



Existing conditions summary report

April 18, 2012

PROJECT PARTNERS

Cities of Beaverton, Durham, King City, Lake Oswego, Portland, Sherwood, Tigard and Tualatin, Multnomah and Washington counties, Oregon Department of Transportation, TriMet and Metro

Metro is the federally mandated metropolitan planning organization designated by the governor to develop an overall transportation plan and to allocate federal funds for the region.

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Southwest Corridor Plan project partners are the cities of Beaverton, Durham, King City, Lake Oswego, Portland, Sherwood, Tigard and Tualatin; Multnomah and Washington counties; Oregon Department of Transportation; TriMet; and Metro.

Project website: www.swcorridorplan.org

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INTRODUCTION

The Southwest Corridor Plan (Corridor) is a comprehensive land use and transportation planning study to identify and prioritize public investments in the corridor between downtown Portland and Sherwood. The expected outcomes include an integrated investment strategy, transportation plan, a transit alternatives analysis, and four land use plans. It integrates:

- strategies for community building such as economic development, housing choices, parks, natural areas, trails and health;
- local land use plans to identify actions and investments that support livable communities, including Portland's Barbur Concept Plan, the Sherwood Town Center Plan, the Tigard High Capacity Land Use Plan and Linking Tualatin; and
- a transportation plan to examine potential roadway, bike and pedestrian improvements and including a transit alternatives analysis.

In the 2035 Regional Transportation Plan, the Southwest corridor was prioritized as the next corridor the region would fully examine a high capacity transit solution and evaluation of transportation investments for all modes to address existing and projected future congestion problems, limited access and transit demand support and to support local, regional and state goals. To initiate this major effort, regional partners have come together to align local, regional and state policies and investments to support the creation of great places within the corridor. The Southwest Corridor Plan looks to create an integrated investment strategy to stimulate community and economic development and improve movement of people and goods in and through the corridor

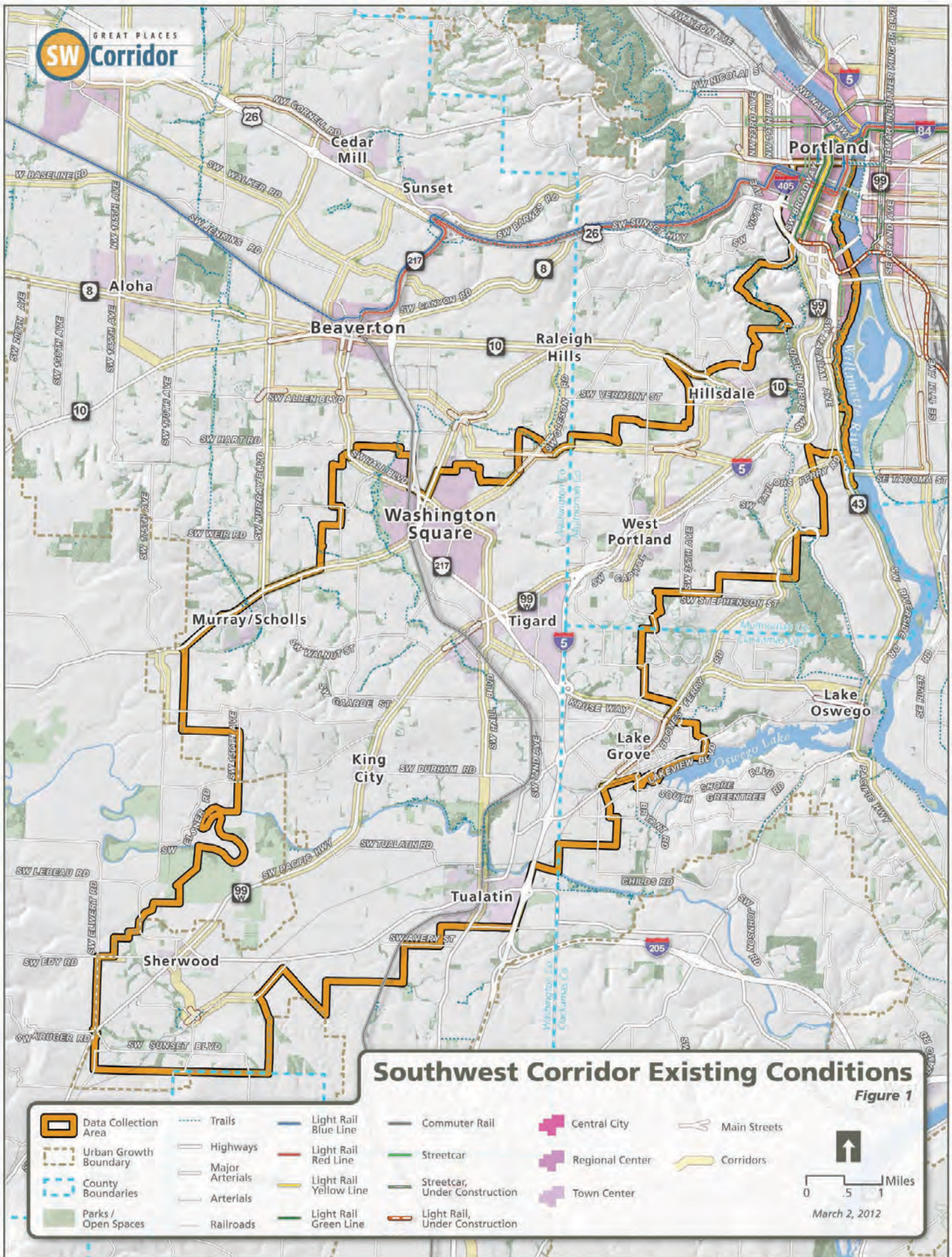
while increasing access to parks, supporting active lifestyles and improving the quality of the region's air, water and habitat. As part of the process, the plan will include a transit alternatives analysis which will include one or more high capacity transit options.

The coordinated strategy allows the project to measure the success of potential public investments and policy changes according to goals of prosperity, health, access and mobility, and accountability and partnership. The project will use this information to determine the solutions that best meet future travel demand and support local land use goals.

The Southwest Corridor Plan project partners include the cities of Beaverton, Durham, King City, Lake Oswego, Portland, Sherwood, Tigard and Tualatin; Multnomah and Washington counties; Oregon Department of Transportation; TriMet; and Metro.

Existing conditions report purpose

This document provides an overview and a snapshot of land use, economic development, employment and housing access, parks, habitat, pedestrian and bike facilities, local bus and high capacity transit potential, freight movement and auto capacity in the Southwest Corridor. The intent of this broad-based report is to form the foundation for future efforts in the Southwest Corridor. Decision makers will consider a wide array of needs and opportunities in the corridor to define the purpose and need, the evaluation framework and to develop the wide-range of alternatives. See *Figure 1: Southwest Corridor existing conditions*.



Southwest Corridor Existing Conditions

Figure 1



For more complete information about each of these subject areas, please see the Southwest Corridor existing conditions technical reports in the appendix: comprehensive corridor planning lessons learned, policy review, opportunity and housing, health assessment, active transportation, land use and zoning assessment, focus area assessment, natural resource inventory, parks and access to nature, infrastructure, brownfields. Future technical reports include transportation, economic development, and security.

Southwest corridor history

Over the past hundred years, transportation technology has spurred the growth of the Southwest Corridor. Cities within the data collection area have grown and changed based on available transportation technologies. Land use patterns and spatial orientation of businesses and housing has been contingent on these developments.

Initially, transportation was reliant on the earliest highways: rivers. River travel was the quickest and cheapest mode of transportation and vessels plied the waters of the Tualatin River and the Willamette River. Farm to market roads were developed throughout the area as well as roads connecting to ferry services. These roads slowly improved as plank roads and other enhancements were added. Orientation of development shifted with the development of rail service throughout the area. First interurban service came, followed by streetcar and more local services.

At the height of the streetcar and electric interurban railroad era came the advent of the automobile age. Nothing would be the same again. The automobile removed the necessity to locate businesses and residential uses near commercial and transportation centers. The construction of Interstate 5 and improvements to Highway 99W paved the way for increased automobility. The farms of the area were quickly converted as changing housing patterns brought residents out of the cities in the post-war era.

The rapid adoption of autos quickly altered traditional travel patterns and allowed new connections and increased mobility. Workers could live in one town and travel quickly to the central city or elsewhere for work. Land choice was no longer dominated by transportation options.

These patterns are manifested in each of the cities of the Southwest Corridor, resulting in a predominance of single-family residential neighborhoods where families have room for a yard and other amenities. To this day, services remain located along the main arterials of the cities allowing for continued intercity connections.

The cities of the Southwest Corridor are an interconnected group of communities which demonstrate the effect that transportation, farming, housing developments, and new industries have had on the area over the intervening century and half.

WHAT ARE THE PEOPLE IN THE CORRIDOR LIKE?

Demographics

The Southwest Corridor is home to 13 percent of the Portland metro population or 197,956 people and is growing faster than the regional at a growth rate of 14 percent between the years 2000 and 2010.¹ The Southwest Corridor consists of 29,728 acres, which is 11 percent of the Portland metro region, and it has an average density of six persons per acre.² See *Figure 2: Population density*.

Environmental justice

The Southwest Corridor Plan is federally funded and therefore, must comply with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and related statutes and regulations in all programs and activities. Title VI requires that no person in the United States of America shall, on the grounds of race, color or national origin, be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which Metro receives federal financial assistance.³ Related statutes and regulations address protections against discrimination on the basis of age⁴, disabilities/physical or mental handicap⁵ and, for federal highway funds, sex.⁶

Principals of Environmental Justice are to⁷:

- Ensure the full and fair participation by all potential affected communities in the transportation decision-making process.
- Avoid, mitigate, or minimize disproportionately high and adverse human health and environmental impacts, including social and economic impacts, on minority and low-income populations.
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Senior population

Within the Southwest Corridor data collection area, approximately one in eight people (13 percent) identified themselves as over 65 years old.⁸ This percentage is higher than the regional average (11 percent). Concentrations of senior populations are located in Southwest Portland, near Portland Community College, in central Tigard, in the retirement communities of King City and Summerfield, near downtown Tualatin, and in Sherwood. See *Figure 3: Density of population 65 and older*.

¹ Census, 2000 & 2010.

² Census, 2010.

³ 42 U.S.C. §2000d and the Civil Rights Restoration Act of 1987, P.L. 100-259, 102 Stat. 28 (1988).

⁴ The Age Discrimination Act of 1975, as amended, 42 U.S.C. 6102, and the Civil Rights Restoration Act of 1987.

⁵ Section 504 of the Rehabilitation Act of 1973, 29 U.S.C §794, the Civil Rights Restoration Act of 1987, and the

Americans with Disabilities Act of 1990, as amended, 42 U.S.C. §12132.



⁶ The Federal-aid Highway Act of 1973, 23 U.S.C. §324.

⁷ U.S. Department of Transportation, "Transportation and Environmental Justice Case Studies," Publication No. FHWA-EP-01-010, December 2000.

⁸ Census, 2010.

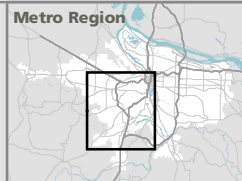




 Data Collection Area
 Urban Growth Boundary

The average density of the Senior population for block groups intersecting the Urban Growth Boundary is .94 people per acre (11.33% of the population).
*Source: 2010 Census

 Metro
February 09, 2012



Race and ethnicity

Over the last twenty years, populations in poverty and non-white populations have shifted from the central city to suburbs in the Portland metro region, including Tigard and Tualatin in the Southwest Corridor.

In the Southwest Corridor, approximately one in six persons (16 percent) identified themselves as non-white. The largest minority ethnic populations among the census tracts were identified as non-white Hispanic (9 percent) and Asian (6 percent).⁹ For both ethnic groups, this percentage was less than the regional average (21 percent). Higher than the regional average for non-white populations are found near Portland Community College, the Washington Square regional center, the employment areas along I-5 in Tigard, and the employment areas of Tualatin.

The school population reflects greater diversity in ethnicity. One in three students (34 percent) identified themselves as non-white. The largest ethnic populations in school are Hispanic (19 percent) and Asian/Pacific Islander (10 percent). The largest average percentages of non-white students are found in schools in the cities of Portland (47 percent), Beaverton (46 percent), Tigard (36 percent) and Tualatin (34 percent).¹⁰ See *Figure 4: Density of non-white population*.

⁹ Census, 2010.

¹⁰ National Center for Education Statistics, Common Core of Data (CCD), "Public Elementary/Secondary School Universe Survey", 2009-10 v.1a.

Population in poverty

In the Southwest Corridor, approximately one in eight persons (13 percent) falls below the federal defined average median income.¹¹ This percentage was less than the regional average (21 percent). However, income varies among the census tracts. Concentrations of people with lower than median incomes are found along 99W in Portland, near Washington Square, in downtown and central Tigard, and the employment areas of Tualatin.

The school population reflects higher rates of poverty in the Southwest Corridor. An average of 46 percent of students is eligible for free or reduced lunch. Students are eligible for free and reduced lunch if their household income falls below 130 percent and 185 percent, respectively, of the federal income poverty guidelines.¹² The highest average percentages of students eligible for free and reduced lunch are found in schools in the cities of Portland (49 percent), Beaverton (42 percent), Tigard (35 percent) and Tualatin (33 percent).¹³ See *Figure 5: Density of population below Area Median Income*.

¹¹ Census, 2010.

¹² **Federal Register** / Vol. 74, No. 58 / Friday, March 27, 2009 / Notices

¹³ National Center for Education Statistics, Common Core of Data (CCD), "Public Elementary/Secondary School Universe Survey", 2009-10 v.1a.

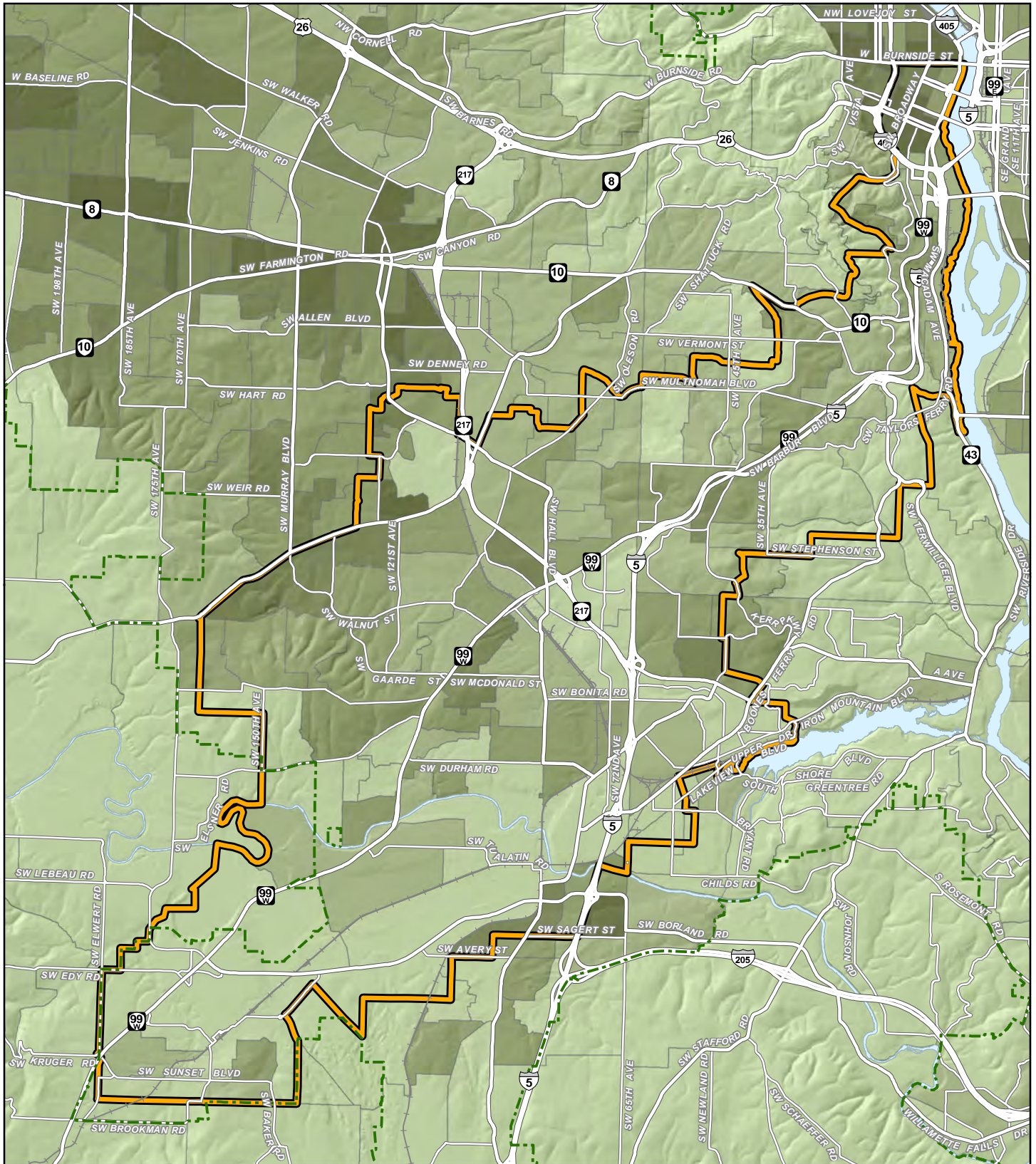


Figure 4

Non-White Pop / Acre

- 0 - .53 ppl/acre
- .53 - 1.08 ppl/acre
- 1.08 - 2.15 ppl/acre
- 2.15 - 4.3 ppl/acre
- 4.3 - 18.06 ppl/acre

Data Collection Area
 Urban Growth Boundary

The average density of Nonwhite population for block groups intersecting the Urban Growth Boundary is 2.15 people per acre (21.67% of the population).
 Source: 2010 Census



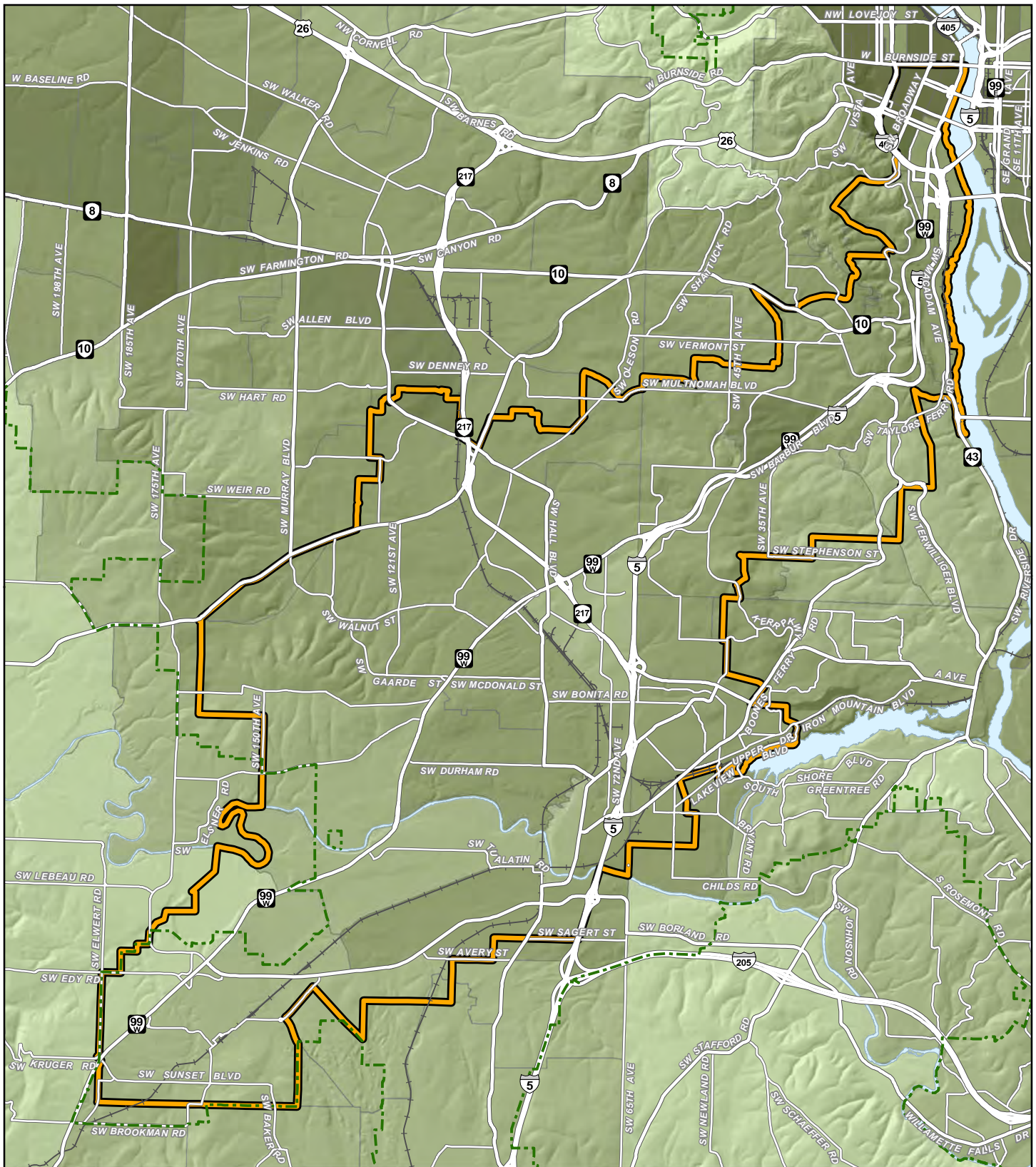


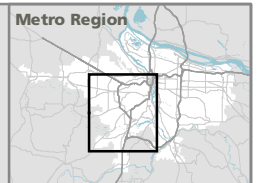
Figure 5

Pop under area median inc./acre

- 0 - .06 ppl/acre
- .06 - .24 ppl/acre
- .24 - 1.13 ppl/acre
- 1.13 - 2.26 ppl/acre
- 2.26 - 11.32 ppl/acre

Data Collection Area
 Urban Growth Boundary

The regional average for density of population under 100% of area median income is 1.13 people per acre or 12%.
 Source: 2010 Census



Health

The planning of communities, especially the availability of community infrastructure and the design of the built environment, can affect health behaviors and environmental exposure. The design of the built environment can offer opportunities for residents to engage in health behaviors that reduce physical activity related illnesses, such as recreation, physical activity and a healthy diet. In addition, the built environment can help to limit exposure to air toxins and noise pollution, which could cause stress-related or air quality-related illnesses. The natural environment, such as trails, parks, tree canopy and open spaces, has been shown to reduce stress.

Generally, the Southwest Corridor has noteworthy prevalence of physical activity and air quality related diseases, although less than the region as a whole. Healthiness of the population varies by neighborhood and income. Sample populations on Medicaid have much higher prevalence of physical activity and air quality related diseases; higher-income neighborhoods close to the Central City have lower prevalence of physical activity related diseases.

Obesity

The prevalence of obesity is 16 percent of Kaiser Permanente members in the Southwest Corridor compared to 20 percent of Kaiser Permanente members region-wide.¹⁴ Over one-third (41

percent) of participants in a Medicaid sample are obese in the Southwest Corridor study area.¹⁵ In comparison, one-quarter of all residents in Multnomah County (26 percent) and Washington County (24 percent) are obese.¹⁶

Almost three-fourths (71 percent) of participants of a Medicaid sample are overweight in the Southwest Corridor.¹⁷ In comparison, one-third of residents in Multnomah County (30 percent) and Washington County (39 percent) of the general population are overweight.¹⁸ See *Figure 6: Rate of high BMI cases (obesity)*.

Asthma

Prevalence of asthma in the Southwest Corridor is similar to regionwide figures. Nearly one in ten (9 percent) of Kaiser Permanente members has asthma in the Southwest Corridor.¹⁹ Approximately one in eight (13 percent) participants of a Medicaid sample has asthma in the Southwest Corridor.²⁰ For comparison, one in ten residents of Multnomah County (10 percent) and Washington County (9 percent) of the general population has

error for members with the following health outcomes in the Kaiser Permanente member population: asthma, body mass index over 30, cardiovascular disease, chronic kidney disease, diabetes mellitus, congestive heart failure, hypertension, smoker. Kaiser Permanente members are a sample of the general population, but do not represent the population as a whole.

¹⁵ Providence CORE, *Oregon Health Study*, www.oregonhealthstudy.org, 2011.

¹⁶ Behavioral Risk Factor Surveillance System, 2010.

¹⁷ Providence CORE, *Oregon Health Study*, www.oregonhealthstudy.org, 2011.

¹⁸ Behavioral Risk Factor Surveillance System, 2010.

¹⁹ Kaiser Permanente, 2010.

²⁰ Oregon Health Study, www.oregonhealthstudy.org, Providence CORE, 2011.

¹⁴ Kaiser Permanente, 2010. In fall 2011, Kaiser Permanente provided Metro with 2010 data on the number of members and the number, rates and margin of

current asthma.²¹ See *Figure 7: Rate of adult asthma*.

Mental health

Two in three Multnomah County (62 percent) and Washington County (69 percent) residents believe they have had no poor mental health in the past 30 days (2006-2009).²² More than one in four (28 percent) participants of a Medicaid sample report having depression in the Southwest Corridor.²³

²¹ Behavioral Risk Factor Surveillance System, 2010.

²² Oregon Behavioral Risk Factor Surveillance System.

²³ Oregon Health Study, www.oregonhealthstudy.org, Providence CORE, 2011.

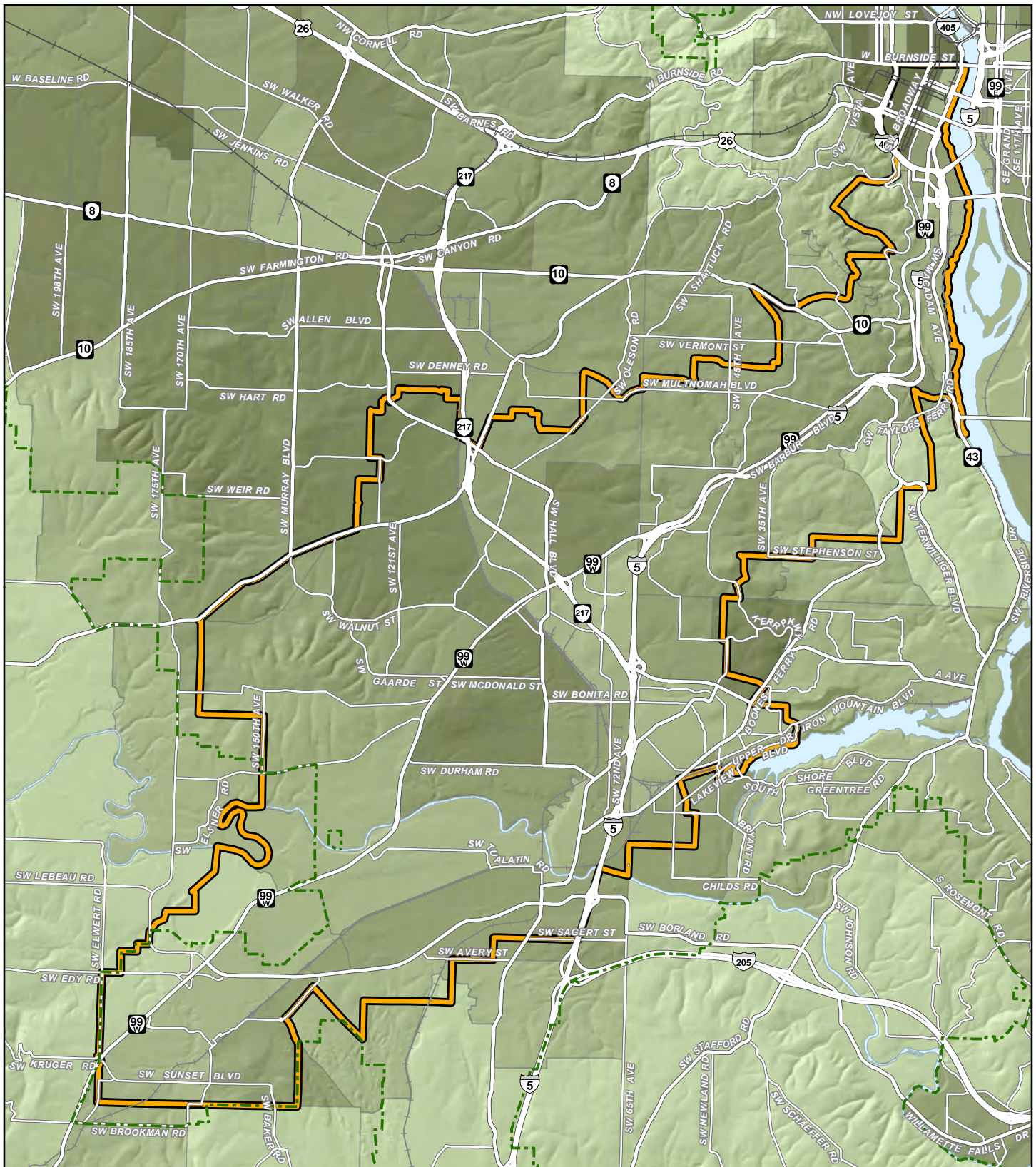


Figure 6

High BMI Rate

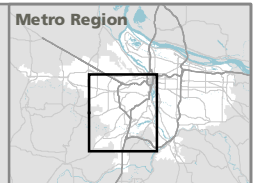
- 0 - .34 ppl/acre
- .34 - .68 ppl/acre
- .68 - 1.36 ppl/acre
- 1.36 - 2.72 ppl/acre
- 2.72 - 5.16 ppl/acre

Data Collection Area
 Urban Growth Boundary

Regional Average for population with high BMI is 1.36 people per acre or 20% of population
 Source: Kaiser Permanente 2010



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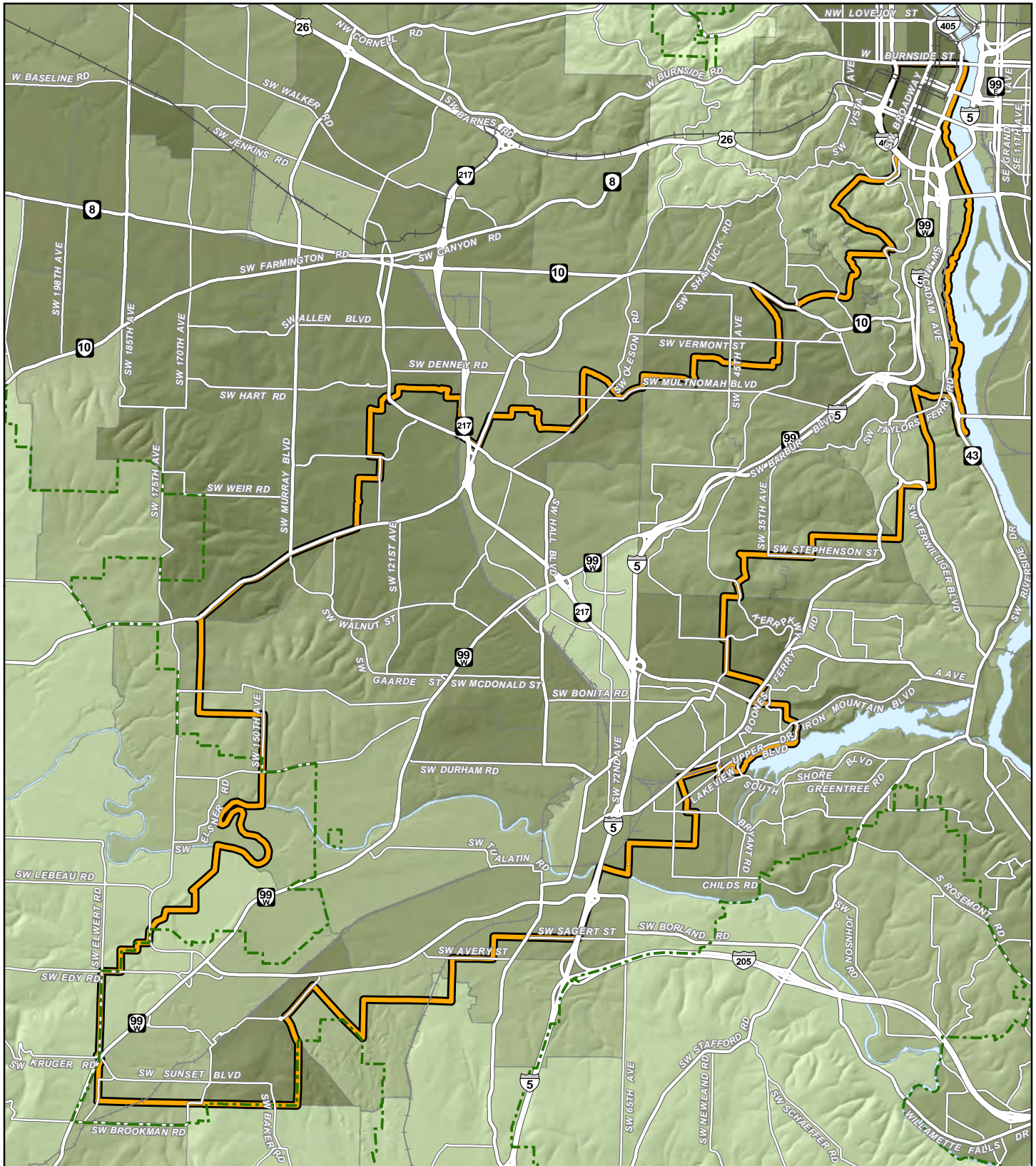


Figure 7

Asthma Rate

- 0 - .16 ppl/acre
- .16 - .32 ppl/acre
- .32 - .64 ppl/acre
- .64 - 1.28 ppl/acre
- 1.28 - 3.1 ppl/acre

Data Collection Area
 Urban Growth Boundary

Regional Average for population with Asthma is .64 people per acre or 9% of population
 Source: Kaiser Permanente 2010

0 0.5 1 Miles

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WHAT ARE THE OPPORTUNITIES TO LIVE, WORK, LEARN AND PLAY?

The Southwest Corridor provides a high level of services and opportunities to live, work, learn and play. It contains a variety of livable and high opportunity neighborhoods that include numerous educational facilities, employment, community assets, and transportation facilities.

Economy

The Southwest Corridor includes several of the largest commercial, employment, and educational centers in the region. The Southwest Corridor is home to 140,412 jobs, which is a quarter of all jobs in the Portland metro region. Concentrations of employment follow major roadways in the corridor, including Highway 217, I-5, Highway 99W, Kruse Way and Tualatin-Sherwood Road. Concentrations of employment are also found in the employment areas within Tualatin, Tigard, and Washington Square. Many areas of the corridor have high jobs to housing ratios. See *Figure 8: Employment density*.

Universities and institutions are key drivers of the regional economy and the Southwest Corridor contains a number of key regional institutions and universities. In the northern portion of the corridor, Oregon Health Science University (OHSU) is the state's fourth largest private employer with over 11,500 employees.²⁴ Portland State University (PSU) is the state's largest university with over 3,500 fulltime employees.

Education

The Southwest Corridor contains numerous educational facilities. Specifically, these include several schools, colleges and universities, Oregon head start programs, workforce training facilities, and libraries.

Concentrations of educational facilities are located near downtown Portland and Portland's University district, Hillsdale, Southwest Portland, the Tigard Triangle, downtown Tigard, downtown Tualatin, and Sherwood.

Also, the Southwest Corridor contains key regional institutions and universities, including Oregon Health & Science University (OHSU), Portland Community College (PCC) Sylvania campus, and Portland State University (PSU). OHSU serves over 2,500 students each year.²⁵ In 2005, the entire PCC system had 24,000 students. Of those, 13,000 (55 percent) attended Sylvania. In fall 2011, full-time equivalent (FTE) of students was 3,787. Sylvania students live in Tigard/Tualatin (14 percent), Lake Oswego/Southwest Portland (12 percent), and Aloha/Farmington (11 percent). PSU is the state's largest university with an enrollment close to 30,000. See *Figure 9: Education facility density*.

²⁴http://selfstudy.ohsu.edu/files/ss05_3.Students.pdf

²⁵http://selfstudy.ohsu.edu/files/ss05_3.Students.pdf

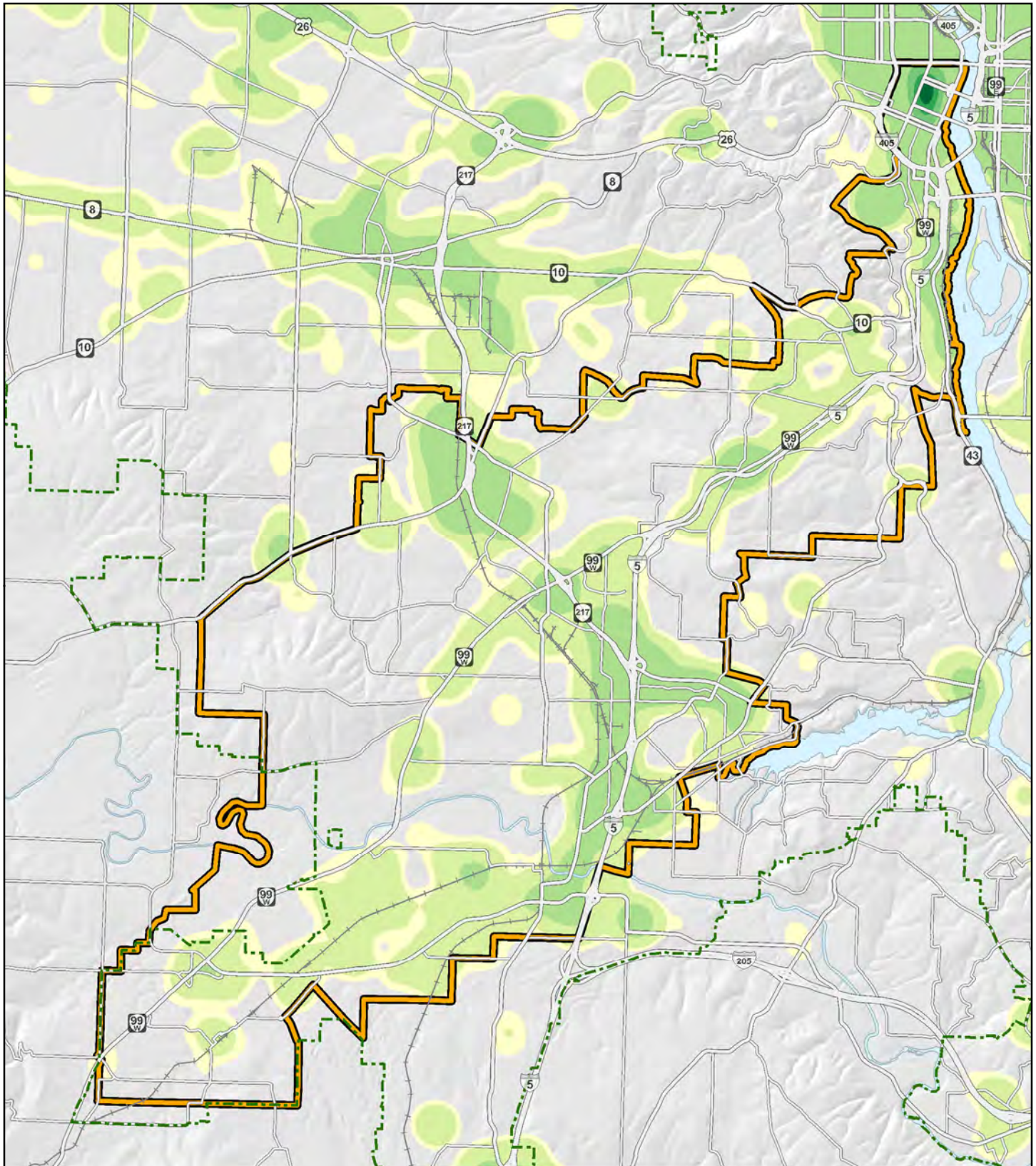
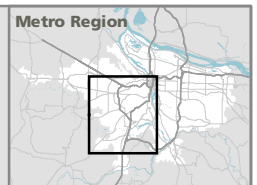
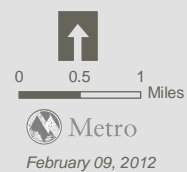
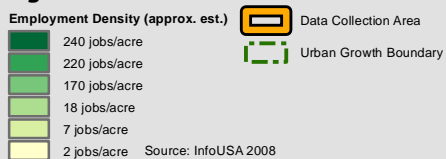


Figure 8



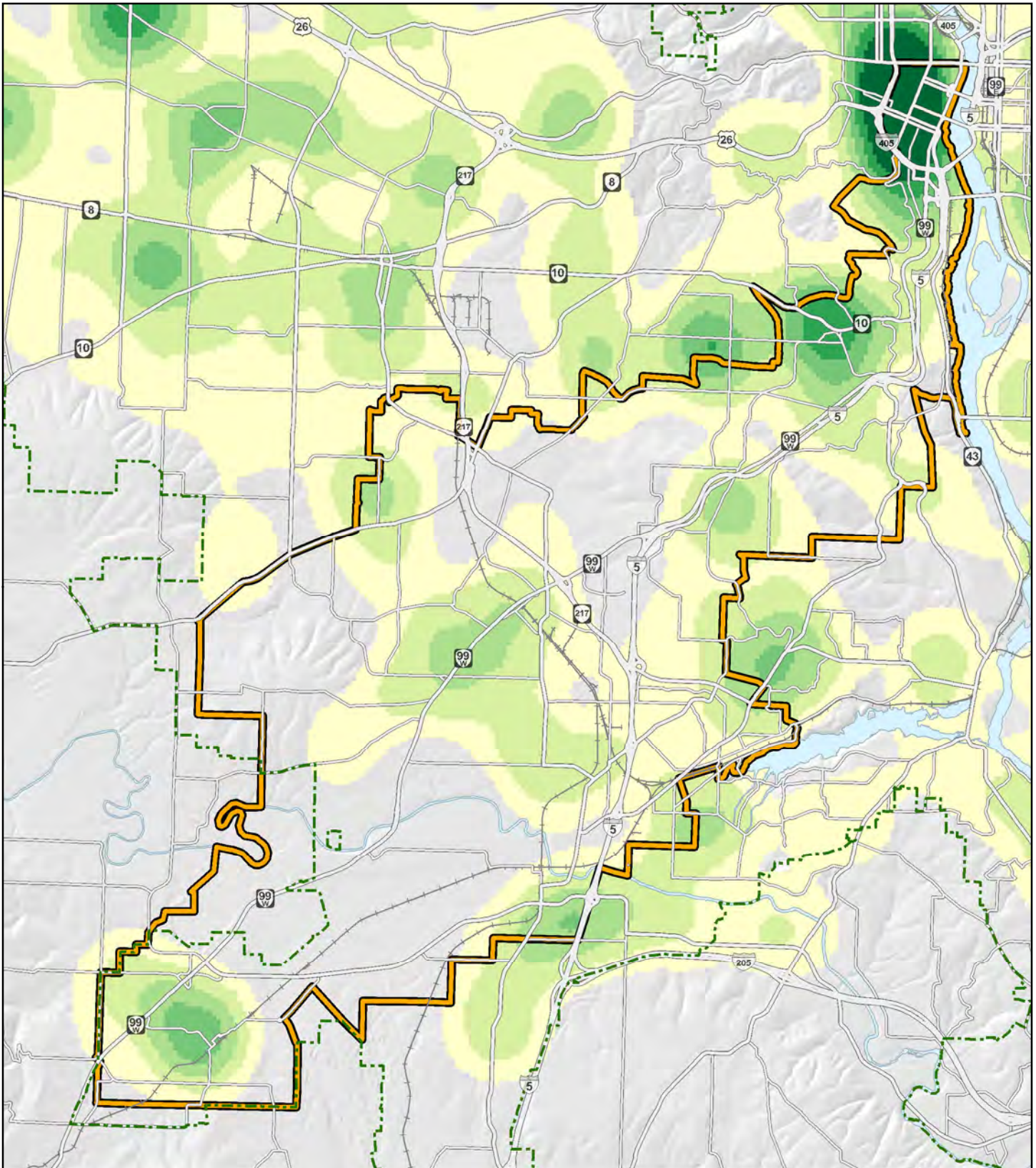


Figure 9

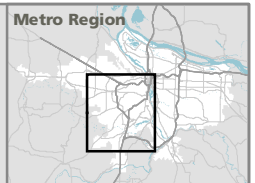
Education Options (num. of facilities)



Facility types include all schools, libraries, and universities. Source: InfoUSA 2008



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Community amenities

The Southwest Corridor is home to many neighborhoods where people's everyday needs are easily accessible within a 20-minute walk. These neighborhoods typically include a variety of community elements that make the neighborhoods livable, enjoyable and easy to inhabit. Some of these community elements include cafes, bookstores, grocery stores, health and social services, and parks.

Urban amenities

The Southwest Corridor hosts 983 urban amenities like cafes, bookstores, grocery stores and theaters, which is 20 percent of the Portland metro region's urban amenities. Concentrations of urban amenities are located in the West Portland Town Center (Southwest Crossroads) between Multnomah Village and Portland Community College along Highway 99W, downtown Tigard, King City and Summerfield, near Washington Square Regional Center, and Sherwood Town Center. See *Figure 10: Amenity density*.

Healthy food

The Corridor is home to 39 grocery stores and fruit, vegetable, and meat markets, which is 13 percent of the Portland metro region. This amounts to approximately two grocery stores or fruit, vegetable, and meat markets for every 10,000 residents in the Corridor. See *Figure 11: Healthy food sources*.

Health and social services

Densities of health and social services can be found in the Southwest Corridor near downtown Portland, Multnomah Village,

along Barbur Boulevard, Washington Square, King City, and the Sherwood Town Center along Highway 99W. See *Figure 12: Community, social, and health services density*.

Parks

The Southwest Corridor has approximately 4,825 acres of parks and natural areas. It is less than a 10-minute walk to a park, trailhead or natural area from almost half (45 percent) of the residential neighborhoods in the Southwest Corridor, compared with two-third (69 percent) of the region.²⁶ This includes the Tualatin River National Wildlife Refuge. See *Figure 13: Access to Intertwine Tier 2 Parks and Natural Areas*.

The corridor does not have a strong, interconnected network of trails. There are 25 miles of regional trails constructed in the corridor and 45 miles planned either formally or in the concept stage.

The Tigard Triangle and the areas to the north and north east have little to no parks or natural areas and offer very limited access to the experience of nature for people.

Within the Southwest Corridor there is a need for approximately 400 acres of parkland and approximately 75 miles of regional trails based on parks system plans from each city.

²⁶ 1 [Urban Green](#), Peter Harnick, page 15.

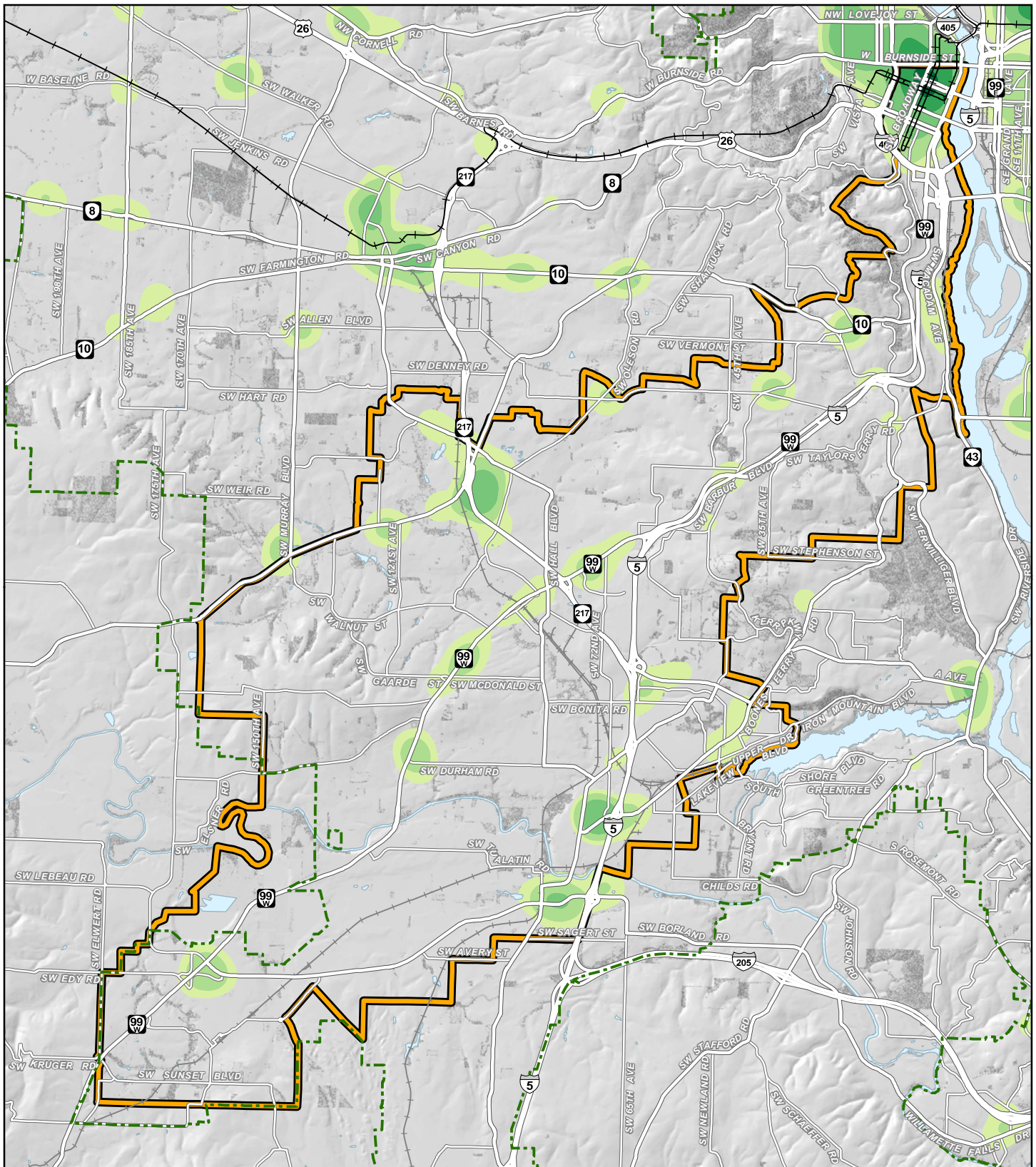


Figure 10

Average Amen. / Acre

- .5 / acre
- 1 / acre
- 2 / acre
- 5 / acre
- 10 / acre

Data Collection Area

Urban Growth Boundary

Source: InfoUSA 2008

0 0.5 1 Miles

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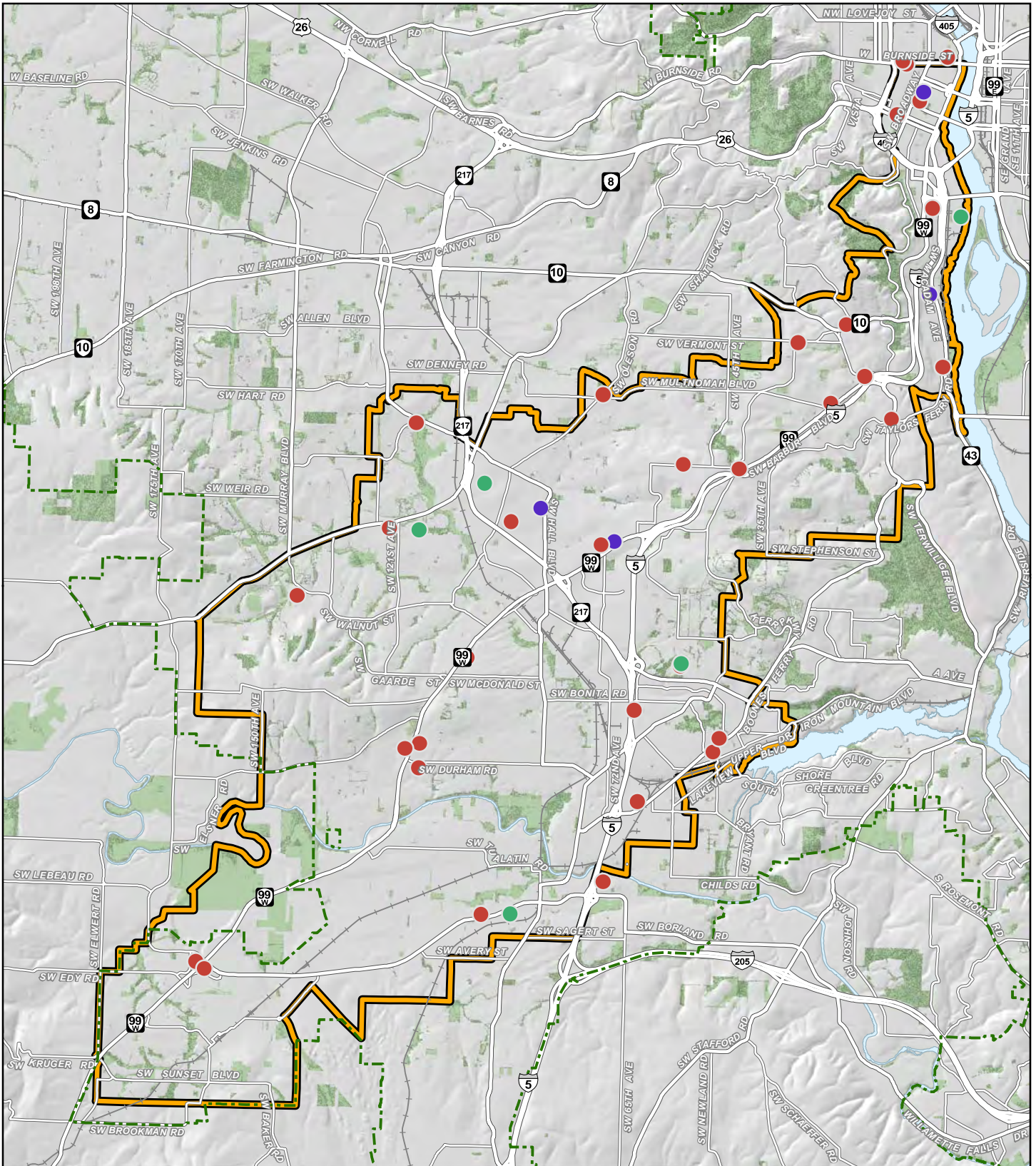
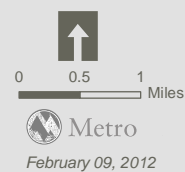


Figure 11

- Fruit & Vegetable Markets
- Meat Markets
- Supermarkets & Other Grocery Stores
- Data Collection Area
- Urban Growth Boundary

Source: InfoUSA 2008



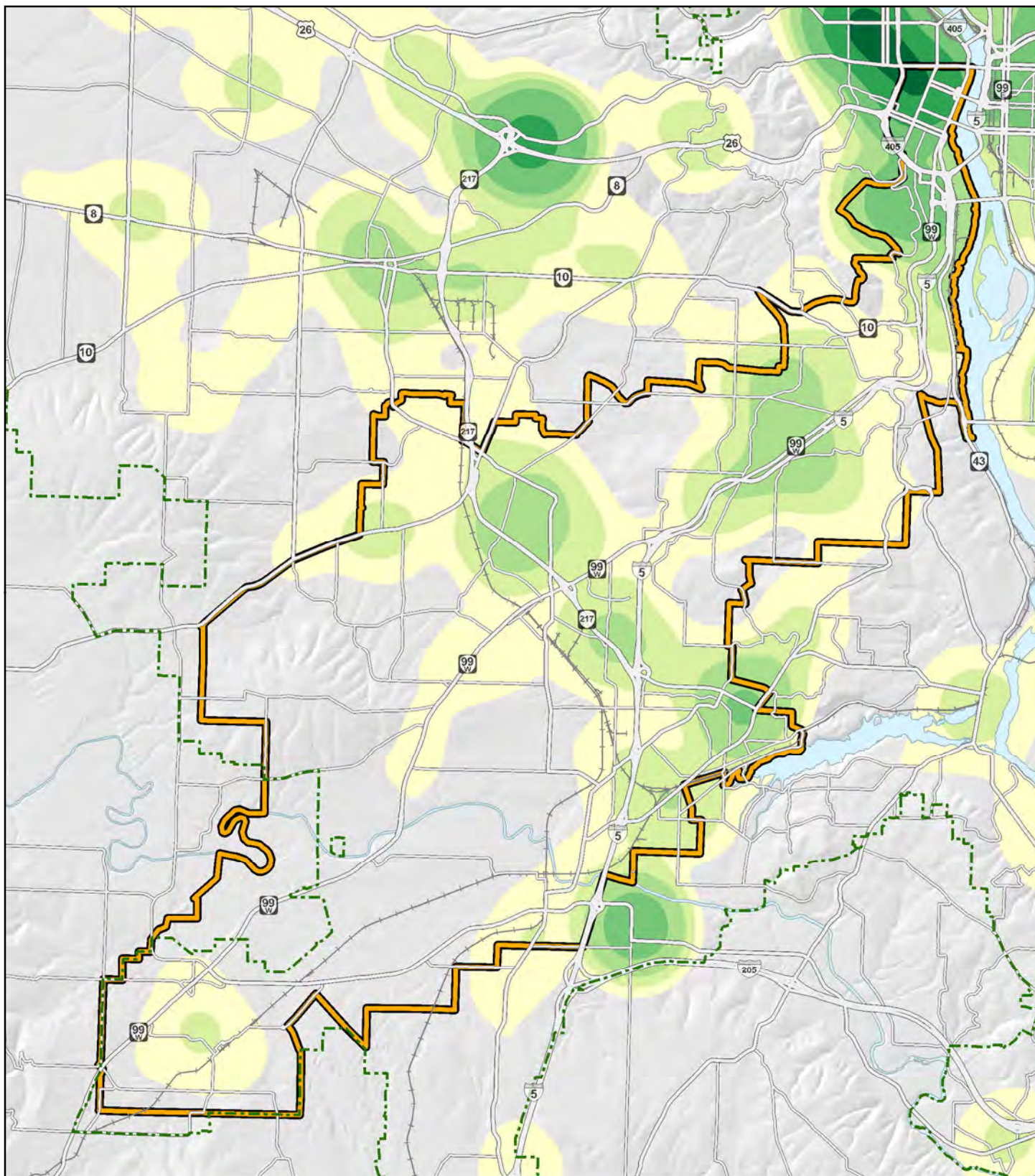




Figure 12

Community, Social, and Health Services Mean Density (approx. est.)

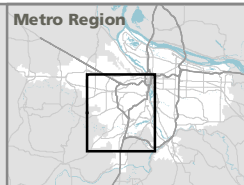
200 facilities / sq mi	25 facilities / sq mi
100 facilities / sq mi	11 facilities / sq mi
43 facilities / sq mi	4 facilities / sq mi

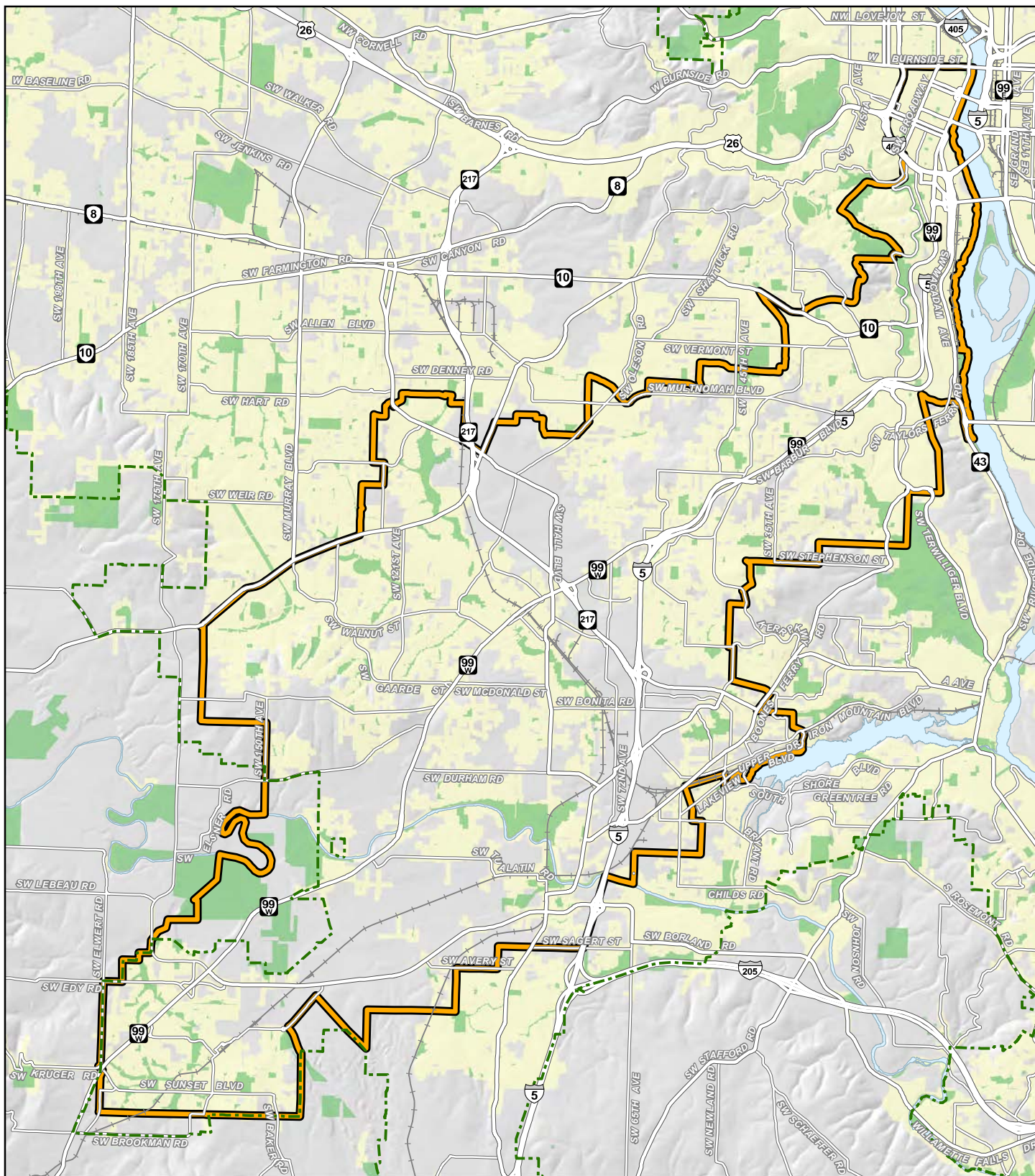
 Data Collection Area
 Urban Growth Boundary





Source: InfoUSA 2008



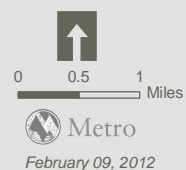
 **Metro**
 February 09, 2012



**Figure 13**

-  Intertwine Tier 2 Parks and Natural Areas
  Data Collection Area
-  1/3 mi walkshed to Tier 2 Areas
  Urban Growth Boundary

Source: Intertwine Study 2011



Metro Region



Natural resources

Water quality and quantity

The Southwest Corridor includes three separate watersheds and 98 miles of streams, which is more than 10 percent of the region's waterways. Water quality issues include high temperatures, excessive nutrients and pollutants.²⁷ Water quantity is also a challenge. Impervious surfaces cause excessive runoff into these creeks and streams during even small storm events, scouring and down cutting stream banks and causing flooding and erosion. Projections for the Willamette Basin show that the length of time that streams are expected to go dry in even a moderately dry summer will double, causing even greater impacts to water quality, stream health, fish and wildlife over time.

Identifying those streams and riparian areas where narrow corridors can be widened presents the best opportunity for significantly improving water quality and wildlife health.

Wildlife habitat

Due to the intense level of development, few remaining opportunities for protecting significant habitat exist in the corridor. However, public agencies, non-profits, neighborhood groups and private land owners support enhancement and restoration of fish and wildlife habitat restoration is happening throughout the corridor. Habitat enhancement and the re-creation of habitat are important to the

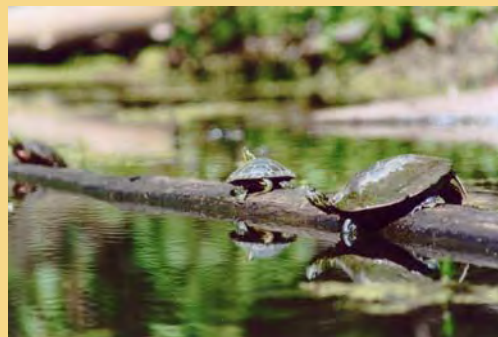
health of wildlife within the corridor and could be a strategy in the corridor plan. Significant habitat patches and special habitats remain, like remnant oak woodlands, hardwood floodplain forests and turtle habitats, which need conservation and protection.

Protected wildlife species are found throughout the Southwest Corridor. Wildlife species of concern, with federal and state status, include the Northern Red-legged Frog, Western Painted Turtle, Pacific (Western) Pond Turtle, Bald Eagle, American Peregrine Falcon, Band-tailed Pigeon, Pleated Woodpecker, Olive-sided Flycatcher, Little Willow Flycatcher, Purple Martin, Slender-billed (White-breasted) Nuthatch, salmonids and bat

WILDLIFE PHOTOS



Northern Red-legged Frog



Western Painted Turtle

²⁷ All of the streams within the corridor are 303(d) listed for water quality by the Oregon DEQ.

species.

Wildlife crossings

Wildlife corridors are important to the long term health of our native species. There are three major stream crossings and several smaller/minor stream crossings impacted by Highway 99W. Typically, these stream crossings also serve as connectivity corridors for wildlife. Next to improving water quality and quantity issues, improving the stream crossings and allowing fish and wildlife passage represent the best opportunities to support wildlife health within the corridor. Improvements of crossings for wildlife could be paired with improved pedestrian crossings to create safer and more reliable transportation alternatives and opportunities for increased access to nature for people living, working and traveling within the area.

Low impact development approaches

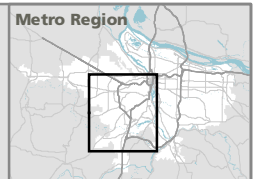
Low-impact development approaches (LIDAs) are not widespread in the Southwest Corridor outside of the City of Portland. These development practices preserve streams from inundation, flash flooding, erosion and pollution. However, LIDAs may be more expensive due to low infiltration rates caused by the area's tight soils. Additionally, some LIDA practices are space intensive and are difficult to permit and finance.

Urban tree canopy

An American Forests study conducted in the Willamette/Lower Columbia Region found that average tree canopy cover had been reduced nearly in half, from 46 percent in 1972 to 24 percent in 2000. In

the study's urban areas, canopy was reduced from 21 to only 12 percent coverage. Overall the tree canopy in the Southwest Corridor is high (29 percent) and many of the residential areas in the corridor feel quite lush and beautifully forested. However, tree canopy covers less than one-sixth of industrial and commercial areas, many of which are directly adjacent to major roadways. See *Figure 14: Tree cover*.

Tree canopy can help beautify the area, clean the air, cool water in streams and slow and clean urban storm water runoff. Tigard and Portland have updated their urban forestry policies and adopted aggressive tree canopy goals for all land use types. Plans for the Southwest Corridor could include more ambitious goals for expanding tree canopy in areas where canopy is lacking. Actions could include tree planting programs for public lands, identifying new funding sources for tree planting and tree maintenance, improving enforcement of existing tree protection and implementing best management practices during construction, development and redevelopment.



Land use

Centers, corridors and main streets have been identified as locations for focused growth in the 2040 Growth Concept. The Southwest Corridor includes the 2040 designated Central City; the Hillsdale Town Center, West Portland Town Center, Tigard Town Center, Tualatin Town Center, Sherwood Town Center, and Washington Square Regional Center

Southwest Corridor contains a wide variety of land uses. Swaths of commercial and industrial strips surround by residential land along Highway 99W and Highway 217. Between Highway 99W and Interstate-5 in Tualatin is a large continuous area of industrially zoned land. The Tualatin River National Wildlife Refuge dominates the landscape between Sherwood and King City. See *Figure 15: Generalized zoning*.

Much of the land within the Southwest Corridor has been developed. There is a total of 1,496 acres of vacant land throughout the corridor.²⁸ See *Figure 16: Vacant land*.

Focus areas

Thirty focus areas were defined through a collaborative process between Metro and the local jurisdictions. The focus areas are areas that are of high importance for future housing and job growth and will be the focus for transportation investments. Focus areas vary by zoning potential, transit orientation, trip patterns and

demographic data. See *Figure 17: Focus areas*.

Development policy and incentives

Jurisdictions in the Southwest Corridor employ several development tools, policies and incentives.

Portland uses Transit Oriented Development Tax Exemption Program, which provides a 100 percent property tax exemption for the construction of dense, multi-story housing in urban centers, preferably near transit facilities.

Portland, Tigard, Sherwood and Lake Oswego employ Tax Increment Financing, which is the assessed value of real property within a defined area of investment is frozen and an authorized agency acquires capital by issuing bonds against the future projected increase in property taxes for that area.

Portland, Tigard, Tualatin, King City, Sherwood, Lake Oswego and Beaverton have improvement districts, which allow private sector entities to assess themselves and other businesses within a district a fee, collected on their behalf by a local jurisdiction.

Portland and Tualatin have parking requirements that decrease the amount of land needed for development. These encourage more residential and commercial investment while reducing congestion and increasing public transportation options.

Other potential development incentives include vertical housing development zone programs, restructuring system development charge fee schedules, and Oregon enterprise zones.

²⁸ Metro's RLIS vacant land data, 2011.

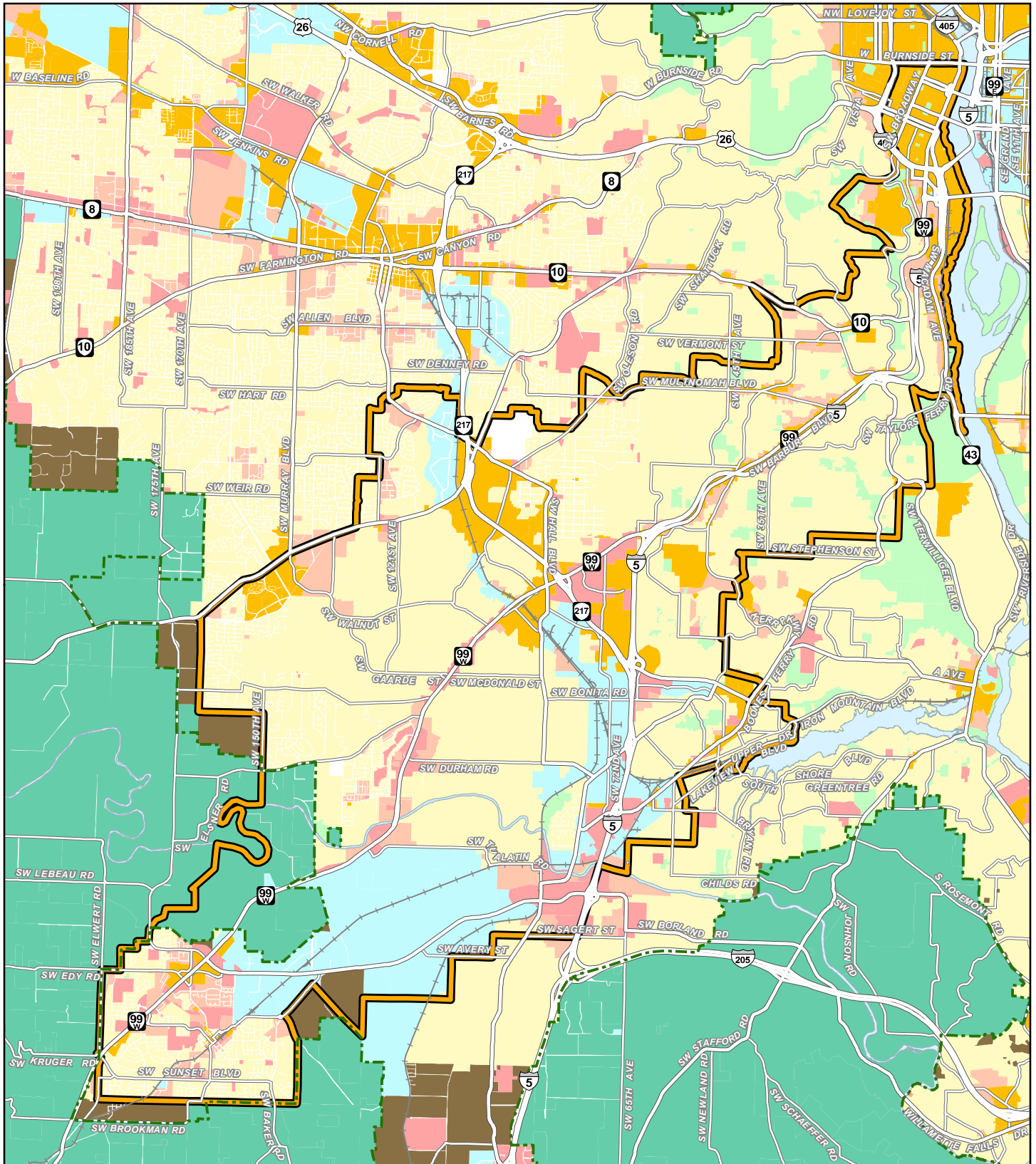


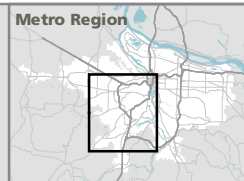
Figure 15

- | | | |
|--|---|---|
| Commercial | Mixed Use Residential | Data Collection Area |
| Future Urban Development | Parks & Open Spaces | Urban Growth Boundary |
| Industrial | Rural | |
| Multi Family | Single Family | |





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Southwest Corridor Focus Areas

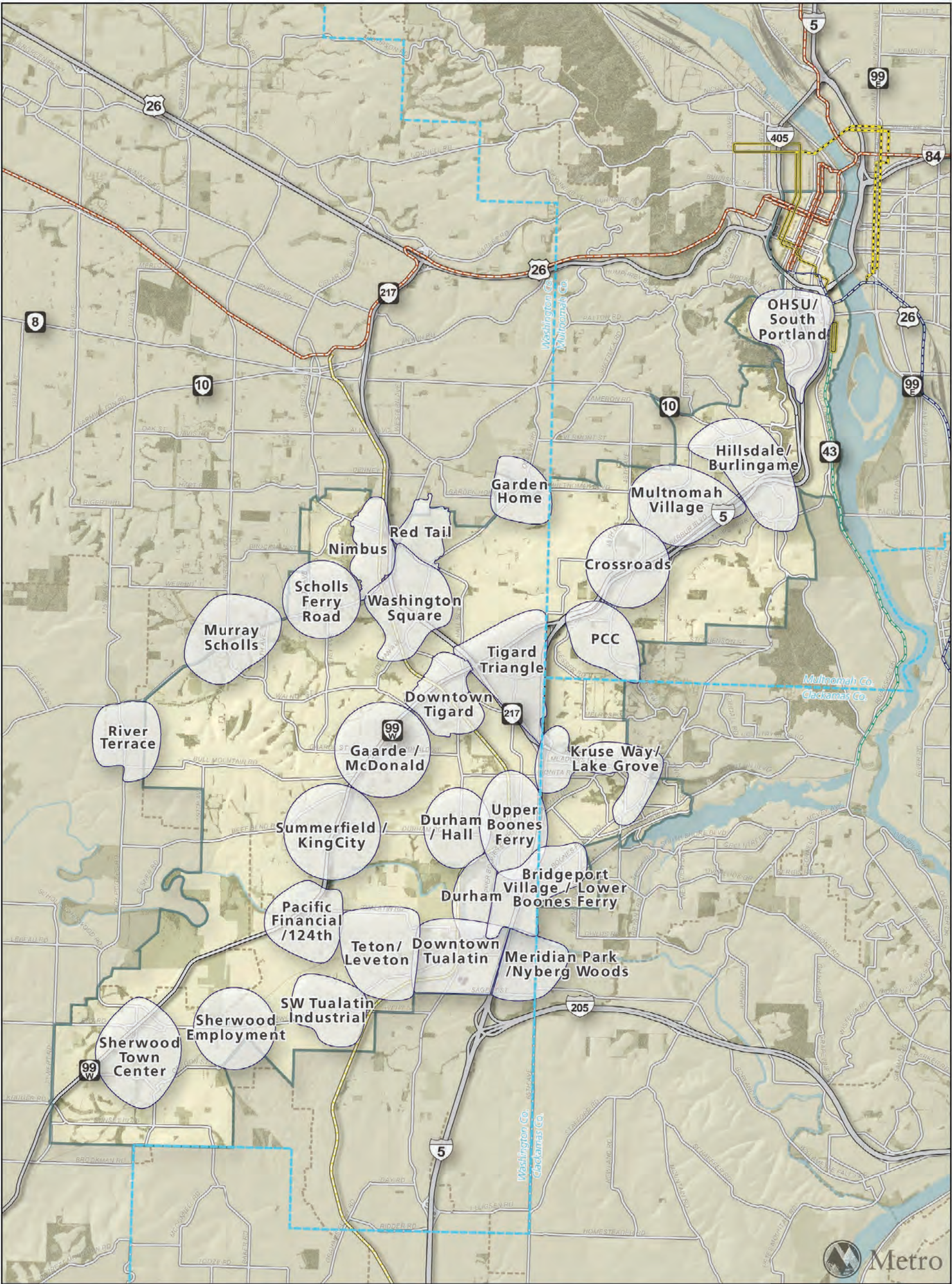


Figure 17

- SW Focus Areas
- Data Collection Area
- Parks / Open Spaces
- County Boundaries
- Urban Growth Boundary

- Light Rail
- Commuter Rail
- Streetcar, Existing
- Streetcar, Under Construction
- Portland-Milwaukie Light Rail Project
- Lake Oswego Transit Project



0 1 2 Miles

February 2, 2012



Housing

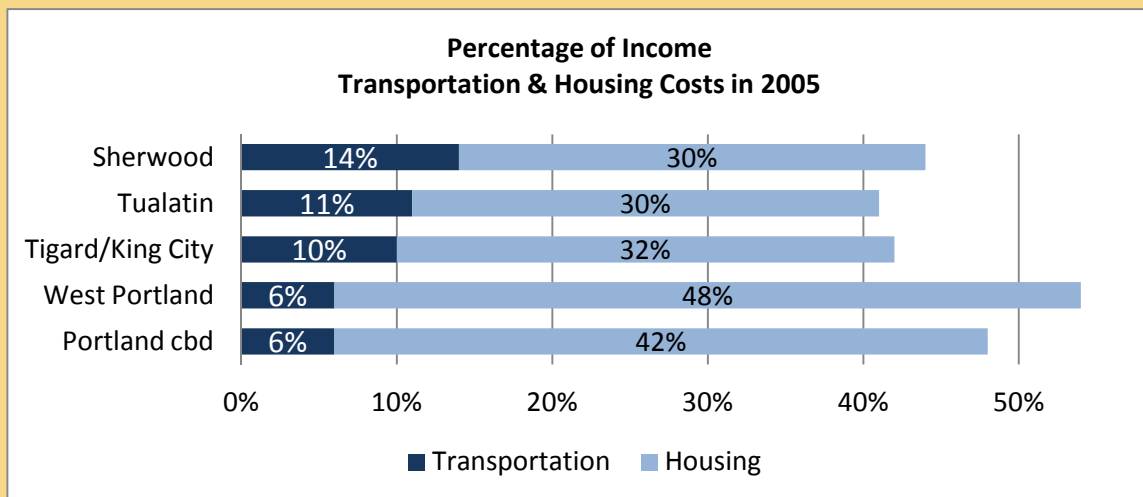
The neighborhoods within the Southwest Corridor differ on housing mix, housing affordability, and transportation costs. Overall, residents of the corridor spent 41-54 percent on housing and transportation costs. The northern portion of the corridor has higher housing costs and lower transportation costs. The southern portion of the corridor has lower housing costs and higher transportation costs.²⁹

Approximately 51,164 housing units (63 percent) in the corridor census tracts were owner-occupied and approximately 29,762 units (37 percent) were renter-occupied.³⁰

Home prices

Within the cities that comprise the Southwest Corridor, the average cost of a single family home for sale is \$276,175 and \$100,700 for a multifamily unit.³¹ Lake Oswego, Durham and Tualatin have the highest average home for sale prices. Lake Oswego and Portland have the highest average multifamily unit sale prices. Of those areas sampled in the Southwest Corridor, highest home prices are found near Barbur Boulevard within Portland, near Durham and Hall, and in the Tigard Triangle.

TRANSPORTATION & HOUSING COSTS



²⁹ Urban Growth Report, Appendix 7, Metro, 2010.

³⁰ U.S. Census Bureau, American Community Survey (ACS), 2009.

³¹ Market Action; Zillow, October 2011.

HOUSING AFFORDABILITY¹



Elementary school teachers, fire fighters, nurses, police officers, administrative assistants and dental assistants make less on average than is needed to afford a median home price, \$220,000, in the Portland Metropolitan Area.³²

Rental prices

Housing costs vary throughout the Southwest Corridor. In Southwest Corridor cities, the average cost for an apartment ranged from \$0.84 per square foot for a three-bedroom apartment to \$0.99 per square foot for a one-bedroom apartment, or from approximately \$642-\$1,058 for an apartment³³. In comparison, the Portland Metro Area has average rates of \$0.83 for a three-bedroom apartment to \$1.07 per square foot for a one-bedroom apartment.

A sampling of locations within the Southwest Corridor offers a snapshot of the rental market in the area. Within the Southwest Corridor, some of the highest rents are found near Barbur Boulevard within Portland, near Durham and Hall, in downtown Tigard, and in Sherwood Town Center. The average rent for single family apartments is the highest in Sherwood Town Center, Tigard Triangle, and near Barbur Boulevard in Portland.

Nursing aides, retail salespersons, janitors, hairdressers, and bank tellers on average make less than the average median income and cannot afford the median one bedroom apartment rent, \$783 per month, in the Portland Metropolitan Area.³⁴

³² U.S. Department of Housing and Urban Development's report on Fair Market Rents for the year 2011.

³³ Norris, Beggs, & Simpson, 2011.

³⁴ U.S. Department of Housing and Urban Development's report on Fair Market Rents, 2011. Wage data: August 2011, Salary.com.

Housing assistance

Subsidized housing is targeted for members of our society that earn under the federal standard of average median income (AMI). The median income of rental assistance recipients was \$10,300 with \$528 in rental assistance.

The Southwest Corridor hosts approximately 1,900 units of regulated subsidized housing and is home to approximately 750 rental assistance recipients.³⁵ Downtown Portland in the Southwest Corridor³⁶ holds an additional approximately 3,000 units of regulated subsidized housing and 650 rental assistance recipients.³⁷ Downtown Portland, Tigard, and Tualatin have the highest number and percentage of regulated subsidized housing units. The highest number percentage of rental assistance recipient households uses that assistance to live in housing within the city of Tigard.³⁸ See *Figure 18: Subsidized housing unit density*.

Higher land values in the Corridor have limited the opportunities to develop affordable housing, but the Southwest Corridor is a desirable place to live. For example, for around 160 regulated affordable housing units, Home Forward has a wait list of 1,342 people.

A variety of tools for advancing housing choices are available. Tigard has a fee waiver program and tax exemption for

affordable housing development. Beaverton has a loan and grant programs for emergency repairs and accessibility modifications, to loans for energy efficiency upgrades and comprehensive housing rehabilitation. Portland has numerous incentives for developers and non-profits. Lake Oswego has an Affordable Housing Task Force Report, and offers tax increment financing for affordable housing units in downtown.

Other tools to increase housing choices include tax credits, property tax exemption or abatement, land donation, reduced fees or system development charges, housing trust funds, reduced-rate loans, and federal, state, and local grants.³⁹ Other development incentives used for affordable housing include development bonuses, accessory dwelling units and parking standard flexibility in parking standards.

Brownfields & Hazardous Materials

The Southwest Corridor has only a few identified brownfields. A comprehensive inventory of existing brownfield sites is needed for the Southwest Corridor. The highest concentrations of hazardous materials are in the northern part of the corridor in the Portland metro region; the lowest concentrations are located in the southern end of the corridor near Sherwood. The majority of sites identified by DEQ are for leaking underground storage tanks.⁴⁰

³⁵ Excludes downtown Portland.

³⁶ Downtown Portland in Southwest Corridor data collection area, bordered by SW Burnside, I-405, and the Willamette River.

³⁷ RLIS, 2011 Housing Update.

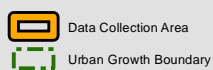
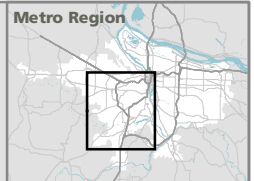
³⁸ Does not include City of Portland rental assistance data.

³⁹ Meeting: Metro, Portland Housing Authority and the Washington County Housing Authority, 7/1/10.

⁴⁰ Department of Environmental Quality's (DEQ) Facility Profiler website.



6,500 Units / sq mi	300 Units / sq mi
5,000 Units / sq mi	100 facilities / sq mi
600 Units / sq mi	50 Units / sq mi

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Historic resources

The National Historic Preservation Act requires federal agencies to take into account how federal undertakings affect historic properties resources listed in or eligible for the National Register of Historic Places (NRHP). In the Southwest Corridor, approximately 300 Historic resources are listed in the National Register of Historic Places (NRHP). These include historic resources in the South Portland Historic District and properties individually listed in the NRHP. The relatively low number of National Register properties from more recent historic context periods may indicate a lack of survey of the period rather than an assumed ineligibility of resources from

those time periods. The NRHP typically considers properties over 50 years old.

Archaeology

A total of 46 cultural resources are reported to occur within the project area, but only 23 of these are officially recorded with sites forms on file at the Oregon State Historic Preservation Office. Of the recorded sites, nine are historic, eleven are prehistoric, and two have both historic and prehistoric components. The remaining recorded site in the project area is a modern rock art replication site. Only a few archaeological sites in the study area have been formally evaluated and many would require additional investigations to make a determination.

HOW DO PEOPLE AND GOODS MOVE IN THE CORRIDOR?

The Southwest Corridor represents a large geographic area with a diverse range of transportation issues and problems. Historic development patterns and geographic and man-made barriers contribute to many of these challenges.

Transportation

Highway 99W is an essential route in the corridor. It serves as the predominant link between destinations within the corridor, particularly south of the Tigard/Portland boundary where parallel facilities are lacking. It also suffers from **functional conflicts** in several areas. As a designated Statewide Highway south of the boundary, Highway 99W's officially stated function is to provide inter-urban and inter-regional mobility, and to provide high-speed, continuous-flow operation. In portions of Tigard and Sherwood, however, the retail commercial development along the highway promotes short trips, and multiple business access points and closely-spaced intersections contribute to congestion and reliability problems. North of the Tigard/Portland boundary Highway 99W is designated as a District Highway, which is expected to function more like a city arterial providing local access and serving local traffic. In reality, as a parallel route to I-5 in this section, Highway 99W carries longer trips that divert from I-5, especially when the freeway is congested. The current locations and spacing of I-5 ramps may contribute to functional conflicts and congestion on Highway 99W in this area. There is also less commercial development and fewer intersections and

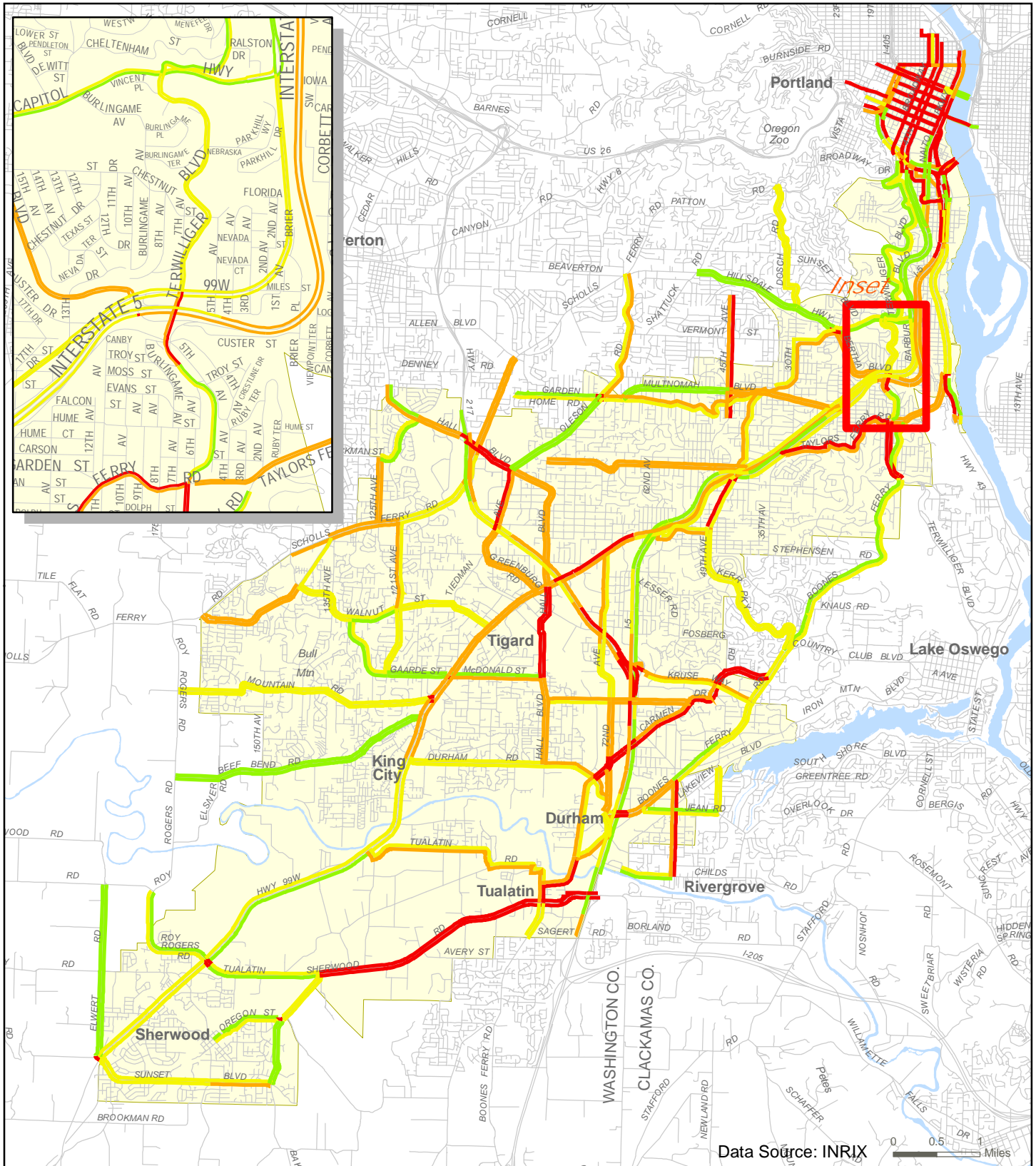
access points in this section of the roadway.

Congestion, defined as average speed slower than 60 percent of posted speed during the PM peak period, occurs in isolated areas throughout the corridor. Notable locations include:

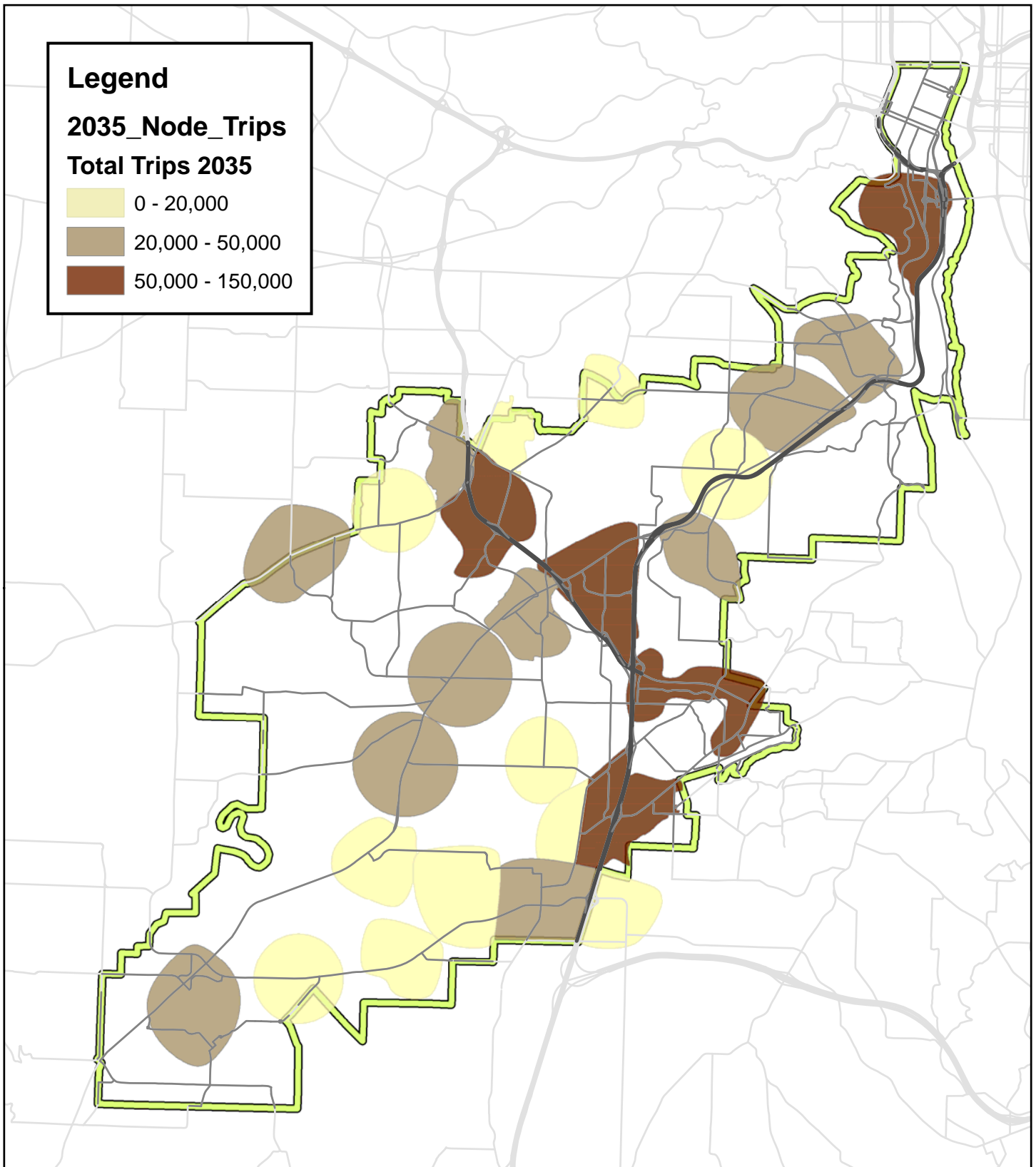
- Highway 99W between I-5 and OR-217,
- I-5/OR 217 interchange on both facilities
- Tualatin-Sherwood Road
- Hall Boulevard near Washington Square and south of Tigard
- Taylors Ferry Road between Highway 99W and Boones Ferry Road
- Upper Boones Ferry Road/ Carman Drive.
- In addition, on portions of Highway 99W between Highway 217 and King City, and between Multnomah Boulevard and I-5, travel speeds are within 60-75 percent of posted speeds during the average PM peak period. Congested conditions may occur sporadically in these segments.

See *Figure 19: Congestion* and *Figure 20: Node trips*.

Southwest Corridor - Transportation

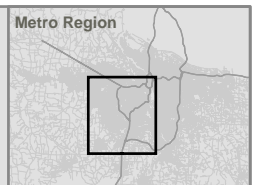


Southwest Corridor - Transportation



Map X.x

0 0.5 1 Miles



Connectivity issues affect access to major employment, education, and retail centers. These issues are largely a product of geography and the locations of freeways and highways in the corridor. In the north, steep terrain prevents the development of a grid network.

Throughout the corridor, but especially in the Tigard Triangle area, I-5, and OR-217, and Highway 99W create barriers that obstruct connectivity. In the south, crossings over the Tualatin River are limited, funneling north-south travel to three facilities in the corridor. The Portland and Western rail line bisects the corridor between Bridgeport Village and the Washington Square/Nimbus areas; lack of overcrossings restrict local access to and concentrate traffic onto a small number of crossing roads.

Transit

A lack of transportation options is an issue in several areas of the corridor. “Transit deserts”, areas without transit service, exist in much of the southern corridor. Sherwood, located at the edge of the TriMet service district, is particularly isolated with service only on Highway 99W. No transit connection exists between Sherwood Town Center and Tualatin Center, a heavily travelled and congested segment of the corridor with high employment density. There is significant travel demand between the southern corridor and areas to the north toward Beaverton and Hillsboro; while WES provides high capacity transit to serve this demand, infrequent headways and lack of off-peak service limit its potential ridership. Conflicts between transit stops and driveways on Highway 99W result in inconvenience and delays

for both transit and auto users. Some of the park and ride lots in the corridor are at or near capacity. The Barbur Transit Center park and ride lot is generally filled to capacity (368 spaces) and the Tualatin lot use averages 83 percent of capacity (458 spaces).

Active transportation

For pedestrians and bicyclists, the Southwest Corridor features a lack of street connectivity, hills, and limited or no provision of bicycle facilities, way finding or secure bicycle parking. Many gaps in the pedestrian and bicycle network remain; 327 miles of roadways lack sidewalks. The built environment presents many driveways, parking lots, and high-speed arterials as the only connecting roads. Most bicycle routes in the corridor follow high-speed arterials. Limited parallel, low traffic, calm routes are available to avoid unsafe riding conditions. See *Figure 21: Sidewalk network and sidewalk gap density*.

Bicycle and Pedestrian safety

Between 2007 and 2010, there were a total of 184 pedestrian crashes and six fatalities reported to law enforcement. Most crashes were concentrated in the downtown Portland portion of the data collection area and along the course of 99W. High speeds, few marked crossings, and limited sight distances can all contribute to unsafe conditions. Vehicle speed and the built environment’s facilitation of excessive speed create unsafe conditions for those not in automobiles. Pedestrians hit by automobiles have a 95 percent rate of

survival at 20 mph, but only 15 percent chance of survival at 40 mph.⁴¹

Of the 213 bicycle crashes between 2007 – 2010, most can be seen in the downtown Portland and along major roadways such as Highway 99W and Capital Highway in Southwest Portland, and along Tualatin-Sherwood Road. These arterials are often the only readily available route for bicycles and provide a high risk riding environment that is unsafe and uninviting. Pedestrians and bicycles must navigate wide streets, auto-serving driveways, large parking lots, limited light timing sequences, and bike lanes placed alongside roads with speeds of over 45 mph. See *Figure 22: Pedestrian and bicycle crashes 2007-2010*.

Crashes

Eighteen crashes with fatalities and 108 crashes with serious debilitating injuries occurred in the Southwest Corridor from 2007-2010. These constitute less than two percent of total crashes. The highest number of fatal and/or serious injury crashes occurred near Bridgeport Village, Downtown Tualatin, Kruse Way/Lake Grove, Murray Scholls, Tigard Triangle, Upper Boones Ferry, and Washington Square.

The study area has 30 different focus areas that have been identified as areas of higher activity and special attention for analysis. Crash data shows that 14 of these focus areas have had three or more crashes with fatal and/or seriously disabling injuries over a four year period from 2007 to 2010.

The seven focus areas that had the highest number of fatal and/or serious injury crashes (8 to 13) include Bridgeport Village, Downtown Tualatin, Kruse Way/Lake Grove, Murray Scholls, Tigard Triangle, Upper Boones Ferry, and Washington Square.

The other seven focus areas that had from three to five fatal and/or serious injury crashes include Downtown Tigard, Gaarde/McDonald, OHSU/South Portland, Pacific Financial/124th, Scholls Ferry, Summerfield/King City, and Southwest Tualatin Industrial.

Freight

The regional freight network within the study area includes I-5, Highway 99W, Highway 217 south of Hall Blvd., Nyberg/Tualatin Sherwood Road between 99W and I-5, SW 72nd Ave. between Highway 217 and Bridgeport Road, and Boones Ferry Road between I-5 at Bridgeport and Sagert Street in Tualatin. Congested roadways are defined as having an existing one hour PM peak average weekday travel speed that is less than 60 percent of the posted speed. Slow roadways are defined as having an existing one hour PM peak average weekday travel speed that is between 60 percent and 75 percent of the posted speed. Congested and slow roadway portions of the regional freight network (during 1-hour PM peak) include:

- I-5 both northbound and southbound between I-405 and Terwilliger Blvd.
- I-5 southbound from Highway 217 to Bridgeport Road (Lower Boones Ferry Road) exit.

⁴¹ United Kingdom Department of Transportation, 1994

- Highway 217 both northbound and southbound between Highway 99W and I-5.
- Highway 99W both northbound and southbound between I-5 and Durham Road,
- SW 72nd Avenue both northbound and southbound between Bonita Road and Bridgeport Road.
- Boones Ferry Road (both directions) between Upper Boones Ferry and Nyberg Road.
- Nyberg/Tualatin Sherwood Road, both eastbound and westbound are fully congested from Oregon Street in Sherwood to I-5 in Tualatin.

Both historic **development patterns** and forecast population growth in the corridor pose challenges for transportation. Much of the corridor developed during the mid-20th century, resulting in auto-oriented development that contributes to sprawl and congestion. Future growth is forecast in urban reserve areas west of Sherwood and Tigard; travel demand models suggest that future assumed road capacity in the western part of the corridor may not adequately support demand resulting from this growth, resulting in additional areas of congestion.

Air quality

Residents and businesses in the region are responsible for an estimated 31 million metric tons of greenhouse gas emissions annually, 14 percent of which

come from local passenger transportation sources.⁴²

The Environmental Protection Agency (EPA) sets National Ambient Air Quality Standards (NAAQS) for various pollutants considered harmful to public health and the environment for Metropolitan Planning Areas. Areas which consistently exceed the NAAQS are considered “non-attainment areas” and areas where these standards are being met are considered “attainment areas.” The EPA also designates “maintenance areas” which are areas that formerly violated the NAAQS, but now meet the standards as a result of intensive management practices.

The Southwest Corridor is within an area designated by EPA as a carbon monoxide (CO) maintenance area, and became “in attainment” for ozone when the standard was revised in June 2005. The area is still subject to the “no backsliding” provisions of the revised standard but does not require a regional air quality conformity analysis for ozone. The area is currently in attainment for the other NAAQS pollutants. See *Figure 23: Modeled air quality risk*.

⁴² Metro Regional Greenhouse Gas Emissions Inventory, 2010

Sidewalk Network and Sidewalk Gap Density

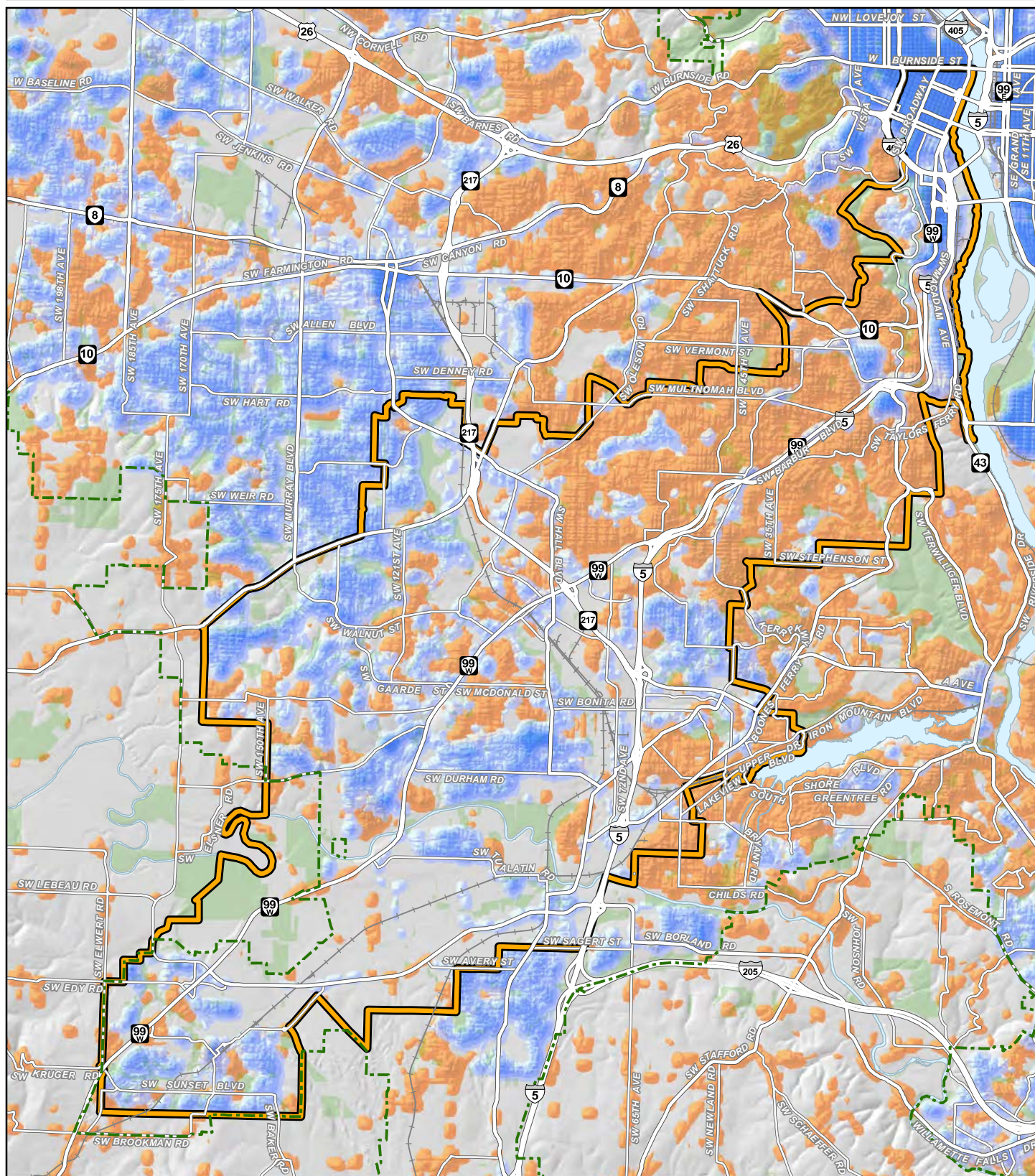



Figure X


Density of Sidewalks



High


Low


Density of Sidewalk Gaps

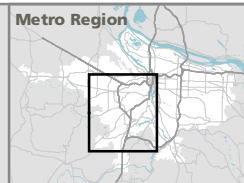
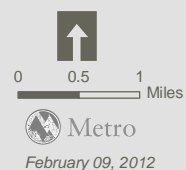


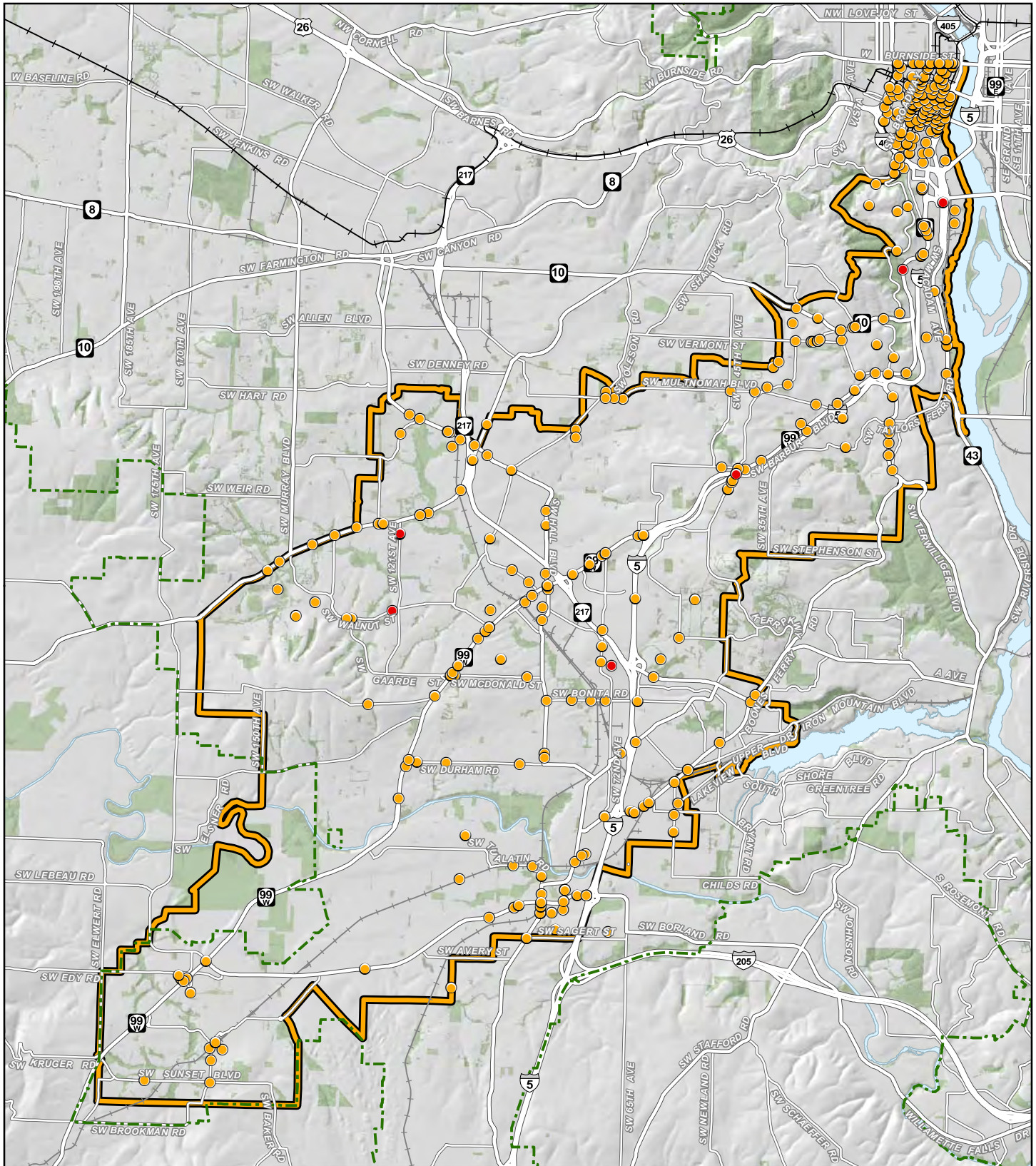
High

Low

 Data Collection Area

 Urban Growth Boundary





Crashes Resulting in Fatality
or Injury that Involved Bicyclists
or Pedestrians (2007 - 2010)*

- Fatality
- Injury (All Injuries)
- Data Collection Area
- Urban Growth Boundary

*Source: ODOT



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Metro Region



Modeled Air Quality Risk

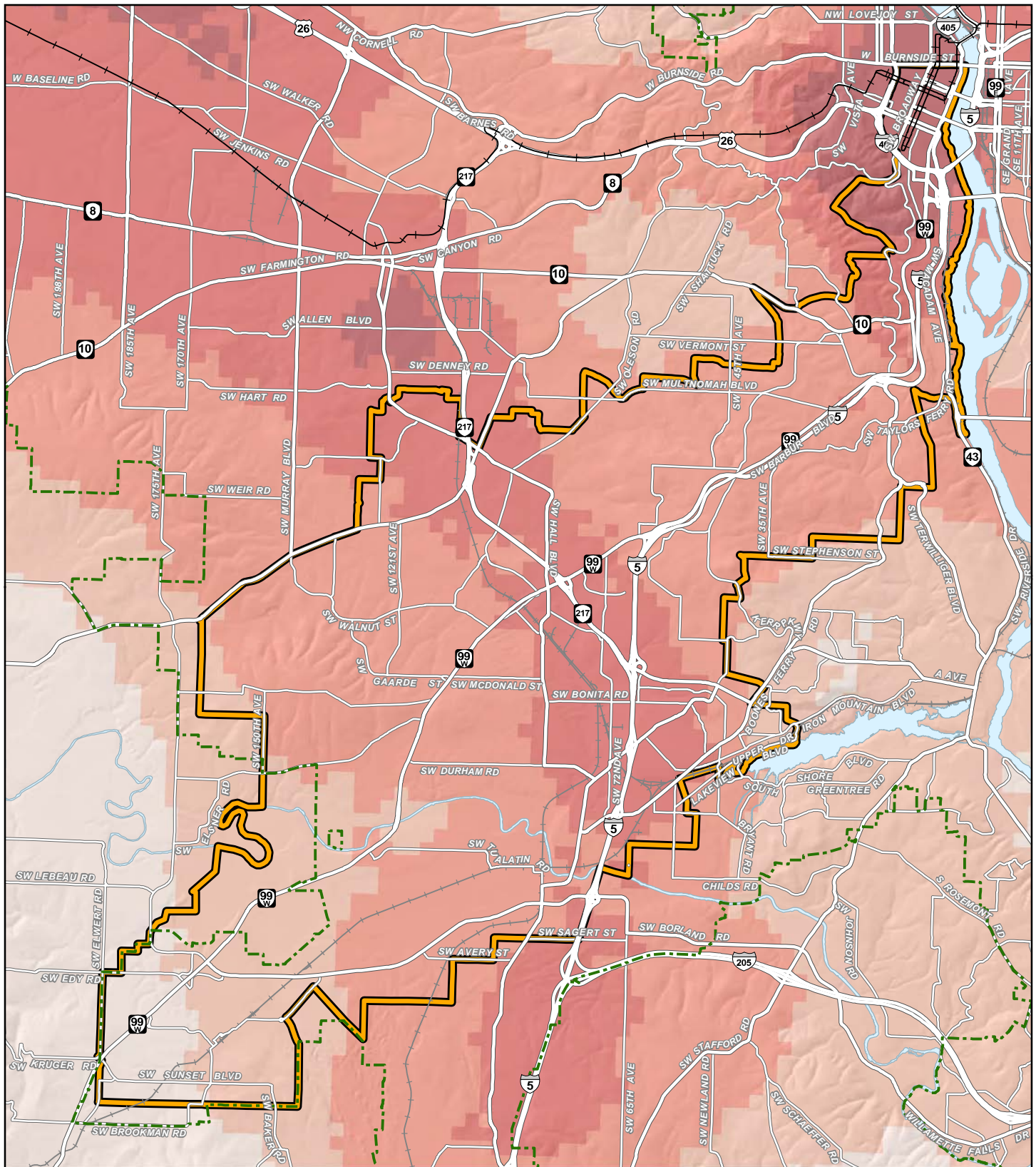
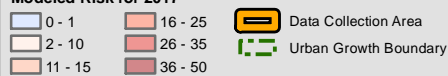


Figure X

Modeled Risk for 2017

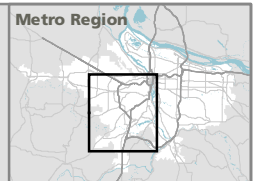


Pollutants Measured

- 1,3 Butadiene
- Benzene
- Ethylbenzene
- Chromium VI
- Arsenic
- Diesel Particulate Matter



 Metro
February 09, 2012



CONCLUSION

The Southwest Corridor offers a high level of services and opportunities to live, work, learn and play. It contains a variety of livable and high opportunity neighborhoods that include numerous educational facilities, employment, community assets, and transportation facilities. However, the corridor has limited transportation accessibility, congestion, patchy pedestrian & bicycle facilities, health concerns, and a low level of affordable housing along with higher land values.

Complex relationships exist between the wide array of opportunities and challenges in the Southwest Corridor and will need to be considered holistically in the next phases of the Southwest Corridor.

- Areas with a concentration of a single land use (jobs or housing) are likely to have higher traffic congestion; single land use areas are likely to have less access to urban amenities and parks; areas with higher traffic congestion are likely to have worse air quality and higher rates of asthma.
- Neighborhoods rich in urban amenities, farmer's market, social and health services, and parks are likely to have more people bicycling and walking; these neighborhoods are likely to have less prevalence of obesity, cardiovascular disease and diabetes; these neighborhoods are likely to have higher housing costs and less regulated affordable housing.
- Neighborhoods rich in employment are likely to have more transportation access; these employment areas are likely to have more air pollution associated with major roadways; these employment areas often have few cafes and urban amenities.
- Neighborhoods with higher rates of poverty are likely to have less access to urban amenities, farmer's markets, social and health services, trees and parks; these neighborhoods are likely to have more prevalence of obesity, cardiovascular disease and diabetes.
- Neighborhoods with higher rates of poverty are likely to be located adjacent to major roadways; these neighborhoods are likely to have worse air quality; these neighborhoods are also likely to have a higher prevalence of asthma.
- Neighborhoods with more seniors are likely to have more prevalence of obesity, cardiovascular disease, diabetes, and asthma; these neighborhoods are also likely to have less access to medical facilities.
- Hilly areas are likely to have less pedestrian and bicycle infrastructure and connectivity; these neighborhoods are likely to have more prevalence of obesity, cardiovascular disease and diabetes.

The entwined nature of demographic shifts, health, employment, housing, community amenities, parks and habitat, and transportation in the Southwest Corridor necessitate further investigation. This multi-disciplinary summary forms

the building blocks for future efforts: the purpose and need, the evaluation framework and the wide-range of alternatives in the Southwest Corridor.

APPENDICES

- Appendix I. Comprehensive corridor planning lessons learned**
- Appendix II. Policy review**
- Appendix III. Opportunity and housing**
- Appendix IV. Health**
- Appendix V. Active transportation**
- Appendix VI. Land use and zoning**
- Appendix VII. Focus area (pending)**
- Appendix VIII. Natural resource**
- Appendix IX. Parks and access to nature**
- Appendix X. Infrastructure**
- Appendix XI. Financial and regulatory incentives**
- Appendix XII. Brownfields**
- Appendix I. Transportation (pending)**
- Appendix II. Economic development (pending)**
- Appendix III. Security (pending)**



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Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and good transportation choices for people and businesses in our region. Voters have asked Metro to help with the challenges that cross those lines and affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to protecting open space, caring for parks, planning for the best use of land, managing garbage disposal and increasing recycling. Metro oversees world-class facilities such as the Oregon Zoo, which contributes to conservation and education, and the Oregon Convention Center, which benefits the region's economy.

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