MEMORANDUM

CITY OF TUALATIN

TO: Honorable Mayor and Members of the City Council

FROM: Sherilyn Lombos, City Manager

DATE: January 28, 2013

SUBJECT: Work Session for January 28, 2013

5:00 p.m. (45 min) – Water Master Plan. We are in the process of updating the Water Master Plan (last updated in 2003). The purpose of a Water Master Plan is to perform a comprehensive analysis of the City's water system, identify deficiencies, determine future supply requirements, and recommend improvements that correct existing deficiencies and provide for future expansion. Prior to completing the Master Plan, there are several policy questions that need direction from the Council. Attached is a report, along with a presentation that will be used to facilitate the discussion.

5:45 p.m. (20 min) – Southwest Corridor Potential Transit Alignments. The Southwest Corridor Plan is a comprehensive land use and transportation plan focused on the corridor between downtown Portland and Sherwood. One of the most significant investments that is envisioned to be made in this corridor is transit service. In February, the Southwest Corridor Steering Committee (Mayor Ogden is Tualatin's representative) will be asked to forward potential alignments on to the evaluation phase. Attached is a packet of information regarding the process, potential alignments and next steps for the Council to be aware of and to give input to Mayor Ogden on as he participates on the Steering Committee.

6:05 p.m. (35 min) – Linking Tualatin – Phase II. Tonight's discussion focuses on the broad concepts for land use changes in the Linking Tualatin Plan area that were suggested through public outreach and planning work completed in Phase I of the project. City Council input on these broad concepts will help inform and direct staff work in Phase II as we further refine the Plan's transit ready place recommendations and conduct property owner and business outreach. Attached is a packet of information for use in this discussion.

6:40 p.m. (10 min) - Council Meeting Agenda Review, Communications & Roundtable. This is an opportunity for the Council to review the agenda for the **January 28, 2013** Council meeting and take the opportunity to brief the rest of the Council on any issues of mutual interest.

MEMORANDUM
CITY OF TUALATIN

TO: Honorable Mayor and Members of the City Council

THROUGH: Sherilyn Lombos, City Manager

FROM: Kaaren Hofmann, Engineering Manager
Alice Rouyer, Community Development Director

DATE: 01/28/2013

SUBJECT: Water Master Plan

ISSUE BEFORE THE COUNCIL:
Review and provide feedback on policy issues connected to the draft Water Master Plan.

EXECUTIVE SUMMARY:

Background

In June 2011, the City started the update to the 2003 Water Master Plan. Murray, Smith & Associates was hired to complete the plan update for the City. The purpose of the Water Master Plan is to perform a comprehensive analysis of the City's water system, to identify deficiencies, to determine future supply requirements, and to recommend faciltiy improvements that correct existing deficiencies and provide for future expansion.

Supply

The City purchases water from the City of Portland Water Bureau as its sole supply. We are also pilot testing an Aquifer Storage and Recovery (ASR) facility. Between these two sources, the City has the ability to supply approximately 11.8 million gallons per day (mgd) in the summertime.

Demand

Master Plans are always modeled conservatively. The actual demands in 2010 were only 56% of the demands projected in the 2003 plan.
If conservation continues as projected and economic and population growth continues to be slower, our current supply will be adequate until 2030. The table below reflects that conservative modeling, showing the potential worst case scenario, with the largest single source of increased demand being the possibility of a large water user in the Southwest Area.

DEMAND	2010	2030	Build - Out

Average Daily Demand (mgd)	4.3	5.9	6.8
Maximum Daily Demand (mgd)	9.5	13.0	14.8
SUPPLY			
Maximum Daily Suppy (mgd)	11.8	11.8	11.8

To address the supply issue identified above, the technical staff recommends that the water demand projections be re-visited in another 3 years to determine if conditions warrant action to begin acquiring additional supply capacity. This will allow the City time to evaluate changes in the Washington County Supply Line (WCSL) usage that may allow for additional capacity acquisition. The City will also continue to evaluate the addition of significant new customer water demands.

The existing transmission system is adequate to supply domestic water service and fire capacity.

Master Plan Projects

The majority of the projects identified in the Master Plan are associated with growth related development. The total estimated cost of the improvements is $20.5 million. Approximately $1.2 million/year should be budgeted to complete these projects over the next 20 years.

There are typically two revenue sources to pay for improvements: rates and system development charges (SDCs).

Policy Questions

Should rates be used to fund growth improvements in the Plan?

> If the decision is made that rates should fund growth improvements, current rates are not adequate and a 4.25% increase will be necessary for the next 20 years starting in 2013-14. If it is decided that growth improvements should not be funded with rates, but should be soley funded through system development charges, current rates still are not adequate to fund the maintenance and operation of the existing system, but the needed increase will be 3.20% starting in 2014-15.

Should SDCs be divided into two categories with: one SDC for the existing City limits and another SDC for the SW Area?

> Our current SDC is $3,266, which is applicable City-wide on development. With the growth related improvements identified in the Master Plan (including the Southwest Concept Plan are), the City-wide SDC is proposed to be $4,428. Since the SW Concept Plan area is the area of significant growth, a specific SDC for that area could be developed, thereby having a SW Concept Plan area SDC and an SDC that applies to the remainder of the City. If the SDCs are separate they will be:SW Area $5,613; Existing City: $2,661.

Next Steps

- Public Comment Period - February

- Planning Commission for comment - February 21st
- Council for acceptance - March 11th
- Plan Text Amendments to incorporate into TDC - Spring 2013

RECOMMENDATION:

Staff recommends that the City Council give direction on policy questions prior to releasing a draft for public comment.

Attachments: A. Executive Summary
B. Powerpoint

EXECUTIVE SUMMARY

PURPOSE

The purpose of this Water Master Plan (WMP) is to perform a comprehensive analysis of the City of Tualatin's (City) water system, to identify system deficiencies, to determine future water distribution system supply requirements, and to recommend water system facility improvements that correct existing deficiencies and that provide for future system expansion. This WMP complies with water system master planning requirements established under Oregon Administrative Rules (OAR) for Public Water Systems, Chapter 333, Division 61. The City's existing WMP was completed in 2003. This updated WMP meets the OAR requirement for the City to maintain a current WMP.

WATER SYSTEM CHARACTERIZATION

The City's current water service area includes all areas within the current city limits and Urban Growth Boundary (UGB). The City provides potable water to approximately 26,000 people through approximately 6,700 residential, commercial, industrial and municipal service connections.

The City purchases wholesale water from the City of Portland Water Bureau (PWB) as its sole supply. The City's water distribution system currently consists of four service zones supplied by five (5) steel storage facilities with a total combined storage capacity of approximately 13.0 million gallons (MG) and three (3) pump stations with a combined pumping capacity of approximately 5,800 gallons per minute (gpm).

The City is currently pilot testing a single Aquifer Storage and Recovery (ASR) facility. ASR operations allow the City to store surplus drinking water in a groundwater aquifer during low demand periods (fall through spring) and then recover the water from a groundwater well during high demand periods (summer). The aquifer has an effective recovery capacity of approximately 90 MG and is connected to Service Area B for both injection and recovery. A single 150 horsepower vertical turbine pump recovers the water at a capacity of approximately 400 to 500 gallons per minute (gpm), depending upon aquifer level and hydraulic conditions.

WATER SYSTEM SUPPLY & DEMAND PROJECTIONS & ASSESSMENT

This WMP is a 20-year planning document. The WMP projects water system needs through 2031. By State law, water master plans must be kept current. This means that the City can expect to update its 20-year plan every eight to ten years.

Population Projection

The projected build-out population is estimated as the current population of 26,060, plus the following growth elements identified by other planning studies for a total of 31,972 residents, projected at build-out (beyond the 20-year planning horizon).:

- ☐ 2,288 residents due to redevelopment and infill,
- ☐ 1,048 residents added to the Town Center,
- ☐ 2,576 residents associated with the Basalt Creek Expansion Area.

Water Demand Projections

The City's current average daily water demand is approximately 4.3 million gallons per day (mgd) with a maximum day demand (MDD) of approximately 9.5 mgd. At build-out development, the anticipated average daily water demand is approximately 6.8 mgd and with a MDD of approximately 15 mgd within the City's current UGB.

Water Supply Capacity & Wholesale Water Purchases

Currently, the City's water supply is purchased wholesale from the PWB through a 20-year wholesale water supply contract signed in 2006. The contract extends through 2026. Under the terms of the agreement, the City is obligated to purchase a minimum annual volume of water equal to 4.4 mgd. The wholesale water rate paid by the City is based on three factors: 1) the guaranteed minimum purchase, 2) the City's peak seasonal factor, and 3) the City's peak daily factor.

The City receives water supply through the Washington County Supply Line (WCSL) which conveys water by gravity from the PWB's Powell Butte Reservoir to the City, along with other Washington County wholesale customers (Tualatin Valley Water District (TVWD) and Raleigh Water District). The WCSL is an 84-inch to 60-inch diameter transmission line that reduces to 48-inch diameter after the supply connection to the TVWD Wolf Creek Main. The WCSL continues south as a 48-inch diameter supply main ending at the Florence Lane Master Meter. A 36-inch diameter City-owned pipe conveys water from the Florence Lane Master Meter to the City, referred to as the Portland Supply Main in this plan.

The Portland Supply Main has a minimum capacity of 20 mgd; however, this supply capacity is limited by the available capacity of the WCSL system. The WCSL has a nominal capacity of 60 mgd and the City has rights to 18 percent of the capacity, or 10.8 mgd. The 60 mgd nominal capacity is based on the WCSL operating with all the owners of the line using their full capacity and maintaining adequate supply pressure. Within the 20-year planning period, the City's peak water supply needs are projected to exceed the City's 10.8 mgd capacity in the WCSL transmission system. The City's 2003 Water System Plan projected water demands to exceed this capacity by 2010, but several factors including conservation and slower population and economic growth have resulted in lower demands.

The City currently has a planning level MDD of approximately 9.5 mgd and experienced an actual peak demand of 9.3 mgd in 2007. The largest single source of increased demand within the study area is the large water users anticipated in the SW Concept Area Plan. The WMP projects that with continued conservation and slower economic growth, water supply expansion will not be required until 2023. **It is recommended that the City review the projected water demand in three years to determine if current conditions warrant action to begin acquiring additional supply capacity. This will allow the City time to evaluate changes in WCSL usage that may result in additional available capacity for acquisition by the City. The City can also evaluate the addition of any significant new customer water demands to the system. The current plan does not budget funds for any supply expansion projects.**

Water System Analysis & Improvements Summary

The City's hydraulic model was updated for recent improvements and calibrated to current water system demands. The model was used to evaluate the current and future water system for deficiencies which were evaluated for inclusion in the City's Capital Improvement Projects (CIP) list. In general, the City's water system is adequate to supply domestic water service and fire suppression capacity within the service area.

The majority of the recommended CIPs are associated with growth related development primarily in the expansion areas. Growth related infrastructure improvements include approximately 48,000 feet of transmission piping, 5.4 MG in new storage facilities, and a new 3,600 gpm pump station. There are several smaller non-growth related improvements associated with improving fire flow capacities, continuation of the asbestos cement pipe replacement program, and upgrades to the existing telemetry system.

The total estimated project cost of these improvements is approximately $24.4 million for the 20-year planning horizon and beyond to the ultimate full development of the City's existing UGB. Of the improvements required in the 20-year planning horizon, approximately $11.8 million of these improvements are required in the next 10 years. Approximately $1.2 million per year should be budgeted over the next 20 years for the completion of these projects.

FINANCIAL SUMMARY

A financial evaluation of the City's water system was performed and included recommendations for updating the System Development Charge (SDC) and recommendations for water system rate adjustments to maintain adequate funds for system operation, maintenance, capital improvements and water system bond coverage.

Water Rate Adjustment

The Plan does not include a recommended rate increase for fiscal year 2012-13. If, during that year, earned rate revenues equal or exceed budgeted rate revenues, then a rate increase can be avoided for fiscal year 2013-14. If, however, revenues for fiscal year 2012-13 are flat, a rate increase of 4.25 percent in fiscal year 2013-14 with a series of similar increases in subsequent years through fiscal year 2021-22 is recommended.

System Development Charge Update

A SDC can include three components: 1) a reimbursement fee based on existing capacity to be used by new development, 2) an improvement fee based on needed new infrastructure to serve development, and 3) compliance costs to develop and administer SDCs. Table ES-1 summarizes the components of the proposed water SDC of $4,428 per Equivalent Dwelling Unit (EDU).

Table ES-1 | SDC Components

Component	Per EDU
Reimbursement fee	$1,602
Improvement fee	2,821
Compliance costs	5
Total water SDC	$4,428

Source: FCS GROUP

The City's current total water SDC (indexed as of February, 2012) is $3,266 per EDU. The proposed SDC is 35.6 percent higher than the current SDC. The City may choose to adopt a new SDC equal to the proposed amount immediately, phase in the SDC increase over multiple years or not adopt the new proposed SDC. Both of the latter options would result in the City forgoing SDC revenue scheduled to fund required system expansion projects identified in the CIP.

CIP Funding

In general, the sources for funding growth and non-growth related Capital Improvement Projects include 1) cash resources and revenues; 2) publicly issued debt; and 3) governmental grant and loan programs.

Water Fund Cash Resources and Revenues

The City's financial resources available for capital funding include rate funding, cash reserves, and SDCs. Generally, the proposed water rate adjustment includes consideration of SDC charges for growth related projects and rate funding for the non-growth related Capital Improvement Projects, which are not SDC eligible.

Public Debt

Revenue bonds are commonly used to fund utility capital improvements. The bond debt is secured by the revenues of the issuing utility and the debt obligation does not extend to other City resources. With this limited commitment, revenue bonds typically require security conditions related to the maintenance of dedicated reserves referenced as bond reserves and financial performance measures which are added to the bond debt as service coverage. There is no bonding limit, except the practical limit of the utility's ability to generate sufficient revenue to repay the debt and meet other security conditions. Revenue bonds incur relatively higher interest rates than government programs, but due to the highly competitive nature of the low- interest government loans, revenue bonds are assumed to be a more reliable source of funding as they typically can be obtained by most communities.

Government Programs

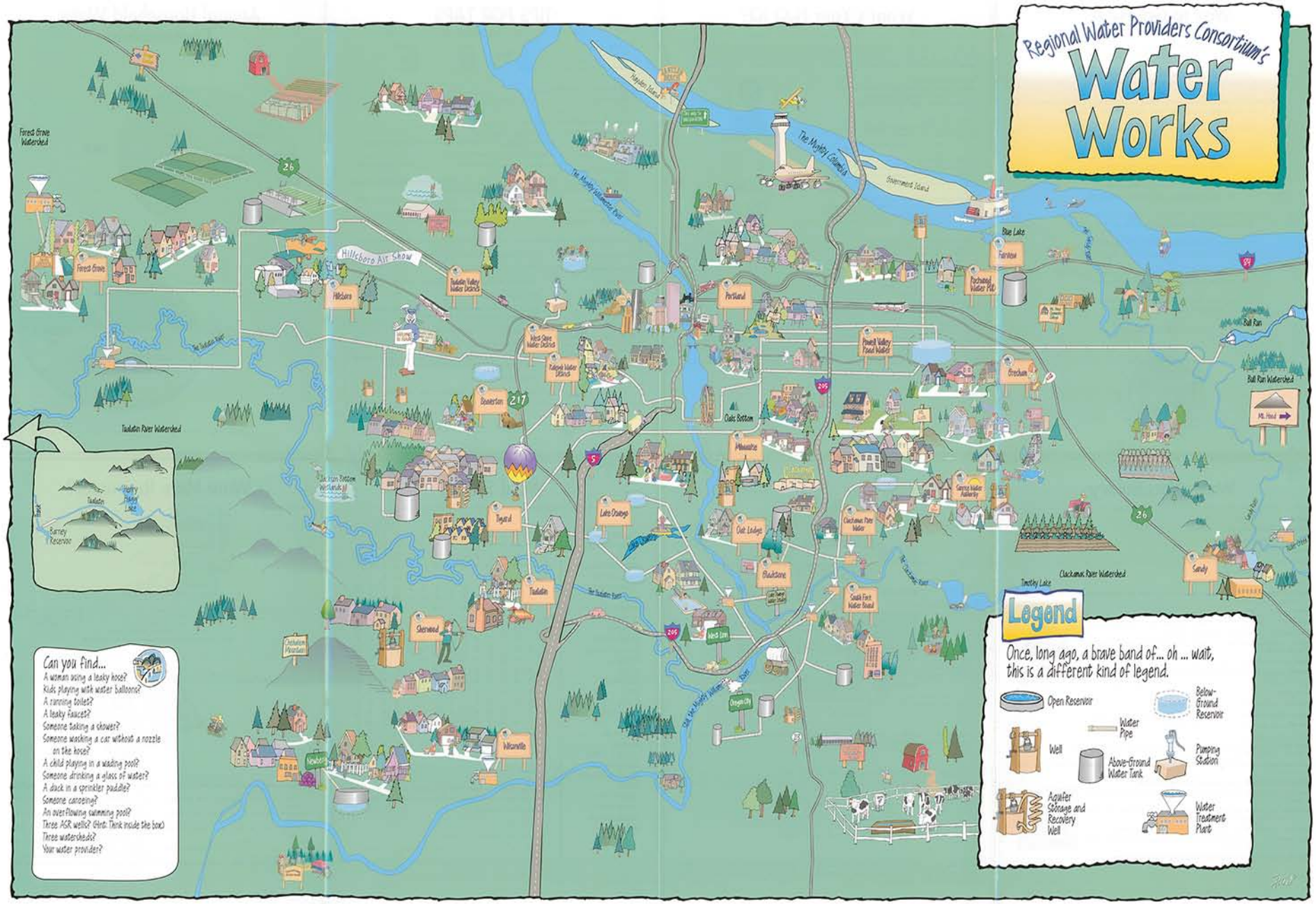
Government programs include low rate loan programs and some grants for eligible projects and loan recipients. The major water system programs include the Oregon State Safe Drinking Water Financing Program, the Special Public Works Fund, and the Water/Wastewater Fund. The WMP financial analysis does not assume use of any lower rate government assistance programs.

Water Master Plan Update

January 28, 2013

Background

- Water Master Plan last updated in 2004
- Required to maintain a current Master Plan
- The Master Plan
  - Identifies deficiencies – supply, system or financial
  - Determines future system supply requirements
  - Recommends improvements that correct existing deficiencies and provide for future expansion


Regional Water Providers Consortium's
Water Works
Forest Grove Watershed
Tualatin River Watershed
Hillsboro Air Show
Hagen Island
The Mighty Columbia
Government Island
Blue Lake
Fairview
Portland
Powell Valley Road Water
Gresham
Bull Run
Bull Run Watershed
Mt. Hood
Oak Lodge
Clackamas River Watershed
Timothy Lake
Sandy
Tigard
Tualatin
Sherwood
Wilsonville
Newberg
Oregon City
Lake Oswego
Barney Reservoir
Hagg Lake
Legend
Once, long ago, a brave band of... oh ... wait, this is a different kind of legend.
Open Reservoir
Below-Ground Reservoir
Water Pipe
Well
Above-Ground Water Tank
Pumping Station
Aquifer Storage and Recovery Well
Water Treatment Plant
Can you find...
A woman using a leaky hose?
Kids playing with water balloons?
A running toilet?
A leaky faucet?
Someone taking a shower?
Someone washing a car without a nozzle on the hose?
A child playing in a wading pool?
Someone drinking a glass of water?
A duck in a sprinkler puddle?
Someone canoeing?
An overflowing swimming pool?
Three ASR wells? (Hint: Think inside the box)
Three watersheds?
Your water provider?

Current Water Supply

- City purchases water from the Portland Water Bureau
- City has rights and ability to obtain 10.8 mgd from the City of Portland
- ASR provides additional supply
- Total daily (summertime) supply is 11.8 mgd

Future Supply Needs

- Master Plans are modeled conservatively

- For example in the 2003 plan –

	2010 Projection	2010 Actual Demand
Average Day Demand (mgd)	7.63	4.3
Maximum Day Demand (mgd)	17.17	9.5

Future Supply Needs

- If conservation continues as projected and economic growth continues to be slower, our current supply will be adequate until 2030

- Largest single source of increased demand is the possibility of large water users in the Southwest Area

Projected Water Demand Compared to Supply

DEMAND	2010	2030	Build Out
Average Daily Demand (mgd)	4.3	5.9	6.8
Maximum Daily Demand (mgd)	9.5	13.0	14.8

SUPPLY	2010	2030	Build Out
Maximum Daily Supply (mgd)	11.8	11.8	11.8

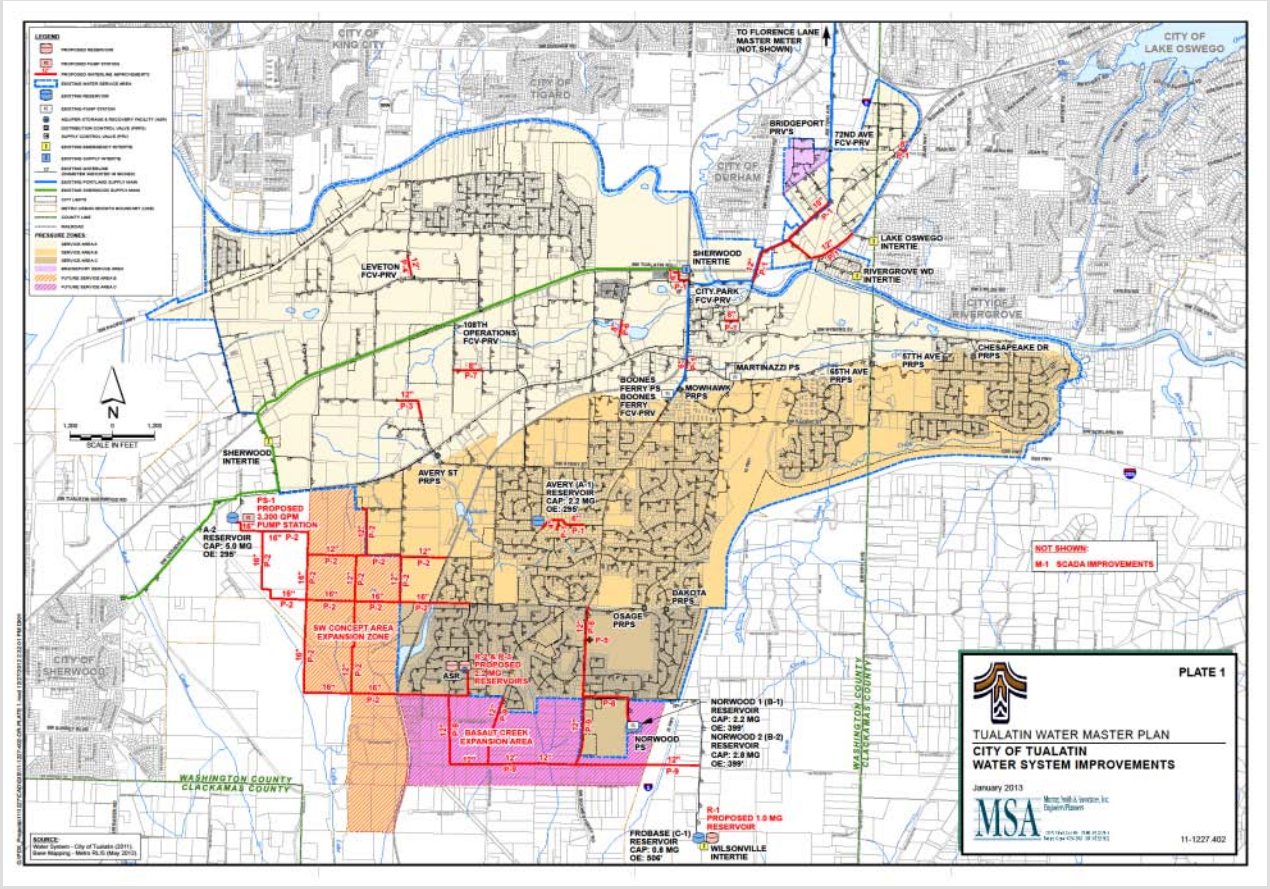
Proposed Plan to Address Supply Issue

- Recommend revisiting the water demand projections in 3 years to determine if more supply is needed

Improvements Needed

- Transmission system is adequate to supply domestic water service and fire capacity
- Majority of recommended projects are associated with growth related development

Improvements Map



Cost of Improvements in the Master Plan

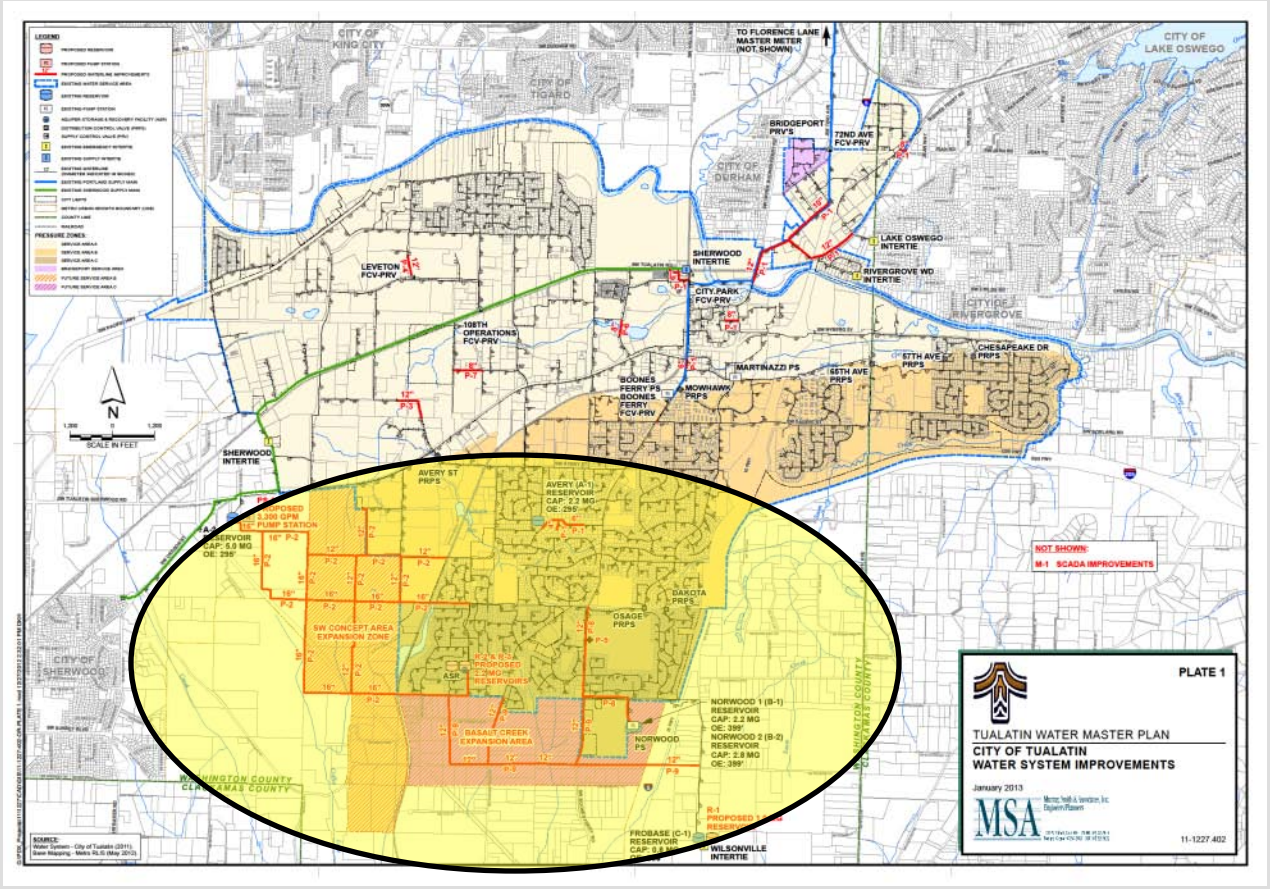
- Total Estimated Costs = $20.5 million

- $1.2 million/year for the next 20 years should be budgeted to complete these projects

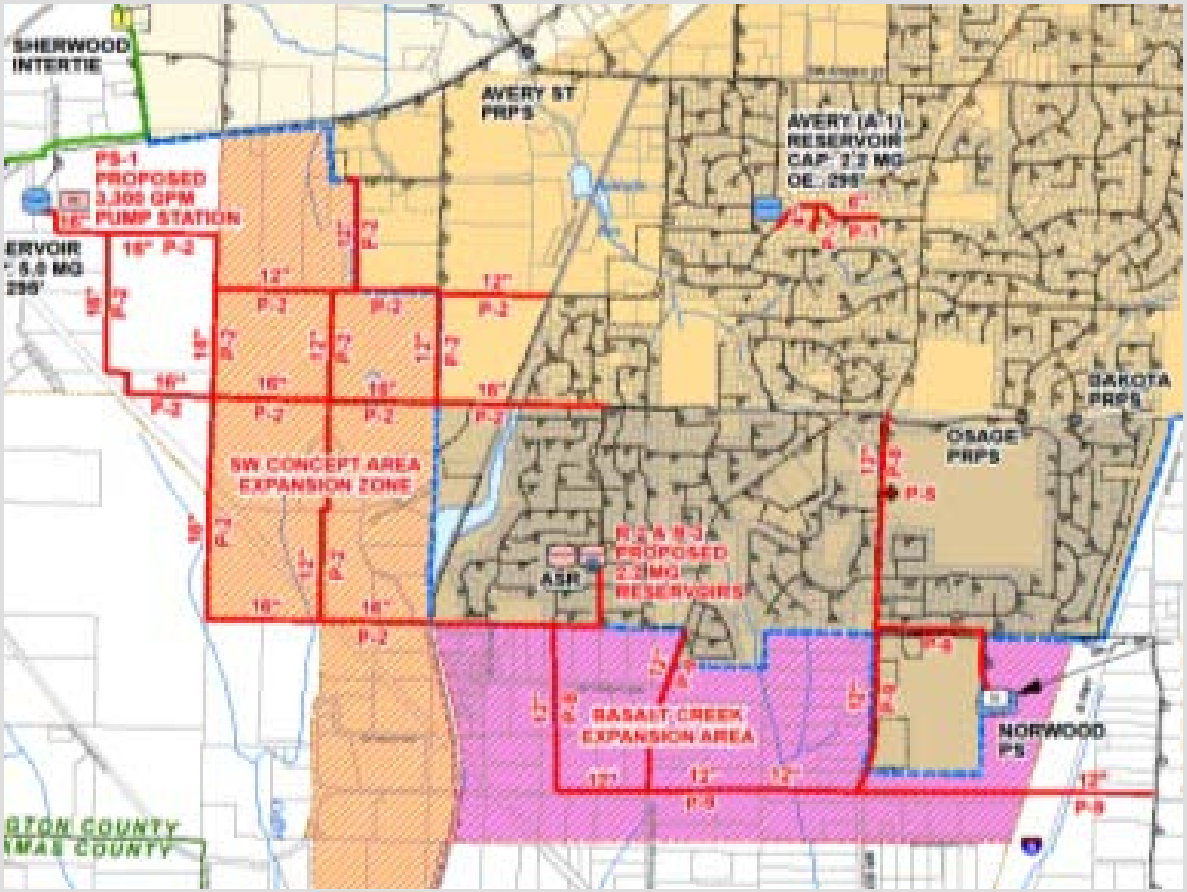
How to pay for improvements?

- Two typical revenue sources:
  - **Rates** – paid by ratepayers – can pay for all necessary improvements
  - **SDCs** – paid thru developments – restricted to growth related improvements

Improvements Map



Growth Improvements



Water Rates Policy Question

- Should rates be used to fund growth improvements in the Plan?

Water Rates

- If rates fund growth improvements: 4.25% increase in 2013-14 with similar increases in future years

OR

- If growth improvements are not included: rates increase 3.20%/year starting in 2014-15

SDC Policy Question

- Should SDCs be divided into two categories?
  - City-wide SDC; or
  - Current SDC & SW Area SDC

SDC Update

- Current (February 2012) SDC = $3,266
- Proposed City Wide SDC = $4,428

OR

- SW Concept Sub-Area SDC = $5,613
- City Wide SDC = $2,661

Next Steps

- Public Comment Period –
  the month of February
- Planning Commission -
  February 21st
- Council for acceptance –
  March 11th
- Plan Text Amendments to incorporate into TDC – Spring 2013

MEMORANDUM
CITY OF TUALATIN

TO: Honorable Mayor and Members of the City Council

THROUGH: Sherilyn Lombos, City Manager

FROM: Ben Bryant, Management Analyst

DATE: 01/28/2013

SUBJECT: Southwest Corridor Potential Transit Alignments

ISSUE BEFORE THE COUNCIL:
Receive update on the Southwest Corridor potential transit alignments

EXECUTIVE SUMMARY:
Background

The Southwest Corridor Plan is a comprehensive land use and transportation plan focused on identifying and prioritizing public investments in the corridor between downtown Portland and Sherwood for the next 15 years. One of the most significant investments that is envisioned to be made in this corridor is transit service.

Process for Developing Potential Routes

Throughout the last year, the cities along the corridor have been engaging their communities to establish a future land use and transit vision. In Tualatin, we called this effort, "Linking Tualatin." By combining the work developed in Tualatin along with the plans in Portland, Tigard, and Sherwood, many patterns were identified. Locally, it became clear that Bridgeport Village and Downtown Tualatin were the priority places to connect with high capacity transit in the future. Other cities were able to also direct the alignments to the locations that mattered most to their community.

Potential Transit Alignments

Last November, the Tualatin City Council reviewed the potential transit options (not alignments) that were requested by the Southwest Corridor Steering Committee to be studied in more detail and explored with residents and businesses within the corridor. The options included Light Rail Transit (LRT) and Bus Rapid Transit (BRT) to various points throughout the corridor; however, exact alignments were not defined.

Since November, Metro, in partnership with TriMet, ODOT, and the cities within the corridor, have developed potential alignments for the various options (Attachment A). Many of the

potential alignments travel to or through Tualatin. While LRT requires dedicated right-of-way, BRT is more flexible and can operate in existing lanes, as well as dedicated right-of-way. During the next several months, the Southwest Corridor technical team will evaluate these potential routes.

Future Analysis

In February, the Southwest Corridor Steering Committee will be asked to forward five transit alignments to the evaluation phase. This phase will include analyzing the following:

- potential ridership;
- travel time;
- estimated capital costs;
- estimated operating costs;
- property impacts;
- potential alignment options; and
- station locations.

Next Steps:

- **February 11:** SW Corridor Steering Committee - Forward options to evaluation
- **March:** Public Outreach
- **April:** Release evaluation results
- **June:** Select an alignment, along with other local investments

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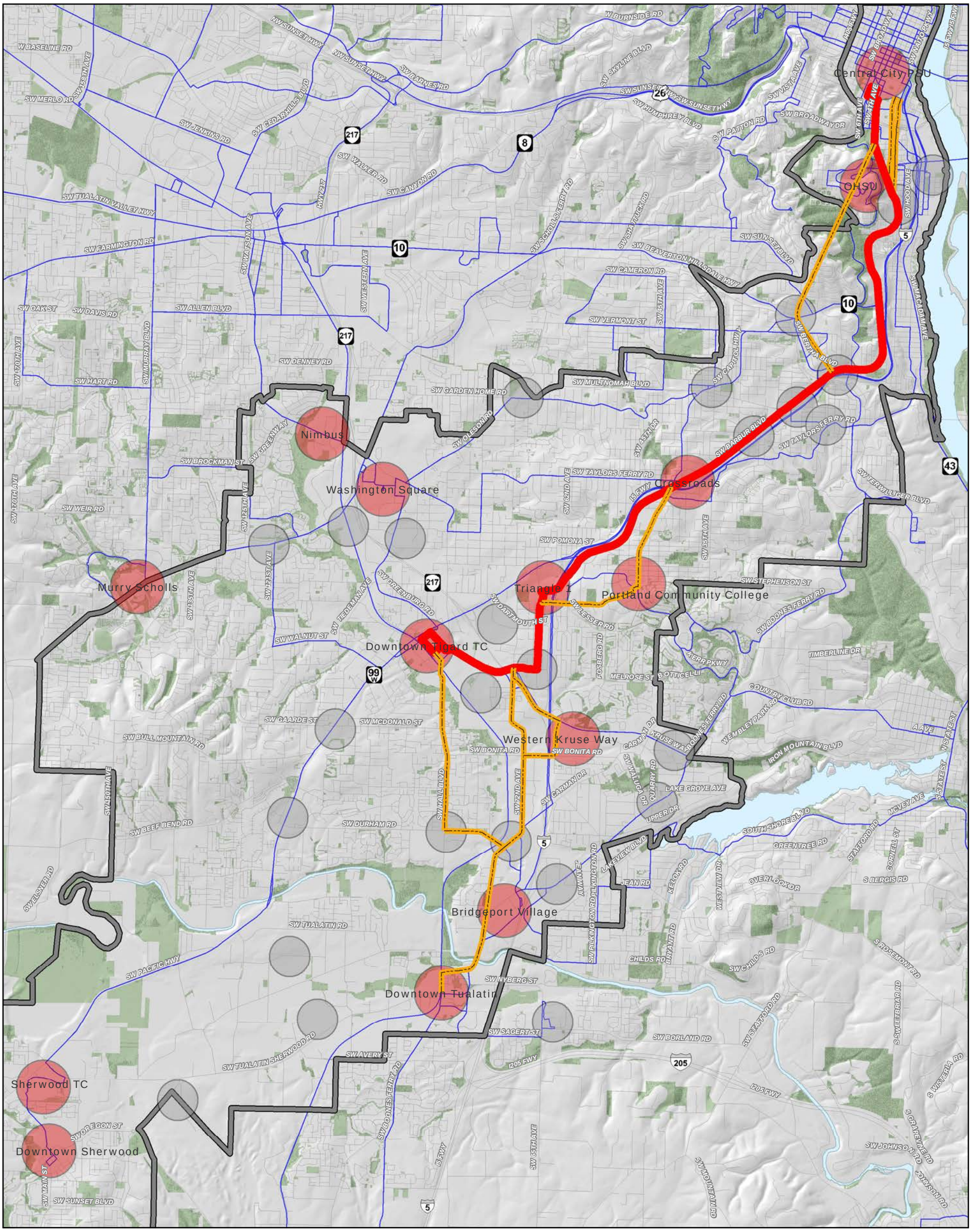
Attachments: A - High Capacity Transit Potential Alignments
B - Bus Rapid Transit Explanation
C - Presentation

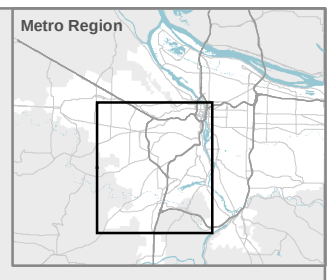
Southwest Corridor

LRT to Tigard Alignment Options



Map 19.A
LRT to Tigard Alignment Options

- Baseline
- Alternatives Alignement
- Existing Transit
- Streets
- Study Area
- Other Identified Places
- Priority Places



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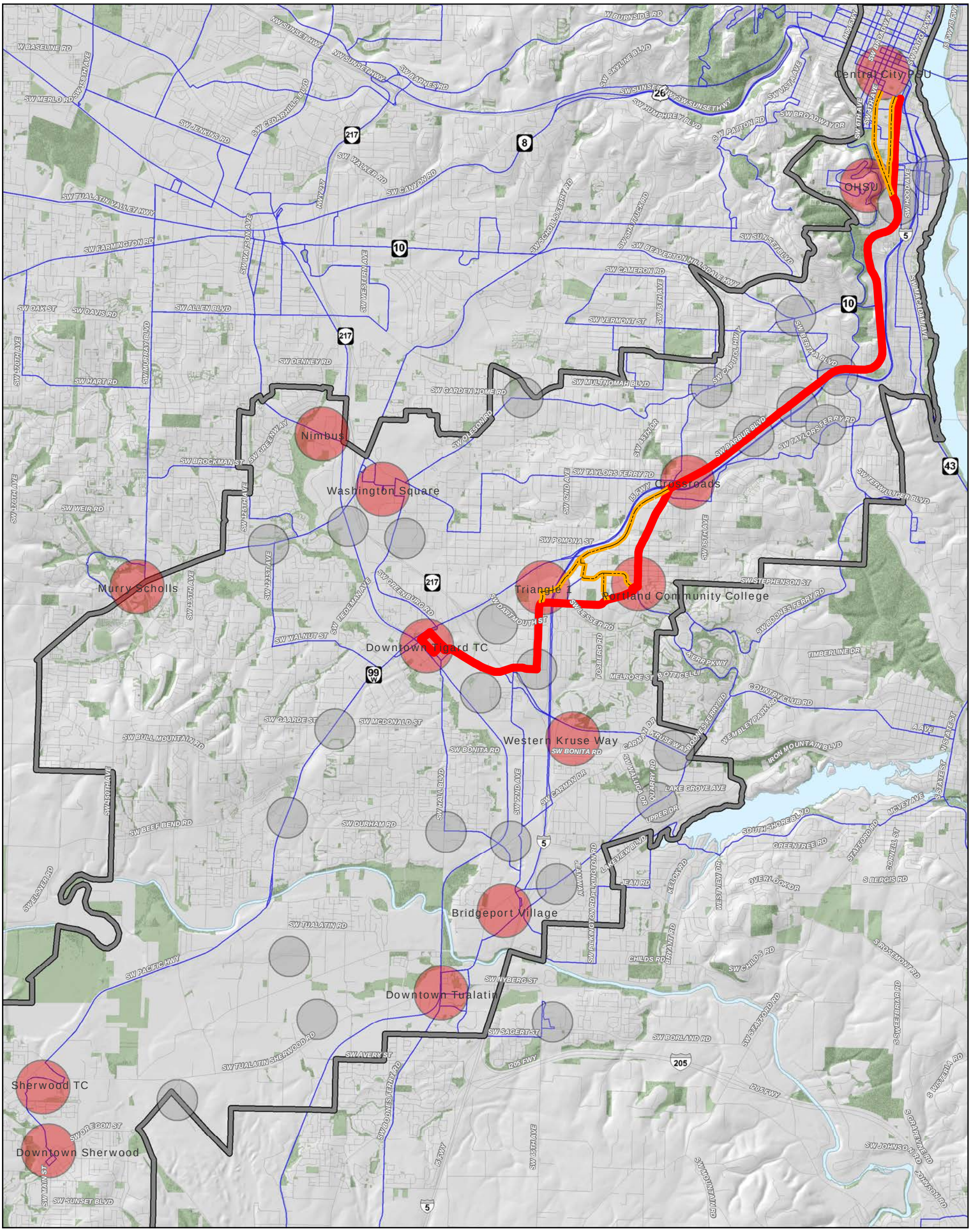
Metro

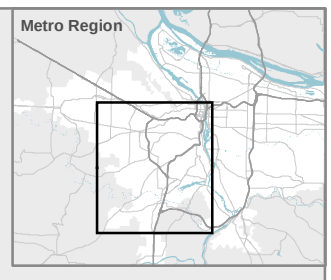
Southwest Corridor

BRT to Tigard Alignment Options



Map 19.B
BRT to Tigard Alignment Options

- Baseline
- Alternative Alignments
- Existing Transit
- Streets
- Study Area
- Other Identified Places
- Priority Places



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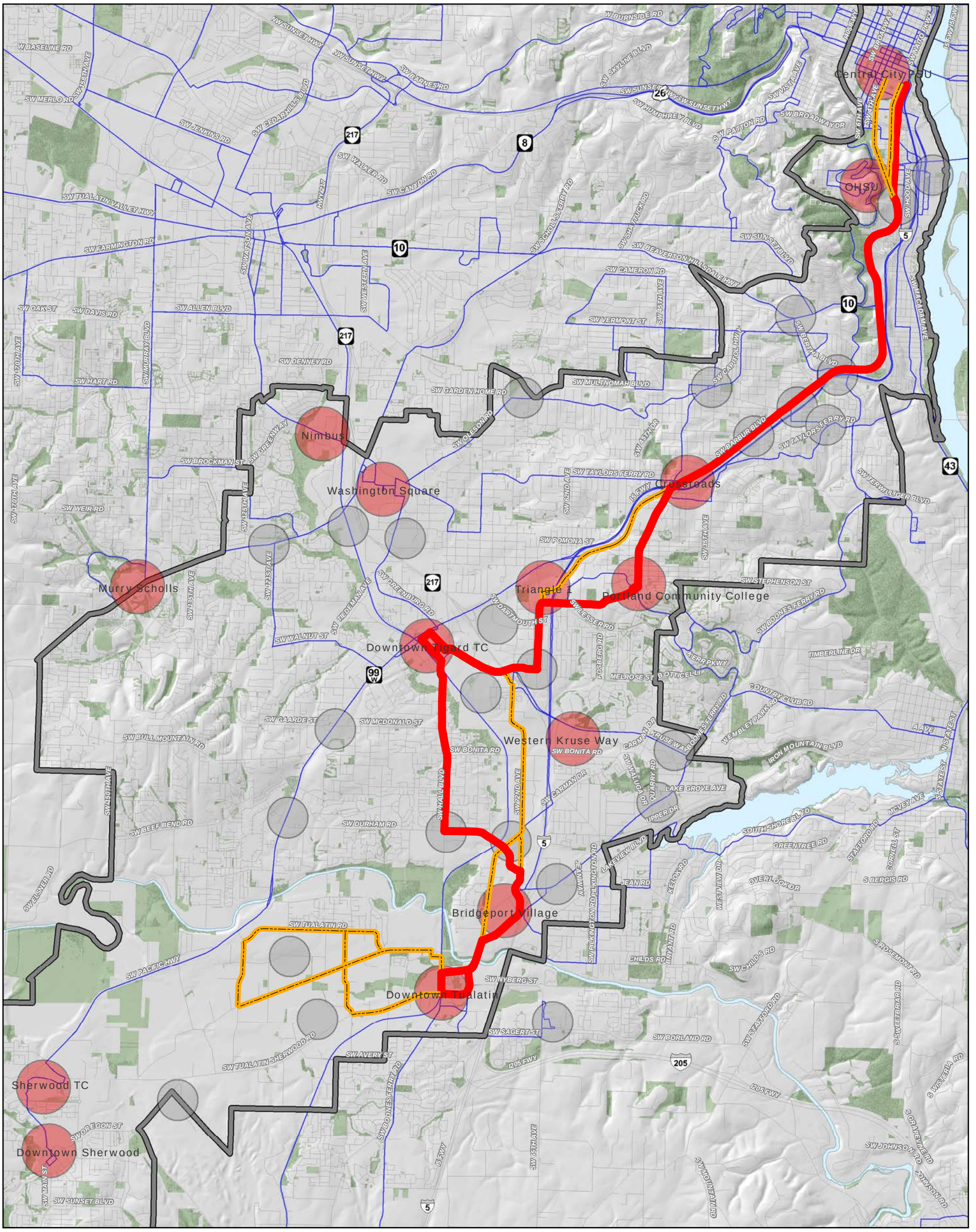
Metro

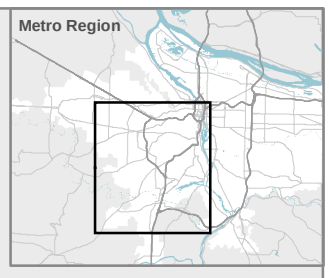
Southwest Corridor

BRT to Tualatin Alignment Options



Map 19.C
BRT to Tualatin Alignment Options

- Baseline
- Alternative Alignments
- Existing Transit
- Streets
- Study Area
- Other Identified Places
- Priority Places



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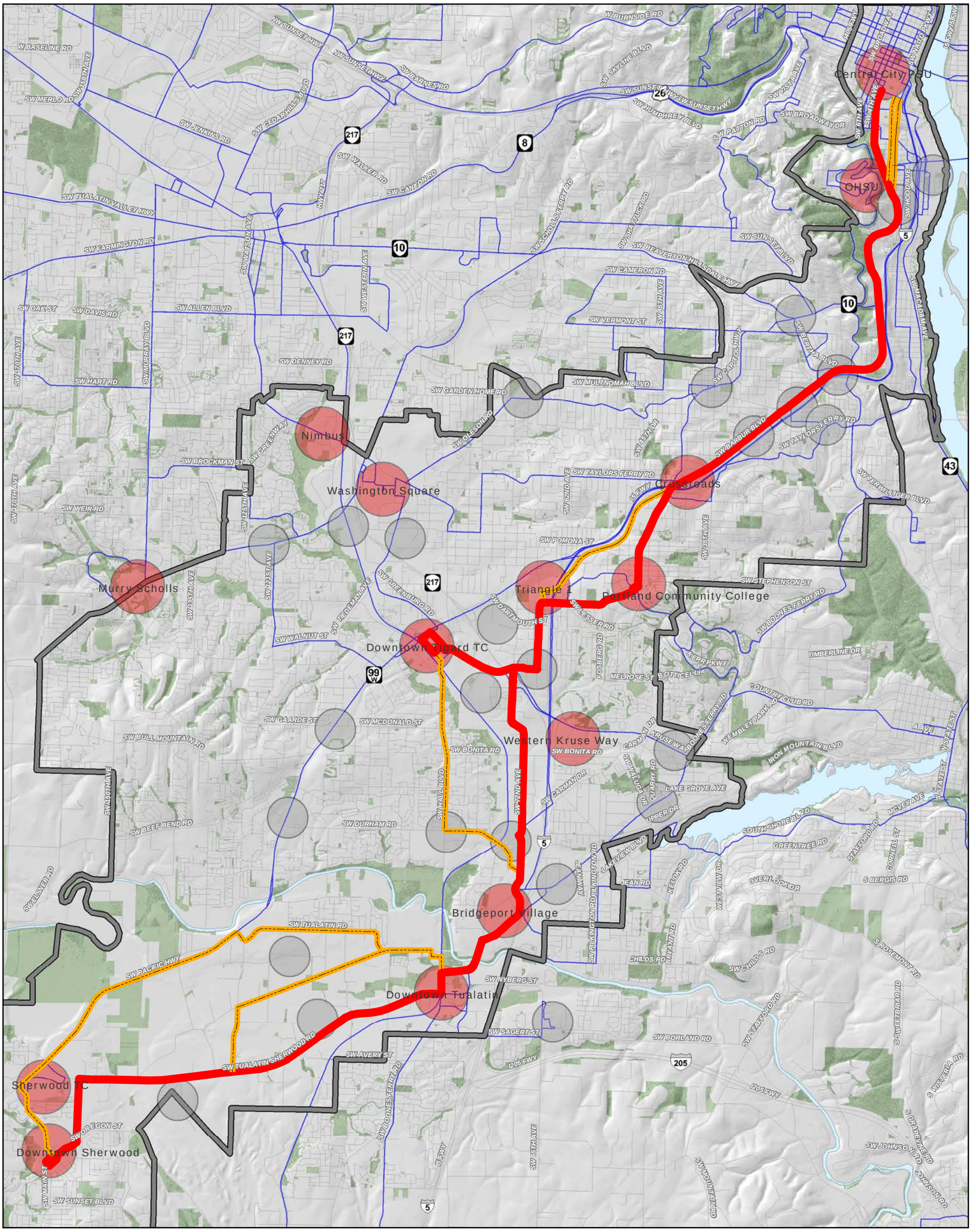
Metro

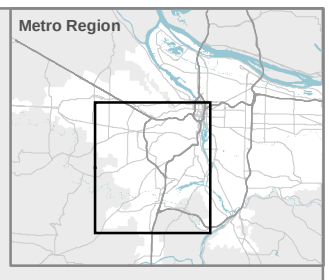
Southwest Corridor

BRT to Sherwood Alignment Options



Map 19.D
BRT to Sherwood Alignment Options

- Baseline
- Alternative Alignments
- Existing Transit
- Streets
- Study Area
- Other Identified Places
- Priority Places



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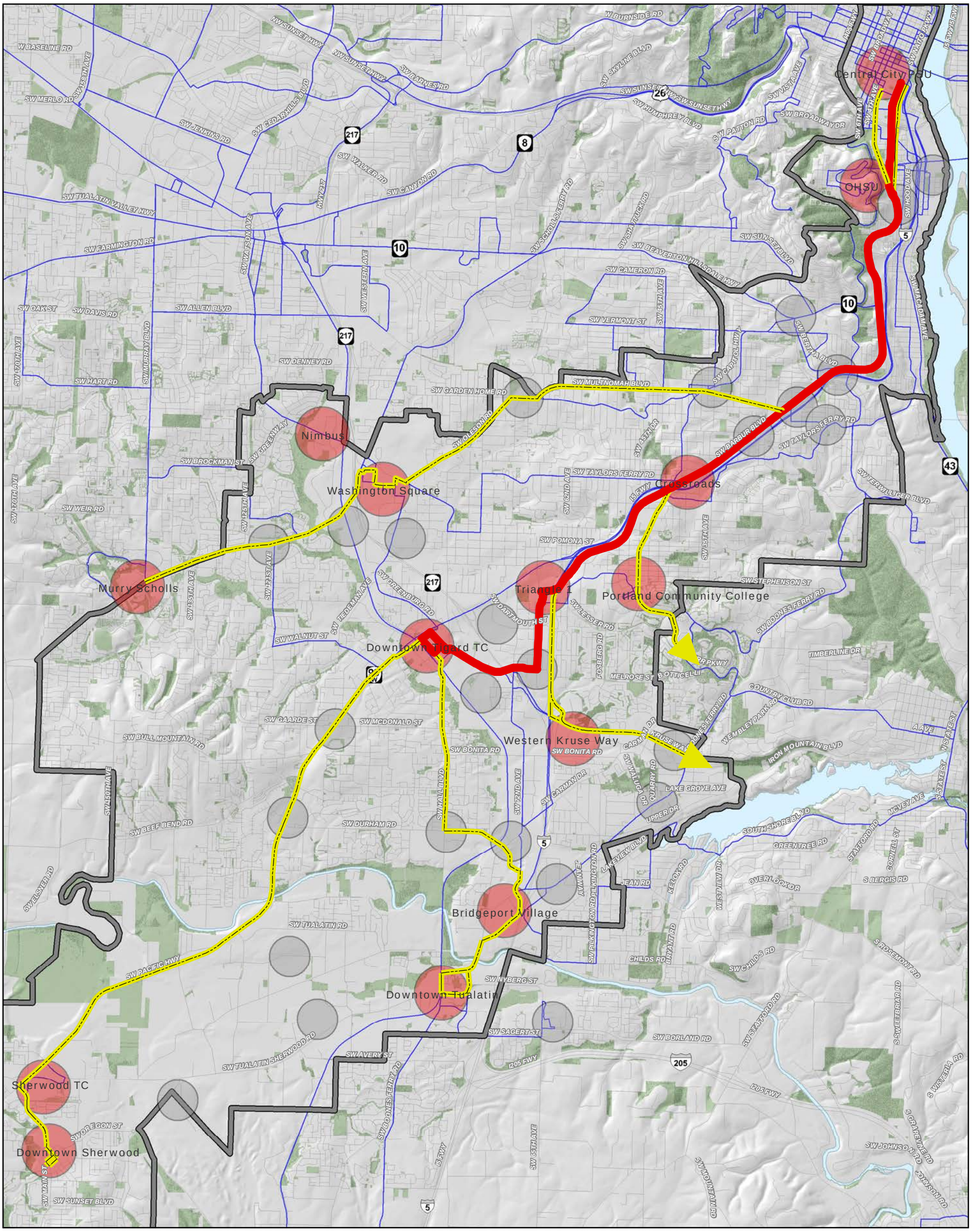
Metro

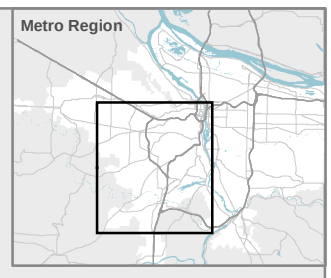
Southwest Corridor

BRT Hub and Spoke Alignment Options



Map 19.E
BRT Hub and Spoke Alignment Options

- Baseline
- Spokes
- Existing Transit
- Streets
- Study Area
- Other Identified Places
- Priority Places



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Metro

Bus rapid transit in other cities

Boston, Mass.

The Massachusetts Bay Transit Authority's (MBTA) Silver Line in Boston is an example of bus rapid transit in an urban corridor. The Silver Line operates using dedicated transit lines as well as in mixed traffic. In addition, the Silver Line has a 1.5 mile underground segment which includes three underground stations.

Eugene, Ore.

The Eugene Emerald Express (EmX) operates using both separate running ways and in dedicated lanes alongside mixed traffic. The separate running ways account for about 60 percent of the route and consist of exclusive single and dual bus lanes. The remaining 40 percent of the route is dedicated bus lanes, which are at a grade and separated from general traffic by yellow bus lane marking. When operating alongside traffic, the EmX utilizes traffic signal prioritization and queue jump lanes.

Cleveland, Ohio

The HealthLine operates in Cleveland in dedicated bus lanes and uses traffic signal prioritization. In downtown Cleveland, buses run along exclusive lanes in the center of the street.

Las Vegas, Nev.

The Metro Area Express (MAX) in Las Vegas has 4.5 miles of dedicated lanes (out of a total route of 7.5 miles). These dedicated lanes are aligned at the curb and shared with right turning traffic. The Strip Downtown Express (SDX) includes the same elements as the MAX plus a central median and dedicated right of way for 2.25 miles.

Los Angeles, Calif.

The Orange Line operated by the Los Angeles County Metropolitan Transit Authority (Metro) is a two lane, fourteen mile dedicated busway. The Orange Line operates using signal prioritization, dedicated bus lanes and uses an existing railroad right of way.

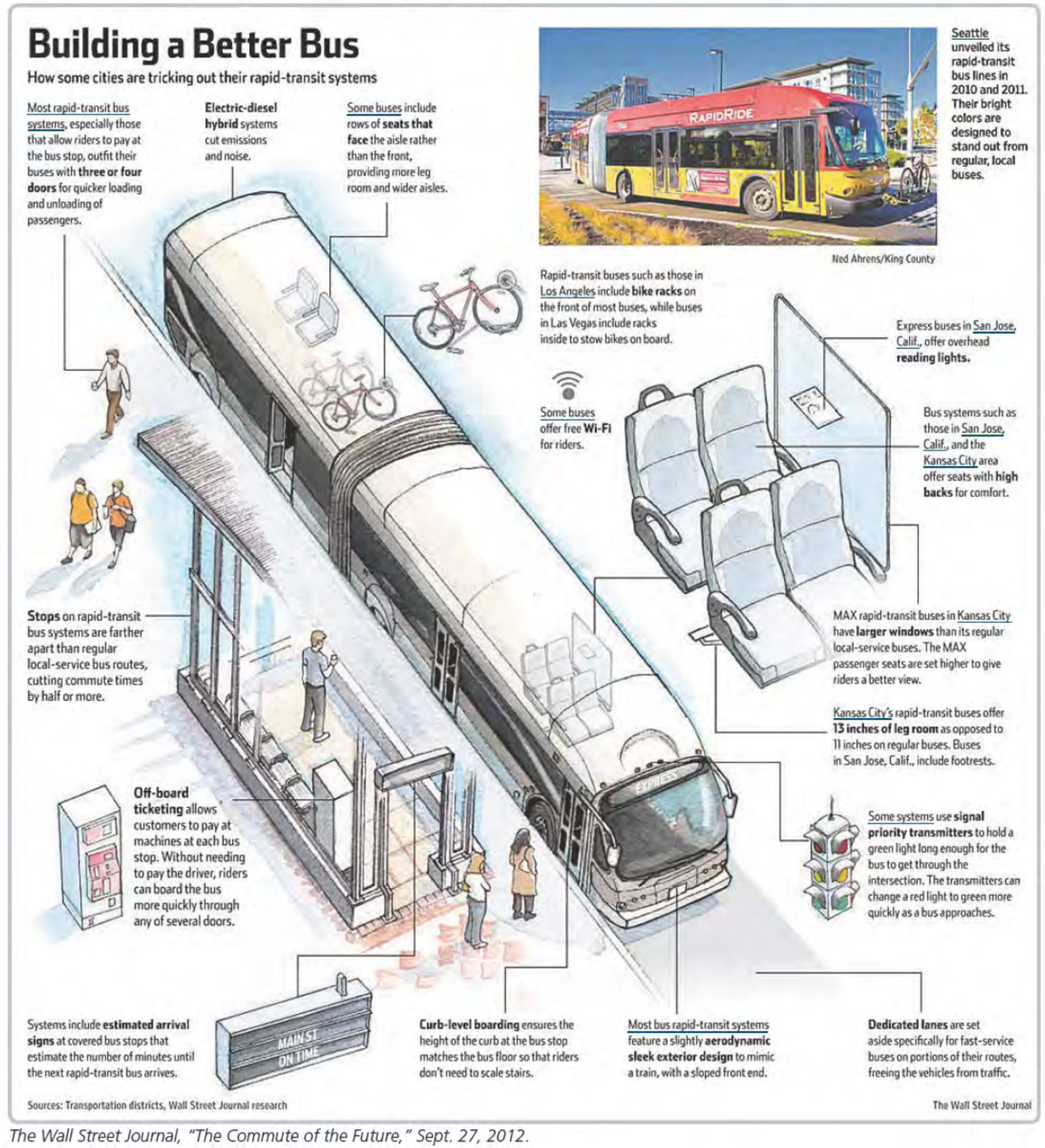
Kansas City, Mo.

The Metro Area Express (MAX) runs on a 6-mile linear route in Kansas City. The MAX operates using bus only curb lanes during peak hours and full time bus only lanes in downtown Kansas City. The MAX is also given signal priority during peak hours.

GREAT PLACES SW Corridor

What is bus rapid transit?

Bus rapid transit service uses high capacity buses in their own guideway or mixed in with traffic, with limited stops and a range of transit priority treatments to provide speed, frequency and comfort to users. Most stations have significant and easily identifiable passenger infrastructure, including waiting areas that are weather protected. Additional station amenities may include real-time schedule information, trip planning kiosks, ticket machines, special lighting, benches and bicycle parking.



The Wall Street Journal, "The Commute of the Future," Sept. 27, 2012.

Vehicles

Bus rapid transit vehicles often have a larger passenger capacity than conventional buses and utilize modern designs and special branding to differentiate bus rapid transit from standard local bus service. They often have level-platform boarding and multiple doors to make entering and exiting the vehicles easier and faster. Many bus rapid transit systems use vehicles with alternative fuels and pollutant emissions controls.

Cleveland vehicle (Matt Johnson, GGW)

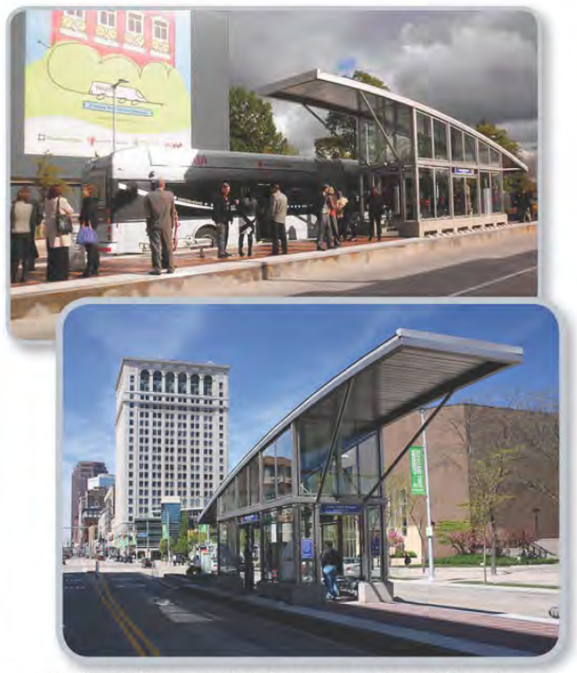
Vehicle interior

Eugene vehicle

Stops and stations

Bus rapid transit stations are generally spaced further apart than standard service stops in order to improve travel time for riders. Stations are typically designed similarly to light rail stations, with features that enhance the passenger experience. These may include enhanced shelters, improved accessibility, improved security elements, and real-time arrival information. Stations contribute to the branding of bus rapid transit systems that distinguish them from standard bus service.

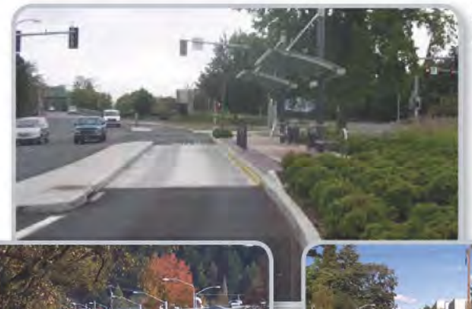
Eugene station and crosswalk



Cleveland's HealthLine (Institute for Transportation and Development Policy; Urban Indy)

Dedicated lanes

Bus rapid transit can operate in mixed traffic, in transit priority lanes or in dedicated transitways. Dedicated transitways operate much like light rail tracks, providing the bus rapid transit with exclusive use of a transit guideway that greatly improves speed and reliability. Transitways could be constructed over long distances or over shorter distances in targeted areas, and could operate in one or both directions.



Eugene dedicated lane and station

Eugene double track median guideway with landscaping

Eugene single track median guideway and station

Off-board ticketing

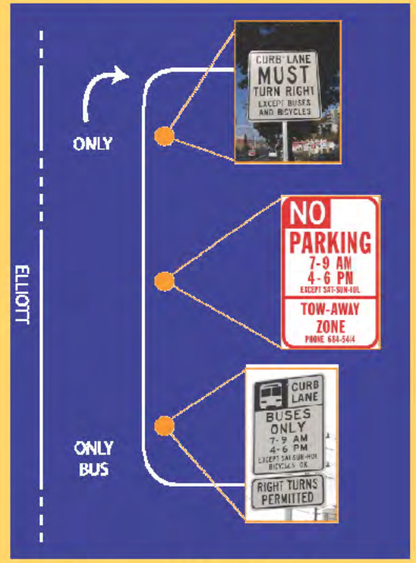
Some bus rapid transit systems include off-board ticketing similar to light rail. Off-board ticketing minimizes dwell times and expedites boardings since passengers can board through either door, contributing to improved travel times and reliability.

Eugene fare machine with emergency call button

Cleveland fare machine (Marvin Fong, The Plain Dealer)

Business access and transit lanes

Transit priority lanes might include business access and transit (BAT) lanes, in which buses share the lane with autos turning right at the next intersection or into business access. Such lanes might operate as BAT lanes all-day or only in peak periods. BAT lanes provide auto access to businesses along the alignment while allowing bus rapid transit vehicles to bypass congestion on the main roadway.



Seattle Department of Transportation

Local and high capacity transit

Transit modes

Local bus

Local bus service focuses on community access, with stops about every 2 blocks to a quarter mile. This service typically uses traditional buses (about 45 seats) but may also use articulated buses (about 65 seats). Local bus service shares roadway and ranges in frequency depending on the route and time of day.

Express bus

Express buses in the region are local bus service, using the same vehicles and following the same routes. Express bus service moves the focus toward regional mobility by reducing the number of stops during peak periods between concentrated housing and employment areas.

Enhanced bus

Enhanced bus service focuses on regional mobility, connecting concentrated housing and employment areas. The service may use traditional buses or those with more amenities (for instance, coach-style vehicles) or more capacity, be given signal priority, have few stops, and/or have special lanes in limited areas. Service frequency can be increased during peak hours.

Streetcar

Streetcar focuses on community access within an urban area, with stops about every three or four blocks. Local streetcar service has been used in Portland to encourage development of shopping, housing and other destination areas. Streetcars have 30 seats per car with room and design for several passengers to stand. Cars can be doubled, and service frequency increased, during peak hours. The service operates in mixed traffic.

Rapid streetcar

Using the same technology as local streetcar, rapid streetcar focuses on regional mobility, offering fewer stops through less populated areas to connect housing areas to jobs or other destinations. Cars can be doubled, and service frequency increased, during peak hours. The service operates in mixed traffic, in exclusive right of way or a combination of the two.

Bus rapid transit

Bus rapid transit uses coach-style or high capacity buses (40-60 seats with room and design for several passengers to stand). The service may be in the roadway with turnouts and signal priority for stops, have an exclusive right of way, or be some combination of the two. The service focuses on regional mobility, with higher speeds, fewer stops, higher frequency and more substantial stations than local bus, connecting concentrated housing or local bus hubs and employment areas. Service frequency can be increased during peak hours.

Light rail

Light rail uses high capacity trains (68 seats with room and design for several passengers to stand) and focuses on regional mobility with stops typically one-half to 1 mile apart, connecting concentrated housing or local bus hubs and employment areas. The service has its own right of way. Cars can be doubled, and service frequency increased, during peak hours.

Commuter rail

Commuter rail uses high capacity heavy rail trains (74 seats in a single car, 154 in doubled cars), typically sharing right of way with freight or other train service (though out of roadway). The service focuses on connecting major housing or local bus hubs and employment areas with few stops and higher speeds. The service may have limited or no non-peak service.

GREAT PLACES
SW Corridor
www.swcorridorplan.org

Tualatin City Council
Work Session
January 14, 2013

City of Tualatin

SW Corridor Update

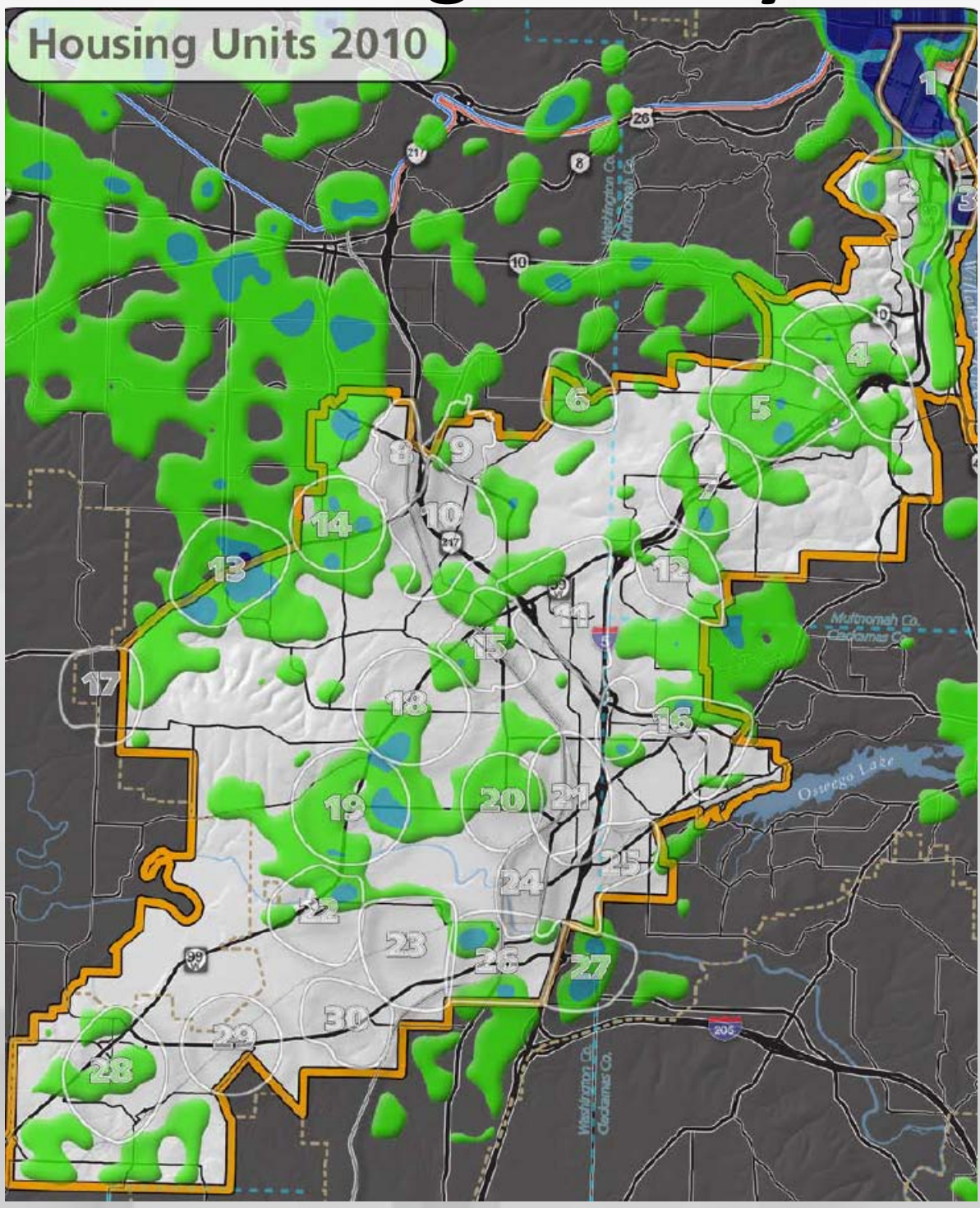
1. **Creating High Capacity Transit Potential Alignments**

2. **Outlining High Capacity Transit Potential Alignments**

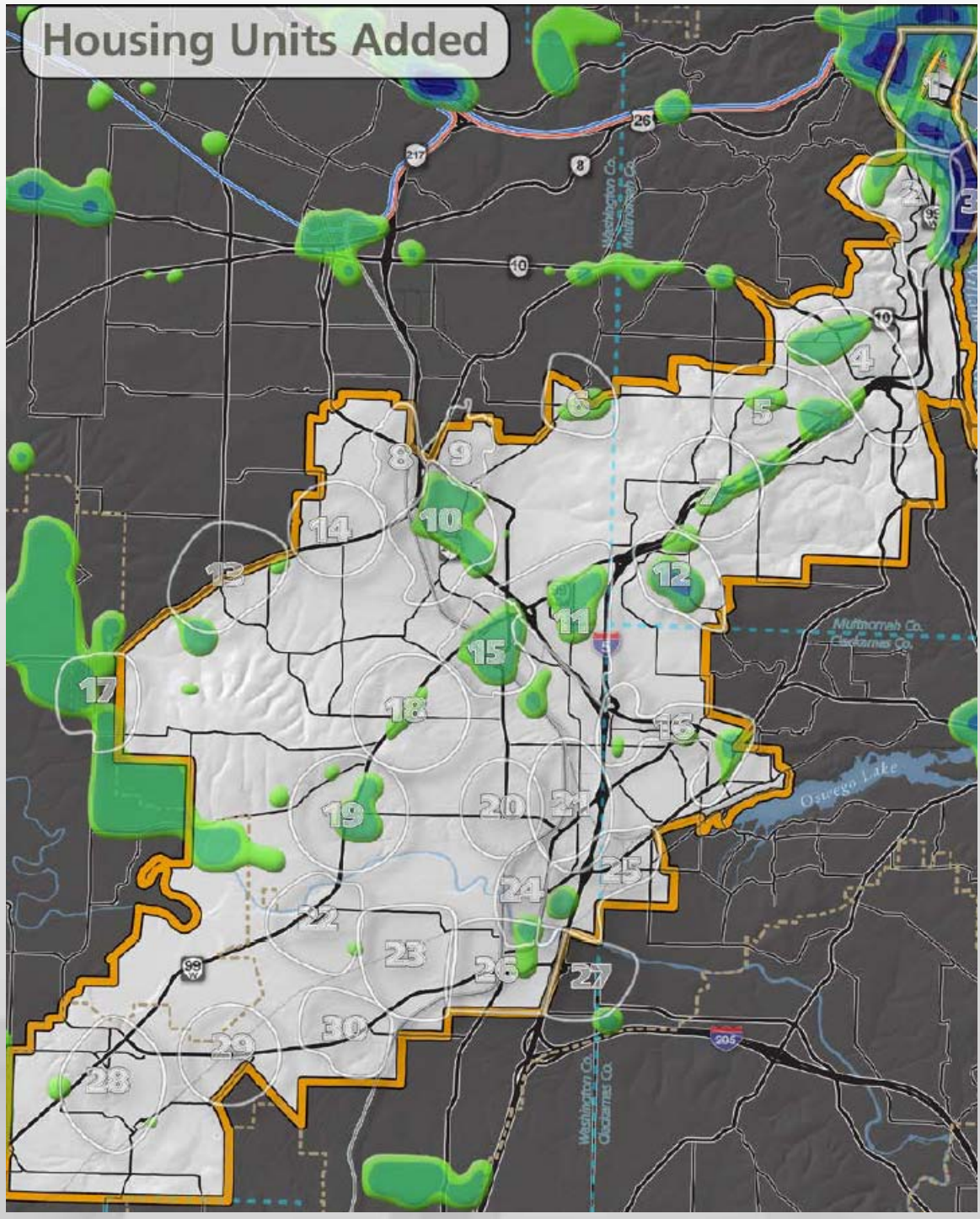
3. **Upcoming Decisions & Next Steps**

Routes: Which routes should be studied and evaluated?

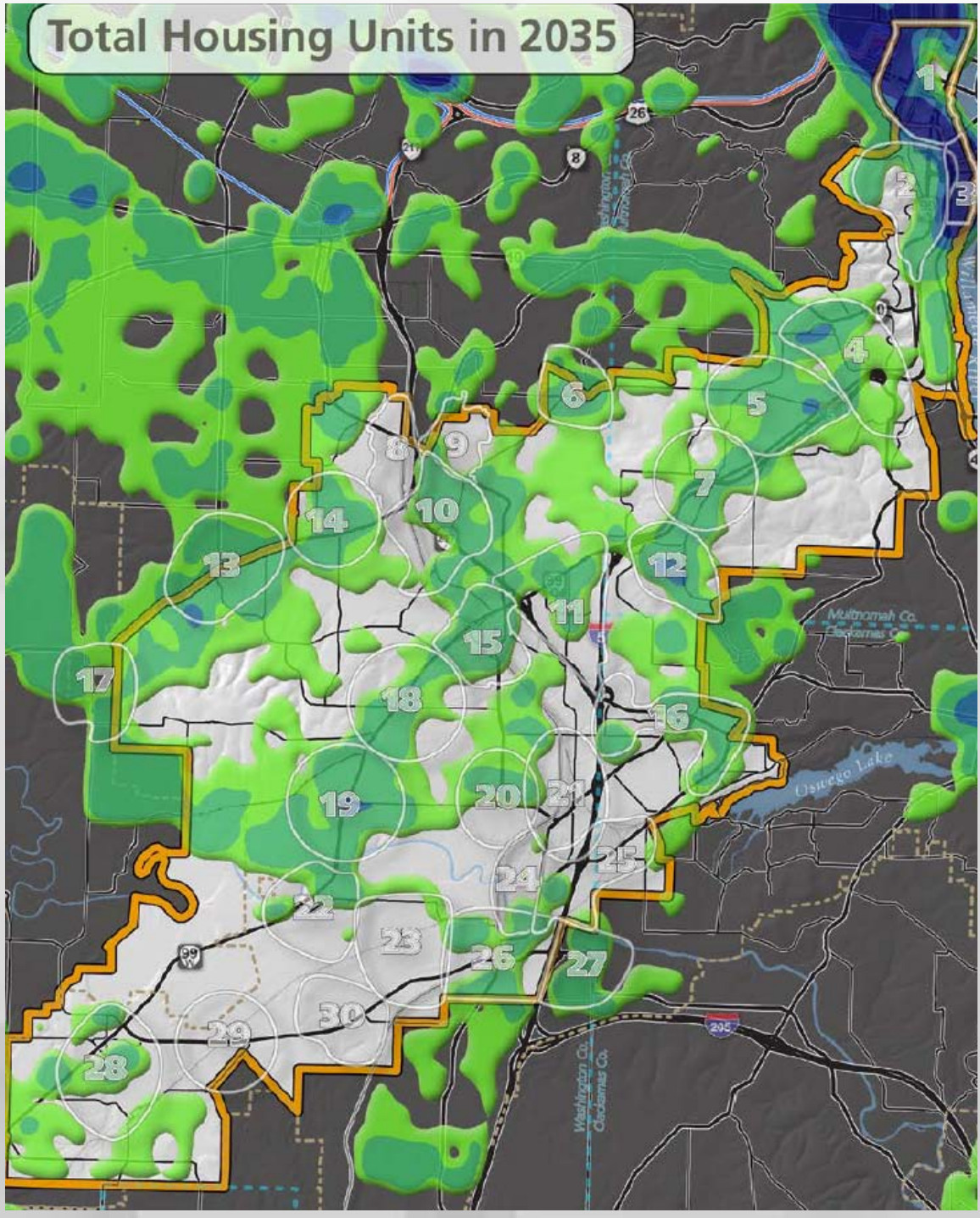
Housing Density



Housing Density



Housing Density



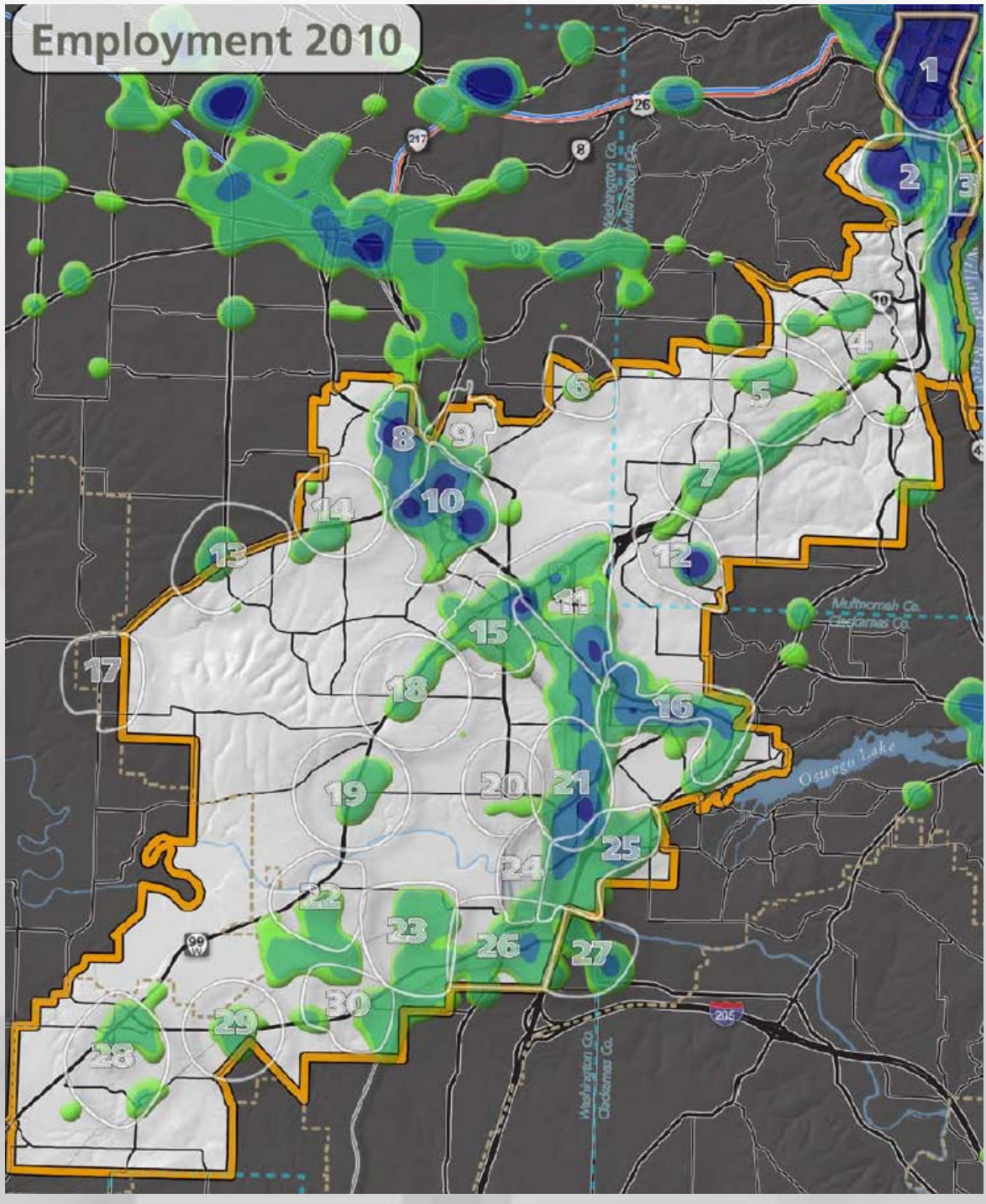
Low Density
1 avg. HU/EMP per Gross Acre

Medium Density
3 avg. HU/EMP per Gross Acre

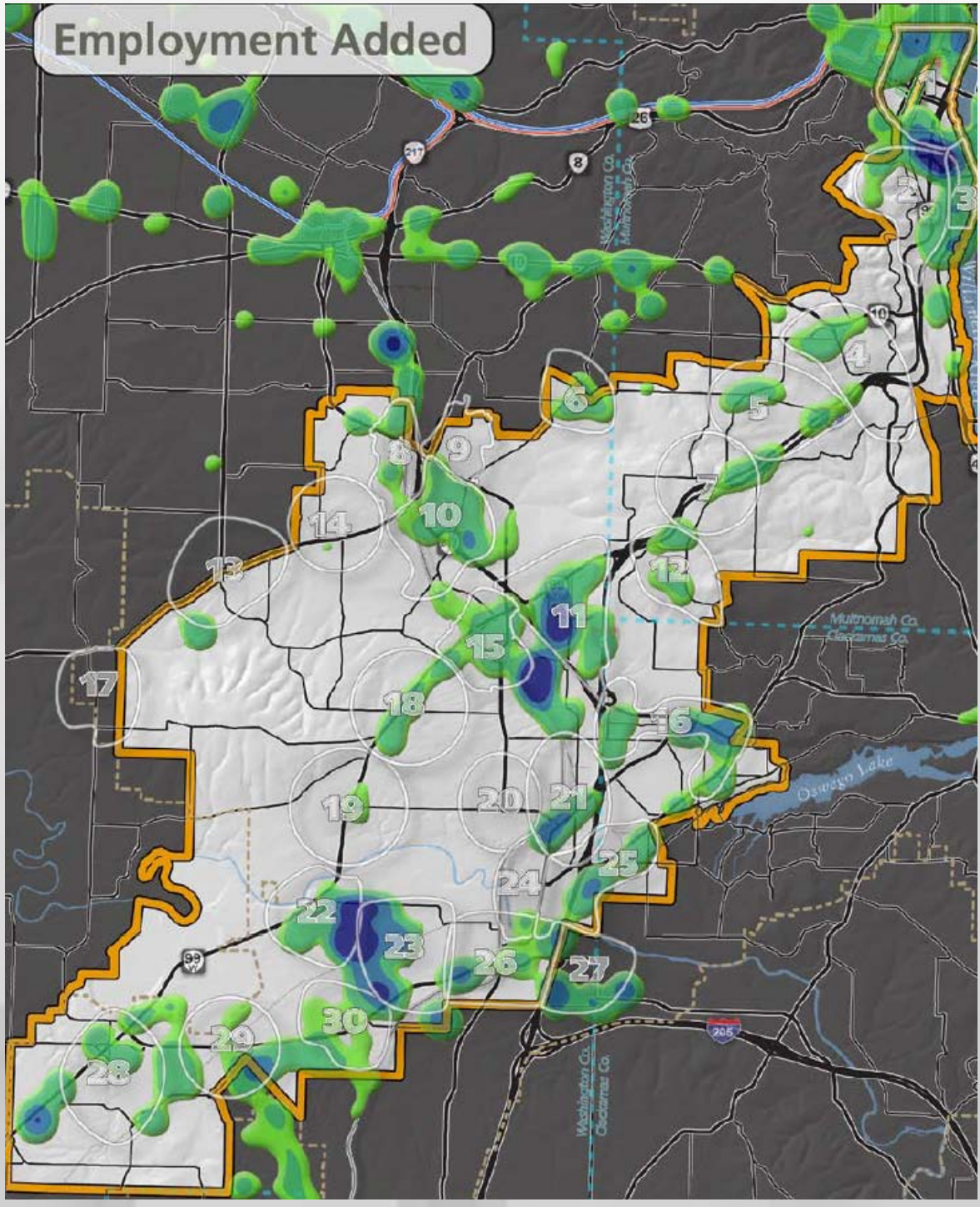
Medium-High Density
5 avg. HU/EMP per Gross Acre

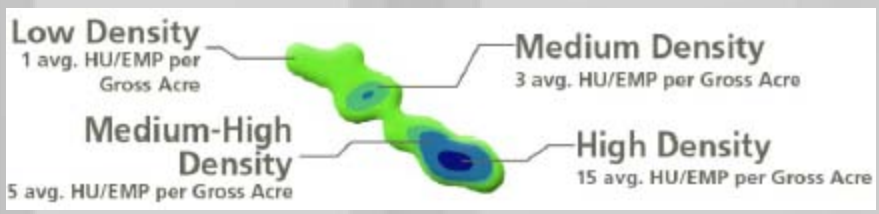
High Density
15 avg. HU/EMP per Gross Acre

Employment Density

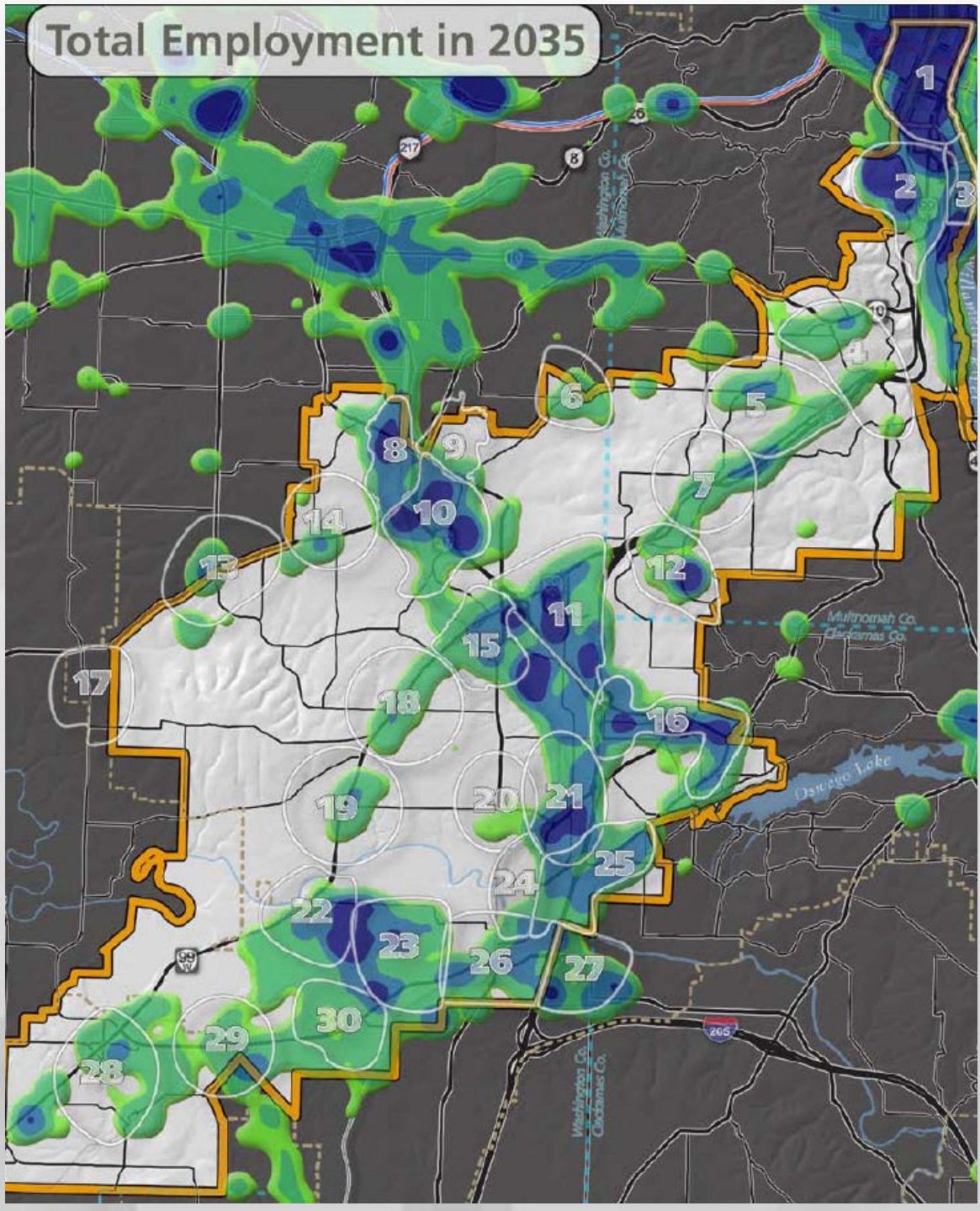


Employment Density





Employment Density

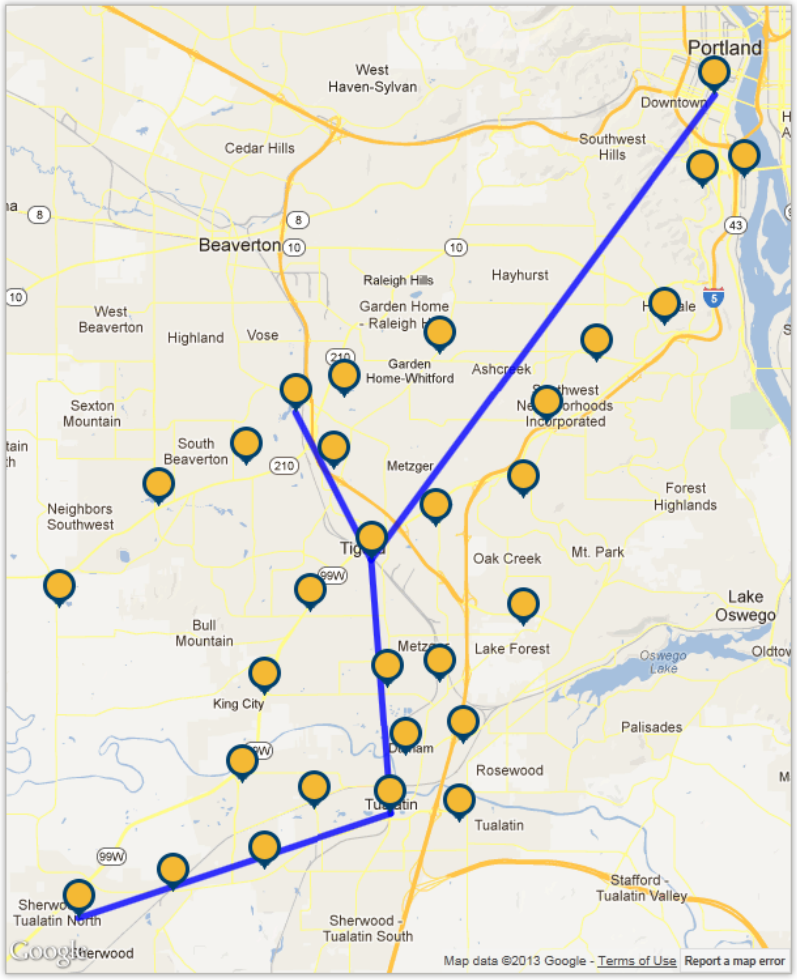


Online Forum

1. Choose your future transit connections

The Southwest Corridor Plan includes an exploration of possible transit investments. These investments may include high capacity transit (bus rapid transit or light rail) and investments in local bus service. What areas of the corridor would you like to see connected by transit in the future? (Pick up to five connections)

Find out about these map points

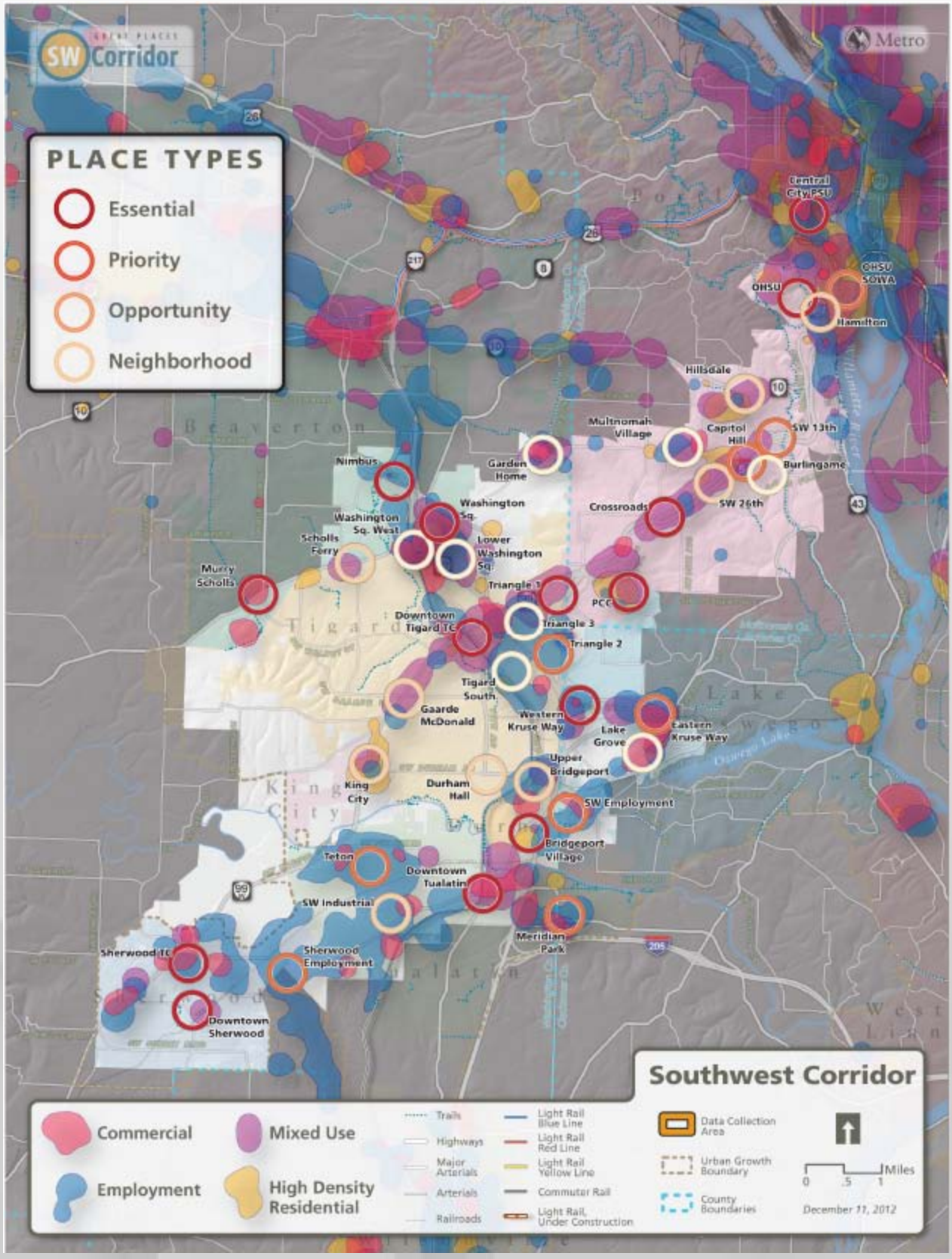


Connections (reset)

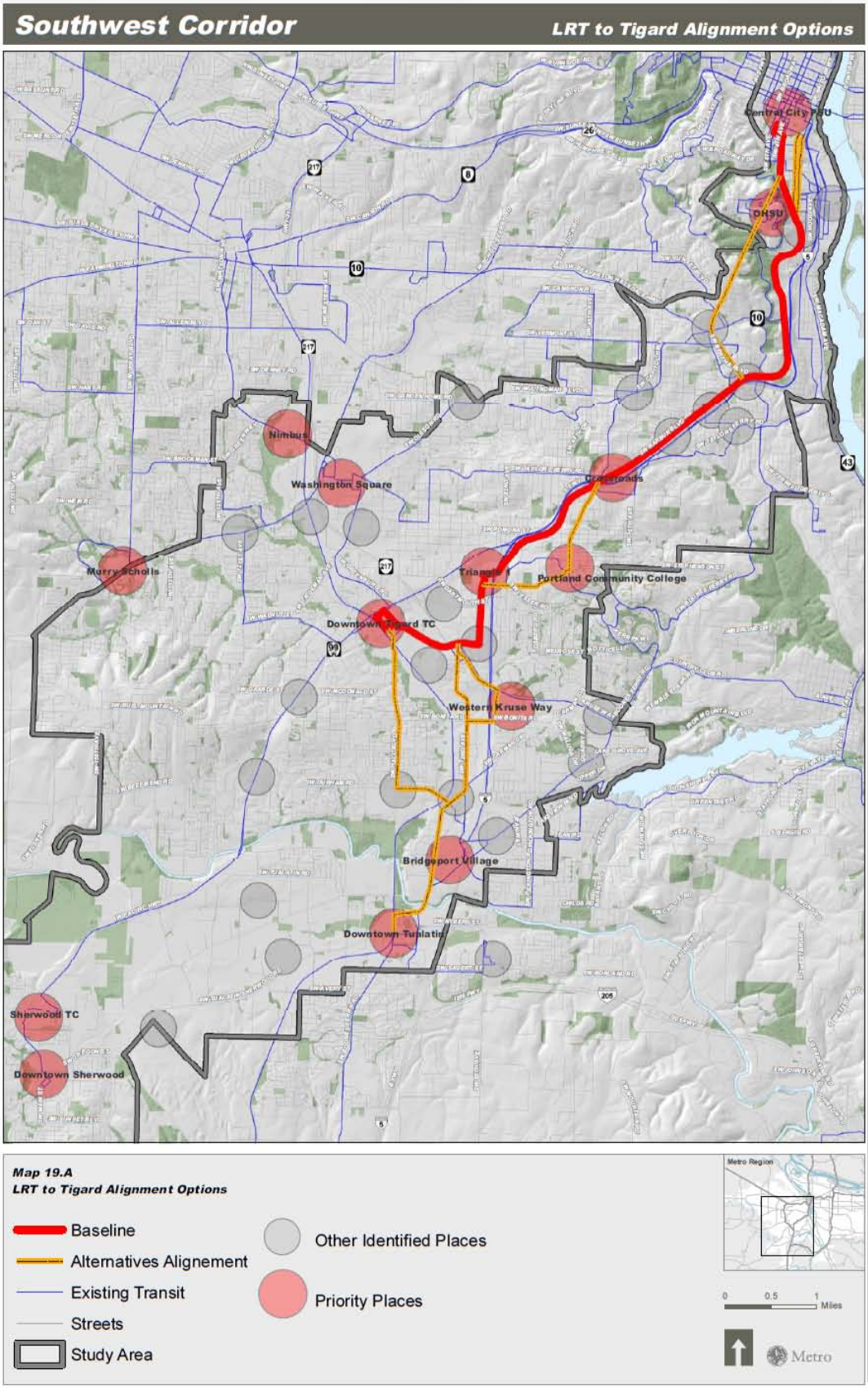
- Downtown to Downtown Tigard ×
- Downtown Tualatin to Downtown Tigard ×
- Downtown Tualatin to Sherwood Town Center ×
- Downtown Tigard to Nimbus ×

Next Step

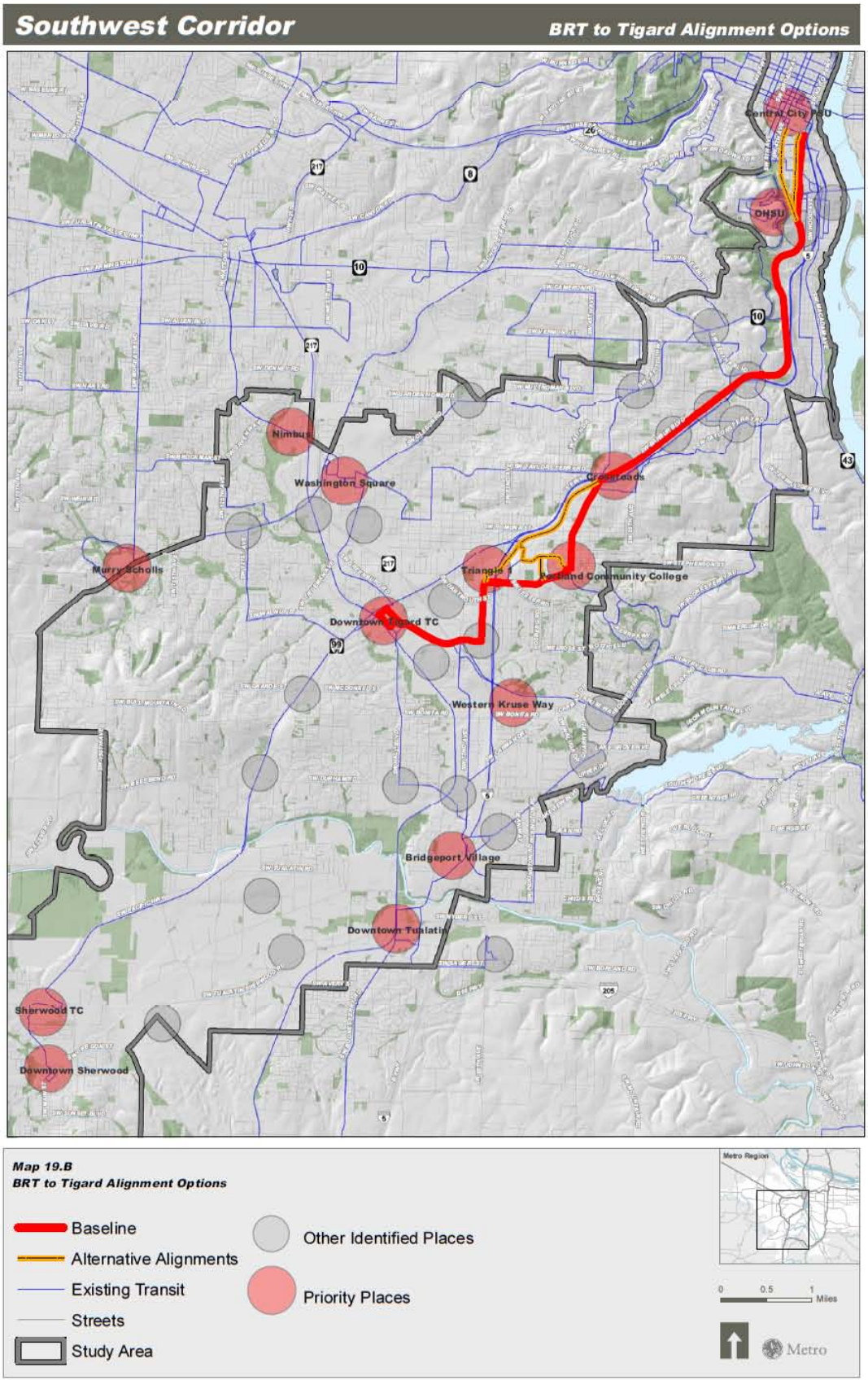
Key Places


SW Corridor
Metro
PLACE TYPES
Essential
Priority
Opportunity
Neighborhood
Central City/PSU
OHSU
OHSU SOWA
Hamilton
Hillsdale
Multnomah Village
Capitol Hill
SW 13th
Burlingame
Crossroads
SW 26th
Garden Home
Nimbus
Washington Sq.
Washington Sq. West
Scholls Ferry
Lower Washington Sq.
Murry Scholls
Triangle 1
PCC
Triangle 3
Triangle 2
Downtown Tigard TC
Tigard South
Gaarde McDonald
Western Kruse Way
Lake Grove
Eastern Kruse Way
Upper Bridgeport
King City
Durham Hall
SW Employment
Bridgeport Village
Teton
Downtown Tualatin
SW Industrial
Meridian Park
Sherwood TC
Sherwood Employment
Downtown Sherwood
Southwest Corridor
Commercial
Mixed Use
Employment
High Density Residential
Trails
Highways
Major Arterials
Arterials
Railroads
Light Rail Blue Line
Light Rail Red Line
Light Rail Yellow Line
Commuter Rail
Light Rail, Under Construction
Data Collection Area
Urban Growth Boundary
County Boundaries
Miles
0 .5 1
December 11, 2012

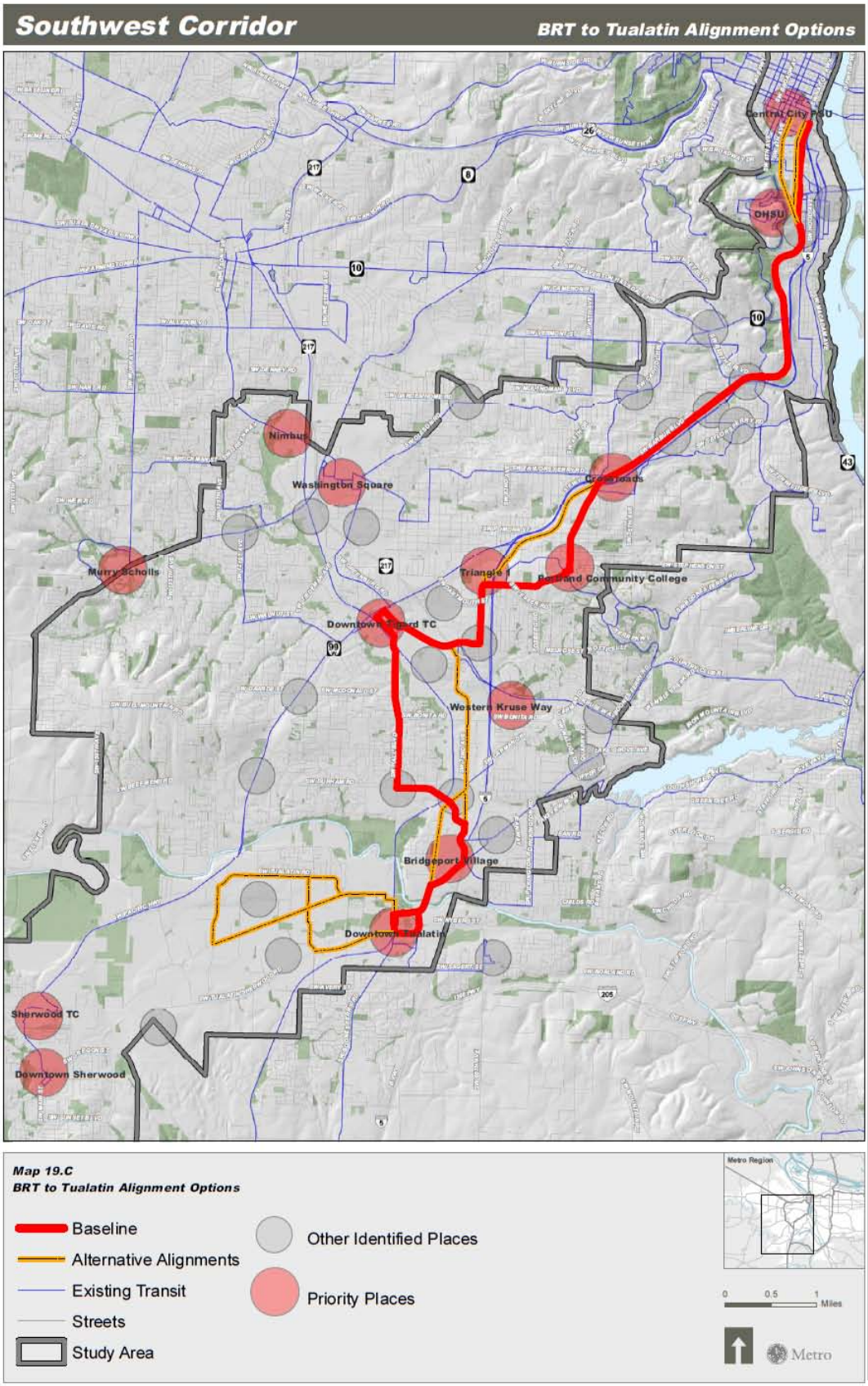
Potential Alignments



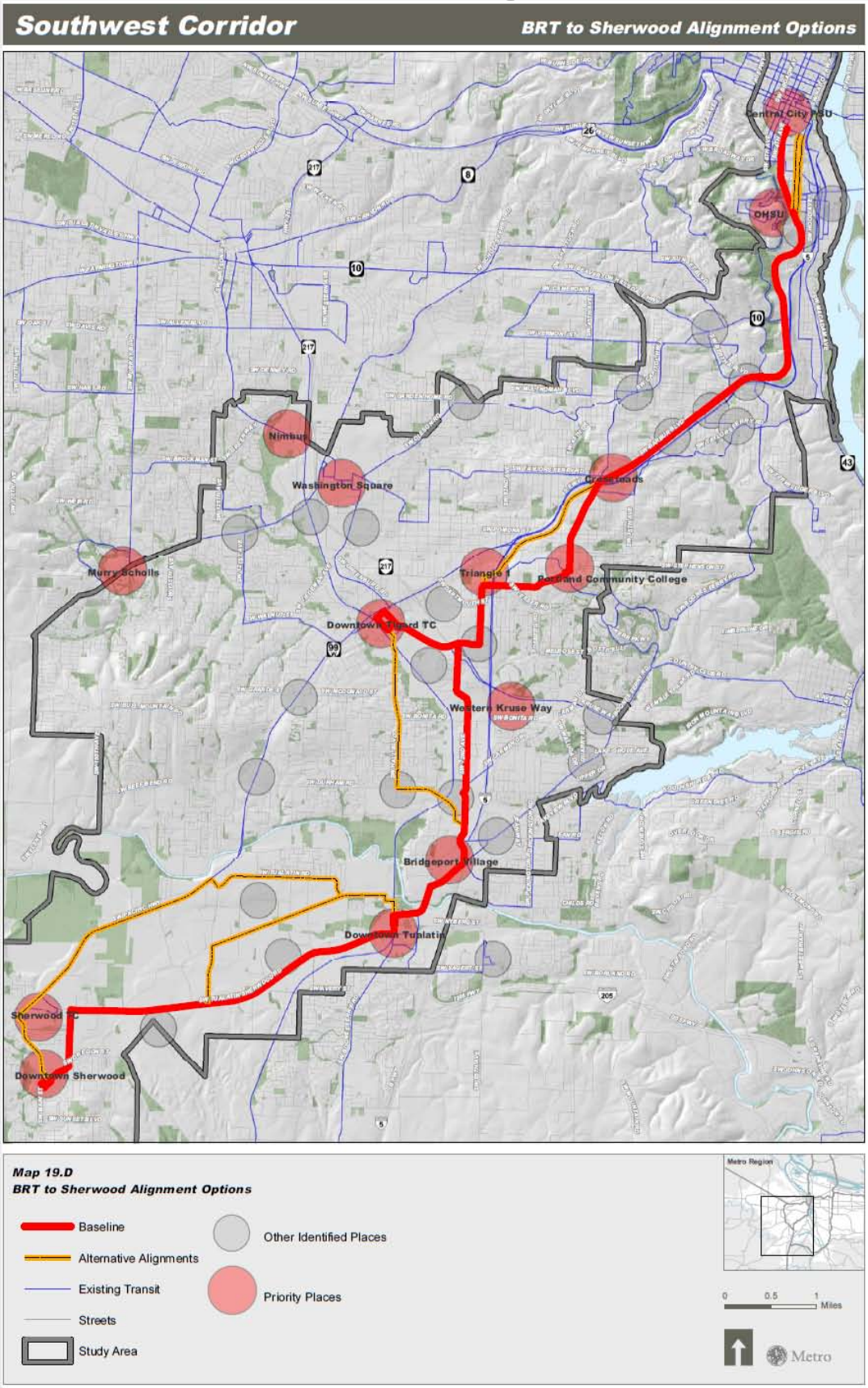
Potential Alignments



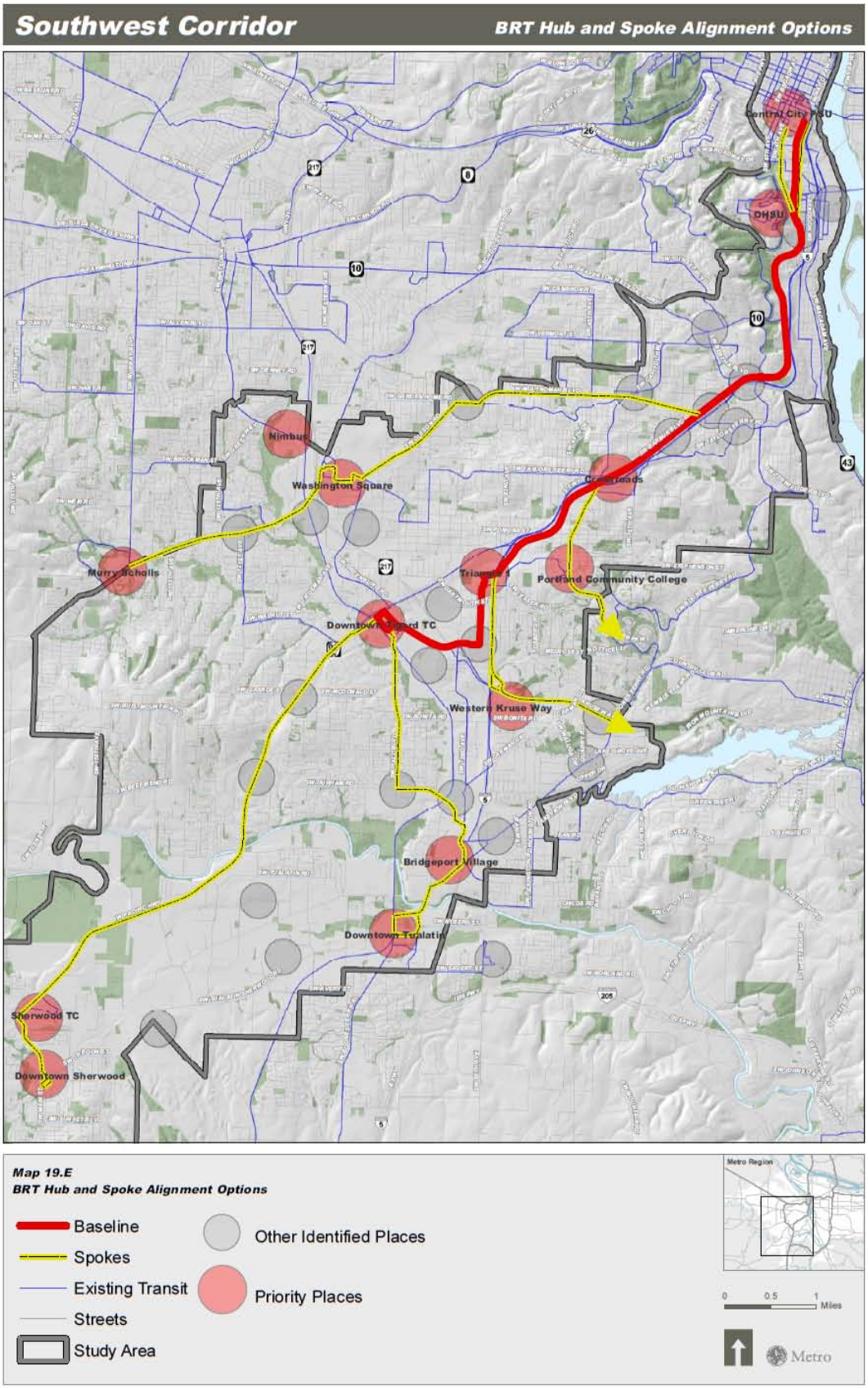
Potential Alignments



Potential Alignments



Potential Alignments



Screening Process & Next Steps

Southwest Corridor Steering Committee (February)

Forward 5 alignments to evaluate

Technical Team (Metro, TriMet, Cities & Consultants)

Evaluate potential alignments

Public Outreach (March & April)

Gather input at open houses, economic summits, planning commission meetings, city councils, etc.

Southwest Corridor Steering Committee (June)

Make final decision

MEMORANDUM
CITY OF TUALATIN

TO: Honorable Mayor and Members of the City Council

THROUGH: Sherilyn Lombos, City Manager

FROM: Cindy Hahn, Associate Planner
Alice Rouyer, Community Development Director

DATE: 01/28/2013

SUBJECT: Linking Tualatin Phase II: Broad Concepts and Next Steps

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ISSUE BEFORE THE COUNCIL:

Tonight's meeting has two purposes:

1. Refine the transit ready places, and
2. Discuss targeted outreach to business and property owners.

EXECUTIVE SUMMARY:

At the October 22, 2012 work session, staff proposed two phases for moving the Linking Tualatin project forward: Phase I: Transportation Project Implementation, and Phase II: Land Use Implementation. This phased approach was also presented to the Transportation Task Force, Tualatin Planning Commission (TPC), and Tualatin Parks Advisory Committee (TPARK).

Phase I: Transportation Project Implementation

Phase I was completed in December 2012 with incorporation of the Southwest Corridor Plan message developed by the Transportation Task Force, TPC, and TPARK into the Linking Tualatin Plan; and integrating an east-west transit connection from Pacific Highway 99W to downtown Tualatin that is emphasized in Linking Tualatin into the proposed Transportation System Plan (TSP) as part of the Transit Modal Plan.

Phase II: Land Use Implementation

Phase II consists of four areas:

- Refine the transit ready place recommendations,
- Conduct property owner and business outreach,
- Participate in and reflect results of the Job Access Mobility Institute (JAMI) work in the Linking Tualatin Plan, and
- Contribute to and integrate components of the Southwest Corridor Plan into the Linking Tualatin Plan.

Tonight's discussion focuses on the broad concepts for land use changes in the Linking Tualatin Plan area that were suggested through public outreach and planning work completed in Phase I of the project. City Council input on these broad concepts will help inform and direct staff work in Phase II as we further refine the Plan's transit ready place recommendations and conduct property owner and business outreach.

DISCUSSION:

Refine Transit Ready Places

Transit ready places defined in the Linking Tualatin Plan include:

- Bridgeport Village,
- Downtown Tualatin,
- Meridian Park/Nyberg Woods,
- Leveton,
- Teton,
- Pacific Financial/124th, and
- Southwest Industrial.

One way to refine these transit ready places is by identifying "broad concepts" for changes that would occur in the planning area with implementation of the Linking Tualatin Plan. These broad concepts generally are recommended to:

- Create a higher concentration of jobs in the transit ready places to make them more attractive to transit service,
- Provide a mixture of uses within employment districts to encourage commuters to travel to work by transit, and
- Improve pedestrian accessibility and comfort related to transit use.

This is consistent with the overall goal of the Linking Tualatin project, which is to explore ways to increase transit use, improve transit connections to the rest of the region, and make Tualatin more "transit ready" over the 20-year planning horizon or longer.

The broad concepts can be grouped into two categories:

1. Land use code changes, and
2. Land use public Investments.

Land use code changes would enable new or expanded land uses, which can be general or site-specific, within the transit ready places. Land use public investments are capital improvement projects that would occur within the various transit ready places. A table and figures that graphically illustrate these broad concepts are included as Attachments A through C. Although Downtown Tualatin is a transit ready place, no broad concepts are shown to occur in it based on the Linking Tualatin Plan because separate planning is expected to occur for this area at City Council direction. The broad concepts are explained in more detail below.

Land Use Code Changes

Mixed-Use:
Mixed-use development is a property or building with two or more different uses, such as housing, office, retail, manufacturing, public, or entertainment, in a compact space. The uses

can be combined horizontally – two or more buildings with a different use in each building – or vertically – one or more buildings with more than one use in each building. Mixed-use development is beneficial from a transit perspective because a greater array of uses, particularly housing and employment, often results in an additional source of transit ridership.

As shown in Attachments A and B, mixed-use is proposed in the Bridgeport Village, Meridian Park/Nyberg Woods, and Pacific Financial/124th Avenue transit ready places. The most feasible way to accomplish this land use code change would be to expand the Mixed Use Commercial Overlay District (MUCOD) which already exists in the Tualatin Development Code (TDC) and allow it to be applied to the identified areas or properties at the property owner's discretion.

Office:
Office development can range in size from small buildings with one or two tenants to large complexes which house business headquarters. While single-story office and light manufacturing uses provide some employment-based transit ridership, there is a potential opportunity to redevelop these low-rise uses with multi-story, more compact development with a mixture of tenants.

As shown on Attachments A and B, one site-specific area in the Bridgeport Village transit ready place is identified as having potential to transition to office use. This area is in the Light Manufacturing (ML) Planning District, and the most likely way to accomplish this land use code change would be to expand the area where additional Commercial Office (CO) uses are already permitted in ML in the TDC to include this area.

Personal Services:
Personal service uses include branch banks and ATM banking kiosks, small restaurants and delis, medical and healing arts offices and clinics, dry cleaners, printing, copying and office services, small food stores, child care centers, and other similar uses that create opportunities for workers to meet daily shopping needs. When personal services are allowed on a limited basis in manufacturing areas, there is opportunity to introduce a wider array of uses, create a more self-sustaining employment district, and allow employees to commute to work by transit without compromising their access to services during the day.

Attachments A and B show that the Leveton, Teton, Southwest Industrial, and Pacific Financial/124th Avenue transit ready places in the City's industrial area are identified as needing to offer more personal services generally as a way to improve transit ridership throughout the area, as well as make the employment district more self-sustaining. There are several ways to accomplish this land use code change including: applying the Industrial Business Park Overlay District (IBPOD) which already exists in the TDC to some or all areas; applying the existing Manufacturing Business Park Commercial Services Overlay District to some or all areas; expanding conditional uses within existing Planning Districts to allow personal service uses; experimenting with food carts or food pods; or some combination of methods.

Business Employment:
Business employment provides an array of uses primarily characterized by small and large light and tech manufacturing (including tech-flex space), offices, and corporate headquarters. In addition, there might be some ancillary commercial uses within easy walking distance from jobs to serve the needs of workers throughout the day (such as restaurants, child care facilities, doctors' offices, banks, and dry cleaners).

As shown in Attachments A and B, the Leveton, Teton, Southwest Industrial, and Pacific Financial/124th Avenue transit ready places in the City's industrial area are identified as having potential to generally expand allowed uses to include business employment. The most feasible way to accomplish this land use code change might be to apply the Industrial Business Park Overlay District (IBPOD) to some or all areas within these transit ready places; however, there may be a more expedient method yet to be explored.

Institutional:
In the context of the Linking Tualatin Plan, institutional use is intended as educational facilities owned and operated by governmental, private or non-profit entities that benefit and serve the community. These might include a community college branch site, a trade or industrial school, or a similar educational or technical facility. The location of this type of facility usually is determined by the owner or operator, not by the city in which it is located.

Attachments A and B show the Leveton and Pacific Financial/124th Avenue transit ready places as having general potential for institutional use. This land use code change likely would be accomplished by expanding the conditional uses in the ML and Manufacturing Park (MP) Planning Districts to include an institutional use of this type.

Public Investments

The Linking Tualatin efforts highlighted some land use public investments that would enhance transit use in the City.

Community Space/Open Space:
In the context of the Linking Tualatin Plan, community space or open space is intended as land for recreational facilities owned and operated by governmental, private or non-profit entities that benefit and serve the community. These might include a community center, ball fields, an RV park, or similar facility.

As shown on Attachments A and C, sites identified to transition to community space/open space in the Linking Tualatin Plan are located in the Teton and Pacific Financial/124th Avenue transit ready places. Both sites are intended to provide more recreational/open space amenities for workers in the industrial area, as well as surrounding residential areas. These land use public investments would require discussion with the current owners, coordination with regulatory agencies, and financing to accomplish.

Parking Structure:
The Tualatin Park-and-Ride, in the Bridgeport Village transit ready place, is a regional facility. It is currently full over 80 percent of the time and is 100 percent surface-parked. Because Bridgeport Village and the surrounding retail uses are a major regional draw and potential transit destination, adding a parking structure to replace some or all of the surface parking at the Tualatin Park-and-Ride would provide more parking space. In addition, including small-scale commuter-oriented retail uses on the ground floor (e.g., coffee shop) as proposed in the Linking Tualatin Plan would be an added amenity for transit users and potentially reduce commuter trips in the area.

This land use public investment is shown on Attachments A and C. It would require discussion with TriMet, coordination with regulatory agencies, and financing to accomplish.

Park-and-Ride:
Both the Linking Tualatin Plan and the Transportation System Plan identified a need for a new Park-and-Ride in west Tualatin in the vicinity of Pacific Highway 99W. The Linking Tualatin Plan indicates that this facility, which would be located in the Pacific Financial/125th Avenue transit ready place, also would be a "transit hub" serving the western part of the city, with the other two hubs being the WES station in downtown and the Tualatin Park-and-Ride in the Bridgeport Village area. Locating a Park-and-Ride and transit hub in this location would help reduce single-occupancy vehicle trips on east-west roads in the city as well as encourage transit ridership both on 99W and throughout Tualatin when expanded transit services are available.

This land use public investment is shown on Attachments A and C. It would require discussion with TriMet and property owners, coordination with regulatory agencies, and financing to accomplish.

Local Street Connections:
Manufacturing areas tend to have large blocks with few local street connections and, consequently, one must walk a long way to find a way through a business campus or around a sprawling industrial complex. Adding local street connections helps create a more structured block system, which enables better wayfinding and makes pedestrian routes safer. With improved connectivity, one is able to get to a transit stop more easily, and there are more options for cars, bicycles and pedestrians to take alternate routes.

As shown on Attachments A and C, local street connections, which are land use public investments, are indicated in all the transit ready places except for Meridian Park/Nyberg Woods. One of these improvements, the extension of Cummins Drive from about 127th Place west to Cipole Road, is included as a future connector in the Transportation System Plan (TSP; December 2012). The new local street between Lower Boones Ferry Road and Bridgeport Road in the Bridgeport Village area and the parkway treatment along Tualatin-Sherwood Road between 124th and 112th Avenues (discussed below) are included in the Transit Modal Plan of the TSP under Regional Coordination; this section discusses Linking Tualatin and includes a list of potential public projects unique to the Linking Tualatin Plan that will be studied further through the planning process. These improvements have not been discussed with property owners and would require coordination with them and regulatory agencies, as well as financing to accomplish.

"Parkway Treatment":
A parkway generally is defined as a roadway with landscaping on both sides, often divided by a landscaped median, which is more comfortable for pedestrians as well as bicyclists to travel than a conventional major arterial or highway. An example would be the part of Tualatin-Sherwood Road from Boones Ferry Road east to the Fred Meyer intersection that was recently improved and landscaped. Parkway treatment improves transit readiness by making the roadway safer for pedestrians who may be waiting at transit stops or walking to their place of work.

As shown on Attachments A and C, the part of Tualatin-Sherwood Road between 124th and 112th Avenues in the Southwest Industrial transit ready place is identified for "parkway treatment", a land use public investment. To accomplish this improvement, coordination with property owners, Washington County and other regulatory agencies, as well as financing would be required.

Targeted Outreach to Businesses and Property Owners

The outreach plan for Phase II builds on the City's relationships that have been developed during earlier stages of the Linking Tualatin and Transportation System Plan (TSP) projects. The intent is to inform business and property owners about the broad concepts being used to refine the transit ready places and to seek their feedback and further involvement. Outreach will be targeted by transit ready place and will involve phone calls, direct mail, and small group meetings. An open house to present the results of the outreach effort also might be scheduled if this seems necessary based on the outcome of the outreach efforts.

Next Steps

Staff will present the broad concepts for land use changes to the TPC and TPARK in February. Based on Council's input tonight, and subsequent input from TPC and TPARK, staff will conduct property owner and business outreach in February-April. Staff will return to Council work session in April to present results of the outreach efforts.

Attachments: A. Table - Broad Concepts
B. Figure - Land Use Code Changes
C. Figure - Land Use Public Investments
D. Powerpoint Presentation

LINKING TUALATIN
Broad Concepts in Transit Ready Places

Broad Concept		Bridgeport Village	Meridian Park/ Nyberg Woods	Leveton	Teton	Southwest Industrial	Pacific Financial/ 124th Avenue
Land Use Code Changes	Mixed-use	MU	MU				MU
	Office	OF					
	Personal Service						
	Business Employment						
	Institutional						
Land Use Public Investments	Community Space/Open Space				CS		CS
	Parking Structure	PG					
	Park-and-Ride						PR
	Local Street Connections						
	"Parkway Treatment"						

Linking Tualatin Broad Concepts Land Use Changes

TUALGIS

MU

Pacific Financial / 124th

Leveton

Bridgeport Village

OF

MU

Downtown

Meridian Park / Nyberg Woods

MU

Southwest Industrial

Teton

Personal Service

Business Employment

Institutional

MU Mixed Use

OF Office

Unincorporated

N

W E

S

Linking Tualatin Broad Concepts Public Investments

TUALGIS

Bridgeport Village

PG

CS

PR

Pacific Financial/124th

Leveton

Downtown

Meridian Park/Nyberg Woods

Teton

Southwest Industrial

CS

CS Community Space/ Open Space

PG Parking Structure

PR Park-and-Ride

Local Street Connector

"Parkway Treatment"

Unincorporated

N

W E

S

Linking Tualatin

City Council

January 28, 2013

PHASE II:
BROAD CONCEPTS AND NEXT STEPS

LINKING Tualatin

Two Project Phases

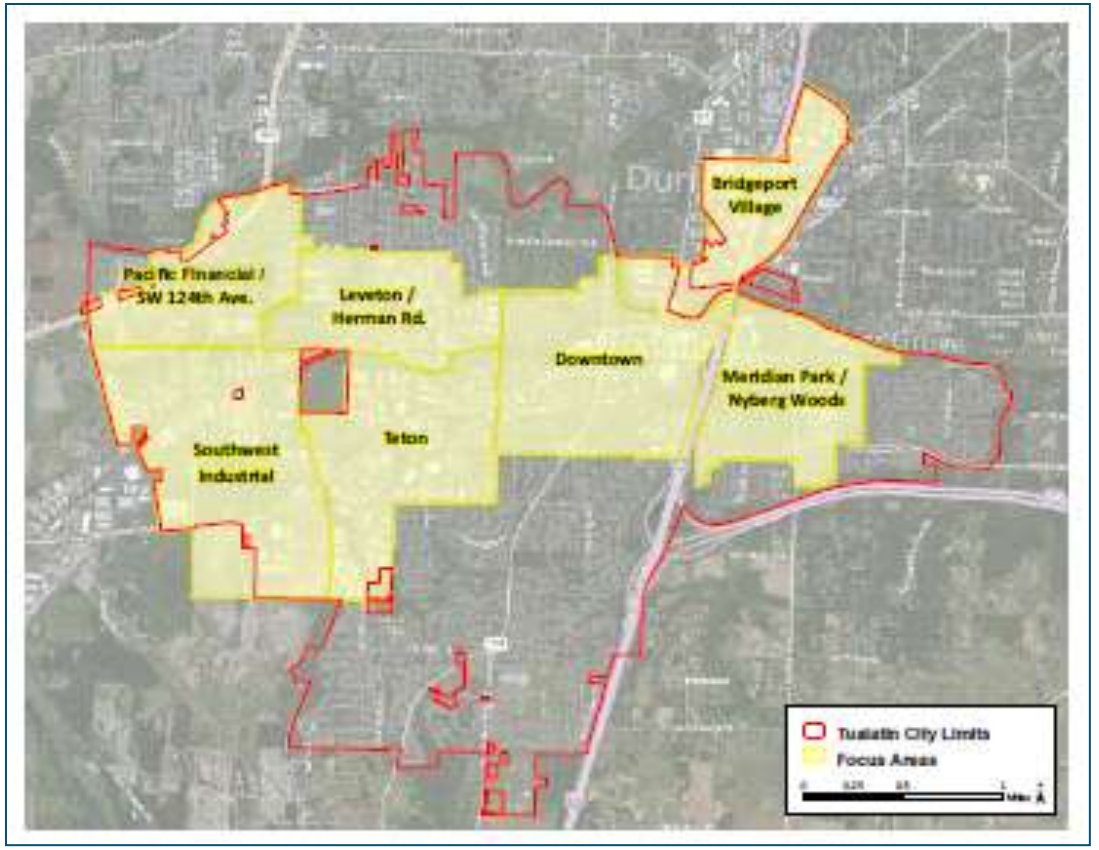
- Phase I: Transportation Project Implementation October – December 2012
  - Incorporated message on SW Corridor Plan
  - Integrated Linking Tualatin transportation projects into TSP

Two Project Phases

- Phase II: Land Use Implementation
  January – June 2013
  - Refine transit ready place recommendations
  - Conduct property owner and business outreach
  - Participate in and reflect results of Job Access Mobility Institute
  - Integrate components of SW Corridor Plan

Tonight's Focus

- Refine transit ready place recommendations
- Discuss property owner and business outreach



Goal of Linking Tualatin

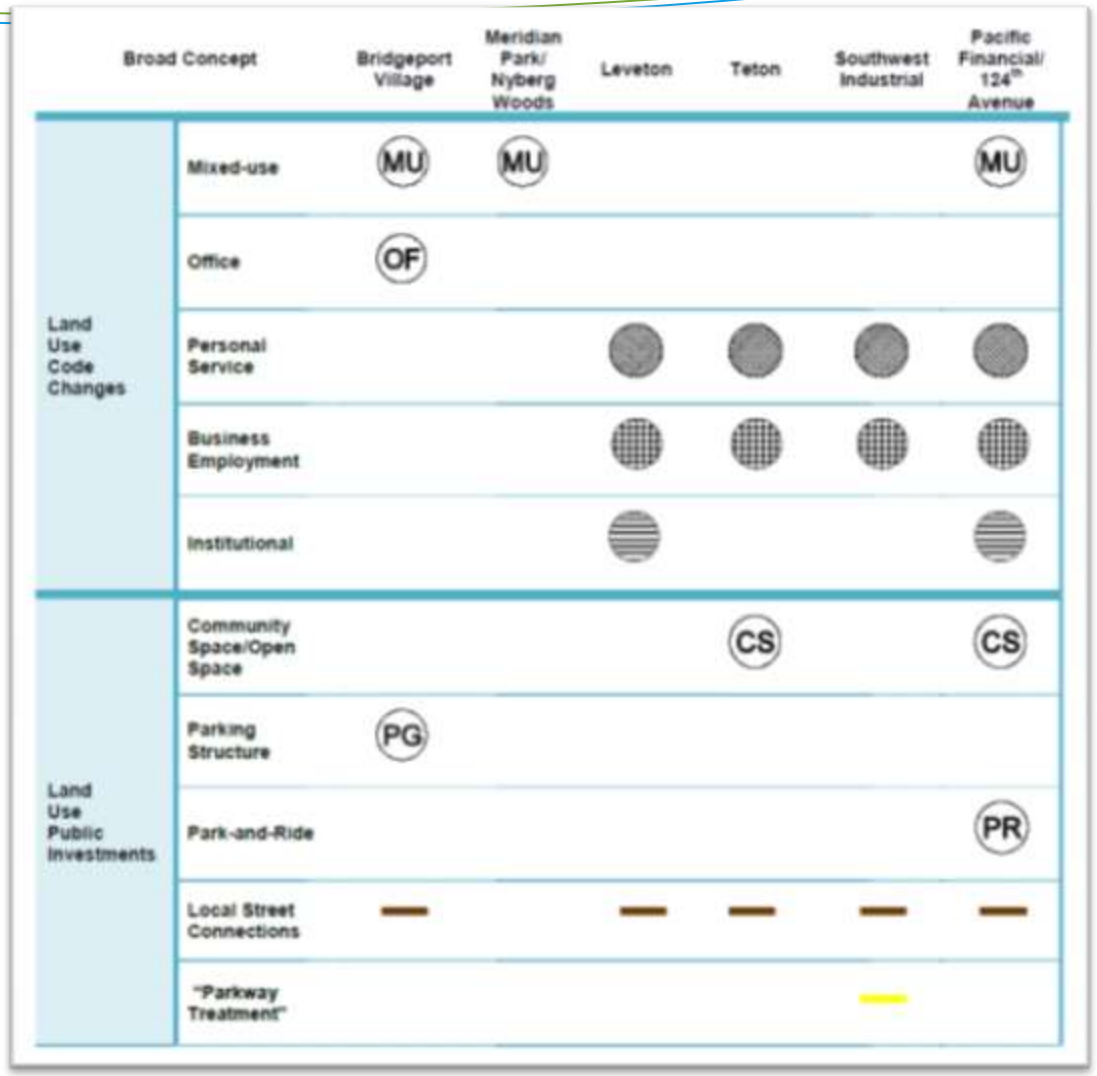
- Explore ways to increase transit use
- Improve transit connections to rest of region
- Make Tualatin more “transit ready” over the 20-year planning horizon or longer

Broad Concepts

- Allow for higher concentration of jobs
- Provide mix of uses in employment area
- Improve pedestrian access

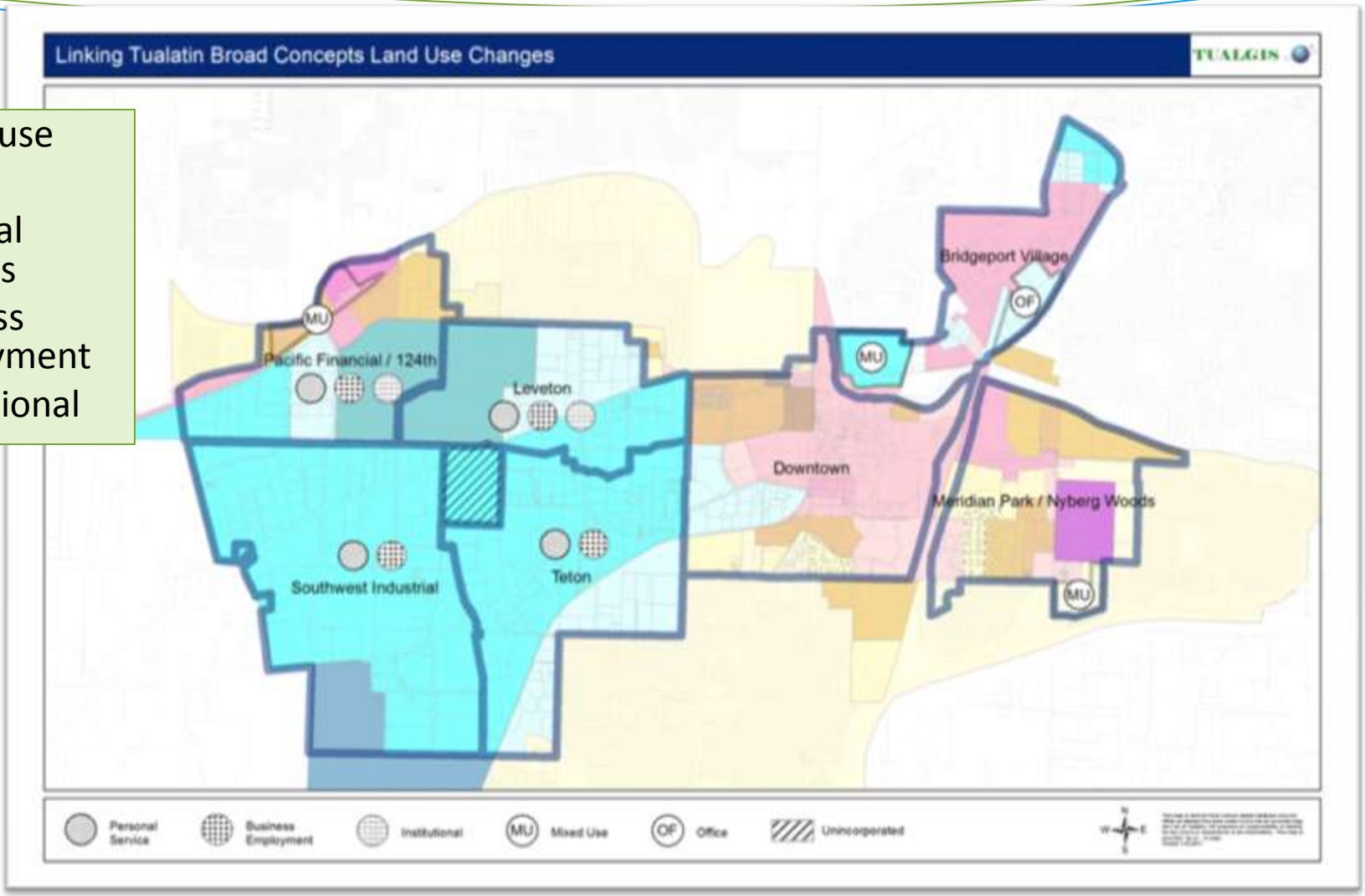
Broad Concepts

- Two categories of broad concepts:
  - Land Use Code Changes
  - Land Use Public Investments



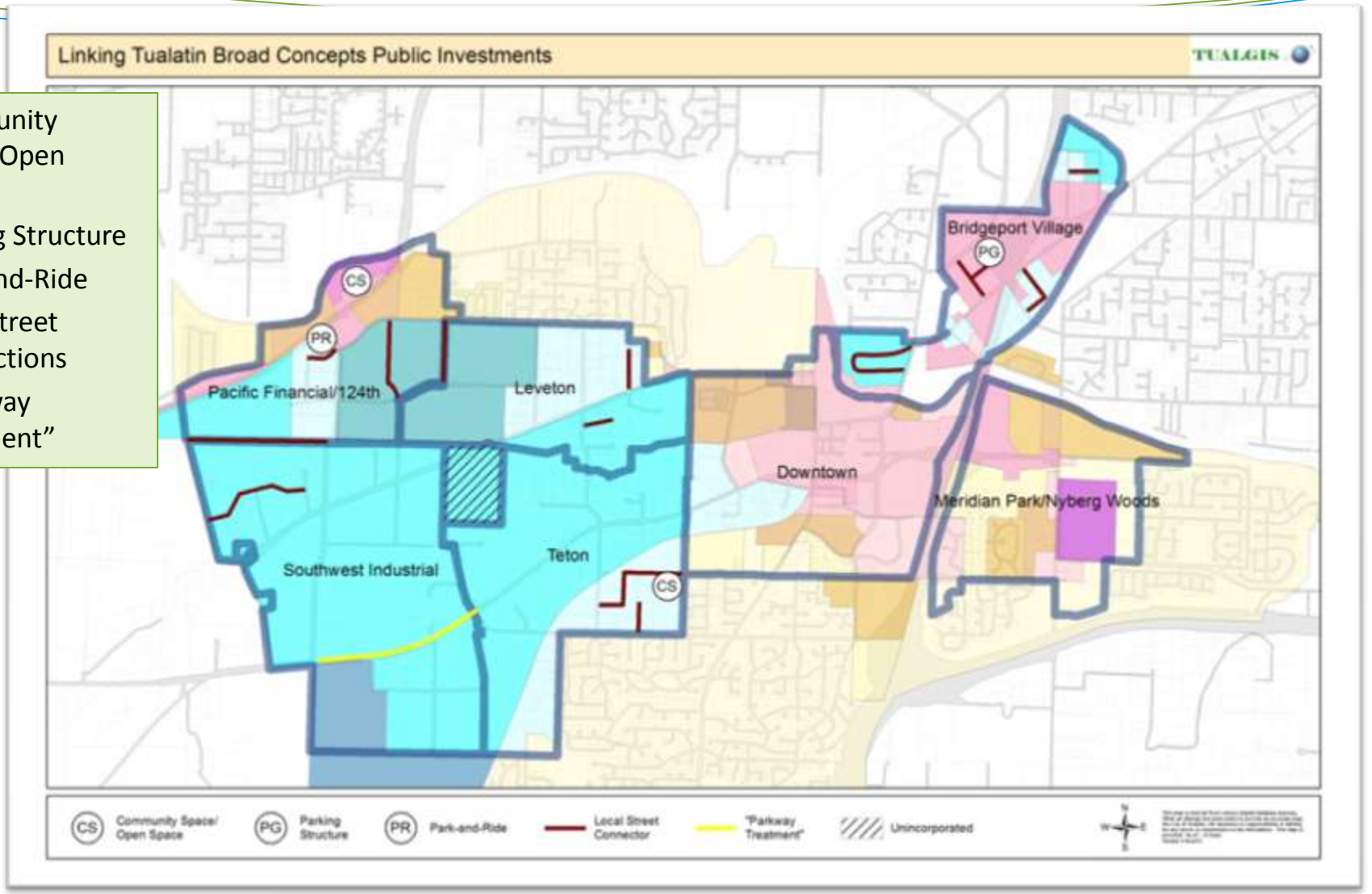
Land Use Code Changes

- Mixed-use
- Office
- Personal Services
- Business Employment
- Institutional



Land Use Public Investments

- Community Space/Open Space
- Parking Structure
- Park-and-Ride
- Local Street Connections
- “Parkway Treatment”



Targeted Outreach

- Inform business and property owners about broad concepts
- Seek feedback
  - Target by transit ready place
  - Phone calls, direct mail, small group meetings
  - Open house, depending on outcome of above efforts

Next Steps

- **February**: Present broad concepts and next steps to TPARK, Planning Commission
- **February-April**: Conduct outreach
- **April**: Present outreach results to Council

Questions/Feedback?

LINKING Tualatin