City of Sherwood Oregon

Home of the Tualatin River National Wildlife Refuge

RESOLUTION 2015-051

ACCEPTING THE TONQUIN EMPLOYMENT AREA MARKET ANALYSIS, BUSINESS RECRUITMENT STRATEGY AND IMPLEMENTATION PLAN

WHEREAS, Metro awarded Washington County and the City of Sherwood grant funds to complete an implementation plan for the Tonquin Employment Area (TEA) as well as a market analysis and business recruitment strategy; and

WHEREAS, the consultant team, Mackenzie, in coordination with the project partners including Sherwood, Washington County, and the City of Tualatin has completed extensive review of existing documents and conditions, conducted field investigations and reached out to property owners within the area; and

WHEREAS, after additional meetings with County and City staff, the Sherwood City Council, Sherwood Planning Commission and property owners in the area, the consultant team has prepared an implementation plan along with recommendations that could potentially be considered to remove real or perceived barriers to development; and

WHEREAS, the consultant team has also prepared a market analysis and business recruitment strategy which will serve as a roadmap for future actions that could be taken by the City to help encourage development in the TEA, and

WHEREAS, the City Council intends to have additional discussion and consider actions that can be taken to help remove real and perceived barriers to development within the TEA.

NOW, THEREFORE, THE CITY OF SHERWOOD RESOLVES AS FOLLOWS:

Section 1. The Sherwood City Council hereby accepts the contents in the "Tonquin Employment Area Market Analysis, Business Recruitment Strategy and Implementation Plan," attached as Exhibit 1, as a reference and tool kit of actions that could be considered by the Council to remove barriers to development and encourage development in the TEA

Section 2. This Resolution shall be effective upon its approval and adoption.

Duly passed by the City Council this 16th day of June 2015.

Krisanna Clark, Mayor

Attest:

Sylvia Murphy, MMC, City Recorder

City of Sherwood Oregon

Tonquin Employment Area (TEA)

Market Analysis, Business Recruitment Strategy, and Implementation Plan

Prepared June 5, 2015

Consultant Team

Johnson Economics

PHS

MACKENZIE.

PROJECT PARTNERS

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6. Preliminary Infrastructure Financial Tools for the Sherwood Tonquin Employment Area; Johnson Economics, May 26, 2015
7. Tonquin Employment Area Marketing Prospectus

1. INTRODUCTION

The Washington County, Oregon, *Industrial Site Readiness Assessment and Implementation Planning* project (the "Washington County project") evaluates multiple employment sites throughout the county to determine their readiness for development. In Task 4 of the Washington County project, Mackenzie, Johnson Economics, and Pacific Habitat Services expanded on this effort to develop a Market Analysis and Business Recruitment Strategy for Sherwood's Tonquin Employment Area (TEA) and the Southwest Tualatin Concept Plan (SWCP) area, abutting study areas within a common market.

The Tonquin Employment Area and Southwest Tualatin Concept Plan area have both been identified by Metro as sites for industrial development and have been the subject of concept planning efforts adopted by the Sherwood and Tualatin City Councils in 2010. However, as several years have elapsed since that time with no discernible development, the Cities wish to expand upon the concept plans with a critical eye toward addressing obstacles that may stand in the way of development.

This effort builds on the concept plans adopted by the Cities for the TEA and SWCP by assessing market conditions, evaluating the suitability of the target industries, identifying transportation and infrastructure needs, recommending a phasing strategy, and outlining actions to effectively market the area to potential businesses. Specific recommendations comprising an implementation plan have also been prepared for the TEA.

A number of factors affect an area's suitability for development, including transportation and utility capacity, the quality of the land supply, regulatory context, and even developers' awareness of the area's characteristics. The intent of this study is to supplement past planning efforts by assessing current market conditions and the feasibility of developing the TEA with the types of industries envisioned by the City of Sherwood, coupled with recommendations for actions that could increase the viability of development.

Separate reports have been prepared for both Sherwood and Tualatin due to different funding availability and scopes of work, but each report includes some discussion of both the TEA and the SWCP area. This report documents the Task 4 results for Sherwood's Tonquin Employment Area, and includes the following elements:

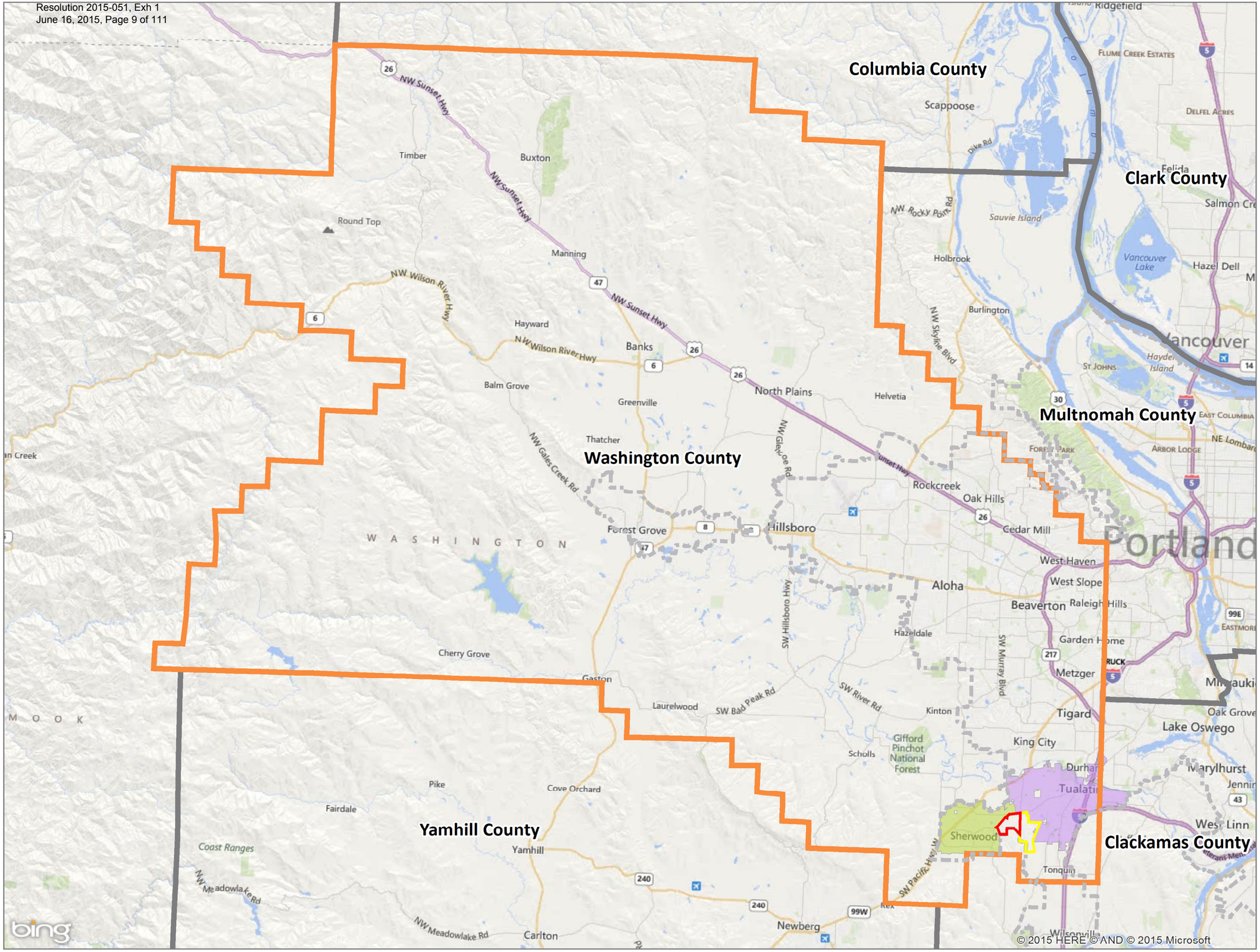
- Background information on the study area, including past planning efforts;
- Study methodology;
- Analysis of economic conditions;
- Land use, transportation, and infrastructure assessment;
- Recommendations for achieving industrial development;
- An implementation plan;
- A marketing strategy and prospectus; and
- A summary of recommended actions.

Study Area Context

The Tonquin Employment Area has an area of approximately 300 acres and is located in southern Washington County within the Portland Metro Urban Growth Boundary (UGB), immediately east of Sherwood City Limits along SW Oregon Street and SW Tonquin Road. The following diagrams provide more information on the location and condition of the TEA:

- Figure 1 indicates the TEA's location within Washington County and the Metro UGB.

- Figure 2 illustrates the TEA's location abutting Sherwood City Limits.
- Figure 3 is an aerial photograph illustrating that the TEA is currently largely undeveloped.
- Figure 4 indicates the proximity of the TEA, Tualatin City Limits, and the 438-acre Southwest Tualatin Concept Plan area.
- Figure 5 is an aerial photograph of existing conditions in both the TEA and the Southwest Tualatin Concept Plan area.



WASHINGTON COUNTY REFERENCE MAP

Washington County, OR

FIGURE 1

LEGEND

- Tonquin Employment Area
- SW Concept Plan Area
- Washington County
- County Boundaries
- Urban Growth Boundary (UGB)

City Limits

- City of Sherwood
- City of Tualatin

0 1.5 3 6 Miles

N

1 inch = 3 miles

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/5/2015
File: TEA_SWCP_WashCountyLimits

Map Created By: ALD
Project No: 2130069.04

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TONQUIN EMPLOYMENT AREA AND SHERWOOD CITY LIMITS

Sherwood, OR

FIGURE 2

LEGEND

- Tonquin Employment Area
- Sherwood City Limits
- County Boundary
- Urban Growth Boundary (UGB)

Tonquin Employment Area

City of Sherwood

WASHINGTON COUNTY

CLACKAMAS COUNTY

0 750 1,500 3,000 Feet

1 inch = 1,500 feet

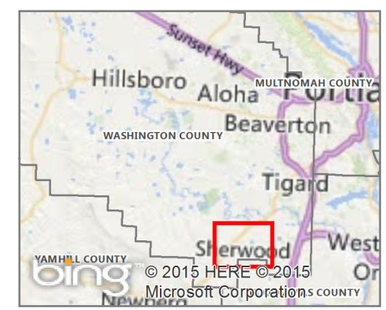
N

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/5/2015
File: TEA_SherwoodCityLimits

Map Created By: ALD
Project No: 2130069.04



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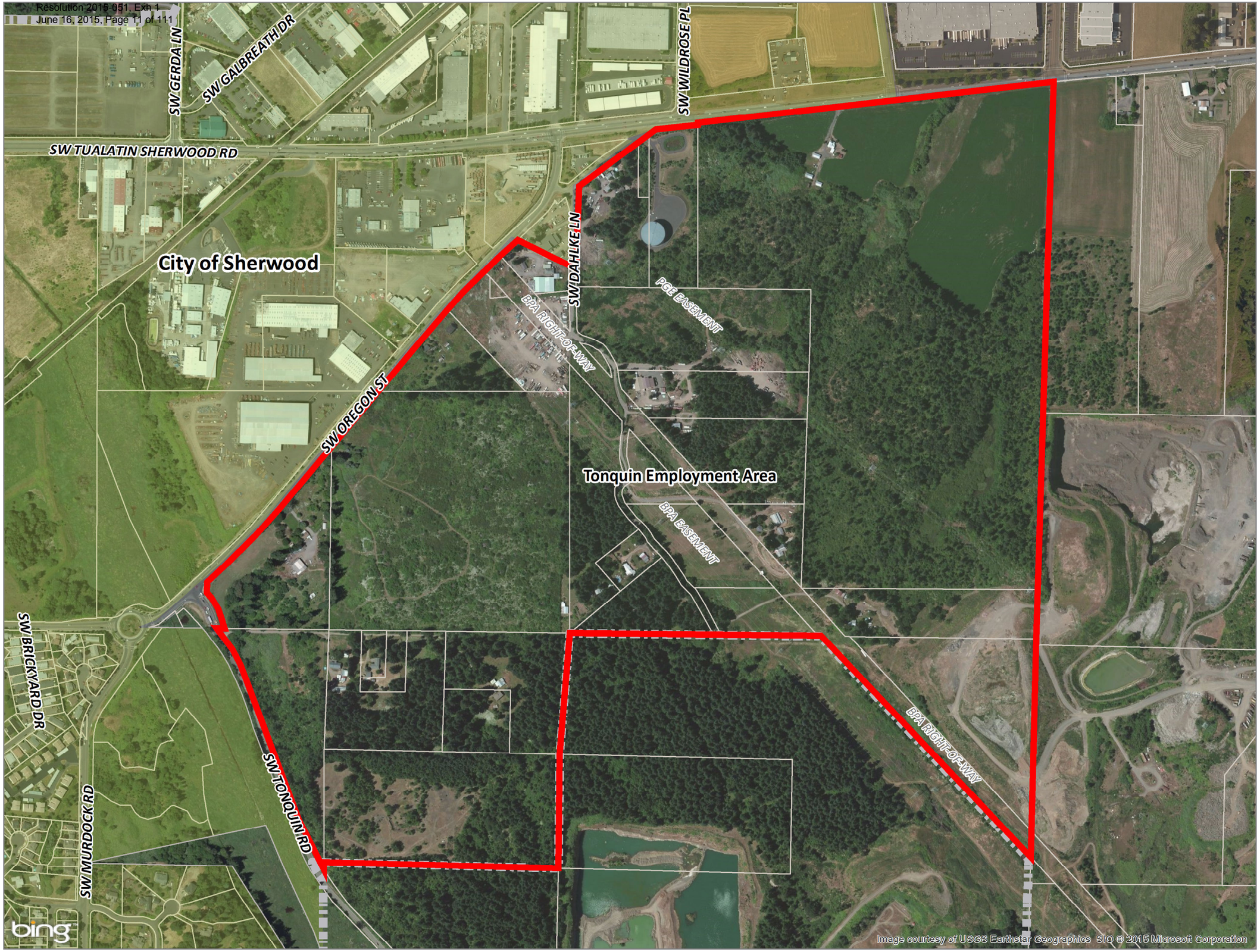
TONQUIN EMPLOYMENT AREA AERIAL PHOTOGRAPH

Sherwood, OR

FIGURE 3



LEGEND

- Tonquin Employment Area
- Tax Lots
- Sherwood City Limits
- Urban Growth Boundary (UGB)

0 250 500 1,000 Feet

N

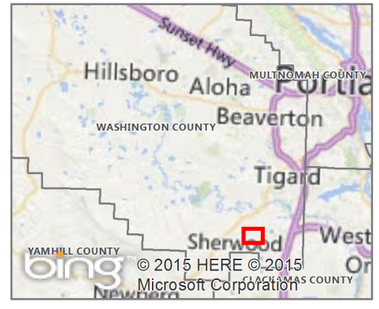
1 inch = 500 feet

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/5/2015
File: TEA_Sherwood_aerial

Map Created By: ALD
Project No: 2130069.04



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TONQUIN EMPLOYMENT AREA, SW CONCEPT PLAN AREA, AND SHERWOOD AND TUALATIN CITY LIMITS

Washington County, OR

FIGURE 4

City of Tigard

City of Tigard

City of King City

City of Lake Oswego

City of Durham

City of Rivergrove

City of Tualatin

Tonquin Employment Area

SW Concept Plan Area

City of Sherwood

City of Wilsonville

LEGEND

- Tonquin Employment Area
- SW Concept Plan Area
- County Boundary
- Urban Growth Boundary (UGB)

City Limits

- City of Sherwood
- City of Tualatin

0 1,500 3,000 6,000 Feet

1 inch = 3,000 feet

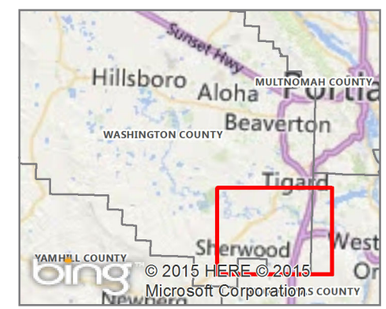
N

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/4/2015
File: TEA_SWCP_Sherwood_TualatinCityLimits

Map Created By: ALD
Project No: 2130069.04



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SHERWOOD TONQUIN EMPLOYMENT AREA AND SW TUALATIN CONCEPT PLAN AERIAL PHOTOGRAPH

Washington County, OR

FIGURE 5

LEGEND

- Tonquin Employment Area
- SW Concept Plan Area
- Tax Lots
- County Boundary
- Urban Growth Boundary (UGB)

City Limits

- City of Sherwood
- City of Tualatin

0 500 1,000 2,000 Feet

N

1 inch = 1,000 feet

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/4/2015
File: TEA_SWCP_Sherwood_Tualatin_aerial

Map Created By: ALD
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The TEA's location within the UGB allows property owners to apply to annex into City Limits, a process that requires a public hearing and City Council approval.[1]

Prior Planning Efforts

The area now known as the TEA was previously designated for rural uses by Metro and Washington County. In 2002 and 2004, Metro expanded the urban growth boundary to include the TEA (which at that time was identified as "Area 48") and the Southwest Tualatin Concept Plan area, both of which were designated for industrial development. Metro regulations required each City to plan for how the study areas would transition from rural uses to urban uses. The City of Sherwood prepared an Existing Conditions Report in 2009 to describe the TEA and then evaluated multiple concept plans for the area. In 2010, the City Council approved a Preferred Concept Plan, which among other aspects, preserves a site of at least 50 acres per Metro requirements while also yielding a 30-acre parcel.

Study Methodology

The project approach started with a review of existing reports for the City of Sherwood (e.g., utility master plans) and those specific to the Tonquin Employment Area. The full list of reference documents reviewed for this study is located in Appendix 1. To ensure that the consultant team used the most current information available, the team coordinated with City staff and evaluated current market conditions to identify items that had changed since the publication dates of the background documents. This analysis was supplemented by the roadway and site layouts performed during Tasks 2 and 3 of the Washington County project, which included a 40-acre site in the TEA plus a 46-acre site and a 79-acre site within the SWCP area.

The consultant team assessed the economic factors, land use regulations, and infrastructure and transportation requirements of the target industries selected by the City for development in the TEA. These requirements were then compared to existing conditions in order to identify any barriers that would stand in the way of development. Finally, an implementation plan was developed to outline measures that could overcome the identified barriers, including development of a marketing prospectus for the TEA. The Planning Commission, City Council, and property owners were provided opportunities to provide input on the process in May and June 2015.

[1] Sherwood annexations also require approval by voters within the City. In this instance, the electorate already voted in favor of annexation of the Tonquin Employment Area, which serves to streamline future annexation applications.

2. ECONOMIC OPPORTUNITIES ANALYSIS SUMMARY AND MARKET TRENDS ANALYSIS

The purpose of this chapter is to summarize Sherwood's adopted Economic Development Strategy and identify market trends that affect development within the study area. This chapter draws on the Johnson Economics memorandum included as Appendix 2.

Economic Opportunity Analysis Summary

The 2007 City of Sherwood Economic Development Strategy serves as the City's economic opportunities analysis (EOA) required by Statewide Planning Goal 9 and Oregon Administrative Rules. This document outlines the City's economic development vision, goals, and objectives; describes existing conditions; analyzes growth trends and employment land use demand and supply for the EOA; analyzes fiscal impacts over a 20-year planning horizon; describes economic development issues facing the City; and identifies an action plan.

The 2007 EOA identified 437 local businesses with roughly 4,315 employees and noted that the City's population was growing at a 4.8% annual rate at that time.

Vision Statement

The EOA outlines the following vision statement for Sherwood:

> *The City of Sherwood will drive economic development and support businesses that provide jobs for our residents by building on our assets and developing the necessary infrastructure to retain existing businesses and support new businesses. Economic development also will be supported by maintaining our livability and character as a clean, healthy, and vibrant suburban community where one can work, play, live, shop and do business.*

Strengths, Weaknesses, and Opportunities

The following characteristics were identified as potential factors impacting economic growth prospects in the 2007 EOA:

- The majority of Sherwood's workforce commutes outside the urban area for employment. Adequate land to support local job creation is needed.
- Adequate infrastructure, specifically sewer service, has curtailed economic growth.
- "Bedroom" communities such as Sherwood often have trouble holding down taxes while providing quality services.
- Industrial development in Sherwood is dominated by durable goods manufacturing. Sherwood sees an opportunity to attract alternative industry types to diversify the industrial base.
- Expanding land and housing costs are restrictive to low and moderate income households.
- Robust industrial growth in neighboring communities such as Tualatin and Wilsonville has the potential to spill into and impact Sherwood's economy.
- Sherwood's reputation as a small community with excellent quality of life, good schools, and good labor market access has made it an ideal location for a variety of manufacturing operations.
- Tualatin-Sherwood Road congestion and distance from Interstate 5 limits Sherwood's marketability to large scale manufacturing and distribution users.

- Sherwood does not have any known natural gas or telecommunications constraints. Investments to improve water and sewer services are planned or made.

Among all these factors, the transportation constraints were thought to have the greatest impact on the types of industries that would look to invest, expand, or locate in Sherwood.

Targeted Industries

The following industries and/or industry clusters utilizing industrial land were identified in the 2007 EOA as being representative of strategic economic opportunities:

- Metal Manufacturing
- Machinery Manufacturing
- Furniture Manufacturing
- Construction
- Specialty Contractors
- Paper Manufacturing
- Plastic or Rubber Manufacturing
- Wood Manufacturing
- Heavy Construction
- Wholesale Trade of Electronics

These industries' sectors were considered when identifying the following target industry types:

- Small to mid-size light manufacturing shops can thrive in small communities such as Sherwood. The small size of such businesses (5-50 employees) means that transportation impacts (and needs) are relatively small. Likewise, with fewer jobs, a business is more likely to find skilled labor within the community (as opposed to finding a labor shortage). Finally, smaller manufacturers are likely to emerge from entrepreneurs who are attracted by Sherwood's quality of life. Light manufacturers could include furniture makers, metal fabricators, and specialty building materials.

- Specialty contractors and construction firms that serve the southern Portland-Vancouver PMSA. These operations may require on-site materials warehousing, light assembly, and wholesale distribution of a variety of construction products and equipment. Given the need for both full and seasonal (part time) employment, the impacts on transportation systems are not as extensive as with other industrial operations.

- Creative services such as engineering, legal services, publishing, management consulting, and accounting are generally high-paying jobs that tend to locate close to residential customers. With the establishment of a new Class A office center, Sherwood could position itself as a sub- regional location for business and professional services.

Based on the characteristics of these business types, the EOA determined that small business parks with flex space, and large master planned research and development campuses with 0.5- to 20-acre sites were the most important industrial sites to accommodate economic growth. The TEA was specifically referenced as a site to accommodate such a use.

Employment Land Demand and Supply

The EOA quantified the demand for and supply of employment land for the City. Under the Medium Growth Scenario, Sherwood was expected to have a 20-year mid-range employment forecast of 3,009 new industrial space-utilizing employees (an annual increase of 8.6% through 2025), which was expected to translate to a demand for 221 net (276 gross) industrial acres

over the planning period. By comparison, the vacant land analysis identified 202 vacant and 101 potentially redevelopable industrial acres in Sherwood's land supply. Consequently, the analysis found that additional vacant industrial land would be needed in the urban growth boundary to accommodate demand under the medium growth forecast.

Tonquin Employment Area Concept Plan Summary

The 2010 Tonquin Employment Area Concept Plan describes the existing conditions within the TEA; outlines the preferred concept plan selected by the City; describes economic, transportation, and utility conditions and needed upgrades; describes potential infrastructure costs and funding tools; and details implementation policies and zoning code provisions specific to the TEA.

Building on the 2007 EOA, the 2010 Concept Plan identified preferred industry targets for the TEA:

1. Industrial campuses and other industrial sites on large and medium-sized parcels that can accommodate a variety of industrial companies and related businesses in:
   A. Clean Technology–Renewable Energy, Energy Efficiency, Sustainable Environmental Products.
   B. Technology & Advanced Manufacturing–Manufacturing/Metals, High Technology, BioTechnology and Bio-pharmaceuticals.
   C. Outdoor Gear and Activewear–Sports Apparel, Recreation Products

2. Flex Building Space with small and medium-sized industrial campuses and business parks to accommodate research and development companies, incubator/emerging technology businesses, related materials and equipment suppliers, and/or spin-off companies and other businesses that derive from, or are extensions of, larger campus users and developments.

The Concept Plan estimated 20-year employment growth for the TEA based on assumed build-out of 235 buildable acres across commercial and industrial uses. The analysis forecasted capacity of 2,290 in the first 20-years with a full build-out capacity of 3,520 jobs.

Market Trends Evaluation

To determine market trends that affect the TEA, the consultant team evaluated industrial trends in the local economy, focusing on the geographic area roughly centered on Tualatin-Sherwood Road between Highway 99W and Boones Ferry Road (see Figure 6).

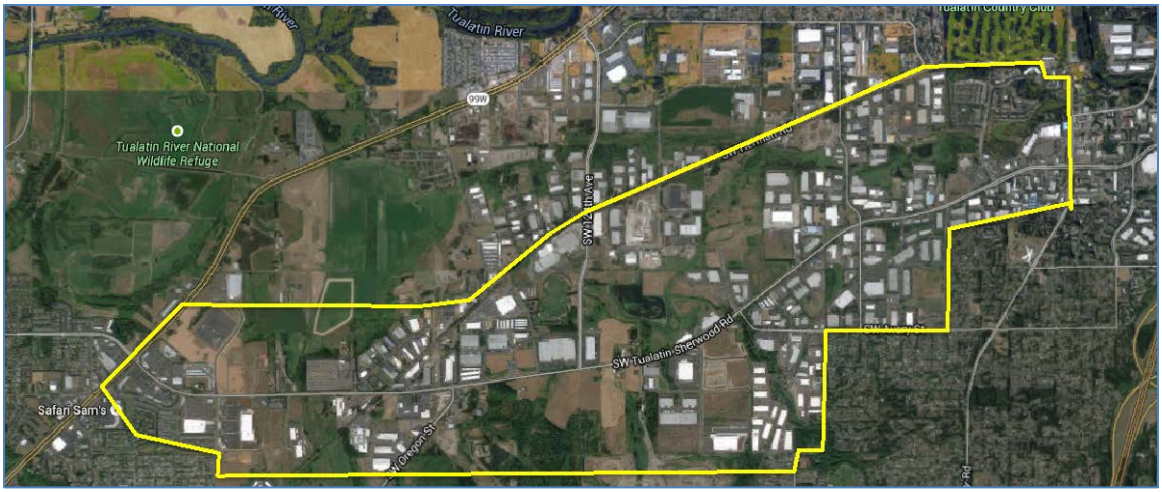


Figure 6: Tualatin-Sherwood Corridor Analysis Area

In previous economic development studies, Tualatin and Sherwood had slight variances in their identified target industries, which generally reflect different periods of evaluation since they were not a coordinated effort between the two jurisdictions. The current analysis does reflect a coordinated effort that considers the same target industries for both Tualatin and Sherwood, specifically as it relates to the TEA and the SWCP, since in most cases economic systems do not function around jurisdictional lines.[2]

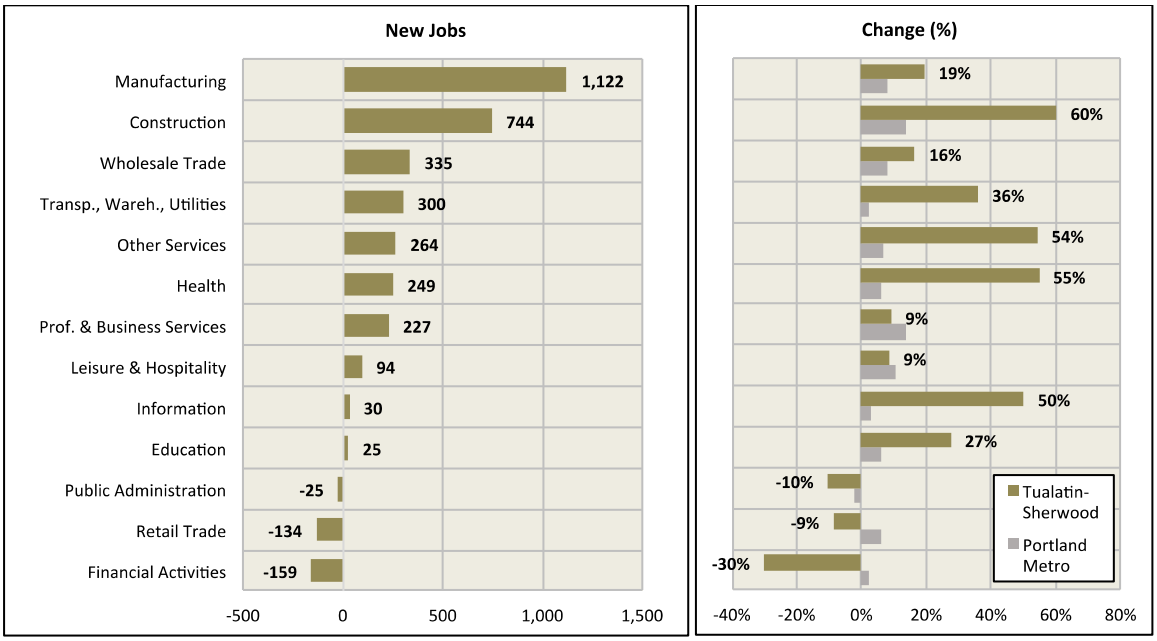
The 2014 *Industry Cluster Analysis in the City of Tualatin* prepared by Johnson Economics identified Advanced Manufacturing; Wood, Paper, Printing, and Related; and Food Processing and Distribution as target industries for Tualatin. Building on these three core clusters, for this project Johnson Economics conducted an additional employment and industry specialization analysis for the economic conditions specific to the Tualatin-Sherwood Road corridor. This analysis provides insight into the industrial ecosystem likely to influence the TEA and the SWCP.

Industry Employment Growth

According to the Quarterly Census of Employment and Wages published by the U.S. Bureau of Labor Statistics, the Tualatin-Sherwood Road corridor (see Figure 6) added 3,030 jobs between 2010 and 2013. This represents an increase of 18%, which translates to an average annual growth rate of 5.6%. In comparison, the equivalent growth rate over the same period was 2.1% in the Portland Metro Area and 1.5% in the nation as a whole. The strongest growth took place in 2013, when employment within the Tualatin-Sherwood Road corridor expanded by nearly 10%.

The manufacturing industry contributed more than one-third of the job growth over the 2010-2013 period, with a gain of more than 1,100 jobs. Construction added nearly 750 jobs over the period, which represented an expansion of 60% relative to its 2010 employment level. Strong job growth was also seen in the wholesale industry and in transportation, warehousing, and utilities, both of which contribute significantly to demand for industrial space.

[2] With the exception of instances of extreme differences in taxes, fees, policy, zoning, etc.



SOURCE: Quarterly Census of Employment and Wages (U.S. Bureau of Labor Statistics)
Figure 7: Industry Employment Shift, 2010 to 2013

Industry Specialization

The most common analytical tool to evaluate economic specialization is a location quotient analysis. This metric compares the concentration of employment in an industry at the local level to a larger geography. For example, a Location Quotient of 1.50 for widget manufacturing would indicate that the share of employment in widget manufacturing locally was 50% higher than the national average. Generally, 1.50 is a common threshold indicating a relatively high specialization. Among the industries with the highest rates of specialization in the Tualatin-Sherwood Road corridor, 12 are manufacturing industries and an additional five are in wholesale/distribution related activities. Considering the top 20 most specialized industries in the Study Area, Location Quotient analysis confirms that reliance on Advanced Manufacturing; Wood, Paper, Printing, and Related Manufacturing; and Food Processing and Distribution as targeted economic opportunities is appropriate for both Cities.

Industrial Market Trends

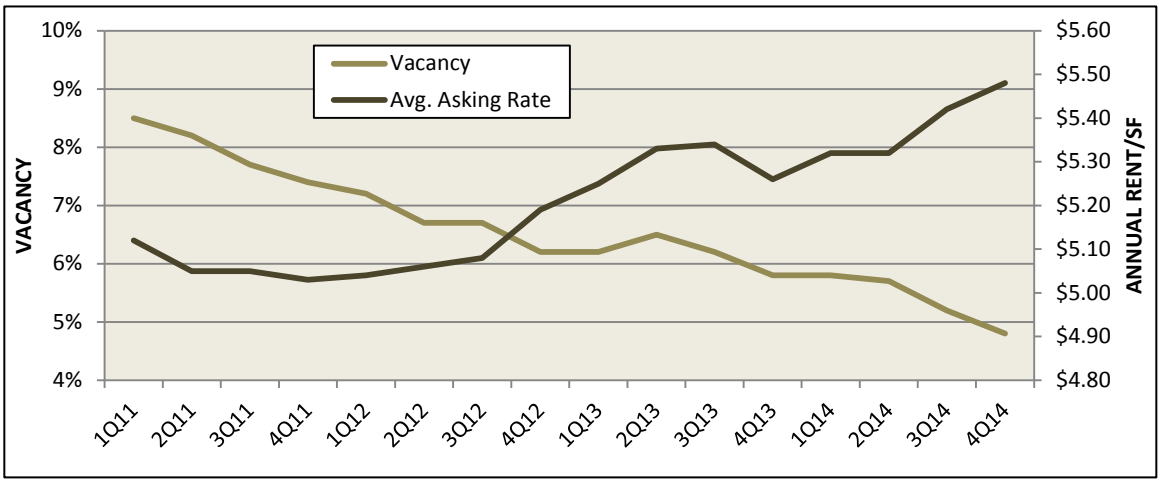
The following analysis reflects recent industrial market trends that will be influencing the character of industrial development over the next business cycle. This analysis includes an overview of conditions in the broader Portland Metropolitan area as well as the I-5 South submarket, which includes the Tualatin-Sherwood Road corridor.

Portland Metro Area

Portland Metro's industrial real estate market has seen significant improvement over the past four years as the local economy has recovered. This is true for warehouses, manufacturing facilities, and flex buildings alike. The flex segment has benefited from growth in the high-tech cluster, as local firms like Intel are expanding, and out-of-area firms like Salesforce.com have moved in. Manufacturing and distribution center space has benefitted from increasing consumption as well as from the region's growing output.

With little new construction in recent years, the absorption of industrial space has driven vacancy rates down and rents up. At the end of the fourth quarter 2014, the overall vacancy rate

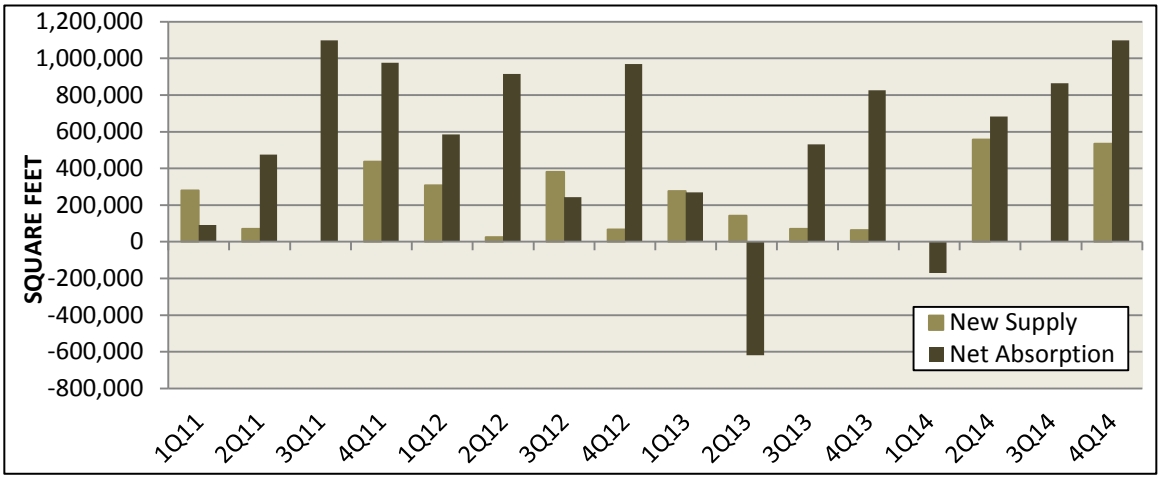
for industrial space was 4.8%, and the year-over-year rent growth was 4.2%, according to Kidder Mathews.



** Blended, NNN, asking rate.*
SOURCE: Kidder Mathews, Johnson Economics

Figure 8: Vacancy and Rent Trend, Portland Metro Area (2011 – 2014)

Roughly 1.1 million square feet of new industrial space was completed in the Portland Metro Area in 2014. This represents a doubling since 2013. However, it is far less than net absorption (net change in occupied space) during the year, which totaled 2.5 million square feet. Though limited new construction was helpful in bringing down excessive vacancy rates in the early part of the recovery, it now likely puts a drag on absorption. At the moment, 1.4 million square feet of space is under construction.



SOURCE: Kidder Mathews, Johnson Economics

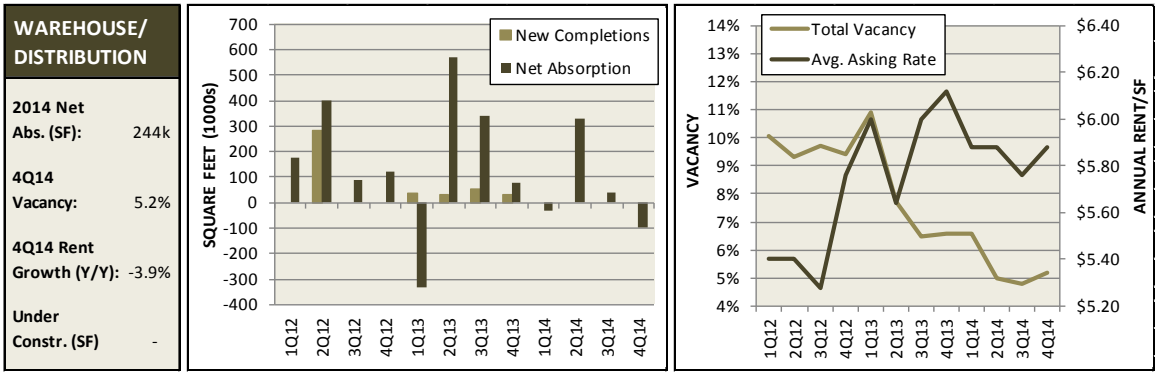
Figure 9: New Deliveries vs. Net Absorption, Portland Metro Area (2011 – 2014)

I-5 South

The I-5 South submarket includes Tualatin and Sherwood as well as Tigard and Wilsonville. Trends in this submarket have largely tracked regional trends over the past three years. Over this period, the overall industrial vacancy rate has fallen from 9% to 5%, and the average annual asking rent has risen from $5.64 to $6.96 per square foot.

Warehouse/Distribution Centers

Warehouses and distribution centers account for two-thirds of the I-5 South industrial market. This segment has seen net absorption of 1.7 million square feet over the past three years, and almost no new construction. The vacancy rate has dropped from around 10% to 5% over this period, while average annual asking rents have increased from $5.40 to $5.88. The decline in asking rents (-4%) over the past year does not appear to reflect softening market conditions, judging from the continued decline in vacancy. Asking rates reflect available inventory, and in times of low vacancy and no new construction, the least desirable properties are often the ones to remain unleased. As these properties account for an increasing share of vacant space, they can reduce the average asking rate, although achievable rent levels are generally rising.

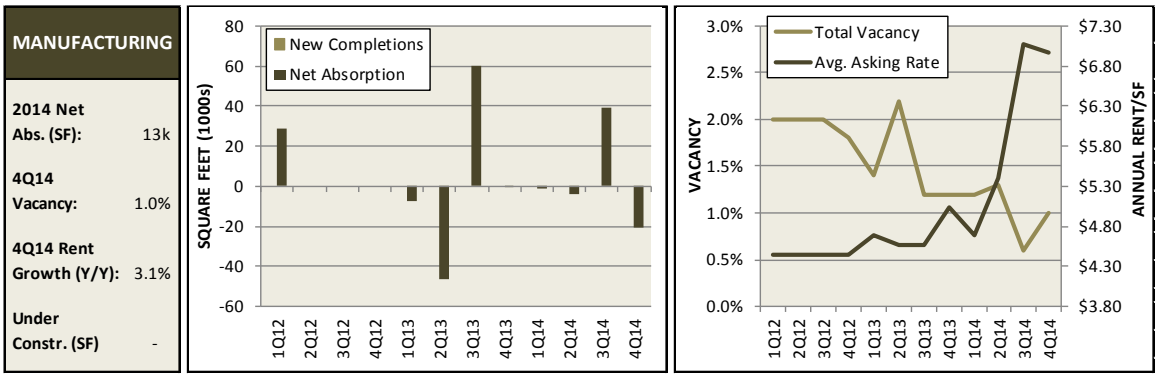


SOURCE: JLL, Johnson Economics

Figure 10: Market Trends, Warehouse and Distribution Space, I-5 South Submarket (2012 – 2014)

Manufacturing Space

Manufacturing facilities account for around 20% of the I-5 South submarket. Roughly 50,000 square feet of manufacturing space has been absorbed on a net basis over the past three years, bringing an already low vacancy rate down from 2% to 1%. In comparison, the metro-wide vacancy rate for manufacturing space is 4.3%. The average annual asking rate for available space jumped from $5.04 to $6.96 over the past year. There is no manufacturing space currently under construction in this submarket.



SOURCE: JLL, Johnson Economics

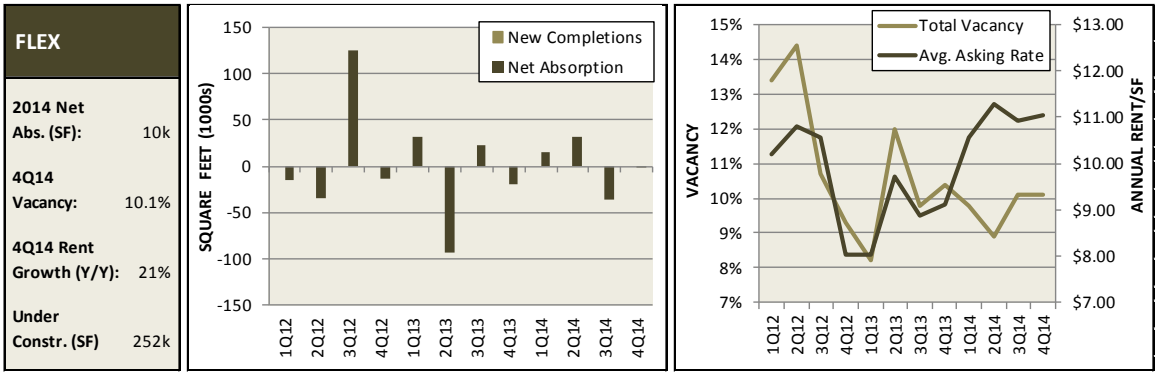
Figure 11: Market Trends, Manufacturing Space, I-5 South Submarket (2012 – 2014)

Flex Space

Flex space is currently a minor part of the I-5 South submarket, currently accounting for around 10% of total industrial space. However, it is the most rapidly expanding segment, with 250,000

square feet currently under construction. This represents an 8% expansion of the current flex inventory. Nearly all of this will be located in Tualatin, and most of it will be delivered in 2015.

Absorption of flex space in I-5 South has been mixed over the past three years, with net absorption of only 16,000 square feet. However, some space was taken off the market over this period, which contributed to a decline in vacancy from around 13% in early 2012 to around 10% in late 2014. Average asking rents have increased from $10.20 to $11.04 over this period.

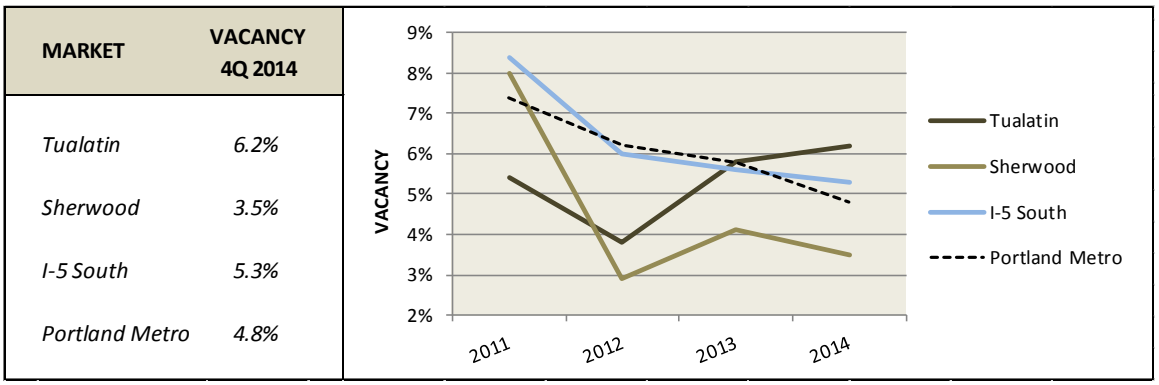


SOURCE: JLL, Johnson Economics

Figure 12: Market Trends, Flex Space, I-5 South Submarket (2012 – 2014)

Tualatin-Sherwood Road Corridor

There is limited market data specific to Tualatin and Sherwood, but Kidder Mathews publishes year-end vacancy rates for these geographies. According to this data, the overall industrial vacancy rate in Tualatin is 6.2%, which is somewhat higher than in the remainder of the I-5 South submarket and the wider Metro Area. In Sherwood, however, the vacancy rate is considerably lower, at 3.5%, after falling steeply in 2012.



SOURCE: Kidder Mathews, Johnson Economics

Figure 13: Year-End Vacancy Rates, All Industrial Space (2011 – 2014)

There are three projects with eight buildings and more than 500,000 square feet of industrial space currently under construction in the Tualatin-Sherwood submarket. All are located in Tualatin. All eight buildings are scheduled for delivery in 2015, as indicated in Table 1.

Table 1: Pipeline of Industrial Space in Tualatin-Sherwood Road Corridor

Project Name	Address	Buildings	Total SF.	Type	Status	Est. Delivery	Developer
Koch Corporate Center	SW 115th & Itel Street	6, 7	100,000	Flex	U.C.	1Q 2015	PacTrust
Southwest Industrial Park	19585 SW 118th Ave	A, B, C, D	301,709	Flex	U.C.	3Q 2015	Trammell Crow Company
Hedges Creek Business Park	112th Ave & Tual.-Sherw. Rd	A, B	116,850	Flex	U.C.	2Q-3Q 2015	Martin Development

SOURCE: Listing brokers, developers, Johnson Economics

3. EVALUATION OF LAND USE, TRANSPORTATION NETWORK, AND INFRASTRUCTURE SYSTEMS

The consultant team reviewed the existing published development codes, utility master plans, concept plans, and similar studies for the Tonquin Employment Area and Southwest Tualatin Concept Plan area. The findings of our land use, transportation network, and infrastructure review are presented in this chapter.

Land Use Review

This section discusses existing land use conditions and the zoning regulations that would apply following annexation of properties within the TEA.

Existing Conditions

As noted in Chapter 1, the TEA consists of approximately 300 acres east of Sherwood city limits within the urban growth boundary. The area is largely undeveloped, with the exception of a few residences and businesses plus the City of Tualatin water reservoir and agricultural land near Tualatin-Sherwood Road. Multiple electrical transmission corridors cross the TEA in a northwest-southeast orientation, including a Portland General Electric (PGE) easement, a Bonneville Power Administration (BPA) easement, and a BPA right-of-way. Additionally, a Kinder Morgan petroleum pipeline passes through a portion of the site in a southeasterly direction from Oregon Street (roughly parallel to the BPA right-of-way).

As illustrated in Figure 14, slopes vary throughout the TEA from under seven percent to areas in excess of twenty-five percent. The study area contains both upland habitat and wetland habitat as illustrated in the diagram of Metro Title 13 “Nature in Neighborhoods” resources (Figure 15). Appendix 3, which describes natural resources in detail, notes that the TEA is primarily comprised of parcels that are at least partially forested or else have been cut over fairly recently, are currently in agricultural production, or are relatively developed. There are multiple vegetation communities in the TEA, the most prominent of which are Upland Mixed Evergreen-Deciduous Forest, Upland Shrub Thicket, Wetland (Forested), Wetland (Scrub-Shrub), Wetland (Emergent), Wetland (Open Water), and Developed/Disturbed. Figure 16 illustrates the wetlands identified by Pacific Habitat Services based on February and March 2015 site assessments.

Several of the features noted above hamper the ability to create development areas amenable to certain industrial employment types. Slopes in excess of seven percent increase the grading requirements (and associated cost) necessary to create the large, flat, rectilinear sites desired for large-format industrial buildings. The electrical transmission corridors, petroleum pipeline, and wetlands locations constrain several properties within the TEA, while the habitat areas could restrict development locations and add local, state, and federal permitting requirements that would extend the timeline before development could occur.

SHERWOOD TONQUIN EMPLOYMENT AREA AND SW TUALATIN CONCEPT PLAN SLOPES

Washington County, OR

FIGURE 14

LEGEND

- Tonquin Employment Area
- SW Concept Plan Area
- Slopes 7-25%
- Slopes >25%
- Tax Lots
- County Boundary
- Urban Growth Boundary (UGB)

City Limits

- City of Sherwood
- City of Tualatin

0 500 1,000 2,000 Feet

N

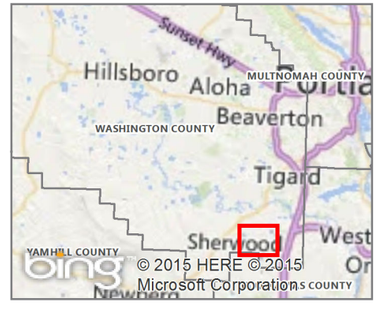
1 inch = 1,000 feet

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/4/2015
e: TEA_SWCP_Sherwood_Tualatin_aerial-Slopes

Map Created By: ALD
Project No: 2130069.04



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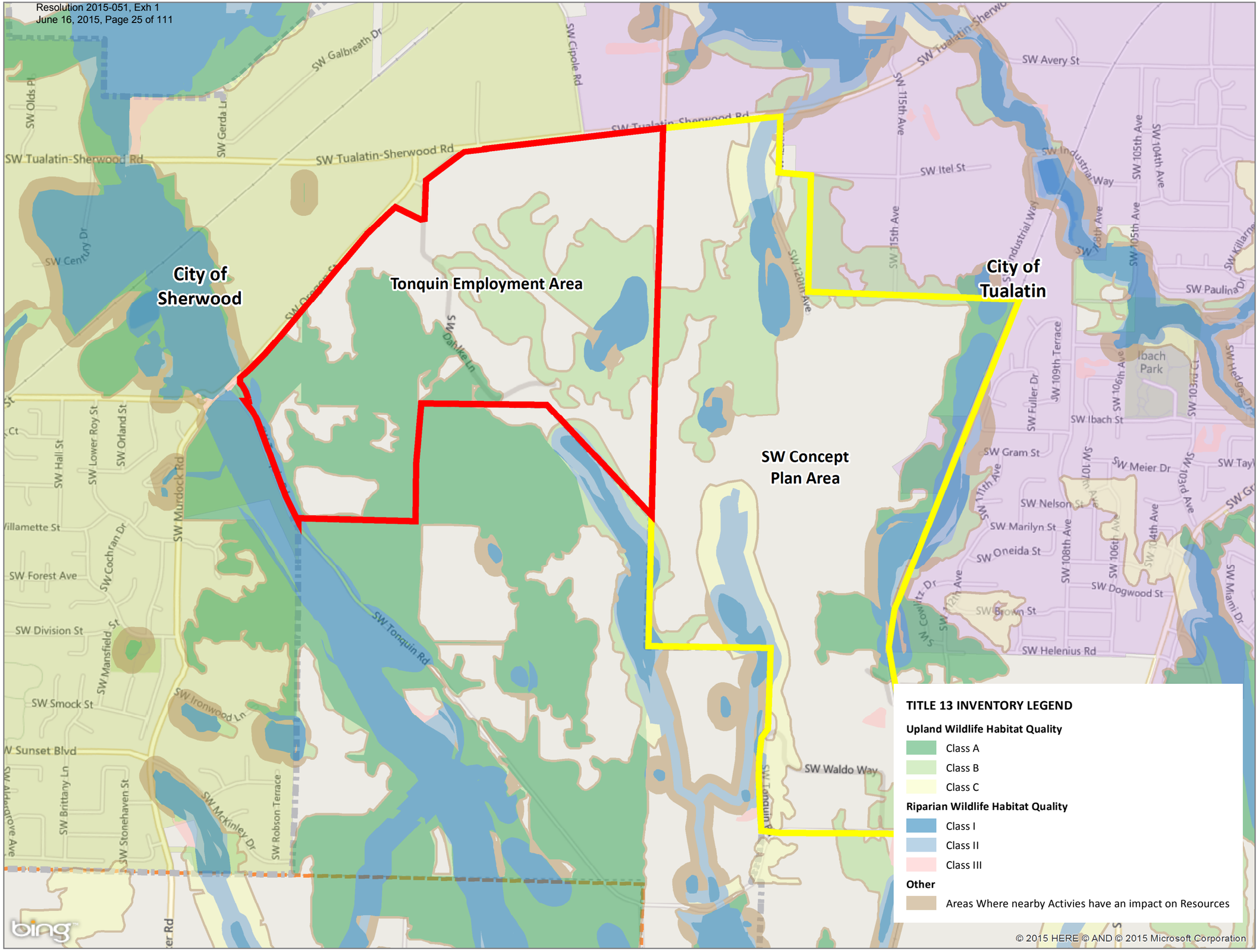

TITLE 13 INVENTORY LEGEND

Upland Wildlife Habitat Quality
- Class A
- Class B
- Class C

Riparian Wildlife Habitat Quality
- Class I
- Class II
- Class III

Other
- Areas Where nearby Activies have an impact on Resources

SHERWOOD TONQUIN EMPLOYMENT AREA AND SW TUALATIN CONCEPT PLAN METRO TITLE 13 RESOURCES (NATURE IN NEIGHBORHOODS)

Washington County, OR

FIGURE 15

LEGEND
- Tonquin Employment Area
- SW Concept Plan Area
- County Boundary
- Urban Growth Boundary (UGB)

City Limits
- City of Sherwood
- City of Tualatin

0 500 1,000 2,000 Feet

N

1 inch = 1,000 feet

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/4/2015
File: TEA_SWCP_Goal5Resources

Map Created By: ALD
Project No: 2130069.04

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SHERWOOD TONQUIN EMPLOYMENT AREA AND SW TUALATIN CONCEPT PLAN WETLANDS

Washington County, OR

FIGURE 16

LEGEND

- *Wetlands
- Wetlands ID number
- Tonquin Employment Area
- SW Concept Plan Area
- County Boundary
- Urban Growth Boundary (UGB)

City Limits

- City of Sherwood
- City of Tualatin

0 500 1,000 2,000 Feet

N

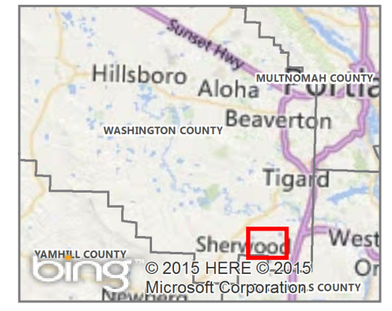
1 inch = 1,000 feet

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/5/2015
TEA_SWCP_Sherwood_Tualatin_aerial-Wetlands

Map Created By: GF
Project No: 2130069.04



*Note: wetland areas are approximate based on Pacific Habitat Services site assessments February-March 2015. Site-specific wetland delineations would be necessary prior to development.

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Image courtesy of USGS Earthstar Geographics SIO © 2015 Microsoft Corporation

Employment Industrial Zone

Following adoption of the 2010 Preferred Concept Plan, the site was designated Employment Industrial (EI) in the Comprehensive Plan and a new EI zone was incorporated into the Development Code. Properties within the TEA that annex into the City would be zoned EI. The EI zone was created specifically for the Tonquin Employment Area to ensure that properties develop in a manner consistent with applicable Metro regulations for designated Industrial Areas and with the vision outlined in the Concept Plan.

The EI zone is intended to complement the City's EOA by targeting preferred industry sectors including Clean Technology, Technology and Advanced Manufacturing, and Outdoor Gear and Active Wear. The permitted uses within the EI zone are more restrictive than the uses allowed in the City's Light Industrial or General Industrial zones. Furthermore, to provide sufficient space for the target industries, the EI zone requires new sites to have a minimum area of three acres (with minor exceptions for selected commercial uses and existing lots of record), while the one site over 50 acres has restrictions limiting the ability to subdivide into smaller parcels. Retail and professional services that cater to daily customers are restricted in size, and commercial development must be located near Blake Road rather than near Oregon Street or 124th Avenue.

Transportation Review

The consultant team reviewed documentation of the existing transportation conditions as well as proposed improvements. This section discusses the transportation network that serves the Tonquin Employment Area.

Tualatin-Sherwood Road

This County Arterial is currently three lanes wide adjacent to the site. Widening is anticipated to a five-lane section in the near future, but no funds are currently identified. We have assumed no driveway access will be allowed for development in the TEA except opposite the Cipole Road signalized intersection, as all development areas would have access to lower classification roadways.

124th Avenue

The alignment has been determined for the extension south of Tualatin-Sherwood Road to Grahams Ferry Road. Construction will begin in summer 2015 on a core road for this County Arterial. No driveway access will be allowed per agreement with the Cities.

Blake Street

This road, which is identified as a need in the 2010 TEA Concept Plan, would serve as an east-west collector through the area, providing an alternate to Tualatin-Sherwood Road between 124th Avenue and Oregon Street in Sherwood (see Figure 17). Based on recent review of the area, it is now recommended the roadway alignment be altered to avoid wetland areas. Through the TEA, the alignment would head southwest from 124th Avenue on the west side of the wetland and cross the power line easements perpendicularly. From that point, the road would turn 90 degrees along the west side of the power line easements to a roundabout intersection with Oregon Street. At the 90 degree bend, future extensions to the south and west could be accommodated.

Tonquin Road

This two-lane County arterial does not have bike lanes or sidewalks, and is not currently planned for improvements as it is primarily outside the city limits. No access is proposed to Tonquin Road for the TEA as it is located at the bottom of a steep slope.

Oregon Street

This roadway is classified as a three-lane arterial and is built to its planned width. Sidewalks do not exist for most of the south frontage and will need to be provided with development.

Local Street Connections

City of Sherwood TSP Figure 18 identifies future extension of Cipole Road south of Tualatin-Sherwood Road into the TEA. Based on this update, we are assuming an internal drive will be located here instead.

Transit Service

Tri-Met serves downtown Sherwood with routes 12 and 94. TriMet's Southwest Service Enhancement Plan is anticipated to provide service along Tualatin-Sherwood Road and 124th Avenue.

Access spacing standards

The following spacing standards generally apply to new driveway and roadway access points:

- Local streets – 10 feet from the point of curvature or 25 feet if no radius exists
- Neighborhood routes – 50 feet
- Collectors – 100 feet
- Arterials – 600 feet

Additional access restrictions apply to Tualatin-Sherwood Road (which would prohibit new driveways except opposite Cipole Road) and 124th Avenue (which would prohibit all driveways and only allow access at Blake Road).

Infrastructure Review

The consultant team reviewed documentation of the existing infrastructure conditions, as well as proposed improvements for water distribution, sewer collection and treatment, and storm drainage systems. In addition to location and sizes of the proposed improvements, the team reviewed the assumptions used to determine the presented utility sizing and alignments, such as expected development density, industrial utility profiles, and utility system corridor alignments.

Water Infrastructure

Municipal water service for the Tonquin Employment Area is expected to be provided by City of Sherwood. Existing service is provided to the western and northern boundaries of the TEA, and expansion to the area is described in the Water System Master Plan.

The TEA will be developed as part of the 380-foot Pressure Zone, which comprises most of the City's water service area. This zone is served by two reservoirs with existing capacity of 6.0

million gallons (MG). The 2015 Master Plan identifies the 380-foot Pressure Zone reservoirs will experience a 0.61-MG deficit at full build-out of the plan service area. However, since the 380-foot zone covers such a large area of the city including significant growth areas, it is not clear that the expected storage deficit will be due to the TEA growth. As noted in the Master Plan, the expected deficiency is far enough out on the development timeline that the need for storage expansion should be considered as part of future planning analysis.

Water supply to the City is provided from groundwater wells and the Willamette River Water Treatment Plant. The City's wells are currently used for emergency redundancy only and can provide approximately 2.6 million gallons per day (MGD). The City currently owns a 5-MGD share in the plant, and the Master Plan recommends purchase of an additional 5-MGD share of future expansion of the plant to accommodate full build-out. The master plan projects TEA development to contribute 0.34-MGD demand to the system, so it is unlikely that development of the TEA will trigger the need for additional supply capacity. However, this projection does not appear to include process water uses. Adding high-demand industrial users in the TEA could potentially exceed the currently available supply surplus of 1.1 MGD.

The distribution system in the TEA is proposed to be extended from existing 10" and 12" lines serving the eastern edge of the 380-foot Pressure Zone. This water main size is expected to be sufficient for most industrial uses; however, high-demand users could require higher peak flows and larger mains than are currently expected.

Sewer Infrastructure

Municipal sewer service for the Tonquin Employment Area is expected to be provided by City of Sherwood. The City has recently upgraded the Rock Creek Interceptor located northwest of the TEA, which is expected to handle flows from the northern portion of the TEA development.

Downstream of the City's pipe system, Clean Water Services has identified capacity issues for the Onion Flat Trunk west of the TEA. However, City staff has said that more recent modeling efforts indicate this line capacity is sufficient for planned build-out conditions.

Proposed sewer infrastructure through the TEA is expected to consist of 12" to 15" lines. A ridge generally runs northwest-southeast along the BPA right-of-way through the TEA, which divides the area into two sewer basins. Development north of the ridge is expected to drain to Tualatin-Sherwood Road and the Rock Creek Interceptor, while development to the south will drain to Oregon Street to the Onion Flat Trunk.

Storm Infrastructure

Storm drainage within the TEA is expected to be managed through regional treatment facilities. Three facilities are proposed within the drainage basins across the TEA. Facilities will be designed according to CWS standards for water quality treatment and flow control. Low-impact development approaches are encouraged for new development to minimize the size of regional facilities.

Energy and Communications Infrastructure

Energy utilities serving the study area include Portland General Electric (PGE) and Northwest Natural Gas. PGE staff has indicated that the area has sufficient capacity for the anticipated development; likewise, Northwest Natural is prepared to provide natural gas to serve the demand. Private communications providers in the area include CenturyLink, Verizon, and Comcast, while the City of Sherwood operates a fiber optic municipal broadband network that

provides high-speed internet service throughout the City and could be expanded to serve both the TEA and the SWCP area.

4. RECOMMENDATIONS FOR ACHIEVING INDUSTRIAL DEVELOPMENT

The purpose of this chapter is to identify barriers that may affect the City's ability to attract the industry types targeted by the Cities of Sherwood and Tualatin for the TEA and the SWCP area. In addition, this chapter provides recommendations for specific actions that could reduce or remove the identified barriers and policy questions for further consideration.

Targeted Uses

As identified in Chapter 2, market analysis confirms that reliance on Advanced Manufacturing; Wood, Paper, Printing, and Related Manufacturing; and Food Processing and Distribution as targeted economic opportunities is appropriate for both Cities. These uses fit well within the recent (2014) *Industry Cluster Analysis in the City of Tualatin* prepared by Johnson Economics and overlap with the preferred industry targets identified in the 2010 TEA Concept Plan (namely, Clean Technology, Technology & Advanced Manufacturing, Outdoor Gear and Activewear; and a variety of possible uses within flex building space).

Based on the market analysis prepared for this report, the two Cities do not need alter their target industry types for the TEA and the SWCP area. Over the past several years, employment growth has been strong in the Tualatin-Sherwood Road Corridor for manufacturing, construction, wholesale trade, and transportation, warehousing, and utilities. Economic opportunities continue to exist for small- to mid-size manufacturing, specialty contractors, creative services, and flex space users.

Recommendations to Overcome Barriers to Development

The TEA and SWCP area are Metro-designated industrial areas added to the urban growth boundary between 2002 and 2004 which were the subject of concept planning efforts adopted by the Sherwood and Tualatin City Councils in 2010. This section itemizes conditions that may serve as barriers to development within the Tonquin Employment Area and provides recommendations for how to address the barriers.

Natural Resource Constraints

As noted in the land use review in Chapter 3, portions of the TEA contain slopes in excess of seven percent (see Figure 14), with small areas in excess of twenty-five percent. The TEA contains numerous upland and wetland habitat areas identified by Metro (see Figure 15). Field investigations performed as part of this project refined the wetlands locations (illustrated in Figure 16) but did not result in survey-grade determinations of the wetlands boundaries. Habitat conditions restrict development locations and add local, state, and federal permitting requirements that extend development timelines and increase costs.

Pacific Habitat Services (PHS) documented the current conditions within the TEA, highlighting the location and characteristics of potentially regulated water resources within the study area in February/March 2015. Broad vegetation communities and wetlands encountered in the TEA are described in Chapter 4. Within the Sherwood portion, large areas of intact forest and scrubland are interspersed with recently logged and/or actively farmed parcels. Landscaped rural residential lots and small scale industrial activities are also present. The PHS report includes a partial species list for the Sherwood and Tualatin study areas (see Appendix 3).

Table 2 outlines the mitigation costs and permitting timeframe associated with mitigation of the wetlands illustrated in Figure 16. These costs and permitting timelines increase the level of uncertainty of developing the affected sites.

Table 2: Wetland Mitigation Costs and Permitting Timeframes

SUMMARY RESULTS FOR WETLANDS							
Jurisdiction	Wetland ID Number	Wetland Size (in acres)	On-site wetland mitigation cost per acre[1]	Total on-site wetland mitigation cost[1]	Off-site wetland mitigation cost per acre[2]	Total off-site wetland mitigation cost[2]	Permitting timeline (months)
Sherwood	1	0.59	$ 65,000	$ 38,350	$ 155,000	$ 91,450	9 months[3]
	2	2.17	$ 65,000	$ 141,050	$ 155,000	$ 336,350	9 months[3]
	3	0.16	$ 65,000	$ 10,400	$ 155,000	$ 24,800	2 months[4]
	4	0.17	$ 65,000	$ 11,050	$ 155,000	$ 26,350	2 months[4]
	5	0.3	$ 65,000	$ 19,500	$ 155,000	$46,500	2 months[4]
	6	6.13	$ 65,000	$ 398,450	$ 155,000	$ 950,150	9 months[3]
	7	0.05	$ 65,000	$ 3,250	$ 155,000	$ 7,750	2 months[4]
	8	0.39	$ 65,000	$ 25,350	$ 155,000	$ 60,450	2 months[4]
Tualatin	9	6.69	$ 65,000	$ 434,850	$ 155,000	$ 1,036,950	9 months[3]
	10	4.72	$ 65,000	$ 306,800	$ 155,000	$ 731,600	9 months[3]
	11	2.57	$ 65,000	$ 167,050	$ 155,000	$ 398,350	9 months[3]
	12	16.28	$ 65,000	$1,058,200	$ 155,000	$ 2,523,400	9 months[3]

Notes:
1. On-site mitigation cost per acre excludes ongoing monitoring, maintenance, and irrigation, and assumes that the developer already owns the property.
2. Wetland mitigation costs were estimated by multiplying estimated wetland impact area by the current private sector rate for wetland mitigation bank credits serving the area. Tualatin Valley Environmental Bank and Butler Wetland Bank both identify tiered rates that start at $175,000 per acre-credit and are reduced as the purchase quantity increases to a low of approximately $155,000 per acre-credit. Mud Slough Bank reports a rate of $2/sq. ft. These 3 mitigation banks serve Sherwood and/or Tualatin.
3. 9 months total (Oregon Department of State Lands: 120 days from delineation, U.S. Army Corps of Engineers: 120 days –270+ days).
4. Development impacting 0.5 acres or less may qualify for USACE Nationwide Permit #39; 60 day permitting timelines.

Wetland mitigation costs range considerably depending on whether the mitigation is performed on-site or off-site, as well as the overall area to be mitigated. The off-site costs were estimated by multiplying the estimated wetland impact area by the current private sector rate for wetland mitigation bank credits serving the area. Tualatin Valley Environmental Bank and Butler Wetland Bank both identify tiered rates that start at $175,000 per acre-credit and are reduced as the purchase quantity increases to a low of approximately $155,000 per acre-credit, while the Mud Slough Bank reports a rate of $2 per square foot. These three mitigation banks serve Sherwood and/or Tualatin (see service area maps in Appendix 4).

Although several acres of wetlands have been identified by PHS, it appears that not all wetlands are likely to be impacted by future development and roads (see Figure 16). Considering future development patterns and lot coverage, wetlands 2-4 are anticipated to be impacted by development and wetlands 5, 6, 9, and 10 are anticipated to be impacted by roads.

- Road impacts to the wetlands. Several of the proposed refined road alignments clip a few fingers of several wetlands. It is assumed that these areas can either be mitigated

on or off site in conjunction with development. Therefore, the Corps of Engineers and the Department of State Lands will want some justification as to why the road needs to be aligned in the selected location, should the proposed refined road alignments move forward. The agencies will first require avoidance and only if the avoidance is unobtainable, then the selected alignment must minimize wetland impacts with appropriate justification for the impact.

- SW 124th Avenue wetland impact. The alignment for SW 124th Avenue in the Implementation Plan diagrams matches Washington County's selected alignment. It appears a portion of the road impacts a large wetland area and all wetland impacts can be mitigated off-site at one of the mitigation banks that are in this area. However, it is unclear whether the County's wetlands permitting encompasses only the core road construction or whether it also includes the future roadway widening. Clean Water Services may require mitigations for vegetated corridor impacts.

- Regional storm ponds. A regional stormwater approach is proposed for the area with some regional treatment/detention facilities located adjacent to or extending into wetland areas. Conversations with Clean Water Services are recommended to discuss the proposed approach and potential impacts.

The remaining potential wetland impacts will highly vary with the specific use, building layout, and steep slope considerations on the impacted property, however, it is reasonable to expect impacts to the wetlands listed above.

Recommendations:

- Perform conceptual site layouts for sloped portions of the TEA to determine optimal finished ground elevations to minimize site grading requirements while creating building pads appropriate for industrial development.

- Perform a more detailed assessment of upland and wetland habitat conditions within the TEA to refine Metro's inventory (including expanding the Sherwood Local Wetland Inventory to include the TEA).

- Continue dialog with Clean Water Services to determine the extent to which their sensitive areas and vegetated corridors may affect development capacity of individual properties.

- Factor wetlands into road alignment and site layout decisions to minimize impacts to the extent possible. Where avoidance is not practicable, wetland mitigation is a possible option to allow development.

Utility Corridors

The TEA is crossed by multiple utility corridors, including a Portland General Electric (PGE) easement, a Bonneville Power Administration (BPA) easement, a BPA right-of-way, and a Kinder Morgan petroleum pipeline. Each of these facilities has a northwest-southeast orientation. The separation requirement from these utilities to any buildings reduces the developable portion of affected sites. Furthermore, existing utility master plans written at different times do not utilize coordinated alignments for future infrastructure, leading to some sites with multiple utility corridors that constrict potential building locations.

Recommendations:

- Factor power line and pipeline encumbrances into the site, roadway, and infrastructure layouts for affected sites since there is no practical way to relocate the existing facilities.

- Lay out roadways and other infrastructure parallel to or perpendicular to the electrical lines and pipeline to preserve developable area.

- Locate public sewer, water, and storm infrastructure within roadways as much as possible to maximize developable area.

Annexation

Currently the entire TEA is located outside Sherwood city limits. In order to receive urban services and be governed by Sherwood development regulations rather than those of Washington County, properties must first annex to the City, which requires a public hearing and City Council approval (but no public vote since the electorate already voted in favor of annexation of the Tonquin Employment Area). However, some property owners appear hesitant to initiate annexation proceedings due to unfamiliarity with the application process, unwillingness to pay the application fee and consultant costs for a discretionary approval process, disinterest in developing, or concerns about increased property tax rates. Properties outside City Limits will be less attractive to developers since annexation is a discretionary decision with a long lead time. Accelerating annexation of TEA parcels would make the properties more likely to be considered by industrial site selectors.

Recommendations:

- Facilitate annexation and development discussions with property owners to explain the annexation process, timeline, and costs. Highlight the advantages of annexation such as increased property value, the opportunity to connect to City services, and the ability to develop.

- Hold policy discussions on whether to provide annexation assistance to TEA property owners (such as waiving fees or engaging a surveyor to write legal descriptions of the annexation area), whether to provide incentives such as property tax abatement for a specific period of time, and to clarify whether there is a minimum area or parcel mix for individual annexation applications.

Roadway Volumes, Access, and Public Transit

Transportation analysis within the 2010 TEA Concept Plan indicated that Tualatin-Sherwood Road operated within Washington County's mobility standards at that time, and would continue to do so in the year 2030 even with the development of the TEA. However, Tualatin-Sherwood Road is perceived as being congested during weekday afternoons and evenings, and there is currently no transit service, all of which may serve as a deterrent to employers considering locating in the area.

Recommendations:

- Construct an east-west collector street roughly paralleling Tualatin-Sherwood Road to provide internal access to the development area (illustrated as Blake Street in Figure 17).

- Limit access points on Tualatin-Sherwood Road to those at Oregon Street, Cipole Road, and 124th Avenue and widen abutting roadways in advance of or in conjunction with development.

- Coordinate with TriMet to provide service along Oregon Street and through the developed portions of the TEA (TriMet's Southwest Service Enhancement Plan will add service along Tualatin-Sherwood Road and 124th Avenue).

- Engage in marketing efforts that highlight the advantages of locating within the Tualatin-Sherwood industrial and manufacturing cluster to counter any negative perceptions of traffic conditions.

Lot Size and Parcelization

Development of industrial uses requires relatively large sites that may comprise multiple properties. The Tonquin Employment area includes approximately 300 acres in 28 separate lots. Ownership of land in the area is held by 21 property owners.[3]

Currently, both plan areas in Sherwood and Tualatin are designated as industrial lands by Title 4 of Metro's Urban Growth Management Functional Plan. Title 4 requires that land divisions into lots less than 50 acres be limited in areas designated for industrial uses.

In addition to the Metro designations to protect the plan area from conversion to non-industrial use and to protect large parcels, both communities have also adopted development code provisions to implement comprehensive plan policies limiting the uses and land divisions in these planning areas. Sherwood's Employment Industrial Zone requires new industrial sites to have a minimum area of three acres (with minor exceptions for selected commercial uses and existing lots of record), while the site over 50 acres has restrictions limiting the ability to subdivide into smaller parcels.

Washington County has zoned the TEA properties Future Development 20 Acre (FD20), protecting the areas from land division smaller than 20 acre parcels and limiting new uses on these future development lands.

With these protections in place, it is unlikely that land divisions would be allowed if they resulted in parcel sizes smaller than 20 acres prior to annexation. Without a regional funding source to purchase properties as they come on the market, the question about how to aggregate some of the parcels into larger tracts is a more difficult question. There are some solutions that could be utilized. For instance, Multnomah County is exploring a policy that would require aggregation of parcels under common ownership as a condition of development approval. A possible variation of this policy could be utilized in the TEA and applied as a condition of annexation for properties under common ownership.

A more common tool used in areas with multiple small parcels and multiple owners is a collective agreement among property owners. These collective agreements would most likely be initiated by property owners wishing to sell their properties for development, but could be facilitated by the Cities through public information and outreach.

[3] Property ownership is counted as a distinct owner name for the each of the parcels. In some cases, a company or person may own property under different corporate names and the actual number of owners may be less than is listed here.

Urban renewal agencies can be effective mechanisms to stimulate development because they can purchase multiple properties from different owners and aggregate parcels to create larger development sites from smaller lots. We recommend that the City explore creation of an urban renewal district (or a combined district encompassing areas from both Sherwood and Tualatin) as a means to aggregate property while at the same time providing a means to fund infrastructure and transportation improvements.

Recommendations:

- Continue to implement measures to preserve large lots and explore options to aggregate parcels as purchase opportunities arise.

- Consider a policy that would require aggregation of parcels under common ownership as a condition of annexation.

- Encourage property owners in the same Development Node (illustrated in Chapter 5) to set up collective agreements regarding the sale and development of their properties.

- Explore creation of an urban renewal district (or a combined district encompassing areas from both Sherwood and Tualatin) as a means to aggregate property and fund infrastructure and transportation improvements.

Branding and Marketing

The TEA and SWCP area are under the jurisdiction of two different Cities, each of which has different resources available to promote development. The individual names for each City's planning area may send the message to potential employers that the Cities have different objectives or are competing with each other. In recognition of the shared market, Sherwood and Tualatin are collaborating in this project and in other efforts to attract employers. Jointly-led branding and marketing efforts using a common name would help to better define the area for employers and developers (full discussion of the recommended branding and marketing approach is found in Chapter 6).

Recommendation:

- Establish a Memorandum of Understanding or Intergovernmental Agreement with the City of Tualatin to perform cooperative marketing efforts.

Transportation and Infrastructure Construction

As illustrated in the 2010 TEA Concept Plan and 2010 SWCP, development of the study area is contingent upon construction of a significant roadway and infrastructure network. The high costs and long timeframes to construct the improvements creates uncertainty which acts as a deterrent to development. Completion of transportation and utility infrastructure projects to bring urban services to sites will help make both the TEA and SWCP competitive with other industrial areas which already have services in place. In Chapter 5, we have proposed discrete Development Nodes in Sherwood and Tualatin that are likely to develop around the same time. For each Node, we have estimated the costs of associated projects so that they can be constructed and financed in manageable pieces (see Chapter 5 and Appendix 5).

Recommendations:

- Identify and construct key projects to open up the development potential of the area (see the proposed list of projects in Chapter 5).
- Facilitate build-out of the TEA in an incremental or phased manner, whereby development on one portion opens up the possibility of development on a neighboring portion.
- Ensure that the projects associated with each phase are included in the applicable capital improvement plans in the correct sequence to ensure needed infrastructure is in place at the appropriate time.
- Pursue a wide variety of financing options such as urban renewal districts, local improvement districts, system development charges (SDCs), grant funding, and public-private partnerships (see Chapter 5).

Additional Policy Questions

In addition to the recommendations outlined above pertaining to specific barriers, there are also a number of policy questions that the two Cities should consider:

- Whether industrial design standards are beneficial (by ensuring quality building and site appearance) or counterproductive (by deterring potential employers);
- The levels and types of financial incentives (e.g., Enterprise Zone tax abatement or development fee waivers) that the jurisdictions may consider providing to potential employers; or
- Special development review processes for the TEA and SWCP (e.g., fast-track land use application review if certain criteria are met).

Investigation of these questions is beyond the scope of this project, but these and other policy issues would be valuable to examine as Sherwood and Tualatin implement measures to spur development.

5. IMPLEMENTATION PLAN

This chapter describes the proposed refinements to the conceptual road layout and summarizes the anticipated transportation and infrastructure costs associated with build-out of multiple Development Nodes comprising several phases throughout the TEA and the SWCP area. Key projects and financing tool options are outlined as well.

Refined Roadway Alignments

Prior concept planning efforts for the TEA and the SWCP identified the need for construction of SW 124th Avenue (portions of which are scheduled to begin shortly) and an east-west collector street that would roughly parallel Tualatin-Sherwood Road. This project builds upon that notion by maintaining the primary roadway corridors, but refines the alignment of the east-west connector route (Blake Road) to minimize impacts to wetlands and to cross the electrical transmission corridors as perpendicular as possible to avoid the tower locations (see Figure 17). As a result of these refinements, the proposed roadway is offset at 120th Avenue to avoid wetlands rather than maintaining a continuous alignment from the west end of the TEA at Oregon Street in Sherwood to the east end at 115th Avenue in Tualatin. Note that the proposed refinements to the street network are essentially concept-plan level alignments that have not been fully engineered; additional refinement would take place in conjunction with future development plans and generation of roadway construction plans. Consistent with the TEA Concept Plan, the roadway alignment still preserves the two largest development parcels by ensuring that the street does not interfere with preservation of large lots.

SHERWOOD TONQUIN EMPLOYMENT AREA AND SW TUALATIN CONCEPTUAL ROAD LAYOUT

Washington County, OR

FIGURE 17

LEGEND:

- SHERWOOD-TUALATIN JOINT PLAN AREA BOUNDARY
- CONCEPT PLAN ROAD ALIGNMENTS
- PROPOSED REFINED ROAD ALIGNMENTS
- WETLANDS AND 50 FOOT BUFFER
- ANTICIPATED ACCESS
- DEVELOPMENT NODE (A)

0 400 800 Feet 1,600

N

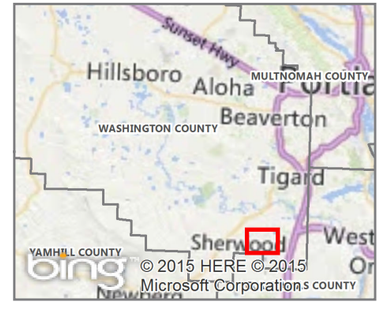
1 inch = 800 feet

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/4/2015
File: TEA_SWCP_ConceptualRoadLayout

Map Created By: GF
Project No: 2130069.04



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Phased Development

Due to the large size of the study area, it is highly unlikely that the entire area would develop at one time. As a result, development is anticipated to occur in phases.

Development Nodes

The TEA Concept Plan divided the TEA into two general areas, one north and one south of the east-west collector street, the thought process being that the northern portion would develop first and the southern portion would develop second (note that the southern portion was further divided into three subareas). The Implementation Plan recommended in this report builds on this approach by dividing the TEA and the SWCP into 17 Development Nodes, with Nodes A through F for Sherwood and nodes G through Q for Tualatin. The Development Node boundaries were selected based on roadway alignments, property line locations, and separation of the largest parcel into two portions based on the likely sequence of development from north to south within that parcel. Given that the final roadway alignment will be established with future development, the Node boundaries are not precise and are subject to change as development occurs in the future, which would alter the location of utility corridors as well. Furthermore, the boundaries are not meant to denote any regulatory requirements affecting site development.

There are a few constrained areas generally not suitable for the type of industrial development envisioned by the City of Sherwood for the TEA. These areas have been excluded from the Development Nodes and identified as areas requiring further policy discussion. These areas include the City of Tualatin's water reservoir parcel (since the property is already committed to utility usage) and property on Oregon Street between Blake Road and Dahlke Lane (due to the multiple power line encumbrances and limited remaining site area). It may be possible to utilize some of this land for non-industrial purposes such as open space, but full determination of potential future uses is beyond the scope of this project.
For each development node, Mackenzie computed the net developable area by subtracting roadway and utility corridors, wetland areas, areas with significant natural slopes, electrical transmission corridors, and the Kinder Morgan petroleum pipeline.

Table 3 indicates the gross area and net developable area for each node within the TEA. Overall, of the 285 acres in Development Nodes A through F, around 70% (199 acres) is classified as developable.

Table 3: Gross and Net Developable Area per Development Node

GROSS AND NET DEVELOPABLE AREA PER DEVELOPMENT NODE			
Development Node ID	**Gross Acreage**	**Net Developable Acreage**	**Developable Percentage**
A	37	24	66%
B	20	18	91%
C	52	48	94%
D	74	45	60%
E	47	40	85%
F	56	24	43%
Total*	**285**	**199**	**70%**

** Note: The total area of the TEA is approximately 300 acres. Development Nodes A through F exclude the constrained areas requiring further discussion and policy guidance illustrated in the Implementation Plan map.*

Based on the net developable acreage in Table 3, using an assumed Floor Area Ratio (FAR) of 0.30, the TEA has capacity for nearly 2.6 million square feet of developable industrial space.

Development Phases and Associated Infrastructure and Transportation Project Costs

The 17 Development Nodes identified in the TEA and the SWCP were further classified into Phases 1 through 3 for Sherwood and Phases 1 through 4 for Tualatin depending on the likely sequence of development throughout the study area (see Figure 18). Each Node would construct its associated transportation network and utility infrastructure to serve the Node itself while providing sufficient capacity for future Nodes. Phase 1 is anticipated to develop first due to the proximity of Development Nodes C and E in Sherwood and Node G in Tualatin to existing transportation and utility infrastructure in Tualatin-Sherwood Road and Oregon Street. Development in subsequent phases is anticipated to expand outward from Phase 1 by making use of the transportation and utility infrastructure constructed in previous phases.

Appendix 5 details the transportation and infrastructure projects for each Development Node throughout the TEA and SWCP, together with their associated costs. The projects specific to the Tonquin Employment Area are listed in Table 4 through Table 9.

SHERWOOD TONQUIN EMPLOYMENT AREA AND SW TUALATIN IMPLEMENTATION PLAN

Washington County, OR

FIGURE 18

LEGEND:

- SHERWOOD-TUALATIN JOINT PLAN AREA BOUNDARY
- CONCEPT PLAN ROAD ALIGNMENTS
- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4
- CONSTRAINED AREAS REQUIRING FURTHER DISCUSSION AND POLICY GUIDANCE
- PROPOSED REFINED ROAD ALIGNMENTS
- WETLANDS AND 50 FOOT BUFFER
- ANTICIPATED ACCESS
- DEVELOPMENT NODE

Feet
0 400 800 1,600

1 inch = 800 feet

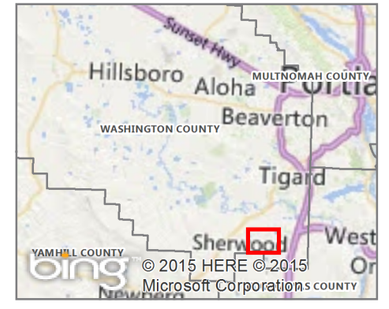
N

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/4/2015
File: TEA_SWCP_ImplementationPlan

Map Created By: GF
Project No: 2130069.04



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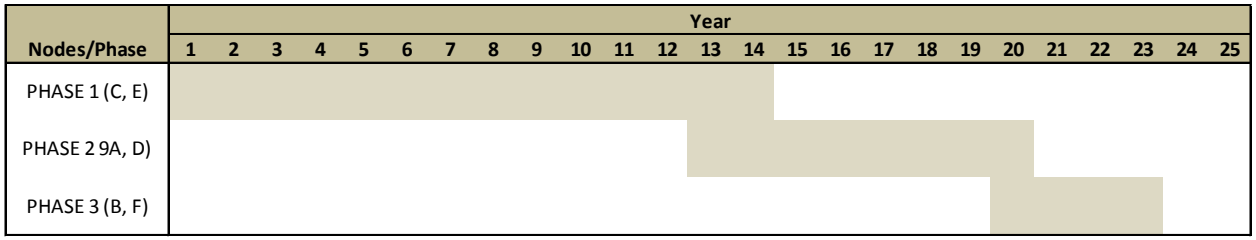
The phase assignments are meant to indicate the expected sequence of development rather than imposing any regulatory requirements; this allows the possibility for specific Development Nodes or properties within the Nodes to develop sooner or later than projected depending on site-specific conditions. Each phase would take several years to fully develop. While there is likely to be some overlap between phases, to a large extent the phases would be sequential since subsequent phases rely on infrastructure constructed in prior phases. As shown in Figure 19, the consultant team estimates that Phase 1 may take up to 14 years to build out; Phase 2 may take up to eight years to build out; and Phase 3 may take up to four years to build out. These estimates were based on assumptions that the Sherwood properties would capture a graduated scale of projected growth at 20% to 30% over the first ten years and 45% to 55% over the subsequent 15 years. Market absorption is assumed to speed up in the back half of the forecast as land is assumed to be increasingly scarce in Tualatin.



SOURCE: Johnson Economics

Figure 19: Approximate Development Timeframes per Phase

Transportation Project Costs

To estimate transportation project costs, Mackenzie assigned each transportation improvement to the earliest phased project for which it is needed (to avoid double-counting costs for improvements in the area). Costs are included when off-site right-of-way is needed for a transportation improvement, even if development of a later phase would also have required the improvement. Lump sum costs are provided for items such as traffic signals, culverts, and roundabouts.

Table 4 lists the transportation projects and associated costs per Development Node within the Tonquin Employment Area. The Phase 1 costs are $5.35 million; the Phase 2 costs are $4.79 million, and the Phase 3 costs are $3.97 million, for a grand total of $14.11 million.

Table 4: Transportation Costs per Development Node and Phase

Node ID	Transportation Project	Project Cost
Phase 1		
C	Frontage improvements along Oregon Street	$176,000
	3-lane full street improvements along Blake Road	$680,000
	3-lane half street improvements along Blake Road	$963,200
	3-lane half street improvements along Tonquin Court	$476,000
	ROW from adjacent parcels	$86,140
	Roundabout at Blake/Oregon St intersection	$750,000
Node C subtotal		$3,131,340
E	5-lane half street improvements along SW Tualatin-Sherwood Road	$1,386,000
	5-lane half street improvements along SW 124th Avenue	$833,000
Node E subtotal		$2,219,000
Phase 1 total		*$5,350,340*
Phase 2		
A	Frontage improvements along Oregon Street	$154,000
	3-lane half street improvements along Tonquin Court	$1,534,400
Node A subtotal		$1,688,400
D	5-lane half street improvements along SW 124th Avenue	$343,000
	3-lane half street improvements along Blake Road	$2,044,000
	3-lane half street improvements along SW Dahlke Lane	$711,200
Node D subtotal		$3,098,200
Phase 2 total		*$4,786,600*
Phase 3		
B	3-lane half street improvements along Tonquin Court	$1,890,000
Node B subtotal		$1,890,000
F	3-lane half street improvements along Blake Road	$1,288,000
	3-lane half street improvements along Blake Road	$140,000
	5-lane half street improvements along SW 124th Avenue	$651,000
Node F subtotal		$2,079,000
Phase 3 total		*$3,969,000*
Grand total		**$14,105,940**

Water Project Costs

To estimate water project costs, Mackenzie assigned each water improvement to the earliest phased project for which it is needed (to avoid double-counting costs for improvements in the area). In general, development phasing is assumed to progress outward from existing service boundaries and in conjunction with the transportation network. Costs assume standard construction techniques for the water system, based on linear foot estimates for the piping improvements. Lump sum costs are provided for large projects such as reservoirs.

Table 5 lists the water infrastructure projects and associated costs per Development Node within the Tonquin Employment Area. The Phase 1 costs are $0.87 million; the Phase 2 costs are $2.11 million, and the Phase 3 costs are $2.41 million, for a grand total of $5.39 million. An illustration of the Water Plan is included in Figure 20.

Table 5: Water Infrastructure Costs per Development Node and Phase

Node ID	Water Project	Project Cost
Phase 1		
C	Construct 12" water line from Oregon Street to end of Blake Road	$396,000
	Construct 10" water line from Blake Road to southwest corner of plan area	$229,500
Node C subtotal		$625,500
E	Construct 12" water line from Cipole Road to the node south boundary	$243,000
Node E subtotal		$243,000
Phase 1 total		*$868,500*
Phase 2		
A	Construct 10" water line within Tonquin Court along the node north frontage	$360,000
	Upgrade Willamette River Water Treatment Plant (WRWTP) capacity to 15 MGD (costs split between Nodes A & D)	$500,000
Node A subtotal		$860,000
D	Construct 10" water line from Dahlke Lane to 124th Avenue along the node north boundary	$472,500
	Construct 12" water line within 124th Avenue along the node east frontage	$81,000
	Construct 10" water line through the site	$195,000
	Upgrade WRWTP capacity to 15 MGD (costs split between Nodes A & D)	$500,000
Node D subtotal		$1,248,500
Phase 2 total		*$2,108,500*
Phase 3		
B	Construct 10" water line from Tonquin Court to the node north frontage	$105,000
	Expand WRWTP treatment and expand Sherwood share (costs split between Nodes B & F)	$950,000
Node B subtotal		$1,055,000
F	Construct 12" water line within Blake Road along the node north frontage	$405,000
	Expand WRWTP treatment and expand Sherwood share (costs split between Nodes B & F)	$950,000
Node F subtotal		$1,355,000
Phase 3 total		*$2,410,000*
Grand total		**$5,387,000**

SHERWOOD TONQUIN EMPLOYMENT AREA AND SW TUALATIN WATER PLAN

Washington County, OR

FIGURE 20

LEGEND:

- SHERWOOD-TUALATIN JOINT PLAN AREA BOUNDARY
- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4
- CONSTRAINED AREAS REQUIRING FURTHER DISCUSSION AND POLICY GUIDANCE
- PROPOSED REFINED ROAD ALIGNMENTS
- WETLANDS AND 50 FOOT BUFFER
- EXISTING WATER LINE
- CURRENTLY ADOPTED WATER LINE
- PROPOSED WATER LINE
- DEVELOPMENT NODE (A)
- STORAGE RESERVOIR

0 400 800 1,600 Feet

1 inch = 800 feet

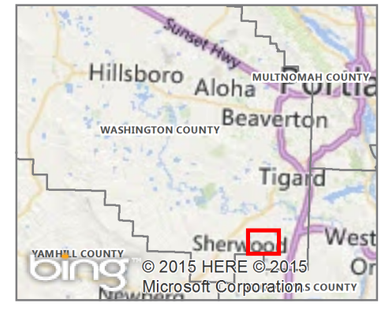
N

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/4/2015
File: TEA_SWCP_WaterPlan

Map Created By: GF
Project No: 2130069.04



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Sewer Project Costs

To estimate sewer project costs, Mackenzie assigned each sewer improvement to the earliest phased project for which it is needed. In general, development phasing is assumed to progress outward from existing service boundaries. Costs assume standard construction techniques for the sewer system, based on linear foot estimates for the piping improvements. Lump sum costs are provided for large projects such as pump stations.

Table 6 lists the sewer infrastructure projects and associated costs per Development Node within the Tonquin Employment Area. The Phase 1 costs are $0.98 million, the Phase 2 costs are $0.70 million, and the Phase 3 costs are zero (since required infrastructure would have been constructed in prior phases), for a grand total of $1.67 million. An illustration of the Sewer Plan is included in Figure 21.

Table 6: Sewer Infrastructure Costs per Development Node and Phase

Node ID	Sewer Project	Project Cost
Phase 1		
C	Construct 15" sewer line from Oregon Street to end of Blake Road	$550,000
	Construct 10" sewer line within Tonquin Court along the node frontage	$162,000
Node C subtotal		$712,000
E	Construct 12" sewer line through the node to the southern boundary	$264,000
Node E subtotal		$264,000
Phase 1 total		*$976,000*
Phase 2		
A	Construct 10" sewer in Tonquin Court along node north frontage	$270,000
Node A subtotal		$270,000
D	Construct 15" sewer line in Blake Road along node south frontage	$425,000
Node D subtotal		$425,000
Phase 2 total		*$695,000*
Phase 3		
B	N/A	$0
Node B subtotal		
F	N/A	$0
Node F subtotal		$0
Phase 3 total		*$0*
Grand total		**$1,671,000**

SHERWOOD TONQUIN EMPLOYMENT AREA AND SW TUALATIN SEWER PLAN

Washington County, OR

FIGURE 21

LEGEND:

- SHERWOOD-TUALATIN JOINT PLAN AREA BOUNDARY
- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4
- CONSTRAINED AREAS REQUIRING FURTHER DISCUSSION AND POLICY GUIDANCE
- PROPOSED REFINED ROAD ALIGNMENTS
- WETLANDS AND 50 FOOT BUFFER
- EXISTING SEWER LINE
- CURRENTLY ADOPTED SEWER LINE
- PROPOSED SEWER LINE
- PROPOSED SEWER FORCE MAIN
- DEVELOPMENT NODE (A)
- PUMP STATION

0 400 800 1,600 Feet

1 inch = 800 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/4/2015
File: TEA_SWCP_SewerPlan

Map Created By: GF
Project No: 2130069.04

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Storm Project Costs

To estimate storm drainage project costs, Mackenzie assigned each storm improvement to the earliest phased project for which it is needed (to avoid double-counting costs for improvements in the area). In general, development phasing is assumed to progress outward from existing service boundaries and in conjunction with the transportation network. Costs assume standard construction techniques for the storm system, based on linear foot estimates for the piping improvements. Lump sum costs are provided for large projects such as treatment facilities. Treatment facilities have been sized based on current Clean Water Services water quality and detention requirements.

To manage stormwater effectively, we propose locating storm facilities along existing drainage ways to achieve channel improvements while meeting runoff treatment goals. Additionally, we propose utilizing regional facilities to consolidate stormwater treatment areas to a few high-quality improvements rather than relying on individual property owner facilities.

Table 7 lists the storm infrastructure projects and associated costs per Development Node within the Tonquin Employment Area. The Phase 1 costs are $1.03 million, the Phase 2 costs are $0.44 million, and the Phase 3 costs are $0.43 million, for a grand total of $1.90 million. An illustration of the Storm Plan is included in Figure 22.

Table 7: Storm Infrastructure Costs per Development Node and Phase

Node ID	Storm Project	Project Cost
Phase 1		
C	Construct 18" storm line from node south to Tonquin Road (through Nodes B and C)	$280,000
	Construct 2.25-acre regional treatment facility	$337,500
Node C subtotal		$617,500
E	Construct 18" storm line through site	$260,000
	Construct 1.0-acre regional treatment facility	$150,000
Node E subtotal		$410,000
Phase 1 total		*$1,027,500*
Phase 2		
A	N/A	$0
Node A subtotal		$0
D	Construct 18" storm line within Blake Road along node southwest frontage	$290,000
	Construct 1.0-acre regional treatment facility	$150,000
Node D subtotal		$440,000
Phase 2 total		*$440,000*
Phase 3		
B	N/A	$0
Node B subtotal		$0
F	Construct 18" storm line within Blake Road along node northwest and southwest frontages	$320,000
	Construct 0.75-acre treatment facility adjacent to wetlands	$112,500
Node F subtotal		$432,500
Phase 3 total		*$432,500*
Grand total		**$1,900,000**

SHERWOOD TONQUIN EMPLOYMENT AREA AND SW TUALATIN STORM PLAN

Washington County, OR

FIGURE 22

LEGEND:

- SHERWOOD-TUALATIN JOINT PLAN AREA BOUNDARY
- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4
- CONSTRAINED AREAS REQUIRING FURTHER DISCUSSION AND POLICY GUIDANCE
- PROPOSED REFINED ROAD ALIGNMENTS
- WETLANDS AND 50 FOOT BUFFER
- EXISTING STORM LINE
- CURRENTLY ADOPTED STORM LINE
- PROPOSED STORM LINE
- DEVELOPMENT NODE (A)
- REGIONAL STORM TREATMENT FACILITY

0 400 800 1,600 Feet

1 inch = 800 feet

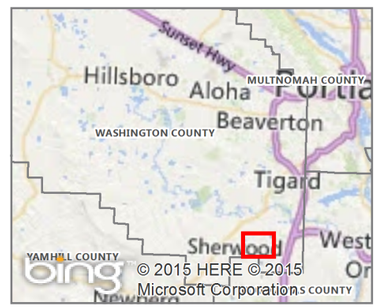
N

SOURCE DATA:
Metro RLIS Lite Base Data, Nov 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 6/4/2015
File: TEA_SWCP_StormPlan

Map Created By: GF
Project No: 2130069.04



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Summary of Project Costs

Table 8 summarizes the transportation, water, sewer, and storm project costs identified in Table 4 through Table 7. The combined cost for Phase 1 is $8.22 million; the combined cost for Phase 2 is $8.03 million, and the combined cost for Phase 3 is $6.81 million, for a total cost of $23.06 million for all phases.

Table 8: Summary of Project Costs per Development Node and Phase

Node ID	Transportation	Water	Sewer	Storm	Total
Phase 1					
C	$3,131,340	$625,500	$712,000	$617,500	$5,086,340
E	$2,219,000	$243,000	$264,000	$410,000	$3,136,000
Phase 1 total	*$5,350,340*	*$868,500*	*$976,000*	*$1,027,500*	*$8,222,340*
Phase 2					
A	$1,688,400	$860,000	$270,000	$0	$2,818,400
D	$3,098,200	$1,248,500	$425,000	$440,000	$5,211,700
Phase 2 total	*$4,786,600*	*$2,108,500*	*$695,000*	*$440,000*	*$8,030,100*
Phase 3					
B	$1,890,000	$1,055,000	$0	$0	$2,945,000
F	$2,079,000	$1,355,000	$0	$432,500	$3,866,500
Phase 3 total	*$3,969,000*	*$2,410,000*	*$0*	*$432,500*	*$6,811,500*
Grand total	**$14,105,940**	**$5,387,000**	**$1,671,000**	**$1,900,000**	**$23,063,940**

Table 9 compares the total project costs from Table 8 with the net developable area identified in Table 3 to compute the cost per net developable acre. Within the TEA, the project cost per developable acre increases from $93,000 in Phase 1 to $116,000 in Phase 2 to $164,000 in Phase 3. The average cost across the entire Tonquin Employment Area is $116,000 per developable acre.

Table 9: Project Costs per Developable Acre and Phase

Node ID	Total Project Costs	Developable Area (acres)	Project Cost per Developable Acre
Phase 1			
C	$5,086,340	48	$105,000
E	$3,136,000	40	$79,000
Phase 1 total	*$8,222,340*	*88*	*$93,000*
Phase 2			
A	$2,818,400	24	$116,000
D	$5,211,700	45	$117,000
Phase 2 total	*$8,030,100*	*69*	*$116,000*
Phase 3			
B	$2,945,000	18	$165,000
F	$3,866,500	24	$162,000
Phase 3 total	*$6,811,500*	*42*	*$164,000*
Grand total	**$23,063,940**	**199**	**$116,000**

Key Projects

As referenced in Chapter 4, completion of key transportation and infrastructure projects would help "unlock" growth and facilitate build-out of the area. Following is a list of key transportation, water, sewer, and storm projects for the TEA and SWCP, some of which span multiple Development Nodes and phases:

Transportation

- Completion of SW 124th Avenue (including possible future connection to I-5)
- Widening Tualatin-Sherwood Road to a five-lane section
- Construction of Blake Road between Oregon Street and 120th Avenue

Water

- Expansion of Sherwood supply share of Willamette River Water Treatment Plant (WRWTP)
- Blake Road water line extension
- 16" extension from Tualatin reservoirs to 124th Avenue
- Tualatin reservoirs R2/R3 (will likely support Basalt Creek development as well)

Sewer

- Blake Road sewer main
- 120th Avenue sewer main

Storm

- Regional facilities: Tonquin Road, Orr property, and wetland area near Itel Street
- Storm lines in Blake Road and 120th Avenue

Financing Tools

The discussion below highlights several different financing tools that can be used to fund construction of infrastructure projects within the TEA.

System Development Charges (SDCs)

SDCs are fees assessed on new development or for changes to higher uses. SDCs are collected to mitigate a project's impact on public infrastructure and facilities. This analysis considers potential revenue sources for water, sewer, and stormwater, and transportation.

Water SDC

Development within the TEA will generate on-going water SDC revenues as development occurs. In Sherwood, the water SDC ranges from $6,725 for a ¾" meter to $605,382 for an 8" line. This analysis does not make an assumption of the number of meters development would require in the TEA. However, as major industrial uses are assumed, the infrastructure analysis does assume water demand at the upper end of the meter size range.

Sanitary Sewer SDC

Sewer SDCs are levied on industrial development based on estimates of usage at the time of development. Connection fees for industrial development vary by estimated usage, which was not estimated as a component of this analysis. The Sherwood reimbursement charge is currently $0.094 with the improvement charge at $0.27. Clean Water Services regional connection charge is $4,900 per dwelling unit equivalent.

Stormwater SDC

Stormwater SDCs are levied by Sherwood and Clean Water Services on new development for water quantity, quality, and regional stormwater drainage. Stormwater SDCs are based on area of impervious surface of development. Based on the development build-out estimates in our analysis, stormwater SDCs would total as much as $1.6 million at today's SDC rates, as shown in Table 10.

Table 10: Estimate of Stormwater SDCs per Development Node

Development Node	Net-Developable Acres	Impervious Area (Sq. Ft.)[1]	Stormwater SDC			
			Quantity	Quality	Drainage	TOTAL
A	24.38	849,594	$88,499	$72,409	$39,081	$199,989
B	17.8	620,294	$64,614	$52,866	$28,534	$146,014
C	48.48	1,689,431	$175,982	$143,986	$77,714	$397,682
D	44.73	1,558,751	$162,370	$132,848	$71,703	$366,921
E	39.5	1,376,496	$143,385	$117,315	$63,319	$324,019
F	23.84	830,776	$86,539	$70,805	$38,216	$195,560
TOTAL:	198.73	6,925,343	$721,390	$590,228	$318,566	$1,630,184

[1] Assumes 80% of net developable area

SOURCE: City of Sherwood, Johnson Economics

Transportation SDC

New development in Sherwood is subject to transportation SDCs at the local and county level. The Washington County Transportation Development Tax (TDT) is assessed on new development across a range of development forms. The TDT is collected at the county level and

distributed to Cities for capital improvements designed to accommodate growth. The Sherwood transportation SDC is similarly assessed on new development based on square footage of development as a proxy for trip generation. Based on the development build-out estimates in this analysis, TDT revenues would range from $8.2 to $14.9 million with Sherwood transportation SDCs ranging from $1.8 to $3.3 million, depending on the character of development in the district, as shown in Table 11.

Table 11: Estimate of Transportation SDCs per Development Node

Development	Net-Developable	Development	TDT Revenue		Sherwood Trans. SDC	
Node	Acres	Capacity (Sq. Ft.)[1]	Low	High	Low	High
A	24.38	318,598	$1,008,681	$1,833,849	$223,656	$410,354
B	17.8	232,610	$736,445	$1,338,905	$163,293	$299,602
C	48.48	633,537	$2,005,777	$3,646,637	$444,743	$815,995
D	44.73	584,532	$1,850,627	$3,364,564	$410,341	$752,877
E	39.5	516,186	$1,634,245	$2,971,167	$362,363	$664,848
F	23.84	311,541	$986,339	$1,793,231	$218,702	$401,265
TOTAL:	**198.73**	**2,597,004**	**$8,222,114**	**$14,948,353**	**$1,823,097**	**$3,344,941**

[1] Assumes average Floor Area Ratio (FAR) of 0.30

Transportation SDC Rate (per 1,000 sf)		
Use	TDT	Sherwood
Manufacturing	$3,166	$702
Light Industrial	$5,756	$1,288
Warehouse	$4,064	$926

SOURCE: City of Sherwood, Johnson Economics

Dilemma of Development Readiness

By practice, SDCs are periodically reviewed, revised, and calibrated by use level, with the intention that SDC revenue completely offsets infrastructure costs. While this is not always the case, it is clear that SDC revenue in the TEA is expected to go a long way towards meeting the costs associated with improving infrastructure. However, the limitation of the SDC system when new infrastructure is required is that revenue is a product of development, but raw unimproved land is not marketable. This “chicken or egg” condition is challenging for many jurisdictions that are looking for funding strategies to frontload investments to make employment areas more marketable. What follows is a list of funding mechanisms at various levels of government and enterprise that can be leveraged to facilitate infrastructure financing.

Urban Renewal/Tax Increment Financing (TIF)

Tax Increment Financing (TIF) is a funding tool by which public projects are financed by debt borrowed against future property tax revenues within a geographic area defined by an Urban Renewal District. Property tax assessments are “frozen” in the base year that the district is established, bonds are sold to finance pre-determined public projects, and repayment of the bonds is derived out of incremental increased value created above and beyond the base year assessment. TIF is becoming an increasingly popular funding mechanism for industrial areas as infrastructure investments are directly tied to a development outcome.

Local Improvement District (LID)

A Local Improvement District (LID) is a commonly used tool to enhance shared infrastructure or amenities of a specific area. The tool has the local jurisdiction issuing tax-exempt bonds to finance projects within the district, which are repaid by a special assessment on the property owners in the district. The tool is particularly useful where property owners directly benefit from project investments, and are more easily implemented when a small number of property owners can be organized. Given the small number of property owners in the TEA, the number of infrastructure projects that could affect multiple properties, and the fact that infrastructure improvements are likely to improve site property marketability and achievable pricing, an LID is a sound candidate for consideration in the TEA.

Enterprise Zone

While not a funding mechanism, Enterprise Zones are tax abatement programs designed to enhance the marketability of a particular area or site. In an Enterprise Zone, property tax assessments are generally abated for the first three to five years of investment. The benefits to the user or developer of this tool could offset additional costs to make sites in the TEA more marketable.

Washington County Major Streets Transportation Improvement Program (MSTIP)

MSTIP uses property tax revenue to fund large-scale transportation improvement projects. Through 2018, MSTIP will have funded 130 projects totaling over $730 million in investment. The Washington County Board of County Commissioners prioritizes projects on five-year funding cycles. This tool is currently being used to fund the 124th Avenue extension along the eastern edge of the TEA. In late 2015, Washington County will begin planning the MSTIP "3e" funding round to cover 2019 through 2023, and Tualatin-Sherwood Road widening has already been discussed as a possible project for the next round of funding.

Metro Regional Transportation Plan (RTP/MTIP)

The Metro Regional Transportation Plan, recently updated in 2014, represents the coordinated regional goals, policies, system concept plans, and funding strategies for regional transportation improvements. The plan organizes how to spend $20 to $22 billion in local, regional, state, and federal funding over the next 25 years to improve the safety, reliability, and economic vitality of the regional transportation network. The Metropolitan Transportation Improvement Program (MTIP) schedules the distribution of all federal and some state transportation funds in the region over a four-year period. Eligibility for MTIP results from designation on the RTP financially constrained project list. MTIP funds are administered by ODOT, TriMet, SMART, and Metro. A significant share of ODOT, TriMet, and SMART funding is commonly slated for particular project categories that are not widely applicable to employment areas. However, funds issued by Metro have more discretion and flexibility.

Metro Regional Economic Opportunity Funds

The Metro regional transportation flexible fund allocates funding to projects identified in the RTP every two years. Project and program applications are nominated by jurisdictions and/or transit agencies.

Special Public Works Fund (SPWF)

SPWF is administered through the Oregon Infrastructure Finance Authority. It provides loans for municipally-owned infrastructure that supports economic development. Loans can be used for planning, design, construction, and ROW acquisition. Some grant funds of up to $500,000 are also administered to for projects that create traded sector jobs. Loans generally range from $100,000 to $10 million, with terms generally limited to the lesser of 25 years or the life of the project. Loans can be repaid from a variety of sources, including taxes, special assessments, user fees, tax increment financing in an urban renewal district, etc.

Immediate Opportunity Fund (IOF)

The Oregon IOF is a special program administered by ODOT. It was created in order to quickly process and fund transportation improvements that create or retain jobs. The program works in collaboration with Business Oregon to serve as a quick response incentive for projects with immediate economic development upside. The IOF has three levels of funding for projects:

- Type A: Specific economic development projects that affirm job retention and job creation opportunities
- Type B: Revitalization of business or industrial centers to support economic development
- Type C: Preparation of Oregon Certified Ready Industrial Sites (pending adoption of new standard, this level would also extend to Regionally Significant Industrial Sites RSIS)

Project maximums are set at $1 million for Type A projects, $250,000 for Type B, and $500,000 for Type C. Grants are typically awarded to proposals offering a 50% or greater match from other local public or private sources.

Governor's Strategic Reserve Fund (SRF)

The Governor's Strategic Reserve Fund provides cash incentives in the form of a forgivable loan to businesses closing on siting decisions. This discretionary fund could be offered to firms for equipment, buy-down on land, training, or other agreed-upon expenses. The fund has been used in the past to pay for critical infrastructure improvements specific to a candidate user.

Regional Infrastructure Supporting our Economy

Regional Infrastructure Supporting our Economy (RISE) is a regional effort, currently headed by Metro and the Port of Portland, to make and facilitate investments in the Portland metropolitan region and partner with stakeholders to develop a system that optimizes the region's ability to deliver infrastructure projects. Public infrastructure projects and public-private partnership projects are both eligible for RISE investment, though implementation details have not yet been finalized by Metro and the Port.

Business Oregon Opportunity Funds

It remains unclear when/if the Business Oregon Opportunity Fund passed by the 2013 legislature will be funded. This program would reimburse local governments 50% of the costs for investments that improve the readiness of industrial sites. Reimbursement would occur upon the location of a traded sector firm on the candidate site.

Recommended Actions to Refine Financing Strategies

The following recommendations represent further actions the City could take to continue to refine infrastructure funding strategies in the TEA.

Promote Projects Widely

The City should continue to identify unfunded transportation projects with candidacy for external state and regional transportation funding. Be proactive in applying for federal, state, and regional grant funding.

Organize Property Owners

Organizing property owners to work collaboratively with the City to market and improve their sites is critically important in moving readiness of TEA sites forward. With fewer than 20 property owners, a local improvement district for shared infrastructure projects should be explored.

Sponsor Designation of Subareas as Regionally Significant Industrial Sites

Business Oregon is currently refining its program prioritization for industrial sites. The new Regionally Significant Industrial Site (RSIS) program will work collaboratively with the more marketing focused Industrial Site Certification Program. Industrial sites designated as RSIS sites will receive prioritized funding from state programs, including SPWF and IOF. The program will require landowner collaboration with a public sponsor. The City of Sherwood should strategically partner with key landowners to apply for RSIS candidacy.

Conduct an Urban Renewal Feasibility Study

It is assumed that, over time, property taxes and fees paid by new private development in the TEA should cover most of the public infrastructure investment costs. However, many typical infrastructure funding tools - for instance, system development charges and capital improvement programming - will not be timely enough for the upfront costs associated with developing a new employment area. Infrastructure funding is needed as part of preparing the area for development readiness and business recruitment. Our experience with the region's targeted industries/employers suggests they are not likely to commit to developing in an area like the TEA until the City can assure them the necessary infrastructure can be built in coordination with tight development schedules. In recent years, Urban Renewal has become an increasingly utilized tool for bridging this financial gap. The feasibility of Industrial Urban Renewal Areas of this type is currently being studied in North Hillsboro and Wilsonville's Coffee Creek Industrial Area.

6. MARKETING STRATEGY AND PROSPECTUS

This chapter provides recommendations for developing a marketing strategy for the combined Tonquin Employment Area and the Southwest Tualatin Concept Plan area. A marketing prospectus for the TEA is included in Appendix 7.

Targeted Marketing Strategy

Marketing a regional plan should be a strategic and targeted outreach. In addition to the business recruitment and visioning efforts by both Cities for the TEA and SWCP area, there are numerous other groups within the region and statewide with a common goal of connecting end users with available lands. The real estate brokerage community is most commonly tasked with marketing property to end users and plays an important role in the region's success by actively marketing specific properties to developers and businesses. On a broader scale, economic development agencies market a community's unique attributes in an effort to recruit new industries to a region, retain existing businesses in the community, and promote expansion of existing businesses. The economic development efforts balance out the site-specific efforts of real estate brokers by providing more community- or regionally-scaled marketing efforts.

Based on the work done by the two Cities, the communities have established a vision for economic development in the TEA and SWCP area. The next step should be to engage economic development partners in the region to move the vision into a recruitment strategy. Some key partners that provide economic development and recruitment in the region are:

- Sherwood Chamber of Commerce, Community Affairs Committee
- Tualatin Chamber of Commerce, Business Advocacy Council
- The Westside Economic Alliance
- Greater Portland Inc.
- Business Oregon

These partners (and others) can provide different levels of support in marketing the TEA and SWCP area and should be included in the initial development of the marketing strategy.

In addition to these economic development partners, there is also a need to identify less formal opportunities for marketing. In many cases, local land development companies and their supporting companies can be a valuable resource in business recruitment through their connections with end users and businesses.

The most effective marketing avenue is directly to targeted industries through personal connections. These connections can be formed through industry trade shows, introductions from existing business contacts in the communities, and introductions through economic development partners.

Based on the market potential of the TEA and SWCP area and the needed public improvements, it is too early to commence specific marketing efforts for the area. Rather, the cities should implement a "Go to Market" strategy. The most notable need is to develop a defined identity (a "brand") that can be marketed.

The "Go to Market" Strategy

The marketing for the Sherwood Tonquin Employment Area and Southwest Tualatin Concept Plan area should feature two distinct and separate phases. The first phase should encompass activities that generally raise awareness about the value proposition of the area as a whole and

improve the Cities' abilities to develop information about targeted marketing prospects. Given that significant transportation and infrastructure improvements are required for development within the TEA, we recommend that the Cities focus on near-term activities before investing in direct marketing and outreach. These activities could include:

- Branding.
- Developing relationships with regional partners to leverage regional recruitment and information development resources and to maintain consistent outward facing/third party exposure. Examples include Business Oregon, Greater Portland Inc., the brokerage community, and other intermediaries.
- Encouraging strategic property owners to apply to the Oregon Site Certification Program/RSIS program.
- Developing a consistent site prospectus for each site and distribute through third-party resource such as Oregon Prospector or CoStar (see example in Appendix 7).
- Developing targeted industry profiles for each economic opportunity segment (similar to Tualatin's 2014 Economic Development Strategic Plan).
- Establishing the groundwork for monitoring and gathering information about specific targeted industries. Examples include tracking industry trends, monitoring major investment decisions/announcements, and maintaining regular interaction with industry leaders in the community.

The second phase should encompass activities that are more direct marketing and promotion activities. These activities would most likely include:

- Attendance at specific and targeted trade shows.
- Participation in regionally coordinated site selector events when applicable.
- Consideration of funding professional support for site selection consulting services.
- Direct promotion of the area through contact with specific companies.

Branding the Vision

To unify efforts among all regional economic development partners, the first priority is to establish a shared identity for the TEA and the SWCP area. Currently both communities have developed independent concept plans to define the community vision. The research from this project has revealed that although the area includes properties in the urban growth boundaries for two different cities, for business development efforts, both the TEA and SWCP are part of one common market. We recommend that the two Cities work collaboratively to highlight the opportunities for industrial development in their shared market. Developing an intergovernmental agreement or memorandum of understanding would enumerate the ways both Cities can work together while defining ways where each City would continue to work independently.

By developing a shared brand for the Tonquin Employment Area and the Southwest Tualatin Concept Plan area, the Cities can help shape the perceptions of potential employers and also provide the public an identifiable concept to support when evaluating potential bond measures or other financing tools. Members of the public seek out and support meaningful brands that demonstrate care for the community, that do not cause harm to the earth, and that benefit the future of their community.

This is the time to establish the brand umbrella so that the marketing strategies are deliberate and targeted and also use public resources wisely and allow for leveraging resources of community economic development partners.

To properly brand, we recommend that the Cities start with developing words that describe the unique attributes of the area, and then proceed through the following steps before developing graphics:

- Arrive at consensus on a brief purpose statement.
- Agree on core values/vision (e.g., enhancing the community through development that results in jobs for residents).
- Determine the mission and measureable goals for milestones to monitor progress and successes in achieving the mission.
- Name the subarea with a unique and identifiable name that allows quick identification of this area and is easily recognizable.

Once the brand has been established, then it is timely to develop specific marketing materials because they will build on an established framework and a consistent strategy.

Development of Targeted Marketing Materials

Once the brand has been defined, the next step is to promote the brand to spread knowledge about the area and begin to build awareness. One of the items increasingly important in our electronic age is to develop a web presence for the brand. Many site selectors and real estate professionals use web research as an initial screen for site attributes and availability. This web presence can be enhanced by including web addresses on community partners' web pages, and through links from other economic development and business recruitment agencies. Business Oregon's Prospector website would be a great resource for listing sites in the subarea. This web site is a resource for site selectors and industry professionals seeking information on available sites.

To amplify the effectiveness of listing on the Oregon Prospector website, participation in the Business Oregon Site Certification Program would also increase exposure for key development sites in the subarea. We would recommend applying for certification for sites following annexation and determination of a definite timeframe to construct improvements. Business Oregon's Site Certification Program is a nationally respected designation for sites ready for construction in six months or less. The ability to demonstrate a development timeline that is market responsive is a key attribute to site selectors and industry professionals.

Development of printed materials for distribution to targeted industries is also a key part of marketing and building brand awareness. The marketing prospectus produced with this project (see Appendix 7) is an example of the type of printed materials that we recommend producing. Materials should highlight the key attributes of the subarea with emphasis on elements that are of particular interest to target industries. A marketing prospectus sheet should be developed for each of the target industries for use in personal meetings and distribution at trade shows.

Identifying a Team of Champions

We recommend identifying a small team of local business and civic leaders to make personal connections with companies in the target industries. Establishing a team of individuals to champion the outreach efforts allows for personal communication directly to executives and industry professionals, and allows for ease in identifying key contacts for economic development partners. Corporate executives state that one deciding factor in their site selection process can be the local welcome and expressed desire to have them be a part of the community. Direct connections with target industry representatives and decision makers is the most efficient and effective marketing strategy. The team of individuals selected to promote the TEA and SWCP

area should meet regularly to discuss leads and should also receive training from members of the team responsible for developing the branded identity.

Developing a Presentation Template

Establish key messages and standardize terminology in an adaptable slide show presentation that can be used by the champions. The presentation template would include talking points appropriate for a broad audience and would use the standardized terminology to describe the area and site elements. Using industry standard terms as much as possible to describe attributes of the site would convey the strongest meaning to the target audience. The presentation should be adaptable to a variety of groups and audiences.

This presentation should be used at regional economic development presentations. Some example groups in the region that would be excellent audiences for this presentation would be NAIOP (the Commercial Real Estate Development Association), SIOR (the Society of Industrial and Office Realtors), Greater Portland Inc., the State of Oregon Regional Solutions Team, OEDA (the Oregon Economic Development Association), and other opportunities and regional economic development conferences.

Pursuing Opportunities for Outreach to Target Industry Sectors

The identified trade sector targets include Advanced Manufacturing; Wood, Paper, Printing, and Related; and Food Processing and Distribution. The Industrial Asset Management Council is a member organization of industrial real estate professionals covering Distribution, Manufacturing, and Health and Science industry groups. Many industrial site developers and site selectors support this organization. This organization generally covers all of the target industry sectors and would provide opportunities for networking at forums and conferences.

Additionally, site selectors can provide insight into trade groups and opportunities for recruitment and expansion. Some of the key site selectors in these industry sectors include the following:

- CBRE
- DTZ/Cushman & Wakefield
- Foote Consulting Group
- Global Location Strategies
- Ginovus
- JLL
- Knight Frank Newmark
- KPMG
- New Landmark Group
- Site Selection Group
- Wadley Donovan Gutshaw Consulting

An industry group for site selectors is the Site Selectors Guild. This industry group of site selection professionals would also be a great resource for initiating personal contact with site selectors representing all of the target industries.

As an important part of the marketing strategy, these site selector and corporate real estate advisors should be included in personal contact and in targeted mailings for the industry-specific marketing materials. The initial listing of site selectors above and the site selectors' industry groups will provide the highest level of interaction with a diverse coverage of industry types.

Outreach should also include industry-specific trade groups and personal contact with existing key industry leaders in the region.

Table 12 below lists selected trade groups for key industries within the industry sectors targeted for the TEA and SWCP area.

Table 12: Key Industries and Selected Trade Groups by Target Industry Sector

KEY INDUSTRIES AND SELECTED TRADE GROUPS BY TARGET INDUSTRY SECTOR		
Industry Sector	**Key Industries**	**Selected Trade Groups**
Advanced Manufacturing	• Clean Room Components • Electromedical Devices • Fabricated Metals • Industrial Equipment • Metal, Machinery, & Electronic Apparatus and Equipment Wholesalers • Microelectronic components • Semiconductor Machinery	• Farm Equipment Manufacturers Association • International Electronics Manufacturing Initiative • Microelectronic Packaging and Test Engineering Council • Pacific Northwest Steel Fabricators Association • Semiconductor Equipment & Materials International • Surface Mount Technology Association • Technology Association of Oregon
Wood, Paper, Printing & Related	• Commercial Printing • Commercial Screen Printing • Furniture Manufacturing • Lumber & Construction Material Wholesalers • Other Building Materials Manufacturing • Paper Products Manufacturing • Window & Door Manufacturing & Wholesale	• Northwest Pulp and Paper Association • Oregon Forest Industries Council • Pacific Printing Industries • Window & Door Manufactures Association
Food Processing & Distribution	• Commercial Baking • Commercial Brewing • Dairy Product (except Dried or Canned) Merchant Wholesalers • Dairy Product Manufacturing • General Line Grocery Merchant Wholesalers • Packaged Frozen Food Merchant Wholesalers	• Agri-Business Council of Oregon • The Food Alliance • Food Innovation Center • Food Processing Suppliers Association • Grocery Manufacturers Association • National Grocers Association • National Poultry and Food Distributors Association • Northwest Food Processors Association • Northwest Grocery Association • Oregon Brewers Guild • Oregon Manufacturing Extension Partnership

7. CONCLUSION AND SUMMARY OF RECOMMENDED ACTIONS

This Market Analysis, Business Recruitment Strategy, and Implementation Plan has been prepared to assist the Cities of Sherwood and Tualatin with a collaborative evaluation of their respective economic strategies for the Tonquin Employment Area and the Southwest Tualatin Concept Plan area. The assessment in Chapter 2 reveals that the target industries envisioned by the Cities are appropriate for the local economy. Chapter 3 evaluates the Sherwood land use conditions, transportation network, and infrastructure to create a baseline for Chapter 4's recommendations regarding overcoming development barriers. The implementation plan in Chapter 5 outlines the anticipated Development Nodes and phasing, estimates construction costs by Node, itemizes key projects, and lists various financing tools that could be utilized by the Cities to fund transportation and infrastructure construction. Finally, Chapter 6 confirms that the two Cities should continue to collaborate and provides a framework for branding and marketing the area.

Summary of Recommended Actions

This section reiterates the recommended actions identified through this analysis to encourage development within the TEA.

- Perform conceptual site layouts for sloped portions of the TEA to determine optimal finished ground elevations.
- Refine the Metro inventory of upland and wetland habitat conditions.
- Continue dialog with Clean Water Services regarding the effect of sensitive areas and vegetated corridors.
- Factor wetlands into road alignment and site layout decisions. Mitigate wetlands as needed.
- Consider power line and pipeline locations for site, roadway, and infrastructure layouts.
- Lay out roadways and infrastructure to maximize developable area.
- Facilitate annexation and development discussions with property owners.
- Hold policy discussions on annexation assistance, incentives, and minimum area or parcel mix for annexation.
- Construct an east-west collector street.
- Limit access points on Tualatin-Sherwood Road.
- Widen roadways in advance of or in conjunction with development.
- Coordinate with TriMet to provide transit service to the TEA.
- Preserve large lots and explore options to aggregate parcels.
- Consider parcel aggregation policies as conditions of annexation.
- Encourage property owners to collaborate on the sale and development of their properties.
- Explore creation of an urban renewal district.
- Establish an agreement with the City of Tualatin to perform cooperative marketing efforts.

- Identify and construct key transportation and infrastructure projects.
- Ensure that capital improvement plans sequence projects to facilitate phased build-out.
- Pursue a wide variety of financing options.
- Evaluate policy considerations including industrial design standards, financial incentives, and special development review processes.
- Promote projects widely.
- Organize property owners.
- Sponsor designation of subareas as regionally significant industrial sites.
- Conduct an urban renewal feasibility study.
- Implement the Targeted Marketing Strategy outlined in Chapter 6:
    - Perform branding activities
    - Develop marketing materials
    - Identify key individuals to champion outreach efforts
    - Develop a standard presentation template
    - Pursue outreach to target industry sectors

APPENDIX 1
LIST OF REFERENCES

City of Sherwood Oregon

Washington County Employment Lands
Task 4: Tualatin-Sherwood Market Analysis and Business Recruitment Strategy

Reference Documents

City of Sherwood

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6. City of Sherwood Water System Master Plan; Murray, Smith, and Associates; August 2005
7. City of Sherwood Water System Master Plan Update; Murray, Smith, and Associates; February 2015 Draft
8. Clean Water Services Sanitary Sewer Master Plan Update, West Yost Associates, March 2009
9. City of Sherwood Transportation System Plan; City of Sherwood, June 2014
10. City of Sherwood System Development Charges: Stormwater & Sanitary Systems; FCS Group, March 2008
11. City of Sherwood Transportation System Development Charges Methodology Report and Rate Study; Don Ganer & Associates, October 2006
12. City of Sherwood Parks and Recreation System Development Charges Update Methodology Report; Don Ganer & Associates, September 2004
13. City of Sherwood Capital Improvement Project Master Plan List, March 2015
14. City of Sherwood Zoning and Community Development Code, March 2015

City of Tualatin

1. Industry Cluster Analysis in the City of Tualatin; Johnson Economics, January 14, 2014
2. Economic Development Strategic Plan; City of Tualatin, 2014 Update
3. City of Tualatin Sewer Master Plan; CH2MHill, December 2002
4. City of Tualatin Water Master Plan; Murray, Smith, and Associates; July 2013
5. Clean Water Services Sanitary Sewer Master Plan Update; West Yost Associates, March 2009
6. Southwest Tualatin Concept Plan 2010 Update; City of Tualatin, October 2010
7. Southwest Tualatin Concept Plan Conceptual Development Plan; Group Mackenzie, May 2012
8. Tualatin Transportation System Plan Update; CH2M HILL, DKS, Angelo Planning Group, & JLA Public Involvement, February 2014
9. 124th Avenue Extension Tualatin Sherwood Rd. to Grahams Ferry Road; Washington County & David Evans and Associates, September 2014
10. City of Tualatin Development Code, March 2015

APPENDIX 2
INDUSTRY AND MARKET TRENDS ANALYSIS

Johnson Economics
April 20, 2015

City of Sherwood Oregon

JOHNSON ECONOMICS

MEMORANDUM

DATE: April 20, 2015

TO: Todd Johnson, Gabriela Frask
MACKENZIE

FROM: Chris Blakney
JOHNSON ECONOMICS

SUBJECT: Industry and Market Trends Analysis in Support of Concept Planning in the Sherwood Tonquin Employment Area (TEA) and Tualatin Southwest Concept Area

INTRODUCTION

JOHNSON ECONOMICS and MACKENZIE were retained by Washington County to conduct concept planning and marketing plans in the Sherwood Tonquin Employment Area (TEA) and Tualatin Southwest Concept Plan Area (collectively referred to here as "The Study Area"). The project is a collaboration between Washington County, the City of Tualatin, and the City of Sherwood. Both Tualatin and Sherwood have properties in The Study Area. JOHNSON ECONOMICS' role in this project is to provide market input through planning process to ensure that planning efforts are responsive to market conditions.

LITERATURE REVIEW

The first task in our analysis is to conduct a literature review of existing economic development and planning materials relating to both the local economy and the Study Area sites. This section is inherently backward looking and is supplemented by an analysis of existing market and economic conditions later in this report.

The Sherwood Economy

The City of Sherwood has a small but robust economy. The 2007 Sherwood Economic Opportunities Analysis (EOA) identified 437 local businesses with roughly 4,315 employees. Major local employers identified included:

- Sherwood School District
- Allied Systems
- Target
- YMCA
- Home Depot

At the time of the analysis, the city's population was growing at a 4.8% annual rate. Future economic and population growth, however, will be influenced by the economic strategy of the community, directed by its economic development vision statement:

> *The City of Sherwood will drive economic development and support businesses that provide jobs for our residents by building on our assets and developing the necessary infrastructure*

to retain existing businesses and support new businesses. Economic development also will be supported by maintaining our livability and character as a clean, healthy, and vibrant suburban community where one can work, play, live, shop and do business.

Strengths, Weaknesses, Opportunities

The following characteristics were identified as potential factors impacting economic growth prospects in the 2007 EOA.

- The majority of Sherwood's workforce commutes outside the urban area for employment. Adequate land to support local job creation is needed.
- Adequate infrastructure, specifically sewer service has curtailed economic growth.
- Bedroom communities such as Sherwood often have trouble holding down taxes while providing quality services.
- Industrial development in Sherwood is dominated by durable goods manufacturing. Sherwood sees an opportunity to attract alternative industry types to diversify the industrial base.
- Expanding land and housing costs are restrictive to low and moderate income households
- Robust industrial growth in neighboring communities such as Tualatin and Wilsonville have the potential to spill into and impact Sherwood's economy.
- Sherwood has a reputation as a small community with excellent quality of life, good schools and good labor market access has made it an ideal location for a variety of manufacturing operations.
- Tualatin-Sherwood Road congestion and distance from Interstate-5 limits Sherwood's marketability to large scale manufacturing and distribution users.
- Sherwood does not have any known natural gas or telecommunications constraints. Investments to improve water and sewer services are planned or made.

Among all these factors, the transportation constraints were thought to have the greatest impact on the types of industries that would look to invest, expand, or locate in Sherwood.

Targeted Industries

The following industries and/or industry clusters were identified in the 2007 EOA as being representative of strategic economic opportunities. For the purpose of this analysis, we focus only on those who utilize industrial land.

- Metal Manufacturing
- Machinery Manufacturing
- Furniture Manufacturing
- Construction
- Specialty Contractors
- Paper Manufacturing
- Plastic or Rubber Manufacturing
- Wood Manufacturing
- Heavy Construction
- Wholesale Trade of Electronics

These industries sectors were considered when identifying the following target industry types:

Small to mid-size light manufacturing shops can thrive in small communities such as Sherwood. The small size of such businesses (5-50 employees) means that transportation impacts (and needs) are relatively small. Likewise, with fewer jobs, a business is more likely to find skilled labor within the community (as opposed to finding a labor shortage). Finally, smaller manufacturers are likely to emerge from entrepreneurs who are attracted by Sherwood's quality of life. Light manufacturers could include furniture makers, metal fabricators, and specialty building materials.

Specialty contractors and construction firms that serve the southern Portland–Vancouver PMSA. These operations may require on-site materials warehousing, light assembly, and wholesale distribution of a variety of construction products and equipment. Given the need for both full and seasonal (part time) employment, the impacts on transportation systems are not as extensive as with other industrial operations.

Creative services such as engineering, legal services, publishing, management consulting and accounting are generally high-paying jobs that tend to locate close to residential customers. With the establishment of a new Class A office center, Sherwood could position itself as a sub- regional location for business and professional services.

Based on the characteristics of these business types, the EOA determined that small business parks with flex space, and large master planned research and development campuses with .05 to 20 acre sites were the most important industrial sites to accommodate economic growth. The TEA was specifically referenced as a site to accommodate such a use.

Employment and Land Demand (Medium Growth Scenario)

- Sherwood has a 20-year mid-range employment forecast of 3,009 new industrial space-utilizing employees. This represents an annual increase of 8.6% through the 2025 forecast period.
- Sherwood's land need forecast utilizes an employment efficiency ratio of 800 square feet per employee and a 0.25 F.A.R. to forecast land need. This process found the need for 221 net (276 gross) industrial acres over the planning period.

Identified Employment Land Supply

- Sherwood's vacant land analysis identified 202 vacant and 101 potentially redevelopable industrial acres in its current land supply.
- The analysis found that additional vacant industrial land would need to be added to the UGB to accommodate demand under the medium growth forecast.

The Tualatin Economy

At this time, the City of Tualatin does not have an Economic Opportunities Analysis. The primary materials informing Tualatin's economic development strategy are its 2014 Industry Cluster Analysis and its 2014 Economic Development Strategic Plan. As such, information relating to Tualatin is less comprehensive, but more timely.

The City of Tualatin has a population of 26,716 residents and had roughly 24,000 private sector jobs as of 2012. Since the trough of the recession (2010-2012) Tualatin added 2,000 employees to the local economy, an 8.9% increase over two years (since this report was released 2013 data is now available, in 2013 Tualatin added an additional 1,879 jobs). Future growth will be influenced by the economic strategy of the community, directed by its economic development vision statement:

Continue a leadership role as one of the premier economic activity centers in the greater Portland metropolitan region. Focus on growing family wage jobs in targeted business clusters while encouraging high standards and excellence in urban design.

Tualatin's Economic Recovery

Through 2012 the majority of Tualatin's industry sectors were on the road to recovery from the Great Recession. Construction, Professional & Business, Education & Health, and Other Services had employment levels all exceeding pre-recession highs. Manufacturing, Wholesale, and Retail were all near previous peaks, while the Financial Services Sector was the only industry trailing considerably.

Targeted Industries

Tualatin's industry cluster analysis identified five key clusters in the local economy. Taken together firms operating within the ecosystem of these clusters accounted for 57% of all employment. Tualatin's five target clusters included:

- Wood, Paper, Printing, and related activities
- Food Processing and Distribution
- Advanced Manufacturing and Related
- Corporate & Professional Services
- Health Care & Medical Related

The first three of these clusters are heavy users of industrial land. Some additional detail on these clusters:

Advanced Manufacturing:

Firms in this cluster account for roughly 22% of the Tualatin economy. Major activities in the cluster include the manufacture of electronic equipment and components, machinery, and fabricated metals. Additional functions include the whole and distribution networks of manufactured components as well as construction and maintenance of critical equipment and facilities. Representative companies include Lab Research, Precision Wire, Kershaw, and Leviton.

Wood, Paper, Printing, and Related:

Firms in this cluster account for roughly 6% of the Tualatin economy. The cluster has a strong specialization in the manufacturing and sale of construction materials and furniture, specifically windows, doors, and kitchen materials. The cluster includes a niche commercial printing industry as well. Representative companies include Milgard, Columbia Corrugated Box, and Cascade Windows.

Food Processing and Distribution:

Firms in this cluster account for roughly 4% of the Tualatin economy. The cluster is dominated by wholesaling and processing activities with some additional direct food manufacturing. The wholesaling nature of the cluster would suggest that the cluster is anchored by Tualatin's advantages in wholesaling workforce and infrastructure as well as a competitive location proximate to Willamette Valley agriculture. Representative companies include Pacific Foods, Frito-Lay, and Transcold Distribution.

Available Land

According to the Economic Development Strategy Plan, the City of Tualatin has roughly 51 acres of commercial land and 787 acres of industrial land that is either vacant and available for development or redevelopable.

Strategy

Tualatin has a two part strategy for economic development. First, the community intends to focus on business retention, expansion, and recruitment. This entails specifically targeting key industries through marketing, incentives, and outreach. As importantly, the City will focus on assisting with site readiness to bring industrial and commercial properties to market. Second, the City is committed to improving the business climate and regional collaborating with neighboring communities and local/regional stakeholders.

Study Area Specific Characteristics

Over the last five years, The Study Area has had considerable resources allocated to concept planning and studying characteristics of the areas to improve its marketability and to identify strategies to overcome specific site constraints. This review also considered economic factors identified in the Tonquin Employment Area Concept Plan (2010), the Southwest Tualatin Concept Plan (2010), and the Tualatin Southwest Concept Development Plan (2012).

Potential Uses

- The Tualatin Southwest Concept Development Plan identified a likely development opportunity as a manufacturing business park with two to 20 acre sites with 20,000 to 400,000 square foot building footprints. Due the area's RSIA designation, this plan also included compliance with a 50 and 100-acre non-divisible parcel. The vision for this plan included a mix of light industrial and high-tech uses in a corporate campus setting.
- These development assumptions were also reflected in the Southwest Tualatin Concept Plan.
- The Sherwood Tonquin Employment Area Concept Plan took assumptions of use a step further in the TEA subarea, identifying preferred industry targets for the TEA:

1) Large and medium-sized parcels for industrial campuses and other industrial sites that can accommodate a variety of industrial companies and related businesses in:
    a. Clean Technology—Renewable Energy, Energy Efficiency, Sustainable Environmental Products.
    b. Technology, & Advanced Manufacturing—Manufacturing/Metals, High Technology, Bio-Technology and Bio-pharmaceuticals.
    c. Outdoor Gear and Activewear—Sports Apparel, Recreation Products

2) Flex Building Space with small and medium-sized industrial campuses and business parks to accommodate research and development companies, incubator/emerging technology businesses, related materials and equipment suppliers, and or spin-off companies and other businesses that derive from, or are extensions of, larger campus users and developments.

Employment Forecast

- The Sherwood Tonquin Employment Area Concept Plan further estimated 20-year employment growth for the TEA. This included the build-out of 235 buildable acres across commercial and industrial uses. The analysis forecasted capacity of 2,290 in the first 20-years with a full build-out capacity of 3,520 jobs.

Market Context

- The Tualatin Tonquin Concept Development Plan was informed by a series of market conditions derived from interviews with industrial brokers. Key findings included:
  - A preference for companies to own properties with a market for buildings in the 10,000 to 120,000 square foot range.
  - Congestion and Interstate proximity is a limiting factor for the Tualatin Concept Plan Subarea.
  - The area is not particularly well suited for Flex development.
  - The market for a campus type development in the subarea appears low.

INDUSTRY IMPACTS IN THE CURRENT ECONOMY

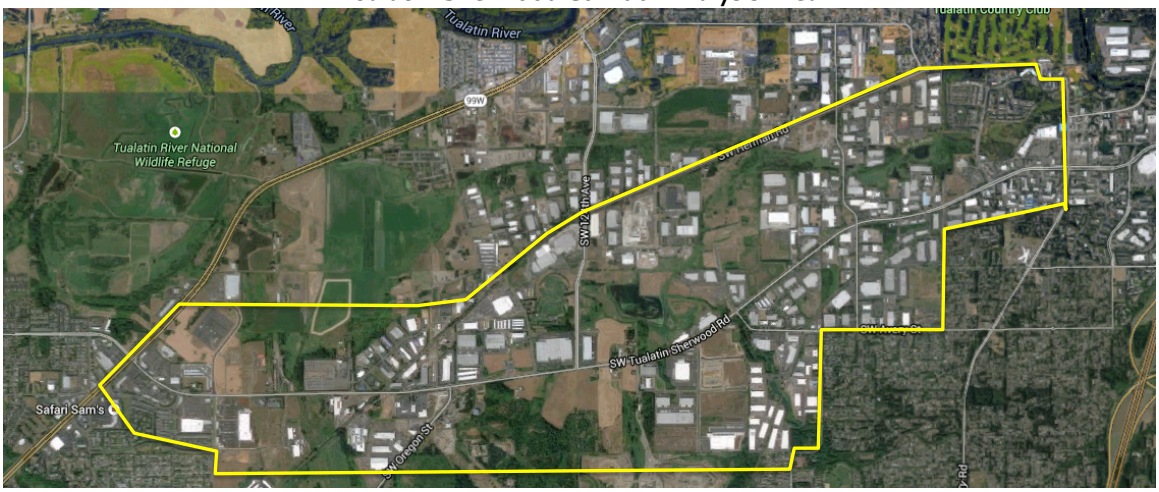
For this analysis, Johnson Economics evaluated industrial trends in the local economy. In previous economic development studies, Tualatin and Sherwood have slight variances in their identified target industries. This generally reflects different periods of evaluation and by extension the condition that they were not a coordinated effort. This analysis does reflect a coordinated effort that considers the same target industries for both Tualatin and Sherwood, specifically as it relates to the study area. This makes logical sense given that the in most cases economic systems do not function around jurisdictional lines[1].

As noted above, Tualatin conducted a detailed industry cluster analysis in 2014 (reflecting 2012 data for the entire Tualatin Economy), identifying three primary industrial land utilizing industry clusters:

- Advanced Manufacturing
- Wood, Paper, Printing, and Related
- Food Processing and Distribution

Building on these three core clusters, Johnson Economics conducted an additional employment and industry specialization analysis for the economic conditions specific to the Tualatin-Sherwood corridor. This analysis provides insight into the industrial ecosystem likely to influence the Study Area.

Tualatin-Sherwood Corridor Analysis Area



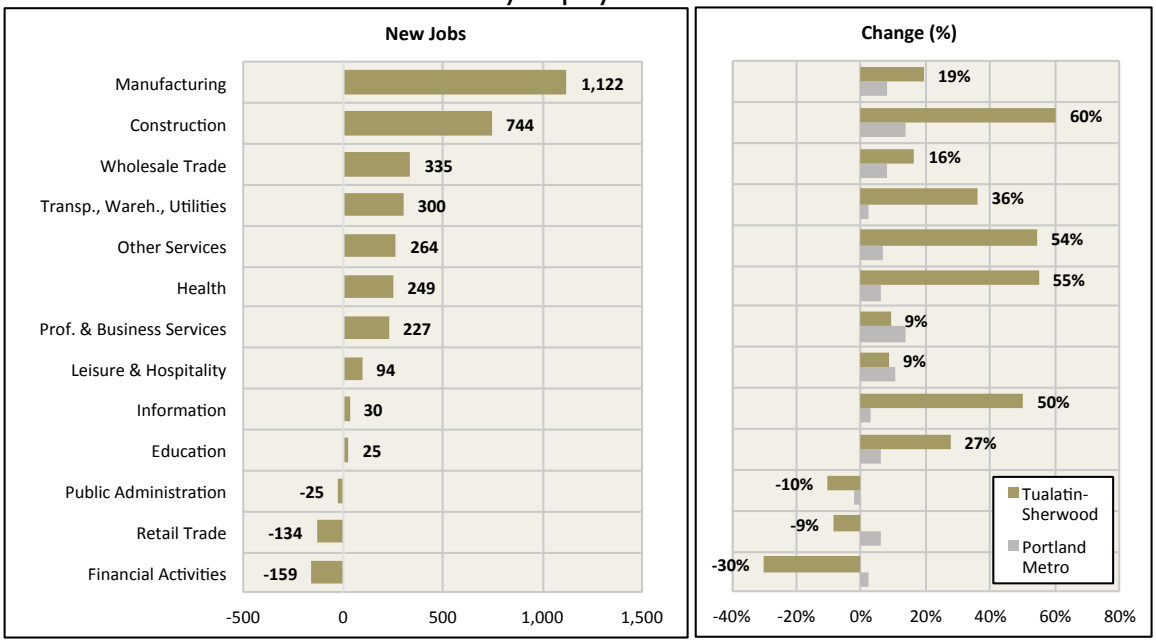
[1] With the exception of instances of extreme differences in taxes, fees, policy, zoning, etc.

Industry Employment Growth

According to the Quarterly Census of Employment and Wages, the Study Area added 3,030 jobs between 2010 and 2013. This represents an increase of 18%, which translates to an average annual growth rate of 5.6%. In comparison, the equivalent growth rate in the Portland Metro Area was 2.1% over the same period, and 1.5% in the nation as a whole. The strongest growth took place in 2013, when employment within the Study Area expanded by nearly 10%.

The manufacturing industry contributed more than one-third of the job growth over the 2010-2013 period, with a gain of more than 1,100 jobs. Construction added nearly 750 jobs over the period, which represented an expansion of 60% relative to its 2010 employment level. Strong job growth was also seen in the wholesale industry and in transportation, warehousing, and utilities, both of which contribute significantly to demand for industrial space.

Industry Employment Shift



Industry Specialization

The most common analytical tool to evaluate economic specialization is a location quotient analysis. This metric compares the concentration of employment in an industry at the local level to a larger geography. For example, a Location Quotient of 1.50 for widget manufacturing would indicate that the share of employment in widget manufacturing locally was 50% higher than the national average. Generally, 1.50 is a common threshold indicating a relatively high specialization. Among the industries with the highest rates of specialization in the Study Area, 12 are manufacturing industries and an additional five are in wholesale/distribution related activities. Considering the top 20 most specialized industries in Study Area, we can confirm from the current data that reliance on Advanced Manufacturing, Wood, Paper, Printing, and Related Manufacturing, Food Processing, and Distribution as targeted economic opportunities for the Study Area is appropriate.

Industry Specialization

INDUSTRY	L.Q.
Machinery Manufacturing	12.14
Furniture and Related Product Manufacturing	5.95
Electrical Equipment, Appliance, and Component Manufacturing	5.90
Couriers and Messengers	5.28
Fabricated Metal Product Manufacturing	4.87
Plastics and Rubber Products Manufacturing	3.23
Computer and Electronic Product Manufacturing	3.04
Merchant Wholesalers, Durable Goods	2.87
Textile Product Mills	2.77
Paper Manufacturing	2.73
Nonmetallic Mineral Product Manufacturing	2.71
Heavy and Civil Engineering Construction	2.40
Repair and Maintenance	2.33
Specialty Trade Contractors	2.17
Food Manufacturing	2.06
Merchant Wholesalers, Nondurable Goods	1.93
Wood Product Manufacturing	1.80
Support Activities for Transportation	1.60
Printing and Related Support Activities	1.58
Wholesale Electronic Markets and Agents and Brokers	1.45

= Manufacturing

= Distributiion/ Wholesale

= Construction/ Other

Industrial Market Trends

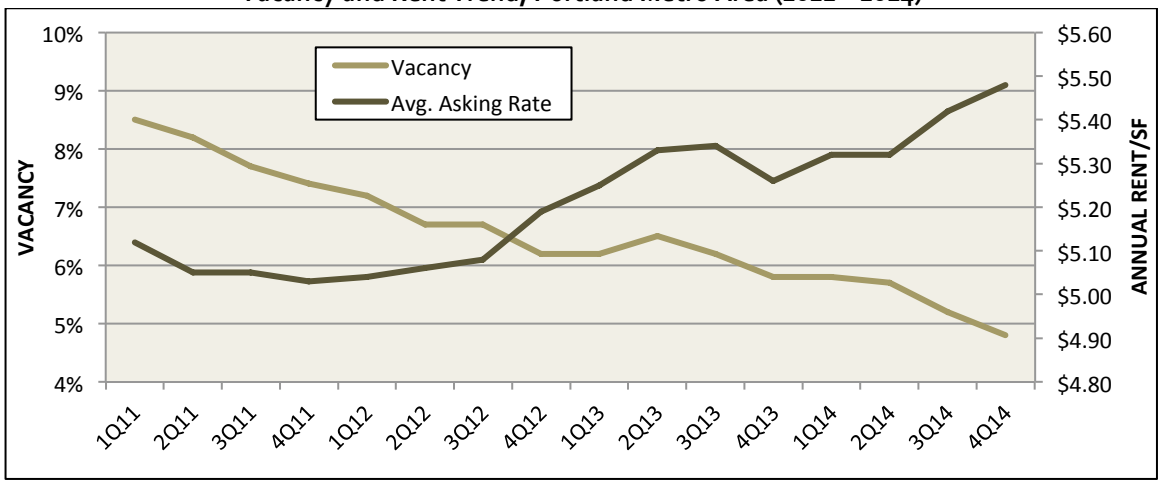
The following analysis reflects recent industrial market trends that will be influencing the character of industrial development over the next business cycle. This analysis includes an overview of conditions in the broader Portland Metropolitan area as well as the I-5 South submarket, which includes the Tualatin-Sherwood Corridor.

Portland Metro Area

Portland Metro's industrial real estate market has seen significant improvement over the past four years, as the local economy has recovered. This is true for warehouses, manufacturing facilities, and flex buildings alike. The flex segment has benefited from growth in the high-tech cluster, as local firms like Intel are expanding and out-of-area firms like Salesforce.com have moved in. Manufacturing and distribution center space has benefitted from increasing consumption as well as from the region's growing output.

With little new construction in recent years, the absorption of industrial space has driven vacancy rates down and rents up. At the end of 4Q 2014, the overall vacancy rate for industrial space was 4.8%, and the year-over-year rent growth was 4.2%, according to Kidder Mathews.

Vacancy and Rent Trend, Portland Metro Area (2011 – 2014)

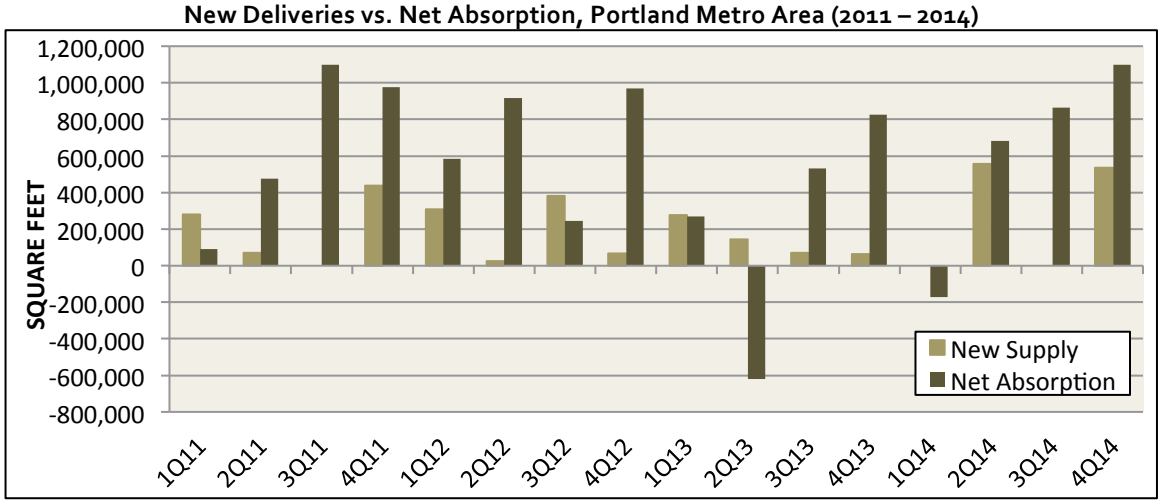


** Blended, NNN, asking rate.*

SOURCE: Kidder Mathews, JOHNSON ECONOMICS

Roughly 1.1 million square feet of new industrial space was completed in the Portland Metro Area in 2014. This represents a doubling since 2013. However, it is far less than net absorption (net change in occupied space) during the year, which totaled 2.5 million square feet. Though limited new construction was helpful in bringing down excessive vacancy rates in the early part of the recovery, it now likely puts a drag on absorption. At the moment, 1.4 million square feet of space is under construction.

New Deliveries vs. Net Absorption, Portland Metro Area (2011 – 2014)



SOURCE: Kidder Mathews, JOHNSON ECONOMICS

I-5 South

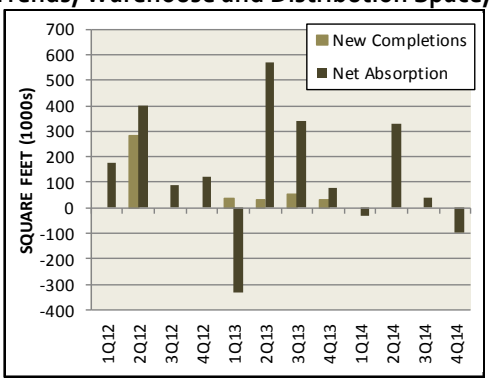
The I-5 South submarket includes Tualatin and Sherwood as well as Tigard and Wilsonville. Trends in this submarket have largely tracked regional trends over the past three years. Over this period, the overall industrial vacancy rate has fallen from 9% to 5%, and the average annual asking rent has risen from $5.64 to $6.96 per square foot.

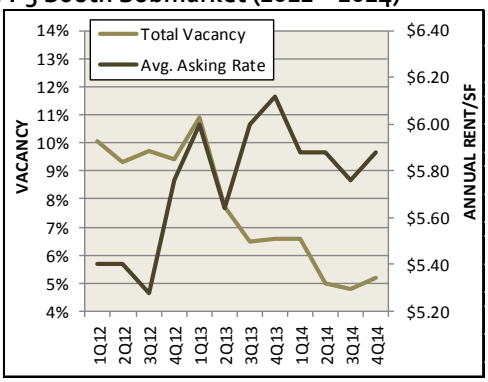
Warehouse/Distribution Centers

Warehouses and distribution centers account for two-thirds of the I-5 South industrial market. This segment has seen net absorption of 1.7 million square feet over the past three years, and almost no new construction. The vacancy rate has dropped from around 10% to 5% over this period, while average annual asking rents have increased from $5.40 to $5.88. The decline in asking rents (-4%) over the past year does not appear to reflect softening market conditions, judging from the continued decline in vacancy. Asking rates reflect available inventory, and in times of low vacancy and no new construction, the least desirable properties are often the ones to remain unleased. As these properties account for an increasing share of vacant space, they can reduce the average asking rate although achievable rent levels are generally rising.

Market Trends, Warehouse and Distribution Space, I-5 South Submarket (2012 – 2014)

WAREHOUSE/ DISTRIBUTION	
2014 Net Abs. (SF):	244k
4Q14 Vacancy:	5.2%
4Q14 Rent Growth (Y/Y):	-3.9%
Under Constr. (SF)	-





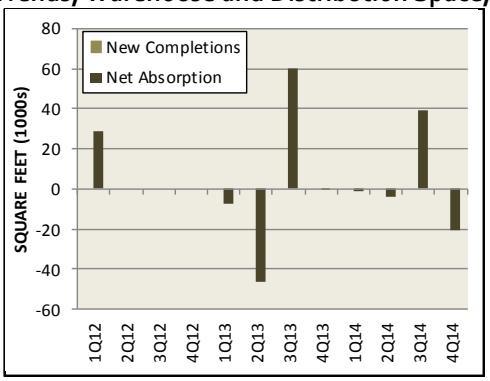
SOURCE: JLL, JOHNSON ECONOMICS

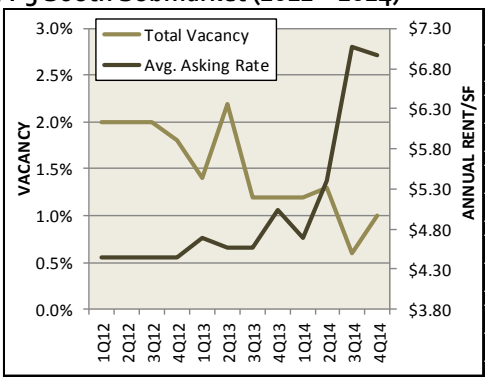
Manufacturing Space

Manufacturing facilities account for around 20% of the I-5 South submarket. Roughly 50,000 square feet of manufacturing space has been absorbed on a net basis over the past three years, bringing an already low vacancy rate down from 2% to 1%. In comparison, the metro-wide vacancy rate for manufacturing space is 4.3%. The average annual asking rate for available space jumped from $5.04 to $6.96 over the past year. There is no manufacturing space currently under construction in this submarket.

Market Trends, Warehouse and Distribution Space, I-5 South Submarket (2012 – 2014)

MANUFACTURING	
2014 Net Abs. (SF):	13k
4Q14 Vacancy:	1.0%
4Q14 Rent Growth (Y/Y):	3.1%
Under Constr. (SF)	-





SOURCE: JLL, JOHNSON ECONOMICS

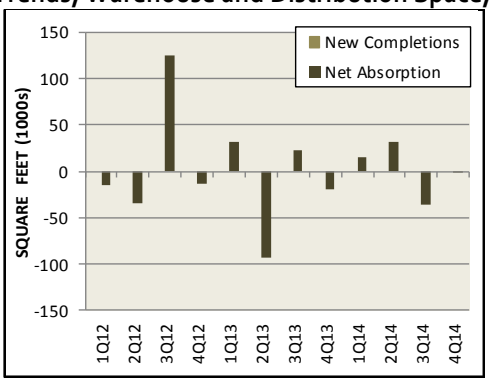
Flex Space

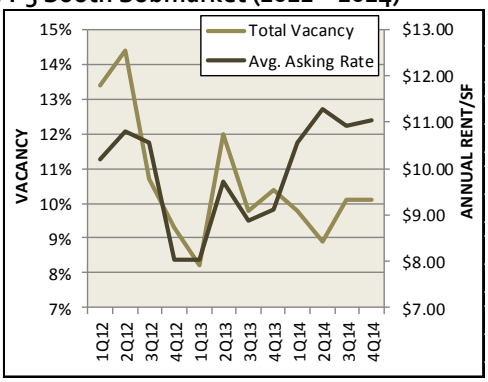
Flex space is currently a minor part of the I-5 South submarket, currently accounting for around 10% of total industrial space. However, it is the most rapidly expanding segment, with 250,000 square feet currently under construction. This represents an 8% expansion of the current flex inventory. Nearly all of this will be located in Tualatin, and most of it will be delivered in 2015.

Absorption of flex space in I-5 South has been mixed over the past three years, with net absorption of only 16,000 square feet. However, some space was taken off the market over this period, which contributed to a decline in vacancy from around 13% in early 2012 to around 10% in late 2014. Average asking rents have increased from $10.20 to $11.04 over this period.

Market Trends, Warehouse and Distribution Space, I-5 South Submarket (2012 – 2014)

FLEX	
2014 Net Abs. (SF):	10k
4Q14 Vacancy:	10.1%
4Q14 Rent Growth (Y/Y):	21%
Under Constr. (SF)	252k





SOURCE: JLL, JOHNSON ECONOMICS

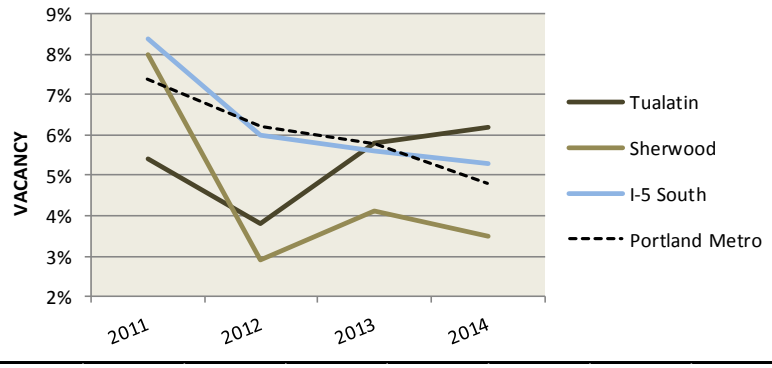
Tualatin-Sherwood

Vacancy

We have limited market data specific to Tualatin and Sherwood, but Kidder Mathews publishes year-end vacancy rates for these geographies. According to this data, the overall industrial vacancy rate in Tualatin is 6.2%, which is somewhat higher than in the remainder of the I-5 South submarket and the wider Metro Area. In Sherwood, however, the vacancy rate is considerable lower, at 3.5%, after falling steeply in 2012.

Year-End Vacancy Rates, All Industrial Space (2011 – 2014)

MARKET	VACANCY 4Q 2014
Tualatin	*6.2%*
Sherwood	*3.5%*
I-5 South	*5.3%*
Portland Metro	*4.8%*



SOURCE: Kidder Mathews, JOHNSON ECONOMICS

Pipeline

There are three projects with eight buildings and more than 500,000 square feet of industrial space currently under construction in the Tualatin-Sherwood submarket. All are located in Tualatin. All eight buildings are scheduled for delivery in 2015.

Pipeline of Industrial Space in Tualatin-Sherwood

Project Name	Address	Buildings	Total SF.	Type	Status	Est. Delivery	Developer
Koch Corporate Center	SW 115th & Itel Street	6, 7	100,000	Flex	U.C.	1Q 2015	PacTrust
Southwest Industrial Park	19585 SW 118th Ave	A, B, C, D	301,709	Flex	U.C.	3Q 2015	Trammell Crow Company
Hedges Creek Business Park	112th Ave & Tual.-Sherw. Rd	A, B	116,850	Flex	U.C.	2Q-3Q 2015	Martin Development

SOURCE: Listing brokers, developers, JOHNSON ECONOMICS

APPENDIX 3
NATURAL RESOURCES MEMORANDUM

Pacific Habitat Services
May 1, 2015

City of Sherwood Oregon

PACIFIC HABITAT SERVICES, INC.
9450 SW Commerce Circle, Suite 180
Wilsonville, Oregon 97070
Oregon General Contractor: CCB# 94379

Telephone number: (503) 570-0800 Fax number: (503) 570-0855

MEMORANDUM

Date: May 1, 2015

To: Brian Varricchione, PE;
Todd Johnson
Mackenzie, Inc.

From: Fred Small/ John van Staveren

Re: Natural Resources within the Tonquin Employment Area (City of Sherwood) and SW Concept Plan Area (City of Tualatin)
(PHS #5560)

This memorandum describes current conditions within the Tonquin Employment Area and SW Concept Plan Area, highlighting the location and characteristics of potentially regulated water resources within the study area. Also discussed, is whether any of these resources are likely to be considered significant under Statewide Planning Goal 5, and whether they will be regulated by federal, state, and/or local agencies.

CURRENT CONDITIONS

PHS conducted reconnaissance-level site assessments on February 23 and March 12, 2015, to determine the approximate location and quality of water resources within the Tonquin study area and SW Concept Plan Area. While the US Army Corps of Engineers' 1987 *Wetland Delineation Manual* and the more recent *Western Mountains, Valleys and Coast Region* regional supplement provide the guidelines and methodology for delineating the regulatory boundaries of wetlands and other waters, this study only utilized those guidelines to roughly define the wetland boundaries.

Broad vegetation communities encountered in both the Tualatin and Sherwood study areas are described below, followed by a discussion of wetlands within each study area.

Vegetation Communities

Vegetation communities within the larger study area have formed in response to the unique, relatively rocky terrain of the 'Tonquin Scablands,' as well as to widely varying degrees of human disturbance over time. Hard rock quarrying operations are prevalent within the Tualatin portion, contributing to the highly patchy and variable plant cover. Within the Sherwood portion, by contrast, larger areas of intact forest and scrubland are interspersed with recently logged and/or actively farmed parcels. Landscaped rural residential lots and small scale industrial activities are also present in the Sherwood portion. The most prominent communities are described below. Appendix A includes a partial species list for the Sherwood and Tualatin study areas, based on the PHS site visits on February 23 and March 12, 2015.

Upland Mixed Evergreen-Deciduous Forest

Intact forest patches are typically comprised of a relatively young to mature overstory comprised primarily of Douglas fir, with bigleaf maple, Oregon white oak, and madrone also present. The understory is mostly dense and includes such species as poison oak, tall Oregon grape, oceanspray, snowberry, hazelnut, and serviceberry. More recently disturbed edges are more likely to be dominated by invasive shrubs (e.g. Himalayan blackberry and Scots' broom).

Upland Shrub Thicket

Shrubby areas have typically been subject to more recent disturbance than areas that retain tree cover. A few parcels have been logged recently, while other disturbed areas include the margins of active quarry pits, as well as the BPA power line rights-of-way. The most common thicket-forming species in these areas include saplings of the more common trees mentioned above, along with Himalayan blackberry, poison oak, and Scots' broom.

Wetland (Forested)

Forested wetlands are typically characterized by a dominant tree such as Oregon ash, along with a hydrophytic understory; however, within the study area just one location was observed with a tree overstory large enough to signify forested wetland. The broad swale and channel extending northward through the Orr property to Tualatin-Sherwood Road met this description.

Wetland (Scrub-Shrub)

Wet depressions or swales within the study area often support thickets of hydrophytic shrubs that are typically dominated by willows, hardhack spirea, and rose, among others. Occasionally scattered within these thickets are tree species such as black cottonwood and Oregon ash.

Wetland (Emergent)

Meadows, pastures, and other open areas may support hydrophytic (moisture-loving) herbaceous species when subject to prolonged seasonal saturation or shallow inundation. These areas often indicate relatively recent disturbance, and may eventually be colonized by woody species if left undisturbed for enough time. Typical emergent species (i.e. rooted hydrophytes that generally extend above the greatest depth of ponding) include reed canarygrass, meadow foxtail, slough sedge, soft rush, American speedwell, knotweeds, and cattail,

Wetland (Open Water)

Open water areas primarily include ponds that have sufficient depth to exclude rooted woody to emergent vegetation. When present, vegetation is typically limited to floating or submerged aquatic vegetation, such as yellow pond lily, floating or curly pondweed, and white water-buttercup.

Developed/ Disturbed

This category includes virtually any developed or highly disturbed land within the study area not otherwise described above. These lands include previously cleared parcels that are currently subject to quarrying, farming, residential landscaping, or similar ground disturbing activities. In some locations these lands are now occupied by structures, access roads, or driveways, or else are maintained in an open condition (mowed lawn or pasture, scattered landscape plantings, etc.). Typically, any vegetation cover is highly patchy and is dominated by introduced, often weedy species or by nursery plantings.

A. Tualatin SW Concept Plan Area Wetlands: Tigard Sand and Gravel/ Oregon Asphaltic Paving (TSG/ OAP) parcels

The Tualatin SW Concept Plan Area is predominantly comprised of active quarrying operations, foremost being the Tigard Sand and Gravel (TSG) operation. Due to onerous mine safety requirements, PHS was provided a driving tour of the operation, in order to determine the locations of any relatively undisturbed land currently subject to wetland hydrologic conditions. Due to the active and continuing nature of the operation, it was apparent during the drive-through that wetland conditions could readily form in recently excavated or otherwise disturbed areas, simply from creating a new depression or by the diversion of stormwater runoff away from actively mined areas.

Wetlands

Since the entire mining area is currently regulated by Oregon's Department of Geology and Mineral Industries' (DOGAMI), as opposed to the state and federal wetland regulators (Department of State Lands and US Army Corps of Engineers), some areas of the site currently meeting wetland criteria may not exist in a few years. Wetland conditions may also be created elsewhere by quarrying activities during that time. The nature of the mining operation is that many feet of overburden (soil, vegetation, poor quality rock) may be removed to access the desired quality and quantity of rock, and the presence of wetlands in quarried areas is thus a transient condition at best.

A single wetland within the operation appears to be of relatively natural contours and in an area unlikely to be further modified:

- Tax Lot 25134B000700: Broad depression in SW corner of study area, partly beneath BPA lines. This depression extends both north and south of an access road beneath the power lines; shallow ponded water and a near monoculture of reed canarygrass were observed to extend in both directions from the road crossing. While soils have not been sampled here, it is anticipated that hydric soils are present.

Ponds within the TSG/OAP operation that appear to be either natural ('kolk' features) or to be older, revegetated excavated depressions that are unlikely to be further modified include:

- Tax Lot 25127C000400: North-South oriented pond along SW 120th entrance road into TSG operation. This pond was apparently excavated prior to the current operators, possibly as early as the 1950s. Currently, clear water is pumped into the pond during summer to maintain its height and the pond lily cover; otherwise the pond apparently dries out by early summer.
- Tax Lot 25127DC02700: North-South oriented pond located in northeast corner of study area, east of the primary deep pit near the TSG office and along the railroad easement. This pond may be a kolk pond scoured by Bretz floodwaters; it is also outside of any future mining activities.
- Tax Lot 25134AC00100: North-South oriented pond located along the central eastern boundary of study area, also along the railroad easement. This pond may also be a kolk pond scoured by Bretz floodwaters, and has been isolated from the mining operation.

Since the above features are least likely to be subject to future mining activities as permitted under the DOGAMI rules in effect, each should be considered potentially jurisdictional under state and federal wetland laws once the prevailing land uses are modified.

B. Sherwood Tonquin Employment Area Wetlands: Orr Family Farm and Oregon Asphaltic Paving parcels; BPA easement

The Sherwood Tonquin Employment Area is primarily comprised of parcels that are at least partially forested or else have been cutover fairly recently; are currently in agricultural production; or are relatively developed (i.e. junkyards, rural residential/landscaped, etc.). Quarrying activities are located mostly outside of the Sherwood study area.

Parcels subject to the above land uses lacked water resources as a rule. However, at least one parcel contained clear aerial indicators of wetland, but access to those features was not possible due to the heavily vegetated terrain. As such, PHS attempted to utilize existing surveyors' trails or other openings to assess these areas to the extent possible. LIDAR imagery was also used to estimate the limits of each wetland feature, with ground verification augmenting the LIDAR data in a few instances. The following discussion summarizes our findings for each affected parcel;

- Tax Lot 2S128D000100 (Orr Family Farm parcel): A large wetland with extensive ponding is located within the predominantly forested to scrub-shrub south half of the Orr parcel. Due to a dense tangle of poison oak, Himalayan blackberry, and other woody species, access into this depressional area is currently impossible without the aid of heavy brush cutting equipment; however, an existing surveyor's trail along the parcel's eastern property line allowed access southward to within 50 feet of a lobe of this wetland. As such, it was verifiable and some typical vegetation could be noted, including Oregon ash, willows, hardhack spirea, and soft rush. However, since better access was not possible, it is likely that the wetlands may be more extensive than depicted on our mapping.

A second water feature was also documented within the Orr property, which was much more accessible than the larger wetland described above. A broad seasonal swale that contains smaller incised channels extends northward from a hillside seep zone several hundred feet south of Tualatin-Sherwood Road. Although the seep zone could not be accessed due to the dense vegetation, LIDAR imagery indicates an abrupt escarpment without apparent channeling above, indicating a fairly confined zone where surface water originates. These flows support a stand of Oregon ash along the swale, along with a variety of shrubs and herbaceous species that include willows, spirea, ninebark, blackberries, reed canarygrass, soft rush, and creeping buttercup. The seasonally charged surface flows are culverted beneath Tualatin-Sherwood Road, ultimately feeding to Hedges Creek.

Three additional features within the Orr property have been included as potential wetlands, despite our lack of reasonable access. These small irregular depressions are indicated fairly clearly by LIDAR data, and are in a similar geomorphic position as the larger wetland described initially. Due to heavy vegetation growth, aerial imagery provides little indication of the nature of these features.

- Tax Lot 2S128D000900 (Oregon Asphaltic Paving): This small, relatively shallow depression is inundated seasonally, although its unlikely to exceed a foot or so in depth even during high runoff events. A small overflow channel issues from its southern end onto a dirt access road without evidence of channeling, so it is unlikely that overflows occur with any regularity. This depression is primarily dominated by emergents, including meadow foxtail.
- Tax Lot 2S128D000100 (BPA alignment near Rivera parcel): A relatively small wetland area is located adjacent to Dahlke Road within the BPA alignment. Dominant plants included willows, Douglas spirea, roses, slough sedge, and soft rush. Although no ponding was visible from the few vantage points, these hydrophytic plants strongly indicate the presence of hydric soils and wetland hydrology.

REGULATED WATER RESOURCES (Federal/ State/ Local Entities)

The criteria for determining federal and state jurisdiction of water resources may potentially be met by each of the wetlands described within the study area, and thus be subject to Section 404 of the federal Clean Water Act (administered by Corps of Engineers [Corps]), and to the State of Oregon's Removal Fill Law (administered by Oregon Department of State Lands [DSL]). These regulations may restrict or modify any proposed impacts to wetlands, and mitigation may be required for those impacts.

Determining the boundaries of state and/or federally regulated wetlands within the study area will require more extensive soils and vegetation sampling by a wetland specialist than has been conducted to date, and on a parcel by parcel basis. Note that once a wetland delineation has been conducted and the boundaries approved by DSL, those findings are only valid for a period of 5 years.

Ponded quarry pits and conveyance channels within the Tigard Sand and Gravel parcels that have been created by and are still subject to quarrying activities are currently regulated by DOGAMI. However, if land uses change and the mining activities cease, then the Clean Water Act, Section 404 and the state Removal Fill law will likely supersede the DOGAMI rules.

Significant Natural Resources (Goal 5)

Local Wetland Inventories (LWI) required to address Statewide Land Use Planning Goal 5 have been conducted for both the Cities of Tualatin and Sherwood. However, nearly the entire study area was not included in the inventories since it is outside both cities' limits.

As such, future site planning by the Cities will require that onsite water resources be assessed for Goal 5 significance using the Oregon Freshwater Assessment Method (OFWAM) methodology. If a resource is determined to be significant, it would then be subject to certain protective measures, which may include restrictions on development and/or protective buffers.

Without actually applying the OFWAM methodology to the mapped wetlands, it is likely that all of the larger wetlands will meet the significance criteria adopted by both cities. However, there are a few smaller potential wetlands that may not meet these criteria.

Significant Natural Resources (Washington County development code Section 422)

If the study area were to remain outside the city limits of both Sherwood and Tualatin, then the County's development standards within significant natural resources (Section 422) would remain in effect. The Section 422 mapping indicates significant natural resource (SNR) overlays within just the Sherwood Tonquin Employment Area (none are indicated within the Tualatin SW Concept Plan Area).

The SNR overlays shown within the Sherwood study area include;

- Water Areas and Wetlands and Fish and Wildlife Habitat
- Significant Natural Areas
- Resource Overlap

These mapped Section 422 overlays are restricted to the Orr Family Farm parcel (Tax Lot 2S128D000100), which includes a large wetland subject to seasonal ponding, a forested wetland swale, extensive upland forested areas, and agricultural lands. Any development proposed within potentially protected features will be subject to the requirements of this code section.

Please note, however, that once a parcel has been subject to a Goal 5 analysis and water features have been adopted into the local jurisdiction's Goal 5 mapping, then the County's Section 422 requirements are no longer applicable. Also, in the event that city boundaries are extended through annexation to include the study parcels, then Goal 5 updates to each city's LWI will be required. Once adopted, the individual cities' development codes will supersede any conditions required by the County's Section 422 ordinance.

SUMMARY

As outlined in the sections above, development within the Tonquin Employment Area and the SW Concept Plan Area will be subject to several distinct jurisdictions, each with its own regulations to address. The table below summarizes potential regulators, their authority, and a current contact for more information.

Agency	Authority	Contact
US Army Corps of Engineers	Section 404 (Clean Water Act)	Michael Ledouceur (503) 808-4337
Oregon Department of State Lands	Removal-Fill Law	Anita Huffman (503) 986-5250
Oregon Department of Environmental Quality	Section 401 (CWA); NPDES	Amy Simpson (503)229-5051
Washington County	Section 422	Wayne Hayson (503) 846-8761
Clean Water Services of Washington County	Regulated buffers	Amber Wierck (503) 681-3653
City of Sherwood	Municipal Code	Julia Hajduk (503) 625-4204
City of Tualatin	Municipal Code	Ben Bryant (503) 691-3049

If any questions arise regarding this discussion, please don't hesitate to call.

APPENDIX A
CURRENT VEGETATION LIST

The table below provides a partial species list for the Sherwood and Tualatin study areas, based on the PHS site visits on February 23 and March 12, 2015**. [Please note that this list should not be considered comprehensive, as it is based on limited ground inspections at a relatively early stage in the growing season].** Whether the species is native, non-native, or particularly noxious is also noted.

Species Name	Common Name	Native/ Introduced?*
Trees		
Acer macrophyllum	Bigleaf maple	N
Arbutus menziesii	Pacific madrone	N
Betula pendula	European white birch	I
Fraxinus latifolia	Oregon ash	N
Malus domestica	Domestic apple	I
Populus balsamifera ssp. trichocarpa	Black cottonwood	N
Prunus avium	Sweet cherry	I
Pseudotsuga menziesii	Douglas fir	N
Quercus garryana	Oregon white oak	N
Salix scouleriana	Scoulers willow	N
Shrubs/ Woody Vines		
Amelanchier alnifolia	Saskatoon serviceberry	I
Berberis [=Mahonia] aquifolium	Tall Oregon grape	N
Corylus cornuta	hazelnut	N/I
Cornus alba	Red-osier dogwood	N
Cornus nuttallii	Pacific dogwood	N
Crataegus douglasii	Black hawthorne	N
Crataegus monogyna	One-seed hawthorn	I
Cytisus scoparius	Scots' broom	I*
Hedera helix	English ivy	I*
Holodiscus discolor	Oceanspray	N
Ilex aquifolium	English holly	I
Ligustrum vulgare	European privet	I
Lonicera ciliosa	Orange honeysuckle	N
Lonicera hispidula	Hairy honeysuckle	N
Physocarpus capitatus	Pacific ninebark	N
Prunus emarginata	Bitter cherry	N
Rhamnus purshiana	cascara	N
Rosa canina	Dog rose	I
Rubus armeniacus	Himalayan blackberry	I*
Rubus leucodermis	White stem raspberry	N
Rubus ursinus	California dewberry	N
Salix spp.	Willows	N
Sambucus racemosa	Red elderberry	N
Spiraea douglasii	Hardhack spirea	N
Symphoricarpos albus	Common snowberry	N
Toxicodendron diversilobum	Poison ivy	N
Herbs		
Agrostis spp.	Bentgrass	I
Alopecurus pratensis	Meadow foxtail	I
Anthoxanthum odoratum	Sweet vernalgrass	I

Species Name	Common Name	Native/ Introduced?*
Bromus vulgaris	Columbia brome	N
Cardamine nuttallii	Nuttall's toothwort	N
Cardamine oligosperma	Little western bittercress	N
Carex obnupta	Slough sedge	N
Cichorium intybus	Chicory	I
Cirsium spp. (C. arvense, C. vulgare)	Canada and bull thistles	I*
Claytonia perfoliata	Miner's lettuce	N
Cynosurus echinatus	Hedgehog dogtail	I
Daucus carota	Queen Anne's lace	I
Dactylus glomerata	Orchardgrass	I
Digitalis purpurea	Foxglove	I
Dipsacus fullonum	teasel	I
Elymus glaucus	Blue wildrye	N
Equisetum arvense	Field horsetail	N
Fragaria vesca	Woodland strawberry	N
Galium aperine	Bedstraw	I
Geranium lucidum	Shiny geranium	I
Geranium molle	Dovefoot geranium	I
Holcus lanatus	Common velvetgrass	I
Hypericum perforatum	St. John's wort	I
Hypochaeris radicata	Hairy catsear	I
Jacobaea vulgaris	Tansy ragwort	I*
Juncus effusus	Soft rush	N
Juncus patens	Spreading rush	N
Leucanthemum vulgare	Oxeye daisy	I
Lupinus sp.	Lupine	N
Luzula sp.	woodrush	N
Nuphar polysepalum	Yellow pond lily	N
Parentucellia viscosa	Yellow parentucellia	I
Phalaris arundinacea	Reed canarygrass	I*
Polypodium glycorrhiza	Licorice fern	N
Polystichum munitum	Swordfern	N
Prunella vulgaris	Self heal	N/I
Ranunculus repens	Creeping buttercup	I
Rumex sp.	dock	N/I
Sanicula crassicaulis	Pacific sanicle	N
Solidago canadensis	Canada goldenrod	N
Stachys cooleyae	Cooley's hedgenettle	N
Taraxacum officinale	Dandelion	I
Trifolium repens	White clover	I
Torilus arvensis	Spreading hedge-parsley	I
Typha latifolia	cattail	N
Verbascum blattaria	Moth mullein	I
Verbascum thaspus	Mullein	I

**These non-native species tend to be especially noxious and/or invasive in disturbed habitats, warranting control efforts whenever possible.*

APPENDIX 4

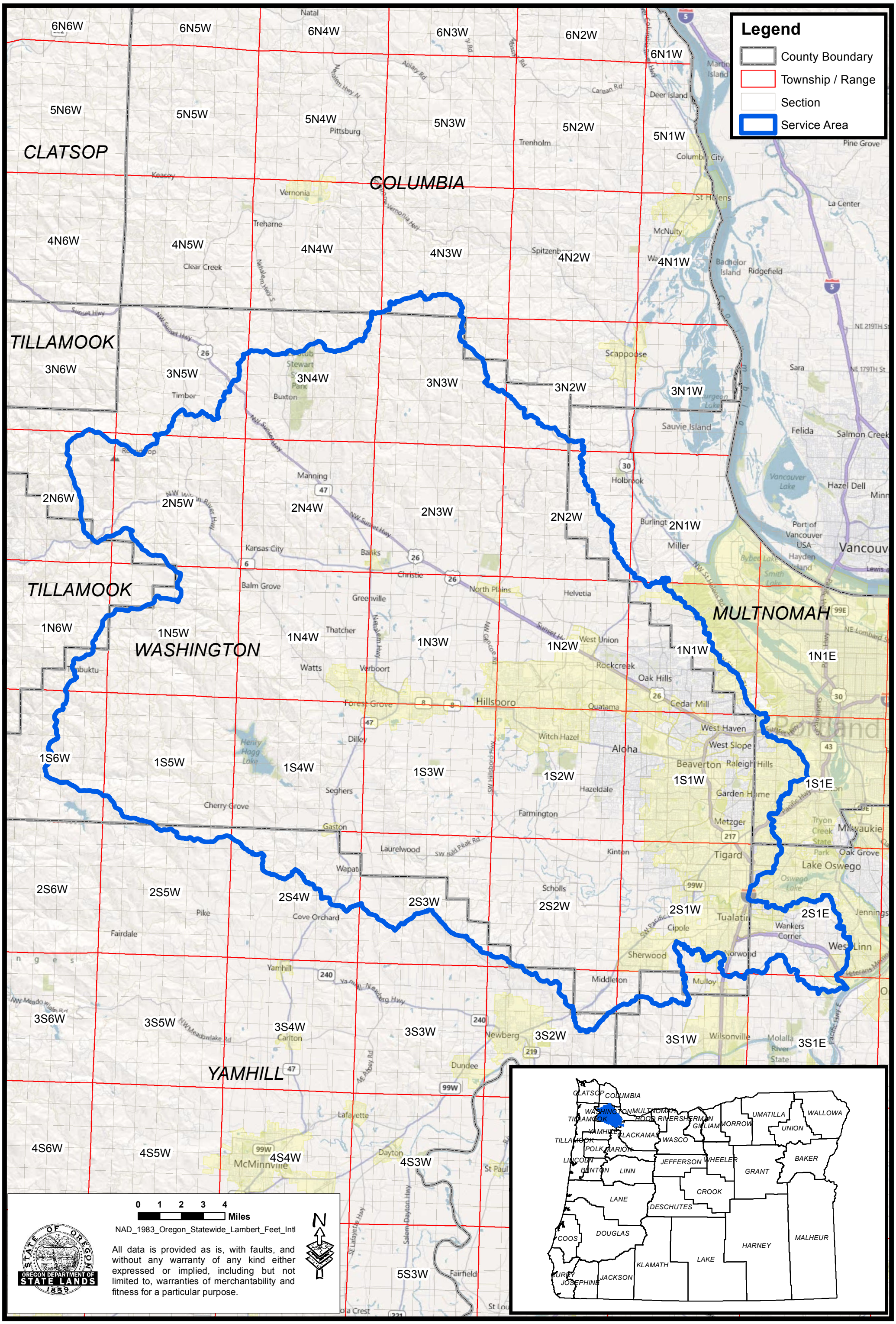
WETLAND MITIGATION BANK SERVICE AREA MAPS

City of Sherwood Oregon

W & M Butler Mitigation Bank

Mitigation Bank Service Area

**Service area is limited to < 1000 ft. elevation.*



Mud Slough

Mitigation Bank Service Area

**Service area may have elevation limits.*

Legend

- County Boundary
- Township / Range
- Section
- Mitigation Bank Service Areas
- Mitigation Banks

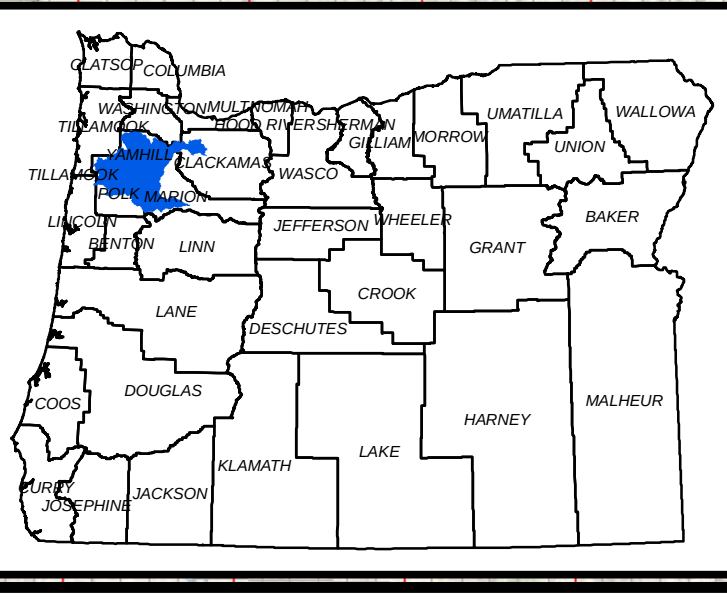
CLATSOP · COLUMBIA · TILLAMOOK · WASHINGTON · MULTNOMAH · YAMHILL · CLACKAMAS · POLK · MARION · LINCOLN · BENTON

Mud Slough

0 2 4 6 8 Miles

NAD_1983_Oregon_Statewide_Lambert_Feet_Intl

OREGON DEPARTMENT OF STATE LANDS



Tualatin Environmental Bank

Mitigation Bank Service Area

**Service area is limited to < 1000 ft. elevation.*

Legend

- County Boundary
- Township / Range
- Section
- Service Area

6N6W 6N5W 6N4W 6N3W 6N2W 6N1W
5N6W 5N5W 5N4W 5N3W 5N2W 5N1W
4N6W 4N5W 4N4W 4N3W 4N2W 4N1W
3N6W 3N5W 3N4W 3N3W 3N2W 3N1W
2N6W 2N5W 2N4W 2N3W 2N2W 2N1W
1N6W 1N5W 1N4W 1N3W 1N2W 1N1W 1N1E
1S6W 1S5W 1S4W 1S3W 1S2W 1S1W 1S1E
2S6W 2S5W 2S4W 2S3W 2S2W 2S1W 2S1E
3S6W 3S5W 3S4W 3S3W 3S2W 3S1W 3S1E
4S6W 4S5W 4S4W 4S3W

CLATSOP
TILLAMOOK
COLUMBIA
WASHINGTON
MULTNOMAH
YAMHILL

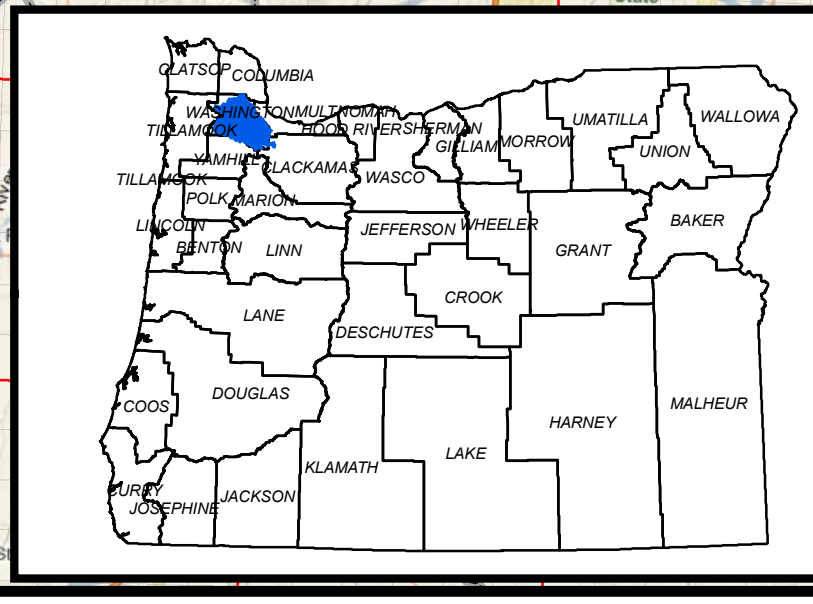
Astoria, Warrenton, Seaside, Cannon Beach, Gearhart, Arch Cape, Manzanita, Nehalem, Wheeler, Rockaway Beach, Garibaldi, Tillamook, Bay City, Pacific City, Neskowin, Hebo, Cloverdale, Beaver, Netarts, Oceanside, Rockaway, Nestucca, Three Rivers, Mist, Vernonia, Clatskanie, Rainier, Scappoose, St Helens, Columbia City, Deer Island, Martin Island, Trenholm, Pittsburg, Keasey, Corey Hill, Rock Creek, Rock, Treharne, Clear Creek, Timber, Buxton, Staleys Junction, Manning, Haywar, Kansas City, Banks, Wilkesboro, Christie, Vadis, North Plains, Helvetia, Roy, Greenville, Gales Creek, Balm Grove, Thatcher, Verboort, Timbuktu, Forest Grove, Cornelius, Hillsboro, Blooming, Carnation, Dilley, Henry Hagg Lake, Cherry Grove, Seghers, Patton, Gaston, Dellwood, Laurelwood, Wapato, Cove Orchard, Pike, Fairdale, Lunnville, Yamhill, Yamhill River, Yamhill-Newberg Hwy, Newberg, Springbrook, Dundee, Lafayette, St Joseph, Orchard View, McMinnville, Dayton, Pleasantdale, Unionvale, Eola Crest, Fairfield, Shiloh, Chehalem, Middleton, Sherwood, Tonquin, Six Corners, Cipole, Tualatin, Norwood, King City, Scholls, Farmington, Jacktown, Hazeldale, Aloha, Beaverton, Tigard, Lake Oswego, Wilsonville, Molalla River State, Milwaukie, Portland, Gresham, Troutdale, Fairview, Wood Village, Sauvie Island, Vancouver, Port of Vancouver USA, Vancouver Lake, Hayden Island, Bybee Lake, Smith Lake, Burlington, Holbrook, Felida, Salmon Creek, Vancouver Junction, Hazel Dell, Minnehaha, Lewis and Clark, Scappoose, South Scappoose, Sauvie Island, Sara, Knapp, Mud Lake, Burgeon Lake, Deer Island, Columbia City, St Helens, West St Helens, McNulty, Spitzenberg, Warren, Bachelor Island, Ridgefield, La Center, Bendemeer, West Union, Rockcreek, Bethany, Merle, Mahan, Sewell, Orenco, Quatama, Marlene Village, Cedar Mill, Oak Hills, Elmonica, West Hayden, Cedar Hills, West Slope, Raleigh Hills, Whitford, Garden Home, Fanno, Robinson, Greenburg, Metzger, Greton, Tigard, Bonita, Ladd, Oak Grove, Concord, Oswego Lake, Riverwood, Milwaukie, Pacific Hwy E, Stadium Fwy, Sunset Hwy, NW Sunset Hwy, NW Cornelius Pass Rd, NW St Helens Rd, Wilson River Hwy, Tualatin River, Dairy Creek, McKay Creek, Scappoose Creek, Mud Lake, Burgeon Lake, Columbia River, Willamette River, Nehalem River, Tide Creek

0 1 2 3 4 Miles

NAD_1983_Oregon_Statewide_Lambert_Feet_Intl

All data is provided as is, with faults, and without any warranty of any kind either expressed or implied, including but not limited to, warranties of merchantability and fitness for a particular purpose.

OREGON DEPARTMENT OF STATE LANDS



APPENDIX 5
IMPLEMENTATION PLAN PHASED INFRASTRUCTURE ANALYSIS

City of Sherwood Oregon

Washington County, Oregon Industrial Site Readiness Assessment and Implementation Planning project

Task 4: Sherwood & Tualatin Market Analysis and Business Recruitment Strategy

Implementation Plan Phased Infrastructure Analysis

Tonquin Employment Area (Sherwood) & SW Tualatin Concept Plan Area

Phase	Node ID	Node Gross Acreage	Node Net Developable Acreage	Jurisdiction	Transportation	Project Cost	Water	Project Cost	Sewer	Project Cost	Storm	Project Cost	Notes
1	C	51.66	48.48	Sherwood	Frontage improvements along Oregon Street	$ 176,000	Construct 12" water line from Oregon Street to end of Blake Road	$ 396,000	Construct 15" sewer line from Oregon Street to end of Blake Road	$ 550,000	Construct 18" storm line from node south to Tonquin Road (through Nodes B and C)	$ 280,000	
					3-lane full street improvements along Blake Road	$ 680,000	Construct 10" water line from Blake Road to southwest corner of plan area	$ 229,500	Construct 10" sewer line within Tonquin Ct along the node frontage	$ 162,000	Construct 2.25-acre regional treatment facility	$ 337,500	
					3-lane half street improvements along Blake Road	$ 963,200							
					3-lane half street improvements along Tonquin Court	$ 476,000							
					ROW from adjacent parcels	$ 86,140							
					Roundabout at Blake/Oregon St intersection	$ 750,000							
	Node C Total	***51.66***	***48.48***	***Sherwood***		***$ 3,131,340***		***$ 625,500***		***$ 712,000***		***$ 617,500***	
	E	46.68	39.5	Sherwood	5-lane half street improvements along SW Tualatin Sherwood Road	$ 1,386,000	Construct 12" water line from Cipole Rd to the node south boundary	$ 243,000	Construct 12" sewer line through the node to the southern boundary	$ 264,000	Construct 18" storm line through site	$ 260,000	
					5-lane half street improvements along SW 124th Avenue	$ 833,000					Construct 1.0-acre regional treatment facility	$ 150,000	
	Node E Total	***46.68***	***39.5***	***Sherwood***		***$ 2,219,000***		***$ 243,000***		***$ 264,000***		***$ 410,000***	
	G	45.82	40.52	Tualatin	5-lane half street improvements along SW Tualatin Sherwood Road	$ 903,000	Construct 16" water line wihtin 124th Ave along the node west frongtage	$ 408,000	Contsruct 18" sewer line in 120th Ave along the node east frontage	$ 560,000	Construct 18" storm line within 120th Ave along node east frontage	$ 170,000	
					5-lane half street improvements along SW 124th Avenue	$ 1,302,000	Construct 12" water line within 120th Ave along the node east frontage	$ 360,000			Construct 1.0-acre regional treatment facility	$ 150,000	
					3-lane full street improvements along Blake Road	$ 725,000	Construct 12" water line within Blake Rd along the node south frontage	$ 180,000					
					3-lane half street improvements along Blake Road	$ 168,000							
					120th Avenue Culvert	$ 125,000							
					3-lane half street improvements along SW 120th Avenue	$ 464,800							
					3-lane full street improvements along SW 120th Avenue	$ 1,180,000							
					ROW from adjacent parcels	$ 5,440							
	Node G Total	***45.82***	***40.52***	***Tualatin***		***$ 4,873,240***		***$ 948,000***		***$ 560,000***		***$ 320,000***	
	Phase 1 Total	**144.2**	**128.5**			**$ 10,223,580**		**$ 1,816,500**		**$ 1,536,000**		**$ 1,347,500**	

Washington County, Oregon Industrial Site Readiness Assessment and Implementation Planning project

Task 4: Sherwood & Tualatin Market Analysis and Business Recruitment Strategy

Implementation Plan Phased Infrastructure Analysis

Tonquin Employment Area (Sherwood) & SW Tualatin Concept Plan Area

Phase	Node ID	Node Gross Acreage	Node Net Developable Acreage	Jurisdiction	Transportation	Project Cost	Water	Project Cost	Sewer	Project Cost	Storm	Project Cost	Notes
2	A	37.18	24.38	Sherwood	Frontage improvements along Oregon Street	$ 154,000	Construct 10" water line within Tonquin Ct along the node north frontage	$ 360,000	Construct 10" sewer in Tonquin Ct along node north frontage	$ 270,000	--		
					3-lane half street improvements along Tonquin Court	$ 1,534,400	Upgrade Willamette River Water Treatment Plant (WRWTP) capacity to 15 MGD (costs split between Nodes A & D)	$ 500,000					
	Node A Total	***37.18***	***24.38***	***Sherwood***		***$ 1,688,400***		***$ 860,000***		***$ 270,000***		***$ -***	
	D	74.32	44.73	Sherwood	5-lane half street improvements along SW 124th Avenue	$ 343,000	Construct 10" water line from Dahlke Ln to 124th Ave along the node north boundary	$ 472,500	Construct 15" sewer line in Blake Rd along node south frontage	$ 425,000	Construct 18" storm line within Blake Road along node southwest frontage	$ 290,000	
					3-lane half street improvements along Blake Road	$ 2,044,000	Construct 12" water line within 124th Ave along the node east frontage	$ 81,000			Construct 1.0-acre regional treatment facility	$ 150,000	
					3-lane half street improvements along SW Dahlke Lane	$ 711,200	Construct 10" water line through the site	$ 195,000					
							Upgrade WRWTP capacity to 15 MGD (costs split between Nodes A & D)	$ 500,000					
	Node D Total	***74.32***	***44.73***	***Sherwood***		***$ 3,098,200***		***$ 1,248,500***		***$ 425,000***		***$ 440,000***	
	H	6.1	5.35	Tualatin	3-lane full street improvements along Itel Street	$ 225,000	--		--				
					3-lane half street improvements along SW 120th Avenue	$ 252,000							
	Node H Total	***6.1***	***5.35***	***Tualatin***		***$ 477,000***		***$ -***		***$ -***		***$ -***	
	I	34.28	29.81	Tualatin	3-lane half street improvements along Blake Road	$ 604,800	Construct 16" water line within 124th Ave along the node west frontage	$ 348,000	Construct 18" sewer line in 120th Ave along node east frontage	$ 182,000	Construct 18" storm line in 124th Ave	$ 270,000	
					5-lane half street improvements along SW 124th Avenue	$ 910,000	Construct 12" water line within 120th Ave along the node east frontage	$ 225,000			Construct 18" storm line in 120th Ave	$ 220,000	
					Traffic signal at Blake/124th Ave	$ 250,000					Construct 1.0-acre regional treatment facility adjacent to wetlands	$ 150,000	
					3-lane full street improvements along SW 120th Avenue	$ 660,000							
					3-lane half street improvements along SW 120th Avenue	$ 358,400							
	Node I Total	***34.28***	***29.81***	***Tualatin***		***$ 2,783,200***		***$ 573,000***		***$ 182,000***		***$ 640,000***	
	P	69.89	52.48	Tualatin	5-lane half street improvements along SW 124th Avenue	$ 1,008,000	Construct 4.4-MGD reservoirs R-2 and R-3	$ 6,867,000	Construct 9,600-LF 15" gravity line within Tonquin Rd to Onion Flat Trunk Line	$ 2,400,000	Construct 18" storm line on site along node east frontage	$ 370,000	
					3-lane half street improvements along Tonquin Road	$ 700,000	Construct 16" water line from R-2 / R-3 reservoirs to 124th Ave	$ 984,000	Construct 3,200-LF 12" gravity line along node west frontage	$ 704,000	Construct 1.25-acre treatment facility adjacent to wetlands near northeast corner	$ 187,500	
							Construct 16" water line within 124th Ave along node west frontage	$ 324,000					
							Construct 12" water line through the site to 124th Ave	$ 180,000					
	Node P Total	***69.89***	***52.48***	***Tualatin***		***$ 1,708,000***		***$ 8,355,000***		***$ 3,104,000***		***$ 557,500***	
	Phase 2 Total	**151.9**	**104.3**			**$ 9,754,800**		**$ 11,036,500**		**$ 3,981,000**		**$ 1,637,500**	

Washington County, Oregon Industrial Site Readiness Assessment and Implementation Planning project

Task 4: Sherwood & Tualatin Market Analysis and Business Recruitment Strategy

Implementation Plan Phased Infrastructure Analysis

Tonquin Employment Area (Sherwood) & SW Tualatin Concept Plan Area

Phase	Node ID	Node Gross Acreage	Node Net Developable Acreage	Jurisdiction	Transportation	Project Cost	Water	Project Cost	Sewer	Project Cost	Storm	Project Cost	Notes
3	B	19.51	17.8	Sherwood	3-lane half street improvements along Tonquin Court	$ 1,890,000	Construct 10" water line from Tonquin Ct to the node north frontage	$ 105,000	--		--		
							Expand WRWTP treatment and expand Sherwood share (costs split between Nodes B & F)	$ 950,000					Water: Cost for WRWTP attributed to TEA development is taken as 20% of total City cost to reflect impacts of growth across the city. Costs are split between Nodes B & F.
	Node B Total	***19.51***	***17.8***	***Sherwood***		***$ 1,890,000***		***$ 1,055,000***		***$ -***		***$ -***	
	F	55.66	23.84	Sherwood	3-lane half street improvements along Blake Road	$ 1,288,000	Construct 12" water line within Blake Road along the node north frontage	$ 405,000	--		Construct 18" storm line within Blake Road along node northwest and southwest frontages	$ 320,000	
					3-lane half street improvements along Blake Road	$ 140,000	Expand WRWTP treatment and expand Sherwood share (costs split between Nodes B & F)	$ 950,000			Construct 0.75-acre treatment facility adjacent to wetlands	$ 112,500	Water: Cost for WRWTP attributed to TEA development is taken as 20% of total City cost to reflect impacts of growth across the city. Costs are split between Nodes B & F.
					5-lane half street improvements along SW 124th Avenue	$ 651,000							
	Node F Total	***55.66***	***23.84***	***Sherwood***		***$ 2,079,000***		***$ 1,355,000***		***$ -***		***$ 432,500***	
	J	5.36	4.5	Tualatin	3-lane half street improvements Blake Road	$ 722,400	Construct 12" water line within Blake Road along the node south frontage	$ 216,000	Construct 10" sewer line in Blake Rd along node south frontage	$ 180,000	--		
	Node J Total	***5.36***	***4.5***	***Tualatin***		***$ 722,400***		***$ 216,000***		***$ 180,000***		***$ -***	
	K	18.52	16.71	Tualatin	3-lane full street improvements along Blake Road	$ 324,800	Construct 12" water line within Blake Road along the node north frontage	$ 99,000	Construct 18" sewer line in 120th Ave along node west frontage	$ 154,000	--		
					3-lane half street improvements along SW 120th Avenue	$ 834,400	Construct 12" water line within 120th Ave along the node west frontage	$ 153,000					
	Node K Total	***18.52***	***16.71***	***Tualatin***		***$ 1,159,200***		***$ 252,000***		***$ 154,000***		***$ -***	
	N	46.6	34.07	Tualatin	3-lane half street improvements along SW 120th Avenue	$ 890,400	Construct 16" water line within 124th Ave along node west frontage	$ 528,000	Construct 15" sewer line in 120th Ave along node east frontage	$ 237,500	Construct 18" storm line in 124th Ave along node west frontage	$ 240,000	
					5-lane half street improvements along SW 124th Avenue	$ 1,505,000	Construct 16" water line within 115th Ave along node south frontage	$ 288,000	Construct 15" sewer line in 115th Ave and 124th Ave to lift station #1	$ 625,000	Construct 18" storm line in 120th Ave along node south frontage	$ 150,000	
					3-lane half street improvements along SW 115th Avenue	$ 672,000	Construct 12" water line within 120th Ave along the node east frontage	$ 135,000	Construct lift station #1 - 1.7 MGD	$ 2,700,000	Construct 2.0-acre treatment facility adjacent to wetlands west of 124th Ave	$ 300,000	
					traffic signal at 124th/115th	$ 250,000	Construct 16" water line from A-2 reservoir to 124th along Node E south boundary	$ 600,000	Construct 15" forcemain in 120th Ave along node east and south frontages	$ 1,200,000			
	Node N Total	***46.6***	***34.07***	***Tualatin***		***$ 3,317,400***		***$ 1,551,000***		***$ 4,762,500***		***$ 690,000***	
	Phase 3 Total	**145.7**	**96.9**			**$ 9,168,000**		**$ 4,429,000**		**$ 5,096,500**		**$ 1,122,500**	

Washington County, Oregon Industrial Site Readiness Assessment and Implementation Planning project

Task 4: Sherwood & Tualatin Market Analysis and Business Recruitment Strategy

Implementation Plan Phased Infrastructure Analysis

Tonquin Employment Area (Sherwood) & SW Tualatin Concept Plan Area

Phase	Node ID	Node Gross Acreage	Node Net Developable Acreage	Jurisdiction	Transportation	Project Cost	Water	Project Cost	Sewer	Project Cost	Storm	Project Cost	Notes
4	L	40.59	36.94	Tualatin	3-lane half street improvements along Blake Road	$ 571,200	Construct 16" water line within 115th Ave along node east frontage	$ 636,000	Construct 15" sewer line in 115th Ave along node east frontage (duplicate with M)	$ 475,000	Construct 18" storm line within 115th Ave along node east frontage	$ 440,000	
					3-lane half street improvements along 115th Avenue	$ 1,461,600					Construct 18" storm line within 120th Ave along node south frontage	$ 130,000	
					3-lane half street improvements along SW 120th Avenue	$ 380,800					Construct 1.5-acre treatment facility within existing quarry area	$ 225,000	
	Node L Total	***40.59***	***36.94***	***Tualatin***		***$ 2,413,600***		***$ 636,000***		***$ 475,000***		***$ 795,000***	
	M	93.06	73.9	Tualatin	5-lane half street improvements along SW 124th Avenue	$ 1,029,000	Construct 12" water line within Blake Rd along node north frontage	$ 243,000	Construct 15" sewer line in 115th Ave along node east frontage (duplicate with L)		Construct 15" storm line on site from southeast corner to 115th Ave	$ 96,250	
					3-lane half street improvements along SW 115th Avenue	$ 2,128,000	Construct 16" water line within 124th Ave along node west frontage	$ 180,000			Construct 18" storm line within 124th Ave along southwest frontage	$ 400,000	
							Construct 16" water line through the node from west boundary to Ibach St	$ 528,000					
	Node M Total	***93.06***	***73.9***	***Tualatin***		***$ 3,157,000***		***$ 951,000***		***$ -***		***$ 496,250***	
	O	43.22	12.81	Tualatin	5-lane half street improvements along SW 124th Avenue	$ 2,058,000	--		--		--		
	Node O Total	***43.22***	***12.81***	***Tualatin***		***$ 2,058,000***		***$ -***		***$ -***		***$ -***	
	Q	10.89	8.91	Tualatin	5-lane half street improvements along SW 124th Avenue	$ 1,288,000	--		--		--		
					Frontage improvements along SW Tonquin Road	$ 350,000							
	Node Q Total	***10.89***	***8.91***	***Tualatin***		***$ 1,638,000***		***$ -***		***$ -***		***$ -***	
	Phase 4 Total	**187.8**	**132.6**			**$ 9,266,600**		**$ 1,587,000**		**$ 475,000**		**$ 1,291,250**	
Total		**629.5**	**462.3**			**$ 38,412,980**		**$ 18,869,000**		**$ 11,088,500**		**$ 5,398,750**	

APPENDIX 6

PRELIMINARY INFRASTRUCTURE FINANCIAL TOOLS FOR THE SHERWOOD TONQUIN EMPLOYMENT AREA

Johnson Economics

May 26, 2015

City of Sherwood Oregon

JOHNSON ECONOMICS

MEMORANDUM

DATE: May 26, 2015

TO: Todd Johnson
MACKENZIE

FROM: Chris Blakney
JOHNSON ECONOMICS

SUBJECT: Preliminary Infrastructure Financial Tools for the Sherwood Tonquin Employment Area

INTRODUCTION

JOHNSON ECONOMICS and MACKENZIE are collectively working with the City of Sherwood to develop concept level planning and strategies for removing economic and physical barriers to development in the Tonquin Employment Area (TEA). The purpose of this technical memo is to identify a range of funding mechanisms to address infrastructure investments needed in the study area.

As an element of this planning process, Mackenzie has developed concept level estimates of required infrastructure improvements necessary to facilitate development across six development nodes in the TEA[1]. Taken together these development areas represent nearly 200 net-developable acres with the capacity for nearly 2.6 million square feet of developable industrial space. Total infrastructure cost to serve the area is roughly $23 million, or $116,057 per net-developable acre.

Development	Net-Developable	Development	Infrastructure Costs				
Node	Acres	Capacity (Sq. Ft.)[1]	Transportation	Water	Sewer	Stormwater	Total/acre
A	24.38	318,598	$1,688,400	$860,000	$270,000	$0	$115,603
B	17.8	232,610	$1,890,000	$1,055,000	$0	$0	$165,449
C	48.48	633,537	$3,131,340	$625,500	$712,000	$617,500	$104,916
D	44.73	584,532	$3,098,200	$1,248,500	$425,000	$440,000	$116,515
E	39.5	516,186	$2,219,000	$243,000	$264,000	$410,000	$79,392
F	23.84	311,541	$2,079,000	$1,355,000	$0	$432,500	$162,185
TOTAL:	198.73	2,597,004	$14,105,940	$5,387,000	$1,671,000	$1,900,000	$116,057

[1] Assumes average Floor Area Ratio (FAR) of 0.30

SYSTEM DEVELOPMENT CHARGES (SDC'S)

SDC's are fees assessed on new development or for changes to higher uses. SDC's are collected to mitigate a project's impact on public infrastructure and facilities. To the extent possible, this analysis considers potential revenue sources for water, sewer, and stormwater, and transportation.

Water SDC:

Development within the TEA subareas will generate on-going water SDC revenues as development occurs. In Sherwood the water SDC ranges from $6,725 for a ¾" meter to $605,382 for an 8" line. This analysis does not make an assumption of the number of meters development would require in the TEA. However, as major industrial uses are assumed, the infrastructure analysis does assume water demand at the upper end of the meter size range.

[1] See Mackenzie Implementation Plan diagram for a map of proposed Development Nodes and phasing.

Sanitary Sewer SDC:

Sewer SDC's are levied on industrial development based on estimates of usage at the time of development. Connection fees for industrial development vary by estimated usage, which was not estimated as a component of this analysis. The Sherwood reimbursement charge is currently $0.094 with the improvement charge at $0.27. Clean Water Services regional connection charge is $4,900 per dwelling unit equivalent.

Stormwater SDC:

Stormwater SDC's are levied by Sherwood and Clean Water Services on new development for water quantity, quality, and regional stormwater drainage. Stormwater SDC's are based on area of impervious surface of development. Based on the development build-out estimates in our analysis, stormwater SDC's would total as much as $611,000 at today's SDC rates.

Development Node	Net-Developable Acres	Development Capacity (Sq. Ft.)[1]	Stormwater SDC Quantity	Quality	Drainage	TOTAL
A	24.38	318,598	$65,993	$53,995	$29,143	$149,131
B	17.8	232,610	$53,769	$43,993	$23,745	$121,507
C	48.48	633,537	$33,187	$27,153	$14,656	$74,996
D	44.73	584,532	$60,889	$49,818	$26,888	$137,595
E	39.5	516,186	$24,230	$19,825	$10,700	$54,755
F	23.84	311,541	$32,452	$26,552	$14,331	$73,335
TOTAL:	198.73	2,597,004	$270,521	$221,336	$119,462	$611,319

[1] Assumes average Floor Area Ratio (FAR) of 0.30

Transportation SDC's

New development in Sherwood is subject to transportation SDC's at the local and county level. The Washington County Transportation Development Tax (TDT) is assessed on new development across a range of development forms. The TDT is collected at the county level and distributed to cities for capital improvements designed to accommodate growth. The Sherwood transportation SDC is similarly assessed on new development based on square footage of development as a proxy for trip generation. Based on the development build-out estimates in this analysis, TDT revenues would range from $8.2 to $14.9 million with Sherwood transportation SDC's ranging from $1.8 to $3.3 million, depending on the character of development in the district.

Development Node	Net-Dev Acres	Development Capacity (Sq. Ft.)[1]	TDT Revenue Low	TDT Revenue High	Sherwood Trans. SDC Low	Sherwood Trans. SDC High
A	24.38	318,598	$1,008,681	$1,833,849	$223,656	$410,354
B	17.8	232,610	$736,445	$1,338,905	$163,293	$299,602
C	48.48	633,537	$2,005,777	$3,646,637	$444,743	$815,995
D	44.73	584,532	$1,850,627	$3,364,564	$410,341	$752,877
E	39.5	516,186	$1,634,245	$2,971,167	$362,363	$664,848
F	23.84	311,541	$986,339	$1,793,231	$218,702	$401,265
TOTAL:	**198.73**	**2,597,004**	**$8,222,114**	**$14,948,353**	**$1,823,097**	**$3,344,941**

[1] Assumes average Floor Area Ratio (FAR) of 0.30

Transportation SDC Rate (per 1,000 sf)		
Use	TDT	Sherwood
Manufacturing	$3,166	$702
Light Industrial	$5,756	$1,288
Warehouse	$4,064	$926

DILEMMA OF DEVELOPMENT READINESS

By practice, SDC's are periodically reviewed, revised, and calibrated by use level, with the intention that SDC revenue completely offsets infrastructure costs. While this is not always the case, it is clear that SDC revenue in the TEA is expected to go a long way towards meeting the costs associated improving infrastructure. However, the limitation of the SDC system when new infrastructure is required is that revenue is a product of development, but raw unimproved land is not marketable. This chicken or the egg condition is challenging for many jurisdictions that are looking for funding strategies to frontload

investments to make employment areas more marketable. What follows is a list of funding mechanisms at various levels of government and enterprise that can be leveraged to facilitate infrastructure financing.

FINANCIAL TOOLS FOR INFRASTRUCTURE

Urban Renewal/Tax Increment Financing (TIF)

TIF is a funding tool by which public projects are financed by debt borrowed against future property tax revenues within a geographic area defined by an Urban Renewal District. Property tax assessments are "frozen" in the base year that the district is established, bonds are sold to finance pre-determined public projects, and repayment of the bonds is derived out of incremental increased value created above and beyond the base year assessment. TIF is becoming increasingly popular funding mechanism for industrial areas as infrastructure investments are directly tied to a development outcome.

Local Improvement District (LID)

A Local Improvement District is a commonly used tool to enhance shared infrastructure or amenities of a specific area. The tool has the local jurisdiction issuing tax-exempt bonds to finance projects within the district, which are repaid by a special assessment on the property owners in the district. The tool is particularly useful where property owners directly benefit from project investments, and are more easily implemented when a small number of property owners can be organized. Given the small number of property owners in the TEA, the number of infrastructure projects that could affect multiple properties, and the fact that infrastructure improvements are likely to improve site property marketability and achievable pricing, an LID is a sound candidate for consideration in the TEA.

Enterprise Zone

While not a funding mechanism, enterprise zones are tax abatement programs designed to enhance the marketability of a particular area or site. In an Enterprise Zone, property tax assessments are generally abated for the first three to five years of investment. The benefits to the user or developer of this tool could offset additional costs to make sites in the TEA more marketable.

Washington County Major Streets Transportation Improvement Program (MSTIP)

MSTIP uses property tax revenue to fund large-scale transportation improvement projects. Through 2018 MSTIP will have funded 130 projects totaling over $730 million in investment. The Washington County Board of County Commissioners prioritizes projects on five-year funding cycles. This tool is currently being used to fund the 124th Avenue extension along the eastern edge of the TEA. In late 2015 Washington County will begin planning the MSTIP 3e funding round to cover 2019 through 2023.

Metro Regional Transportation Plan (RTP/MTIP)

The Metro Regional Transportation Plan, recently updated in 2014, represents the coordinated regional goals, policies, system concept plans, and funding strategies for regional transportation improvements. The plan organizes how to spend $20 to $22 billion in local, regional, state, and federal funding over the next 25 years to improve the safety, reliability, and economic vitality of the regional transportation network. The Metropolitan Transportation Improvement Program (MTIP) schedules the distribution of all federal and some state transportation funds in the region over a four-year period. Eligibility for MTIP results from designation on the RTP financially constrained project list. MTIP funds are administered by ODOT, TriMet, SMART, and Metro. A significant share of ODOT, TriMet, and SMART funding is commonly slated for particular project categories that are not widely applicable to employment areas. However, funds issued by Metro have more discretion and flexibility.

Metro Regional Economic Opportunity Funds

The Metro regional transportation flexible fund allocates funding to projects identified in the RTP every two years. Project and program applications are nominated by jurisdictions and/or transit agencies.

Special Public Works Fund (SPWF)

SPWF is administered through the Oregon Infrastructure Finance Authority. It provides loans for municipally-owned infrastructure that supports economic development. Loans can be used for planning, design, construction and ROW acquisition. Some grant funds of up to $500,000 are also administered to for projects that create traded sector jobs. Loans generally range from $100,000 to $10 million, with terms generally limited to the lesser of 25 years or the life of the project.

Immediate Opportunity Fund (IOF)

The Oregon IOF is a special program administered by ODOT. It was created in order to quickly process and fund transportation improvements that create or retain jobs. The program works in collaboration with Business Oregon to serve as a quick response incentive for projects with immediate economic development upside. The IOF has three levels of funding for projects.

Type A: Specific economic development projects that affirm job retention and job creation opportunities

Type B: Revitalization of business or industrial centers to support economic development

Type C: Preparation of Oregon Certified Ready Industrial Sites (pending adoption of new standard, this level would also extend to Regionally Significant Industrial Sites RSIS)

Project maximums are set at $1 million for Type A projects, $250,000 for Type B, and $500,000 for Type C. Grants are typically awarded to proposals offering a 50% or greater match from other local public or private sources.

Governor's Strategic Reserve Fund (SRF)

The Governor's Strategic Reserve Fund provides cash incentives in the form of a forgivable loan to businesses closing on siting decisions. This discretionary fund could be offered to firms for equipment, buy-down on land, training, or other agreed upon expenses. The fund has historical precedent as used to pay for critical infrastructure improvements specific to a candidate user.

Regional Infrastructure Enterprise

A regional effort, currently headed by Metro and the Port of Portland, to make and facilitate investments in the Portland metropolitan region and partner with stakeholders to develop a system that optimizes the region's ability to deliver infrastructure projects.

Business Oregon Opportunity Funds

It remains unclear when/if the Business Oregon Opportunity Fund passed by the 2013 legislature will be funded. This program would reimburse local governments 50% of the costs for investments that improve the readiness of industrial sites. Reimbursement would occur upon the location of a traded sector firm on the candidate site.

RECOMMENDED ACTIONS/STRATEGIES

The following recommendations represent further study/actions the City could take to continue to refine infrastructure funding strategies in the TEA.

Project Promotion

The City should continue to identify unfunded transportation projects with candidacy for exogenous state and regional transportation funding. Be proactive in applying for federal, state, and regional grant funding.

Property Owner Organization

Organizing property owners to work collaboratively with the City to market and improve their sites is critically important in moving readiness of TEA sites forward. With fewer than 20 property owners, a local improvement district for shared infrastructure projects should be explored.

Sponsor Designation of Subareas as Regionally Significant Industrial Sites

Business Oregon is currently refining its program prioritization for industrial sites. The new Regionally Significant Industrial Site (RSIS) program will work collaboratively with the more marketing focused Industrial Site Certification Program. Industrial sites designated as RSIS sites will receive prioritized funding from state programs, including SPWF and IOF. The program will require landowner collaboration with a public sponsor. The City of Sherwood should strategically partner with key landowners to apply for RSIS candidacy.

Conduct an Urban Renewal Feasibility Study

It is assumed that, over time, property taxes and fees paid by new private development in the TEA should cover most of the public infrastructure investment costs. However, many typical infrastructure funding tools - for instance, system development charges and capital improvement programming - will not be timely enough for the upfront costs associated with developing a new employment area. Infrastructure funding is needed as part of preparing the area for development readiness and business recruitment. Our experience with the region's targeted industries/employers suggests they are not likely to commit to developing in an area like the TEA until the City can assure them the necessary infrastructure can be built in coordination with tight development schedules. In recent years, Urban Renewal has become an increasingly utilized tool for bridging this financial gap. The feasibility of Industrial Urban Renewal Areas of this type is currently being studied in North Hillsboro and Wilsonville's Coffee Creek Industrial Area.

APPENDIX 7

TONQUIN EMPLOYMENT AREA MARKETING PROSPECTUS

City of Sherwood Oregon

Tonquin Employment Area
Marketing Prospectus

Property Snapshot

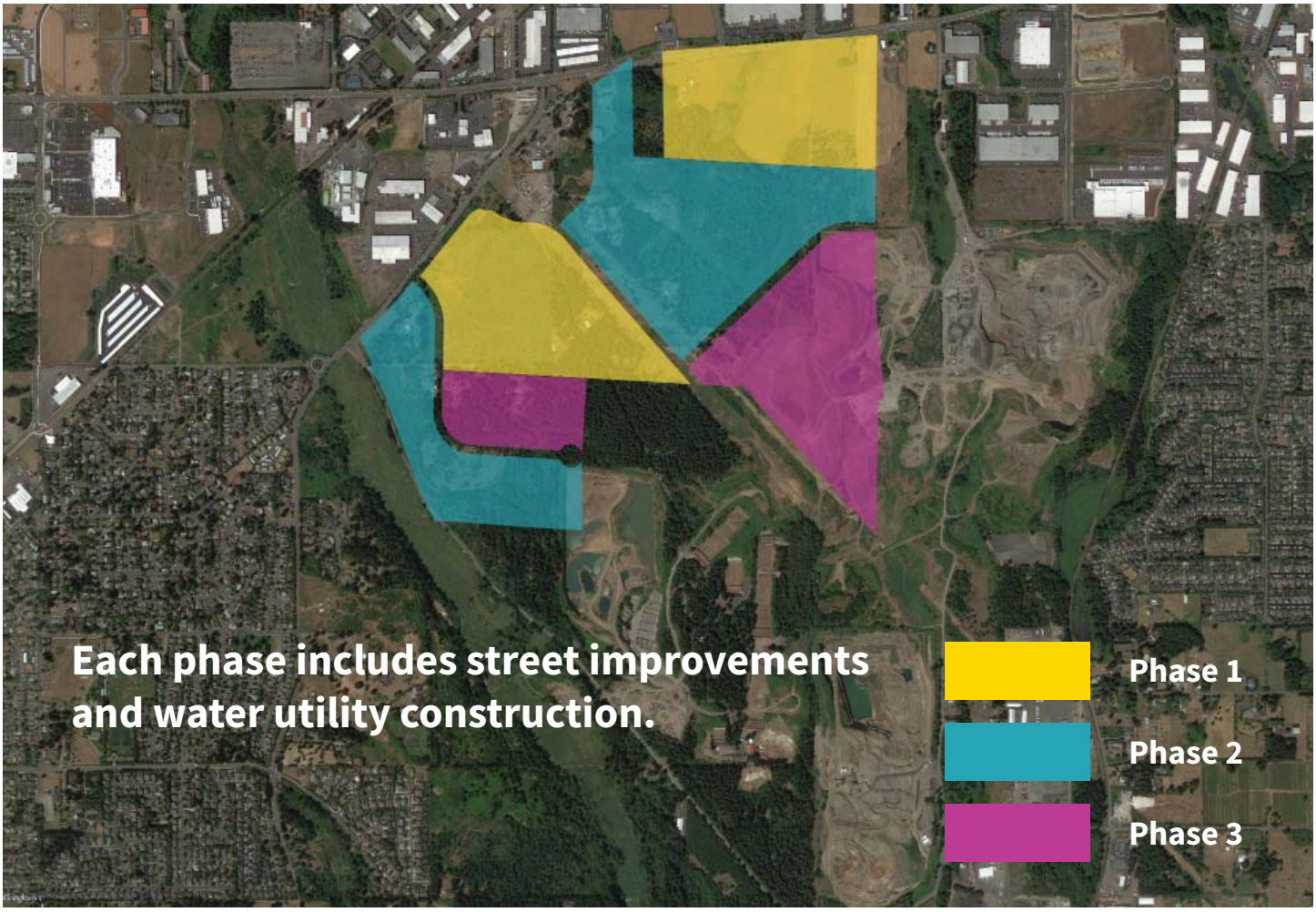
Size:	**300 acres**
Future Zoning:	**Employment Industrial (EI)**
Utilities:	**Municipal water and sewer, electric power and natural gas available; fiber optic municipal broadband network available**
Owner:	**Multiple owners**

Metro's modern industrial hub

The Tonquin Employment Area (TEA) in Sherwood, Oregon, is identified by Oregon Metro as a regionally significant industrial location. The 300-acre TEA features multiple potential employment sites to be developed, and the area is in proximity to desirable amenities such as the Tualatin-Sherwood Road multimodal transit corridor and the cities of Sherwood and Tualatin, with a total population of over 45,000 residents, as well as the entire Portland metropolitan area, with a population of over 2 million.

In 2010, the City of Sherwood produced a TEA concept plan, which the city is currently expanding. The City envisions that the TEA will be developed for uses in clean technology, advanced manufacturing, outdoor gear and activewear, and a variety of possible uses within flex building spaces.

Development Phases



Building out strategically

Because of the size of the TEA, it is unlikely that the entire area would be developed at once; rather, development is more likely to occur in phases. Specifically, development is expected to occur from north to south, as indicated in the above diagram of Phases 1, 2, and 3.

The phase area boundaries were determined from roadway alignments, property line locations, and parcelization. Considering that the final roadway alignments and utility corridors will be established through future development, the phase areas are conceptual and non-regulatory.

It is estimated that, within the TEA, the Phase 1 areas may take up to 14 years to build out, Phase 2 may take up to 8 years to build out, and Phase 3 may take up to 3 years to build out (note that phases may overlap). Transportation and utility projects and the associated costs have also been estimated for the different phases.

Additionally, it has been estimated that the TEA properties would capture a graduated scale of projected growth at 20% to 30% over the first ten years and 45% to 55% over the subsequent 15 years.

Economic Analysis

Growth and innovation

- The Tualatin-Sherwood Road corridor added over 3,000 jobs to the local economy between 2010 and 2013, representing an increase of 18% and an annual growth rate of 5.6%.
- Manufacturing contributed to over one-third of the job growth during the 2010–2013 period, with a gain of more than 1,000 jobs.
- In the region's industrial real estate market, flex spaces have benefited from growth in the high-tech clusters, as local firms such as Intel have expanded and non-local firms such as Salesforce have relocated to the area. Manufacturing and distribution spaces have also benefited as consumption has increased and the region's export market has grown.
- In the Portland metropolitan area, vacancy rates have dropped as rental rates have risen in recent years. At the end of the fourth quarter of 2014, the overall vacancy rate for industrial space was 4.8%, and year-over-year rent growth was 4.2% (Source: Kidder Matthews).
- In the I-5 South submarket, which includes the cities of Sherwood, Tualatin, Tigard, and Wilsonville, the overall vacancy rate has fallen from 9% to 5%, and the average annual asking rent has risen from $5.64 to $6.96 per square foot.
- Along the Tualatin-Sherwood Road corridor, the vacancy rate is considerably lower than the I-5 South submarket, after falling steeply since 2012 to 3.5%.
- The City of Sherwood has a population of nearly 17,000 residents. With an eye toward modern industrial development, Sherwood also aspires to retain its charm and friendliness.

Source for images: City of Sherwood

Development Considerations

Balancing needs

Though the TEA is largely undeveloped, multiple electrical transmission corridors cross the area, and a petroleum pipeline passes through a portion of the sites.

Slopes in the TEA vary from less than 7% to more than 25%. The TEA also contains both upland habitat and wetland habitat, though it primarily comprises forested or agricultural land.

The above mentioned features could affect the feasibility of development for some industrial uses. Slopes greater than 7% can be cost-prohibitive, considering the grading necessary to create the larger, more level, rectilinear sites needed for industrial-scale buildings. Additionally, the electrical transmission corridors, petroleum pipeline, and wetland habitats across the sites constrain several properties within the TEA; the habitat areas could also restrict development locations and, by entailing additional local, state, and federal permitting requirements, extend the timeline for development to occur.

Despite the aforementioned constraints, the City of Sherwood has been visionary in designing the TEA to be responsive to the appropriate market for modern industrial uses. In many ways primed for development, the TEA is positioned to become the next hub for innovative high-tech, advanced manufacturing, and other production clusters in the Oregon Metro region and the Northwest.

Source: City of Sherwood

City of Sherwood Oregon