T112004006PDX 320604.01.04 3/18/05 kk an

Northwest Tualatin
CONCEPT PLAN

prepared for

CITY OF TUALATIN
COMMUNITY DEVELOPMENT DEPARTMENT

&

ODOT
TRANSPORTATION AND GROWTH MANAGEMENT PROGRAM

VOLUME I
TEXT

prepared by CH2MHILL & KITTELSON & ASSOCIATES

MARCH 2005

Northwest Tualatin
CONCEPT PLAN

prepared for

CITY OF TUALATIN
COMMUNITY DEVELOPMENT
DEPARTMENT

&

ODOT
TRANSPORTATION AND GROWTH
MANAGEMENT PROGRAM

VOLUME I
TEXT

prepared by CH2MHILL & KITTELSON & ASSOCIATES

MARCH 2005

T112004006PDX 320604.01.04 3/18/2005 kk an

CONTENTS

Tables

Figures

Appendixes

(Located in Volume II)

Project Staff

CITY OF TUALATIN

Stacy Hopkins

Douglas Rux

OREGON DEPARTMENT OF TRANSPORTATION

Andrew Johnson

CH2M HILL

Tim Burkhardt

Steve Katko

Steve Mader

Tim Yamada

KITTELSON & ASSOCIATES

Paul Ryus

Selman Altun

Technical Advisory Committee

CITY OF TUALATIN

Dayna Johnson

WASHINGTON COUNTY

Aisha Willits

BONNEVILLE POWER ADMINISTRATION

Neal Meisner

METRO

Lydia Neill

TUALATIN RIVER NATIONAL WILDLIFE REFUGE

Peter Schmidt

PORTLAND GENERAL ELECTRIC

Manny Angulo

CLEAN WATER SERVICES

Craig Dye

TRIMET

Ken Zatarain

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

1 INTRODUCTION

The *Northwest Tualatin Concept Plan* (Concept Plan) is a guide for the industrial development of a 15-acre area at the northwestern corner of the City of Tualatin (City). The Concept Plan follows a December 2002 decision by the Metropolitan Service District (Metro) to bring the area inside the regional urban growth boundary (UGB). Metro conditioned the land for industrial development as part of a strategy to balance the supply of land for job creation. The Concept Plan allows for flexibility in industrial development while promoting compatibility with adjacent land uses and natural resources.

Context and Setting

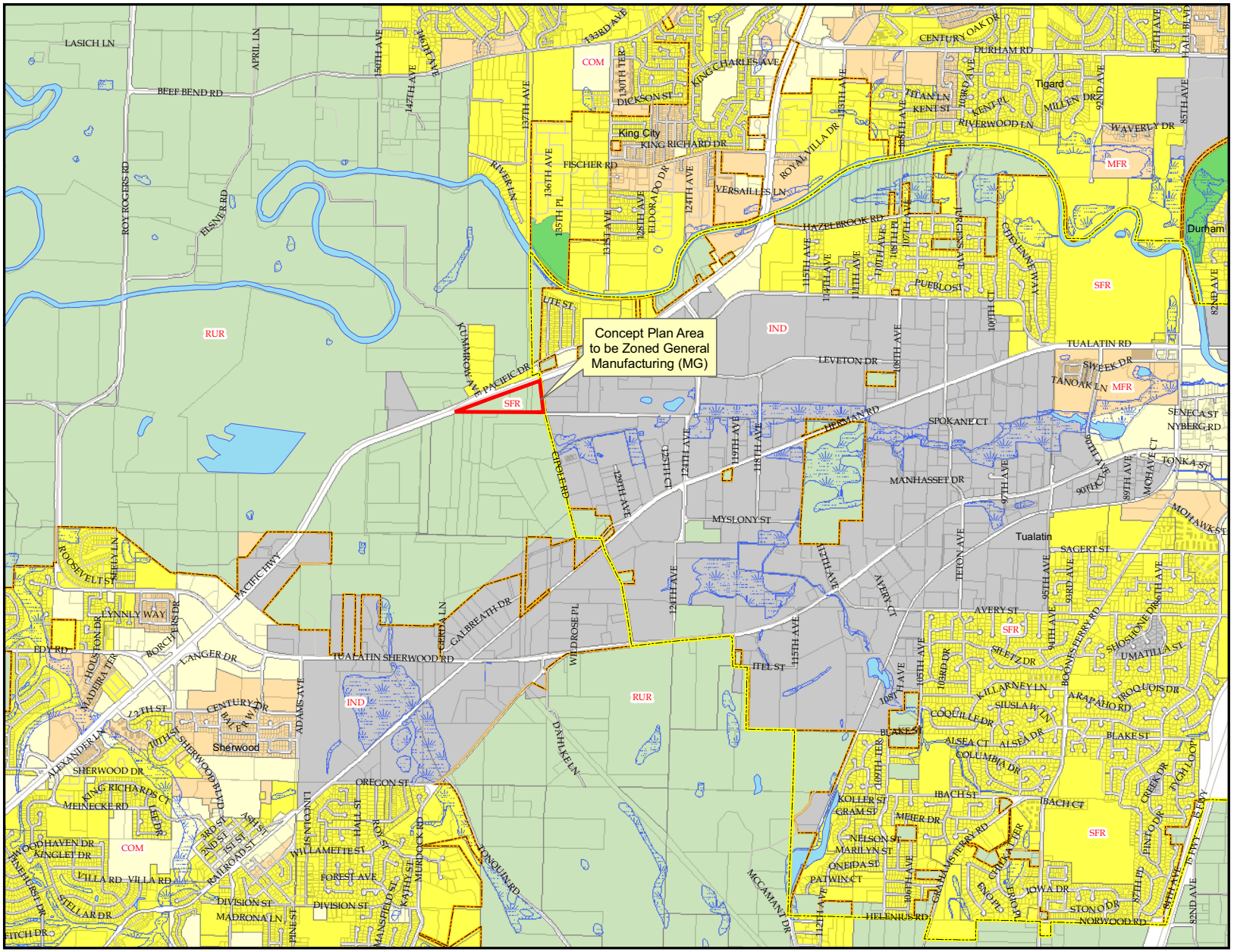
The Concept Plan area is located in unincorporated Washington County at the northwestern corner of the City (Figure 1). The surrounding area is developed on the north and east sides and relatively undeveloped on the south and west sides. The Concept Plan area is bounded by roadways—Highway 99W to the north and SW Cipole Road to the east. North of Highway 99W, land uses are residential and open space; east of SW Cipole Road, adjacent lands are in industrial use. The land to the south and west of the Concept Plan area is under agriculture and nursery production and within the Tualatin River National Wildlife Refuge (TRNWR) planning area, lying within the floodplain known as the Onion Flats. The Concept Plan area includes Washington County tax lots 801, 900, 1100, and 1200 of tax map 2S 1 21B.

Plan Summary

Key features of the Concept Plan are summarized in Table 1.

TABLE 1
Concept Plan Summary

Element	Description
Land Use and Development	Land use would be industrial, consistent with City of Tualatin General Manufacturing (MG) planning district requirements. To maximize future development opportunities and flexibility, the Concept Plan assumes that the best configuration of area development within the uses allowed would be determined by market opportunities and constraints at the time of development.
Transportation	New access road to Concept Plan area from SW Cipole Road and improvements to SW Cipole Road between Highway 99W and future Cummins Drive.
Water	New 10-inch looped water system to connect to existing water main in SW Cipole Road.
Sewer	New 8-inch sanitary sewer line in Concept Plan area plus connection offsite to existing SW Cipole Road pump station south of Concept Plan area.
Storm Drainage	New storm drainage system in Concept Plan area plus connection to Rock Creek offsite.
Natural Resources	Previously delineated floodplain would be addressed administratively or through mitigation. Existing regulations would minimize potential adverse effects on adjacent Tualatin River National Wildlife Refuge.



Northwest Tualatin Concept Plan

Figure 1

Location Map

File Path: \\Astoria\GISData1\data\Proj\tv_gis\mapdocuments\figure1_basemap.mxd, Date: November 30, 2004 7:22:50 AM

2 PLANNING PROCESS

What is a Concept Plan?

A concept plan guides how land newly added to the UGB will be used, provided with urban services, and developed in the context of existing adjacent communities. Concept plans, which typically focus on issues of land use, transportation, public infrastructure, and natural resources, are defined in Title 11 of Metro's *Functional Plan* (Code Sections 3.07.1105 – 3.07.1140, "Planning for New Urban Areas"). The 11 basic parts of a concept plan are listed below, with those relevant to the *Northwest Tualatin Concept Plan* shown in italics.

1. *Annexation plan*
2. Residential densities of at least 10 dwelling units per net residential acre
3. Provisions for a diversity of housing stock
4. Provisions for affordable housing
5. *Provisions for commercial and industrial land suited to the area*
6. *Conceptual transportation plan*
7. *Natural resource protection and restoration plan*
8. *Public facilities plan*
9. Plan for schools
10. *Overall urban growth diagram*
11. *Coordination among city, county, school districts, and other districts*

Metro added the 15-acre area addressed by the Concept Plan to the regional UGB in December 2002, and at that time conditioned the land for industrial use. Preparation of this Concept Plan is the next step toward future urbanization of this land and annexation into the City. The Concept Plan area is intended only for industrial development and is not large enough to be considered a complete community. As a result, not all of the concept plan parts defined in Metro's *Functional Plan* apply to this Concept Plan[1]. The requirements for a concept plan are described in more detail in the Metro handbook titled *Livable New Communities* (2002).

How Was the Plan Developed?

The planning process consisted of four key components:

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

Input from Technical Advisory Committee

Development of the Concept Plan was guided by input from an 11-member TAC that met four times during the planning process. The TAC included representatives from the City of Tualatin, Oregon Department of Transportation (ODOT), Washington County, Bonneville Power Administration (BPA), Metro, U.S. Fish and Wildlife Service (representing the TRNWR), Portland General Electric (PGE), Clean Water Services (CWS), and TriMet. Documentation of the TAC meetings is provided in Appendix A.

[1] Provisions for commercial use, housing, and schools are not applicable because the Concept Plan area is for industrial use only.

INVOLVEMENT OF STAKEHOLDERS AND THE PUBLIC

The broader community was involved in the Concept Plan process through mailings to interested parties and a public open house. The public open house was conducted on January 11, 2005, to allow public review and subsequent revision of the Draft Concept Plan. Documentation of the public open house is provided in Appendix B.

ESTABLISHMENT OF CONCEPT PLAN GOALS

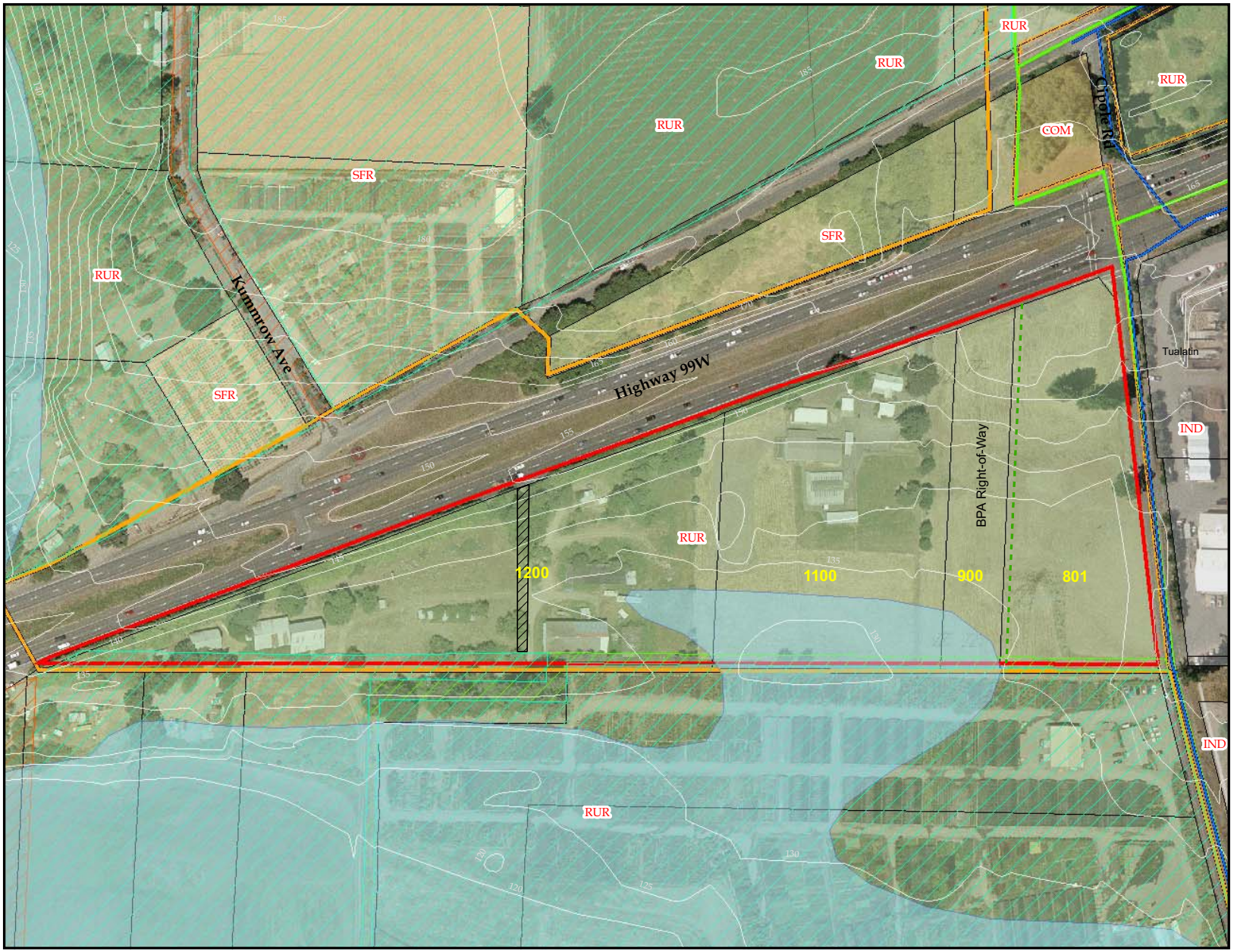
Goals for the Concept Plan were established early in the planning process. The goals, shown in Table 2, were reviewed and affirmed by the TAC at their meetings on August 11, 2004, and October 18, 2004.

TABLE 2
Concept Plan Goals

1.	Create a plan to guide the future development of the project area.
2.	Ensure an orderly system for infrastructure provision.
3.	Cooperate with the U.S. Fish and Wildlife Service to minimize adverse impacts to the Tualatin River National Wildlife Refuge from development in adjacent areas of the City of Tualatin.
4.	Examine and address other environmental issues in the project area.
5.	Work with BPA to ensure safe development near the BPA transmission lines.
6.	Ensure an adequate and efficient transportation system that works with the existing system.
7.	Meet the relevant goals of Metro.
8.	Involve the broader community in the planning process.

REVIEW OF EXISTING CONDITIONS

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



Northwest Tualatin Concept Plan

Figure 2

Existing Conditions

Legend

- Water Line
- Underground Natural Gas Pipeline (approximate location)
- Urban Growth Boundary
- Concept Plan Area
- FEMA FLood Plain
- Tualatin City Limit
- TAXLOTS
- Planning District
- Commercial (COM)
- Industrial (IND)
- Rural (RUR)
- Single-Family Residential (SFR)
- Access Easement (16.5 Ft. Right-of-Way

Tualatin River National Wildlife Refuge

- Owned by Metro, Managed by FWS
- Easements Held by FWS
- Within Acquisition Boundary
- Currently owned by FWS

Data Source: Metro, City of Tualatin, USGS, USFWS

N

0 75 150 300 Feet

CH2MHILL

File Path: \\astoria\GISData1\data\Proj\tv_gis\mapdocuments\figure2_base_map_nwr.mxd, Date: 01 04, 2005 12:03:09 PM

3 CONCEPT PLAN

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

Land Use and Development Plan

ZONING

In adding the Concept Plan area to the UGB, Metro conditioned the land to be used for industrial purposes. When land in the Concept Plan area is annexed to the City of Tualatin upon redevelopment, the land shall be zoned MG (Figure 1). There are several reasons for this zoning designation.

1. The MG designation is the more comprehensive of the city's three manufacturing planning districts and will allow the city and property owners greater flexibility for development. This, in turn, will help meet Metro's goals for industrial development.

2. The MG designation is consistent with the designation immediately to the east of the Concept Plan area across SW Cipole Road and is consistent with the City's historical practice of placing MG lands at the City's outer edges.

3. Uses allowed under the more inclusive MG designation are compatible with the adjacent wildlife refuge. The MG designation would not have a greater potential for adverse impacts on the TRNWR than the ML designation, based on a comparison of allowed uses in the two districts.

Key development assumptions associated with the MG planning designation are shown on Table 3.

TABLE 3
Development Assumptions for General Manufacturing (MG) Planning District

Parking	1.6-3.0 spaces/1,000 square feet
Setbacks	Front: 30 feet Side/back: 0-50 feet Private road: 5 feet Public road: none
Impervious Surface	Up to 85 percent of the development area may be impervious
Landscaping	15 percent of the development area is required to be landscaped
Minimum Lot Size	20,000 square feet
Maximum Structure Height	60 feet

DEVELOPABLE AREA

Of the approximately 15 acres in the Concept Plan area, the actual developable area is reduced by the following factors or development requirements:

- Only three of the four parcels that make up the current Concept Plan area are developable. Tax lot 1100 is not available for development; it is owned by BPA and used as right-of-way for overhead electrical transmission lines. BPA staff have indicated the following constraints for tax lot 1100:
  - Cannot be used for parking or water quality facilities
  - No buildings can be constructed within 25 feet of the vertical members of the transmission line towers
  - Potentially could be used for public open space, such as a trail

- Setback and landscaping requirements of the Tualatin Development Code (see Table 2)
- Transportation facilities (public access road or private driveway)
- Water, sewer, and stormwater facilities
- Northwest Natural owns and operates an underground liquid petroleum pipeline that appears to be located near the western edge of Tax Lot 801 (Figure 2).

As discussed below under Natural Resources, it is assumed that any impacts on potential floodplains and wetlands could be mitigated offsite and would not reduce developable area. Any offsite mitigation would be subject to the applicable regulations of the affected jurisdictions (e.g., Washington County).

A water well on tax lot 1200 is currently used to provide potable water to a residential property outside the Concept Plan area and the UGB. This conflict will need to be addressed as part of redevelopment.

FUTURE URBAN EXPANSION

When the Concept Plan area is annexed into the City of Tualatin, it will form the northwestern city limits. The Concept Plan area is surrounded on three sides by land that is either currently in the TRNWR or is proposed for future acquisition by the TRNWR (Figure 2). The land to the west and south of the Concept Plan area is within the floodplain of the Tualatin River. The Concept Plan assumes there will be no future expansions of the city limits or the UGB[2] in these directions because of the presence of the TRNWR and floodplain.

Transportation Facilities Plan

Figure 3 shows the recommended improvements to the transportation system to accommodate future industrial development of the Concept Plan area.

ROAD ACCESS TO CONCEPT PLAN AREA

Access Road Location

Road access to the Concept Plan area will be provided via SW Cipole Road. Direct access via Highway 99W will not be allowed by ODOT.

The recommended access location along SW Cipole Road is across from the future Cummins Drive at the southeast corner of the Concept Plan area (Figure 3). Constructing a standard four-way intersection at this location would maximize the continuity, connectivity, and safety of the existing and planned local street system. Based on the right-of-way identified on City maps, the future Cummins Drive would intersect SW Cipole Road just south of the south boundary of the Concept Plan area and the UGB. Creating a standard four-way intersection at this location would require either that the Concept Plan access road be curved to the south (beyond the Concept Plan boundary where the Loen Nursery property is located today) or that Cummins Drive be curved to the north (where the Grimm's Fuel site is today).

Because the Grimm's site has been developed around the location of the proposed Cummins Drive right-of-way, the best option appears to be curving the access road to the south. This option would require a minor UGB expansion for the portion of the access road lying south of the Concept Plan area boundary, and would require purchase of right-of-way from the nursery in that location and result in reconfiguration of that business. The future SW Cipole Road/Cummins Drive intersection would be signalized, in accordance with TDC Chapter 11.

[2] A minor UGB adjustment is proposed to accommodate future road access (see Section 3).

An alternate location for access to the Concept Plan area on SW Cipole Road between Highway 99W and the Cummins Drive right-of-way was considered but rejected for a number of reasons. This access would be inferior from a transportation operations and safety perspective in that it would not be at a signalized intersection (too close to Cummins Drive) and it would not support the connectivity of the local street system in that it would be a three-way intersection that would not take advantage of the connection with Cummins Drive to the east. In addition, an access at this location would bisect the tax lot immediately adjacent to SW Cipole Road (tax lot 801), effectively splitting it into two smaller lots.

Access Road Type

The Concept Plan access road could be provided by a public road or a private driveway, depending on the timing and configuration of development, as follows:.

- Private driveway: If the three developable parcels will be developed by a single owner, access could be provided by a private driveway.
- Public road: If the three parcels will be owned and developed separately, a public road is recommended.

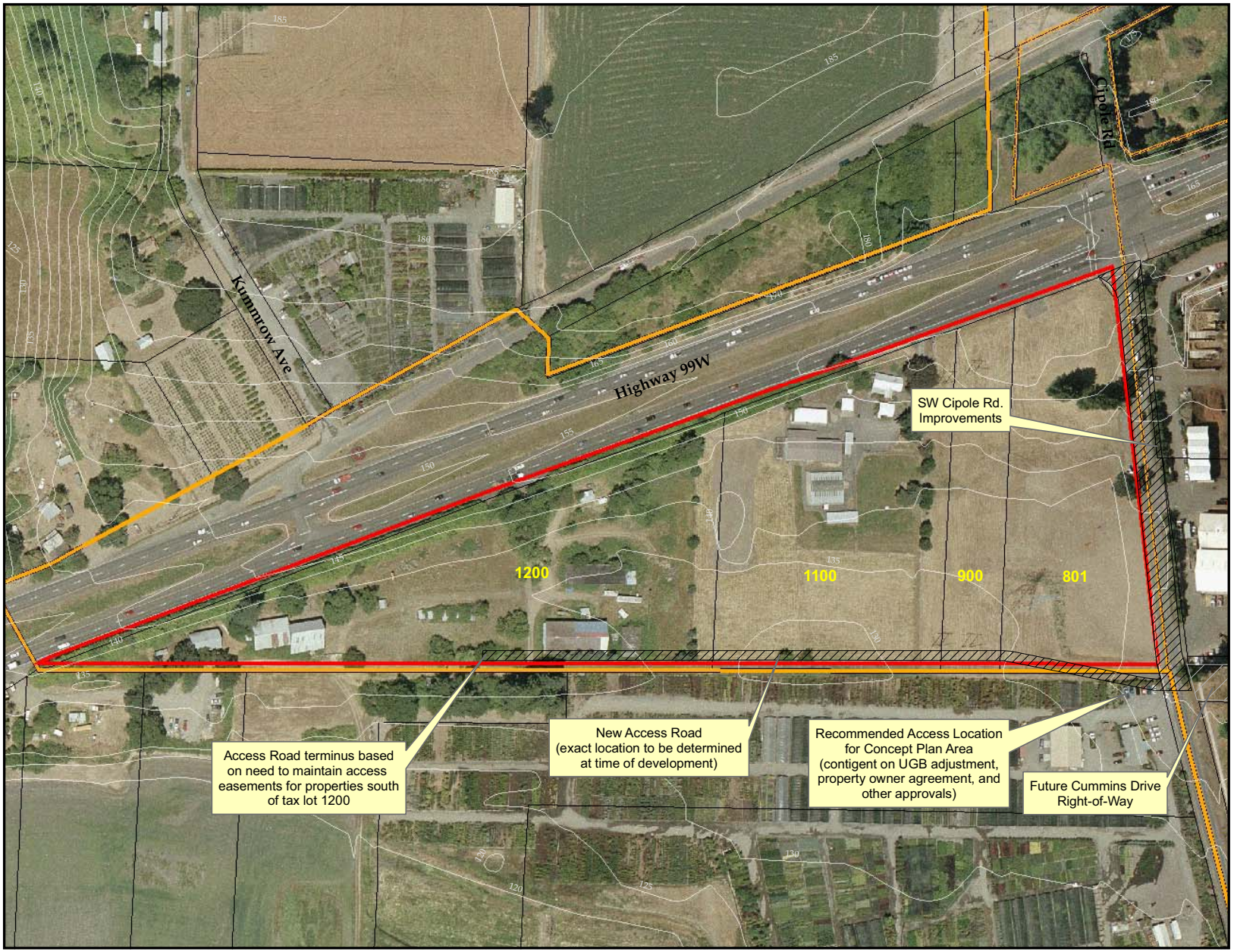
A public roadway would be developed as a cul-de-sac with an offset bulb turnaround at the west end. The typical cross section for a public road of this type would be two 16-foot-wide travel lanes), plus 5-foot-wide sidewalks and optional 4-foot-wide planter strips. These dimensions follow the City's local commercial industrial (B-CI) functional classification. Installing a sidewalk on only one side might be appropriate, depending on the location of the road. To reach the westernmost property (tax lot 1200) from SW Cipole Road, the road would exceed the 600-foot length for a cul-de-sac allowed by Tualatin Development Code. There is precedent for an exception to this limit, depending on the proposed Concept Plan area use.

Regardless of whether the access will be public or private, the exact location of the road would be best determined in conjunction with a specific development proposal.

Access Road Potential Constraints

Potential constraints to development of the Concept Plan site are discussed in detail in the review of existing conditions included in Appendix C. Issues related to the access road include:

- Transmission Lines: Two sets of wooden transmission line poles owned by BPA and located at the south end of Tax Lot 900 would most likely need to be relocated as part of developing the access road. The cost for this relocation is roughly estimated at $40,000 to $60,000. There are steel transmission line poles on the same property owned by PGE that are unlikely to be affected. The height of the transmission lines would need to be reviewed to assure that enough clearance was provided above the future road.
- Federal Permitting—BPA: Because Tax Lot 900 is owned by a federal agency (BPA), constructing a new road across the property would require compliance with relevant federal regulations, including the National Environmental Policy Act (NEPA). The NEPA requirements are likely to be minor.
- Federal Permitting—USFWS: Because the Concept Plan area is adjacent to the TRNWR managed by the U. S. Fish and Wildlife Service (USFWS), future development of the properties and the access road would need to be coordinated with that agency. For example, aligning the proposed access road to meet the future Cummins Drive right-of-way would infringe on a small area of land that is within the future acquisition area for the refuge. This would require approval by the agency.



Northwest Tualatin Concept Plan

Figure 3

Transportation Facilities Plan

Legend

- Urban Growth Boundary
- Concept Plan Area
- Tualatin City Limit
- Tax Lots
- Proposed New Roadways

Data Source: Metro, City of Tualatin, USGS, USFWS

N

0 75 150 300 Feet

CH2MHILL

File Path: \\astoria\gisdata1\data\Proj\tv_gis\mapdocuments\figure3_trans.mxd, Date: 01 06, 2005 3:15:19 PM

- UGB Adjustment: As mentioned above, aligning the proposed Concept Plan access road to meet the Cummins Drive right-of-way would require the eastern end of the road be constructed outside the UGB. Because the acreage affected outside the UGB is estimated at less than 2 acres, only a minor UGB adjustment would be required. It is anticipated that such an adjustment would be granted, given the minor impacts and the stated purpose of implementing the previous UGB expansion for the Concept Plan area itself.

Additional information on each of these issues should be developed in the future as part of a specific development proposal.

SW Cipole Road Improvements

At the time of development of the Concept Plan area, SW Cipole Road between Highway 99W and the future Cummins Drive should be improved to meet current city standards. Doing so would include widening the existing roadway to Street Standard Cb&t (major collector) from the Tualatin Development Code, modifications to the signal at Highway 99W[3] and SW Cipole Road, illumination, and drainage.

Maintenance of Existing Access Easements

There are several existing access entitlements or easements across the properties that make up the Concept Plan area that provide access between properties to the south of the Concept Plan area and Highway 99W or SW Cipole Road. The development of the Concept Plan area would need to accommodate these easements. Specifically, the new access road to the Concept Plan area would need to maintain the connections to several properties to the south of the Concept Plan area. For example, the existing access easements in the Concept Plan area that provide direct access to Highway 99W would be accommodated in the future by an east-west road (the proposed Concept Plan area access road) to SW Cipole Road, which would then provide access to Highway 99W.

[3] Modifications to the signal (including signal timing) at Highway 99W and SW Cipole Road would need to be approved by the ODOT signal manager.

Water, Sewer, and Storm Drainage Facilities Plan

Figure 4 shows the recommended water, sewer, and storm drainage facilities to accommodate future industrial development of the Concept Plan area. Figure 4 and the text below focus on public facilities—those required to bring the utility to a private property. Where relevant, private facilities—those required on a private property itself—are identified conceptually. The recommended facilities are approximate and could change based on the actual type and configuration of future development.

WATER SYSTEM

A 1,600-lineal-foot looped water system (10-inch water main, sized for 3,500 gallon per minute [gpm] fire flow) is recommended to provide the best water flow and pressure for future uses on the three developable tax lots. This system would connect at both ends to the existing 12-inch water main located in SW Cipole Road, adjacent to the Concept Plan area. Private developments would connect to the looped public system as needed.

SEWER SYSTEM

A new 8-inch gravity sanitary sewer pipe should be installed to collect the wastewater flows from the three developable properties. In addition, an 855-foot-long gravity pipe system would be needed along SW Cipole Road to connect the 654 feet of public sanitary system on the Concept Plan area to the existing SW Cipole Road pump station. Based on the average water demands for commercial/industrial use (750 gallons per acre per day) specified in the Tualatin Water Master

Northwest Tualatin Concept Plan

Figure 4

Water, Sewer, and Storm Drainage Facilities Plan

Legend

- Water
- Sewer
- Storm Drainage
- Property Boundary (approximate)
- Water quality facility for public access road (potential location)

N

0 75 150 300 FEET

CH2MHILL

T112004006PDX 320604.01.04 3/18/05 kk an

Plan, the existing SW Cipole Road pump station would be adequate to accommodate industrial development under the MG planning designation.

STORM DRAINAGE SYSTEM

Figure 4 shows the proposed configuration of the storm drainage system for the Concept Plan area (including the proposed access road), with a progression in storm pipe sizing as the collected runoff increases toward the south and west of the Concept Plan area. Collected runoff would be treated on site before being discharged to Rock Creek via a new pipe in the Highway 99 right-of-way.

Because the south central portion of the Concept Plan area is the lowest in elevation, installation of a piped storm system would increase in depth as it extends westerly toward its eventual discharge to Rock Creek. A stormwater easement would be required from the properties south and west of the site if access into the Highway 99 right-of-way is not granted.

Stormwater management at future streets and development(s) on the Concept Plan properties (that is, within the City of Tualatin) would meet CWS design criteria for stormwater quality and quantity control. The receiving waters (Rock Creek) for the drainage from the Concept Plan area are in Washington County. Onsite stormwater treatment would assure that the runoff meets County standards. Figure 4 shows a potential location for a nonmanufactured water quality facility (i.e., pond or swale) for the proposed access road. The actual location and type of facility would be determined at the time of development. Water quality facilities also would be required for development of the private properties.

Stormwater runoff quantities can be reduced and stormwater quality would be improved, to the extent practicable, through the use of low-impact development (LID) techniques such as reducing the amount of effective impervious surface area (using pervious pavements, for example), facilitating evapotranspiration, and promoting soil infiltration. Future development on the parcels would consider such techniques to exceed minimum requirements for stormwater management to the extent that they would be practicable.

Other Utilities

Provision of other utilities (e.g., electricity, natural gas, and communications) would occur according to future development need and site configuration. These facilities should be designed and located in coordination with roads and water, sewer, and storm drainage infrastructure. No constraints to providing these other utilities have been identified.

Natural and Cultural Resources

As discussed below, it is assumed that natural resources pose minimal constraints to development and any impacts could be mitigated offsite and would not reduce developable area. Costs would be borne by the developer.

FLOODPLAINS

Existing FEMA floodplain mapping shows a 100-year floodplain at the south-central part of the Concept Plan area (Figure 2). Observations during a site visit and review of aerial photography of the area suggest that L improvements at the Loen Nursery property south of the Concept Plan area have severed the natural drainage route to the Onion Flats and Tualatin River floodplain and that the mapped boundary is no longer accurate. Given this, two approaches to addressing floodplains are possible:

- Assume the FEMA floodplain mapping is accurate and mitigate any floodplain impacts in the plan area accordingly. Following this approach, a road along the south boundary of the Concept

Plan area would require compensatory floodplain mitigation. Onsite mitigation would reduce the developable area; offsite mitigation would require agreement with a property owner in the floodplain.

- Verify and document that the mapped FEMA floodplain boundary is incorrect; that is, request a FEMA map adjustment. This is an administrative process that must be conducted according to FEMA rules and requirements. Assuming the result is as anticipated (that the development to the south has altered the floodplain so that it no longer extends into the Concept Plan area), floodplain mitigation would not be a condition for development.

Regardless of which approach is taken, the Concept Plan assumes that floodplain protection will not constrain future development.

WETLANDS

The existing conditions review suggests that a small protected wetland has been created by drainage modifications and/or nursery irrigation at the south-central part of the Concept Plan area. Also, ditches and culverted drainages along SW Cipole Road and within the plan area may contain potential federal and state jurisdictional waters. A formal wetland delineation and concurrence by applicable agencies would be required to verify the presence of these resources. However, it is anticipated that any wetland area present is small and that impacts can be mitigated in a way that would not interfere with development on the developable parcels.

OTHER NATURAL AND CULTURAL RESOURCES

At the time when the Concept Plan properties are annexed into the City of Tualatin, they will be within the jurisdiction of CWS and subject to their water quality regulations. During a site visit conducted with CWS staff in October 2004, there were no stream channels or water quality sensitive areas apparent within the Concept Plan area.

Several large oak trees are present near the south boundary of the Concept Plan area. These trees contribute to the area's natural resource values. These trees should be preserved, if practicable.

No other natural or cultural resources at the Concept Plan area are anticipated to be development constraints, based on preliminary information.

4 IMPLEMENTATION

This section addresses four key considerations for Concept Plan implementation: provision of urban services, costs, funding options, and consistency with City plans and policies.

Provision of Urban Services

This plan assumes that future property developers, not the City of Tualatin, will provide for the extension of needed urban services to the Concept Plan area and the parcel or parcels to be developed. The Concept Plan includes cost estimates for the provision of these services. However, to maximize future development opportunities and flexibility, the plan does not identify specific locations or configurations. Assumptions are that the best configuration of development on the Concept Plan area would be determined by market opportunities and constraints at the time of development, allowed uses, and other Tualatin Development Code requirements. Utility and access services would be provided along a single multipurpose corridor.

Development of the three key lots[4] in the Concept Plan area either individually or in combination would influence the sequencing of services provided. If the three developable lots are developed separately, coordination is recommended so as not to preclude the provision of public infrastructure to the remaining sites through reasonable and affordable means. Such coordination would ensure that:

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

Cost Estimates

Transportation Facilities

Estimated costs to design and construct roads and related infrastructure (e.g., traffic signals) on and adjacent to the Concept Plan area are shown in Table 4. Based on the conceptual designs for these facilities, a 30 percent contingency is included in the estimate to account for potential unknowns typically identified during detailed design. The estimates do not include land use or environmental permitting, legal fees, or utility relocation costs.

The estimates distinguish between those facilities already in the City of Tualatin Transportation System Plan that are part of the programmed public system and those that would be required to be constructed as part of the development of the Concept Plan area.

[4] The lot owned by BPA (tax lot 1100) is reserved for electrical transmission line right-of-way and is not developable.

TABLE 4
Transportation Cost Estimates

Facilities in the Transportation System Plan (TSP). *Will be part of the public system regardless of how they are financed*	**Cipole Road** Includes 800 feet of road widening between Highway 99 and future Cummins Drive, landscaping, and illumination[1]	**Concept Plan Area Access Road** Includes 1,200 feet of new roadway[2], a signal at the SS Cipole Road/Cummins Drive intersection, drainage, and illumination
Construction	$495,000	$600,000
Right-of-way	$215,000	Assumed to be dedicated by private property owners (no public cost)[3]
Design engineering	$74,000	$90,000
Construction engineering and administration	$124,000	$150,000
TOTAL	**$907,000**	**$840,000**
Facilities not in the TSP. *Would be required by the development of the Concept Plan area*	**Cipole Road** Signal modifications at Highway 99W and SW Cipole Road.	**Concept Plan Area Access Road** None
Signal modifications at Highway 99W and Cipole Road	$125,000	Not Applicable
TOTAL	**$125,000**	**Not Applicable**

1 Storm drainage costs for the roadway are included in the cost estimate for storm drainage, as shown in Table 5.

2 A roadway of this length is recommended to provide connections to existing access easements for properties to the south side of Tax Lot 1200.

3 This estimate does not include costs for modifications to private property (for example, the Loen Nursery site).

WATER, SEWER, AND STORM DRAINAGE FACILITIES

Estimated costs to construct public and private water, sewer, and storm drainage facilities on and adjacent to the Concept Plan area are shown in Table 5. Based on the conceptual designs, a 30 percent contingency is included in the estimate to account for potential unknowns typically identified during detailed design.

TABLE 5
Water, Sewer, and Storm Drainage Cost Estimates

	Estimated Cost
Public Infrastructure *Facilities that will be part of the City of Tualatin public system regardless of how they are financed*	
Water (10-inch water main, 1,600 lineal feet)	$148,000
Onsite Sewer (8-inch pipe, 654 lineal feet)	$102,000
Offsite Sewer (8-inch pipe, 885 lineal feet)	$130,000
Storm Drainage (within Concept Plan area and connections to Rock Creek, including water quality facilities)	$334,000
TOTAL COST FOR PUBLIC INFRASTUCTURE	**$714,000**
Private Infrastructure *Facilities on private property whose construction and financing are the responsibility of the property owner*	
Water (varies with development need)	Not Applicable
Onsite Sewer (8-inch pipe, 725 lineal feet)	$57,000
Storm Drainage (12-inch pipe, total of 865 lineal feet)	$59,000

Public facilities are defined as those that will be part of the City of Tualatin public system regardless of how they are financed. Private facilities are defined as those on private property whose construction and financing are the responsibility of the property owner.

Funding Options

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

This plan assumes that future property developers, not the City of Tualatin, would provide for the extension of needed urban services to the Concept Plan area and to the parcel or parcels to be developed.

In addition to funding directly through developer-constructed improvements, other funding mechanisms could include:

- System development charges
- Impact fees
- Local improvement districts
- Street utility fees
- Federal, state, and regional funds

Consistency with City Plans and Policies

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

TRANSPORTATION SYSTEM PLAN (TDC CHAPTER 12)

Tualatin's TSP is implemented primarily by Chapter 11 of the TDC. The TDC would need to be amended to incorporate the intersection improvement project at Highway 99W/SW Cipole Road that was identified in the transportation impact analysis. TSP map amendments are expected to be of the "housekeeping" variety: showing the new UGB boundary and extending current designations farther southwest along Highway 99W, for example. Because of the uncertainty as to whether a public or private street would access the site and because the street would not be an arterial or collector in any event, no change to the TSP functional classification map to show the street is recommended. The TSP amendments would need to be reviewed by the Tualatin Planning Commission and adopted by the City Council.

OTHER

To codify the Concept Plan, a number of other elements of the TDC and the Comprehensive Plan would need updating with map changes and additional text. These changes will be identified by City of Tualatin staff as part of the adoption process.

Northwest Tualatin
CONCEPT PLAN

prepared for

CITY OF TUALATIN
COMMUNITY DEVELOPMENT DEPARTMENT

&

ODOT
TRANSPORTATION AND GROWTH MANAGEMENT PROGRAM

VOLUME II
APPENDIX

prepared by CH2MHILL & KITTELSON & ASSOCIATES

MARCH 2005

T112004006PDX 320604.01.04 03-21-05 kk an

Northwest Tualatin
CONCEPT PLAN

prepared for

CITY OF TUALATIN
COMMUNITY DEVELOPMENT DEPARTMENT

&

ODOT
TRANSPORTATION AND GROWTH MANAGEMENT PROGRAM

VOLUME II
APPENDIX

prepared by CH2MHILL & KITTELSON & ASSOCIATES

MARCH 2005

T112004006PDX 320604.01.04 1/6/05 kk an

APPENDIXES FOR THE NORTHWEST TUALATIN CONCEPT PLAN

A Technical Advisory Committee (TAC) Documentation

B Public Open House Documentation

C Existing Conditions Technical Memorandum

APPENDIX A

TECHNICAL ADVISORY COMMITTEE (TAC) DOCUMENTATION

Northwest Tualatin Concept Planning
Technical Advisory Committee #1
August 11, 2004
9:00AM-11:00AM
Council Chambers – 18880 SW Martinazzi Avenue
Tualatin

A G E N D A

1. Introductions

2. Public Comment

3. Overview
   a. Project Scope of Work and Schedule
   b. TAC Responsibilities

4. Goals Discussion

5. Issues Discussion

6. Schedule next TAC meeting –October

Northwest Tualatin Concept Planning
Technical Advisory Committee #1 - Minutes
August 11, 2004

In attendance: Stacy Hopkins – Tualatin, Tim Burkhardt – CH2M Hill, Dave Simmons – CH2M Hill, Aisha Willits – Washington County, Craig Dye – CWS, Dayna Johnson – City of Tualatin, Pete Schmidt – Tualatin River National Wildlife Refuge, Weimen Tung – PGE, Lydia Neill – Metro

---

Everyone **introduced** themselves.

Stacy described the **project**, how it came about, funding and the **schedule**.

Stacy described the role of the TAC in the process. Generally, the TAC shall share its expertise with the project management team both in the formulation and the review of planning documents.

Tim described the concept planning process, providing the definition from Metro "to promote integration of new land added to the urban growth boundary into existing communities." Tim also highlighted the basic parts of a concept plan such as an annexation plan, transportation plan, natural resource protection, public facilities plan and the role of coordination.

Tim introduced and read off the draft **goals** drafted by the project management team.

Lydia asked that we keep note of issues that arise through this process that may inform Metro in its on-going work related to UGB expansion and "The Big Look".

Aisha asked about the industrial condition placed on this property. Stacy explained that it is conditioned for industrial, not Regionally Significant Industrial like the southwest Tualatin piece. Stacy also explained that if the concept plan determined that industrial was not the best use for the area, a case would need to be made for Metro to accept the difference.

Stacy also explained the changing nature of industrial land uses. She will bring or distribute copies of Tualatin's existing codes on industrial land uses to the TAC.

Ultimately, no changes were made to the goals.

Tim led a discussion on **issues** related to the NW Tualatin concept planning. He asked the TAC to think of issues they may have as they related to the following chart:

	Transportation	Natural Resources	Land Use	Infrastructure	Other
CWS					
Wash. Co.					
Metro					
PGE					
BPA					
TRNWR					
TriMet					
ODOT					
Engineering					

Craig indicated that natural resources and infrastructure would be issues for CWS. There is a bit of floodplain on the south side of the study area, and a broad flood plain further south. He also wanted to know where sewer lines were and how storm water would be handled on site. He stated that this area may be a good one for low impact development practices.

Aisha indicated that transportation would be an issue for the County since the County updated its TSP in 2002. She indicated that the new Tualatin Basin Goal 5 work could be included in the analysis. She referred to Ordinance 615, which changed the zoning of this area from RR-5 to FD-20. Aisha asked about the coordination between this project and the I-5/Highway 99W Connector. Dave Simmons indicated that this project would not be directed influenced by the Connector, but the project management team would continue to monitor to the Connector's progress.

Pete of TRNWR listed issues related to natural resources. He is interested in water quality and quantity as well as storm water run off. The TRNWR hopes to purchase and restore the Onion Flats, located to the south and west of this study area, and already has about 1/3 of this land. He'll also be interested in issues of noise and light as they affect the area, especially the wintering waterfowl and occasional bald eagles in the Refuge. He indicated that the portion of the Refuge north of 99W is nearly fully restored and that construction of a visitor's center will soon be underway, along with a new access point on 99W (two or three other accesses shall be decommissioned). This new access will be right in, right out. Tim asked if the CWS Best Practices work for the Refuge; Pete was not certain. Pete indicated that Rock Creek, which is near the study area, has cut throat trout and could probably support steelhead.

Lydia indicated that Metro's concern will be that this concept plan implements the Metro Functional Plan. She also stated that if the design type needs to change to something that may have less impact on the Refuge, we could make a case for it. She also clarified that the Metro Council does not adopt the concept plan – staff reviews it and okays it. Stacy requested that something be put in writing that demonstrates Metro's approval and Lydia agreed.

Weimen of PGE had no issues. He indicated that there are PGE lines and stations nearby.

Dayna of the Tualatin Engineering Department indicated she'll examine issues of transportation and infrastructure.

Pete of TRNWR asked about how the City deals with contaminants on site, such as herbicides, asbestos, etc. and ensures they are properly cleaned up. Dayna talked a bit about decommissioning septic systems.

Stacy indicated her thoughts on issues from ODOT, TriMet and BPA. From ODOT, Stacy indicated that access onto 99W would be an issue. She didn't think many issues would arise from TriMet since the bus service in the area is already good. BPA's issues would likely relate to maintaining safety near the BPA right-of-way.

Tim described the **next steps** of the process – to develop an existing conditions report.

The **next meeting** is scheduled for Monday, October 18, 2004 10:30AM – 12:30PM.

Northwest Tualatin Concept Planning
Technical Advisory Committee #2
October 18, 2004
10:30AM-12:30PM
Council Chambers – 18880 SW Martinazzi Avenue
Tualatin

A G E N D A

1. Introductions

2. Public Comment

3. Minute approval, August 11, 2004 TAC meeting #1

4. Review Goals

5. Draft Existing Conditions presentation and discussion

    a. Review of existing conditions documents
    b. System review: transportation, water, sewer, storm water
    c. Traffic impact analysis

6. Discussion of Manufacturing planning districts

7. Next steps, project calendar

8. Schedule next TAC meeting –mid-December

9. Wrap-up public comments

NORTHWEST TUALATIN
GENERAL PROJECT GOALS
(As reviewed and approved at TAC Meeting #2 on October 18, 2004)

- Create a plan to guide the future development of the project area
- Ensure an orderly system for infrastructure provision
- Cooperate with the U.S. Fish and Wildlife Service to minimize adverse impacts to the Tualatin River National Wildlife Refuge from development in adjacent areas of Tualatin.
- Examine and address other environmental issues in the project area
- Work with BPA to ensure safe development near the BPA lines
- Ensure an adequate and efficient transportation system that works with the existing system
- Meet the relevant goals of Metro
- Involve the broader community in the planning process

Northwest Tualatin Concept Planning
Technical Advisory Committee #2 - Minutes
October 18, 2004

In attendance: Stacy Hopkins – Tualatin; Tim Burkhardt – CH2M Hill; Andrew Johnson – ODOT; Manny Angulo– Portland General Electric (PGE); Dayna Johnson– Tualatin Engineering; Craig Dye – Clean Water Services (CWS); Peter Schmidt – Tualatin River National Wildlife Refuge; Lydia Neill – Metro.

Also attending: Marley Martin – citizen; Cliff Finnell – representative; Phil Worth – Kittelson and Associates; Sharon Werre – citizen; Clark Johnston Jr. – citizen; Donald Werre – citizen.

Everyone **introduced** themselves.

There were no **public comments**.

Lydia Neill had one change to the **minutes** – to include two "Ls" in her last name.

Stacy reviewed the **project goals** with the committee. She read the goals as crafted at the first TAC meeting, then proposed changing one of the goals to have it be more consistent with the goals contained in the Tualatin Community Plan. Rather than say "Cause no harm to the Tualatin River National Wildlife Refuge", the goal now reads "Cooperate with the U.S. Fish and Wildlife Service to minimize adverse impacts to the Tualatin River National Wildlife Refuge from development in adjacent areas of Tualatin" as per Section 4.050(11) of the Community Plan. Peter Schmidt of the Refuge liked the idea of cooperation. Andy Johnson thought the change is in the same spirit as the original goal.

Tim Burkhardt introduced the **Existing Conditions Memo** and discussed at length the summary table at its end. He also talked about the site map, indicating that the Refuge did not include the concept plan site, and that the BPA property is assumed not developable with buildings due to the presence of the overhead transmission lines.

Tim indicated that the future transportation system of this area would need to accommodate truck traffic.

Regarding water supply, there are no assumptions made in the Existing Conditions Memo regarding intensity of use. There may be supply limitations that will be identified in later phases of this project.

Regarding storm drainage, there is no formal system on the site yet. Culverts are located under Highway 99W. Preliminary research indicates this area might be a water quality regulated site. Tim indicated that the concept planning does not specifically delineate the

floodplain or wetland areas. There is a question if low impact development practices may be mandated for this site given its proximity to the Refuge.

Tim indicated that there is no inventory done for this area regarding historic resources. However, one of the dwellings is over 50 years old, so additional study will occur on the possible significance of the structure.

Cliff Finnell inquired when the zoning would be designated for the concept planning area. Stacy replied that it would begin to be discussed later during the meeting. Marley Martin asked if this area was first deemed commercial. Stacy replied that it may have been, and if it were, the City of Tualatin didn't support it because it would be incompatible with the adjacent land uses and would continue development along Highway 99W that taxes the roadway (Note: Stacy examined past documents and realized Metro first recommended this area come in for residential use, not commercial).

Peter Schmidt offered to provide an updated, more detailed map of the Refuge in GIS form to Stacy and Tim.

Phil Worth of Kittelson and Associates introduced and discussed transportation issues related to the Concept Plan area. He indicated that the Transportation Planning Rule dictates what improvements are needed. First, regardless of the site's development, the Cipole/99W intersection needs improvement to continue operating efficiently in the future. He indicated that a three-lane northbound configuration with a left turn, left/straight, and right turn lane would suffice. Second, he indicated that the Tualatin TSP states that the intersection of Herman and Cipole should be signalized. The City has considered a local improvement district at this site to fund the signal. Last, he indicated that when the I-5/Highway 99W Connector occurs, it would alleviate traffic on Highway 99W at this site.

Peter Schmidt asked how transportation projects were funded, and Stacy responded, indicating that funding may be from a variety of sources.

Phil Worth indicated that a western access point onto Highway 99W, assuming that ODOT spacing standards are met, would likely be a right in, right out. Andy Johnson of ODOT stated that the land use would also dictate a second access. The spacing standards could be met if other access points are terminated. (Note: after the meeting, Andy did some research; given the operational and geometric characteristics of that stretch of road, ODOT is unlikely to consider an additional access at that western end of the Concept Plan area.)

Lydia asked if the angle of the Cipole/99W intersection could be altered to provide easier truck access. Phil stated it could.

Andy Johnson will provide follow-up information on the right-of-way width of 99W, access control, permits, safety information and accident rates.

Stacy went over the type of uses in the different **manufacturing planning designations**. Lydia asked about the listing of schools in the manufacturing area as a conditional use –

Stacy provided the conditional use criteria to demonstrate what would need to be met to allow a school.

Tim said that the question is what designation is appropriate for the site and the surrounding uses. General Manufacturing (MG) may be more intensive.

Peter Schmidt indicated that the Light Manufacturing (ML) district would be preferable since there is probably less possibility of contaminants reaching the water.

Lydia indicated that uses in ML generate more trips. Peter stated that this is a concern as well.

Lydia also stated that the allowed uses in MG seem to be more appropriate for large sites.

Cliff Finnell stated that MG is preferred by property owners as it provides greater flexibility, especially with the proximity to Highway 99W.

Lydia stated that some of the site issues might be mitigated in coordination with the Refuge.

Sharon Were asked if the Refuge was just for wildlife or if there was public access. Peter indicated that public access is increasing, with plans for a visitor center to the northwest of the concept plan area.

Mr. Johnston asked how the BPA line and petroleum pipe would affect provision of an access road, other infrastructure and potential future development. Stacy will contact Neal Meisner of BPA to learn more.

The TAC discussed how to allow development while adjacent to the Refuge. Peter Schmidt indicated that the Refuge did not expect anything unusual to occur in the Concept Plan area regarding zoning limitations or overlay districts to ensure better water quality; he expected these to be addressed by the existing regulations. He would like to see water quality issues addressed.

Stacy identified the **next steps**, highlighting the development of a draft concept plan in the next couple of months.

The **next TAC meeting** was scheduled for Tuesday December 7, 2004 from 1:30 to 3:30 at the same place.

Northwest Tualatin Concept Planning
Technical Advisory Committee #3
December 7, 2004
1:30PM-3:30PM
Council Chambers – 18884 SW Martinazzi Avenue
Tualatin

A G E N D A

1. Introductions
2. Public Comment
3. Minute approval, October 18, 2004 TAC meeting #2
4. Draft Concept Plan presentation and discussion
5. Discuss and schedule Open House, January ____
6. Schedule next TAC meeting –_____
7. Wrap-up public comments

Northwest Tualatin Concept Planning
Technical Advisory Committee #3 - Minutes
December 7, 2004

In attendance: Stacy Hopkins – Tualatin; Tim Burkhardt – CH2M Hill; Andrew Johnson – ODOT; Dayna Johnson– Tualatin Engineering; Craig Dye – Clean Water Services (CWS); Peter Schmidt – Tualatin River National Wildlife Refuge; Neal Meisner – Bonneville Power Administration; Dawneen Dostert – Bonneville Power Administration; Doug Rux – City of Tualatin

Also attending: Sharon Werre – citizen; Donald Werre – citizen.

Everyone **introduced** themselves.

There were no **public comments**.

There were no changes to the **minutes**.

Tim introduced the **draft concept plan.** Essentially, the plan is drafted to maintain flexibility while recognizing the firmness of some regulations. Tim highlighted the various easements on and near the subject area.

Pete Schmidt clarified that the US Fish & Wildlife easement that runs east-west is actually on the nursery property to the south of the concept planning area.

Neil Meisner is going to double check BPA's documents to see if the petroleum line easement is on the BPA property or the Martin property to the east.

The Werre's indicated that the north-south easement on their property is no longer used.

Tim described how vehicular access could be achieved for this site, indicating the issues surrounding access at the future Cummins Road intersection and issues related to a secondary access location. Tim also stated that there cannot be access from Highway 99W to this site due to ODOT spacing and safety issues. Andy Johnson clarified that the current lots have access to 99 for residential and farm access; however these accesses would go away with a change of use.

Doug Rux stated that the concept plan needs to demonstrate how access to all relevant parcels will be provided in the future where access to 99W is no longer available and when properties urbanize.

Doug stated that the access into the site could be public or private. If all three parcels were bought and developed by a single entity, then the access could be private; otherwise, it would be public and carry the BCi classification. In any

case, the road would be a cul-de-sac, with an offset bulb, greater than 600-feet in length. The TDC will need to be amended to allow this unusual circumstance.

Neal stated that there are BPA issues with a potential roadway. The wooden poles are about 45 feet north of the property line. A roadway would have a 60-foot right-of-way, and would infringe upon the poles. BPA wants all roads at least 25 feet from its poles. It will cost BPA approximately $40,000 to $60,000 to move its poles.

It is unclear if a future roadway would also infringe upon the PGE metal lattice poles.

The future road serving this area may require a minor UGB expansion on the nursery parcel so that the road maintains proper distance from BPA's poles and the road aligns with the future Cummins Drive. This would also be easier from BPA's perspective to place a road where BPA has an easement for land rather than where they own the land.

Andy Johnson indicated that the signal at 99W and Cipole is managed by ODOT, and signal timing is maintained by ODOT.

Doug suggested that the project team talk with the property owners of the nursery and the Grimm property prior to the Open House. The Grimms have made improvements to their property, and any right-of-way acquisition on their property would be difficult.

Pete Schmidt indicated that if the road to the concept site were to be located on the nursery property to the south, it would also be within the TRNWR acquisition area. It could be an issue, but he doesn't see it being a huge issue.

Doug stated that any intrusion into non-UGB lands should be minimized.

Doug brought up the right-of-way of 99W north of the concept plan area. The right-of-way is part of the UGB expansion and will ultimately need to carry a City planning designation. He stated that a residential or commercial planning designation is likely – given the zoning to the east – however, this area would remain undevelopable.

Tim introduced the draft concept plan in regard to water, sewer and storm water. He made the assumption that infrastructure would be in the same area as roadways. The water system would be looped with discharge ultimately into the Onion Flats.

Pete indicated that this would be extremely difficult. It essentially takes an act of Congress to get an easement on Federal property. The Refuge Improvement Act of 1997 outlines what is needed for easements for storm discharge – an analysis needs to show that there would be no impact.

Neal Meisner added that BPA would require an environmental assessment for a road on its property though no assessment would be needed if the road were to go across a BPA easement.

The Werre's indicated that there is a ditch to the south that is an option for storm discharge.

Alternately, storm water could follow 99W to a point where it could tie into Rock Creek.

Doug suggested that a title search occur for this area to learn of all easements in this area, and to see if any are related to water conveyance.

Regarding water, Doug indicated that the line should be along the south edge of 99W rather than in the middle of the study area in order to keep more land available for development. Neil indicated that this scenario is better for BPA.

Regarding sanitary sewer, Doug indicated that it would need to be designed to handle water runoff from the roads. The street would need a water quality facility too.

There was a question if the floodplain was accurate for this area or not. Craig and Stacy thought it was accurate but would double check.

Doug stated that the plan should separate what is public from private development, especially in regard to infrastructure financing. Providing a range of what it would cost would be beneficial as well. This estimate should be public infrastructure only.

The last section of the concept plan discusses implementation and code changes. Doug stated that there would be many sections to update, including the creation of an addendum to the TSP.

Stacy introduced the upcoming **Open House**, and suggested it be held on January 11, 2005 at 5:30 PM in the Council Chambers. The group concurred. In addition to a notice in the Tualatin Times, the Sherwood Gazette should be contacted. Other modes of notifying people about the open house include letters to the property owners, the surrounding property owners (up to 500-feet) and an article in the newsletter. The TAC is invited to attend the open house.

Stacy set up the **next TAC meeting** for Tuesday January 18, 2005 at 1:30 PM.

Northwest Tualatin Concept Planning
Technical Advisory Committee #4
January 18, 2005 1:30PM - 3:00 PM
Council Chambers
18884 SW Martinazzi Avenue
Tualatin

A G E N D A

1. Introductions
2. Public Comment
3. Minutes Approval, December 7, 2004 TAC Meeting #3
4. Review Comments from the January 11th Open House
5. Draft #2 Concept Plan Review
6. Wrap-up Public Comments

NORTHWEST TUALATIN CONCEPT PLANNING
TECHNICAL ADVISORY COMMITTEE #4 - MINUTES
JANUARY 18, 2005

Attendees:

City of Tualatin:	Doug Rux and Carol Rutherford, Community Development; Dayna Johnson, Engineering
CH2M Hill:	Tim Burkhardt
Bonneville Power Administration:	Neal Meisner
ODOT:	Andrew Johnson
Portland General Electric (PGE):	Emmanuel (Manny) Angulo
Tualatin River National Wildlife Refuge:	Peter Schmidt
Property Owners:	Sharon and Donald Werre; Connie Ledbetter

1. INTRODUCTIONS

Mr. Rux welcomed everyone. TAC members and property owners introduced themselves.

2. PUBLIC COMMENT

Prior to the beginning of the meeting, Mr. and Mrs. Werre discussed water and well issues. These items will either be incorporated into the Existing Conditions Report or a general statement made in the plan. Ms. Ledbetter indicated that she lives near the Country Club and has previously had issues with CWS, but is in attendance today to learn more about this project.

The Werre's inquired if a divided street with landscaping is necessary. Mr. Rux explained that Tualatin's Transportation System Plan (TSP) calls for landscaping (i.e. street trees) along the road edges but not in a median for this road type. Some areas require access for both pedestrians and bike lanes. A brief discussion included which side of the street would be most appropriate for the sidewalk as well as the location of a bus stop in the area. While the City will apply certain TSP standards for this roadway, we have the ability to make some modifications. At the time a developer is planning to do construction in the area, the Engineering Department will look at options for the roadway as well as to insure the preservation of the wetlands and wildlife areas.

3. APPROVAL OF MINUTES, DECEMBER 7, 2004 TAC MEETING #3

The minutes were approved as written.

4. REVIEW COMMENTS FROM THE JANUARY 11TH OPEN HOUSE

Eight people attended the Open House. Mr. Rux distributed a synopsis of the comments/questions raised during the open house and briefly reviewed each item.

Mr. Rux explained the differences between the three types of manufacturing zones. General Manufacturing is the most broad. Very limited commercial uses are permitted in a manufacturing district. Retail or office uses are not permitted. He stressed that the concept plan is a guideline for what could be built. The Comprehensive Plan will be amended to reflect any proposed changes.

A brief discussion was held regarding the easement for road access on the south side. Research will be conducted to confirm that this exists on the deed to the property. Fish and Wildlife should also be on the deed.

Mr. Rux stated that the City has not received any other emails or written communication since the last TAC meeting.

5. DRAFT #2 CONCEPT PLAN REVIEW

Tim Burkhardt, consultant for CH2M Hill, provided an overview of the changes made to the concept plan based on discussions at the December 7th meeting. He distributed updated copies of the plan and appendix reflecting these changes. Changes to the appendix include existing conditions information and documentation from the meeting and public open house.

Ms. Ledbetter inquired about the zoning designation for Helzer Industries. Mr. Rux stated that it is currently classified as Light Manufacturing and offered to provide her with sections from the Tualatin Development Code that list the parameters for each designation.

Mr. Burkhardt displayed drawings of the NW concept planning area and highlighted the changes to the transportation and other infrastructure as well as text changes. TAC members discussed the new access road and its connection to Cipole Road. This will become a four-way intersection with Cummins Drive. As proposed, it would require a minor adjustment to the UGB.

Mr. Burkhardt also discussed impacts of easements on this land, floodplain options, and water/sewer/storm drainage issues. Drainage has been relocated along 99W, and an underground pipe is proposed. Hopefully, this proposal will not cause any issues with ODOT. The potential location for a water quality facility is shown on the map. It will be a pond without filtration. The ideal spot is at the low point in the area so that no digging will be required. Any impacts on private properties will be addressed with the affected property owners. The new water line will be a loop system in the highway right-of-way on public property. Mr. Burkhardt indicated that there are changes in cost estimates

based on these changes. Costs for the infrastructure will be paid for by the developers at the time of construction. The actual layout of the inftrastrucure could change based on whether properties are developed individually or all at once. TAC members and guests had no questions or comments on the material presented.

Mr. Rux provided an update on the schedule for the remainder of this project which includes:

- February 10th, Tualatin Planning Advisory Committee (TPAC). They have been receiving memos on a monthly basis so they are aware of the concept plan.
- February 28th, Presentation at the City Council work session. 20 minutes have been allocated. Staff's initial presentation will be 10-12 minutes with the remaining time allocated for feedback. Council has also received memos regarding this project.

All comments received will be incorporated into the Concept Plan. The final plan will become the basis for making changes to the Comprehensive Plan. Future meetings include:

- March 10th, TPAC to review the proposed changes
- April 11th, City Council hearing to discuss the proposed changes. Council will then direct staff to prepare an Ordinance that will become effective 30 days after adoption (end of May).

The final draft will be forwarded to Metro to advise them that this is our concept plan for the NW Tualatin area in conjunction with Title 11. This is the last meeting of the Technical Advisory Committee. Mr. Rux encouraged members to review the draft plan within the next two weeks and advise him if there are any further recommendations or changes to the document. He thanked to everyone for their time and assistance.

6. WRAP UP – PUBLIC COMMENTS

Ms. Ledbetter inquired if there will be a traffic signal installed at the intersection of Cipole and the new road. Mr. Rux indicated that this intersection has been identified in the TSP to have a signal at the corner of Cipole and Cummins. Ms. Ledbetter stated that this she thinks this plan looks great and was impressed with the amount of work we have done.

Staff will continue to update the web site with all available information as well as articles in the City's monthly newsletters. TAC members and property owners will also be informed when the final concept plan is complete as well as the date and time for the public hearing process.

Minutes Prepared by: Carol Rutherford, City of Tualatin

APPENDIX B
PUBLIC OPEN HOUSE DOCUMENTATION

Northwest Concept Plan
Open House Summary
January 11, 2005

Eight individuals attend the Open House on January 11, 2005 from 5:30 – 7:30 PM. The attendee list is attached.

The following is a list of questions or comments raised:

1. Location of power lines (Bonneville Power Administration and Portland General Electric) and their impact on the concept plan area.

2. What are environmental issues? Do they include floodplain, Tualatin River National Wildlife Refuge, wetlands, anything else?

3. What is the intended zoning of the area? Will it be General Manufacturing? What is the difference between general manufacturing and the other industrial zones in Tualatin? Will General Manufacturing limit the types of activities allowed?

4. Is the Plan what actually will be developed or is a generally guideline for what could be developed?

5. Could the land to the northeast of the Concept Plan area be changed to industrial from commercial to allow industrial development?

6. Do the current property owners currently have an easement for road access on the south side or is it just an informal agreement?

APPENDIX C
EXISTING CONDITIONS TECHNICAL MEMORANDUM

Northwest Tualatin Concept Plan: Existing Conditions Memorandum

PREPARED FOR: Stacy Hopkins/City of Tualatin

PREPARED BY: Tim Burkhardt, AICP/CH2M HILL HILL

COPIES: Andrew Johnson/ODOT
Dave Simmons/CH2M HILL

DATE: Revised: December 7, 2004

PROJECT NUMBER: 320604.01.03

Contents

- Metro Regional Transportation Plan Designations
  - Regional Motor Vehicle System
  - Regional Street Design System
  - Regional Freight System
  - Regional Bicycle System
  - Regional Pedestrian System
- Tualatin Water Master Plan
- Tualatin Sanitary Sewer System Master Plan
- Metro Regionally Significant Habitat
- Tualatin River National Wildlife Refuge
- Washington County Tax Assessor Maps
  - NW ¼ Section 21 T2S R1W
  - SW ¼ Section 21 T2S R1W
  - Record of Survey for Mr. Marley Martin

This memorandum describes existing conditions for the *Northwest Tualatin Concept Plan* (Concept Plan). The memorandum is divided into two major sections:

- Document review summary
- Existing conditions and infrastructure needs

Tables and maps are located at the end of text. The transportation analysis performed by Kittelson & Associates is provided as an attachment.

Document Review Summary

This section summarizes documents that are relevant to the Concept Plan area. A summary of each document is provided, along with a description of its relevance to the Concept Plan area and a discussion of key transportation and development issues.

Land Use and Development

Tualatin Development Code (TDC)

Summary: The City of Tualatin's (City) Development Code guides development on land within the City's jurisdiction.

Relevance to Concept Plan: The Concept Plan area is assumed to annex into the City in conjunction with its redevelopment. The TDC includes chapters related to planning and zoning, provision of infrastructure, and development processes.

Transportation and Development Issues: A summary of TDC chapters relevant to the Concept Plan area and the concept planning process is provided in Table 1-1 (located at the end of text). Those sections of the TDC that are better covered in other sections of this memorandum are identified. The Concept Plan area currently is conditioned to be zoned industrial; two existing planning districts may apply to the Concept Plan area, the Light Manufacturing (ML—Chapter 60) or General Manufacturing (MG—Chapter 61). For additional context, Table 1-1 provides summaries of other relevant chapters of the code as well.

Washington County Development Code

Summary: Washington County's Development Code guides development on land within the County's jurisdiction.

Relevance to Concept Plan: The land that includes the Concept Plan area is currently located in Washington County. The portion of the Washington County Code most relevant to the Concept Plan area is Chapter 308 on the Future Development 20 Acre District (FD-20). Washington County B-Engrossed Ordinance No. 615 applied this designation to the Concept Plan area. This is the interim zoning designation for the Concept Plan area.

Transportation and Development Issues: As stated in the Washington County Code and in the ordinance, the FD-20 District "recognizes the desirability of encouraging and retaining limited interim uses until the urban comprehensive planning for future urban development of these areas is complete. The provisions of this District are also intended to implement the requirements of Metro's Urban Growth Management Functional Plan." This zoning will

apply to the Concept Plan area until such a time when the properties in the Concept Plan area are annexed into the City.

Metro Urban Growth Management Functional Plan

Summary: The purpose of Metro's Functional Plan, which is Section 3.07 of the Metro Code, is to implement regional goals and objectives adopted by Metro, in particular the Metro 2040 Growth Concept and the Regional Framework Plan. Cities and Counties are required to comply with the Functional Plan, which includes making changes to their Comprehensive Plans and implementing regulations.

Relevance to Concept Plan: The relevant portion of the Functional Plan is Title 11 (Metro Code Sections 3.07.1105–3.07.1140), entitled "Planning for New Urban Areas." The purpose of this section is to guide planning for land brought into the urban growth boundary (UGB) for conversion from rural to urban use. This is the document that outlines the content of and requirements for a concept plan.

Transportation and Development Issues: Title 11 lists provisions that need to be addressed in the local jurisdiction's comprehensive plan element, including an urban growth plan diagram and policies consistent with the Regional Framework Plan and adopted 2040 Growth Concept design types. The basic parts of a concept plan, in brief, are listed below. Only those in italics apply to the Concept Plan area.

1. *An annexation plan*
2. Residential densities of at least 10 dwelling units per net residential acre
3. Provision for a diversity of housing stock
4. Provisions for affordable housing
5. *Provisions for commercial and industrial land suited to the area*
6. *A conceptual transportation plan*
7. *A natural resource protection and restoration plan*
8. *A public facilities plan*
9. A plan for schools
10. *An overall urban growth diagram*
11. *Coordination among city, county, school districts, and other districts*

The requirements for a concept plan have since been described in more detail in *Livable New Communities* (Metro, 2002).

Transportation

Summary: This section summarizes the transportation projects, policies, and standards that affect the site, based on the 1999 Oregon Highway Plan, Metro's Regional Transportation Plan (RTP), and the City of Tualatin and Washington County Transportation System Plans (TSPs). Rather than examining these document by document, this section is organized by issue. Issue topics include functional classification, traffic operations standards, access management standards, and planned projects. Figures are included at the end of this memorandum.

Functional Classification

The functional classification of the roads in the Concept Plan area are as follows.

ODOT. **Highway 99W** is maintained by the Oregon Department of Transportation (ODOT) and is classified as a *statewide highway* and a *freight route*. It is a four-lane, divided highway immediately north of the site and is planned to remain four lanes through 2020, in part because the City of Tigard's TSP calls for its portion of Highway 99W southwest of Greenburg Road to remain at five lanes. If the Tigard portion of Highway 99W remains at five lanes, there is no point in widening the Tualatin portion of Highway 99W.

Modeling work for the Tualatin TSP found that an I-5/Highway 99W Connector reduced traffic on the section of Highway 99W adjacent to the site, with the effects more pronounced when the Connector joined Highway 99W south of Sherwood. Because no alignment for the Connector has been adopted yet, the transportation work for this site assumes the alignment shown in the TSP, which has the Connector following the UGB south and west of Tualatin.

Metro. The RTP governs long-range transportation planning within the Portland region. Local TSPs must be consistent with the RTP, thus ensuring the consistent implementation of the regional transportation vision. The RTP serves both as a policy document and as a plan outlining the regional transportation projects (1) that are needed over the 20-year planning horizon, and (2) for which funding is expected to be available during that timeframe. Specific standards are set by other documents such as the Oregon Highway Plan or the local TSPs.

The RTP must meet both federal and state requirements for content and time between updates; the portions used for federal funding decisions are updated every 3 years (most recently in summer 2004), while the portions used for Oregon land use planning are updated every 6 years, with the next major update scheduled for 2007. Because the RTP is between major updates, some projects shown in the 2004 federal version of the RTP are not included in the 2000 plan that must be used for land use decision making.

Metro's 2040 Growth Concept assigns the following designations to Highway 99W in the Concept Plan area (see illustrations in Figures section):

- **Green Corridor**. The 2040 Growth Concept identifies the section of Highway 99W from the westerly point of the concept planning area to the city limit of Sherwood as a *Green Corridor.* This designation is intended to protect rural lands between the region and its neighboring cities by limiting access from the existing highway to adjacent land. Green Corridors also serve as bicycle and public transportation routes through Rural Reserves.

- **Corridor**. The section of Highway 99W from the westerly-most point of the concept planning area to the north is designated as a *Corridor* in the 2040 Growth Concept. These facilities provide high-quality bicycle and pedestrian environments and convenient access to public transportation.

- **Regional Street**. The Regional Street Design System designates Highway 99W adjacent to the site as a *Regional Street.* These streets carry significant vehicle traffic while also serving transit, bicycle, and pedestrian travel. Buildings are often oriented toward the street at major intersections and transit stops. They have some public street connections, but few driveways, which are combined whenever possible.

- **Major Arterial.** The Regional Motor Vehicle System designates the adjacent portion of Highway 99W as a *Major Arterial.* These streets provide motor vehicle connections

between the central city, regional centers, and industrial areas, particularly through connections to the principal arterial system. Freight movement should not be restricted on major arterials. North of SW 124th Avenue, Highway 99W is designated as an *area of special concern,* as opportunities to add capacity are limited, while demand (both existing and latent) will continue to be high. The future I-5/Highway 99W Connector is intended in part to provide relief to this section of Highway 99W.

- **Freight Route.** Highway 99W is designated as a *main roadway freight route.* These routes connect major activity centers in the region to other areas in Oregon and other areas throughout North America.
- **Regional Bikeway.** Highway 99W is designated as a *regional bikeway corridor.* These corridors provide point-to-point connectivity between the central city, regional centers, and larger town centers.
- **Transit/Mixed-Use Corridor**. Highway 99W is also designated as a *transit/mixed-use corridor* in the Regional Pedestrian System. These corridors are priority areas for pedestrian improvements and will be redeveloped at densities somewhat higher than exist today. Pedestrian amenities (for example, special lighting, benches, street trees, bus shelters, and awnings) are provided. The Regional Trails and Greenways map shows the future Tonquin trail extending north-south through the wildlife refuge, crossing Highway 99W southwest of the site. This trail would connect north to the Tualatin River and south to the Willamette River near Wilsonville.

Washington County. SW Cipole Road, east of the site, is maintained by Washington County, while SW Herman Road, located south of the Concept Plan area, is maintained by the City. Washington County classifies SW Cipole Road as a *collector*, with a future two- to three-lane cross section.

City of Tualatin. The Tualatin TSP identifies a future *local commercial-industrial street,* Cummins Drive, coming from the east that would intersect SW Cipole Road at the southeast corner of the site. This location would be the most logical point for a public street connection into the concept planning area. The cross section of a local commercial industrial street includes sidewalks on both sides, a plant strip, a travel lane in each direction, and a center turn lane.

The Tualatin TSP classifies SW Cipole Road and SW Herman Road as *major collectors*. According to the City TSP, these roads are planned to have a three-lane cross section, with bicycle lanes, sidewalks, and landscape strips. Both roads currently have a two-lane cross section with no paved shoulder or other facilities.

The Tualatin TSP classifies Highway 99W as an *arterial*.

Traffic Operations Standards

The City, County, and ODOT have each developed traffic operations standards for intersections under their jurisdiction.

ODOT. The 1999 Oregon Highway Plan (as amended by the Oregon Transportation Commission [OTC] on December 13, 2000) identifies a maximum volume to capacity (v/c) ratio (the percentage of capacity being used) of 0.99 for Highway 99W in the site vicinity, as

a result of its Corridor designation in Metro's Regional 2040 Growth Concept. In the transportation analysis for the Concept Plan (see the attachment to this memorandum), this standard is applied to the Highway 99W/SW Cipole Road intersection.

Washington County. Washington County's Code Section 60.55.10 states that intersections must have an average peak hour control delay no greater than 65 seconds per vehicle, using a signal cycle length no greater than 120 seconds. In addition, the peak hour v/c ratio for each lane group should be no greater than 0.98.

City of Tualatin. The City's operations standards are level of service (LOS) D for signalized intersections (representing no more than 55 seconds of average control delay per vehicle) and LOS E for unsignalized intersections (representing no more than 50 seconds of average control delay per vehicle on the worst approach). In the transportation analysis for the Concept Plan (see the attachment to this memorandum), this standard is applied to the SW Cipole Road/SW Herman Road intersection.

Access Management Standards

ODOT. ODOT's access spacing rules are contained in OAR 734-051. The minimum access spacing for Highway 99W is 1,320 feet (0.25 mile). If the Concept Plan area were to fully redevelop, any direct access from the site to the highway would need to occur at the Kummrow Avenue/Pacific Drive intersection near the western end of the site. This access, if provided, would preferably be a public street connection rather than a private driveway. Such an access would meet ODOT's access spacing standards, but would still require ODOT approval. This approval is unlikely to be granted due to ODOT's concerns about accident rates along this section of the highway.

The three existing accesses to Highway 99W from properties in the Concept Plan area would not be allowed upon redevelopment of the properties, assuming that other access (e.g., via a new roadway to SW Cipole Road) was provided. ODOT purchased access control along this segment of Highway 99W in the 1950s. At that time, access "reservations" were put in place that allowed residential and agricultural use to continue from tax lots 1200, 1100, and 801. A condition of these access reservations is that they would no longer be allowed if the land use of the property changes. Thus, at a time when these properties are redeveloped, these accesses will no longer be permitted.

ODOT's desire, as expressed through the Oregon Highway Plan, would be to have no private access points onto Highway 99W between SW Cipole Road and the Kummrow Avenue/Pacific Drive intersection.

Metro. The RTP includes policy elements and guidance relevant to Highway 99W, which borders the Concept Plan area on the north. The primary relevance to the Concept Plan is to emphasize access control onto Highway 99W.

Washington County. Washington County's Community Development Code (501-8.5(3)) permits land uses with at least 150 feet of frontage to access a collector roadway, with a minimum access spacing of 100 feet.

City of Tualatin. The City's access management standards are contained in Chapter 75 of the Tualatin Development Code and generally apply only to arterial streets. Because Highway

99W is an arterial and the Concept Plan area abuts Highway 99W, the regulations in this chapter apply to the concept planning area. Section 75.070 indicates that new intersections shall be spaced 0.5 mile apart.

Planned Projects

ODOT. There are no known planned ODOT projects on Highway 99W in this area.

Metro. The RTP governs long-range transportation planning within the Portland region. Local TSPs must be consistent with the RTP, thus ensuring the consistent implementation of the regional transportation vision. The RTP serves both as a policy document and as a plan outlining the regional transportation projects that are (1) needed over the 20-year planning horizon, and (2) for which funding is expected to be available during that timeframe. Specific standards are set by other documents such as the Oregon Highway Plan or by the local TSPs.

The RTP includes policy elements and guidance relevant to Highway 99W, which borders the Concept Plan area on the north. The primary relevance to the Concept Plan is to emphasize access control onto Highway 99W.

The RTP must meet both federal and state requirements for content and time between updates; the portions used for federal funding decisions are updated every 3 years (most recently in summer 2004), while the portions used for Oregon land use planning are updated every 6 years, with the next major update scheduled for 2007. Because the RTP is between major updates, some projects shown in the 2004 federal version of the RTP are not included in the 2000 plan that must be used for land use decision making.

One regional transportation improvement project is identified in the RTP in the vicinity of the Concept Plan area: widening SW Herman Road to three lanes and constructing sidewalks on Herman Road between SW Tualatin Road and SW Cipole Road. This project was added to the financially constrained 2004 federal funding version of the RTP, but is not included in the 2000 RTP, which is the version used for land use planning.

Washington County. No relevant future transportation projects are identified in the Washington County TSP.

City of Tualatin. The Tualatin TSP identifies the following long-term project needs in the site vicinity:

- **Constructing Cummins Drive**. This project is included in the TSP's financially constrained plan, with funding from both the Leveton Tax Increment District and adjacent development.
- **Traffic signal at the future Cummins Drive/ SW Cipole Road intersection**. This project is included in the TSP's financially constrained plan, with funding from the development(s) that trigger the need for the signal.
- **Widening SW Herman Road**. This project is identified in the TSP. Portions of SW Herman Road have been widened as part of projects in the Leveton Tax Increment District.

- **Widening SW Cipole Road**. This project is an unfunded need in the TSP. Widening could occur incrementally over time as adjacent properties redevelop, or the City or County could employ a similar consent-to-future-local improvement district (LID) process as is proposed for SW Herman Road.
- **Signal at SW Herman Road and SW Cipole Road.** This project is an unfunded need in the TSP.

Water System

Tualatin Water Master Plan Update (August 2003)

Summary: This is the City of Tualatin's master plan for providing water infrastructure in the city. Most recently updated in 2003, it provides a forecast for future water supply needs under 2010 demand conditions.

Relevance to Concept Plan: The Concept Plan area is immediately adjacent to the western City limit but is outside the City. As a result, the Water Master Plan does not include the Concept Plan area itself.

Development Issues: An existing 12-inch water main is located in SW Cipole Road, adjacent to the Concept Plan area). Pressures in this system have been computed to range from 55 to 75 pounds per square inch (psi), based on the 2010 average daily demands. However, because the Concept Plan area is located at the western boundary of the existing water service area, some limitations on water demands and pressures will exist without improvements to the system. The Concept Plan area must be in the City of Tualatin prior to receiving water service. The water system master plan is illustrated in the Figures section of this report.

Sewer System

Tualatin Sanitary Sewer System Master Plan (December 2002)

Summary: This is the City of Tualatin's master plan for providing sewer infrastructure in the City. Most recently updated in 2002, it provides a forecast for future sewer system needs under 2005 and 2010 demand conditions.

Relevance to Concept Plan: The Concept Plan area is immediately adjacent to the western City limit but is outside the City. As a result, the Sewer Master Plan does not include the Concept Plan area itself.

Development Issues: The nearest sanitary sewer connection for this site is at the Cipole pump station, located approximately 700 feet south of the site's southeast property corner, on the east side of SW Cipole Road. The Cipole pump station discharge flows into one of the City's main sanitary sewer trunk lines that border the western portion of the City. The segment of this system between SW Herman Road and SW Boones Ferry Road was recommended for improvement (up-sizing) in the 2002 Tualatin Sewer Master Plan to handle future flows. Also, the segment between SW 118th Avenue and SW Herman Road was recently cleaned and slip-lined to extend its service life and improve its hydraulic performance. The Concept Plan area must be in the City of Tualatin prior to receiving sewer service. The sewer system master plan is illustrated in the Figures section of this report.

Storm Drainage

Clean Water Services (CWS) (Design and Construction Standards for Sanitary Sewer and Surface Water Management, March 2004)

Summary: This document provides standards for sewer and surface water management relevant to the design and construction of sites and facilities within the CWS service area in metropolitan Portland.

Relevance to Concept Plan: The Concept Plan area is outside the CWS current service area. However, if the study area were within the CWS service district, it could contain CWS jurisdictional water quality Sensitive Areas and Vegetated Corridors. It is assumed that the study area would be within CWS jurisdictional area prior to development of the site.

Development Issues: Clean Water Services staff performed a prescreening determination for the study area on August 27, 2004, at the request of City of Tualatin staff. The prescreening determination suggested that CWS-designated water quality Sensitive Areas exist in the Concept Plan area, based on review of maps. On October 28, 2004, two CWS staff met with City of Tualatin staff on the site and concluded there did not appear to be any stream channels or water quality Sensitive Areas on the site. The field review did identify a small potential wetland on the south part of the site.

Prior to redevelopment, CWS requires the preparation of a natural resources assessment. The agency usually defers to federal and state wetland removal/fill permitting agencies if redevelopment will affect Sensitive Areas, unless CWS has sole jurisdiction. Based in part on the results of the natural resources assessment and possible alternatives analysis, the Design and Construction Standards establish allowable uses and procedures for development. If impacts to CWS jurisdictional areas are unavoidable, the rules direct appropriate mitigation of impacts.

Prior to obtaining a building permit or site redevelopment, CWS reviews the site plan to ensure the plan meets the District's requirements for water quality protection and issues a Service Provider Letter followed by a Stormwater Connection Permit Authorization.

Natural and Cultural Resources

The review of relevant natural and cultural resource documents that follows is divided into the following sub-sections:

- Statewide Planning Goal 5 Resources (wildlife and riparian resources, threatened and endangered species, cultural resources)
- Floodplains
- Stormwater
- Tualatin River National Wildlife Refuge

Figures are included at the end of this memorandum to identify these resource areas.

Statewide Planning Goal 5 Resources

Wildlife and Riparian Resources

Summary: Goal 5 resources are generally natural resources identified by jurisdictions in compliance with Statewide Planning Goal 5 (Open Spaces, Scenic and Historic Areas, Riparian Corridors, Wildlife Habitat, and Natural Resources). The following documents were reviewed for this section: Tualatin Development Code, Washington County Rural/ Natural Resource Plan, Metro Inventory of Regionally Significant Habitat, and Tualatin Basin Partners for Natural Places materials.

Relevance to Concept Plan: There are some identified Goal 5 resources in the Concept Plan area that could present constraints to development. These generally relate to the floodplain.

Development Issues: Map 72-1 (Natural Resource Protection Overlay and Greenway Locations) of the Tualatin Development Code excludes the Northwest Tualatin Concept Plan study area from consideration of Goal 5 resources because the site is outside the Planning Area Boundary.

Washington County's Rural/Natural Resource Plan indicates that portions of all tax lots in the study area contain a county-designated significant natural resource—"Water Areas and Wetlands." The designation appears related to "100-year floodplain, drainage hazard areas and ponds, except those already developed." The location of this resource as mapped by the County, is approximate and shall be field-verified prior to development. Procedures for delineating the protected resource are presented in Washington County's Community Development Code Section 421.

Metro's Inventory of Regionally Significant Habitat identifies two habitat areas in the study area that are regionally significant based on their value to fish and wildlife (www.metro-region.org; September 13, 2004). Figures illustrating the habitat areas are included in the Figures section of this report. One area (the southern quarter of tax lots 801, 900, and 1100) is identified as a "class 2 riparian, medium-value habitat." A second area (southeastern corner of tax lot 1200) is identified as a "class 3 riparian, lower-value habitat." Both appear to be ecologically associated with the floodplain and stream functions of Cummins Creek. In addition, a perimeter buffer around the northern edge of the class 3 riparian habitat is identified as an "impact area, land next to regionally significant habitat that may have a significant affect on the condition of the habitat."

The Tualatin Basin Partners for Natural Places has adopted Metro's Inventory of Regionally Significant Habitat for the Tualatin basin and proposed Goal 5 program. In the Northwest Tualatin Concept Plan study area, the relative levels of protection—the Allow-Limit-Prohibit program recommendations—apply to the Metro-inventoried significant natural resources as follows: the class 2 riparian habitat has a "strictly limit" designation, the class 3 riparian habitat has a "moderately limit" designation, and the "impact area" has a "lightly limit" designation. The Tualatin Basin Partners for Natural Places are in the process of defining the relative levels of protection at this time.

Threatened and Endangered Species Database

Summary: The Oregon Natural Heritage Information Center maintains a database of known occurrences of threatened and endangered species. A database search was requested for the Concept Plan area.

Relevance to Concept Plan: The presence of threatened and endangered species on the Concept Plan area or vicinity could present constraints to future development.

Development Issues: The database search, which was conducted for a 2-mile radius around the Concept Plan area, noted three records of threatened or endangered species. Two of the records were for fish. Because there is no fish habitat onsite, these records are not relevant. The third record was for a bald eagle nest about 1.5 miles southwest of the site, a distance that should not present a constraint to development on the site. Because a lack of a record in the database does not mean that there are no such species present on the site, a field survey should be conducted prior to site development.

Cultural Resources

Summary: This section summarizes known information on cultural resources as relevant to future development of the Concept Plan area.

Relevance to Concept Plan: Presence of cultural resources could be a constraint to development of the Concept Plan area. The project area is occupied by a few residential structures, agricultural fields, and woodlands. Highway construction, gravel access roads, and graded fields are the major disturbances in the study area.

Development Issues: According to the Washington County's SurveyNet, the properties in the study area were originally surveyed and recorded on June 9, 1886, as land survey #844. A review of property tax records indicates that tax lot 1200 has four structures built in 1940 (out buildings including two loft barns), four structures built in 1950, and one structure built in 1975. No structures on the other tax lots are older than 50 years.

The homes and structures older than 50 years would meet the minimum age criteria for potential eligibility for listing on the National Register of Historic Places. A review of photographs of the structures older than 50 years did not suggest that any of the structures would meet any of the four National Historic Preservation Act eligibility criteria for an historic property:

A. Property is associated with events that have made a significant contribution to the broad patterns of our history.

B. Property is associated with the lives of persons significant in our past.

C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

D. Property has yielded, or is likely to yield, information important in prehistory or history.

If any of the properties are eligible and are impacted (directly or indirectly), the project's impacts on these resources would be determined according to the guidance established in Section 106 of the National Historic Preservation Act. If the home or property were eligible, mitigation would be required if the home were to be removed or otherwise impacted.

Contact with the State Historic Preservation Office (SHPO) indicated that the statewide geographic information system (GIS) database contains no information on any known cultural resource sites or archaeological sites located within the Concept Plan area. No previous cultural resource surveys have been conducted in the general area, according to the SHPO. The SHPO guidance and state law provide that if any cultural material is

encountered during project development, all work should cease immediately and an archaeologist should be contacted to assess the discovery. Because of poor ground visibility on the site, exploratory subsurface probing is advised prior to redevelopment to ensure that these activities do not impact potential buried cultural resources.

Floodplains

FEMA Flood Insurance Rate Maps

Summary: The Federal Emergency Management Agency publishes maps of floodplains. The Tualatin Development Code is based on the 1987 Flood Insurance Rate Maps (FIRM).

Relevance to Concept Plan: FEMA maps show floodplains present in the Concept Plan area. Map community-panel number 410238 0514 B covers the Concept Plan area. It shows a Zone A 100-year floodplain at the south-central part of the study area (tax lots 801, 900, and 1100), and a Zone B 500-year floodplain bordering the 100-year floodplain and running generally along the southern boundary of the study area. The Metro Inventory of Regionally Significant Habitat generally corresponds to the floodplains on the FIRM map. The City of Tualatin will utilize updated floodplain maps when FEMA approves them.

Development Issues: The floodplains in the Concept Plan area are assumed to be a constraint to future development.

Tualatin River National Wildlife Refuge (TRNWR)

Final Environmental Assessment, TRNWR (1992) and Land Acquisition Status Map (2003)

Summary: The Environmental Assessment describes the potential environmental consequences of establishing the U.S. Fish and Wildlife Service's (USFWS) TRNWR. Congress authorized acquisition of up to 3,058 acres of spatially designated land. The land acquisition map shows those lands acquired by the TRNWR and those proposed to be acquired. As per clarification from USFWS staff, the map incorrectly illustrates that the Concept Plan area has been proposed for future acquisition by the TRNWR.

Relevance to Concept Plan: The Concept Plan area is located at the northeast corner of one of the land areas identified for future acquisition but is excluded from the potential acquisition lands (per clarification from USFWS staff). However, lands designated for acquisition lie south, west, and north of the study area. These designations are shown in the Existing Conditions figure at the end of this report. The general refuge boundaries are shown in a separate figure in that section of the report.

Development Issues: The refuge responds to the need to protect and enhance floodplains, wetlands, riparian habitats, and upland buffers for a variety of wildlife and for the enjoyment of people. The refuge was established with the knowledge that urban land uses and transportation networks would surround and bisect it. The environmental assessment concluded that the refuge would not have significant environmental impacts on adjacent land uses. Future land uses in the Concept Plan area are not expected to be constrained by the TRNWR unless redevelopment causes adverse and unpermitted impacts on lands associated with the refuge. However, the proximity of the study area to existing and future TRNWR lands suggests the need for careful management of redevelopment (e.g., storm-water runoff, noise, lighting) to ensure consistency with designated land uses of the refuge.

Existing Conditions and Infrastructure Needs

This section of the memorandum describes existing conditions of the Concept Plan area and discusses potential constraints and opportunities to future development and infrastructure needs. This section is summarized in Table 2-1 (located at the end of text).

The infrastructure analysis is based on the assumptions and planning horizons in the City of Tualatin's existing adopted infrastructure plans (Waster System Master Plan, Sanitary Sewer Master Plan, and Transportation System Plan) and on the assumption that the site will be zoned for industrial use. This memorandum identifies general infrastructure needs; more specific needs (for example, pipe sizes, cost estimates) will be developed as part of the Draft Concept Plan.

Land Use and Development

Existing Conditions: The site consists of four parcels all in separate ownership. From west to east, uses are (1) residence/farm (tax lot 1200), (2) residence/dog kennel (tax lot 1100), (3) BPA right-of-way (tax lot 900), and (4) undeveloped (tax lot 801). The adjacent land uses are as follows: north and west = state highway; east = industrial (yard waste facility); south = nursery. The BPA property is 100 feet wide.

Discussions with property owners and a review of assessor's maps and survey records indicate several access easements in the Concept Plan area, as follows:

- Tax lots 1200, 1100, 900, 801 (the entire Concept Plan area): 16.5-foot east-west easement at the south end of the properties to provide road access between the parcels and SW Cipole Road. This road is an unimproved road used as a secondary access. TRNWR is also a party to this easement for access to some of its holdings south of the Concept Plan area.
- Tax lot 1200: 16.5-foot north-south easement to provide highway access to agricultural parcel or parcels to the south.
- Tax lot 801: 10-foot pipeline easement at western border of property. 112.5-foot easement for PGE, presumably to provide access for repair, etc. of the underground pipeline.
- The TRNWR has an easement along the existing access road at the south of the Concept Plan area that allows access to a parcel to the south. TRNWR staff have indicated they do not currently use this easement but anticipate using it in the future as part of restoration activities.

Copies of tax assessment and survey maps are provided in the Figures section of this report.

Development Issues: The site includes approximately 15 acres of land anticipated to be zoned and developed for industrial use. The site is adjacent to Highway 99W, which connects to I-5 approximately 5 miles away, resulting in relatively good highway access. The site is located at the western edge of the Portland Metropolitan UGB and is anticipated to be incorporated into the City of Tualatin in the future. The four parcels are relatively small and some are oddly shaped.

Lands to the north, west, and south are desired for acquisition by the TRNWR. The Bonneville Power Administration (BPA) site is not developable as it is a transmission line right-of-way. BPA rules limit the proximity of buildings to transmission towers to no less than 25 feet. Further, the Bonneville Power Administration (BPA) site has overhead lines for Portland General Electric (PGE) and an underground petroleum line for Northwest Natural. The potential presence of hazardous materials on the Concept Plan area is unknown.

Future development would need to accommodate the functions of the existing easements, e.g., so that roadway access would still be provided to the affected parcels.

Infrastructure Needs: See transportation, water, sewer, etc., below.

Transportation

Existing Conditions: There are no existing paved roads or public streets on the Concept Plan area. An unpaved road that runs east-west at the southern property line provides secondary access to the four existing properties (see also discussion of access easements above). The closest bus stop (TriMet) is at the Highway 99W/SW Cipole Road intersection. Service is provided via Line 12 (Barbur Boulevard) at 30-minute headways. Peak-hour peak-direction service to/from Tigard and Portland is provided via Line 95 (Tigard/I-5 Express). The only bicycle facilities are shoulder bike lanes on Highway 99W. SW Cipole Road does not have bicycle facilities. No pedestrian facilities are provided on Highway 99W or SW Cipole Road, other than pedestrian signals at the SW Cipole Road/Highway 99W traffic signal.

Development Issues: The site access road would need to avoid the utility poles for the BPA transmission lines and minimize impacts to the underground gas line in BPA right-of-way. The access road would need to work around wetlands, floodplains, and other natural resources. The existing unpaved access road provides a potential location for the future paved road (see also discussion of access easements, above). A future public street connection is planned from the east at SW Cipole Road to the southeast corner of the Concept Plan area; this intersection will be signalized in the future. ODOT's desire, as expressed through the Oregon Highway Plan, would be for existing private driveways onto Highway 99W between SW Cipole Road and the Kummrow Avenue/Pacific Drive intersection to be closed at the time of redevelopment.

Infrastructure Needs: Onsite, a road or roads, with sidewalks, accessing each of the four properties would be required. The design of the road(s) would need to follow the City of Tualatin commercial/industrial street design standard (Street Standard B-C1). Among other things, this would allow the road to accommodate interstate-sized trucks. The City of Tualatin has a maximum length for a dead-end road (cul-de-sac) of 600 feet as per TDC 74.460. Local emergency response officials might have a maximum cul-de-sac length as well, depending on how the site is developed. Offsite, improvements to SW Cipole Road would be triggered by the redevelopment of the easternmost property in the Concept Plan area, which fronts SW Cipole Road, or by the development of other properties in the vicinity.

The Concept Plan area fronts SW Cipole Road and Highway 99W. The future Cummins Drive/SW Cipole Road traffic signal called for in the Tualatin TSP will be located approximately 600 feet south of the Highway 99W/SW Cipole Road intersection. Although City and County access management policies would, in principle, permit a full site access

onto SW Cipole Road between the two intersections, the transportation analysis (see the attachment to this memorandum) suggests that 375 feet of queue storage will be needed in the year 2020 to serve northbound traffic at the Highway 99W intersection. Given the need also to provide a left-turn lane for southbound traffic at Cummins Drive, there would be no room to provide a center two-way left-turn lane between the two intersections and, therefore, a full access midblock is not recommended. Given also that the Concept Plan area is anticipated to develop as industrial land, a second right-in, right-out access would not be needed to serve the site. Consequently, it is recommended that the site take its primary access from an extension of Cummins Drive that would run along the southern side of the site (the exact location is subject to wetlands and other site issues).

The SW Cipole Road/Cummins Drive intersection is anticipated to be constructed as a signalized intersection with protected phasing and left-turn lanes provided on all approaches. Given that both roadways are planned to have three-lane cross sections, no additional right-of-way would be needed for the turn lanes. However, the right-of-way currently reserved for Cummins Drive intersects SW Cipole Road just south of the Concept Plan area and an extension of the road west to serve the Concept Plan area would, therefore, be located outside the UGB.

The Concept Plan area access road and Cummins Drive should intersect SW Cipole Road at the same location. There are two ways to accomplish this. First, Cummins Drive could intersect SW Cipole Road approximately 60 feet north of the current right-of-way location. This alignment would require that right-of-way be purchased from the Grimm's Fuel site on the east side of SW Cipole Road, which would also require that the southernmost driveway to Grimm's Fuel be closed because of its proximity to the new intersection and that site's internal circulation changed. Second, the Concept Plan area access road could intersect SW Cipole Road at the location the Cummins Drive right-of-way currently intersects SW Cipole Road. This option would require a minor UGB expansion for the portion of the access road lying south of the Concept Plan area boundary, and would require that right-of-way be purchased from the nursery.

Water System

Existing Conditions: An existing 12-inch water main is located in SW Cipole Road, adjacent to the site. Pressures in this system have been computed to range from 55 to 75 psi, based on the anticipated 2010 average daily demands.

Development Issues: Because the site is located at the western boundary of the existing water service area, some limitations on water demands and pressures will exist without improvements to the system.

Infrastructure Needs: A looped water system should be installed on the Concept Plan area to provide the best water flow and pressure for future uses. Once development assumptions have been specified, more specific estimates of future infrastructure needs can be made.

Sewer System

Existing Conditions: No sanitary sewer service is currently provided to the site; existing development uses septic systems. The nearest sewer connection is at the Cipole pump station, located approximately 700 feet south of the Concept Plan's southeast property

corner, on the east side of SW Cipole Road. The Cipole pump station discharge flows into one of the City's main sanitary sewer trunk lines in the western portion of the City. The segment of this system between SW Herman Road and SW Boones Ferry Road was recommended for improvement (up-sizing) in the 2002 Tualatin Sewer Master Plan to handle future flows. The segment between SW 118th Avenue and SW Herman Road was recently cleaned and slip-lined to extend its service life and improve its hydraulic performance.

Development Issues: Sanitary flows from future developments will be limited by the capacity of the existing Cipole pump station (~1,100 gpm) and the 15-inch gravity section of the sanitary sewer trunk line.

Infrastructure Needs: A new gravity sanitary pipe will need to be installed throughout the site to collect the wastewater flows from the properties on the site. A 700-foot-long gravity pipe system also will need to be installed along SW Cipole Road, connecting the site and the Cipole pump station. Depending on the intensity of development at the site, upgrades to the pump station and trunk line may be needed. This will be determined as part of the Concept Plan development.

Storm Drainage

Existing Conditions: No stormwater system exists on the site. Runoff from the center and easterly portions of the site flows in a southerly direction and collects in a closed depression located on the southern property line. Previously placed fill material by the development to the south has cut off the natural drainage route from this site to Onion Flats and Rock Creek. Runoff from the western portion of the site still flows in a southerly direction from the site to Onion Flats and Rock Creek. Cross culverts below Highway 99W are reported to flow in a southerly direction onto the site.

Development Issues: Because the south-central portion of the site is the lowest in elevation, installation of a piped storm system will be deep as it extends westerly toward its eventual discharge to the Onion Flats area. A stormwater easement would be required from the properties south of the west end of the site in order to discharge to Onion Flats.

Infrastructure Needs: Runoff from future streets or access roads and development will need to meet CWS design criteria for stormwater quality and quantity control. A new conveyance system will need to be installed along the southern property line that extends from the center of the site to the west end. Collected runoff will be treated and detained, if necessary, before being discharged to Onion Flats. Easements will be needed to discharge across properties.

Other Utilities

The sections below describe the other existing utilities and any known development issues or infrastructure needs related to them.

Telephone: Verizon was contacted via telephone regarding communication facilities in the Concept Plan area and has not responded. A follow-up letter was sent on November 19, 2004. The project team is assuming that no response to the letter means that there is no issue with the future urbanization of the area from Verizon's perspective.

Natural Gas: Northwest Natural was contacted regarding natural gas facilities in the Concept Plan area and has responded that they are confident that they could serve this area.

Cable: Comcast was contacted via telephone regarding natural gas facilities in the Concept Plan area and has not responded. A follow-up letter was sent on November 19, 2004. The project team is assuming that no response to the letter means that there is no issue with the future urbanization of the area from Comcast's perspective.

Electrical: PGE provides electrical service in the Concept Plan area. A 115-KV electrical service line runs along Highway 99W and serves the current development on the Concept Plan site. This existing infrastructure would be used to provide electrical service for future development. A representative from PGE is memver of the Technical Advisory Committee for this project.

BPA can accomate urbanization of this area. A 115-KV electrical transmission line (referred to as the Keeler Oregon City #2, Oregon City Stub) crosses the Concept Plan area on the BPA property. This is a regional distribution line that is not used to provide electrical service to the site. Conversations with BPA staff have indicated that in the future the site could be used for open space or perhaps a trail but is off limits for development or use as a water quality facility. BPA is willing to work with property owners or the City to provide road access to the other sites. No construction could occur within 25 feet of the transmission line poles. Also, no parking, refueling, or storage of flammable materials may occur on the BPA property.

Liquid Petroleum Pipeline: An underground gas pipeline (estimated 16-inch-diameter) owned and operated by Northwest Natural runs north-south about 4 feet below ground on the parcel owned by BPA. The relatively shallow depth of the pipeline could be a constraint to the location of other underground utilities or construction activities.

Natural and Cultural Resources

Existing Conditions: Natural resources in the Concept Plan area have been highly modified by historical and current land uses. The primary land cover is non-native grassland associated with rural residential and commercial uses. Trees and shrubs generally are restricted to hedgerows and embankment slopes. Grading and earthwork within properties and for construction of adjacent roads has altered historical drainage patterns. Surrounding commercial land uses and roads limit habitat perviousness and connections to regionally significant natural resources. The proposed TRNWR land acquisition area excludes the Concept Plan area but is adjacent to it.

Development Issues: The proximity of the Concept Plan area to significant natural resources—TRNWR and Onion Flats—could be seen as an amenity. Future development has the opportunity to incorporate stormwater management facilities and approaches that maximize interception and evapotranspiration by vegetation, soil infiltration, onsite detention though bioswales, ecoroofs, pervious paving, and other factors. Providing natural landscaping would be consistent with habitat objectives for the TRNWR.

A number of potential natural resource issues are relevant, including wetlands associated with the nursery irrigation to the south and potential federal and state jurisdictional water issues associated with ditched or culverted drainages floodplains, CWS water quality

sensitive areas and vegetated corridors, potential federal Endangered Species Act listed species, and potential weed management issues from BPA right-of-way. Proposed Statewide Planning Goal 5 significant natural resources, with proposed development restrictions—"lightly limit," "moderately limit," and "strictly limit." Also, the general site characteristics and lack of previous surveys suggest the potential for cultural resource issues.

Infrastructure Needs: Stormwater system (see discussion above).

ATTACHMENT

Northwest Tualatin Concept Plan Zone Change Transportation Analysis (Kittelson & Associates)

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING
610 SW ALDER, SUITE 700 • PORTLAND, OR 97205 • (503) 228-5230 • FAX (503) 273-8169

TECHNICAL MEMORANDUM

Northwest Tualatin Concept Plan
Zone Change Transportation Analysis

Date: Revised: November 8, 2004 **Project #:** 6518

To: Tim Burkhardt, AICP, CH2M HILL
From: Paul Ryus, P.E. and Selman Altun

cc: Stacy Hopkins, City of Tualatin

Introduction

Metro added a 15-acre area south of Highway 99W and west of Cipole Road to the Portland UGB in December 2002. This area is now within the Urban Growth Boundary and shall be within Tualatin's Planning Area boundary in the future. Through the Northwest Tualatin Concept Plan, the City of Tualatin is identifying land use, transportation, and urban services needs for this area. This memorandum addresses Oregon Transportation Planning Rule (TPR) requirements for the area, evaluating the transportation impacts of rezoning the site to allow the levels of urban development one would normally find within the UGB.

Transportation Planning Rule Requirements

Oregon's Transportation Planning Rule (OAR 660-012) sets out the process that local governments must follow when rezoning land. Generally, an analysis must demonstrate that either the planned roadway system can accommodate any additional traffic resulting from the zone change (by comparing traffic operations to the applicable local standards), or that the traffic impacts of the zone change can be mitigated in some way, for example, through a new roadway improvement project added to the local TSP.

The specific test for determining whether a zone change (or other land use regulation amendment) has a "significant affect" is as follows (OAR 660-012-0060 (2)):

a. The functional classification of an existing or planned transportation facility is changed;

b. Changed standards implementing a functional classification system;

c. Allows types or levels of land uses which would result in levels of travel or access which are inconsistent with the functional classification of a transportation facility; or

d. Would reduce the performance standards of the facility below the minimum acceptable level identified in the TSP.

For the purposes of this zone change, tests (a) and (b) are not relevant, as no changes to the functional classification of existing or planned roadways are proposed, and no changes to the City's functional classification standards are proposed.

If a "significant affect" is found, the following are allowed remedies (OAR 660-012-0060 (1)):

a. Limiting allowed land uses to be consistent with the planned function, capacity, and performance standards of the transportation facility;

b. Amending the TSP to provide transportation facilities adequate to support the proposed land uses consistent with the requirements of [the TPR];

c. Altering land use designations, densities, or design requirements to reduce demand for automobile travel and meet travel needs through other modes; or

d. Amending the TSP to modify the planned function, capacity, and performance standards, as needed, to accept greater motor vehicle congestion to promote mixed use, pedestrian friendly development where multimodal travel choices are provided.

Existing Conditions

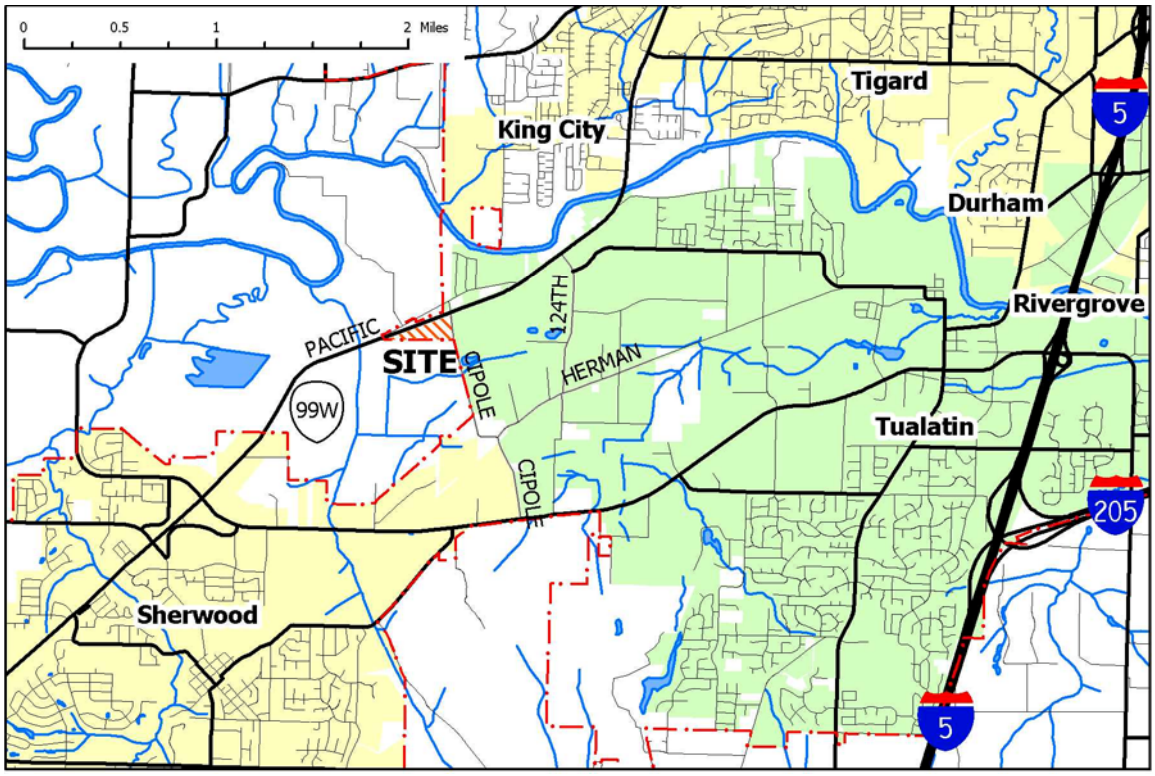
Highway 99W is owned by the Oregon Department of Transportation (ODOT) and is designated as a *statewide highway* and a *freight route.* It is a four-lane divided highway in the site vicinity and is planned to remain so through at least 2020, in part because both the RTP and the City of Tigard's TSP call for keeping the portion of Highway 99W in Tigard southwest of Greenburg Road at five lanes. If the Tigard portion of Highway 99W will not be widened, there is no point in widening the Tualatin portion of the highway.

SW Cipole Road is maintained by Washington County and is classified as a *collector* by the County, with a future two-to-three lane cross section. The Tualatin TSP classifies SW Cipole Road as a *major collector* and a *truck route,* with a future three-lane cross section, bicycle lanes, sidewalks, and landscape strips. The City plans to signalize the SW Cipole Road/SW Herman Road intersection in the future as part of a broader project to complete the widening of SW Herman Road to three lanes. These projects are identified in the City's TSP but have no identified funding source.

The Tualatin TSP identifies a future *local commercial-industrial street,* Cummins Drive, coming from the west and intersecting with SW Cipole Road at the southeast corner of the Concept Plan area. It would have a three-lane cross section, sidewalks, and landscape strips within a 60-foot right-of-way. The Tualatin TSP identifies a need for a traffic signal at the Cummins Drive/SW Cipole Road intersection.

The 15-acre site is located south of Highway 99W and west of SW Cipole Road, as illustrated in Figure 1.

Figure 1
Site Vicinity



Traffic counts were taken on September 14, 2004 during the weekday a.m. (7:00 to 9:00 a.m.) and p.m. (4:00 to 6:00 p.m.) peak hours at the intersections of SW Cipole Road with Highway 99W and SW Herman Road. The count sheets are available from the City of Tualatin. The traffic counts were used to help develop future turning movement volumes at these intersections, as described in the next section.

Year 2020 Traffic Volume Forecasts

The year 2020 was selected as the horizon year for this analysis, as it corresponds to the horizon year of the Tualatin TSP. Traffic volume forecasts were taken from the modeling work done for the TSP's "New Scenario #1" (Appendix G of the TSP), which most closely corresponds to the projects included in the final adopted TSP. In particular, this scenario includes a northern expressway alignment for the I-5/Highway 99W Connector running between I-5 and Tualatin-Sherwood Road, and an extension of Hall Boulevard over the Tualatin River.

The RTP anticipates that the future I-5/Highway 99W connector will help relieve the section of Highway 99W adjacent to the Concept Plan area by removing through traffic from the highway. However, the alignment of the connector has not yet been finalized. Modeling work done for the Tualatin TSP found that a limited-access alignment (with only one or two interchanges

between I-5 and Highway 99W) that joined Highway 99W south of Sherwood would result in under-capacity operations on the portion of Highway 99W adjacent to the Concept Plan area in the year 2020. However, because a statewide planning goal exception would be needed for the southern alignment, this memorandum assumes the northern alignment currently shown in the Tualatin TSP, which follows the UGB between I-5 and Tualatin-Sherwood Road. This alignment does much less to relieve Highway 99W adjacent to the Concept Plan area, and over-capacity conditions result on the 99W highway segment adjacent to the site by the year 2020.

Metro's model estimates travel times along road segments according to a formula that derives travel speeds from each segment's demand volumes and capacities. Like most models, intersection operations (and delays) are not modeled. As a result, the model's turning movements generally should not be relied upon by themselves. In addition, although the model is calibrated on a regional level, the model's estimates of base-year traffic volumes on specific roadway segments may be higher or lower than the actual observed volumes.

To compensate for these issues (inherent with any model), future weekday p.m. peak hour volumes were estimated using the process described in *NCHRP Report 255,*[1] which is the method recommended by ODOT. The NCHRP 255 method evaluates the absolute increase in traffic volumes and the percentage increase in traffic volumes on a given street segment between the model's base year and the model's horizon year. The average increase in traffic volumes from the two calculations is then added to the existing traffic volumes on a given street segment (known from the traffic counts that were performed), to develop the initial future year volume forecast used in the traffic operations analysis. Finally, the volumes were reduced to reflect 16 years of growth (from 2004 to 2020), rather than the 20 years of growth assumed in the model.

At intersections, weekday p.m. peak hour turning movement volumes were estimated based on (1) the year 2020 traffic volumes forecast to enter and exit the intersection, and (2) the existing turning movement patterns. An iterative process was used to balance the volumes entering and exiting the intersection. The future-year background turning movement volumes (not including the additional traffic generated by the anticipated zone change) developed through this process are available upon request.

Because the Metro model does not forecast weekday a.m. peak hour volumes, a different methodology was used to estimate these volumes for the year 2020. An average annual growth rate was determined based on the growth forecast from the weekday p.m. peak hour analysis. Sixteen years of this growth was then added onto the existing weekday a.m. peak hour traffic volumes to arrive at the 2020 forecasted volumes.

Existing and Proposed Zoning

Prior to its addition to the Urban Growth Boundary, the Concept Plan area was zoned RR5 (Rural Residential—5 Acre Minimum Lots). Uses permitted outright in the RR5 zone include one single-family home per lot, home occupations, parks, and boarding or training horses for profit. Current development consists of homes, various accessory structures, a dog kennel (allowed as a conditional use), and the overhead and underground utilities present in the BPA

---

[1] JHK & Associates, "Highway Traffic Data for Urbanized Area Project Planning and Design," *NCHRP Report 255*, Transportation Research Board, National Research Council, Washington, DC (1982).

corridor that runs north-south through the site. When the area was brought into the UGB, the zoning was changed to Future Development 20 Acre District (FD-20), an interim zoning until such a time as the site is redeveloped and annexed to the City of Tualatin. For the purposes of this analysis, the "existing" zoning is assumed to be the former RR5 zoning that under which the existing land uses were allowed.

The conditions attached to the ordinance that brought the Concept Plan area into the UGB state that the area will be industrial. For the purposes of this traffic analysis, the City of Tualatin's MG (General Manufacturing) planning district is assumed for the site. Uses permitted outright in the MG zone include all uses permitted in the Light Manufacturing (ML) planning district: beverage packaging and processing, electrical appliance assembly, auto body and paint shops, chemical warehousing and distribution, cold storage, concrete batch plants, manufacturing, metal casting and fabrication, petroleum product distribution and storage, planing mills, farming, sale or rental of industrial machinery, sandblasting, storage and sale of rock and barkdust, testing laboratories, welding shops, wireless communication facilities, electroplating, laundry and dry cleaning, machine shops, vehicle and boat storage, offices related to the sale and service of industrial products, processing and assembly of various goods and equipment, molding of small products from plastic, industrial tool and supply sales, warehousing, and publishing and printing. Additional uses are allowed in the MG planning district. Onsite retail sale of products manufactured onsite is allowed in both the MG and ML districts, provided that the retail sale area does not exceed 5% of the building's gross floor area, or 1,500 square feet.

Trip Generation

A reasonable worst-case trip generation scenario was developed for both the existing zoning and the proposed zoning, based on the highest trip-generation uses permitted outright under each planning district. It should be noted that both districts allow conditional uses which generate more trips than the uses permitted outright; however, this analysis focuses only on those uses which can be built without additional levels of government review and approval.

For the RR5 zone, the reasonable worst-case use permitted outright is a single-family residence.[2] The site contains four lots, one of which is the BPA utility corridor, which is assumed to remain that way. Therefore, three single-family homes are the worst-case use permitted outright under the existing zoning. Three homes would generate fewer than five trips during both the weekday a.m. and p.m. peak hours.

For the MG zone, several possibilities were investigated as potential reasonable worst-case uses. The Institute of Transportation Engineers (ITE) standard reference *Trip Generation,* 7th Edition was used to identify appropriate land-use categories and their corresponding trip generation rates. General light industrial, manufacturing, industrial park, and warehousing were all evaluated, with warehousing turning out to be the highest trip generator. As warehousing is also a permitted use in the ML zone as well as the MG zone, the results of this analysis would remain applicable if the site were to be zoned ML instead of MG.

Trip generation for the industrial uses was based on the ITE rates per acre. The Concept Plan area's acreage was based on the size of the three non-BPA lots (determined using GIS software),

[2] The dog kennel existing on one of the lots is allowed as a conditional use. ITE does not provide trip generation data for kennels, but we believe its peak hour trip generation would be minimal.

with a deduction for the future right-of-way assumed to be required for a public street running along the south side of the side. This right-of-way was assumed to be 60 feet wide, running west from SW Cipole Road to a point 60 feet into the westernmost lot. The total acreage remaining for development was 11.89 acres. Warehousing development on the entire developable portion of the site would generate 105 weekday p.m. peak hour trips.

Because the trip generation associated with the existing zoning is minimal, it was assumed for this analysis that the zone change would result in up to 120 additional weekday a.m. peak hour trips and 105 additional weekday p.m. peak hour trips on the adjacent street system.

Trip Distribution

The trips associated with the proposed zoning were distributed onto the roadway network in proportion to the future traffic volumes forecast on SW Cipole Road and Highway 99W. During the weekday p.m. peak hour, 3% of trips were assigned to and from SW Herman Road, 5% to and from SW Cipole Road south, 45% to and from Highway 99W northeast, and 47% to and from Highway 99W southwest. The percentages used for the weekday a.m. peak hour were similar. The only access point to the Concept Plan area was assumed to be located at the intersection of SW Cipole Road with the future Cummins Drive.

Traffic Operations Analysis

Highway 99W/Cipole Road

ODOT's operations standard for this signalized intersection is a volume-to-capacity (v/c) ratio (the percentage of capacity being used) of 0.99. If this ratio would be exceeded under background traffic conditions (i.e., without the zone change), then the standard is to not make operations worse.

As shown in Table 1, traffic demand will exceed the intersection's capacity in the year 2020 under background conditions during both the weekday a.m. and p.m. peak hours. Therefore, the applicable standard is to not make operations worse. The additional traffic resulting from the zone change will worsen the intersection's operations and ODOT's standard would not be met. Consequently, the zone change would have a "significant affect" on the Highway 99W/SW Cipole Road intersection.

If the Highway 99W/SW Cipole Road intersection were to be improved by providing separate left-turn and through-right lanes on SW Cipole Road, along with protected (i.e., left-turn arrow) signal phasing for SW Cipole Road, the impact of the additional traffic would be more than offset, as shown in Table 1. This level of improvement would meet TPR requirements for the zone change; however, the intersection would continue to operate over capacity in 2020.

Development of the Concept Plan area, as well as other industrial land in the area, would be facilitated if the intersection operated at or below capacity in the long term. If the northbound SW Cipole Road approach were to be widened to three lanes (left, left-through, and right) and split phasing provided for the SW Cipole Road approaches (i.e., the two directions receive separate green indications), the intersection would operate at a v/c ratio of 0.82 in the year 2020 during the weekday p.m. peak hour and 1.02 during the weekday a.m. peak hour. It is

recommended that the Tualatin TSP be amended to incorporate this more substantial improvement. The improvement could be funded through proportional contributions from those who end up redeveloping the site, or it could be wrapped into a larger Local Improvement District for Cipole Road.

TABLE 1
Highway 99W/SW Cipole Road Year 2020 Traffic Operations (v/c ratio)

Scenario	Weekday AM Peak Hour	Weekday PM Peak Hour
Background	1.27	1.33
With zone change	1.33	1.37
Mitigated, with protected phasing & left-turn lanes	1.13	1.02
Mitigated, with split phasing & 3 northbound lanes	1.02	0.82

It should also be noted that although demand is forecasted to exceed capacity at this intersection in 2020, as a practical matter the volume would likely not materialize. The adjacent signalized intersections on Highway 99W—SW 124th Avenue and Tualatin-Sherwood Road—have higher side-street volumes than SW Cipole Road (i.e., shorter green times for Highway 99W) and would serve to meter the amount of traffic that could arrive at the SW Cipole Road intersection during peak hours. Therefore, actual 2020 intersection operations would be better than suggested by Table 1.

Herman Road/Cipole Road

The City of Tualatin's operations standard for this all-way-stop intersection south of the Concept Plan area is level of service (LOS) E, representing no more than 50 seconds of average control delay per vehicle. As shown in Table 2, the intersection will fail under background traffic conditions by the year 2020 and will continue to operate at LOS F following the zone change. As mentioned earlier, the City plans to signalize this intersection, although there is no identified funding source at this time. However, this project does not currently appear in the City's TSP. Because the project is not in the TSP and because the intersection would not meet the City's LOS E standard following the zone change, there is a "significant affect."

If the intersection were to be signalized, with two inbound lanes on each approach, the intersection would operate at LOS B. It is recommended that the traffic signal that the City is already planning to construct be added to the City's TSP.

TABLE 2
SW Herman Road/SW Cipole Road Year 2020 Traffic Operations (seconds of control delay)

Scenario	Weekday AM Peak Hour	Weekday PM Peak Hour
Background	>50 (LOS F)	>50 (LOS F)
With zone change	>50 (LOS F)	>50 (LOS F)
Mitigated, with signal and turn lanes	14 (LOS B)	19 (LOS B)

Conclusions

The proposed zone change will have a "significant effect" on the intersections of SW Cipole Road with Highway 99W and SW Herman Road. TPR requirements can be met by amending the Tualatin TSP to include the following projects:

- Adding left-turn lanes and protected signal phasing to the SW Cipole Road approaches to the Highway 99W intersection; and
- Signalizing the SW Herman Road/SW Cipole Road intersection, providing two inbound lanes on each intersection approach.

Although not required to comply with the TPR, it is recommended that Highway 99W/SW Cipole Road intersection be improved instead by providing three northbound lanes (left, left-through, and right) on SW Cipole Road and by providing split traffic signal phasing for the SW Cipole Road approaches. This intersection configuration provides operations below capacity during the weekday p.m. peak hour and operations just over capacity during the weekday a.m. peak hour. Because the year 2020 demand that is forecast for Highway 99W will be metered by other signalized intersections, the actual traffic volumes using the intersection will likely be lower than assumed in this analysis, resulting in somewhat better intersection operations.

The SW Cipole Road/Highway 99W improvement could be funded through a LID along SW Cipole Road or by proportional developer contributions as the Concept Plan area develops.

Tables

TABLE 1-1
Tualatin Development Code Summary (Relevant Chapters)

Chapter	Summary and Relevance to Concept Plan
	General
1	Section 1.030 discusses plan text and map amendment processes. This will be relevant at the end of the concept planning process.
4	Section 4.050 contains the following relevant General Growth Objectives: (4) Provide a plan that will create an environment for the orderly and efficient transition from rural to urban land uses. (8) Define the urban growth boundary. (11)…Cooperate with the USFWS to minimize adverse impacts to the TRNWR from development in adjacent areas of Tualatin.
9	Includes the Community Plan Map and Tualatin Design Type Boundary map which show that the lands to the east—within the City of Tualatin—are zoned MG (general manufacturing) and carry the industrial design type. The properties on the Concept Plan area that front Highway 99W also have a corridor overlay design type. The maps will need to be updated by the end of the Concept Plan process. Further, these maps are references for the creation of the Draft Concept Plan. The maps also identify surrounding land uses, which should be consulted to limit potential conflicts.
31	Provides definitions applicable to the TDC and outlines processes for application review and appeal, which will be important in incorporating the Concept Plan into the TDC. Part of this chapter describes the process to update the text and maps of the TDC.
	Industrial Planning Districts
7	Discusses the Manufacturing Planning Districts, including relevant objectives outlined in 7.020 and 7.040.
37	Discusses the development, review, and approval of industrial master plans. An industrial master plan is an option for development in the Manufacturing Park (MP) planning district. It allows greater flexibility and variety in development, enables a campus-like setting, and allows smaller parcels and some commercial uses. The Concept Plan area is currently conditioned to be zoned industrial. However, if it is determined that an industrial planning district is not appropriate for the Concept Plan area, the MP planning district should be examined.
60	Discusses the Light Manufacturing (ML) planning district, including allowed uses, conditional uses, and site characteristics for developments in this district. Generally, the ML planning district provides for industrial uses that are compatible with adjacent commercial and residential use. This planning district is one that is under consideration for the concept planning area.
61	Discusses the General Manufacturing (MG) planning district, including allowed uses, conditional uses, and site characteristics for developments in this district. The MG planning district provides for both light and heavy industrial uses. Typically, uses allowed in this district could be more unsightly and/or have greater potential for adverse environmental impacts than uses allowed in the ML planning district. This planning district is under consideration for the Concept Plan area. Lands in Tualatin adjacent to the Concept Plan area currently are zoned MG.
62, 63	This chapter discusses the MP planning district. It presents allowed uses, conditional uses, and site characteristics for developments in this district. The MP planning district provides for an environment for the development and protection of modern, large-scale specialized manufacturing and related uses and research facilities. It is anticipated that these uses are less loud, odorous, and offensive than other manufacturing uses. Generally, lots in the MP planning district are larger in size. Chapter 63 of the TDC discusses environmental regulations associated with the MP planning district. The Concept Plan area is currently conditioned to be zoned industrial. However, if it is determined that an industrial planning district is not appropriate for the Concept Plan area, the MP planning district should be examined.

TABLE 1-1
Tualatin Development Code Summary (Relevant Chapters)

Chapter	Summary and Relevance to Concept Plan
69	Discusses the Industrial Business Park Overlay planning district. This overlay district is an option in the MG and ML planning districts and allows a greater variety of uses to occur on a parcel. Additional uses include office and selected service and retail uses. Application for this overlay is made at the time of a development application. Properties with this overlay district may have slightly greater transportation demands since some retail and office uses would be allowed. Because this is an option in the ML and MG planning districts, it should be considered as part of identifying the planning designation for the Concept Plan area.
	Infrastructure
11	Transportation System Plan. See discussion in Transportation section of Existing Conditions memorandum.
12	Water service and policies. See discussion in Waster System section of Existing Conditions memorandum.
13	Sewer service, objectives, and projects. See discussion in Sewer System section of Existing Conditions memorandum.
14	Storm drainage and surface water management. See Storm Drainage and Natural Resources sections of Existing Conditions memorandum.
70, 72	Chapters 70 and 72 discuss regulations for areas in the floodplain and in other environmentally sensitive areas. Chapter 72 discusses environmentally sensitive areas. The Concept Plan area is not part of the City's historic Goal 5 inventory. The environmental resources within the Concept Plan area are currently being explored through efforts of the Tualatin River Basin Natural Resources Coordinating Committee. The south-central part of the concept planning area is in a floodplain. Regulations would apply to this area.
74	Discusses public improvement requirements, including rights-of-way, street trees, and other utilities. Guidelines in this chapter are relevant when determining the future transportation system and the layout of other facility systems. Most of this chapter has greater relevancy to specific developments than to concept planning.

TABLE 2-1
Existing Conditions Summary

	Summary of Existing Site Conditions	Opportunities for Future Development	Constraints to Future Development	Infrastructure Needed to Urbanize the Site
Land Use and Development	Site consists of four tax lots. From west to east, uses are (1) Tax lot 1200—residence/ farm, (2) Tax lot 1100—residence/dog kennel, (3) Tax lot 900—BPA right-of-way, (4) Tax lot 801—undeveloped. Adjacent land uses are as follows: north and west = state highway; east = industrial (yard waste facility); south = nursery.	Approximately 15 acres of land anticipated to be zoned industrial. Site is adjacent to Highway 99W, which connects to I-5. Site is located at the western edge of the Portland UGB and is anticipated to be incorporated into the City of Tualatin in the future.	Parcels are relatively small and some are oddly shaped. Lands to north, west, and south are desired for acquisition by the TRNWR. Some topographical and natural resource issues. BPA site is not developable as it is transmission line right-of-way. BPA rules limit proximity of buildings. Potential hazardous materials issues (unknown).	N/A
Transportation	No existing paved roads or public streets. An unpaved road that runs east-west at the southern property line provides secondary access to the four existing properties. Closest bus stop is at Highway 99W/SW Cipole Road. Service via Line 12 at 30-minute headways. Peak-hour peak-direction service to/from Tigard and Portland via Line 95. Shoulder bike lanes on Highway 99W. No pedestrian facilities on Highway 99W or SW Cipole Road, other than pedestrian signals at the SW Cipole Road/Highway 99W traffic signal.	Site is adjacent to Highway 99W, which connects to I-5. Existing unpaved access road may be used for future paved road. Future public street connection from the east to SW Cipole Road at the site's southeast corner; this intersection will be signalized in the future.	Road would need to avoid utility poles for BPA lines and minimize impacts to underground gas line in BPA right-of-way. Wetlands, floodplain, other natural resources—access road would need to work around these. Existing private driveways onto Highway 99W would be closed at time of redevelopment.	A road or roads, with sidewalks, that would access each of the four properties. A public road would need to follow the City of Tualatin commercial/industrial street design standard and would need to accommodate interstate-sized trucks (WB-67).
Water System	An existing 12-nch water main is located in SW Cipole Road, adjacent to the site. Pressures in this system have been computed to range from 55 to 75 psi, based on the 2010 average daily demands.	N/A	Because the site is located at the western boundary of the existing water service area, some limitations on water demands and pressures will exist without improvements to the existing system.	A looped water system should be installed on the site to provide the best water flow and pressure to the future uses. The need for improvement to the existing system can be deter-mined once development

TABLE 2-1
Existing Conditions Summary

	Summary of Existing Site Conditions	Opportunities for Future Development	Constraints to Future Development	Infrastructure Needed to Urbanize the Site
				assumptions have been specified.
Sewer System	No sanitary sewer service is currently provided to the site; existing development uses septic system. Nearest connection is at the Cipole pump station, located approximately 700 feet south of the site's southeast property corner, on the east side of SW Cipole Road. The Cipole pump station discharge flows into one of the City's main sanitary sewer trunk lines in the western portion of the City. The segment of this system between SW Herman Road and SW Boones Ferry Road was recommended for improvement (up-sizing) in the 2002 Tualatin Sewer Master Plan to handle future flows. Also, the segment between SW 118th Avenue and SW Herman Road was recently cleaned and slip-lined to extend its service life and improve its hydraulic performance.	N/A	Sanitary flows from future developments will be limited by the capacity of the existing Cipole pump station (~1,100 gpm) and the 15-inch gravity section of the sanitary sewer trunk line.	A new gravity sanitary sewer pipe will need to be installed throughout the site to collect wastewater flows from properties on the site. A 700- foot-long gravity pipe system will need to be installed along SW Cipole Road, to connect the site and the Cipole pump station.
Storm Drainage	No stormwater system exists on the site. Runoff from the center and easterly portions of the site flows in a southerly direction and collects in a closed depression located on the southern property line. Previously placed fill material by the development to the south has cut off the natural drainage route from this site to Onion Flats and Rock Creek. Runoff from the western portion of the site still flows in a southerly direction from the site to Onion Flats and Rock Creek. Cross culverts below Highway 99W are reported to flow in a southerly direction onto the site.	N/A	Since the south-central portion of the site is the lowest in elevation, installation of a piped storm system will be deep as it extends westerly toward its eventual discharge to the Onion Flats area. A stormwater easement may be required from the properties south of the site's westerly end in order to discharge to Onion Flats.	Runoff from future developments will need to meet CWS design criteria for stormwater quality and quantity control. A new conveyance system will be needed along the southern property line that extends from the center of the site to the western end. Collected runoff will be treated and detained, if necessary, before being discharged to Onion Flats (stormwater easement would be required).

TABLE 2-1
Existing Conditions Summary

	Summary of Existing Site Conditions	Opportunities for Future Development	Constraints to Future Development	Infrastructure Needed to Urbanize the Site
Natural Resources	Natural resources have been highly modified by historical and current land uses. Primary land cover is non-native grassland associated with rural residential and commercial uses. Trees and shrubs generally are restricted to hedgerows and embankment slopes. Grading and earthwork within properties and for construction of adjacent roads has altered historical drainage patterns. Surrounding commercial land uses and roads limit habitat perviousness and connections to regionally significant natural resources. The proposed TRNWR project area excludes the Northwest Tualatin Study Area, but is adjacent to it.	Proximity to significant natural resources—TRNWR and Onion Flats—could be seen as an amenity. Future development has the opportunity to incorporate stormwater management facilities and approaches that maximize interception and evapotranspiration by vegetation, soil infiltration, onsite detention though bioswales, ecoroofs, pervious paving, etc. Providing natural landscaping would be consistent with habitat objectives for the TRNWR.	Potential federal, state jurisdictional wetland area associated with nursery irrigation located to the south. Potential federal, state jurisdictional water issues associated with ditched or culverted drainages. Potential floodplain. Potential CWS water quality sensitive areas and vegetated corridors. Proposed Goal 5 significant natural resources, with proposed development restrictions—“lightly limit,” “moderately limit,” and “strictly limit.” Potential for cultural resources issues. Potential federal Endangered Species Act listed species. Potential weed management issues from BPA right-of-way.	Stormwater management system.

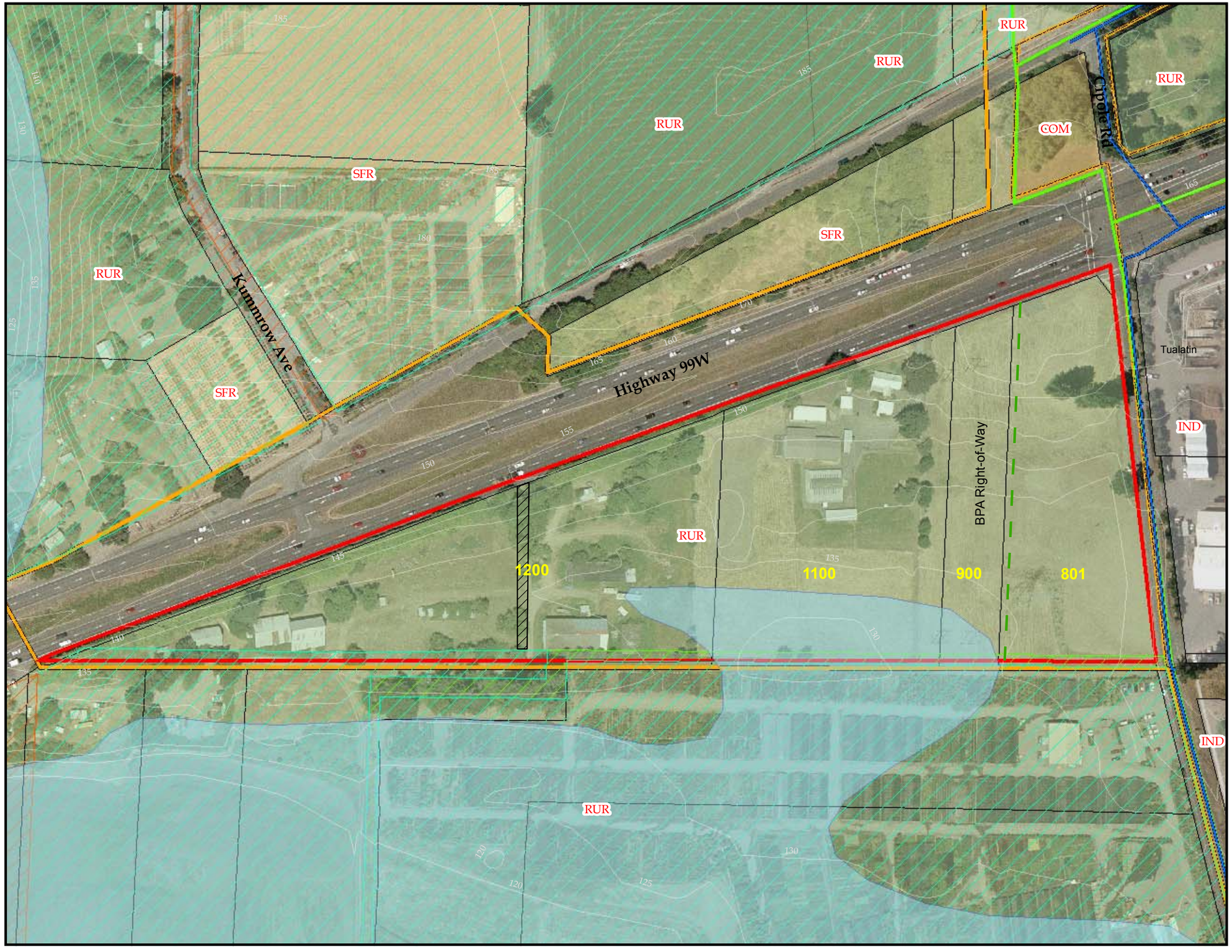
N/A = Not applicable.

Figures

Northwest Tualatin Concept Plan

Base Map

Existing Conditions



Legend

- Water Line
- Natural Gas Pipeline
- Urban Growth Boundary
- Concept Plan Area
- FEMA FLood Plain
- Tualatin City Limit
- TAXLOTS
- Planning District
- Commercial (COM)
- Industrial (IND)
- Rural (RUR)
- Single-Family Residential (SFR)
- Access Easement (16.5 Ft. Right-of-Way)

Tualatin River National Wildlife Refuge

- Owned by Metro, Managed by FWS
- Easements Held by FWS
- Within Acquisition Boundary
- Currently owned by FWS

Data Source: Metro, City of Tualatin, USGS, USFWS

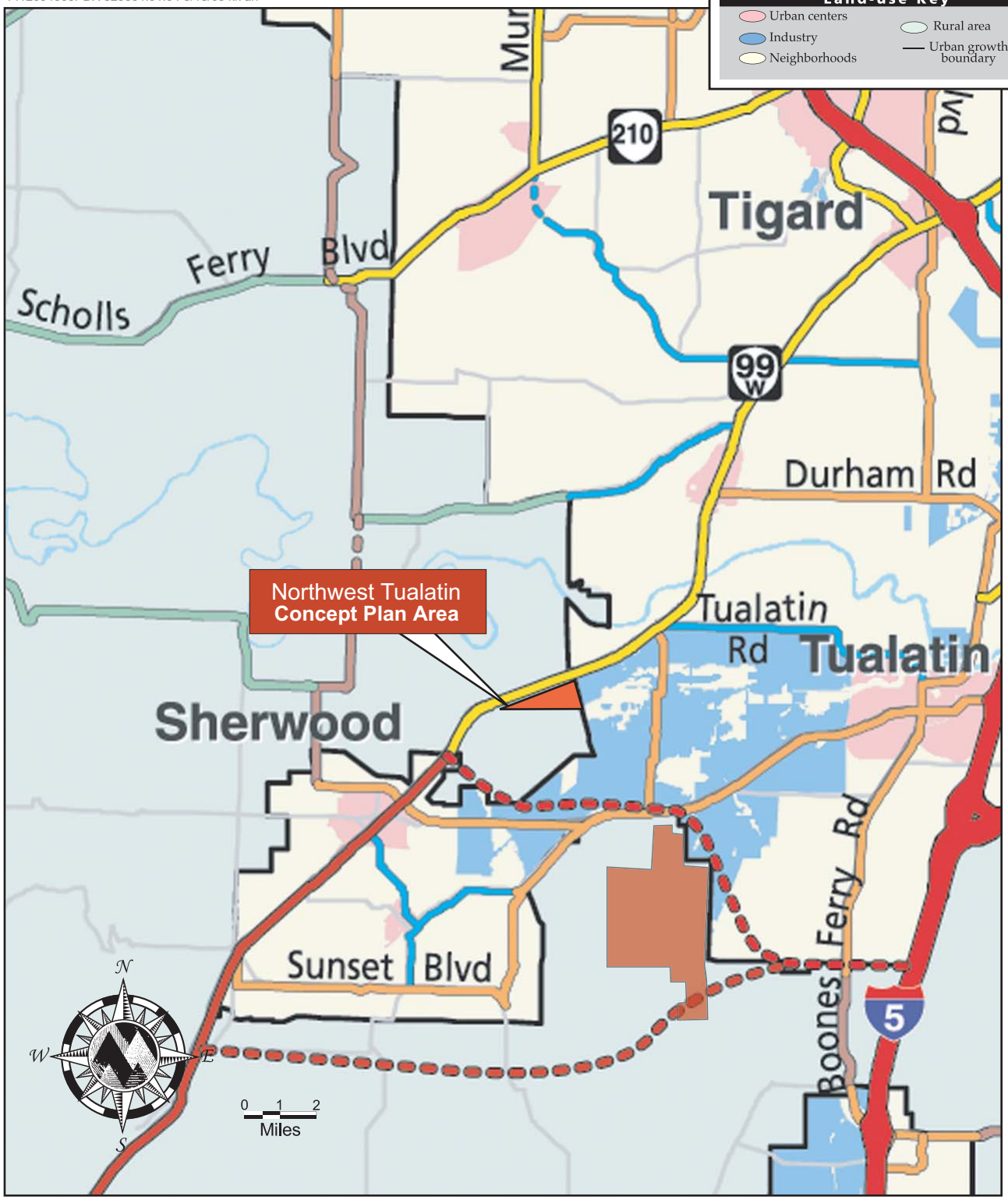
N

0 75 150 300 Feet

CH2MHILL

File Path: \\astoria\GISData1\data\Proj\tv_gis\mapdocuments\figure2_base_map_nwr.mxd, Date: November 03, 2004 1:16:52 PM

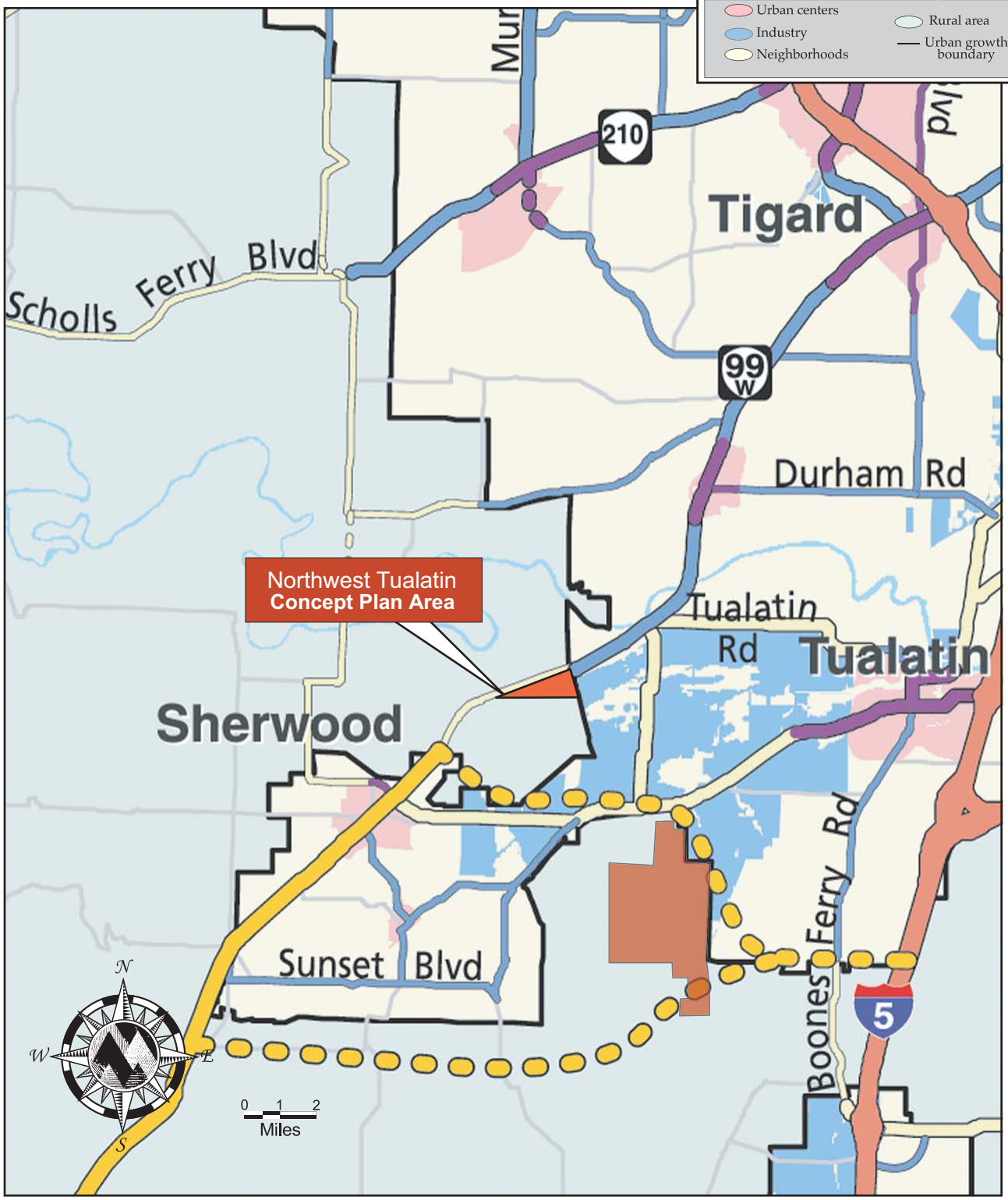
T112004006PDX 320604.01.04 3/18/05 kk an



SOURCE: 2000 Regional Transportation Plan, 2004 Update (Metro)

Regional Motor Vehicle System

T112004006PDX 320604.01.04 3/18/05 kk an



SOURCE: 2000 Regional Transportation Plan, 2004 Update (Metro)

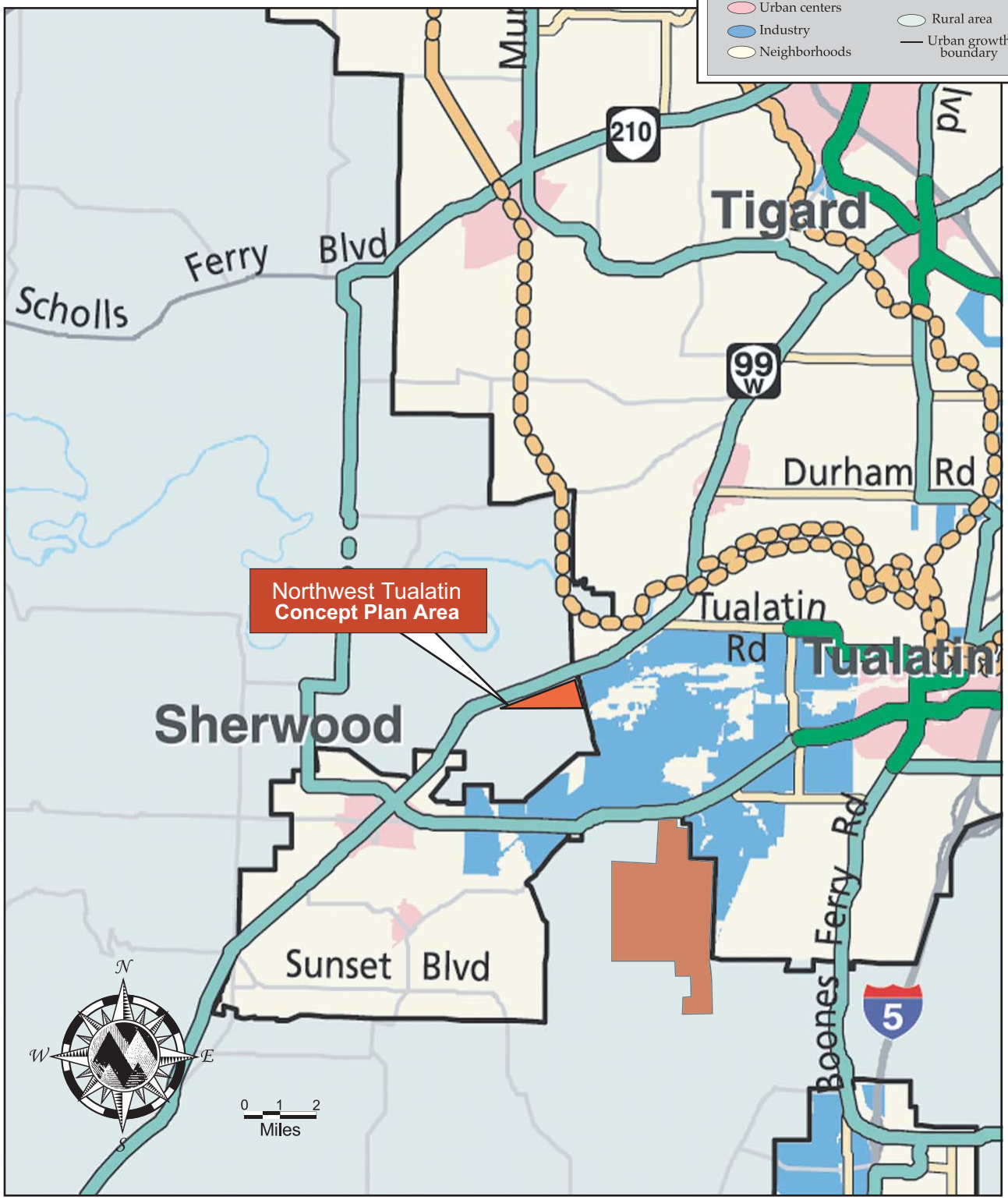
Regional Street Design System

T112004006PDX 320604.01.04 3/18/05 kk an

SOURCE: 2000 Regional Transportation Plan, 2004 Update (Metro)

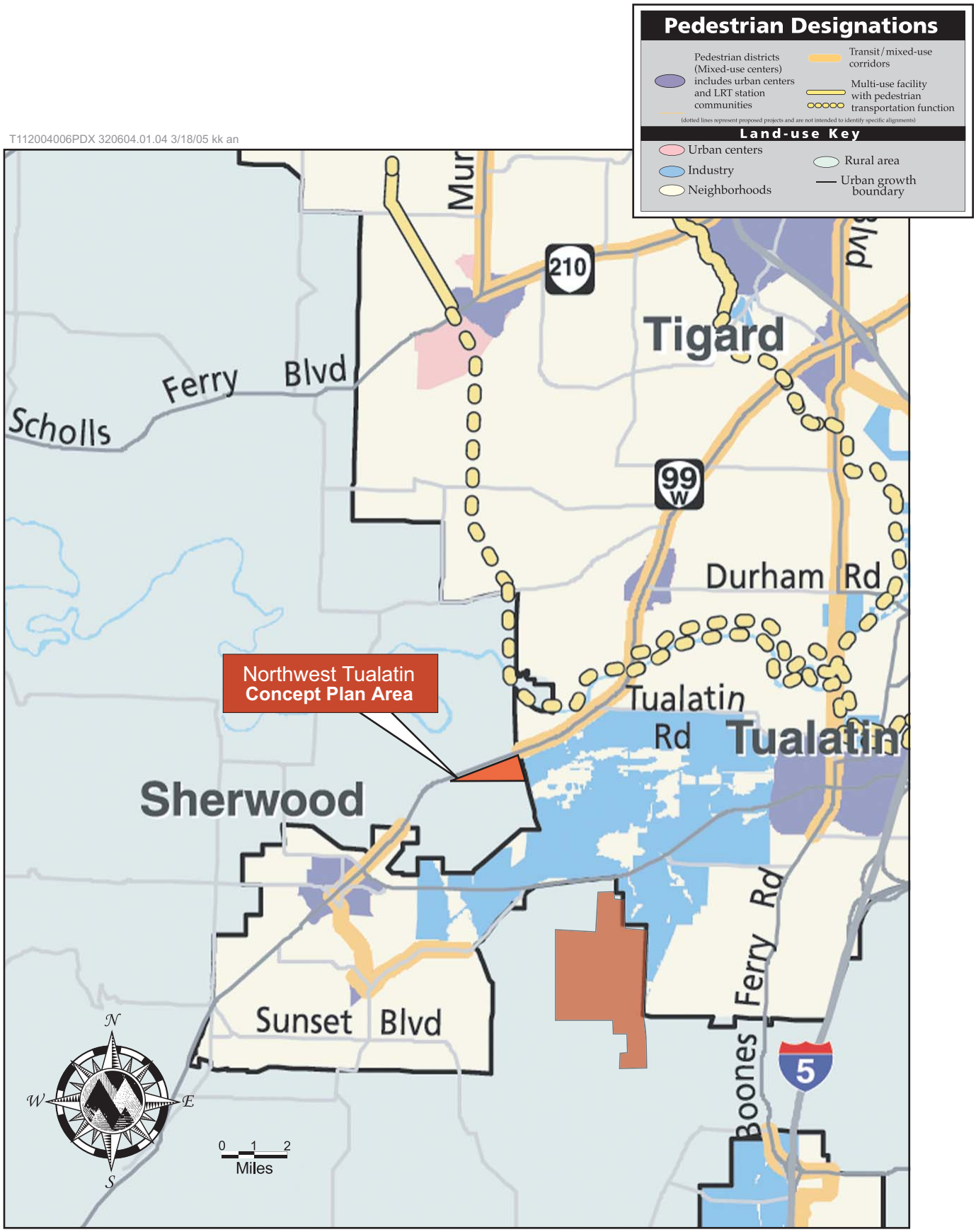
Regional Freight System

T112004006PDX 320604.01.04 3/18/05 kk an



SOURCE: 2000 Regional Transportation Plan, 2004 Update (Metro)

Regional Bicycle System



SOURCE: 2000 Regional Transportation Plan, 2004 Update (Metro)

Regional Pedestrian System

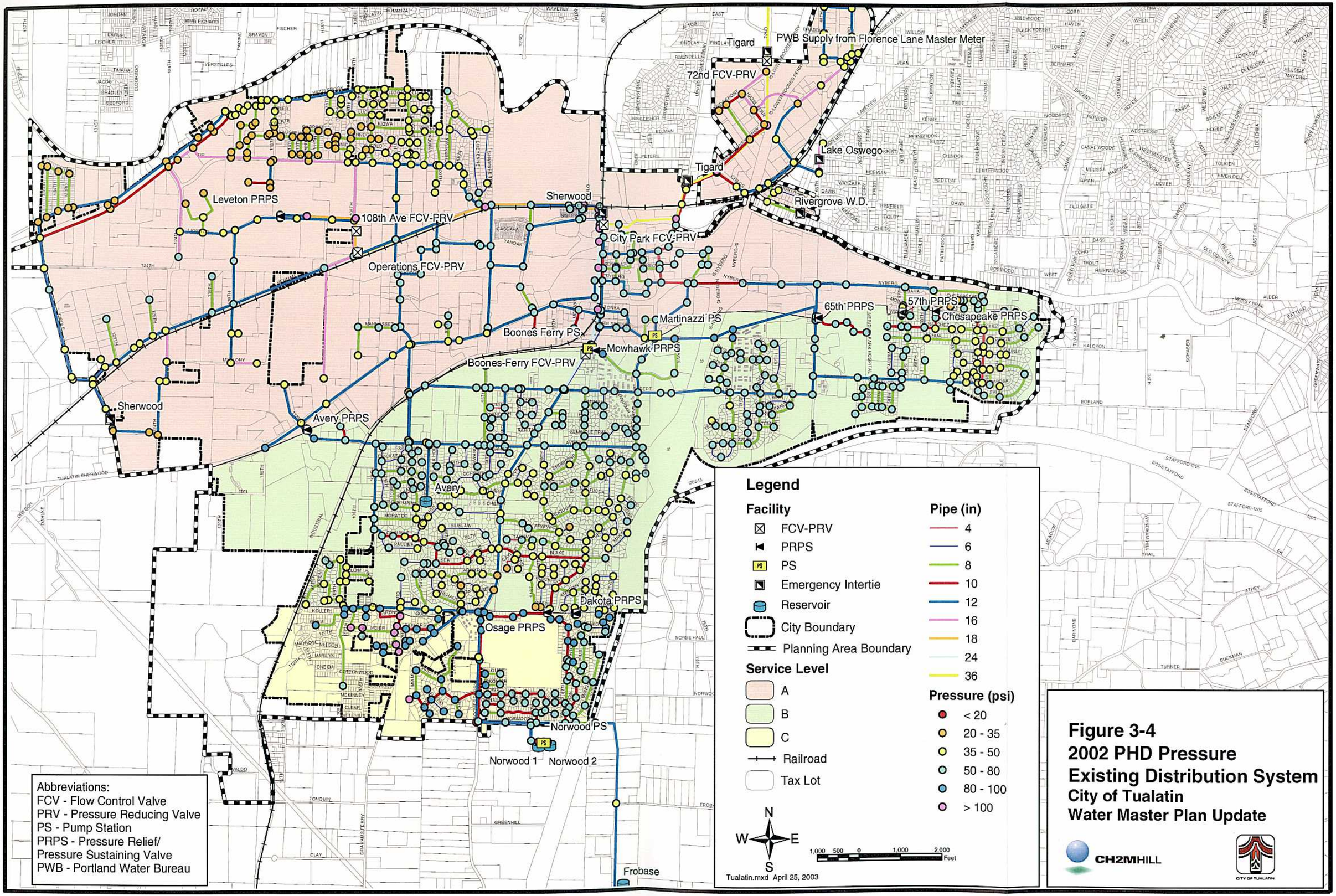


Figure 3-4
2002 PHD Pressure
Existing Distribution System
City of Tualatin
Water Master Plan Update

CH2MHILL

CITY OF TUALATIN

DURHAM WWTP

SW HALL

SW PACIFIC HWY

HERMAN RD

SW SAGERT ST

SW BORLAND

INTERSTATE HIGHWAY 205 (I-205)

SE TUALATIN SHERWOOD

INTERSTATE HIGHWAY 5 (I-5)

N

Scale: 1" = 2500'

Legend

- Force Main
- Gravity Pipe
- Lift Station
- Diversion
- CWS Model Flow Input
- URA Modeled Flow Input Node
- Manhole
- Planning Area

FIGURE 2-2
MODELED COLLECTION SYSTEM

City of Tualatin
Sewer Master Plan

CH2MHILL

P:\TUALATIN\156088\TO 20 Sewer MP Update\MasterPlan\Maps\Figure2-2_Modeled Collection System.WOR

Washington County, Oregon

Goal 5

last modified: July 23, 2004

Department of Land Use & Transportation
Brent Curtis, Manager

Enter Street Address

example: 155 N 1st Ave

Find Address

OR

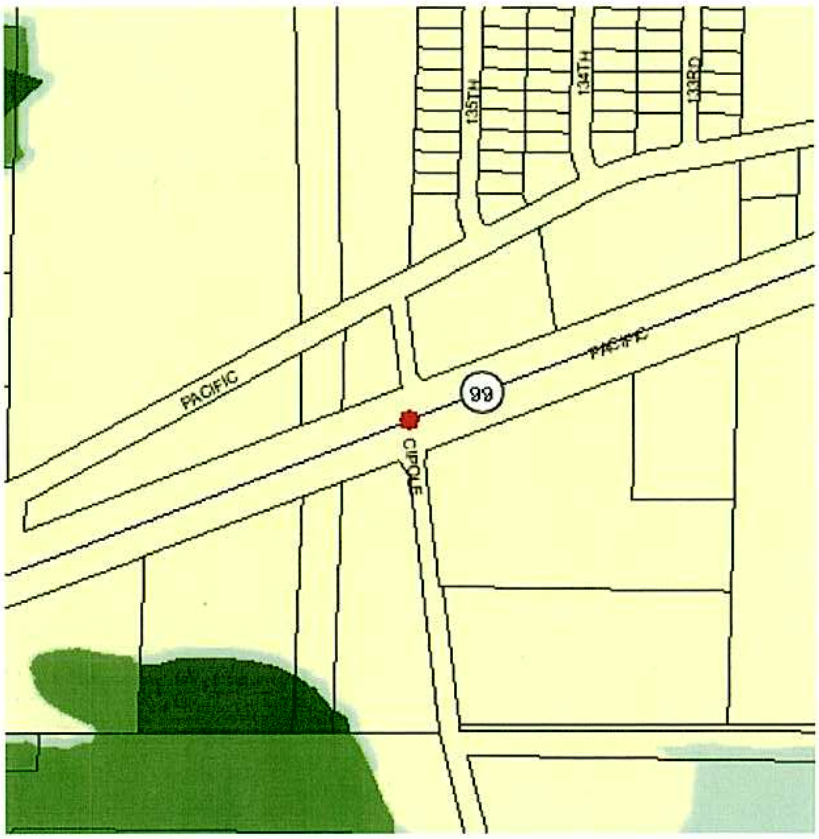
Street Intersection

Street 1: SW Kummrow

Street 2: SW Pacific Highway

example; Street 1: North First Ave
Street 2: Lincoln Street

Address: SW CIPOLE RD + SW PACIFIC HWY Tualatin 97140
Street Map (approximate location)



Site Adjust
- Allow
- Lightly Limit
- Moderately Limit
- Strictly Limit

General
- Allow
- Lightly Limit
- Moderately Limit
- Strictly Limit

- Tualatin Basin Outside of Inventory
- Outside of Tualatin Basin

Definitions for ALP Program Recommendatior

Washington County
Land Use and Transportation Department
Planning Division
155 N. First Avenue, Suite 350, MS 14
Hillsboro, OR 97124

Planning Division: 503-846-3519
fax: 503-846-4412
E-Mail to: lutplan@co.washington.or.us

Washington County, Oregon

Goal 5

last modified: July 23, 2004

Department of Land Use & Transportation
Brent Curtis, Manager

Enter Street Address

example: 155 N 1st Ave

OR

Street Intersection

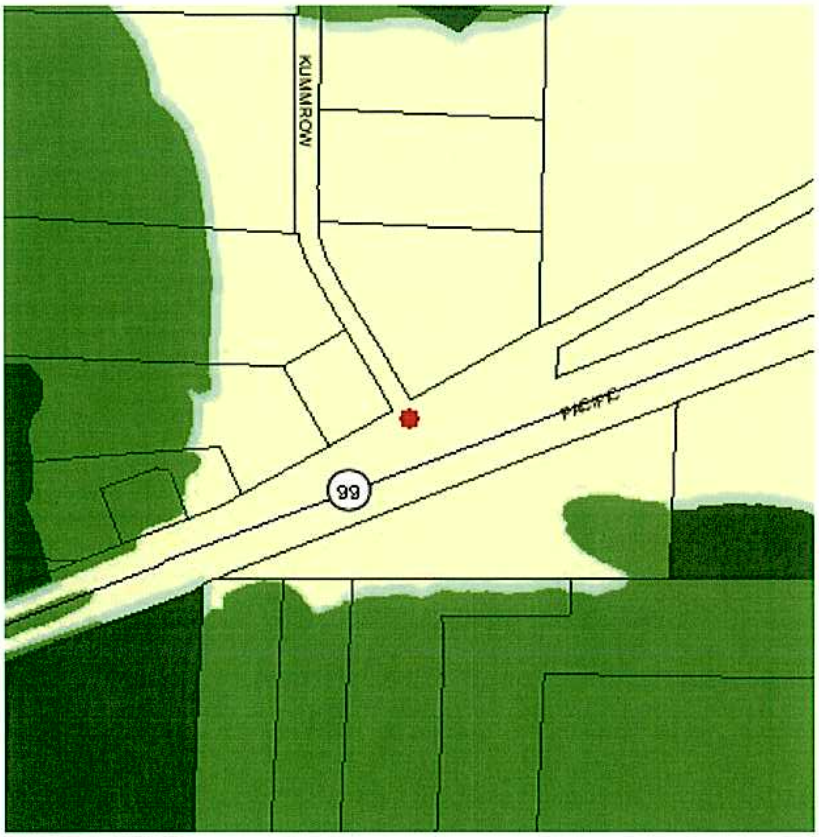
Street 1

Street 2

example; Street 1: North First Ave
Street 2: Lincoln Street

Find Address

Address: SW KUMMROW AVE at SW PACIFIC DR 97140
Street Map (approximate location)



Site Adjust
- Allow
- Lightly Limit
- Moderately Limit
- Strictly Limit

General
- Allow
- Lightly Limit
- Moderately Limit
- Strictly Limit

- Tualatin Basin Outside of Inventory
- Outside of Tualatin Basin

Definitions for ALP Program Recommendatior

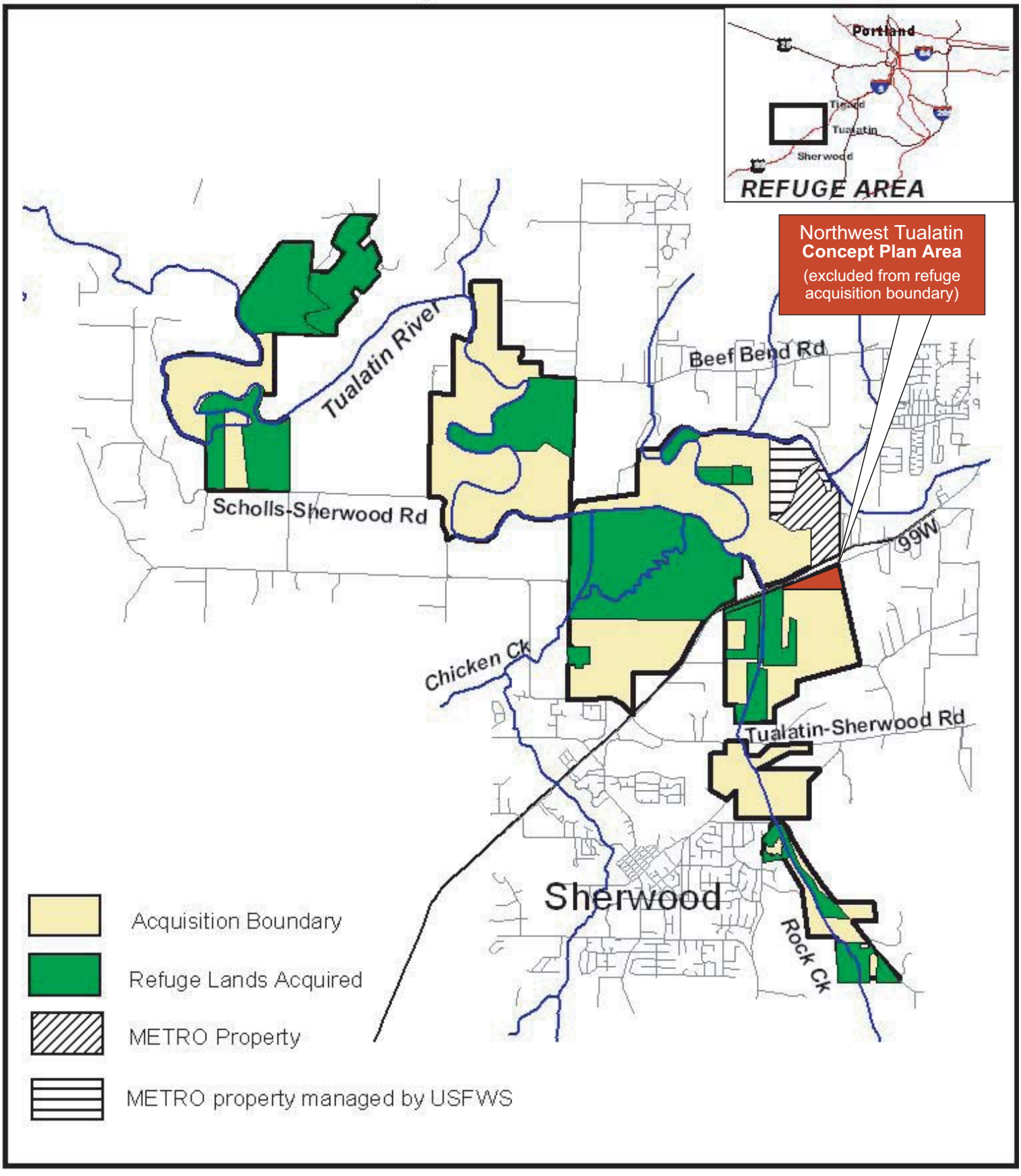
Washington County
Land Use and Transportation Department
Planning Division
155 N. First Avenue, Suite 350, MS 14
Hillsboro, OR 97124

Planning Division: 503-846-3519
fax: 503-846-4412
E-Mail to: lutplan@co.washington.or.us

TUALATIN RIVER NATIONAL WILDLIFE REFUGE

Washington County, Oregon

Land Acquisitions Status 2003

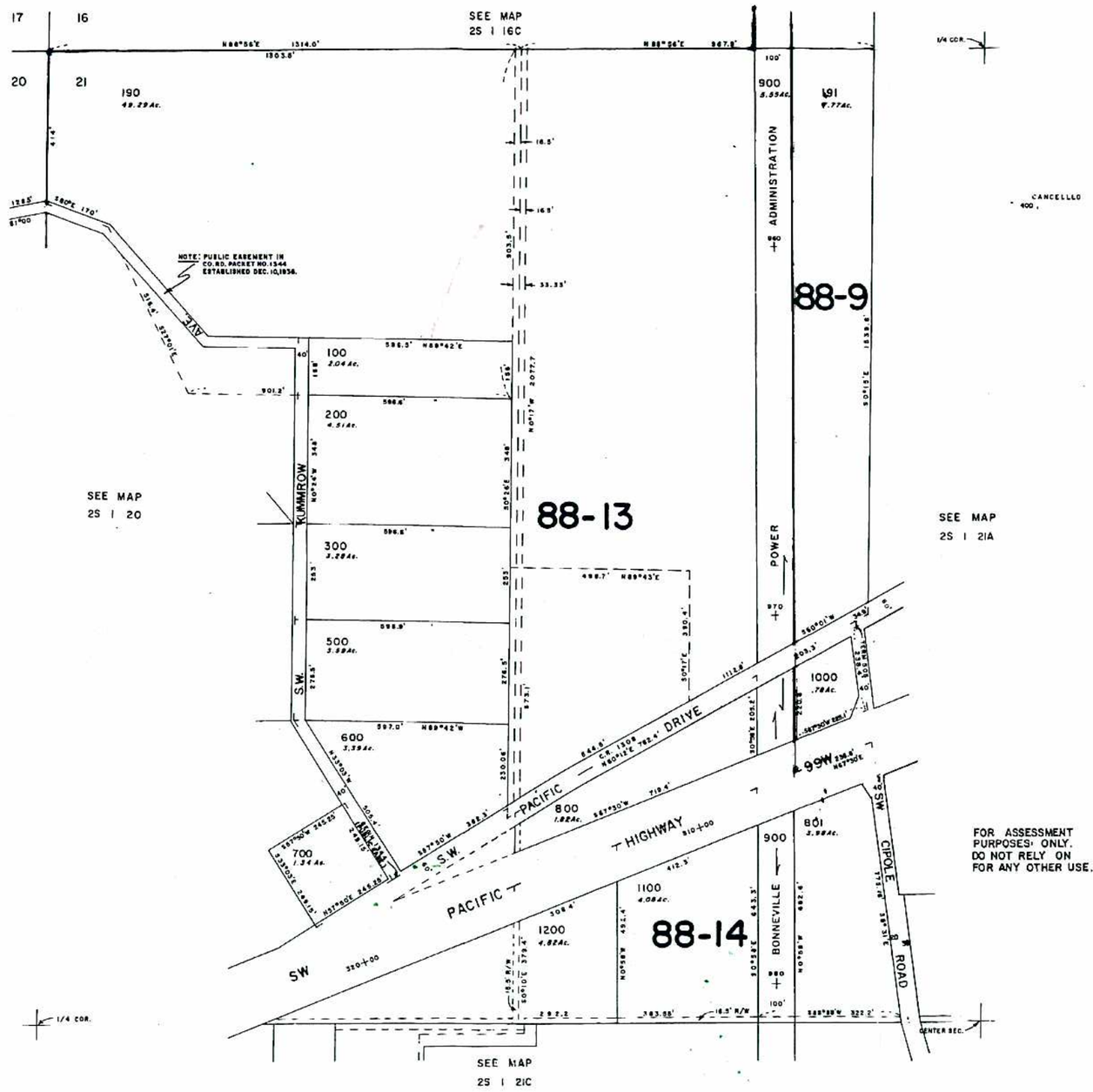


NW 1/4 SECTION 21 T2S R1W W.M.

WASHINGTON COUNTY OREGON

SCALE 1"=200'

2S 1 21B



2S 1 21B

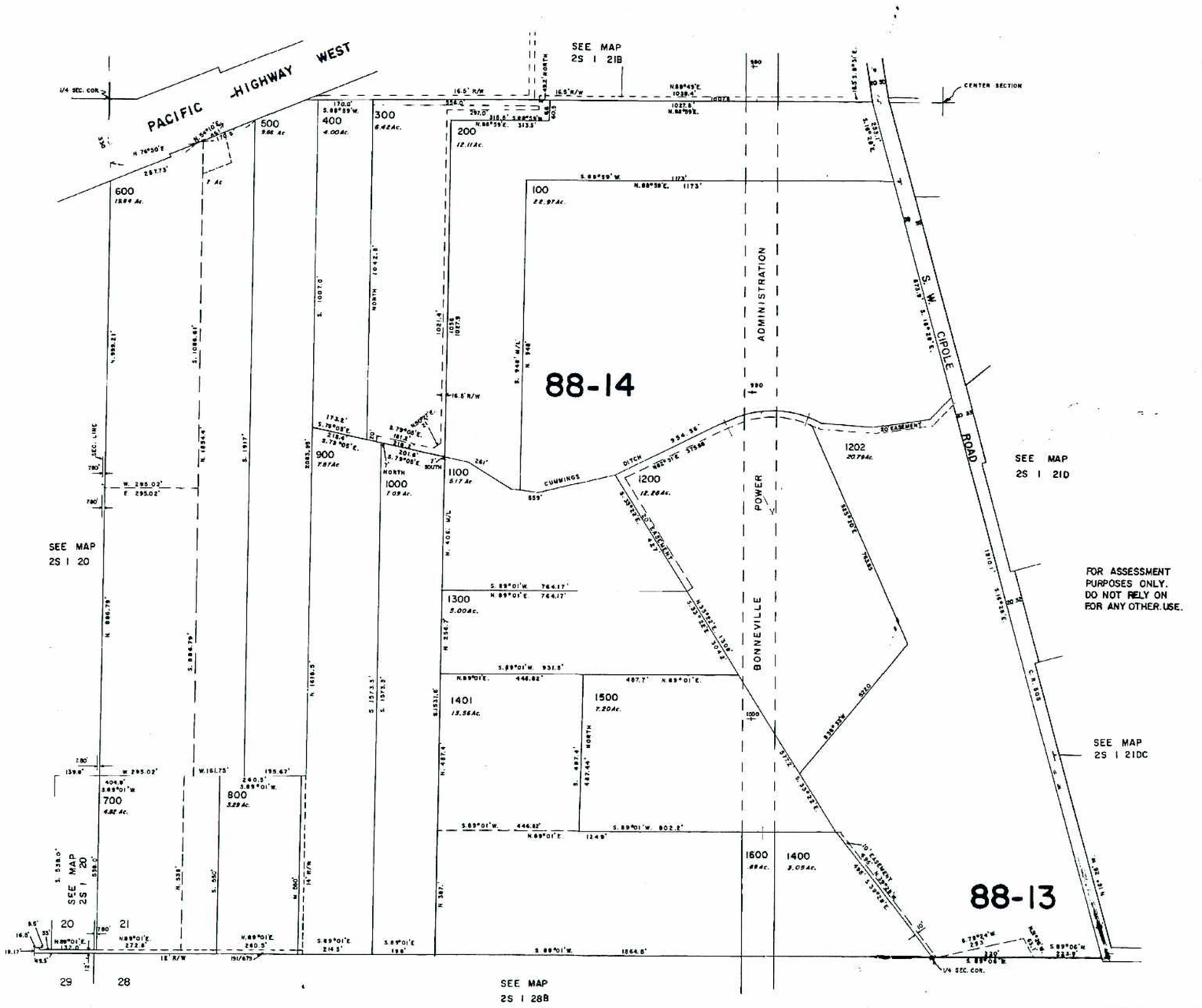
SW 1/4 SECTION 21 T2S R1W W.M.

WASHINGTON COUNTY OREGON

SCALE 1"=200'

2S 1 21C

CANCELLED TAX LOTS
1201,



2S 1 21C

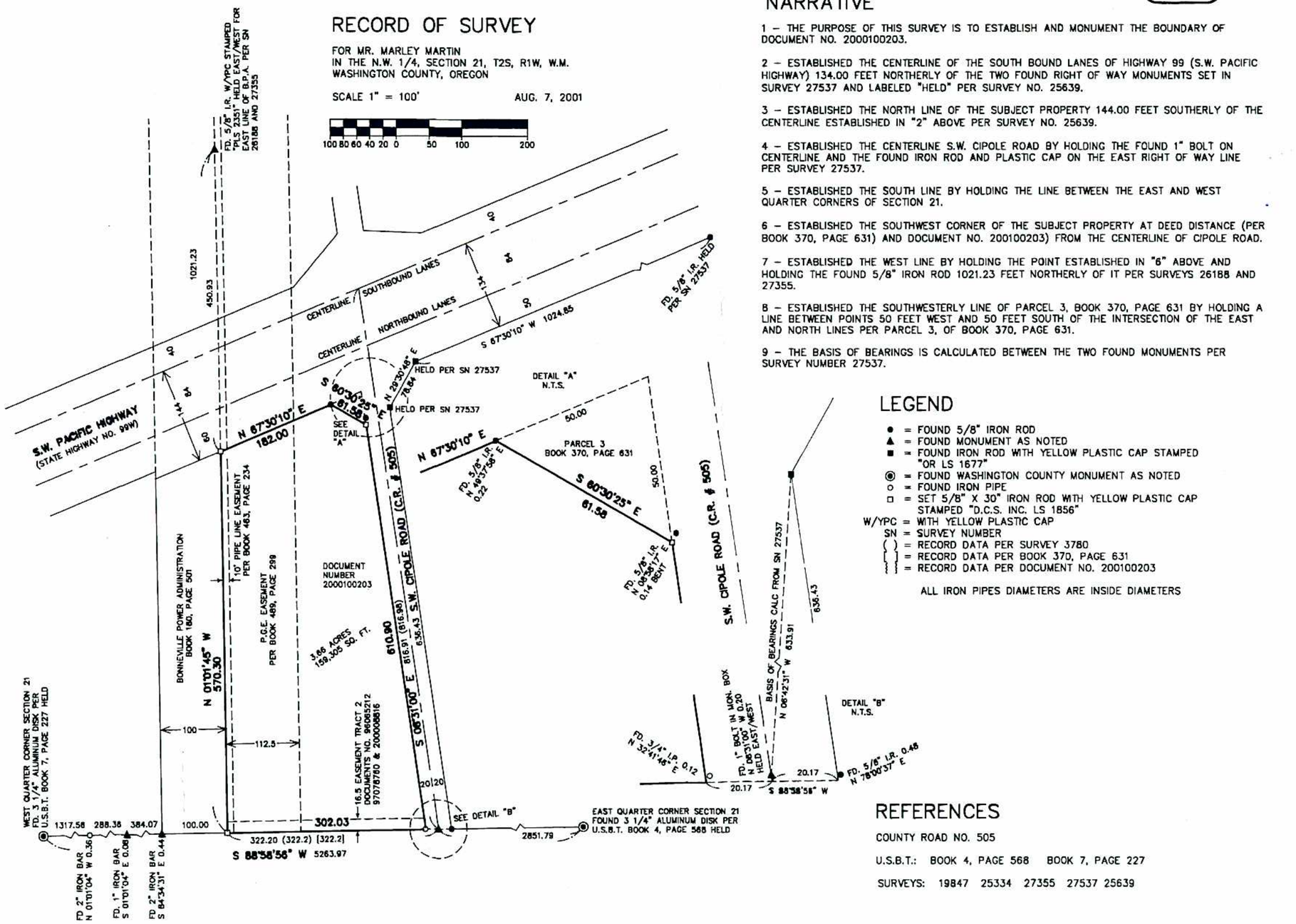
28,706

RECORD OF SURVEY

FOR MR. MARLEY MARTIN
IN THE N.W. 1/4, SECTION 21, T2S, R1W, W.M.
WASHINGTON COUNTY, OREGON

SCALE 1" = 100' AUG. 7, 2001

100 80 60 40 20 0 50 100 200



NARRATIVE

1 – THE PURPOSE OF THIS SURVEY IS TO ESTABLISH AND MONUMENT THE BOUNDARY OF DOCUMENT NO. 2000100203.

2 – ESTABLISHED THE CENTERLINE OF THE SOUTH BOUND LANES OF HIGHWAY 99 (S.W. PACIFIC HIGHWAY) 134.00 FEET NORTHERLY OF THE TWO FOUND RIGHT OF WAY MONUMENTS SET IN SURVEY 27537 AND LABELED "HELD" PER SURVEY NO. 25639.

3 – ESTABLISHED THE NORTH LINE OF THE SUBJECT PROPERTY 144.00 FEET SOUTHERLY OF THE CENTERLINE ESTABLISHED IN "2" ABOVE PER SURVEY NO. 25639.

4 – ESTABLISHED THE CENTERLINE S.W. CIPOLE ROAD BY HOLDING THE FOUND 1" BOLT ON CENTERLINE AND THE FOUND IRON ROD AND PLASTIC CAP ON THE EAST RIGHT OF WAY LINE PER SURVEY 27537.

5 – ESTABLISHED THE SOUTH LINE BY HOLDING THE LINE BETWEEN THE EAST AND WEST QUARTER CORNERS OF SECTION 21.

6 – ESTABLISHED THE SOUTHWEST CORNER OF THE SUBJECT PROPERTY AT DEED DISTANCE (PER BOOK 370, PAGE 631) AND DOCUMENT NO. 2001000203) FROM THE CENTERLINE OF CIPOLE ROAD.

7 – ESTABLISHED THE WEST LINE BY HOLDING THE POINT ESTABLISHED IN "6" ABOVE AND HOLDING THE FOUND 5/8" IRON ROD 1021.23 FEET NORTHERLY OF IT PER SURVEYS 26188 AND 27355.

8 – ESTABLISHED THE SOUTHWESTERLY LINE OF PARCEL 3, BOOK 370, PAGE 631 BY HOLDING A LINE BETWEEN POINTS 50 FEET WEST AND 50 FEET SOUTH OF THE INTERSECTION OF THE EAST AND NORTH LINES PER PARCEL 3, OF BOOK 370, PAGE 631.

9 – THE BASIS OF BEARINGS IS CALCULATED BETWEEN THE TWO FOUND MONUMENTS PER SURVEY NUMBER 27537.

LEGEND

- ● = FOUND 5/8" IRON ROD
- ▲ = FOUND MONUMENT AS NOTED
- ■ = FOUND IRON ROD WITH YELLOW PLASTIC CAP STAMPED "OR LS 1677"
- ◉ = FOUND WASHINGTON COUNTY MONUMENT AS NOTED
- ○ = FOUND IRON PIPE
- □ = SET 5/8" X 30" IRON ROD WITH YELLOW PLASTIC CAP STAMPED "D.C.S. INC. LS 1856"

W/YPC = WITH YELLOW PLASTIC CAP
SN = SURVEY NUMBER
( ) = RECORD DATA PER SURVEY 3780
[ ] = RECORD DATA PER BOOK 370, PAGE 631
¦ ¦ = RECORD DATA PER DOCUMENT NO. 200100203

ALL IRON PIPES DIAMETERS ARE INSIDE DIAMETERS

REFERENCES

COUNTY ROAD NO. 505

U.S.B.T.: BOOK 4, PAGE 568 BOOK 7, PAGE 227

SURVEYS: 19847 25334 27355 27537 25639

WASHINGTON COUNTY
SURVEYOR'S OFFICE
RECEIVED 8-28-01
ACCEPTED FOR FILING
10-09-01

CALC. / CHECK	
R.M.R.	08/01/01
J.M.P.	08/03/01
J.M.P.	08/08/01

DWG. / REVISED	
D.A.P.	08/02/01
D.A.P.	08/07/01
D.A.P.	08/08/01

REGISTERED PROFESSIONAL LAND SURVEYOR
John M. Peterson
OREGON JULY 13, 1978 JOHN M. PETERSON 1856
RENEWAL 12/31/02

DEVELOPMENT & CONSTRUCTION SERVICES, INC.
339 W. MAIN STREET
HILLSBORO, OREGON 97123 (503) 648-4959

JOB # 0107015