



TUALATIN CITY PLANNING COMMISSION MEETING

WEDNESDAY, FEBRUARY 21, 2024

TUALATIN SERVICE CENTER
18880 SW HERMAN RD
TUALATIN, OR 97062

Bill Beers, Chair Janelle Thompson, Vice Chair
Daniel Bachhuber, Ursula Kuhn
Randall Hledik, Brittany Valli
Zach Wimer

Or

Join Zoom Meeting

<https://us02web.zoom.us/j/87664022150?pwd=RTBZK0dqUnRSUjV6UmRkTk95a0p6UT09>

Meeting ID: 876 6402 2150
Passcode: 217984

Find your local number: <https://us02web.zoom.us/j/87664022150?pwd=RTBZK0dqUnRSUjV6UmRkTk95a0p6UT09>

CALL TO ORDER & ROLL CALL

ANNOUNCEMENTS & PLANNING COMMISSION COMMUNICATION

1. Election of Chair and Vice Chair.

APPROVAL OF MINUTES

1. Review of October 18, 2023 minutes.

COMMUNICATION FROM THE PUBLIC (NOT ON THE AGENDA)

Limited to 3 minutes

ACTION ITEMS

1. Presentation of the 2023 Tualatin Planning Commission Annual Report. The Annual Report will be presented to the Tualatin City Council on February 26, 2024.

COMMUNICATION FROM CITY STAFF

1. Informational presentation on the ongoing update to the Tualatin Transportation System Plan

FUTURE ACTION ITEMS

ADJOURNMENT

Tualatin Planning Commission

MINUTES OF OCTOBER 18, 2023 (NOT ADOPTED)

TPC MEMBERS PRESENT:

William Beers, Chair
 Janelle Thompson, Vice Chair
 Randall Hledik, Commissioner
 Daniel Bachhuber, Commissioner
 Zach Wimer, Commissioner
 Brittany Valli, Commissioner

STAFF PRESENT:

Steve Koper, Asst. Community Development Director
 Nic Westendorf, Public Works Deputy Director
 Maddie Cheek, Management Analyst
 Lindsey Hagerman, Office Coordinator

TPC MEMBERS ABSENT:

Ursula Kuhn, Commissioner

CALL TO ORDER AND ROLL CALL

The meeting was called to order at 6:30 p.m. and roll call was taken.

APPROVAL OF MINUTES

Commissioners unanimously voted to approve September 2023 minutes with edits recommended.

COMMUNICATION FROM CITY INVOLVEMENT ORGANIZATIONS

None

COMMUNICATION FROM CITY STAFF

1. **The draft Climate Action Plan (CAP) is complete and ready to be shared with the general public for feedback. The project team will summarize the information and process that shaped the development of the CAP and share information about actions included in the CAP that are relevant to the work of the Planning Commission.**

Maddie Cheek, Management Analyst I introduced herself and Nic Westendorf, Public Works Deputy Director. She provided an overview of the presentation on the Climate Action Plan. She noted it's a long term plan with a goal to reduce carbon emissions to net zero by 2050. She shared the plan includes recommended actions to prepare for climate change (adaptation) and reduce emissions (mitigation).

Ms. Cheek briefly discussed the adaptation focus areas, the first being Natural System, Resources, and Infrastructure. The second focus area is centered on Health and Safety, while the third focuses on Economic Shifts. She then noted the mitigation focus areas, including the fourth Building and Energy Use, the fifth Urban Form and Land Use, and the sixth

Transportation, and finally the seventh being Consumption. She highlighted that the Planning Commission's primary areas of focus would be 5 and 6, which she would elaborate on in greater detail.

Ms. Cheek then addressed how Tualatin's climate will change over the next 50 years with visual aids. These changes include more wildfires and smoke in the region, more days over 90 degrees Fahrenheit, and more frequent and intense flooding. She noted the adaptation actions will help us adjust to these changes and are informed by community feedback.

Ms. Cheek shared a graph of local and imported emissions sources. She highlighted local emission sources being building energy, transportation energy, waste disposal, industrial process and refrigerants from highest to lowest discharges. Imported emission sources include goods production, food production, fuel production, and air travel. She noted this information informed the mitigation actions needed to take to reach the net zero goal.

Ms. Cheek spoke about Focus Area 5: Urban Form and Land Use Strategy 5.1, *"Dense future development resulting in reduced future vehicle miles traveled."* She noted the effects of urban sprawl and the goal of reducing vehicle trips by encouraging compact development that is comfortable to navigate as a pedestrian, cyclist, and transit user.

Ms. Cheek spoke about Strategy 5.2, focusing on urban/community forestry and carbon sequestration. She emphasized the importance of trees in providing shelter and carbon sequestration. Suggested approaches that include a canopy study as well as widening standards for planter strips.

Ms. Cheek spoke about Strategy 6.1, highlighting the importance of fuel switching to electric vehicles or low-emission fuels. She emphasized that, by 2035, all new vehicles sold in Oregon must be plug-in hybrids at minimum. Ms. Cheek pointed out that being proactive in installing infrastructure early is beneficial.

Ms. Cheek spoke about Strategy 6.2, *"Active transportation to reduce car miles and fossil fuel use."* She noted an example to develop a complete streets policy as a way to prioritize and increase active transportation options and infrastructure.

Ms. Cheek outlined the upcoming stages of the Climate Action Plan acceptance process, underscoring the need for strong community support. These steps involve hosting an open house, presenting to City Council, finalizing the details, and subsequently moving forward with implementation. The presentation was then opened up to questions.

Chair Beers asked why so few of the actions align with City Council's vision. Mr. Westendorf answered they referred to Council's 2030 vision placemat to determine how many of the actions were directly supported by Council vision.

Commissioner Bachhuber asked if this plan was mandated by the state and the cost to produce this plan. Mr. Westendorf answered yes, and it cost \$280K.

Commissioner Valli asked how aggressive this plan is. Ms. Cheek answered that many actions require policy direction from Council so it's more of a road map and menu of options to pick from.

Commissioner Valli asked about funding. Mr. Westendorf answered the plan includes a section that provides information on funding mechanisms and staff resources. It is envisioned that Council will prioritize shorter chunks of the plan to implement in pieces.

Commissioner Hledik noted the plan was well written but noticed many actions recommended to reduce emissions have low benefit ratings in the key. He noted his opinion that it would be a beneficial next step to identify the actions that provide the "biggest bang for the buck". Mr. Westendorf noted the feedback being received from the plan review could provide that lens.

Vice Chair Thompson asked how much influence the plan will have for future projects moving forward. Mr. Westendorf answered it's yet to be determined.

Chair Beers asked how the 2050 date align with State and Federal goals. Ms. Cheek answered that the net zero goal was identified under the Paris Climate Accord agreement. She noted they are working with Metro and DEQ on Oregon's priority climate action plan in collaboration with several jurisdictions toward the same goal.

Commissioner Bachhuber shared his opinion on climate instability and a preference for resiliency.

Vice Chair Thompson shared how information in the plan was done well in communication to the general public.

Commissioner Wimer shared his opinion that it's important to consider that some mitigated strategies may also increase our resiliency, like greater reliance on solar generation instead of relying on power generation that needs to be shipped in.

Commissioner Hledik asked about a strategy to reduce emissions from landscaping and why there is no cost benefit bar included for that. Ms. Cheek answered they budgeted a cost benefit analysis of ten strategies with their consultant.

Chair Beers noted that we might consider adding a transportation strategy that considers hydrogen as a potential power source. Under the Biden administration that has been a focus area for Class A type trucks.

Commissioner Valli asked what other cities surrounding the area have adopted a similar plan. Ms. Cheek and Mr. Westendorf answered the Cities of Milwaukie, Beaverton, Tigard, Eugene, Bend, Portland, Gresham, and Hillsboro as well as Clackamas and Washington Counties.

Commissioner Wimer asked how Tualatin's plan compares as far as ambition, feasibility, and compatibility with other regional strategies. Would this plan be considered a reach, conservative look at what's possible, or middle of the road?

Ms. Cheek answered that Climate Action Plans are typically quite aspirational, and our plan is ambitious and would be hard to meet. She noted that completing strategies will depend on what the community wants and what Council is willing to support. Mr. Westendorf noted Tualatin is aligned with surrounding cities and that we have all worked with the same consultant.

There were no other questions or comments on this topic.

2. Informational update on Tualatin's Housing Needs Analysis, including recently completed work as well as future action items.

Steve Koper, Assistant Community Development Director opened with an overview of the presentation. He explained a Housing Needs Analysis anticipates housing needs over the next 20 years, using Metro's adopted population forecast. He shared this also examines demographic and socioeconomic trends related to housing needs. He stated this study also includes a Buildable Lands Inventory that determines whether Tualatin has enough land to accommodate forecasted growth.

Mr. Koper shared pictorial findings of the buildable lands inventory that included the Basalt Creek planning area. He highlighted that a significant portion of the Basalt Creek area is zoned as low and medium-low density, and the city has a shortage of buildable land for higher densities.

Chair Beers asked if all five acres of high density is dedicated to Plambeck Gardens. Mr. Koper answered yes.

Mr. Koper shared the projections of future housing needs which includes 40% single-family detached, 15% single-family attached, and 45% multi-family. He stated the goals for the various typologies were set as part of the housing needs analysis based on public input and Council goals. This is a projection of growth broken down to each type meeting Council goals.

Commissioner Hledik noted his assumption of the data was based on trends. Mr. Koper shared that the projections mirror what we are seeing in trends but are not based on them. The main difference from the trend line was single-family attached data which was historically at 5%.

Mr. Koper discussed the housing capacity results which is determined by looking at buildable lands multiplied by the zoning density. He then went on to discuss affordability of housing, while pointing out that interest rates for loans had fluctuated since the data was collected. A significant insight from the table was that individuals residing in Tualatin need to earn median income or higher to afford market rate housing. He presented a graph illustrating the distribution of households based on their income levels. Mr. Koper emphasized that half of Tualatin's population many not earn enough to afford market-rate housing. And that another 15% of the population is considered middle income. This group doesn't qualify for subsidies and may not be able to afford the majority of what's available in the housing market.

Mr. Koper discussed the process for developing housing strategies in compliance with State law. He outlined the four steps which involved extensive discussion, leading to recommendations that were presented to the City Council for adoption. He also provided an overview of how the strategies and actions within the Housing Production Strategy work.

Mr. Koper explained part of implementing the Housing Needs Analysis is to adopt the document into the Comprehensive Plan, including updates to goals and policies. He also shared that strategic actions that require further study were added as part of the Comprehensive Plan update. He shared an example strategic action that calls to evaluate opportunities to increase development densities. He noted Tualatin applied for, but did not receive a grant to further pursue this strategy. Mr. Koper shared that another strategic action was to do a funding plan. The city embarked on this exercise to evaluate different funding mechanisms in support of housing and their feasibility.

He highlighted the state's schedule for housing capacity analysis updates and mentioned that Tualatin is slated for a housing update in 2026. He explained the advantages of waiting for this update.

Commissioner Bachhuber asked if there is a penalty if don't have it adopted by 2026. Mr. Koper answered there is not, but there may be some potential to push out the due date based on grant funding.

Commissioner Bachhuber asked how much the first one was. Mr. Koper answered it was combined with Economic Opportunities Analysis and roughly \$80K. A guess is \$50-60K for a standalone.

Commissioner Hledik asked if the cities due in 2023 delinquent. Mr. Koper answered yes but some may be completed or close to be done with waivers.

Mr. Koper discussed the state's update to the regional housing needs projection. Statewide Goal 10 is implemented through Oregon administrative rules. The old approach did not include a regional housing estimate, however the new approach would include a regional housing

estimate that is allocated to individual cities and counties. He summarized the components of the revised methodology that also considers a community's range of median family income. He pointed out that Tualatin will be one of the first cities to navigate this new framework to address housing needs.

Commissioner Bachhuber shared an example a project of converting a church to multi-unit housing and spoke about the long permitting process.

Chair Beers asked does the new calculation methods change the buildable land index. Mr. Koper stated probably not but noted that Metro is reviewing buildable land at the regional level to justify urban growth boundary expansions.

Commissioner Hledik wondered if house bill 2001 would affect calculations for low to medium density zoning. Mr. Koper answered the rules are limited to 3% annual growth rate and shouldn't present a large impact.

Mr. Koper summarized the presentation for Tualatin's Housing Needs Analysis and noted the next HNA will need to be completed by January of 2026. He again emphasized that the update will calculate Tualatin's share of the region's housing needs.

Commissioner Bachhuber asked the pricing of the new homes in Autumn Sunrise that are being built. Mr. Koper answered town homes start in the \$500K and detached up to \$700K.

Commissioner Valli asked what the criteria is for the cities that are included in the projected total housing units forecast chart, that demonstrates the change to projected regional share of needed housing. Mr. Koper shared examples of cities who have recently done a Housing Needs Analysis done in 2019-2020.

Commissioner Bachhuber asked if Dallas' projection was low because their employment is low. Mr. Koper shared that he didn't know, but that there could be a few possible reasons.

Commissioner Valli what does a housing needs analysis look like if a city has no developable land left. Mr. Koper answered that you would compare the projection against available land and the corresponding zoning. It's possible that the report finds we have a deficient of some zoning and a surplus of other zoning. These findings will help determine if re-zoning land may be recommended to accommodate housing need.

ADJOURNMENT

A motion to adjourn was made by Vice Chair Thompson. The motion was seconded by Chair Beers. The Planning Commissioners unanimously voted to adjourn the meeting at 8:35 p.m.



City of Tualatin

2023 ANNUAL REPORT

TUALATIN PLANNING COMMISSION

February 21, 2024

Planning Commissioners:

Bill Beers, Chair
Janelle Thompson, Vice Chair
Daniel Bachhuber
Ursula Kuhn
Randall Hledik
Zach Wimer
Brittany Valli

2023 ANNUAL REPORT OF THE TUALATIN PLANNING COMMISSION

BACKGROUND

The Tualatin Planning Commission, formerly the Tualatin Planning Advisory Committee, was established on July 26, 1976 (Ord. 1339-12 and Ord. 342-76). The Planning Commission's membership, organization and duties are prescribed in Tualatin Municipal Code Chapter 11-1. The Planning Commission is the official Committee for Citizen Involvement in accordance with Statewide Land Use Planning Goal 1, Citizen Involvement. This annual report covers activities conducted by the Planning Commission in 2022.

This report will address a section of the Tualatin Municipal Code Chapter 11-1.

11-1-080: Not later than April 1 of each year, the Commission shall file its annual report of the activities of the Commission with the City Council. The annual report shall include a survey and report of the activities of the committee during the preceding year, in addition to specific recommendations to the City Council not otherwise requested by the City Council, relating to the planning process, plan implementation measures within the City, or the future activities of the Committee. The report may include any other matters deemed appropriate by the Committee for recommendation and advice to the Council.



2023 Planning Commission

Left to Right: William Beers, Ursula Kuhn, Janelle Thompson, Daniel Bachhuber, Randall Hledik, Zach Wimer, and Brittany Valli (not pictured)

CITIZEN INVOLVEMENT AND INPUT

The Planning Commission is Tualatin's official Committee to fulfill Goal 1: Citizen Involvement of Oregon's statewide land use planning program. The purpose of Goal 1 is to develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the land use planning process. Goal 1 is specific to land use and involving citizens in land use decisions. The Planning Commission serves two functions in Tualatin's land use planning program. Their first and original function is to serve as an advisory committee to the City Council by reviewing and making recommendations on comprehensive plan amendments. Plan amendments implement policy direction and are essentially legislative decisions. The second function of the Planning Commission is decision-making authority over a specified set of quasi-judicial land use decisions. In other words, the Planning Commission has the authority to approve or deny projects tied to specific properties.

At all Planning Commission meetings, community members are given the opportunity to make comments either in writing or verbally at the public meeting prior to the Planning Commission making a recommendation to the City Council. All Planning Commission meetings regardless of the agenda items are published on the City website and notices of the meetings are posted in two different locations in City buildings. Lastly, the Planning Commission provides room on each agenda for community members to make comments related to items not on the agenda that are within the Planning Commission's purview. Additionally, the Community Development staff meets with the Citizen Involvement Organization Land Use Officers as topics arise. The purpose of the meetings is to provide updates on land use items such as projects under construction, upcoming decisions and long-range planning. These meetings are held directly before the Planning Commission meetings, and they provide a forum for CIO officers to ask questions and get more information about community development processes.

PLANNING COMMISSION MEETINGS:

In 2023, the Planning Commission met 7 times during the calendar year. 1 meeting was canceled.

PLANNING COMMISSION RECOMMENDATIONS

The Planning Commission's role as an Advisory Committee to City Council involves it making recommendations to the Council on Comprehensive Plan amendments such as Plan Map and Plan Text Changes. In 2023, the Planning Commission made a recommendation to the City Council on the following items:

- Creation of the Basalt Creek Employment Zoning District and corresponding updates to Tualatin Comprehensive Plan (PTA22-0001 and PMA22-0001). The Planning Commission recommended (5-0) that the Council adopt the proposed amendments, finding them in conformance with the Tualatin Comprehensive Plan.
- Medium- Low Density Residential (RML) and Institutional (IN) to High-Density High Rise (RH-HR) (PMA23-0001 and PTA23-0001). The Planning Commission recommended to (7-0) the Council to deny the proposed amendments.
- Water Master Plan update and corresponding updates with the Tualatin Comprehensive Plan (PTA23-0002 and PMA23-0002). The Planning Commission recommended (5-0) to the Council to approve the proposed amendments finding them in conformance with the Tualatin Comprehensive Plan.

PLANNING ACTION ITEMS:

In 2023, the Planning Commission did not review any quasi-judicial land use applications.

STAFF UPDATES TO THE PLANNING COMMISSION

- Update to the Tualatin Planning Commission on the current status of statewide Climate Friendly and Equitable Communities rules
- Informational presentation on Tualatin's Equitable Funding Action Plan
- Metro Regional Transportation Plan (RTP) 2023 Update
- Informational presentation on the Climate Action Plan (CAP)
- Legal Training
- Informational update on the Tualatin's Housing Needs Analysis



CITY OF TUALATIN Staff Report

TO: Tualatin Planning Commissioners

THROUGH: Steve Koper, AICP, Assistant Community Development Director

FROM: Steve Koper, AICP, Assistant Community Development Director

DATE: January 17, 2024

SUBJECT:
Tualatin Transportation System Plan Update

EXECUTIVE SUMMARY:

An informational presentation on the status of the update to Tualatin's Transportation System Plan (TSP). This update will include details on the following topics:

- Transportation System Plan Goals: Five priority statements were shared with Council on August 28, 2023. Those statements have been refined based on staff comments, discussion with Council, and public outreach.
 - Engagement summary: An update on the activities that took place during Phase 1 and 2 of the TSP engagement process, and the results of those engagement efforts.
 - Existing conditions overview: The Existing Conditions report lays the groundwork for the TSP through an inventory of existing transportation infrastructure and identification of gaps, deficiencies, and opportunities in the current transportation system. The report is broken into three key sections: Plan Area, Existing Systems Inventory, and Operations & Safety.
 - Next steps: a review of upcoming TSP tasks.
-

ATTACHMENTS:

- PowerPoint Presentation
- Exhibit 1 - Tualatin Existing Conditions Technical Documentation
- Exhibit 2 - Tualatin Existing Conditions Report



TSP Goals, Engagement Summary, & Existing Challenges

Tualatin Planning Commission | January 17, 2024

AGENDA



Goals



Community
Engagement
Summary



Existing
Conditions



Wrap Up & Next
Steps



Goals

- The draft goals were created and refined using:
 - The goals in the current TSP
 - Review of related planning efforts such as the climate action plan and comprehensive plan
 - City staff input
 - City Council feedback in August



Transportation Goals

Advance Our Land Use Vision

Create a transportation system that enhances Tualatin's growing economy and future land use vision.

Provide a High Quality of Life

Efficiently and safely move people and goods to provide a high quality of life for people who live, work, learn, and play in Tualatin.

Expand Opportunities for Safe Multi-Modal Transportation

Expand travel options for users of all ages and abilities by improving options for walking, rolling, cycling, and accessing transit.

Advance Climate and Health Goals

Reduce greenhouse gas emissions from the transportation system and support the City's climate and health goals.

Invest Wisely

Maximize transportation funding by effectively maintaining the transportation assets we have, finding creative maintenance solutions that can help improve the transportation system, and leverage outside funding opportunities.



TSP Public Engagement Process



**Phase 1:
Recruit**

What is the TSP?
Do you want to
follow along with
this process?

**Phase 2:
Listen & Learn**

What can the TSP
address? What are
your transportation
goals and needs?

**Phase 3:
Reflect; Connect
the Dots**

How do our
transportation
goals connect to
potential projects?
Are these the right
projects?

**Phase 4:
Refine**

What do you
think of the draft
plan? What did
we miss?



Public Engagement Events



Viva Tualatin

- Atfalati Park
- ~100 participants

TSP Open House

- Tualatin Library
- ~40 participants

National Night Out

- Stoneridge Park
- ~50 participants

Focus Groups

- Zoom meetings
- 23 participants

Pumpkin Regatta

- Tualatin Commons
- ~300 participants

Tualatin TSP Survey

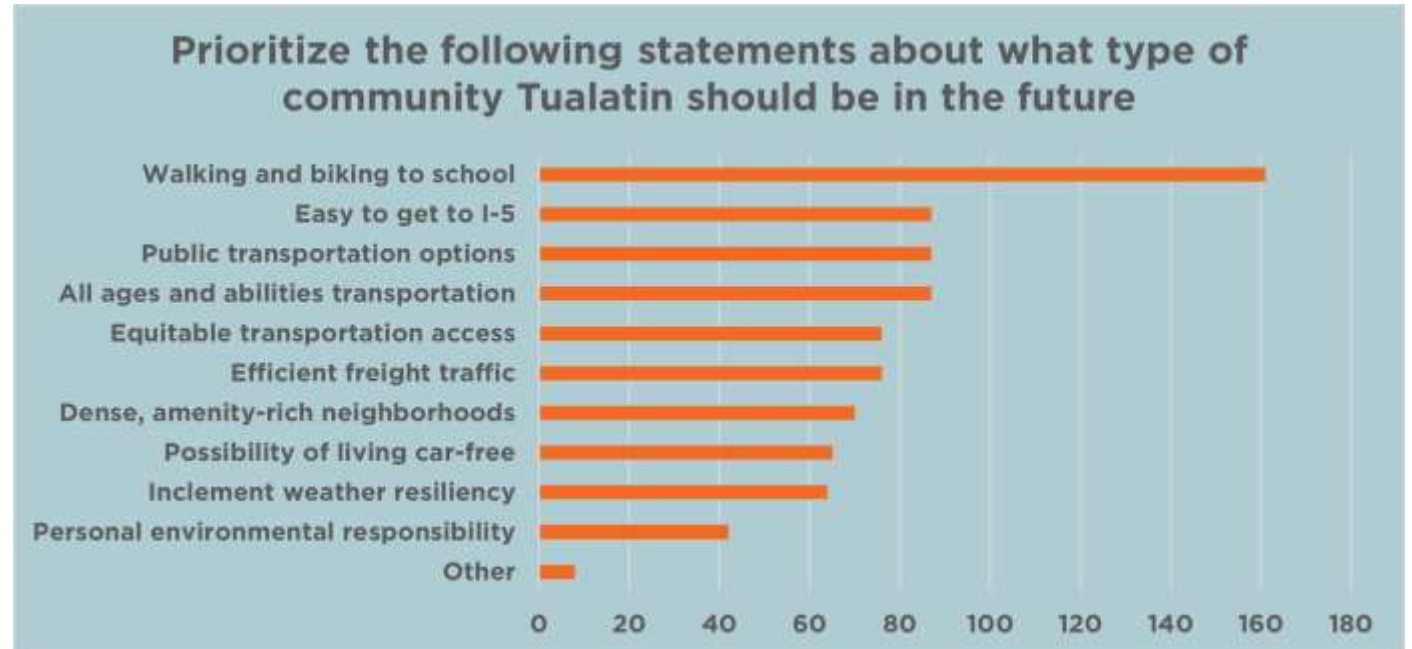
- Online and hard copy
- 202 participants



TSP Public Engagement Key Takeaways



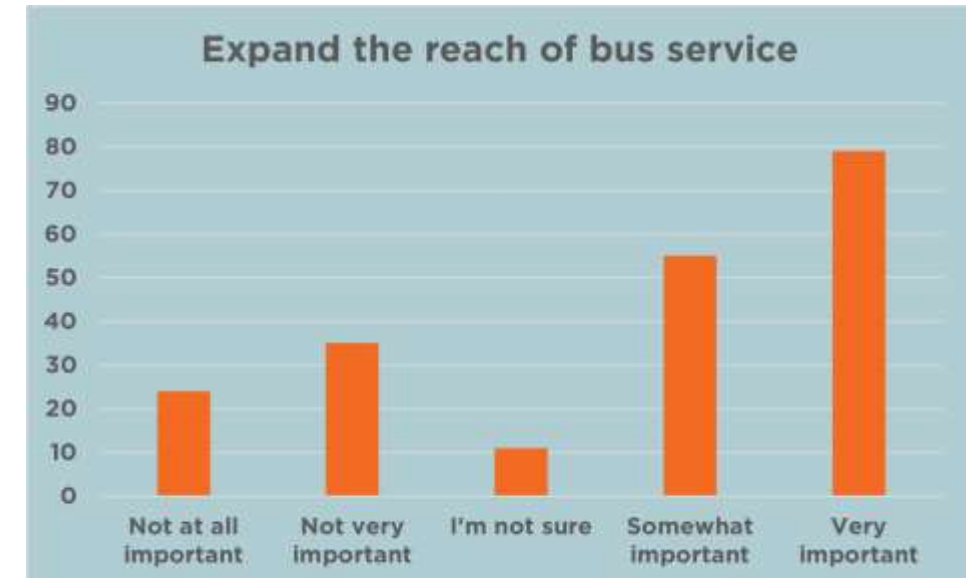
- People want to walk, bike, and take transit more.
- They also want to continue to travel by car.
- Concern about the future capacity of the roadway system with growth.
- Concern about increasing traffic congestion.





TSP Public Engagement Key Takeaways

- Improving safety for road users is a high priority.
- People want improved coverage and frequency of transit service.



Existing Conditions Inventory





The agency that owns and operates a roadway is responsible for setting standards for roadway design and operation and must approve any changes to the roadway.

Arterials and collectors in Tualatin are owned and operated by a mix of the Oregon Department of Transportation (ODOT), Washington County, and Tualatin.

Improvements recommended on 99W, Tualatin-Sherwood Road, 66th Avenue and other key roadways not owned by Tualatin will require coordination with Washington County or ODOT.

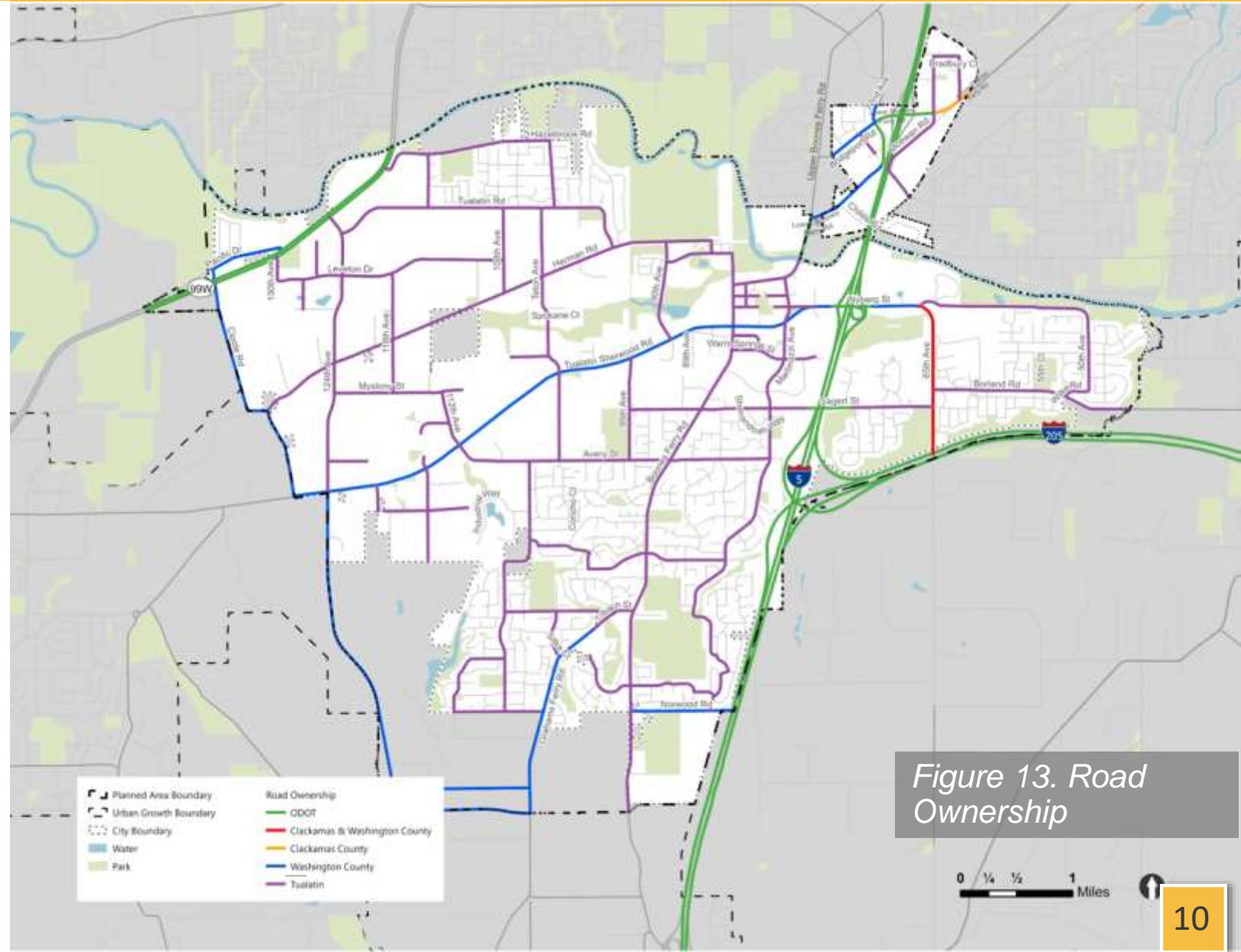
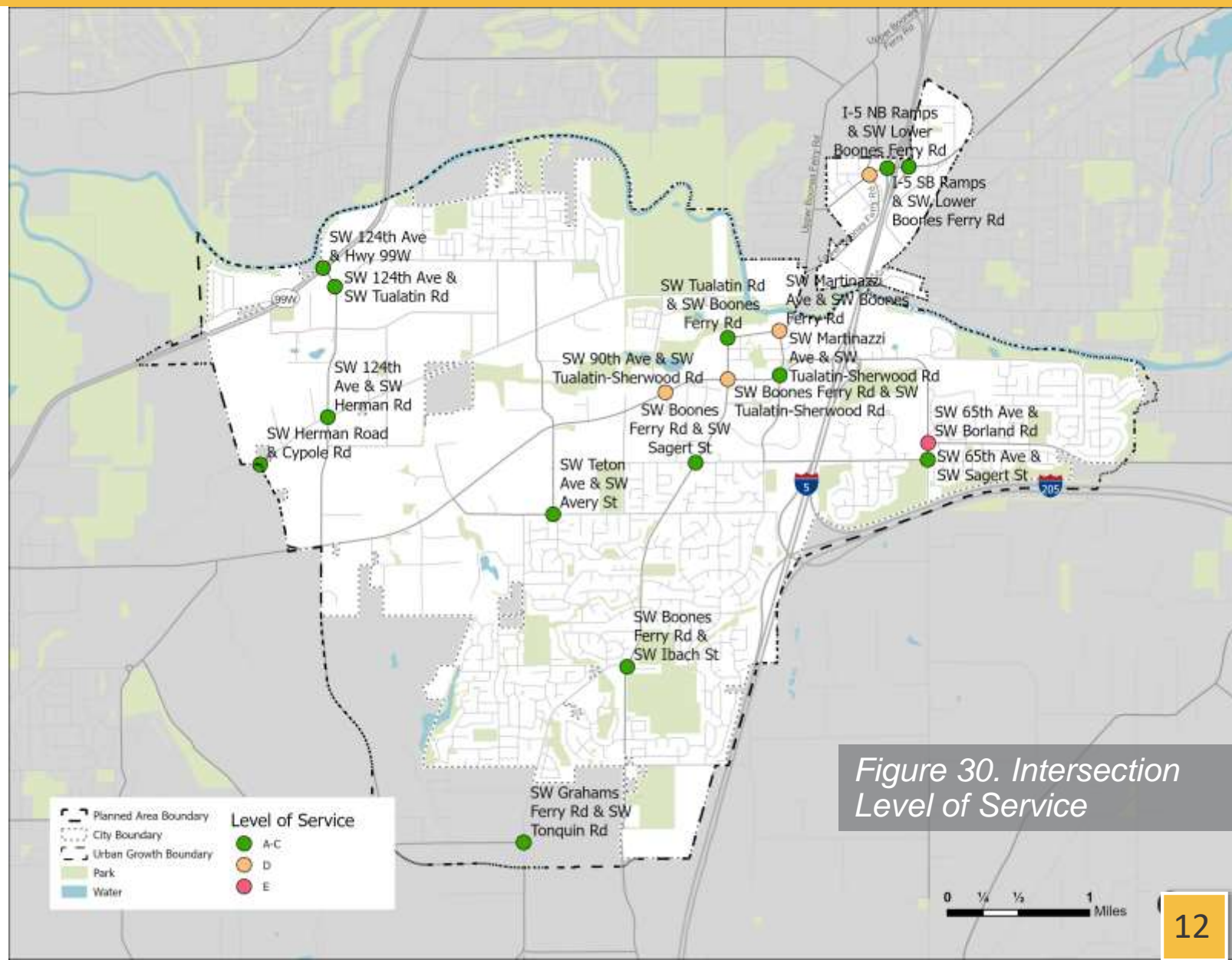


Figure 13. Road Ownership

To establish a baseline for how Tualatin's transportation system operates today, intersection Level of Service (LOS) was evaluated at key intersections throughout Tualatin using traffic counts collected in Fall 2023 and existing roadway and intersection geometries.

While most intersections in Tualatin operate at LOS C or better, indicating there is minimal congestion, intersections on Lower Boones Ferry Road, Tualatin-Sherwood Road, and SW 65th Avenue were found to operate at LOS D and E. This indicates that congestion that results in queueing and higher levels of delay is occurring in these areas.



Within Tualatin, bus service is located primarily on roadways that connect users to retail and employment centers in Tualatin or to destinations outside Tualatin.

WES (Westside Express Service), which is also operated by TriMet, is a commuter rail line serving Beaverton, Tigard, Tualatin and Wilsonville. The service operates on weekdays during commute hours with trains every 45 minutes and is intended to connect users to employment centers and Max service in Beaverton.

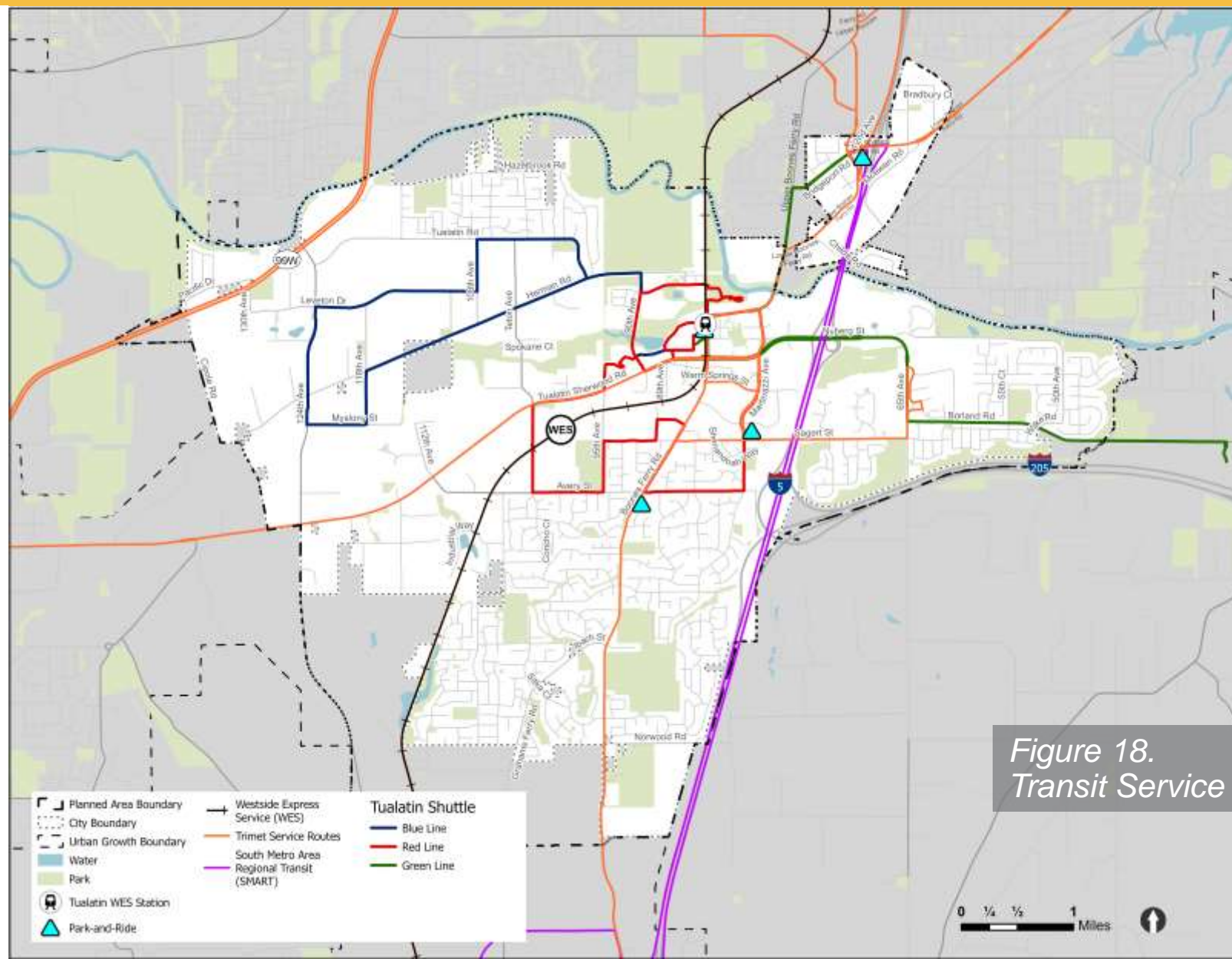


Figure 18.
Transit Service



Tualatin's pedestrian network is well built out with sidewalks on both sides of residential streets in most neighborhoods. Exceptions to this are neighborhoods near 99W and the Bridgeport area, where some roadways only have streets only have sidewalks on one side.

Today, the trail system provides strong east-west connections, including across I-5, through the area north of Nyberg Street, and through the Ibach neighborhood.

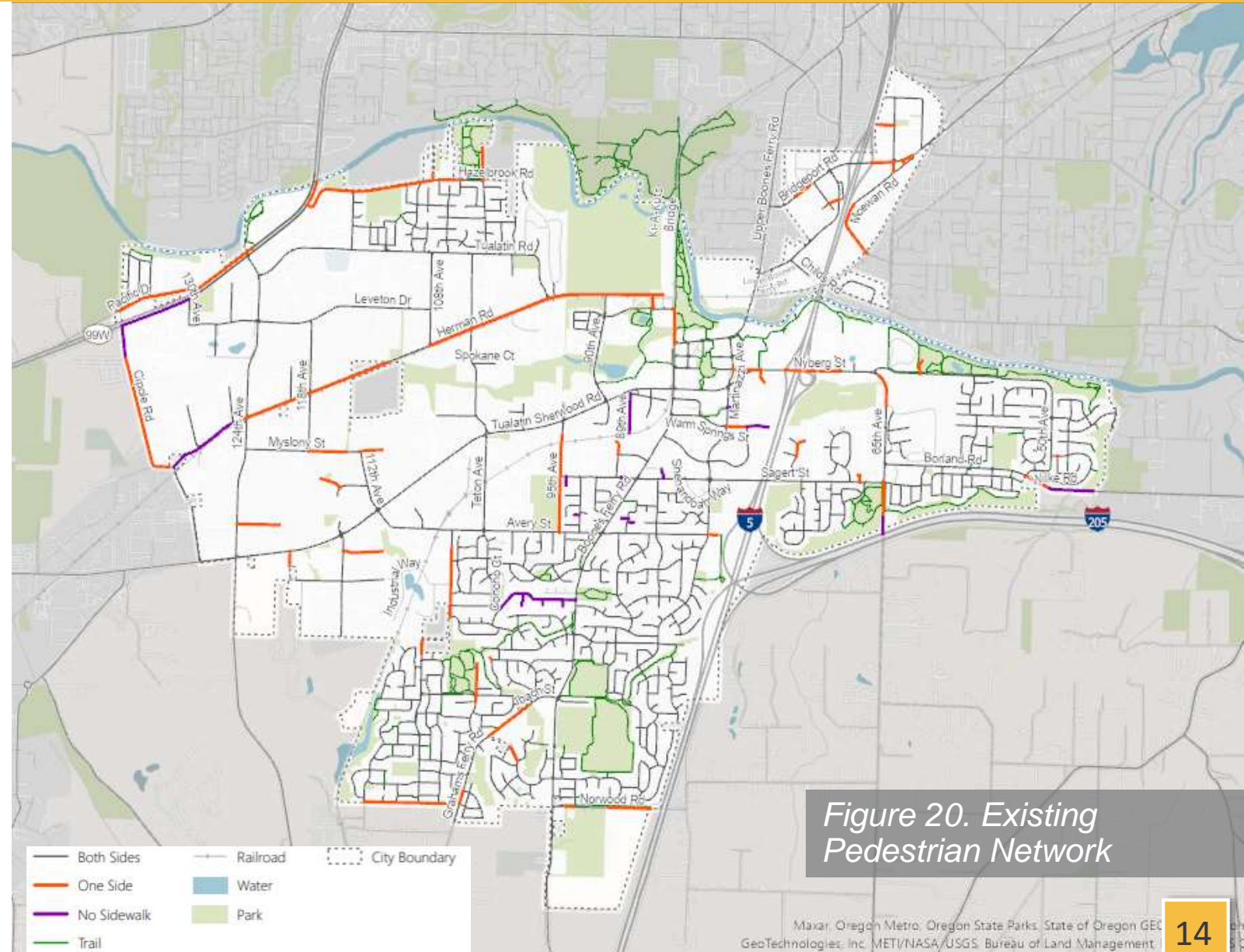


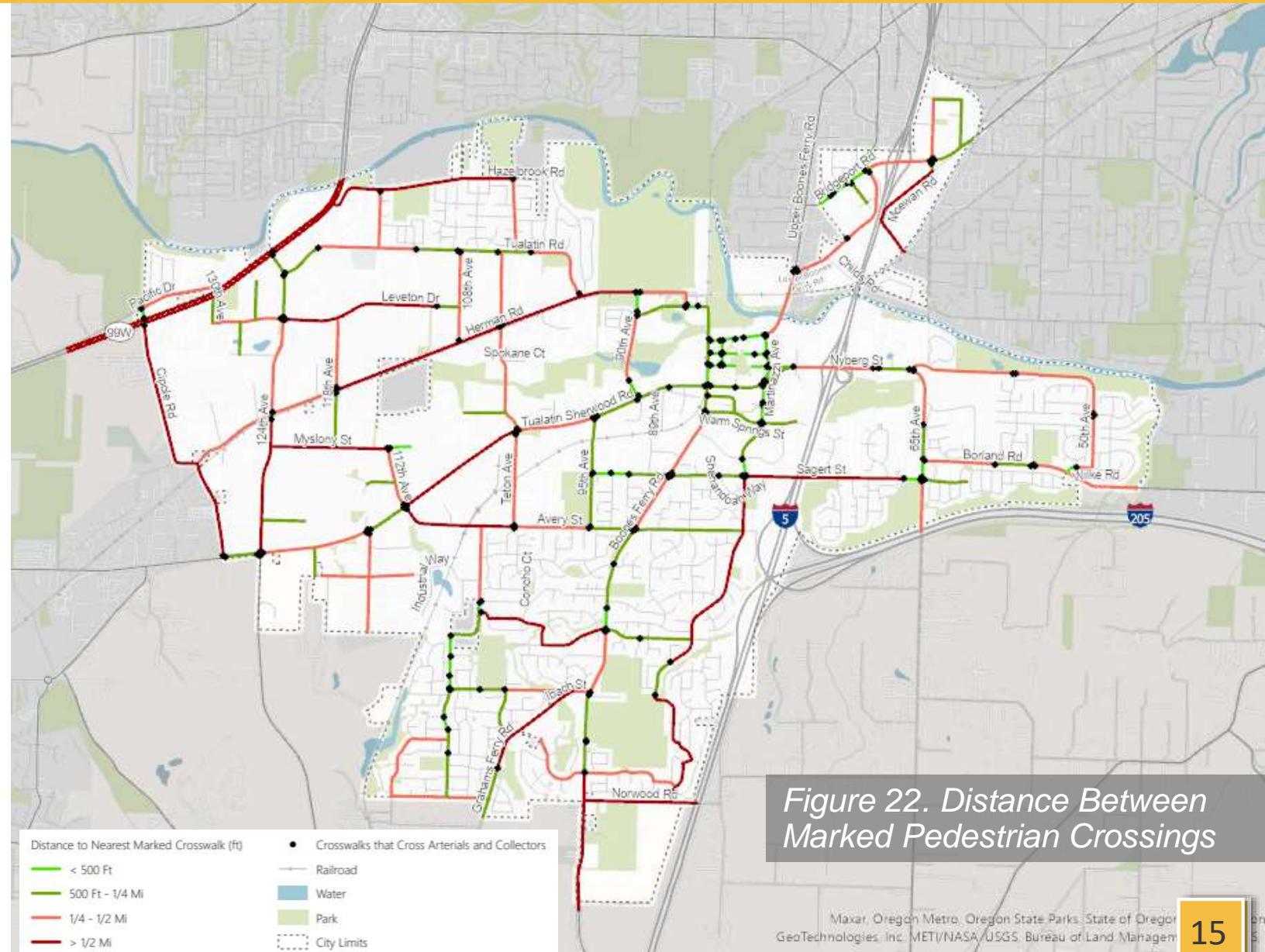
Figure 20. Existing Pedestrian Network



When the distance between marked crossings is high, pedestrians may be more likely to cross at unsafe locations or at unsafe times.

Figure 22 shows the location of marked crossings and the distance between marked crossings on arterials and major collectors. The distance between marked crossings is lowest in downtown and longest in the industrial areas.

There are multiple arterial and collector roadways with crossing distances greater than a quarter mile, including: 99W, Tualatin-Sherwood Road, Herman Road, Sagert St, and Avery Street.



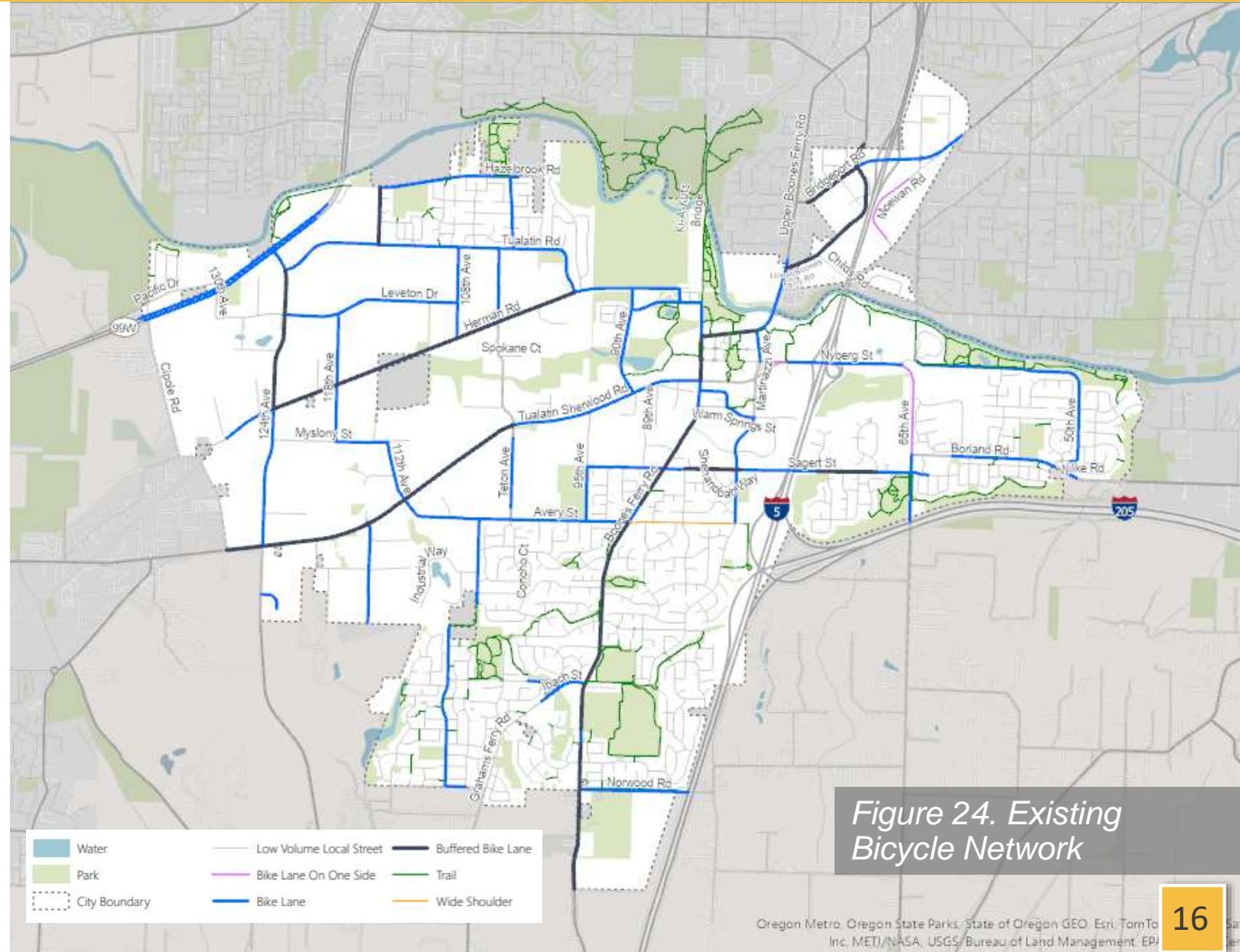


Tualatin's bicycle network is connected, but primarily comprised of striped bike lanes on arterial and collector roads, as shown on Figure 24.

While Tualatin does have an extensive off-street trail system, it lacks connectivity which limits users' ability to travel around the city on it.

Tualatin has begun to build more and more buffered bike lanes (dark blue) though gaps remain.

One challenge facing Tualatin's bicycle network is I-5. Today, there are only two on-street bike lanes that connect bicyclists across the freeway.



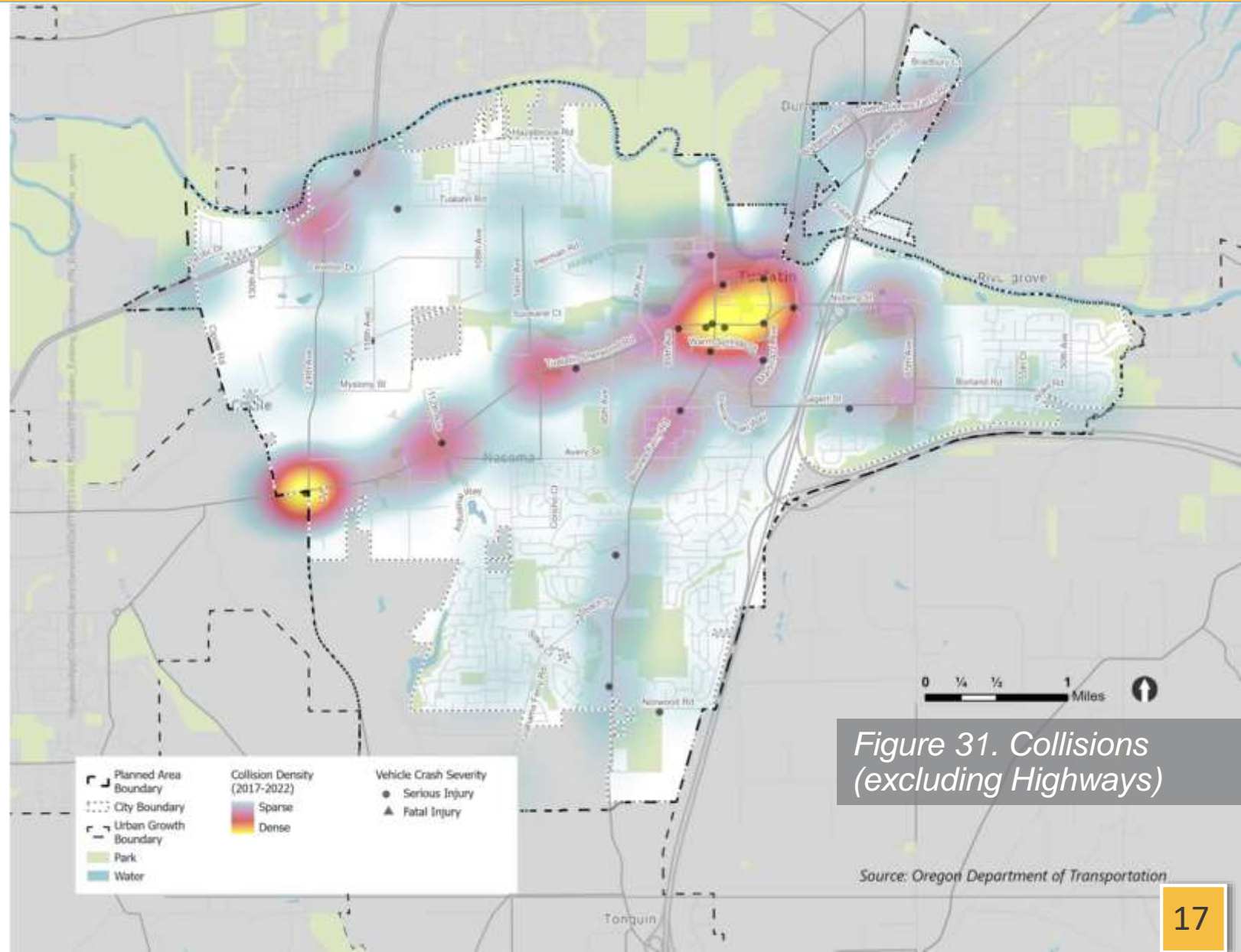


One indicator of roadway safety is the number of collisions and severity of collisions that occur.

To understand recent trends in Tualatin, five years of collision data was analyzed.

This analysis found the highest concentration of collisions occurs on Tualatin-Sherwood Road with hot-spots near downtown and 124th Avenue.

This was also true for serious injury collisions, with most of those occurring on Tualatin-Sherwood Road or Boones Ferry Road near downtown.

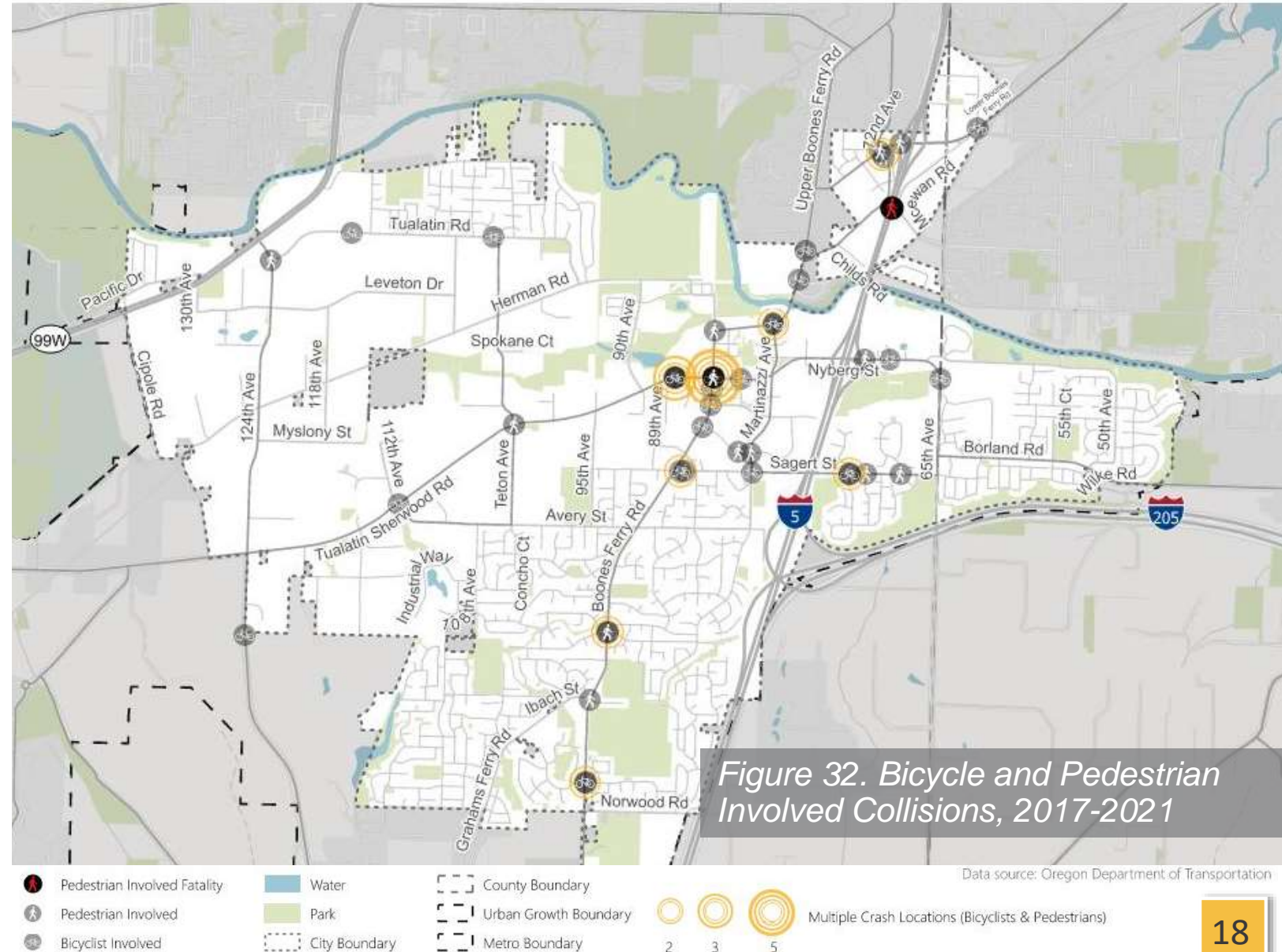




Five years of collision data were analyzed to identify potential hot spots for collisions involving a bicycle or pedestrian.

Of the 2,264 reported collisions in Tualatin within the past five years, 43 collisions (1.9%) involved a pedestrian or bicyclist. Approximately 70% of these occurred at intersections with at least one arterial roadway.

Both Tualatin-Sherwood Road and Boones Ferry Road showed higher numbers of bicycle or pedestrian collisions





Opportunities and Challenges

- Where are there existing challenges for people traveling in Tualatin?
- Where are there opportunities to create connections or enhance the current transportation system to shape the future we want for travel in Tualatin?
- Is there anything we've missed in the existing conditions analysis?



Next Steps

- Provide additional feedback on the existing conditions by Monday 1/29
- We'll be finalizing the Existing Conditions and TSP Goals with CAC, Planning Commission, and City Council input over the next few weeks



Memorandum

Date: January 2024

To: City of Tualatin Project Team

From: Briana Calhoun, Kara Hall, Jai Daniels – Fehr & Peers
Katie Selin, Phil Longnecker – Alta Planning + Design

Subject: Transportation System Plan Update: Existing Conditions Inventory Technical Memorandum

Introduction

The City of Tualatin is updating its Transportation System Plan (TSP), through a process that will establish a shared understanding of how the transportation system operates today, identify needed improvements, and create a vision for enhancing community mobility in Tualatin.

To achieve the first goal of establishing a shared understanding of how the transportation system operates, document existing transportation infrastructure, and identify current infrastructure gaps or deficiencies in the transportation system, the TSP update began with development of an Existing Conditions Report.

This memorandum is intended to support the Existing Conditions Report and includes additional documentation of transportation assets in Tualatin, an overview of the methodology used to complete traffic operations and safety analysis, and a summary of existing deficiencies identified through the existing conditions inventory.

Consistent with the Existing Conditions Report, this technical memorandum provides additional information for the following topic areas:

- Demographics in Tualatin
- The existing transportation system in Tualatin, including the roadway network, transit service, pedestrian, and bicycle facilities
- Identification of basic facilities and operations for truck freight, rail, and marine transportation modes serving Tualatin
- An overview of pipeline resources that should be considered in the identification and evaluation of transportation solutions

- Base year transportation conditions, including traffic operations on key corridors, a summary of collision patterns, and pedestrian, bicycle, and truck traffic on the roadways

Tualatin Demographics

Demographic information plays a crucial role in shaping an effective transportation system by providing essential insights into the characteristics and behaviors of a population. Understanding demographic data, such as population density, age distribution, income levels, and employment patterns, will allow the project team to evaluate potential solutions with an eye towards equity and ultimately recommend transportation infrastructure improvements that meet the diverse needs of different groups within a community. This information also helped to inform the development of an inclusive public engagement plan and will be used to evaluate how effective efforts to engage historically underrepresented groups in the planning process are.

As shown in **Table 1**, there are several key demographics where Tualatin differs from the Metro region overall. Those demographic areas are shown in **bold** text in the table below.

Table 1. Current City and Regional Demographics

Tualatin			Metro Region	
Race and Language				
Total Population	27,821		2,493,429	
Non-White	7,552	27%	469,429	19%
Hispanic or Latino	5,986	22%	326,336	13%
Speak a Language Other than English	5,926	22%	431,434	18%
Age				
Under Age 18	6,537	23%	410,824	16%
65 and Over	3,522	13%	294,303	12%
Other Demographics				
Income Below Poverty Level (in last 12 months)	2,811	10%	247,359	10%
Disability	2,387	9%	236,085	9%
No Vehicle Available	526	5%	80,387	8%
Housing				
Total Housing Units	11,171		1,033,420	
Occupied Housing Units	10,835	97%	979,213	95%

Table 1. Current City and Regional Demographics

	Tualatin		Metro Region	
Vacant Housing Units	336	3%	54,207	5%
Total Households	10,737		1,001,094	
Owner-Occupied Households	5,851	55%	620,678	62%
Renter-Occupied Households	4,886	45%	380,416	38%

Notes:

The Metro Region is comprised of the Portland-Vancouver-Hillsboro, OR-WA Metro Area.

Bold text indicates a greater than 5% variance from the Metro Region.

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates

Existing System Inventory

Roadway Network

The roadway network serves as the backbone of Tualatin’s multi-modal transportation system. These facilities must accommodate many travel modes within their rights of way and users’ experience are shaped not only by the roadway design itself but also by the surrounding land use. The following section documents the current state of the network for each mode of travel.

Lane Width

Travel lane width, or how wide the striped lanes on a roadway are, is a key characteristic for roadways. Roads that are designed to serve larger vehicles such as trucks carrying freight or buses, often have wider lanes. As more narrow lanes can help to lower vehicle speeds, roadways with on-street bicycle lanes may have narrower lanes to improve safety and comfort for those users or to take advantage of the limited right-of-way available. Within Tualatin, most arterials and collectors have lane widths between 10 and 12.5 feet.

Roadway Design Standards

In Tualatin, street design standards are based on the functional and operational characteristics of streets including travel volume, capacity, operating speed, and safety. This section summarizes design standards that apply to transportation facilities in Tualatin. **Table 2** summarizes design standards for roadway cross-section elements, which are included in Chapter 74 of the City of Tualatin’s Development Code. **Table 3** summarizes Metro’s roadway design guidance from the 2018 Regional Transportation Plan (RTP). This guidance applies to roadways that fall under Metro’s Regional Motor Vehicle Network (RMVN).

Table 2. Roadway Design Standards, Tualatin’s Development Code

Roadway Element	Design Characteristic
Minimum and preferred vehicle lane widths	<ul style="list-style-type: none"> • Major arterial: 12 feet minimum, 12 feet preferred • Minor arterial: 12 feet, 12 feet preferred • Major collector: 11 feet minimum, 12 feet preferred • Minor collector: 11 feet minimum, 12 feet preferred • Local: 14 feet minimum, 16 feet preferred • With multi-use path: 12 feet minimum, 12 feet preferred
Minimum and preferred number of lanes	<ul style="list-style-type: none"> • Major arterial: 3 lanes minimum, 5 lanes preferred • Minor arterial: 2 lanes minimum, 3 lanes preferred • Major collector: 2 lanes minimum, 3 lanes preferred • Minor collector: 2 lanes minimum, 2 lanes preferred • Local: 2 lanes minimum, 2 lanes preferred • With multi-use path: 2 lanes minimum, 3 lanes preferred
Minimum and preferred sidewalk widths	<ul style="list-style-type: none"> • Major arterial: 5 feet minimum, 6 feet preferred • Minor arterial: 5 feet minimum, 6 feet preferred • Major collector: 5 feet minimum, 6 feet preferred • Minor collector: 5 feet minimum, 6 feet preferred • Local: 5 feet minimum, 5 feet preferred
Minimum and preferred on-street parking widths	<ul style="list-style-type: none"> • Minor collector: 8 feet minimum, 8 feet preferred • With multi-use path: 8 feet minimum, none preferred
Minimum and preferred bicycle lane widths	<ul style="list-style-type: none"> • Major arterial: 5 feet minimum, 6 feet preferred • Minor arterial: 5 feet minimum, 6 feet preferred • Major collector: 5 feet minimum, 6 feet preferred • Minor collector: 5 feet minimum, 6 feet preferred

Table 3. Roadway Design Suggested Guidance, 2018 Regional Transportation Plan

Roadway Element	Design Standard
Maximum number of travel lanes	<ul style="list-style-type: none"> • Freeway: No maximum • Throughway: 6 lanes • Major Arterial: 4 lanes • Minor Arterial: 4 lanes
Median requirements	<ul style="list-style-type: none"> • Appropriate for roadways with 4 or more lanes
Street corner radii	<ul style="list-style-type: none"> • Tight Corner Radii (5 to 15 feet): preferred on regional and community boulevards • Wide Corner Radii (greater than 15 feet): preferred on highways and industrial streets

Table 3. Roadway Design Suggested Guidance, 2018 Regional Transportation Plan

Roadway Element	Design Standard
Preferred lane widths	<ul style="list-style-type: none"> • Freeway: 12 feet • Highway: 12 feet • Regional Boulevard: 10 feet • Community Boulevard: 10 feet • Regional Street: 10 to 11 feet • Community Street: 10 to 11 feet • Industrial Street: 11 to 12 feet

Access Management

The Oregon Transportation Planning Rule (TPR) defines “Access Management” as “...measures regulating access to streets, roads and highways from public roads and private driveways.” A requirement of the TPR is that new connections to both arterials and state highways must follow designated access management categories. Typically, existing accesses can remain as long as the land use does not change.

In Tualatin, access management standards for driveways are based on use. In general, as the number of units or parking spaces increases, the number of and approach width for driveways increases. **Table 4** shows the City of Tualatin’s access for driveway standards from Chapter 75.040 of the Tualatin Development Code.

Table 4. City of Tualatin Driveway Standards

Land Use Classification	Minimum Driveway Approach Width	Maximum Driveway Approach Width
Single-Family Residential, Duplexes, Triplexes, Quadplexes, Townhomes, Cottage Clusters	10 feet	26 feet for one or two car garages 37 feet for three or more car garages

Table 4. City of Tualatin Driveway Standards

Land Use Classification	Minimum Driveway Approach Width	Maximum Driveway Approach Width
Multi-family	5-49 Units = 24 feet	May provide two 16 foot one-way driveways instead of one 24-foot driveway
	50-499 = 32 feet	
	Over 500 = as required by the City Manager	May provide two 24-foot one-way driveways instead of one 32-foot driveway
Commercial	1-99 Parking Spaces = 32 feet 100-249 Parking Spaces = two approaches each 32 feet	Over 250 Parking Spaces = As Required by the City Manager, but not exceeding 40 feet
Industrial	36 feet	Over 250 Parking Spaces = As Required by the City Manager, but not exceeding 40 feet
Institutional	1-99 Parking Spaces = 32 feet 100-249 Parking Spaces = two approaches each 32 feet	Over 250 Parking Spaces = As Required by the City Manager, but not exceeding 40 feet

Washington County has access standards which are established in the Washington County Community Development Code, in Section 501-8.5(A) entitled “Roadway Access.” Projects being considered on County facilities will need to refer to these standards.

The Oregon Highway Plan (OHP) includes access management spacing standards for highways owned and operated by the Oregon Department of Transportation (ODOT). The access management spacing standards were amended in 2005. Interstate 5 (I-5), I-205, Highway 99W and freeway interchange areas are under ODOT management and must follow OHP standards. The OHP access management spacing standards as applied to I-5 and I-205 are shown in **Table 5**.

Table 5. OHP Access Spacing Standards

Roadway	Speed Limit	Spacing Standard
Freeway interchanges	30 mph	250 feet
I-5	55 mph or higher	1320 feet
I-205	55 mph or higher	1320 feet

Spacing for Connectivity

While access management standards establish minimum distances between intersections to maintain safe and efficient operations, this must be balanced with the need for a connected street network. The Metro RTP identifies connectivity as a system of major arterials spaced no more than one mile apart and minor arterials or collectors spaced no more than a half-mile apart. While these guidelines were established to encourage efficient mobility through the City, they also acknowledge that the realities of natural barriers (e.g., waterways and topography), major infrastructure (e.g., highways), and the built environment (e.g., established neighborhoods) may not make it possible to always meet these connectivity goals. The presence of I-5 serves as a major connectivity barrier in Tualatin. The interchanges are spaced about one mile apart (in Northern Tualatin; three miles apart in Southern Tualatin) and are among very few ways to cross the highway on foot or in a vehicle.

Parking

There is significant off-street parking for many of the retail uses throughout Tualatin, specifically in the Bridgeport Village area and many of the retail areas along Tualatin-Sherwood Road and Nyberg Street. There are also several City-owned parking lots in the Downtown area near the Tualatin Commons and the Library.

On-street parking is typically not allowed along major roadways (Arterials and Major Collectors) in Tualatin but is often allowed on Local Streets and Minor Collectors in neighborhoods and in retail areas.

Transit System

The location of transit routes that service Tualatin are shown on **Figure 19** in the Existing Conditions report. Frequency and hours of operation for each route are shown in **Table 6**.

Table 6. Transit Routes

Route	Service Type	Agency	Origin	Destination	Frequency	Service Span	Days	Fare
Shuttle (Red)	Local	Ride Connection	South Tualatin		50 minutes	5:15 – 8:45 AM / 3:30 – 7:45 PM	Monday – Friday	Fare-free
Shuttle (Green)	Local	Ride Connection	Tualatin P&R	Rolling Hills Church	1 hour	5 – 9:30 AM / 12:15 – 7:15 PM	Monday – Friday	Fare-free
Shuttle (Blue)	Local	Ride Connection	North Tualatin		45 minutes	5:40 – 10:00 AM / 3:00 – 7:00 PM	Monday – Friday	Fare-free
37	Regional	TriMet	Tualatin Park & Ride	Lake Oswego Transit Center	45 minutes during AM and 1 hour during PM	7:10 AM – 9:20 AM / 3:40 – 5:50 PM	Monday – Friday	\$2.50
38	Regional	TriMet	Tualatin Park & Ride	Portland City Center	1 hour	6:45 AM – 10 AM / 3:30 – 7 PM	Monday – Friday	\$2.50
76	Regional	TriMet	Beaverton Transit Center	Tualatin	15 minutes	6 A.M. to Midnight	Monday – Saturday	\$2.50
96	Regional	TriMet	Commerce Circle	Portland City Center	1 hour, 30 minutes during AM & PM peak	5 A.M. to 9 P.M.	Monday – Friday	\$2.50

Table 6. Transit Routes

Route	Service Type	Agency	Origin	Destination	Frequency	Service Span	Days	Fare
97	Regional	TriMet	Tualatin	Sherwood	1 hour during the AM / 1:10 during the PM	6:15 - 9:30 / 3:30 - 7	Monday – Friday	\$2.50
2X	Regional	SMART	Wilsonville Transit Center	Tualatin Park & Ride	1 hour, 30 minutes during PM peak	5 A.M. to 9 P.M.	Monday – Saturday	Fare-free
Cascade	Regional	POINT	Eugene	Portland	Not standard	7 A.M. - 0:00 SB 8 A.M. - 9 P.M. NB	Monday – Saturday	\$4
WES	Regional	TriMet	Wilsonville WES Station	Beaverton TC WES Station	45 minutes	5:30 AM – 8:45 AM 3:30 PM – 7 PM	Monday - Friday	\$2.50

Park & Ride

Tualatin offers four Park & Ride locations, three of which are served by transit six days per week, as shown in **Table 7**.

Table 7. Park & Ride Locations in Tualatin

Lot Name	Address	Parking Spaces	Bike Racks	Transit Connections	Days
Mohawk	SW Mohawk St & Martinazzi Ave, Tualatin, 97062	232	Yes	96 - 76	Monday-Saturday
Tualatin	SW 72nd Avenue & Bridgeport Road, Tualatin 97062	368	Yes	36 - 37 - 38 - 76 - 96 - 2X - Point	Monday-Saturday
Tualatin South	18955 SW Boones Ferry Rd, Tualatin 97062	147	Yes	WES - 76 - 97 - Tualatin Shuttle	Monday-Saturday
Boones Ferry Community Church of Christ	20500 SW Boones Ferry Rd, Tualatin, 97062	20	No	96	Monday-Friday

Pedestrian System and Bicycle System

This section provides an overview of the existing City of Tualatin pedestrian and bicycle networks to inform transportation planning and development strategies that promote sustainable modes of transportation. The overview includes information on the current state of the pedestrian and bicycle network, including where infrastructure exists, where it is and is not comfortable to walk and bike, and locations of collisions. These existing conditions details will be used to identify gaps in the network and areas where improvements are needed.

Existing Pedestrian Network and Inventory

In Tualatin, sidewalks and trails play an important role in the pedestrian network. In many parts of Tualatin, trails help to connect residential areas to parks and greenspaces in places where there are no roads or sidewalks. Trails also augment the sidewalk network and bridge barriers presented by large roadways, as in the case of the recently completed link of the Tualatin River Greenway under I-5.

Figure 20 in the Existing Conditions report shows all sidewalks and trails in Tualatin, as well as the streets where sidewalks are missing on one or both sides. The condition of sidewalks is shown in **Figure 21**. Documenting all walkable facilities helps identify where gaps remain in

the pedestrian network and establishes a baseline for future planning efforts. (Note: The Existing Pedestrian Network map, included in the Existing Conditions Report reflects facilities as of November 2023 based on data provided by Metro and the City of Tualatin and the latest information about the City's capital projects.)

As part of the existing conditions inventory, the consultant team prepared a detailed Pedestrian System Inventory, incorporating details on facility types and road characteristics consistent with state standards (OAR Chapter 660 Division 12) and the requirements of the Climate-Friendly and Equitable Communities (CFEC) Program. These data are compiled in a GIS database and corresponding table containing detailed inventories of crosswalks, curb ramps, and sidewalks across the City. They contain information on the width and condition of sidewalks, crosswalk types, and curb ramp locations. Note that speed, volume, and road width data are the same as is detailed in the bicycle system inventory. Another important component of the pedestrian network is the spacing between crossings which is inventoried in **Figure 22**.

The pedestrian network of sidewalks and trails that provide routes for people to walk to their destinations is also reliant on infrastructure at intersections. **Figure 21** illustrates aspects of intersections and street crossings, such as signalized crosswalks and refuge islands, and rapid flashing beacons that have been installed to help people cross busy streets.

Sidewalk Conditions, Crosswalk Types, and Curb Ramp Inventory

Figure 21 shows the varying quality and condition of sidewalks across Tualatin. Vertical deflections, cracks, and obstructions all contribute to the quality of the sidewalk. This information is not only important for planners to understand where maintenance needs are, but also to locate areas that may be inaccessible for people who use mobility devices.

The sidewalk conditions map reflects facilities as of 2017 based on data provided by Metro and the City of Tualatin. Note that several sidewalks have been built since condition data has been collected. They are shown in the pedestrian network map (Figure 20).

For Further Study and Consideration

Understanding where sidewalk conditions are insufficient and where safe crossings are located is critical for creating a more accessible transportation system for vulnerable communities. As the project moves forward we will be considering places where access to walking and biking opportunities is hindered by difficulty crossing major roadways.

Distance Between Marked Pedestrian Crossings

In addition to street crossing inventories, OAR rules mandate that Pedestrian System Inventories must also include the spacing between crossings. **Figure 22** illustrates the

distance between marked crosswalks that cross arterial and major collector streets in Tualatin.

Multi-lane roadways can be difficult to cross, so every improved crossing helps to make the sidewalk and trail network more accessible for people walking. To create this map, residential streets and interstates were removed to leave arterials and collectors. Then, road segments with the same name were combined into single features, and divided into segments that correspond to the distances between crosswalks.

For Further Study and Consideration

The crossing spacing analysis shows the potential gaps between existing crossings and highlights priority locations for additional crossings. Thus, it will be important to understand how these crossing locations relate to places where people frequently need to cross the street, including transit stops, parks, neighborhoods, and schools.

Pedestrian Level of Traffic Stress (PLTS)

The purpose of the PLTS analysis, shown in **Figure 23**, is to classify streets in Tualatin based on how comfortable they are for walking. The analysis highlights the overall comfort of different segments of the pedestrian network and is required for Transportation System Plans in Oregon¹. The results offer greater insight into the pedestrian experience than simply whether or not a sidewalk is present. The scores show the elements that may be missing from a street that could make pedestrians feel more comfortable, such as greater separation from traffic, wider sidewalks, smoother sidewalks, crosswalk and refuge availability, and other factors.

The analysis scores streets on a scale from 1 to 4, from most comfortable to least comfortable. In summary, the scores indicate the following conditions:

- PLTS 1- Due to the presence of sidewalks that are not adjacent to high volumes of traffic, people walking feel little to no traffic stress, requiring most people to pay little attention to the traffic situation around them.
- PLTS 2 – People feel some traffic stress; walking along this street requires more attention to the traffic situation than that of which young children may be capable. This would be suitable for children over 10, teens, and adults.
- PLTS 3 - People feel moderate stress; the facility is suitable for adults.
- PLTS 4 - People feel high traffic stress. Only able-bodied adults with limited route choices would typically use this facility.

It is important to note that roadways can score poorly even when they include a sidewalk. For example, if the sidewalk is narrow, cracked, adjacent to multi-lane roadway, it is rated as a higher PLTS. Additionally, if a road scores poorly for one criterion but better on another, the

resulting score is the lowest among both – so the PLTS results reflect the worst measure, not an average of all measures. If a street has a nice sidewalk on one side, but no sidewalk on the other, it is automatically scored as a PLTS 4, reflecting the experience for pedestrians on the missing side.

For Further Study and Consideration

Understanding what factors (e.g., vehicle speed, landscape buffer, etc.) contribute to each street's PLTS score is critical to identifying future improvements that would lower the level of traffic stress for pedestrians and thereby encourage increased levels of walking for transportation. Identifying patterns among the scores will help the City use design standards to systematically improve the pedestrian experience.

Bicycle System Inventory

In accordance with the requirements of the CFEC Program and consistent with state standards (OAR Chapter 660 Division 12), the consultant team compiled a bicycle system inventory in GIS that documents facility types and road characteristics of the existing bicycle system. The dataset and corresponding table include information on the width, type, and condition of various bicycle facilities, as well as speed, volume, separation, and road width data.

Existing Bicycle Network

The bicycle facility inventory, illustrated in **Figure 24**, shows all of the designated on-street and off-street bicycle facilities in Tualatin. In Tualatin, bike facilities include striped bike lanes, striped buffered bike lanes, low-traffic-volume streets, and off-street trails and paths. Each of these facilities offers a different level of separation from traffic and are therefore more or less comfortable for riders of varying confidence and ability.

In Tualatin, low-traffic-volume streets (shown in gray) are streets where people must bike in mixed traffic and are mostly located on residential streets.

Bike lanes (shown in light blue) are found on most collectors and arterials in the city and are usually about six feet wide and defined by a wide painted stripe and bike symbol. Buffered bike lanes (shown in dark blue) increase the amount of separation between the bike lane and vehicle traffic, typically with a second painted line as a way to further delineate the space for people biking. Finally, off-street trails offer the highest level of separation from vehicle traffic. There are not currently any physically protected bike lanes in Tualatin.

Accounting for the location of all bike facilities helps identify where gaps remain in the bicycle network and establishes a baseline for future bikeway planning. This map reflects facilities as of November 2023 based on data provided by Metro and the City of Tualatin and latest information about the City's capital projects.

For Further Study and Consideration

As the city plans for additional bikeways that are accessible for riders of all ages and abilities, it will be important to understand how trails relate to enhanced crossings of major streets. It will also be important to consider how low-traffic-volume streets could be enhanced for bicyclists, such as designating key routes as bicycle boulevards or neighborhood greenways.

Bicycle Level of Traffic Stress (BLTS)

Figure 25 and the BLTS analysis classifies streets in Tualatin based on how comfortable they are to travel by bicycle. The analysis is a tool for examining the overall comfort of the bicycle network and is required for Transportation System Plans in Oregon³. The results offer insight into the experience of biking in the city, rather than simply whether or not a street has a bike lane. The scores identify elements, such as greater separation from traffic, lower speeds, and turn box availability, that may be missing from a street that would make biking feel more comfortable.

The analysis scores streets on a scale from 1 to 4, from most comfortable to least comfortable. In summary, the scores indicate the following conditions:

- LTS 1- Due to the separation of people biking from moving cars and trucks, this score represents little traffic stress. Since traveling by bike requires the rider to pay little attention to traffic, it is suitable for use by people of all ages and abilities.
- LTS 2 - People feel some traffic stress. Biking on the street requires more attention to traffic conditions than young children would be expected to deal with, so is suitable for teens and adults with adequate bike handling skills.
- LTS 3 - People feel moderate stress when biking because they need to pay attention to and interact with surrounding traffic. Suitable for most adults with experience biking.
- LTS 4 - Most people feel high levels of stress due to the proximity to and interactions with traffic. Only suitable for skilled adults with experience biking.

If a segment scores poorly for one criterion but better on another, the resulting score is the lowest among both - so the BLTS results reflect the worst measure, not an average of all measures.

For Further Study and Consideration

Understanding how the bike network interfaces with the BLTS scores provides insight into the improvements necessary for increasing levels of biking for transportation.

For Tualatin, a recurring theme is that left turn lanes often cause a roadway to score lower than it would otherwise. However, after discussions with the project team, this criteria table was omitted from the analysis due to widespread inflation of scores. Still, the issue of left

turns remains, and ODOT recommends that left turn lane LTS scores can be improved to LTS 1 by providing two-stage left turns with regular and left-turn queue bike boxes. Identifying locations where cyclists are likely to make left turns to continue onto the bike network would help prioritize locations for bike turn boxes and would lower the LTS score for the roadway.

Recognizing that many destinations are located and surrounded by high-stress roadways, including Boones Ferry Road, Tualatin Sherwood Road, and SW Nyberg Street, underscores the importance of reviewing these locations for opportunities to improve facilities and establish low-stress routes. This proactive approach is essential to ensure the safety and well-being of the community.

Truck Freight

The freight network in Tualatin is comprised of local freight routes and state and federal truck routes, as highlighted in **Figure 27** in the Existing Conditions document. I-5 is part of the National Highway Freight Network Critical Urban Corridors. I-5 can have freight bottlenecks, within the Portland Metro, that affect Tualatin.

Marine

Many companies in Tualatin produce goods that are transported by ship, or receive goods transported by ship. The viability of marine transport (shipping) to and from the Portland area affects businesses in Tualatin. The closest major marine ports are the Port of Portland and Port of Vancouver, both approximately 22 miles north of Tualatin.

Within Tualatin, marine travel is limited to the Tualatin River which has recreational boat ramps and launch platforms at the following parks:

- Jurgens Park
- Tualatin Community Park
- Browns Ferry Park

Rail

There are two rail lines in Tualatin, as seen in **Table 8**. Rail in Tualatin is important to businesses and the regional economy as it transports people and goods. However, rail can potentially cause congestion and extended blockages of crossings on the city's roadways and create safety concerns at crossings, all of which should be considered as future projects are developed in areas where rail is present.

Table 8. Rail Lines in Tualatin

Route	Direction	Type of Service	Owners	Classification
Westside Express Service Commuter (WES)	North – South	Transit, Freight	TriMet	I
Portland & Western (PNWR)	Northeast – Southwest	Freight	PNWR	II

1.

Pipeline

There is a natural gas pipeline, operated by Northwest Natural Gas Company, that runs north to south from Bridgeport Village through Lower Boones Ferry Road and then through Service Road OR 141. The pipeline has terminals in Durham, Oregon, and Wilsonville, Oregon.

Operations and Safety

The following section discusses the traffic operations on the existing network. The analysis evaluates the demand for the network for vehicles and how well the existing system serves the residents of Tualatin.

Existing Traffic Conditions

The evaluation of existing traffic conditions focuses on daily volumes along key corridors in Tualatin, along with afternoon peak-hour operations at 21 intersections in the City.

Intersection Operations







One way to quantify delay experienced by drivers is through intersection operations analysis. As part of the existing conditions inventory, 21 key intersections in Tualatin were evaluated during the evening commute hour to identify locations where congestion occurs on the existing transportation system during peak travel hours.

Level of Service and Delay

Level of Service (LOS) is a standard method for characterizing delay at an intersection. For signalized and all-way stop controlled (AWSC) intersections, the LOS is based on the average delay for all approaches. For two-way stop controlled (TWSC) intersections, the movement with the highest delay is used.

Table 9 summarizes the LOS and delay thresholds specified in the 6th Edition Highway Capacity Manual (HCM), which is a standard methodology for measuring intersection performance.

Table 9. Level of Service Definitions

Level of Service	Description	Signalized Intersection Delay (seconds/vehicle)	Unsignalized Intersection Delay (seconds/vehicle)
 A	Free-flowing Conditions	≤ 10	0-10
 B	Stable Flow (slight delays)	>10-20	>10-15
 C	Stable Flow (acceptable delays)	>20-35	>15-25
 D	Approaching Unstable Flow (tolerable delay)	>35-55	>25-35
 E	Unstable Flow (intolerable delay)	>55-80	>35-50
 F	Forced Flow (congested and queues fail to clear)	>80	>50

Source: 6th Edition Highway Capacity Manual, 2016

For most of the study intersections, traffic operations were analyzed using Synchro 11 software. For a few locations, described in more detail below, SimTraffic was used to better reflect congested conditions known to occur. The Synchro network reflects the existing roadway network including intersection geometry, signal timing, and vehicle and pedestrian/bicycle volumes.

The City has set LOS standards of D and E for signalized and unsignalized intersections respectively in Tualatin, as seen in TDC 74.440(3)(e).

Delay

Delay is a direct calculation of the wait time in seconds experienced by motorized vehicles at the intersections. Delay can be calculated for each vehicle, by approach or by intersection. The delay includes the queue delay and the control delay. Queue delay is experienced by vehicles waiting in traffic before getting through the intersection. Control delay is the wait time of vehicles at the intersections exerted by the signalized intersections alone.

Simtraffic Calibration

As described above, isolated intersection analysis using the Synchro software resulted in LOS/delay results that were found to match field observations and known congestion levels at most of the intersections. For two intersections, SW Boones Ferry Road & SW Tualatin-Sherwood Road and SW Boones Ferry Road & SW Martinazzi Avenue, a more detailed operational analysis was required to better reflect existing conditions. For these

intersections, microsimulation using the SimTraffic software was used to better reflect the impact on operations of spillback between intersections and closely spaced intersections.

The Simtraffic network was calibrated using video from the traffic count collection data and data available from Washington County's INRIX portal. INRIX data, which uses vehicle data gathered from GPS devices, was used to confirm delay experienced by movement at these intersections, while video data was used to estimate the true vehicle demand for these intersections compared to the number of vehicles that could be served during the peak hour.

To calibrate the SimTraffic network to existing conditions, delay reported by SimTraffic was compared to the delay reported by INRIX for individual movements at each intersection. For movements where SimTraffic was found to report lower delay than the delay reported by INRIX and what was observed in the field, video data was referenced to understand how volume should be adjusted to account for demand not being served.

At the intersection of SW Boones Ferry Road & SW Tualatin-Sherwood Road, the southbound left-turn onto SW Tualatin-Sherwood Road was the primary movement where calibration was needed. Calibration of this movement included increasing volume on this movement by 20% to match demand for the movement. With this change, LOS for this movement was degraded to LOS F, which matches field observations and delay reported in INRIX. Other movements at this intersection that operate with high levels of delay include: the left-turn movements on the eastbound, westbound, and northbound approaches, and the northbound through movement. Queueing was also observed to occur on the northbound approach at this intersection and while not included in this analysis, interactions with the SW Tonka Street intersection, approximately 150 feet south of the intersection, also contribute to queueing at this location. Based on SimTraffic results, the intersection as a whole operates at LOS D during the PM peak hour. This was confirmed with INRIX data, which also reports LOS D for this intersection. This is a result of prioritizing operations for the eastbound and westbound through movements, which have the highest volume, and experience the lowest amount of delay.

The other intersection evaluated in SimTraffic was the SW Boones Ferry Road & SW Martinazzi Avenue intersection. When using SimTraffic, delay at this intersection was found to correlate to LOS D operations. As data available in INRIX indicates that this intersection generally operates at LOS C, no additional adjustments were made at this intersection. The movement found to operate with the highest delay both in SimTraffic and based on data reported by INRIX is the southbound left-turn.

Summary of Existing Deficiencies

As shown in **Table 10**, there is one study intersection with an LOS E, indicating a high amount of delay. This intersection is at SW 65th and SW Borland Road.

Table 10. Intersection Level of Service (LOS)

ID	Name	Control	LOS / Delay	Worst Mvmt	HCM
1	SW 124 th Ave & Hwy 99W	Signal	B/19	-	HCM 2000
2	SW 124 th Ave & SW Tualatin Rd	Signal	C/21	-	HCM 2000
3	SW 124 th Ave & SW Herman Rd	Signal	B/18	-	HCM 6 th
4	SW Cipole Rd & SW Herman Rd	AWSC	B/11	-	HCM 6 th
5	SW 124 th Ave & Tualatin-Sherwood Rd ¹	Signal	/	-	
6	SW Tonquin Rd & SW Grahams Ferry Rd	TWSC	B/15	EBL	HCM 6 th
7	SW Ibach St & SW Boones Ferry Rd	Signal	C/34	-	HCM 6 th
8	SW Avery St & SW Teton Ave	AWSC	B/14	-	HCM 6 th
9	SW Sagert St & SW Boones Ferry Rd	Signal	C/28	-	HCM 6 th
10	SW 90 th Ave & SW Tualatin-Sherwood Rd	Signal	D/42	-	HCM 6 th
11	SW Boones Ferry Rd & SW Tualatin-Sherwood Rd ²	Signal	D/48	-	-
12	SW Martinazzi Ave & Tualatin-Sherwood Rd ¹	Signal	/	-	
13	SW Nyberg St & I-5 SB Ramps ¹	Signal	/	-	
14	SW Nyberg St & I-5 NB Ramps ¹	Signal	/	-	
15	SW 65 th Ave & SW Borland Rd	Signal	E/60	-	HCM 6 th
16	SW 65 th Ave & SW Sagert St	Signal	C/23	-	HCM 6 th
17	SW Tualatin Rd & SW Boones Ferry Rd	Signal	C/28	-	HCM 2000
18	SW Martinazzi Ave & SW Boones Ferry Rd ²	Signal	D/54	-	-
19	SW Bridgeport Rd & SW Lower Boones Ferry Rd ¹	Signal	D/37	-	HCM 6 th
20	SW Lower Boones Ferry Rd & I-5 SB Ramps	Signal	B/15	-	HCM 6 th
21	SW Lower Boones Ferry Rd & I-5 NB Ramps	Signal	B/18	-	HCM 6 th

Note:

¹ Intersection is currently under construction and was therefore not analyzed in the existing conditions. These will be included in the future conditions analysis.

² Intersection analyzed using microsimulation, this represents to intersection average, see text for additional information on movements operating with high delay.

Safety

The collision data and analysis described below is derived from ODOT collision data from 2017 to 2021.

Collision Summary

Around 80% of collisions in Tualatin occurred on arterials, with many of these collisions occurring on SW Tualatin Sherwood Road. Boones Ferry Road also had a significant numbers of crashes. Over half of collisions for all modes are rear-ends, as seen in **Table 11**. Around 17% and 11% of collisions occurred due to turning movements and overtaking, respectively. The most common cause of bicycle-involved collisions was from vehicles making turning movements.

Table 11. Types of Vehicular Collisions

Type of Collision	Percentage
Angle	2%
Backing	1%
Fixed Object or Other Object	8%
Head-On	0%
Miscellaneous	1%
Non-collision	0%
Parking Maneuver	0%
Pedestrian	1%
Rear-End	57%
Sideswipe - Meeting	1%
Sideswipe - Overtaking	11%
Turning movement	17%

Source: ODOT Collision Data, 2017-2021

Bicycle and Pedestrian Collisions

Figure 32 documents collision locations and the frequency of collisions in Tualatin. Knowing what factors affect crash risk is an important step to implementing changes to the transportation system that might mitigate them. The map illustrates collision locations and frequency. Knowing what factors affect crash risk is an important step to implementing mitigation measures.

The collision data and analysis presented in the bicyclist and pedestrian-involved collision map are derived from ODOT records from 2017 to 2021. The yellow rings around crash locations indicate that more than one crash occurred in that location. **Table 12** provides a summary of reported pedestrian and bicycle-related injuries and fatalities from 2017-2021.

Table 12. Bicyclist and Pedestrian-Involved Collisions (2017-2021)

Year	Bicyclist-Involved	Pedestrian-Involved	Year Total
2017	7	5	12
2018	8	3	11
2019	3	5	8
2020	4	4	8
2021	1	4	5
Total	23	20	44

For Further Study and Consideration

Safety needs for pedestrians and bicyclists span the extent of the city. Identifying priority areas with higher crash frequencies and severities, whether in proximity to high equity need areas, school zones, parks, or at other locations, can help to identify near term investments.

ODOT SPIS

A Safety Priority Index System (SPIS) identifies and ranks intersections and roadway segments that are most likely to benefit from crash reduction countermeasures. Typically, a SPIS considers linear crash data along roadway and excludes side-street crashes at intersections. Most SPISs use three-years of crash data and provide SPIS scores that range between 0 (least severe) and 100 (most severe) based on crash frequency, crash rate, and crash severity. ODOT publishes a statewide SPIS and an SPIS for each region, which includes all ODOT owned roadways and highways.

According to 2021 SPIS reports, there are 33 ODOT owned intersections and roadway segments in Tualatin that fall in the 95th percentile of SPIS scores. Of those, the top ten scores occur along I-5 and at Nyberg Road at the I-5 interchange.

Washington County SPIS

The Washington County SPIS identifies and ranks intersections similarly to the ODOT SPIS. The Washington County SPIS analyzes intersections, rather than roadway segments. Of the hundred highest ranking intersections in Washington County by SPIS (2018-2020) score, the intersections within Tualatin city limits are #2 Tualatin-Sherwood Rd at 124th Ave; #21 Tualatin-Sherwood Rd at Boones Ferry Rd; #64 Tualatin-Sherwood Rd at Teton Ave; #68 Tualatin-Sherwood Road at Nyberg Rd (and shopping center accesses); and #93 Lower Boones Ferry Rd at 72nd Ave and Bridgeport Rd.

Transportation Demand Management

Transportation Demand Management (TDM) is the application of strategies and policies to redistribute demand from single-occupancy vehicles to alternative modes of travel to lower vehicle miles traveled (VMT).

One strategy is Employee Commute Options, a mandatory program for large employers. Under the Department of Environmental Quality's (DEQ) ECO Program, employers with more than 100 employees must provide commute options to employees designed to reduce the number of cars driven to work in Portland and surrounding areas.

In and around Tualatin, there are around 4,013 employees that are ECO eligible and around 109 incentives available to encourage use of alternative modes, including bike lockers, showers, subsidized TriMet passes, and more. The Tualatin Shuttle, by Ride Connection, provides transportation for commuters to and from the Tualatin WES Commuter Rail Station.

Transportation Systems Management and Operations

Transportation Systems Management and Operations (TSMO) is a set of strategies that focus on operational improvements that can maintain and even restore the performance of the existing transportation system before extra capacity is needed. These cost-effective strategies include things like smarter signal timing, coordinated traffic incident response and traveler information. In Tualatin, some of the traffic signals on Tualatin-Sherwood Road and Nyberg Road at the I-5 interchange use adaptive signal timing to optimize the traffic flows.

Access to Schools

There are 19 schools within the City of Tualatin, ranging from elementary school to college and both publicly and privately run. There is a Safe Routes to School (SRTS) program for the Tigard-Tualatin School District that encourages active transportation to and from schools. Some schools are located near collision hot spots. Additionally, schools are often not located near completed sidewalk segments, making it difficult for students to walk to school safely.



EXISTING CONDITIONS

January 2024

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Introduction



The **Tualatin Transportation System Plan (TSP)** will serve as Tualatin's long-range transportation plan to guide the development of transportation projects over the next 20 years.

The **Existing Conditions Report** lays the groundwork for the TSP through an inventory of existing transportation infrastructure and identification of gaps, deficiencies, and opportunities in the current transportation system.

The report is broken into three key sections:

- **Plan Area** describes Tualatin as a whole and the demographics of people who live in the city.
- **Existing Systems Inventory** describes the existing modal systems in Tualatin and identifies existing infrastructure gaps.
- **Operations and Safety** describes locations where people driving experience delay and locations where collisions have occurred in recent years.

Additional information on all three areas can be found in the **Existing Conditions Technical Memorandum**.

The City of Tualatin is located approximately 12 miles south of Portland and within both **Clackamas and Washington Counties**.

Interstate 5 (I-5) runs north-south through the city and acts as a barrier to east-west travel.

The city is also bounded by Interstate 205 (I-205) to the southeast, Oregon Route 99W to the northwest, and the Tualatin River to the north.

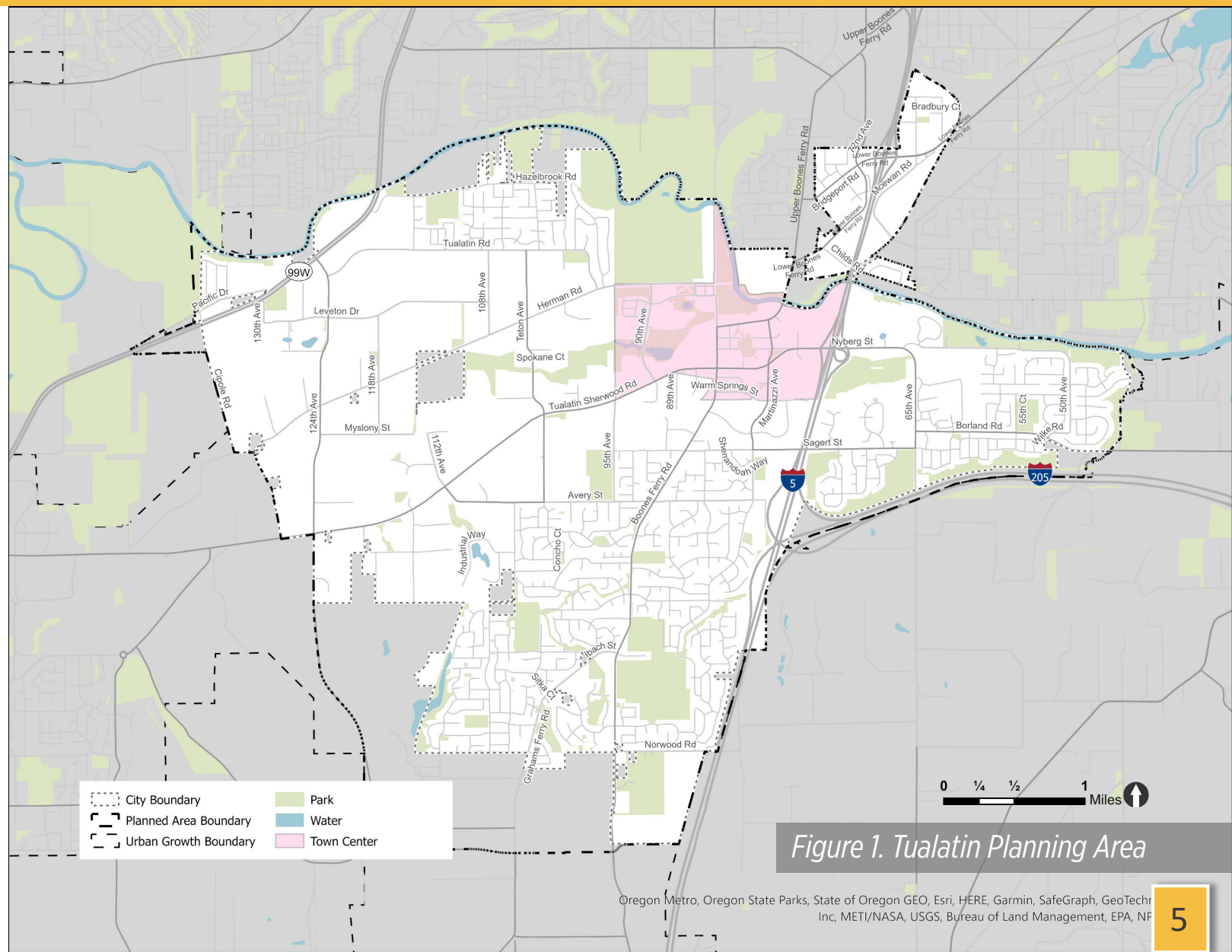


Figure 1. Tualatin Planning Area

Tualatin is largely comprised of manufacturing and industrial uses in the western part of the city.

The northeastern and central parts of the city are zoned for commercial and mixed-use with several pockets of zoning for multifamily residential.

The southeastern part of the city and areas to the east of I-5 are primarily zoned for lower-density single-family residential with several areas that allow for commercial and multifamily uses.

Tualatin is home to five Commercial Centers, which are described on the following page.

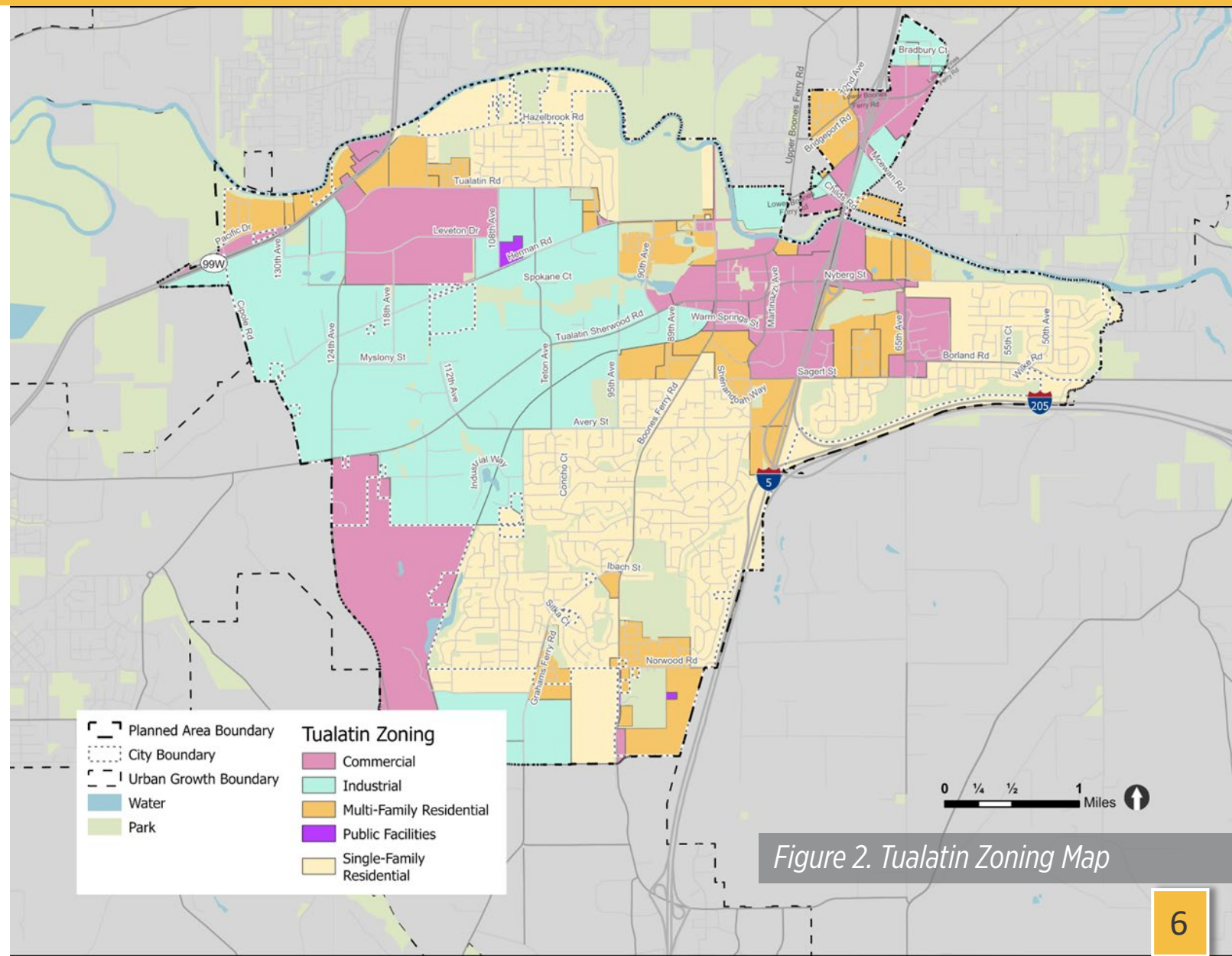


Figure 2. Tualatin Zoning Map

Downtown Tualatin is located in the central part of the city and is home to the Tualatin Commons.

Tualatin Commons is a 19-acre site in the northeastern part of the city west of I-5 that features a three-acre manmade lake surrounded by a wide public promenade, plazas, and an interactive fountain. The area is also home to multi-family residences and hosts several events year-round, including Concerts on the Commons, and a Summer Reading Program.

Bridgeport Village is an upscale mixed-use commercial center in the northeast corner of the city. The center hosts a large movie theater, national and regional chain restaurants, and several retail stores.

Nyberg Woods, a 250,000-foot lifestyle center, is located just south of Bridgeport Village and at the conjunction of I-5 and Nyberg Road. The center is anchored by big-box retail, smaller retail uses, restaurants, and office spaces.

Nyberg Rivers contains approximately 300,000 square feet of retail, restaurant, fitness and entertainment space.

Basalt Creek is land on the south end of the city in unincorporated Washington County that will be used for employment opportunities.

Key destinations for community members traveling in Tualatin include:

- Community Centers
- Schools
- City Hall
- Emergency Service Centers

Recommendations that provide safe connections to these destinations will be one outcome of the TSP update.

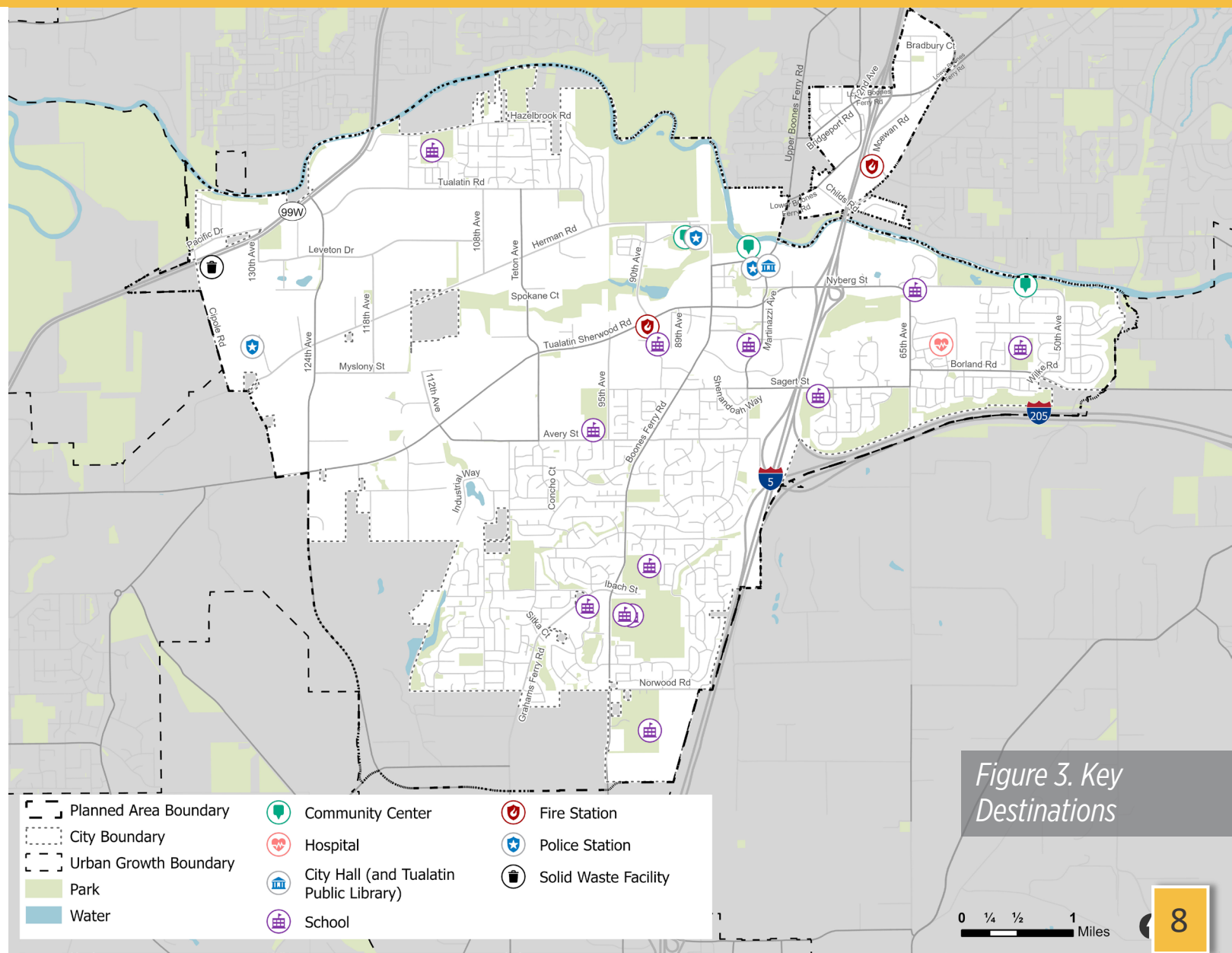


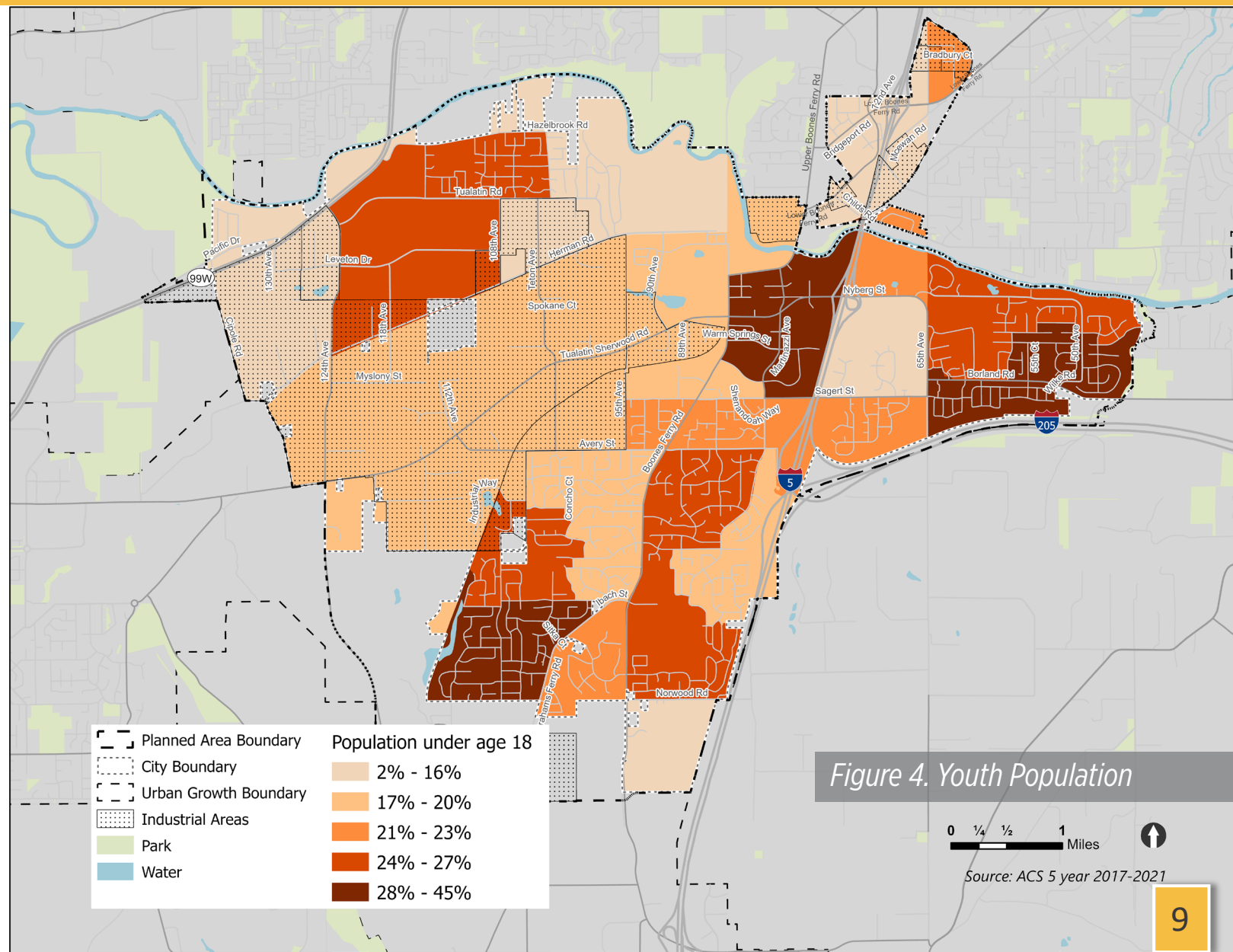
Figure 3. Key Destinations

The City of Tualatin is home to **27,821 people** according to the 2021 Census Data.

Understanding how and where younger populations travel is an important component of developing a transportation system that meets the needs of some of the most vulnerable users.

The city is slightly **younger** than the metropolitan region with a greater proportion of the city population under 18.

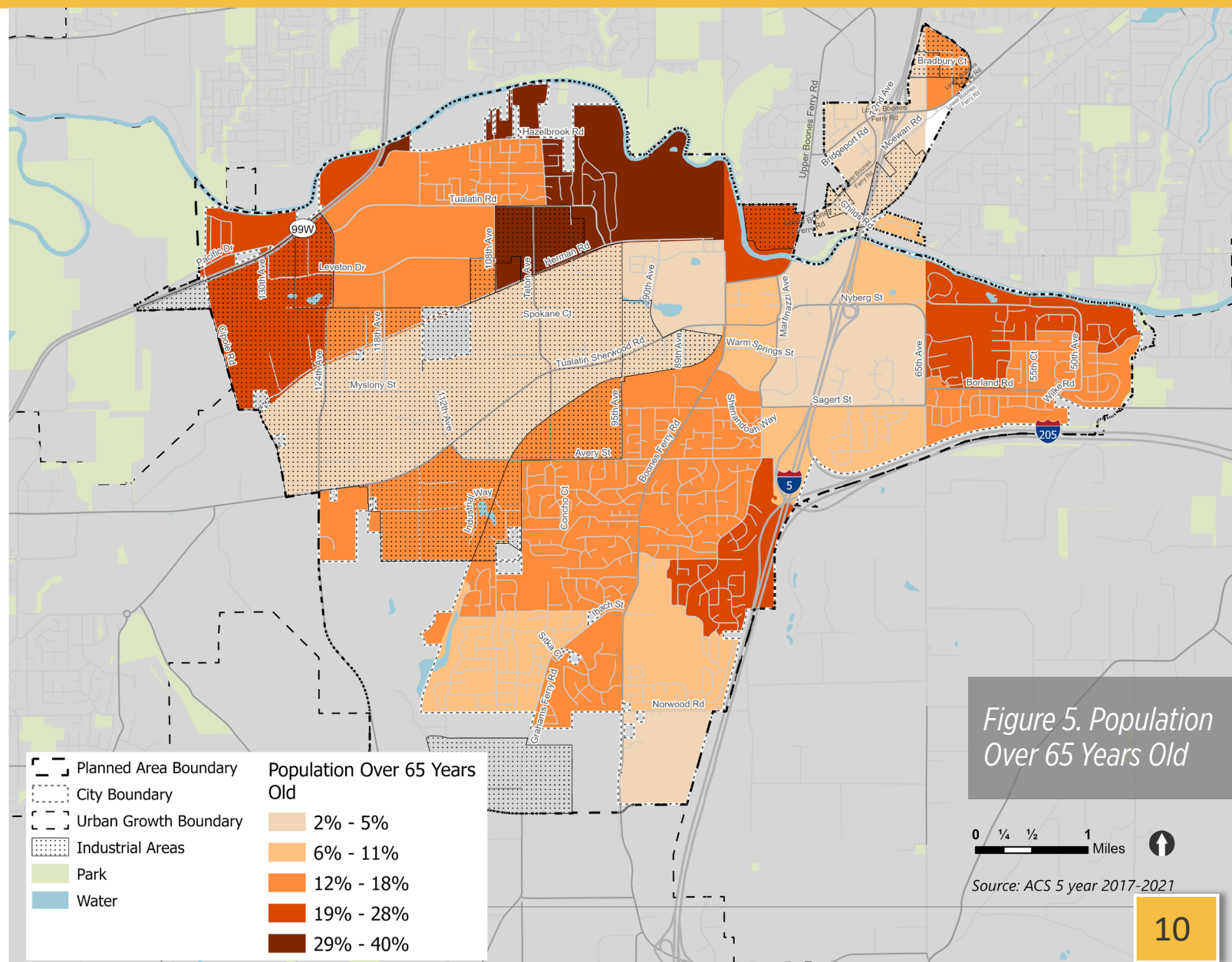
As shown, the highest concentrations of youth population are in the southwest corner of the city, areas surrounding Tualatin Commons, and the eastern edge of the city.



Understanding the travel patterns and needs of members of the population **over 65 years** old is also an important component of building a transportation system for all ages and abilities.

Figure 5 shows the concentration of members of the population over 65 years old.

The portion of the city between Boones Ferry Road and SW 106th Avenue and north of SW Herman Road has the largest concentration of population members over 65 years old within the City Boundary.

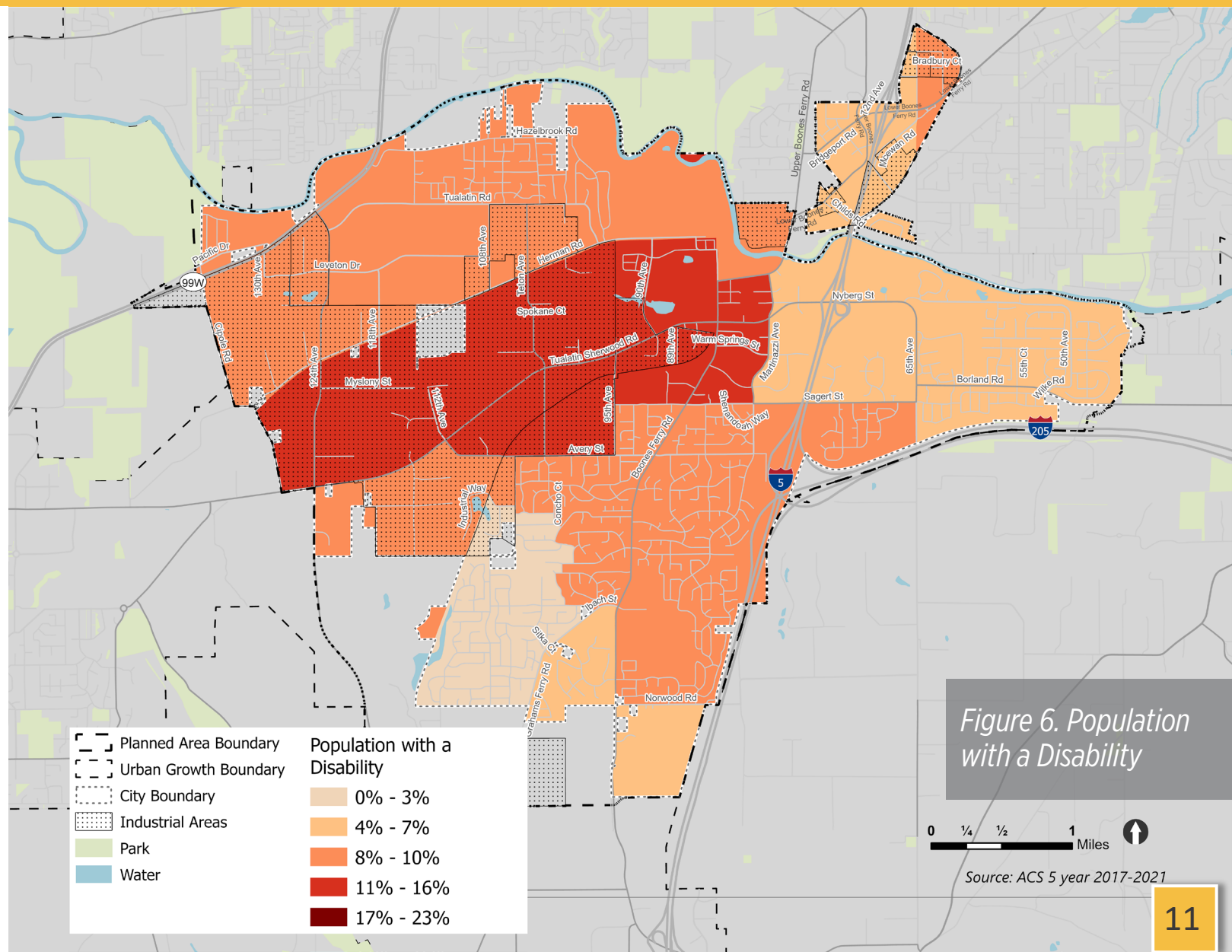




In Tualatin, the highest concentration of population with a disability live just north and south of Tualatin Sherwood Road. Much of this area is industrial so housing is concentrated toward the central city.

Disabilities captured in the American Community Survey (ACS) data include:

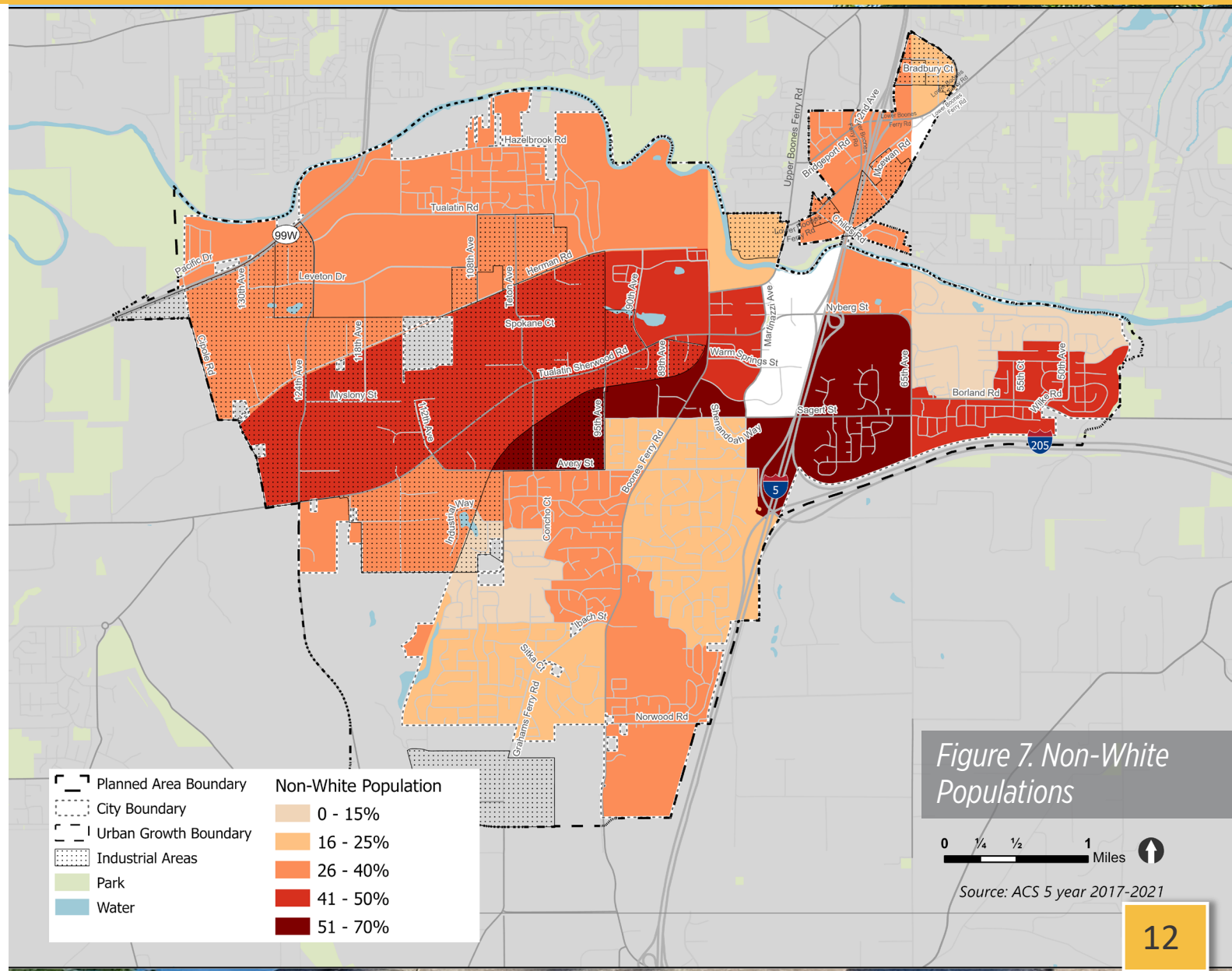
- Hearing
- Vision
- Cognitive
- Ambulatory



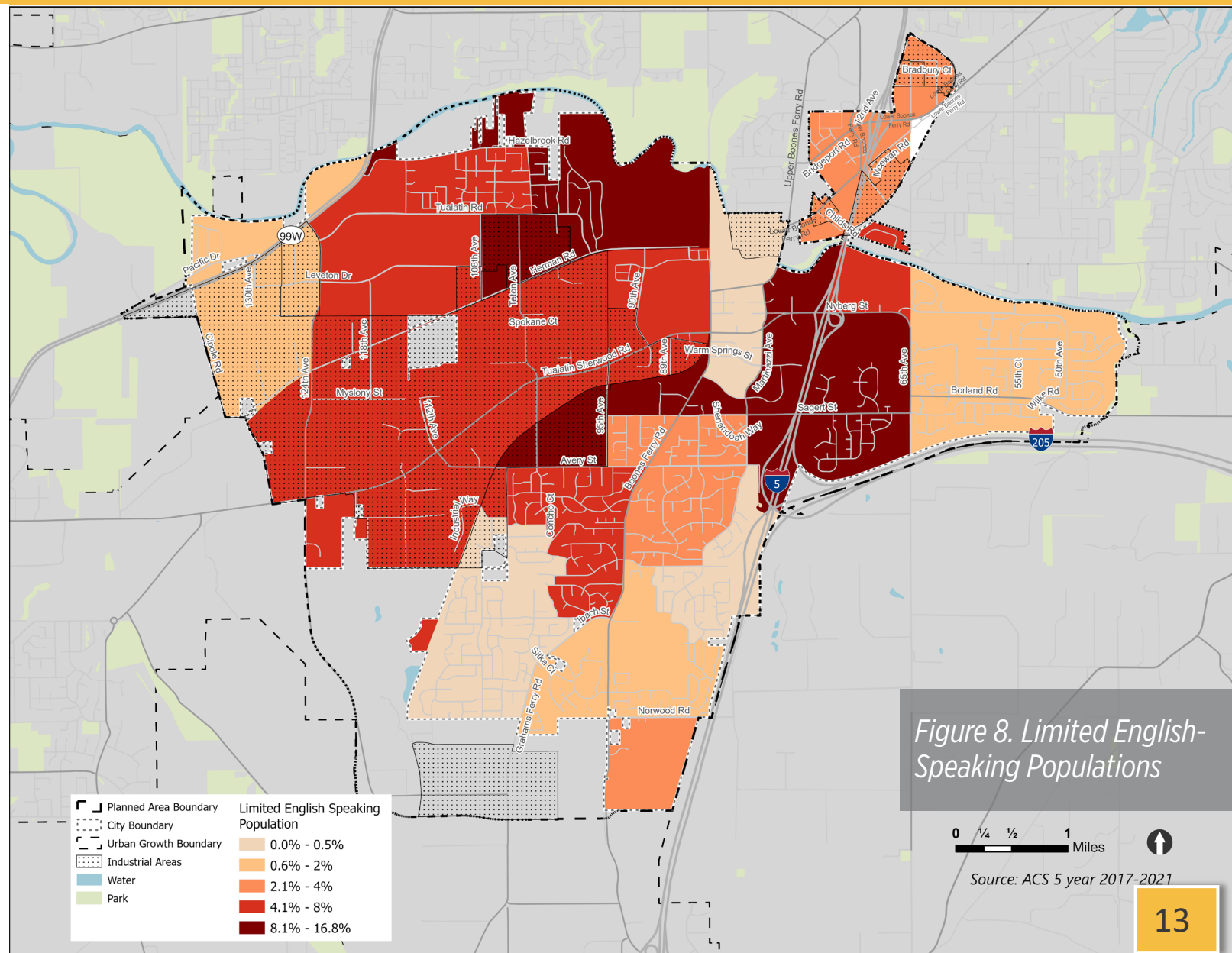
The portion of Tualatin's population that identifies as Non-White and Hispanic or Latino is **greater than the regional average** at 27% and 22%, respectively.

The highest concentration of non-white population in the city is concentrated around the I-5 interchanges in the middle of the city.

Other high concentrations include areas between Tualatin-Sherwood Road and Avery Street and on either side of Borland Road.

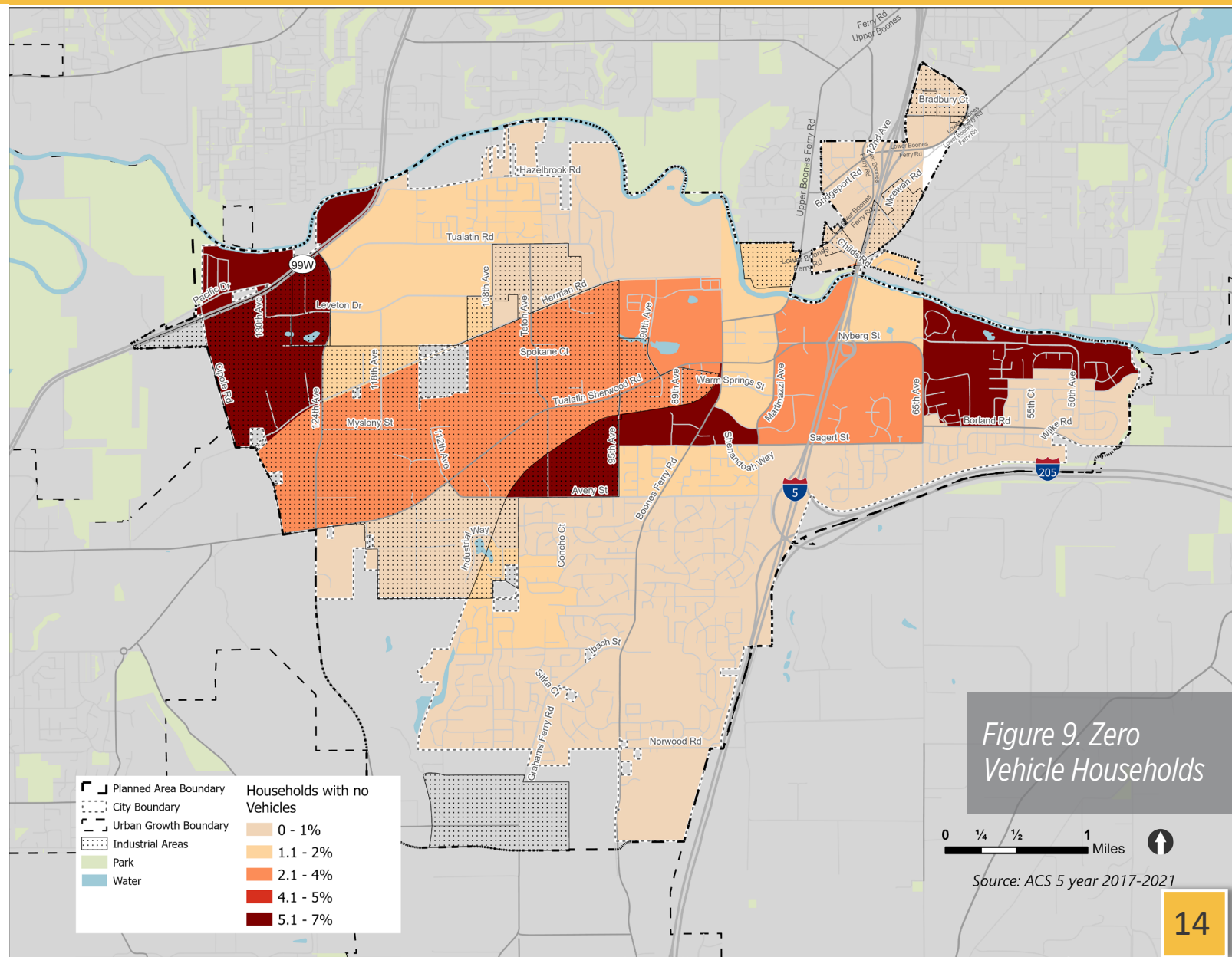


As shown on Figure 8, Limited English-speaking populations in Tualatin tend to live in the same tracts as non-white populations as well as the northernmost part of the city.



The number of households with no vehicles in Tualatin is **three percent lower** than the regional average.

Households with zero vehicles are primarily located in westernmost and eastern most parts of the city as well as the area between the railroad track and Boones Ferry Road.



There are **five key industry clusters** in Tualatin that provide the majority of employment opportunities. Those five sectors are:

1. Manufacturing
2. Health Care and Social Assistance
3. Wholesale Trade
4. Construction
5. Retail Trade

The largest employer in Tualatin is **Lam Research**, a supplier of wafer-fabrication equipment and related services to the semiconductor industry.

The largest employment clusters are in the western part of the city, which is where most of the industrial uses are located.

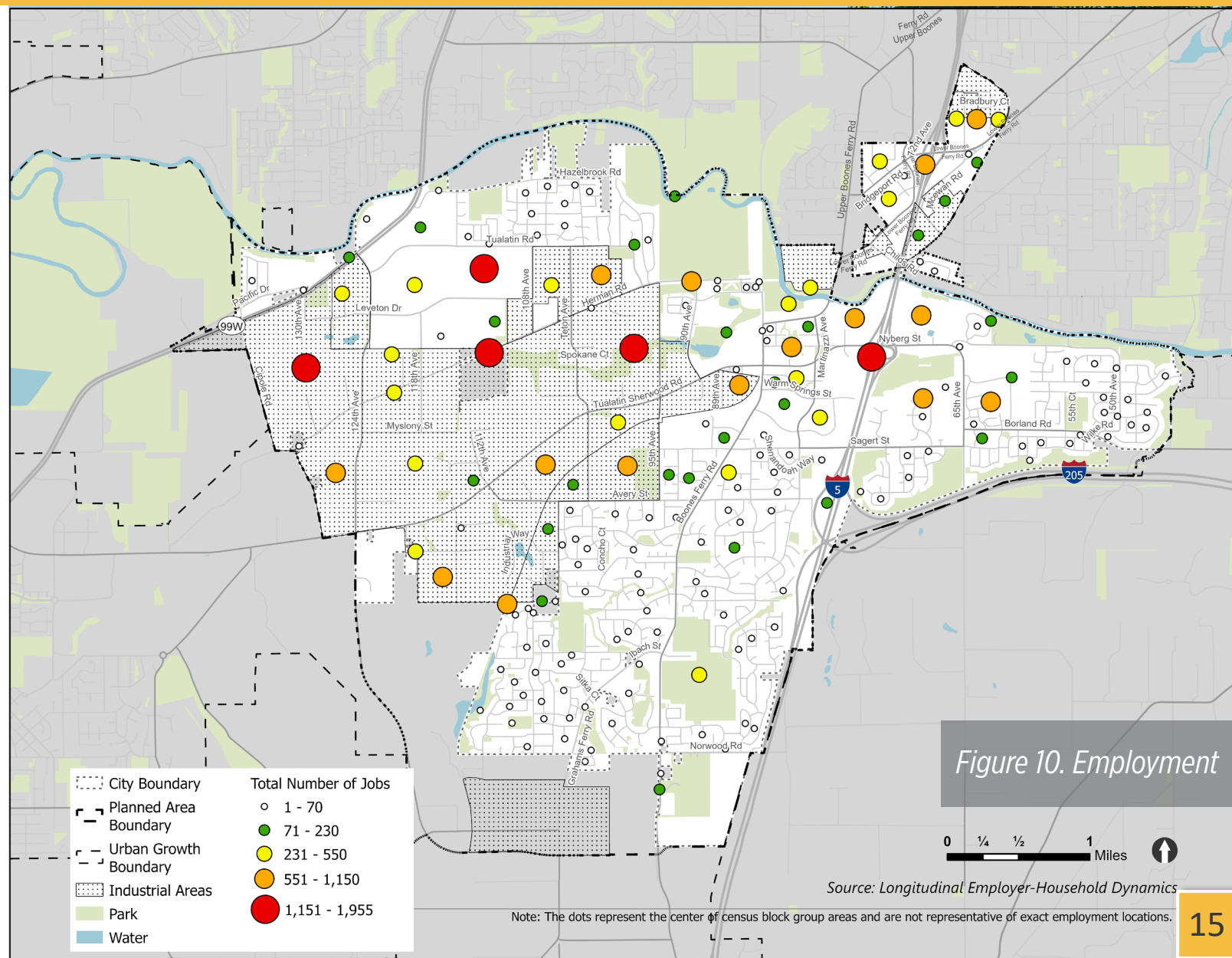
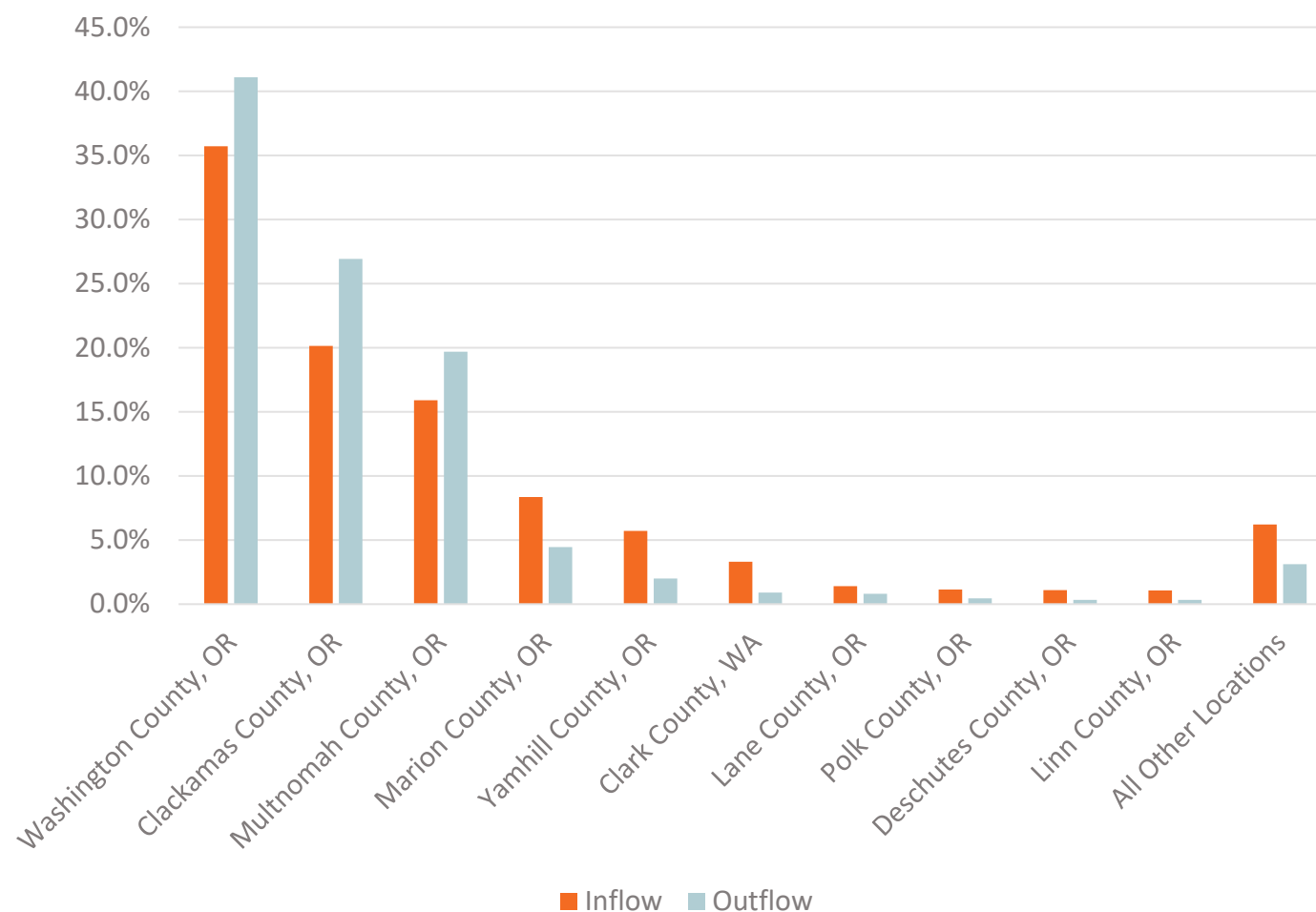


Figure 10. Employment

While Tualatin has many employment centers, many of its workers work in other communities.

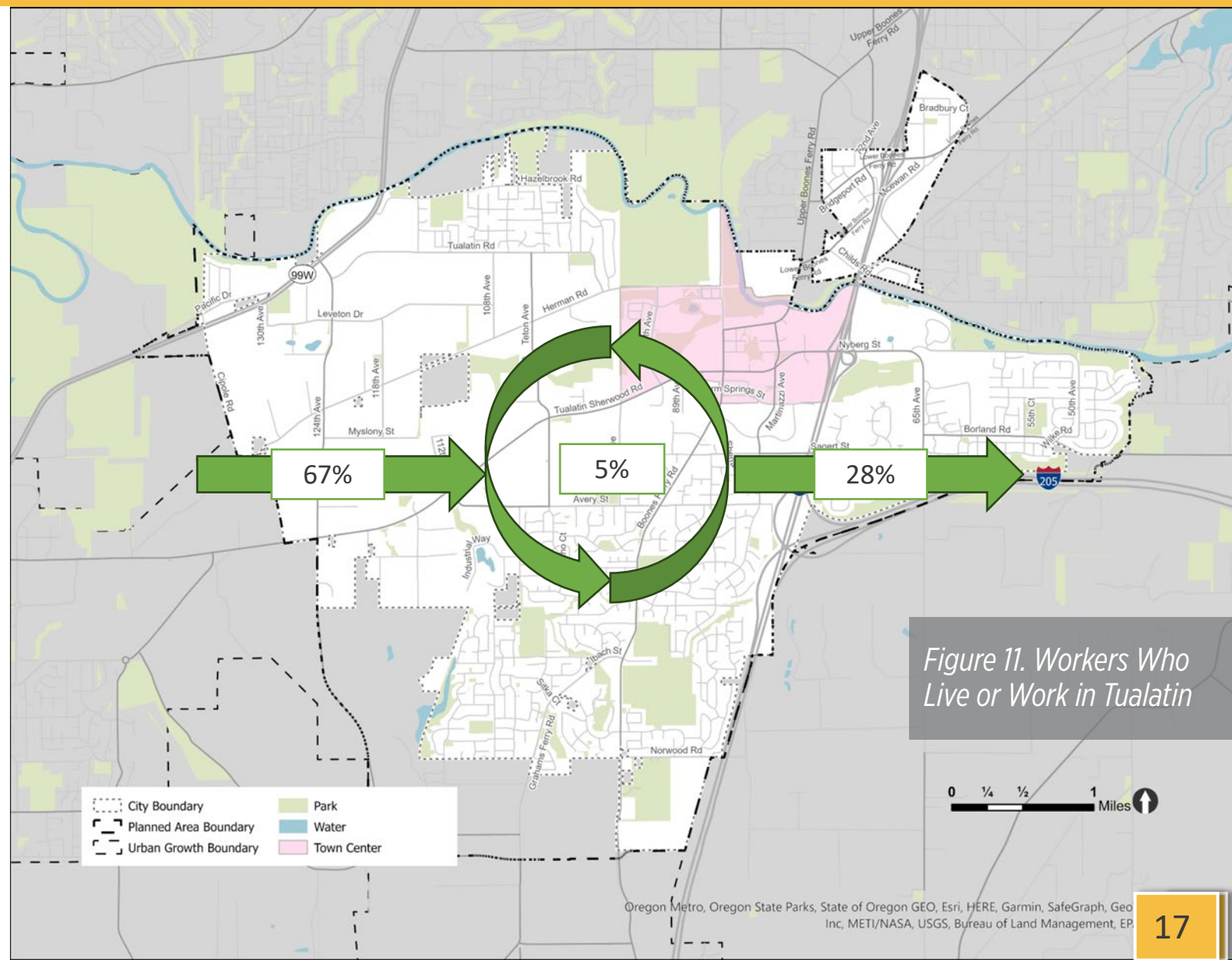
12.3% of workers who live in Tualatin work outside the Metro region.

28.3 % of workers in Tualatin live outside the Metro region.



According to the most recent LEHD data on workers who live or work in Tualatin:

- 5%, or 1,947, of workers both live and work in Tualatin.
- 67%, or 27,991, live outside of Tualatin and come to the city to work.
- 28%, or 11,531, live in Tualatin and go outside the city to work.





Existing System Inventory

Roadway Network



Functional classification is used to sort roadways into classes based on the how a roadway is intended to function and who it is intended to serve.

Arterials are generally intended to prioritize moving vehicles through an area and connecting them to regional destinations.

Collectors are designed to connect users to local destinations, including retail and residential areas.

As shown on Figure 12, Primary Arterials in Tualatin include: 99W, Tualatin-Sherwood Road, and Boones Ferry Road.

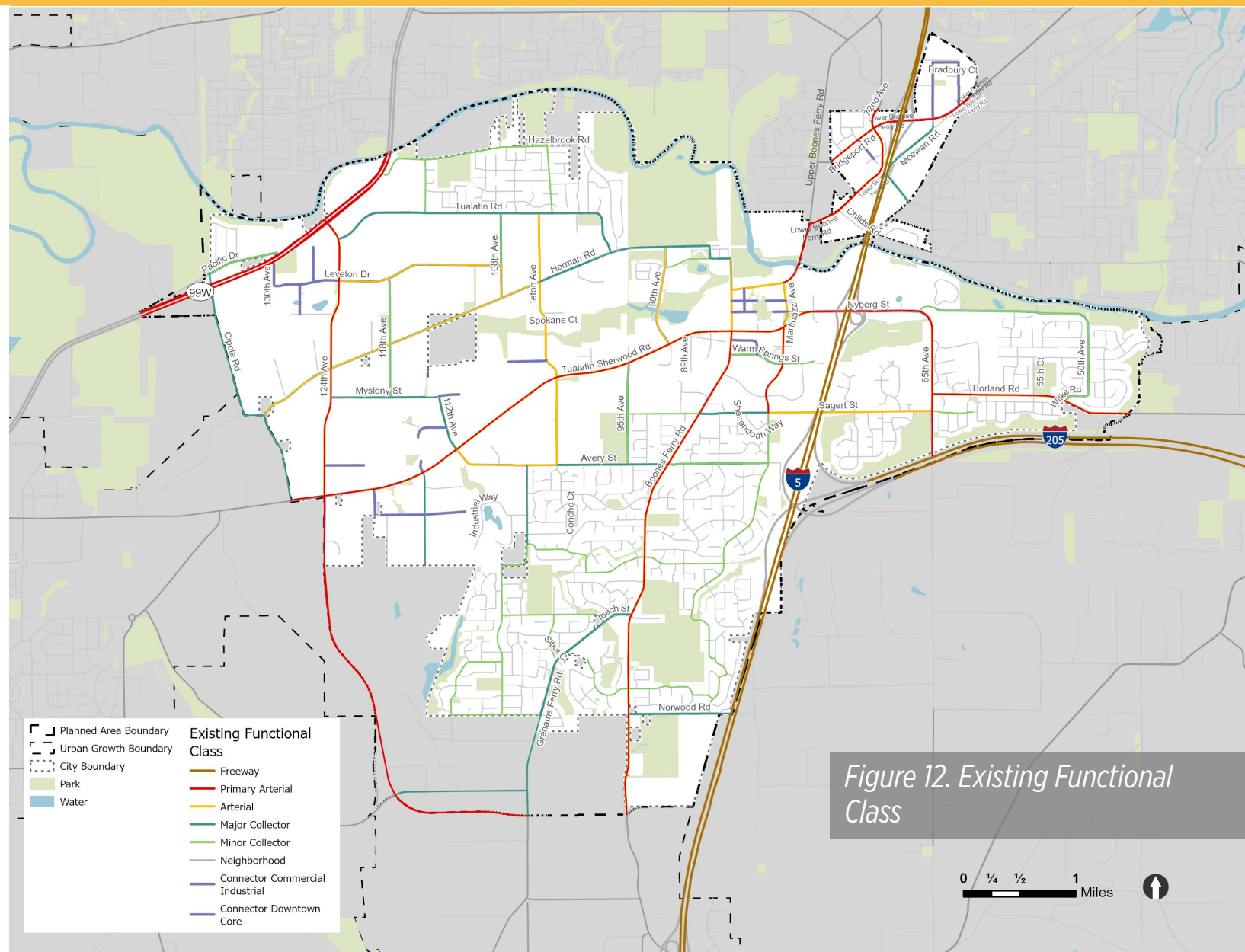


Figure 12. Existing Functional Class

The agency that owns and operates a roadway is responsible for setting standards for roadway design and operation and must approve any changes to the roadway.

Arterials and collectors in Tualatin are owned and operated by a mix of the Oregon Department of Transportation (ODOT), Washington County, and Tualatin.

Improvements recommended on 99W, Tualatin-Sherwood Road, 66th Avenue and other key roadways not owned by Tualatin will require coordination with Washington County or ODOT.

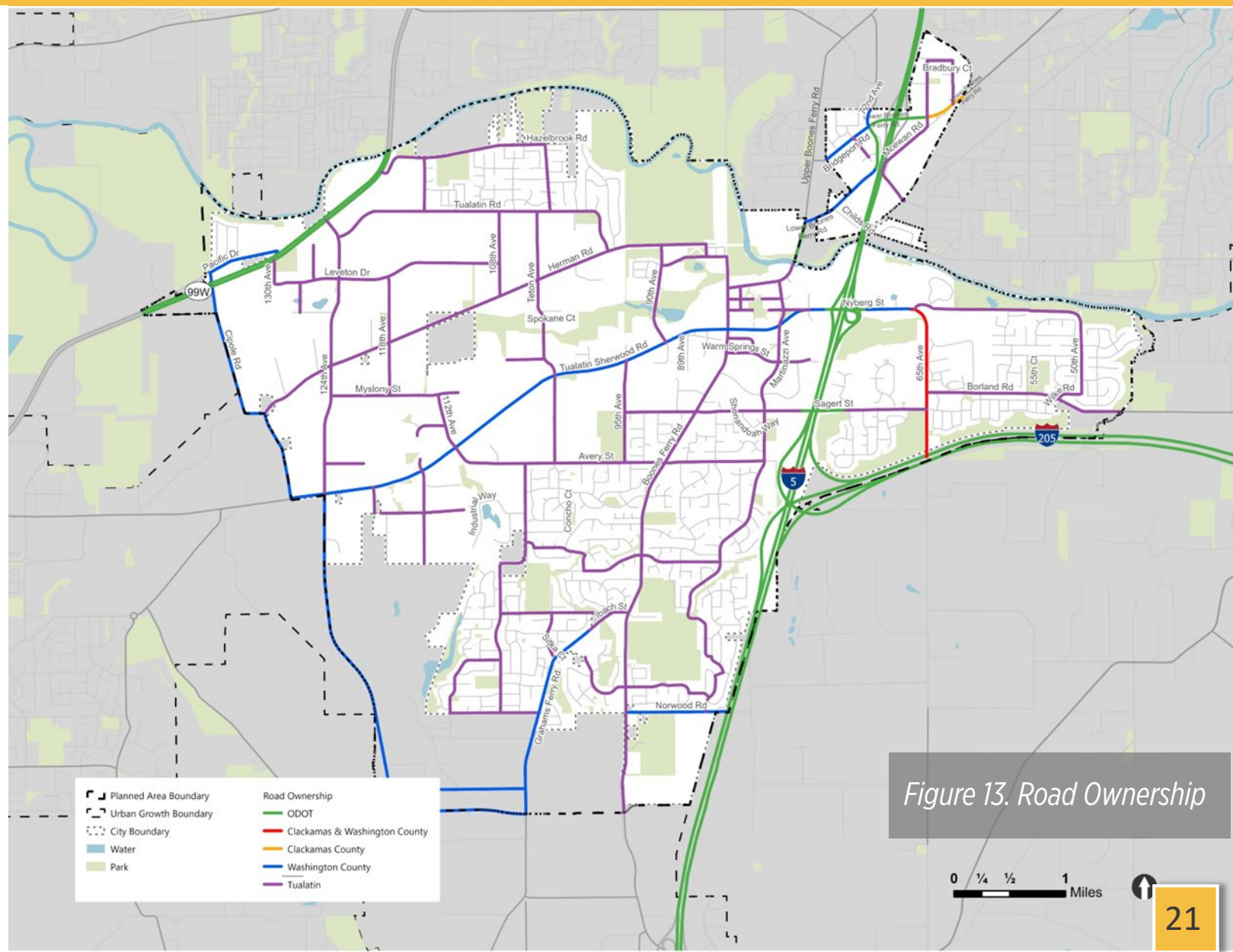


Figure 13. Road Ownership

The number of travel lanes provided on a roadway is the primary indicator of roadway capacity.

Figure 14 shows the number of travel lanes on arterials and collectors in Tualatin.

As shown, most roadways within the City provide two travel lanes (one lane in each direction); however, there are several areas, particularly roadways that connect to I-5 and 99W, where additional capacity is provided.

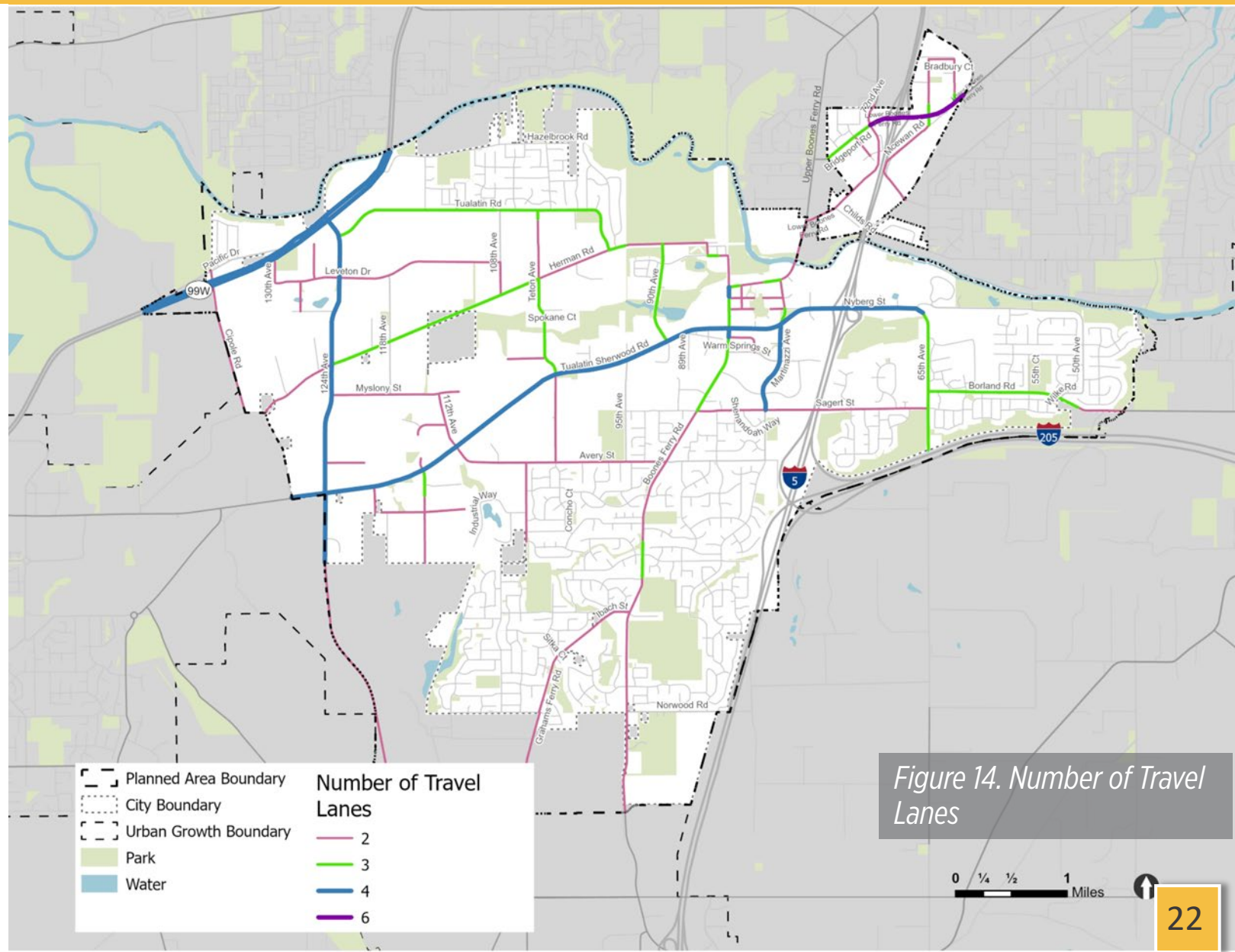


Figure 14. Number of Travel Lanes



Local streets in Tualatin, which are mostly located in residential areas, have a speed limit of 25 miles per hour (mph).

The arterials and collectors within the city generally have a posted speed limit of 35 mph or lower except for major roadways including:

- Herman Road
- 124th Avenue
- Tualatin-Sherwood Road

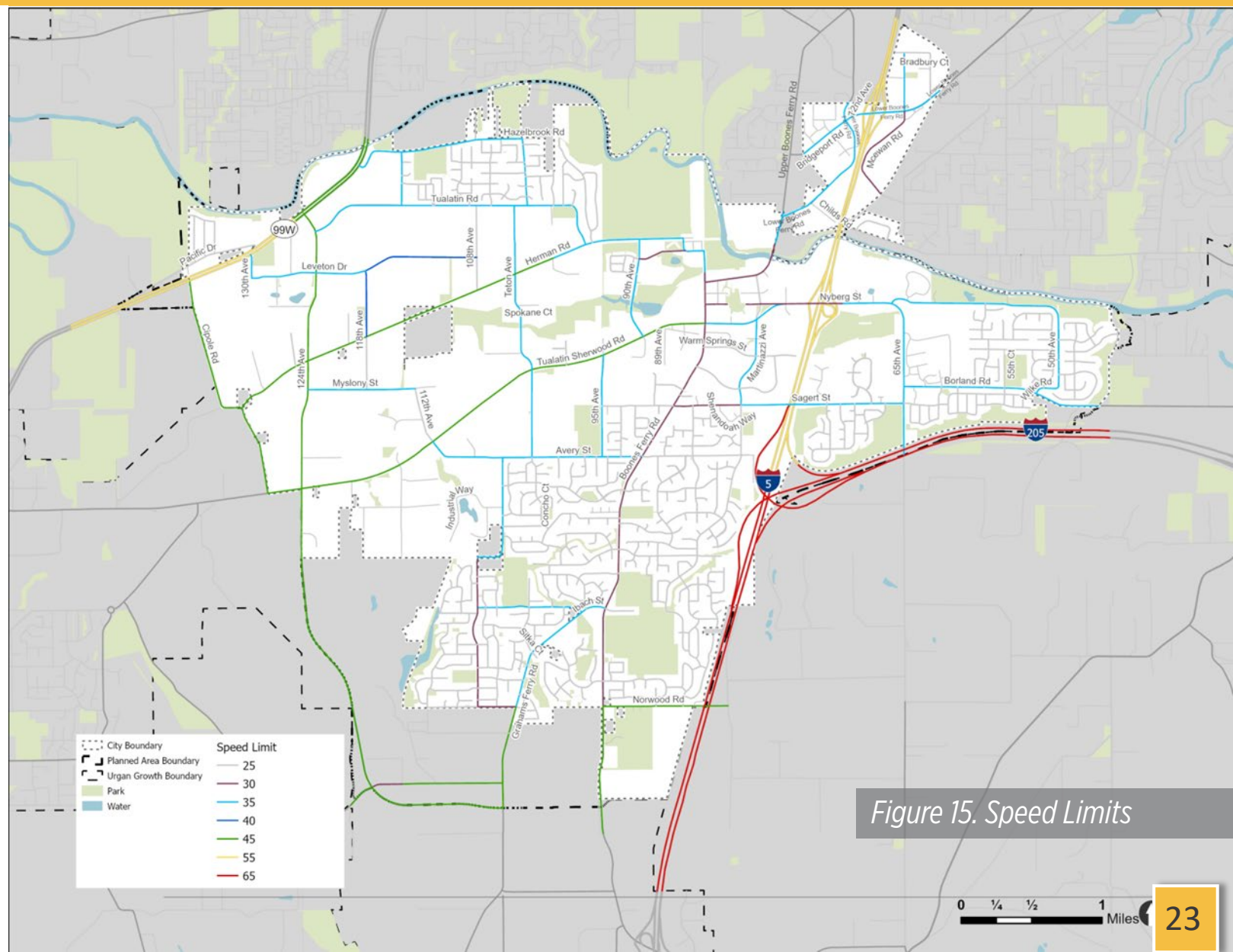
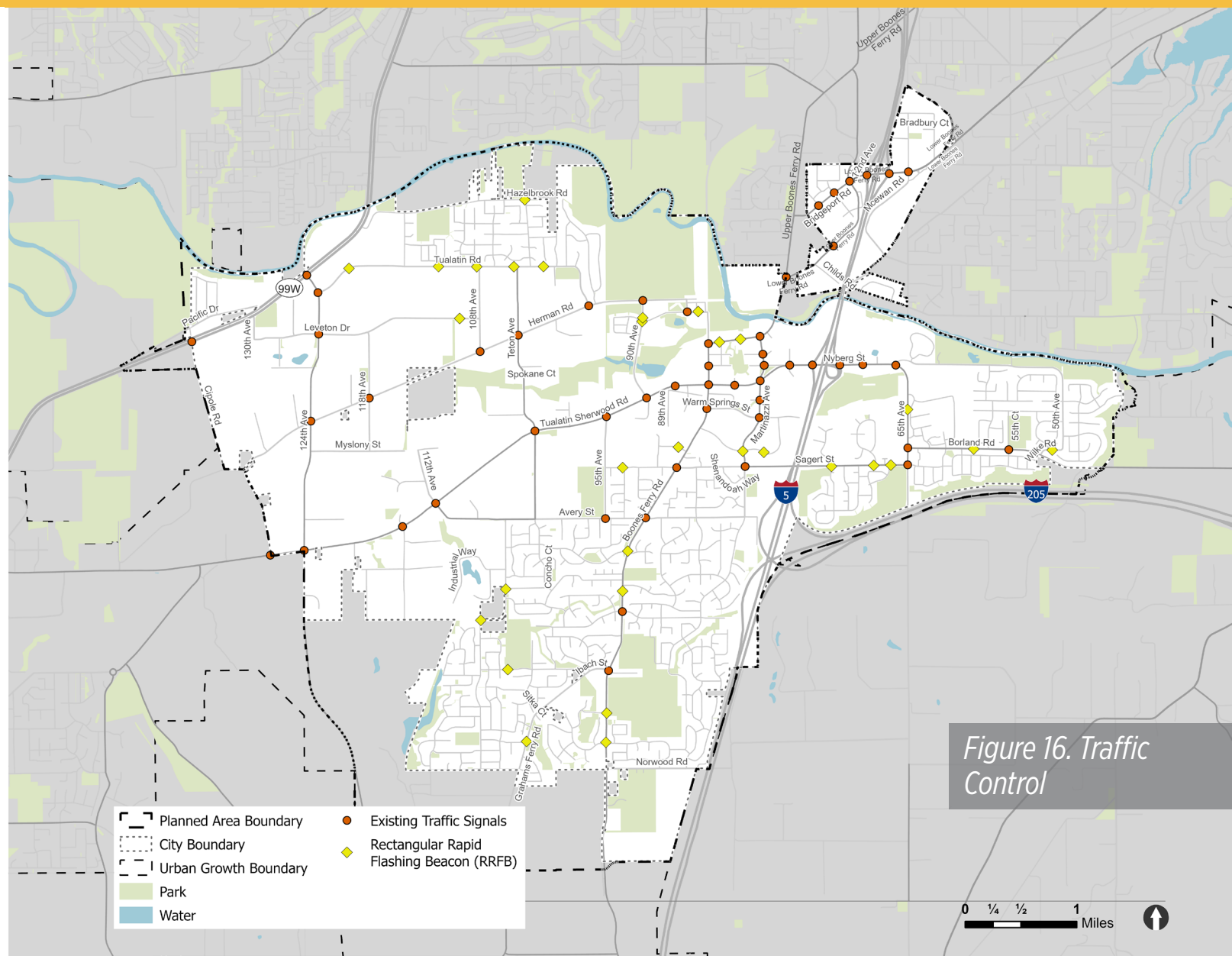


Figure 17 shows the existing traffic signals within Tualatin.

Most signalized intersections within the city have at least one marked crosswalk to facilitate pedestrian crossings.

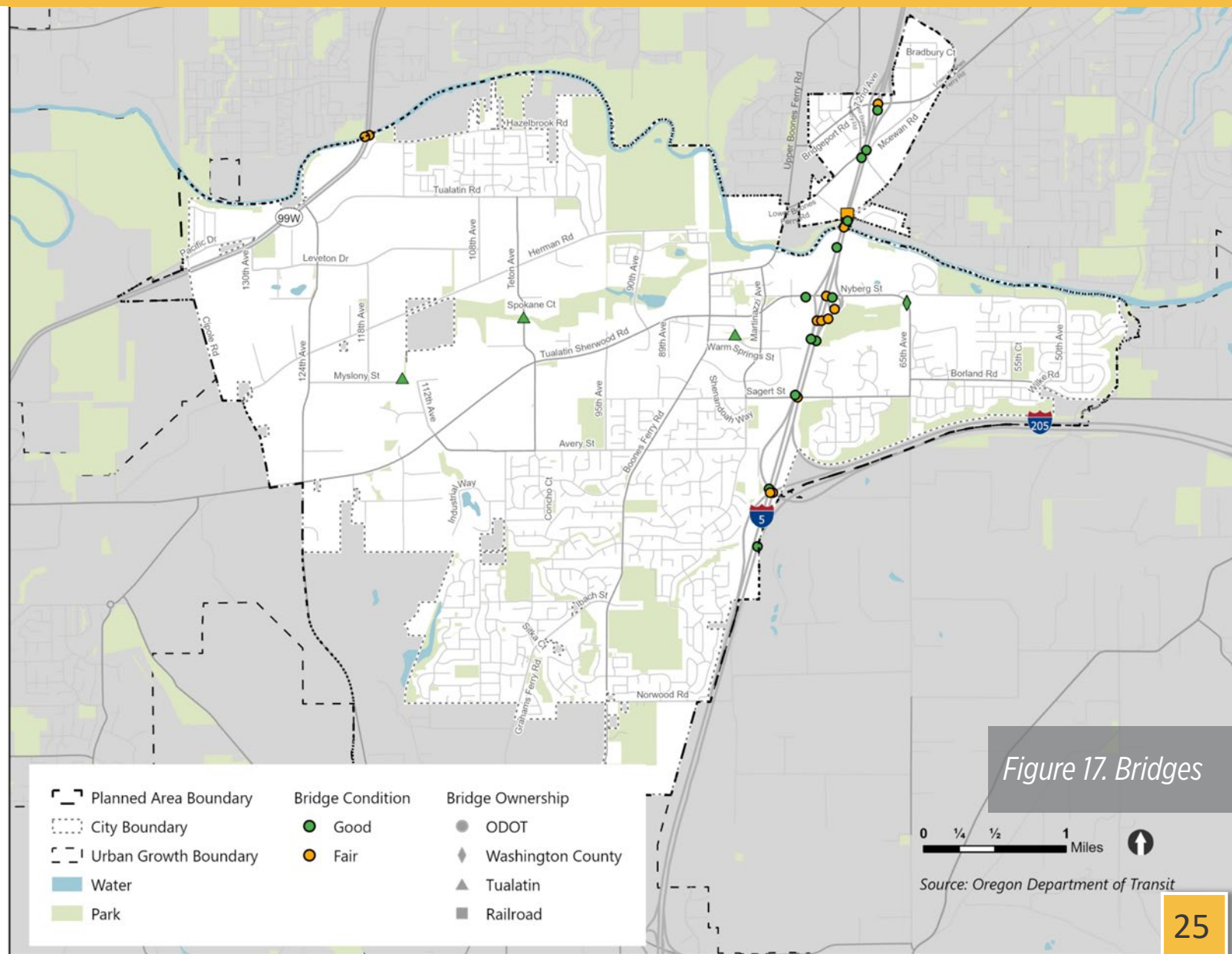
There are a number of rectangular rapid flashing beacons (RRFB) around the city, located primarily on primary arterials and major collectors, that provide safer crossings for pedestrians.



With I-5 bisecting the city and the Tualatin River acting as the northern boundary for the city, bridges are a critical piece of Tualatin's transportation system.

Only three bridges are maintained by the City of Tualatin, all of which are in good condition.

ODOT maintains most of the bridges, specifically along the I-5 and 99W corridors. All bridges maintained by ODOT are also in good or fair condition.



Transit System





Locally, Tualatin is served by **Ride Connection**, a dial-a-ride program that services people in the Portland metropolitan region. Ride Connection operates **three local dial-a-ride shuttles in Tualatin**: the Red Line, the Blue Line, and the Green Line.

Regionally, Tualatin is served by **TriMet** and **Sound Metro Area Regional Transit (SMART)**. TriMet is the state's largest transit agency and provides bus, light rail, and commuter rail service in the Portland metropolitan region. TriMet has seven regional lines that provide inner-city and intercity travel in Tualatin. There are also four TriMet Park & Ride locations in Tualatin.

SMART is operated by the City of Wilsonville and services Wilsonville with connections to nearby cities, including Tualatin.



Within Tualatin, bus service is located primarily on roadways that connect users to retail and employment centers in Tualatin or to destinations outside Tualatin.

WES (Westside Express Service), which is also operated by TriMet, is a commuter rail line serving Beaverton, Tigard, Tualatin and Wilsonville. The service operates on weekdays during commute hours with trains every 45 minutes and is intended to connect users to employment centers and Max service in Beaverton.

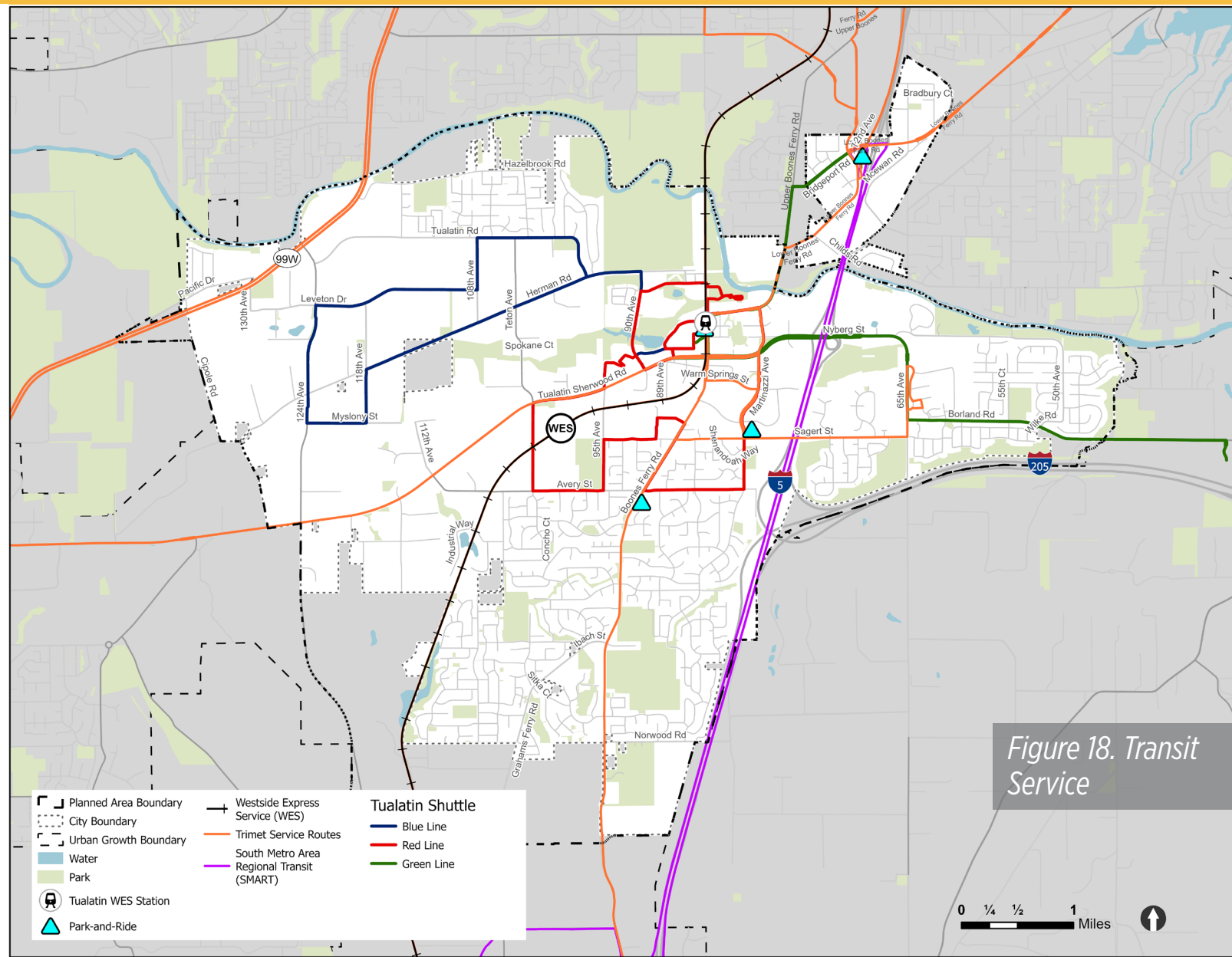
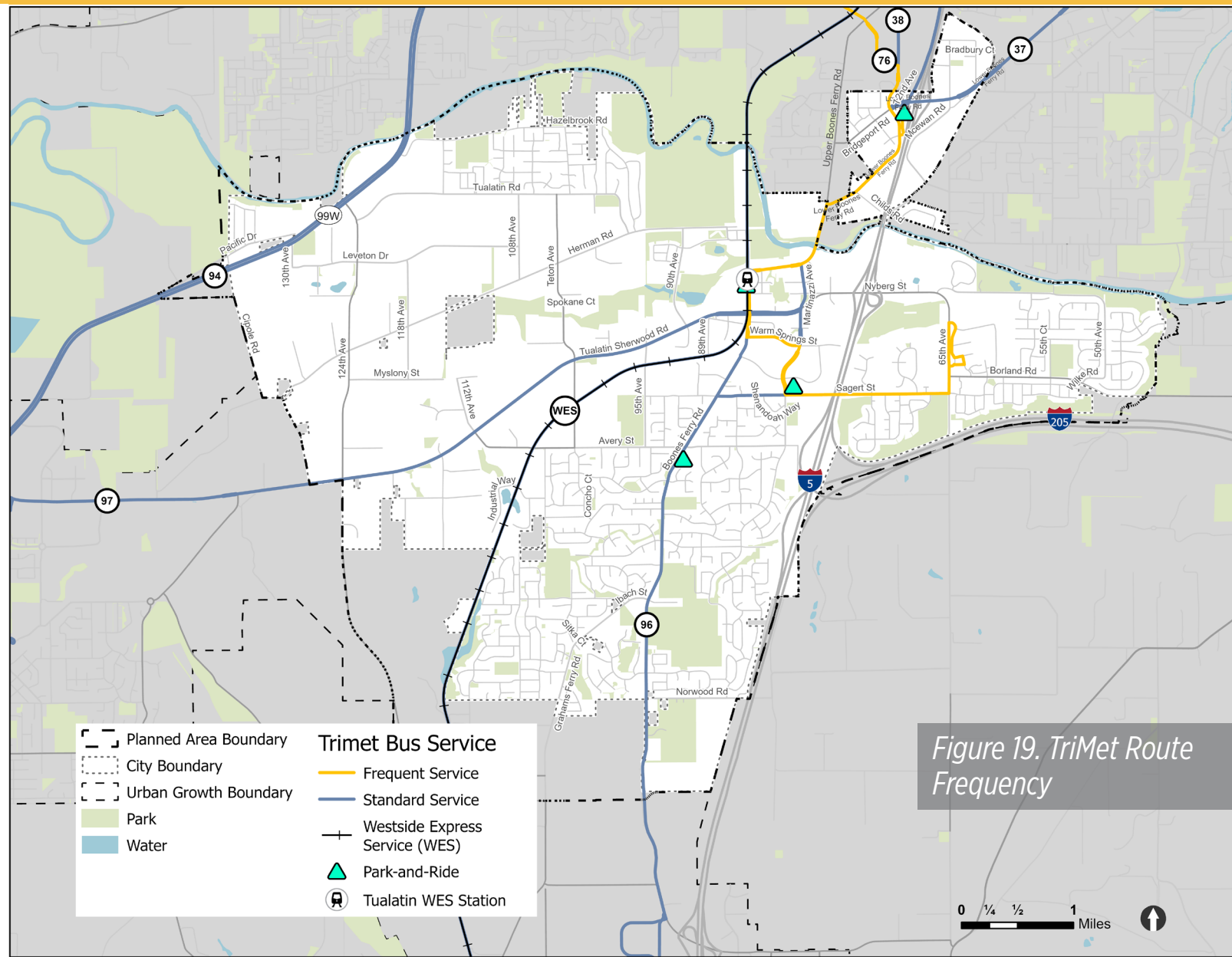


Figure 18. Transit Service



TriMet has one frequent service line in Tualatin, Line 76. It runs between the Beaverton Transit Center and Legacy Meridian Park Hospital with connections at the Tigard Transit Center, Washington Square shopping mall, and Tualatin Park & Rides. Standard service lines run along Boones Ferry Road, Tualatin Sherwood Road, 99W, and Lower Boones Ferry Road.



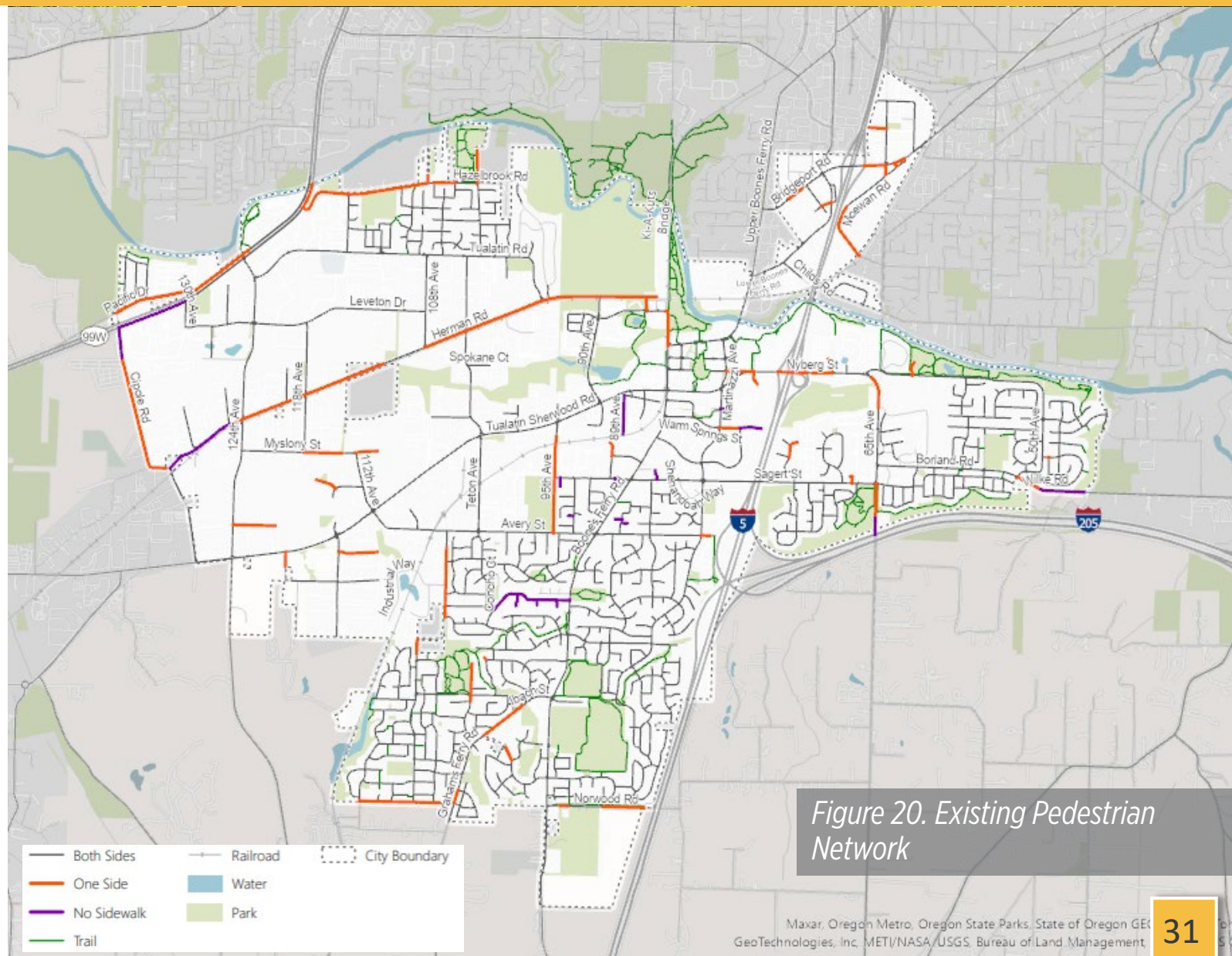
Pedestrian System





Tualatin's pedestrian network is well built out with sidewalks on both sides of residential streets in most neighborhoods. Exceptions to this are neighborhoods near 99W and the Bridgeport area, where some roadways only have streets only have sidewalks on one side.

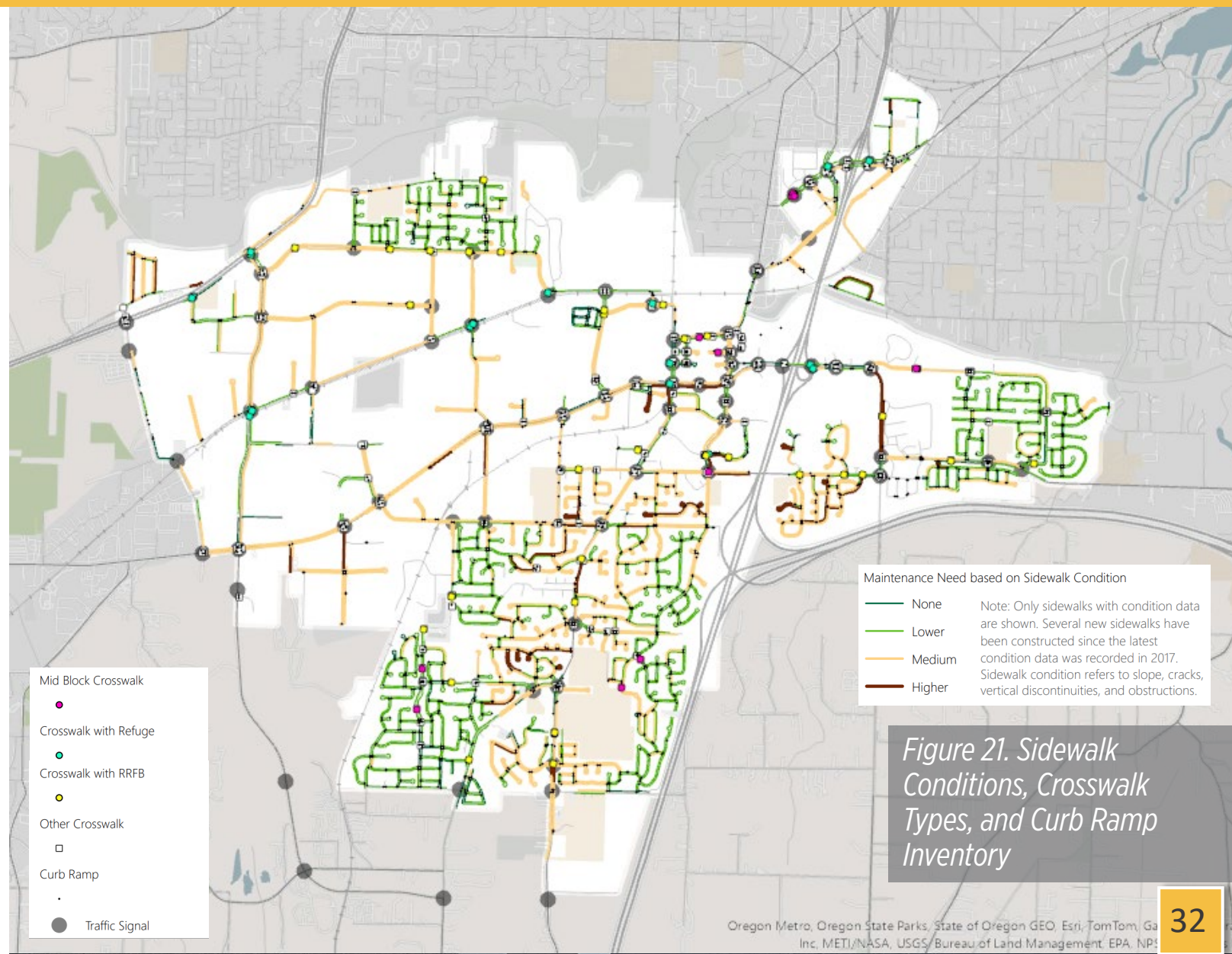
Today, the trail system provides strong east-west connections, including across I-5, through the area north of Nyberg Street, and through the Ibach neighborhood.





The sidewalk condition in Tualatin today varies due to pavement quality, American with Disabilities Act (ADA) compliance, and obstructions that reduce the effective width of sidewalks.

There are several roadways within Tualatin where the distance between marked crossings is high. To address this, Tualatin has installed many enhanced crosswalks along arterial and collector streets to improve existing crossings. These enhancements include Rectangular Rapid Flashing Beacons (RRFBs) and refuge islands.

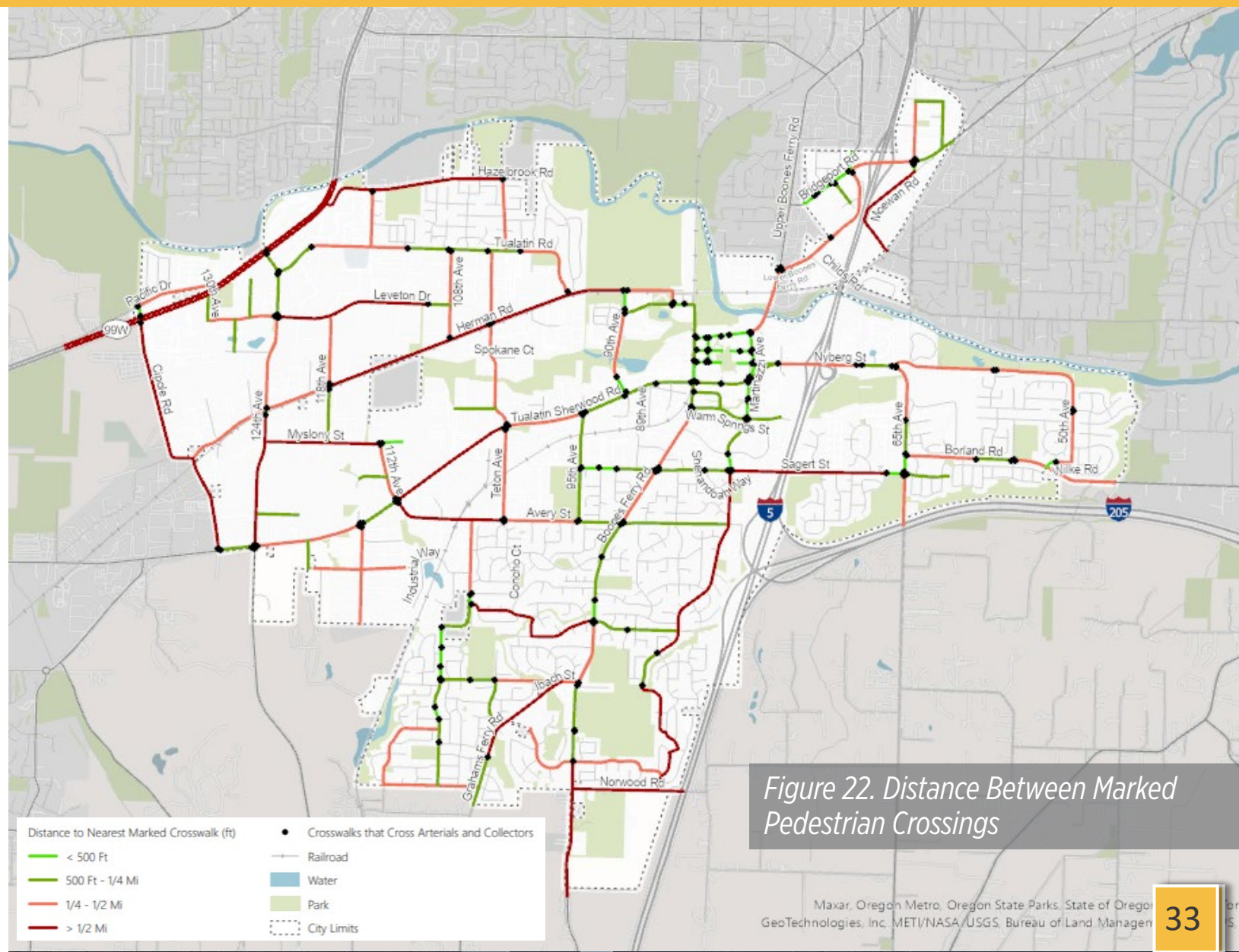




When the distance between marked crossings is high, pedestrians may be more likely to cross at unsafe locations or at unsafe times.

Figure 22 shows the location of marked crossings and the distance between marked crossings on arterials and major collectors. The distance between marked crossings is lowest in downtown and longest in the industrial areas.

There are multiple arterial and collector roadways with crossing distances greater than a quarter mile, including: 99W, Tualatin-Sherwood Road, Herman Road, Sagert St, and Avery Street.





Level of traffic stress (LTS) is a way to evaluate how comfortable a pedestrian feels walking along a street. LTS ranges from 1 (least stressful) to 4 (most stressful).

Based on analysis completed for the TSP, many collectors and arterials in Tualatin have a pedestrian LTS of 3 or 4, indicating pedestrians may feel high levels of stress or discomfort when waling on these roadways.

There are several high stress roadways such as Boones Ferry Road, which has higher traffic volume and speeds, that make it challenging for pedestrians to walk from residential areas to commercial areas.

Curb tight sidewalks that lack a buffer space for trees or furnishings and signalized intersections with slip lanes and permissive right turns are contributors to higher pedestrian LTS throughout the City.

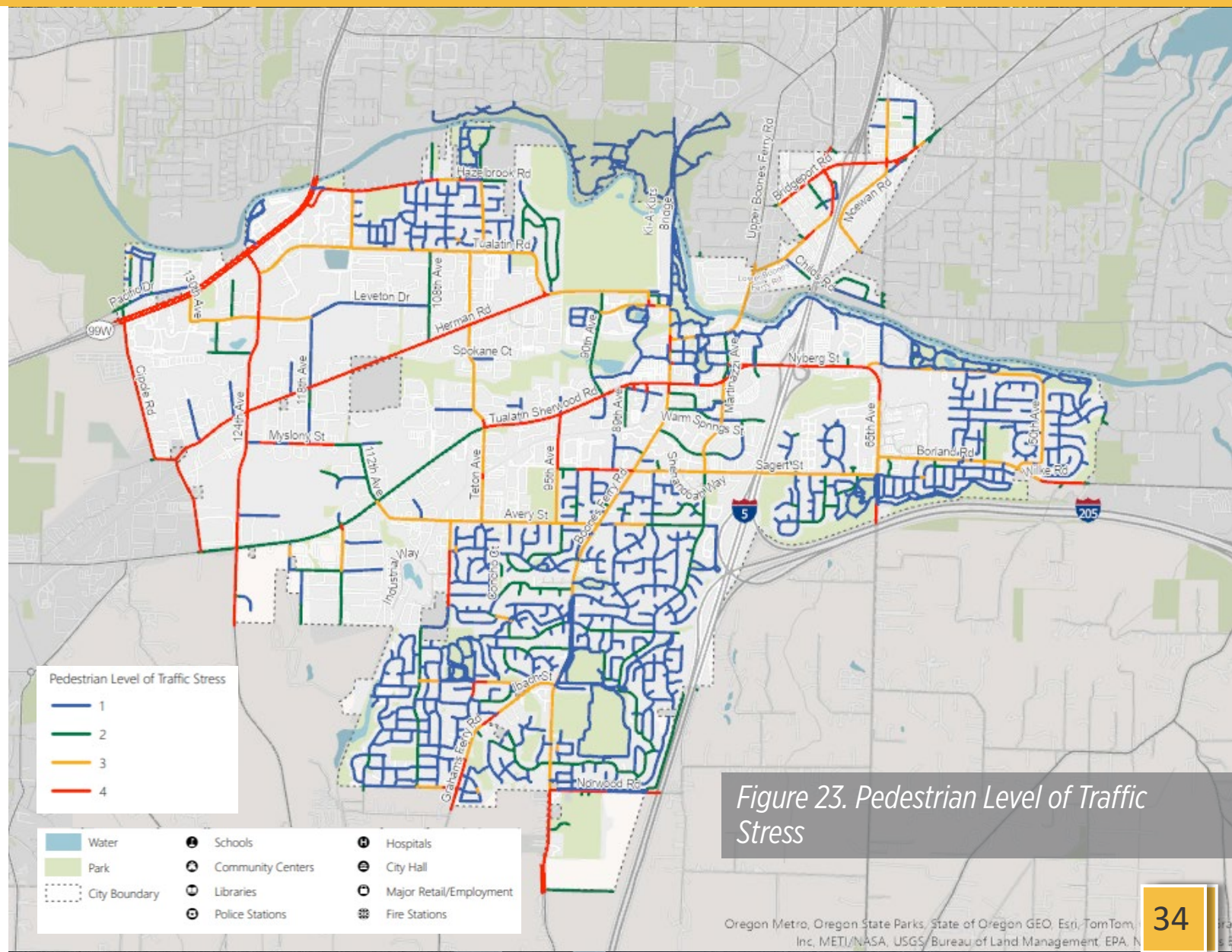


Figure 23. Pedestrian Level of Traffic Stress

Bicycle System



While Tualatin does have an extensive off-street trail system, it lacks connectivity which limits users' ability to travel around the city on it.

Tualatin has begun to build more and more buffered bike lanes (dark blue) though gaps remain.

One challenge facing Tualatin's bicycle network is I-5. Today, there are only two on-street bike lanes that connect bicyclists across the freeway.

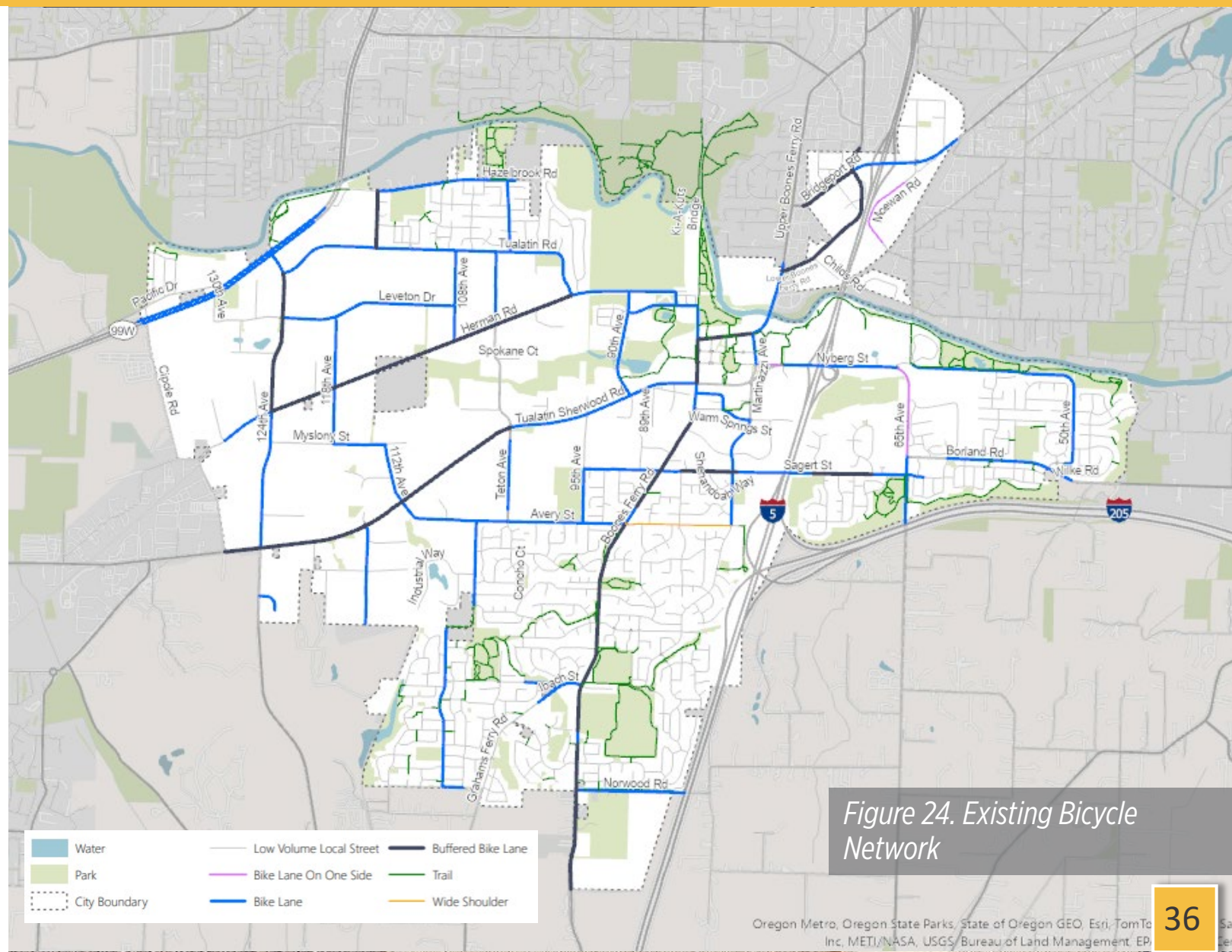
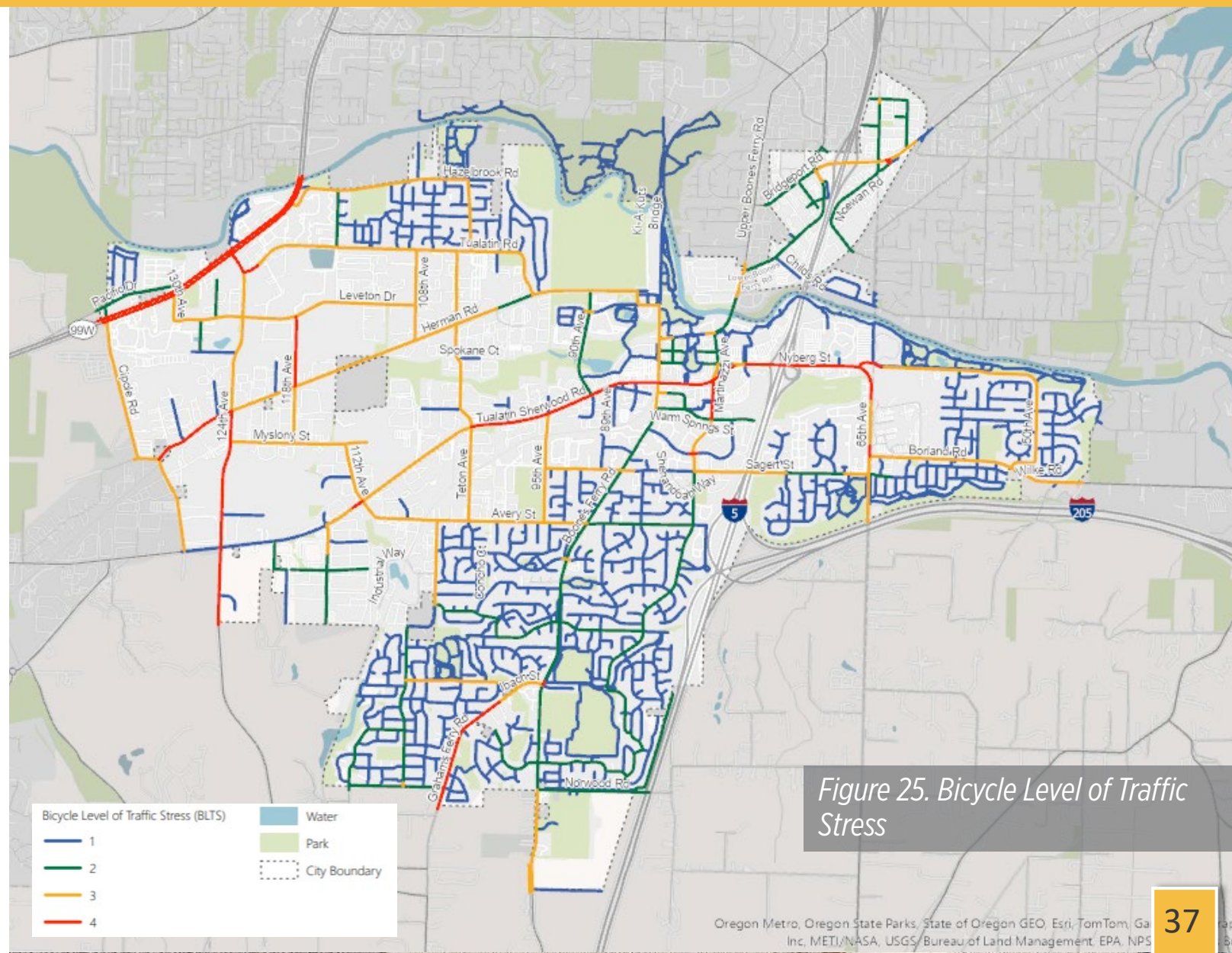


Figure 24. Existing Bicycle Network

LTS was also used to evaluate which bicycle facilities feel the most comfortable for bicyclists in Tualatin today and where bicyclists may choose to avoid or may experience high levels of stress when riding.

Today, streets in most residential areas offer comfortable cycling, except in neighborhoods near 99W and the Bridgeport area.

While most collectors and arterials include bike facilities, they are stressful for most riders (BLTS 3-4), including on roadways in downtown Tualatin and near many schools. These multi-lane streets with BLTS 3 and 4 often create barriers between neighborhoods.



edEx

Ground

Freight

Understanding which routes are designated for freight travel will play an important role in improving travel for pedestrians and bicyclists within Tualatin, as roads with high volumes of large trucks can be some of the most stressful for these users.

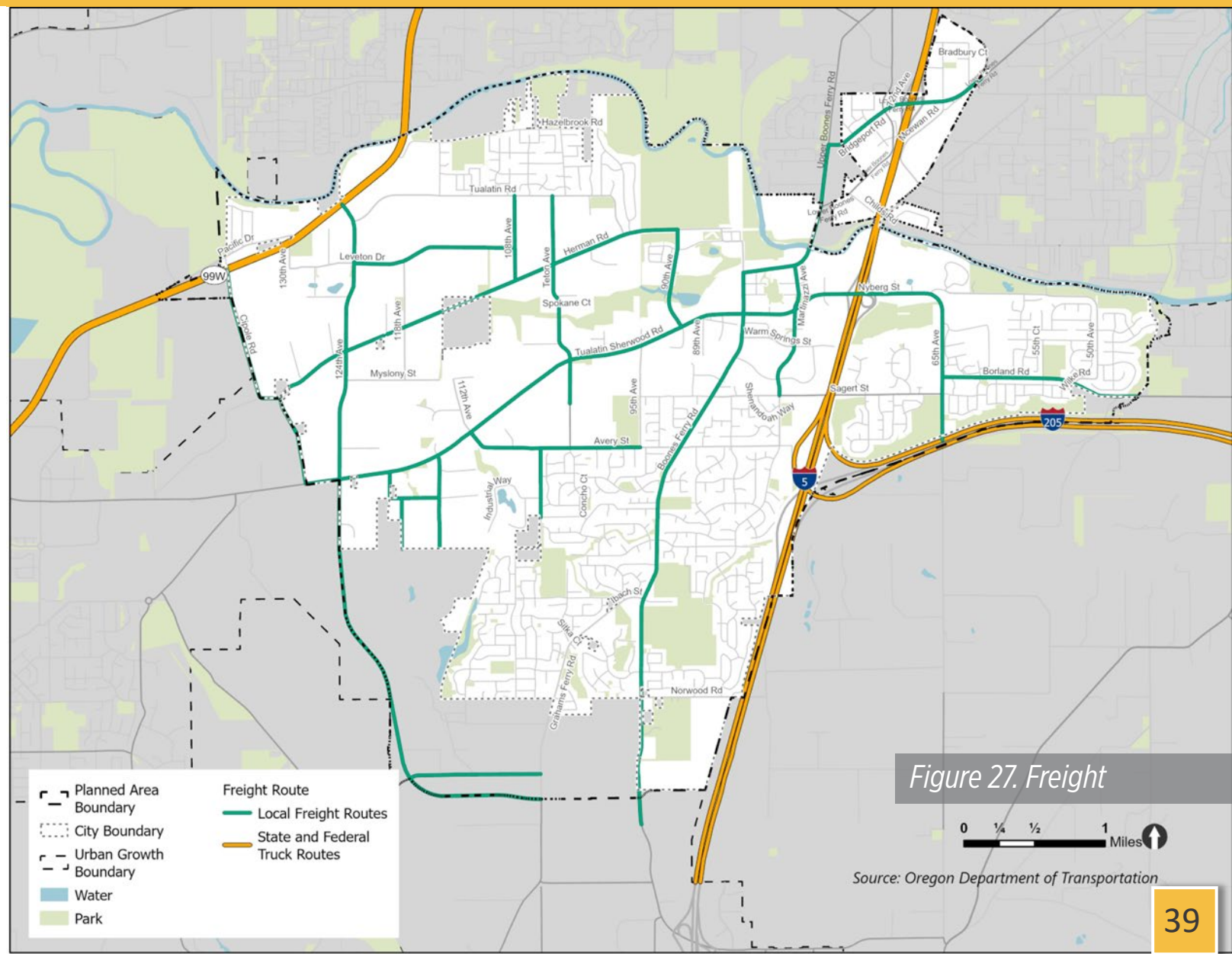


Figure 27. Freight

Source: Oregon Department of Transportation

Rail



As shown on the figure, there are multiple at-grade crossings throughout Tualatin, including at the Tualatin-Sherwood Road and Boones Ferry Road intersection, a key intersection for vehicle travel in Tualatin.

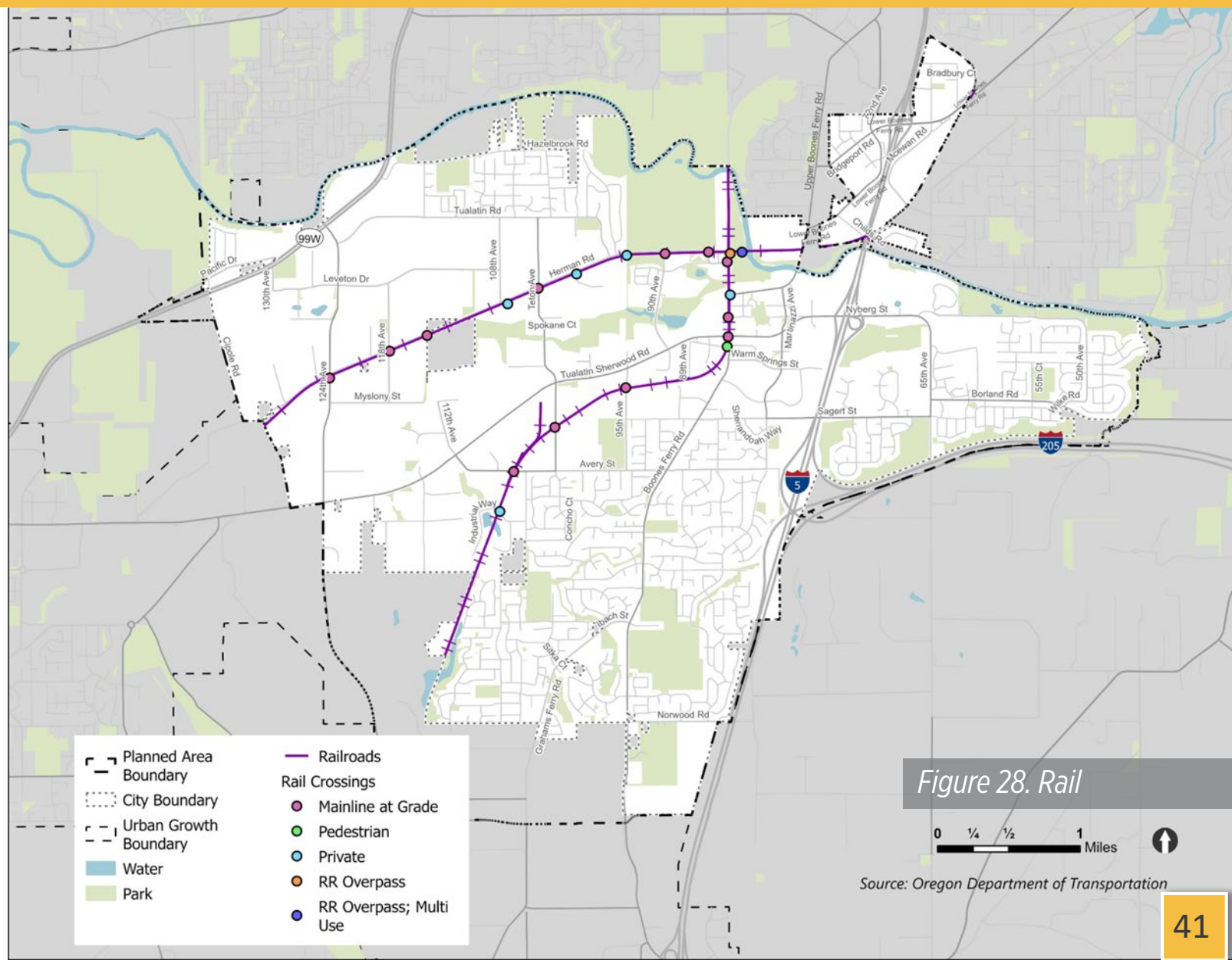


Figure 28. Rail

Source: Oregon Department of Transportation

Air



While there are no airports in Tualatin, residents have access to five nearby airports, listed in the table below.

Airport	Distance from Tualatin (mi)	Service Area	Service Type	Airport Classification
Portland International (PDX)	16	International	Civil, Military	Commercial, Freight
Aurora State (UAO)	10	State	Civil	Public
Portland – Hillsboro (HIO)	15	National	Flight School, Civil	Corporate
Portland – Troutdale (TTD)	21	National	Flight School, Civil	Corporate
Pearson Field (VUO)	27	Municipal	Civil	Public

Environmental Resources

The City of Tualatin boasts several natural resources:

- The **Tualatin River** flows north of the city and connects to the Tualatin River Greenway Trail providing a scenic place for people to walk, bike, or roll.
- The **Tualatin Commons Park** is home to the **Tualatin Lake at the Commons**, a 3-acre lake surrounded by a plaza.
- The **Tualatin Community Park** features a dog park, skateboarding, picnic areas, a softball field, and a boat ramp to the Tualatin River.
- **Jurgens Park** has a dog park and soccer fields.
- **Tualatin Island Greens** is a golf driving range and putting green.
- **Ibach Park, Little Woodrose Natural Area, and Lafky Park** are small parks in the southern part of the city.

Protecting these areas while building out a well-connected transportation system can be challenging. As this TSP explores options to improve transportation in Tualatin, consideration should be given to the impact and potential cost of improving infrastructure in these areas.

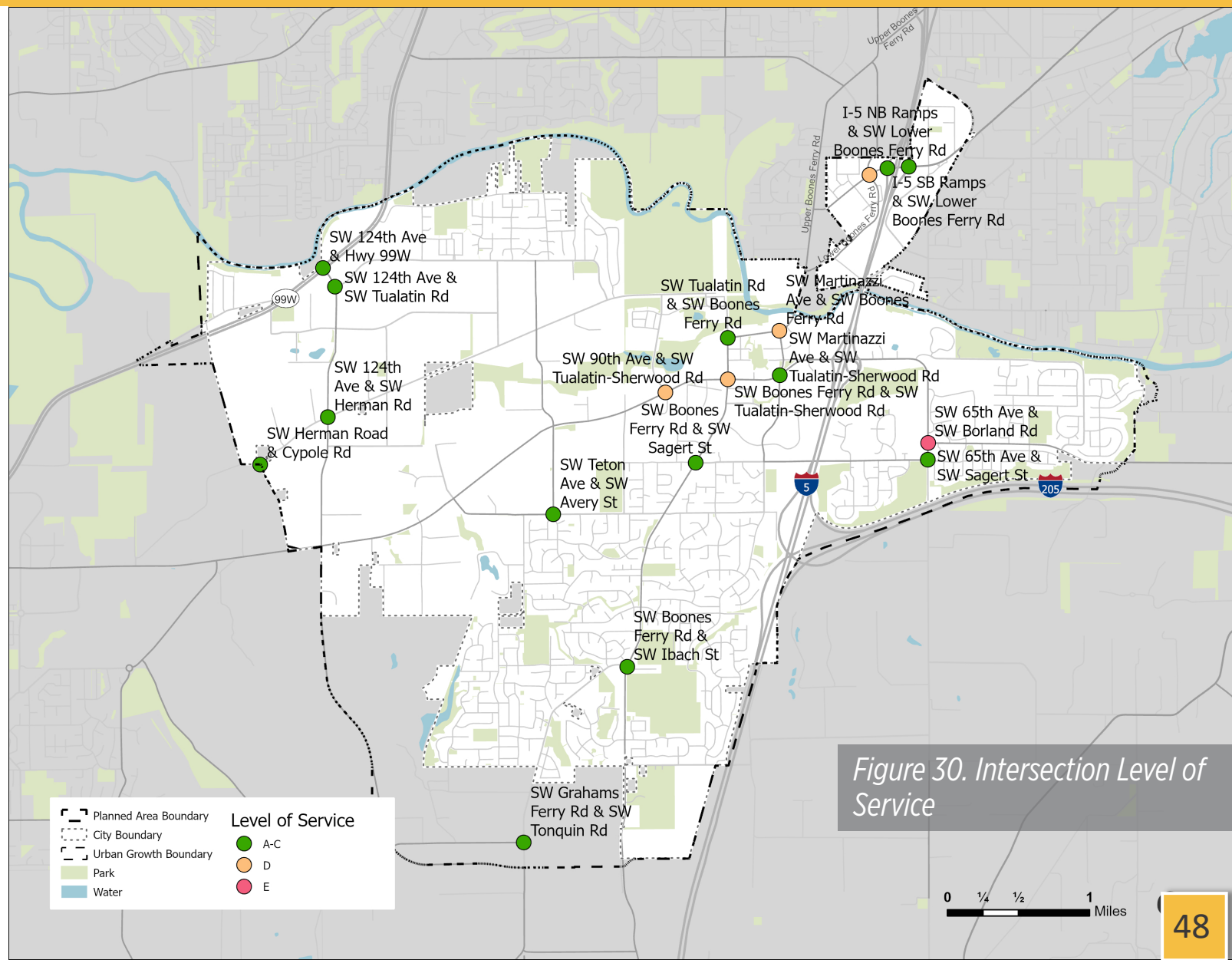


Operations and Safety



To establish a baseline for how Tualatin's transportation system operates today, intersection Level of Service (LOS) was evaluated at key intersections throughout Tualatin using traffic counts collected in Fall 2023 and existing roadway and intersection geometries.

While most intersections in Tualatin operate at LOS C or better, indicating there is minimal congestion, intersections on Lower Boones Ferry Road, Tualatin-Sherwood Road, and SW 65th Avenue were found to operate at LOS D and E. This indicates that congestion that results in queueing and higher levels of delay is occurring in these areas.

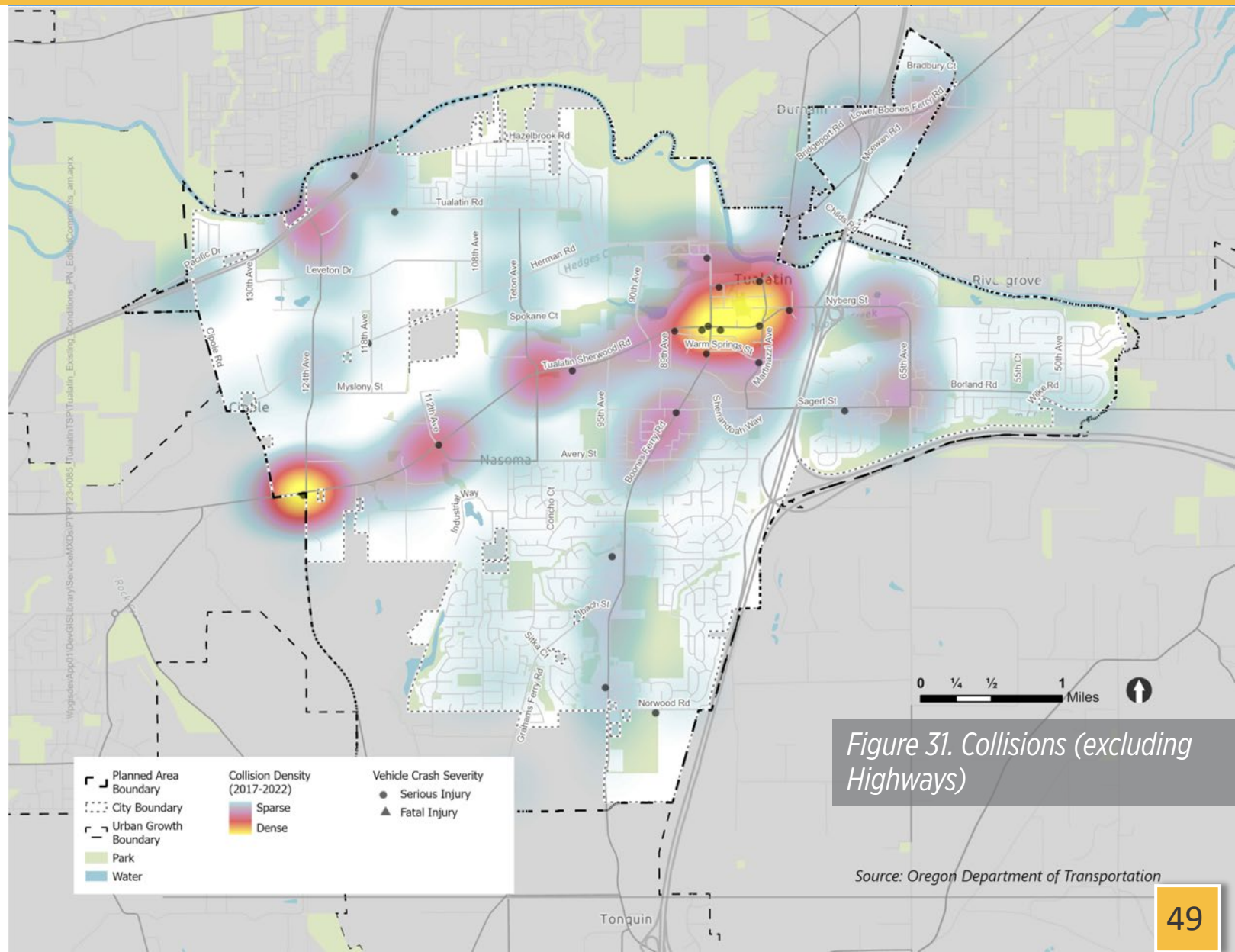


One indicator of roadway safety is the number of collisions and severity of collisions that occur.

To understand recent trends in Tualatin, five years of collision data was analyzed.

This analysis found the highest concentration of collisions occurs on Tualatin-Sherwood Road with hot-spots near downtown and 124th Avenue.

This was also true for serious injury collisions, with most of those occurring on Tualatin-Sherwood Road or Boones Ferry Road near downtown.



Five years of collision data were analyzed to identify potential hot spots for collisions involving a bicycle or pedestrian.

Of the 2,264 reported collisions in Tualatin within the past five years, 43 collisions (1.9%) involved a pedestrian or bicyclist. Approximately 70% of these occurred at intersections with at least one arterial roadway.

Both Tualatin-Sherwood Road and Boones Ferry Road showed higher numbers of bicycle or pedestrian collisions

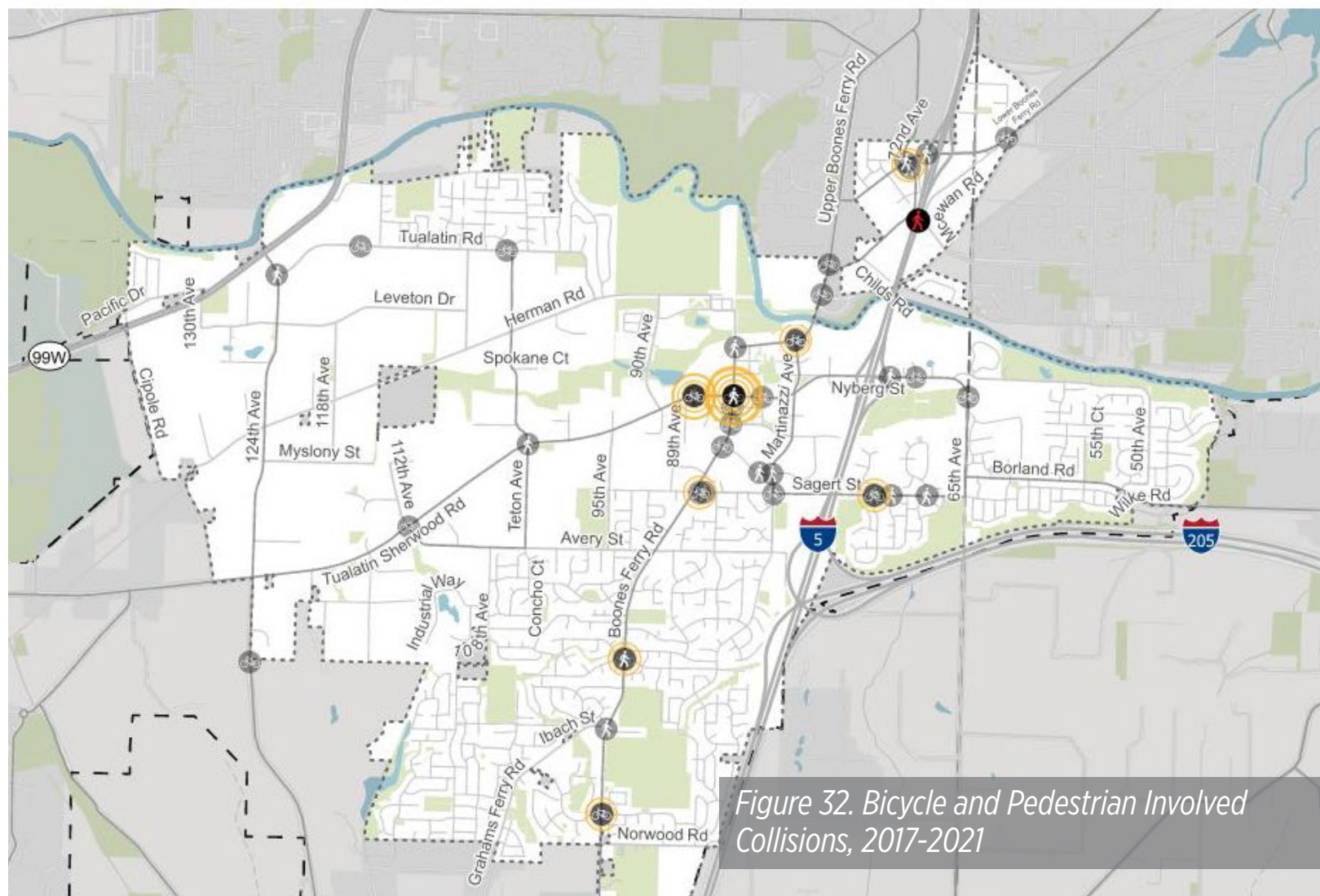








Figure 32. Bicycle and Pedestrian Involved Collisions, 2017-2021

Data source: Oregon Department of Transportation

-  Pedestrian Involved Fatality
-  Pedestrian Involved
-  Bicyclist Involved

-  Water
-  Park
-  City Boundary

-  County Boundary
-  Urban Growth Boundary
-  Metro Boundary

-  2
-  3
-  5

Multiple Crash Locations (Bicyclists & Pedestrians)