local, state or national history.

Conclusion: This criterion has not been met.

(iii) The site or structure is associated with events that have significantly affected past social or economic activities in the community, state or nation.

Findings: No information could be found indicating significant social or economic activities occurring at this location.

Conclusion: This criterion has not been met.

(iv) The structure is in its original setting and remains essentially as originally constructed.

Findings: Available information indicates that the structure is in its original location, and has not been modified except for the addition to the exterior surface of shake (asbestos) siding over wood shingle, alterations to the exterior surface window treatment of the structure, and the replacement of some wood windows with aluminum windows. The structure retains the original gable roof design, verge boards, knee braces, attached brick chimney and two square support columns on the covered front porch. The structure is essentially as originally constructed.

Conclusion: This criterion has been met.

(v) The structure embodies the distinctive characteristic of a type, period or method of construction that was used in the past.

Findings: This structure is representative of the craftsman style, and the stylistic elements are similar to other common examples of craftsman architecture in Tualatin and in the Portland metropolitan region as a whole.

Conclusion: This criterion has been met.

(vi) The structure's original workmanship and material remain to show the construction technique and stylistic character of a given period.

Findings: The exterior walls have been modified by the addition of asbestos shake siding covering wood shingle, which is presently only visible along the bottom portion of the exterior. The original workmanship of the exterior window casing is no longer present and some wood windows have been replaced with aluminum windows. While some original workmanship and materials remain - such as the front porch support columns, verge boards and knee braces, and attached chimney - the roof, exterior windows and exterior walls have been altered and no longer display the original workmanship or material.

Conclusion: This criterion has not been met.

(vii) The structure represents the work of a master, i.e., is a noteworthy example of the work of a craftsman, builder, architect or engineer significant in local, state or national history.

Findings: No information has been found that the builder of this structure was a master craftsman, builder, architect or engineer.

Conclusion: This criterion has not been met.

(viii) The structure possesses high artistic values in its workmanship and materials.

Findings: Inspection of this structure indicates that no significant artistic values are apparent. The design is simple and functional, and if workmanship and materials of high artistic values were originally present, they have been lost through subsequent alterations.

Conclusion: This criterion has not been met.

(ix) The immediate setting of the site retains the planting scheme, plant materials or land uses of the relevant historic period or the landscaping is consistent with that period.

Findings: The site is surrounded on three sides by agricultural fields, with industrial development close by. The site contains a detached wood frame garage/shed, typical of the period in which the structure was built. The plant materials, including Rhododendron, blackberry, red-leaf plum, filbert and walnut are common and are not indicative of a relevant historic period or consistent with that period. There is no indication that the original planting scheme, if any was originally present, has been retained.

Conclusion: This criterion has not been met.

(x) The site or structure yields or may be likely to yield information important in history or prehistory.

Findings: No information can be found to support this criterion.

Conclusion: This criterion has not been met.

(xi) The site or structure is significant as a visual landmark.

Findings: The structure is located on the south side of SW Tualatin-Sherwood Road, and is in an area that was once farmland and is now transitioning to industrial uses. The simple and functional nature of the structure's massing and architecture are not visually distinctive, and its subsequent exterior alterations have diminished the original visual aspects.

Conclusion: This criterion has not been met.

CONCLUSION

Review of the Thompson House against the 12 criteria indicates that the basic 50 year requirement along with the criterion iv and v have been met. This is 3 of the 12 criteria. Therefore, the historical importance of this structure is not significant.

RECOMMENDATION

Based on the staff report and information gathered through inspection and research, staff recommends that the Thompson House not be designated as a landmark.

Respectfully submitted,

Elizabeth Stepp
Senior Planner

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OREGON INVENTORY OF HISTORIC PROPERTIES
HISTORIC RESOURCE SURVEY FORM
COUNTY: WASHINGTON

SHPO Inventory No.: Local ID:

Historic Name:		Date of Construction:	1918
Common Name:	Thompson House	Original use:	Residence
Address:	12350 SW Tualatin-Sherwood Road	Pres. Use:	Residence
City:	Tualatin (outside city limits)	Architect:	Unknown
Owner Name:	Harris G. and Linda Thompson	Builder:	Unknown
Address1:	12350 SW Tualatin-Sherwood Road	Theme:	20th Century
Address2:		Style1:	Craftsman
City/State/Zip:	Tualatin, Oregon 97062	Style2:	Altered
T/R/S:	2S127C00700	Object:	Building
Parcel:		Style Notes:	(none)
Addition:	NA		
Block:	NA	Lot: NA	Quad:

Plan Type/Shape:	Rectangle	No. of Stories:	1.0
Primary Foundation Material:	unknown	Basement:	Y, unfinished
Second Foundation Material:			
Roof Form:	Gable	Roof Material:	Comp Shingle
Wall Construction:	Wood	Structural Frame:	Wood Stud

Primary Window Type: 1/1 double hung sash
Exterior Surfacing Material: Asbestos siding / wood shingle
Decorative Features: Covered front porch with two square support columns, verge boards, knee braces
Other notes:
Condition: Fair Moved Y/N: N Date:

Exterior Alterations/Additions (date): Shake (asbestos) siding over wood shingle, aluminum windows (dates unknown)

Comments:

Noteworthy Landscape Features: None

Associated structures: Detached garage/shed, additional outbuilding. Washington county records indicate mobile home on property.

Known Archaeological Features: None

Setting: South side of Tualatin-Sherwood Road set close to roadway and surrounded by agricultural fields. Site currently zoned Rural EFU

Sources: Washington County Department of Assessment & Taxation, Metromap

Statement of Significance (comments): Architectural: None
Historical: None

Recorded by: Elizabeth Stepp
Date: 06/29/05
Designation:
Graphic sources: Elizabeth Stepp
Digital Image Name / No.: THOMPSONHOUSE1.JPG, THOMPSONHOUSE2.JPG

Thompson House
12350 SW Tualatin-Sherwood Road

Tonquin Electrical Transformer Substation and Depot
Tonquin Station Area, Northeast of Waldo Way
Tualatin, OR

ANALYSIS:

A. The site or structure shall have a primary or secondary ranking. A structure less than 50 years of age may be designated a landmark upon application by the owner; and

Findings: The structure has a secondary ranking being constructed circa 1913. The time of construction makes the structure approximately 92 years old.

Conclusion: This criterion has been met.

B. The site or structure shall meet one or more of the following:

(i) The resource was listed on the National Historic Register of Historic Places.

Findings: The structure is not listed on the National Historic Register of Historic Places.

Conclusion: This criterion has not been met.

(ii) The site or structure is associated with the life of a person significant in local, state or national history.

Findings: No information could be found indicating that this structure is associated with the life of a person significant in local, state or national history.

Conclusion: This criterion has not been met.

(iii) The site or structure is associated with events that have significantly affected past social or economic activities in the community, state or nation.

Findings: The structure was constructed to meet the needs of the Oregon Electric railroad, and was abandoned when diesel locomotives were added to the railway, circa 1945. According to the Washington County Cultural Resources Inventory, the structure is a significant structural reminder of an early age of railway transportation in this area, and that the development of suburban garden tract housing neighborhoods built between 1910 and 1940 was based on the inter-urban electric commuter rail service. Several such developments were built along this rail line, which extended from Portland to Salem. This structure is associated with significant economic activities occurring in the community and in the northern Willamette Valley.

Conclusion: This criterion has been met.

(iv) The structure is in its original setting and remains essentially as originally constructed.

Findings: Available information indicates that the structure is in its original location. The concrete shell walls are still present and are in very poor condition with shrubs and at least one tree growing adjacent to its base. The structure currently has a corrugated metal roof over wood, also in poor condition, and it lacks all of its original roof, doors and windows. The structure does not remain as originally constructed.

Conclusion: This criterion has not been met.

(v) The structure embodies the distinctive characteristic of a type, period or method of construction that was used in the past.

Findings: The remaining components of this rectangular-shaped structure are representative of industrial buildings of the early 20th century. It features three-stepped parapet walls, each with a central shuttered vent with decorative ledge detailing at the rounded top. The eastern side includes an attached one-story rectangular, flat-topped room extension with crenelated parapet walls that research indicates was used as a depot. These remaining features do embody the characteristics of the period of construction. However, after being abandoned approximately 60 years ago, only the concrete shell of the structure remains, due primarily to the durability of the concrete material. As a structure, it no longer embodies distinctive characteristics of a type, period or method of construction that was used in the past.

Conclusion: This criterion has not been met.

(vi) The structure's original workmanship and material remain to show the construction technique and stylistic character of a given period.

Findings: The original roof and all components of the doors and windows are no longer present, hence the workmanship and original materials have been lost. The concrete shell and portions of the two wood shuttered vents remain, both original materials and in very poor condition. As a structure, the original workmanship and material no longer remain.

Conclusion: This criterion has not been met.

(vii) The structure represents the work of a master, i.e., is a noteworthy example of the work of a craftsman, builder, architect or engineer significant in local, state or national history.

Findings: No information has been found that the builder of this structure was a master craftsman, builder, architect or engineer.

Conclusion: This criterion has not been met.

(viii) The structure possesses high artistic values in its workmanship and materials.

Findings: This industrial structure was built to perform a utility function. Inspection of the concrete shell structure indicates that no significant artistic values are apparent.

Conclusion: This criterion has not been met.

(ix) The immediate setting of the site retains the planting scheme, plant materials or land uses of the relevant historic period or the landscaping is consistent with that period.

Findings: The original setting was rural industrial, and the structural shell remains close to the railway line. Currently, a rural residential area lies to the east, and a few businesses are nearby to the west on Waldo Way. No information has been found indicating that there were any original plantings. While the site remains associated with the railway, the building has been abandoned since circa 1945, and an inspection of the site showed no active use. A mixture of grasses, overgrown shrubs and trees surround the structure, and the immediate vicinity is being used for outdoor storage. The site does not retain land uses relevant to the historic period, and if any original plantings were once present they no longer exist.

Conclusion: This criterion has not been met.

(x) The site or structure yields or may be likely to yield information important in history or prehistory.

Findings: No information can be found to support this criterion.

Conclusion: This criterion has not been met.

(xi) The site or structure is significant as a visual landmark.

Findings: The remaining portions of the structure are located on the west side of the old Oregon Electric railway line, northeast of Waldo Way. The concrete shell's three stepped parapet walls and attached one-story addition with crenelated walls are distinctive visual features, which can been seen only from the railway, from portions of Tonquin Loop or from portions of Waldo Way. The building has been abandoned for approximately 60 years and portions of the structure that remain are in very poor shape. The remaining parts of the structure are not significant as a visual landmark.

Conclusion: This criterion has not been met.

CONCLUSION

Review of the Tonquin Electrical Substation building against the 12 criteria indicates that the basic 50 year requirement along with the criterion iii has been met. This is 2 of the 12 criteria. Therefore, the historical importance of this structure is not significant.

RECOMMENDATION

Based on the staff report and information gathered through inspection and research, staff recommends that the Tonquin Electrical Transformer Substation building not be designated as a landmark.

Respectfully submitted,

Elizabeth Stepp
Senior Planner

OREGON INVENTORY OF HISTORIC PROPERTIES
HISTORIC RESOURCE SURVEY FORM
COUNTY: WASHINGTON

SHPO Inventory No.: Local ID:

Historic Name:	Tonquin Electrical Substation	Date of Construction:	c. 1913
Common Name:	Tonquin Station	Original use:	Electrical Substation / Depot
Address:	11611 SW Waldo Way	Pres. Use:	Vacant
City:	Tualatin (outside City Limits)	Architect:	Unknown
Owner Name:	EMJ Properties LLC	Builder:	Unknown
Address1:	P.O. Box 12490	Theme:	early 20th Century
Address2:		Style1:	Industrial
City/State/Zip:	Portland OR 97212	Style2:	
T/R/S:	2S1W 134DB 03100	Object:	Building
Parcel:		Style Notes:	
Addition:	NA		
Block:	NA	Lot: NA	Quad:

Plan Type/Shape:	Rectangular	No. of Stories:	1.0
Primary Foundation Material:	unknown	Basement:	N
Second Foundation Material:			
Roof Form:	Gable	Roof Material:	Corrugated metal
Wall Construction:	Concrete	Structural Frame:	Concrete
Primary Window Type:	unknown		
Exterior Surfacing Material:	concrete walls		

Decorative Features: 3-stepped parapet walls, shuttered vents with decorative ledge above rounded top opening
Other notes:
Condition: Poor Moved Y/N: N Date:
Exterior Alternations/Additions (date): Corrugated metal roof (unknown)
Comments: All components of all doors and windows are missing; the concrete shell remains.

Noteworthy Landscape Features: None
Associated structures: None
Known Archaeological Features: None

Setting: Close to the west side of Burlington - Northern railroad right of way, north of Tonquin Road and west of Tonquin Loop, with Morse Brothers Quarry operations nearby to the west and rural residential properties to the east. Currently zoned Rural: Future Urban 20 Acres.

Sources: Washington County Department of Assessment and Taxation; Washington County Cultural Resource Inventory; Craig Bass, Depots of the West photograph collection, photograph and caption; Salem Public Library Historic Photograph Collection.

Statement of Significance (comments):
Architectural: None.
Historical: The Tonquin substation was constructed to serve the needs of the Oregon Electric Railway, which ran from Portland to Salem. The substation was abandoned circa 1945 when diesel locomotives were introduced to the railway. At least one other similar substation structure was built, located north of Salem at Waconda.

Recorded by: Elizabeth Stepp
Date: 06-29-05
Designation:
Graphic sources: Elizabeth Stepp
Digital Image Name / No.: TONQUINSTATION.JPG

Tonquin Electrical Substation
11611 SW Waldo Way

Image Name: TONQUINSTATION.JPG