DRAFT

FEHR PEERS

Memorandum

Date: February 18, 2025

To: City of Tumwater

From: Siddharth Sivakumar & Daniel Dye, Fehr & Peers

Subject: City of Tumwater Existing Transportation Conditions

TC24-0105

The City of Tumwater is in the process of updating the Transportation Master Plan (TMP) of its Comprehensive Plan with a planning horizon of 2045. The purpose of this update is to guide transportation investments over the next two decades in alignment with the community's vision and objectives. The overarching goal is to integrate a multi-modal transportation system that addresses the needs of both current and future transportation system users. This memorandum describes Tumwater's existing transportation infrastructure and identifies challenges and opportunities for improvement.

Existing Transportation Plans

The City of Tumwater has adopted a handful of city-wide transportation plans since the 2036 Transportation Master Plan (TMP) was published in 2016. Important plans are discussed in further detail below. In addition to these, plans such as the Old Highway 99 Corridor Study (2024), Tumwater Brewery District Plan (2020), Capitol Boulevard Corridor Planning Project (2014), Littlerock Road Subarea Plan (2018), Black Hills Subarea Transportation Plan (2002), Town Center Street Design Plan (2004 - Amended 2019), the Parks, Recreation and Open Space Plan (2016), and other agency plans such as Intercity Transit's Strategic Plan 2023-2028 (2022) will also be considered in the development of the project list for the 2045 TMP Update.

Transportation Master Plan

The 2036 TMP serves as a guide for the improvement and expansion of the transportation system to meet the demands of future growth based on analysis completed in 2016. In addition to laying out Tumwater's future transportation vision and goals, it outlines a list of transportation projects that respond to identified needs.

Transportation Improvement Plan

The City of Tumwater also updates its 6 Year Transportation Improvement Plan (TIP) every year, as required by state law. The TIP, most recently published for 2024-2029[1], is informed by the TMP, identifies near-term improvements to the transportation network, and allocates funding for each year. The TIP is designed to provide a framework for prioritizing, scheduling, and implementing transportation projects in the near term. These projects include corridor and intersection improvements, investments in active transportation infrastructure, traffic calming programs, and maintenance.

Brewery District Plan

The Brewery District Plan, originally adopted in 2014 and amended in 2020, aims to guide development that will improve transportation safety and access in the triangle of roads formed by Custer Way, Cleveland Avenue, and Capitol Boulevard. The plan has four goals:

- Create a stronger sense of place by facilitating pedestrian access, establishing gathering places for residents, and fostering a distinct District identity
- Improve transportation options, safety, and access within and across the District
- Expand economic opportunity and activity
- Improve the function and appearance of the built environment

Capitol Boulevard Corridor Plan

The Capitol Boulevard Corridor Planning Project was adopted in 2015. Its goal is to make improvements to Tumwater's most traveled street, between the Southgate Shopping Center area and Israel Road. The project has three main goals:

- Improve the business climate and conditions
- Improve safety and expand transportation options for all users of the corridor including pedestrians, bikes, and vehicles
- Improve the aesthetic appeal of the corridor as a whole

Strategic Priorities and Council Goals

[1] https://mccmeetingspublic.blob.core.usgovcloudapi.net/tumwater-meet-b66e9b21a3d644ca94004d50516d56c2/ITEM-Attachment-001-7abf94b8cbff457da5c5f05e7cdd77f4.pdf

The City of Tumwater developed a list of priorities that were adopted with the 2023-2024 Biennial Budget. The City intends to create and maintain a transportation system that is safe for all modes of travel. To accomplish this, Tumwater hopes to achieve the following goals:

Create and Maintain a Transportation System Safe for All Modes of Travel

- Continue implementation of the Capitol Boulevard Plan.
- Implement transportation components of the Brewery District Plan.
- Continue to improve maintenance and interconnectivity of a bicycle and pedestrian system.
- Continue implementation of and evaluate new funding sources for the Sidewalk Program.
- Update Transportation Impact Fee Program and Transportation Plan.
- Provide a safe, efficient, and cost-effective transportation system.
- Continue improving the maintenance of the transportation system.
- Demonstrate the importance and impact of the Transportation Benefit District.
- Explore opportunities to extend multimodal transportation facilities to areas of the City outside the urban core

Thurston Regional Planning Council Regional Transportation Plan

Tumwater's long-range transportation planning must be consistent with the Regional Transportation Plan (RTP) which is developed by the Thurston Regional Planning Council (TRPC). The RTP is currently being updated, the following information is based on the 2020 RTP.

Tumwater collaborates with TRPC to reach agreement on LOS standards, peak periods, and transportation system goals. The RTP is the long-range transportation plan and is adopted every four years. The RTP defined the following Tumwater projects that impact the movement of people and vehicles at the regional scale. Projects pertaining to Tumwater identified in Appendix L of the plan include the following:

- Capacity projects (including multimodal improvements)
  - Capitol Boulevard – M Street to Israel Road
  - Henderson Boulevard corridor
  - Old Highway 99 improvements
  - Tumwater Boulevard interchange
- New connections and alignments

- E Street extension
- Tyee Drive extension

Thurston Regional Trails Plan

Adopted in 2023, the Thurston Regional Trails Plan intends to establish a comprehensive, well-connected non-motorized trail network that links all communities in the region. Trails connect people to the outdoors, destinations such as Brewery Park, and economic opportunity. The completion of the 0.8-mile segment of the Deschutes Valley Trail between Historical Park and Brewery Park at Tumwater Falls was the most recent milestone in the regional trail network. The following trail corridors, extensions, and system enhancements are included in the Regional Trails Plan:

- Capitol Lake to Belmore Trail Corridor
  - Black Lake Trail - conceptual (20+ years)
- Deschutes Valley Trail Corridor
  - Tumwater Valley Drive extension – planned (2026)
  - Pioneer Park extension - planned (20+ years)
- Tumwater to Downtown Olympia Union Pacific Line Corridor
  - East Olympia Trail - conceptual (20+ years)
  - BPA Shared Use Path – conceptual (20+ years)
- Karen Fraser Woodland Trail Corridor
  - Olympia Phase 4 extension, Henderson to Tumwater – planned (20+ years)

Transportation Network Overview

Tumwater's transportation network accommodates many modes of travel, including walking, bicycling, rolling, public transit, freight, and driving. Vehicular travel is the primary mode utilized for most travelers in and around Tumwater, and the roads must accommodate both local trips and regional travelers passing through. This is captured by the commuting data made available by the American Community Survey, 2023. Compared to 2018 when 5.4% of commuters worked from home, 23% of commuters worked remotely in 2023. Although work-based trips generally have a higher proportion of drive alone trips (66%) compared to other trip purposes, only 6% of commuters choose carpooling, which is indicative of larger trends in mode choice and mobility. About 2% of commuting trips were made by foot and less than 1% by bike. The City of Tumwater has made significant investments in multimodal transportation, but gaps in connectivity still exist for non-vehicular modes. This section documents how Tumwater's roads and streets serve different modes, and how residents and visitors experience the city.

Transportation facilities in Tumwater include state highways, city streets, sidewalks, bike lanes, trails, freight routes, rail, and public transportation facilities and services. A comprehensive inventory of all transportation facilities provides a sound basis for effective planning. The City maintains

inventories of transportation facilities that include the street system, pedestrian facilities, bicycle facilities, and transit facilities.

This plan classifies Tumwater's roadways into major and minor arterials, major and minor collectors, and local streets, as shown in **Table 1** and displayed in **Figure 1**. Examples of each roadway type and the intended uses served are described below.

Table 1: Functional Classification of Roadways

Functional Classification	Average Annual Daily Traffic (AADT) Range	Description	Examples
Major Arterial	13,000 >	These streets have the highest functional classification and tend to carry the highest volumes. Major arterials serve regional through trips and connect Tumwater with the rest of the region.	Capitol Boulevard SE, Tumwater Boulevard
Minor Arterial	5,000 – 13,000	The next highest functional classification, which are designed for higher volumes, but tend not to be major regional connectors. Minor arterial streets provide inter-neighborhood connections.	93rd Avenue SW, Littlerock Road SW
Major Collectors	3,000 – 5,000	Major Collectors distribute trips between local streets and arterials and serve as transition roadways to or from commercial and residential areas. These are higher volume collectors.	Barnes Boulevard, 88th Avenue SE
Minor Collectors	1,500 – 3,000	These streets also distribute trips between local streets and arterials and serve as transition roadways to or from commercial and residential areas. Minor Collectors have lower volumes and can include select traffic calming elements to balance experience for all modes with vehicular mobility.	Center Street SW, Mottman Road SW
Local	< 1,500	Local streets are the lowest functional classification, providing circulation and access within residential neighborhoods.	12th Avenue SW, Glenwood Drive SW

Source: Fehr & Peers, 2025.
Note: AADT ranges are only one consideration when classifying roadways, other considerations include surrounding land uses, roadway usage, and access to property provided by each roadway.

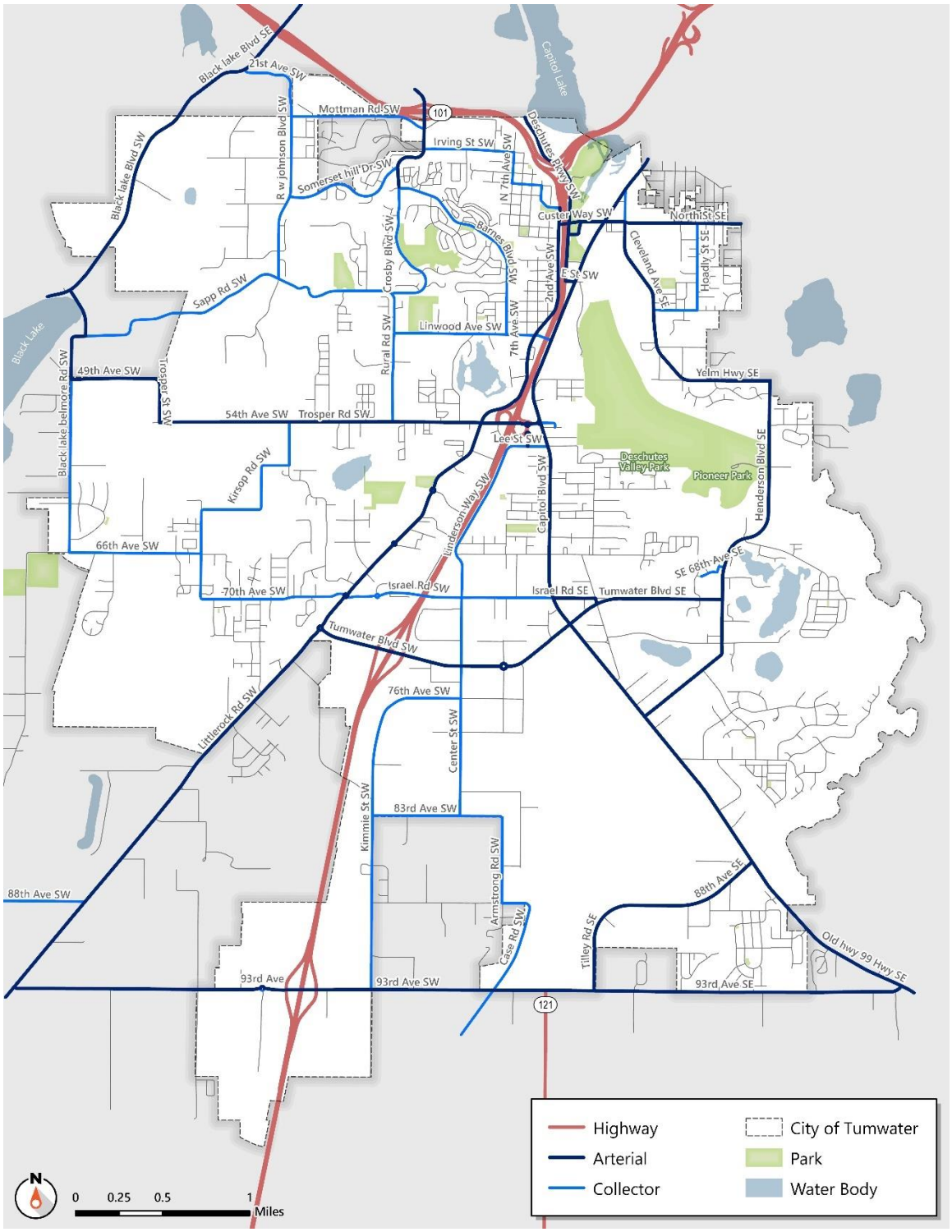

Figure 1: Roadway Classification

Source: Fehr & Peers, 2025.

Vehicle Congestion

As part of the Transportation Element update, traffic operations were assessed at 40 locations, including signalized, roundabout, and stop controlled intersections throughout Tumwater. These intersections are situated along critical junctions and corridors and were selected in consultation with City staff. All 40 study intersections were also evaluated as part of the 2016 Comprehensive Plan.

This section discusses the methodology and findings from the traffic operations analysis under existing conditions and evaluates how well the existing system may be serving both local and regional needs.

Delay and Level of Service

Intersection-level delay (measured in seconds per vehicle) and level of service (LOS) will be the primary measures of intersection performance for the traffic operations analysis.

The *Highway Capacity Manual* (HCM) defines delay as "delay brought about by the presence of a traffic control device including delay associated with vehicles slowing in advance of an intersection, the time spent stopped on an intersection approach, the time spent as vehicles move up in the queue, and the time needed for vehicles to accelerate to their desired speed."

LOS is a term that qualitatively describes the operating performance of an intersection and is a standard method for characterizing delay at an intersection. For signalized, roundabout, and all-way stop control (AWSC) intersections, the LOS is based on the average delay for all approaches. For two-way stop control (TWSC) intersections, the movement with the highest delay is used. LOS is reported on a scale from A to F, with A representing the lowest delays and F the highest. **Table 2** a brief description of each LOS letter designation based on the HCM, 6th Edition.

Table 2: Level of Service Descriptions

LOS	Description	Signalized Intersections / Roundabouts Avg. Delay (sec/veh)[1]	Unsignalized Intersections Avg. Delay (sec/veh)[2]
A	*Free Flow / Insignificant Delay* Extremely favorable progression. Individual users are virtually unaffected by others in the traffic stream.	< 10	< 10
B	*Stable Operations / Minimum Delays* Good progression. The presence of other users in the traffic stream becomes noticeable.	> 10 to 20	> 10 to 15
C	*Stable Operations / Acceptable Delays* Fair progression. The operation of individual users is affected by interactions with others in the traffic stream	> 20 to 35	> 15 to 25
D	*Approaching Unstable Flows / Tolerable Delays* Marginal progression. Operating conditions are noticeably more constrained.	> 35 to 55	> 25 to 35
E	*Unstable Operations / Significant Delays Can Occur* Poor progression. Operating conditions are at or near capacity.	> 55 to 80	> 35 to 50
F	*Forced, Unpredictable Flows / Excessive Delays* Unacceptable progression with forced or breakdown of operating conditions.	> 80	> 50

1. Overall intersection LOS and average delay (seconds/vehicle) for all approaches.
2. Worst movement LOS and delay (seconds/vehicle) only.

Source: Fehr & Peers, based on *Highway Capacity Manual 6th Edition*.

The existing level of service policy in the City of Tumwater sets the following standards:

- LOS E for intersections and segments within the designated urban core area
- LOS D for all other intersections and segments in the city

The Washington Department of Transportation (WSDOT) sets LOS standards for state-owned highways, including interchanges. WSDOT has established LOS D for state highways within Tumwater's urban area (and that of Olympia and Lacey) and LOS C for those outside of it.

The LOS standards applicable to each study intersection are noted in **Table 3**.

Traffic Operations Methodology

To understand traffic operations in the City of Tumwater, the project team utilized Synchro traffic operations analysis software. Analysts used 2024 as the baseline year for the existing conditions

analysis, and the analysis was carried out for the weekday PM peak hour (the highest volume hour between 4 PM and 6 PM). All study intersections are listed in **Table 2** and depicted in **Figure 2**.

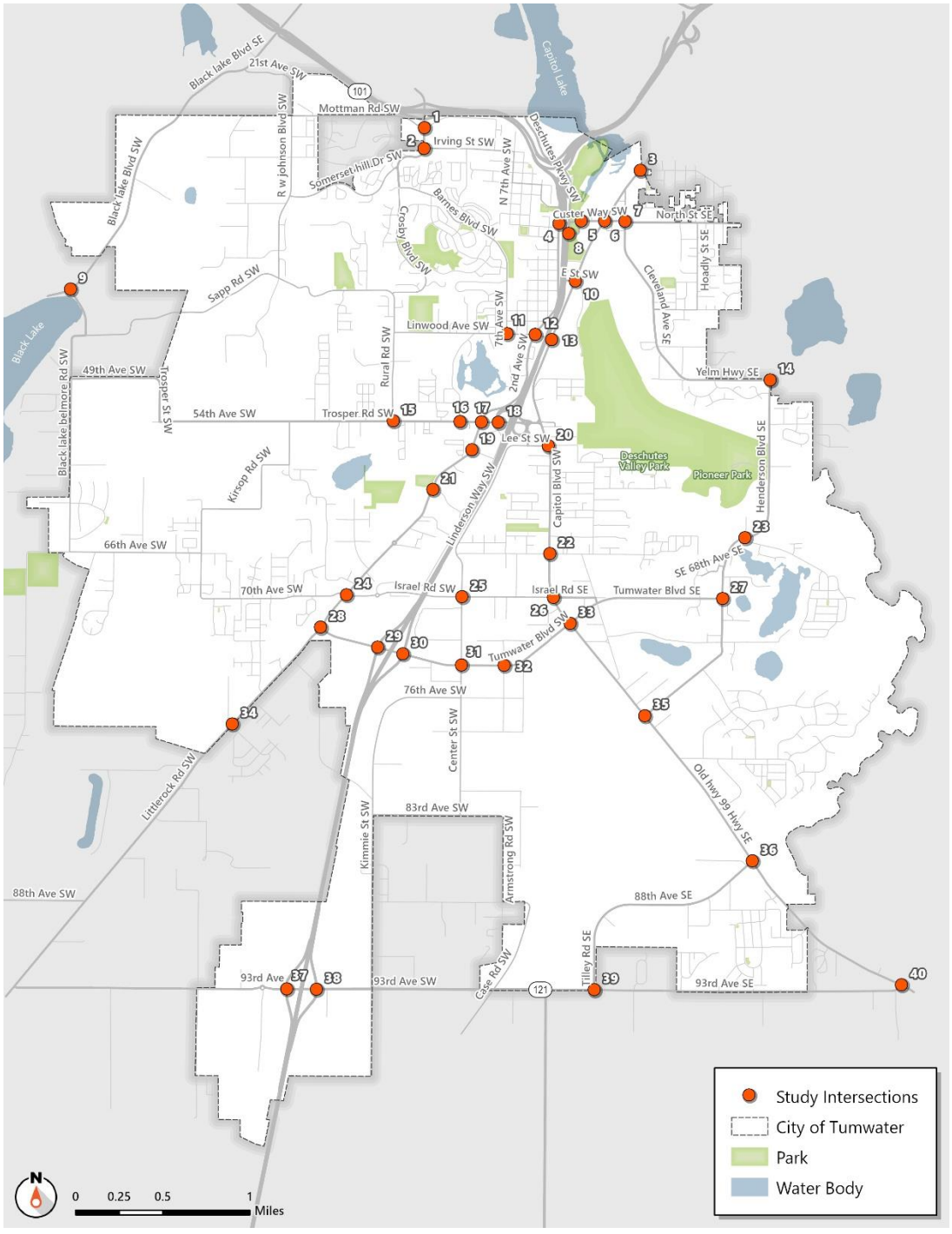

Figure 2: Study Intersections

Source: Fehr & Peers, 2025

Streetlight Data was used to obtain turning movement volumes for the 40 intersections. Streetlight Data is an online platform that retrieves and processes Connected Vehicles Data (CVD) to estimate turning movement volumes at intersections. Streetlight Data allows users to select date ranges, days of week, and hours of day, and produces outputs based on an aggregation and expansion of all CVD trips available in that range. It does not provide actual turning movement counts for a specific date and time but is a representative estimate of the typical traffic behavior expected in a date and time range. For the Streetlight turning movement volumes, data was aggregated for a period from February 1 to May 31, 2023, Tuesdays through Thursdays, 4 to 6 PM.

For the operations analysis, the peak hour factor (PHF) was calculated using data from the 40 intersections using Streetlight Volumes. The PHF measures variation of traffic demand and is the ratio of the average 15-minute count to the maximum 15-minute count in the peak hour. It is always less than 1, and a high PHF represents a traffic flow that is evenly distributed between the four 15-minute segments that make up an hour. Conversely, a low PHF represents a much higher peak 15-minute period, such as might occur near a school when many student pickups occur at the same time.

Conflicting pedestrian volumes were determined using count collected for the 2036 TMP, where available. Conflicting pedestrian volumes were assumed to be 5 per hour for any movements where counts were not available, or where counts were less than 5 pedestrians per hour. However, this was only assumed for approaches that had signed pedestrian crossings. Any unsigned approaches without counts were assumed to be zero.

Heavy vehicle percentages were also obtained from the 2036 TMP counts, where available. If they were not available, surrounding intersections were used to determine an average that could be used to supplement missing counts.

Traffic Operations Analysis Results

The results of the operations analysis are shown in **Table 3** and **Figure 3**.

Table 3: Intersection Delay and Level of Service

#	Intersection Name	Control	HCM Version	LOS (2015) / Delay (sec/veh)	LOS (2024) / Delay (sec/veh)
1	Crosby Blvd / Mottman Rd	Signal	2000	B/16	C/26
2	Crosby Blvd / Irving St	Signal	2000	B/11	A/10
3	Capitol Blvd / Carlyon Ave / Sunset Way	Signal	2000	B/10	B/13
4	2nd Ave / Custer Way	Signal	2000	B/15	**E/61**
5	Custer Way / Boston St	TWSC	6th	D/30	**E/42 (WBL)**
6	Custer Way / Capitol Blvd	Signal	6th	D/39	C/23
7	Custer Way / North St / Cleveland Ave	Signal	2000	D/48	C/23
8	Deschutes Way / Boston St	AWSC	6th	D/29	**F/86**
9	Black Lake Blvd / Black Lake Belmore Rd	TWSC	6th	**E/37**	D/27 (WBL/WBR)
10	Capitol Blvd / E St	Signal	6th	C/23	B/10
11	7th Ave / Linwood Ave	TWSC	6th	C/18	**E/43 (SBL/SBT/SBR)**
12	2nd Ave / Linwood Ave	AWSC	6th	C/25	D/32
13	Capitol Blvd / Linwood Ave	Signal	6th	B/17	B/12
14	Henderson Blvd / Yelm Hwy	Signal	6th	D/49	D/46
15	Rural Rd / Trosper Rd	TWSC	6th	C/16	B/15 (SBL)
16	Lake Park Dr / Trosper Rd	Signal	6th	B/14	A/4
17	Littlerock Rd / Trosper Rd	Signal	2000	D/42	D/40
18	I-5 SB Ramps / Tyee Dr / Trosper Rd	Signal	2000	D/45	D/41
19	Littlerock Rd / Costco Drwy	Signal	6th	A/8	D/37
20	Capitol Blvd / Lee St SW	Signal	6th	C/24	**F/88**
21	Littlerock Rd / Kingswood Dr	RAB	SIDRA HCM	A/6	A/3
22	Capitol Blvd / Dennis St	Signal	6th	B/12	B/15

#	Intersection Name	Control	HCM Version	LOS (2015) / Delay (sec/veh)	LOS (2024) / Delay (sec/veh)
23	65th Ave SE / Henderson Blvd	Signal	6th	A/7	A/7
24	Littlerock Rd / Israel Rd / 70th Ave	RAB	SIDRA HCM	A/9	A/7
25	Linderson Way / Israel Rd	Signal	6th	B/17	C/23
26	Capitol Blvd / Israel Rd	Signal	6th	C/22	C/32
27	Tumwater Blvd / Henderson Blvd	Signal	6th	C/34	D/37
28	Littlerock Rd / Tumwater Blvd	RAB	SIDRA HCM	A/8	A/5
29	I-5 SB Ramps / Tumwater Blvd	Signal	6th	B/12	C/23
30	I-5 NB Ramp / Tumwater Blvd	TWSC	6th	**F/106**	**F/163 (NBL/NBT)**
31	Linderson Way / Tumwater Blvd	Signal	6th	C/35	C/28
32	New Market St / Tumwater Blvd	RAB	SIDRA HCM	A/4	A/3
33	Capitol Blvd / Tumwater Blvd	Signal	6th	D/36	C/25
34	Littlerock Rd / Black Hills School Drwy	Signal	6th	A/3	B/11
35	Old Hwy 99 / Henderson Blvd	Signal	6th	B/13	B/11
36	Old Hwy 99 / 88th Ave	Signal	6th	A/9	B/12
37	I-5 SB Ramps / 93rd Ave	Signal	6th	B/20	B/14
38	I-5 NB Ramps / 93rd Ave	TWSC	6th	B/12	A/5
39	93rd Ave / Tilley Rd SW	TWSC	6th	B/14	**F/66 (NBL/NBR)**
40	Old Hwy 99 / 93rd Ave	TWSC	6th	C/18	**E/47 (NBL)**

Notes:
Intersections in **bold** do not meet their LOS threshold.
TWSC intersections have the worst movement noted in parentheses.
Abbreviations: AWSC – All Way Stop Control, TWSC – Two Way Stop Control, RAB – Roundabout
Source: Fehr & Peers, 2025.

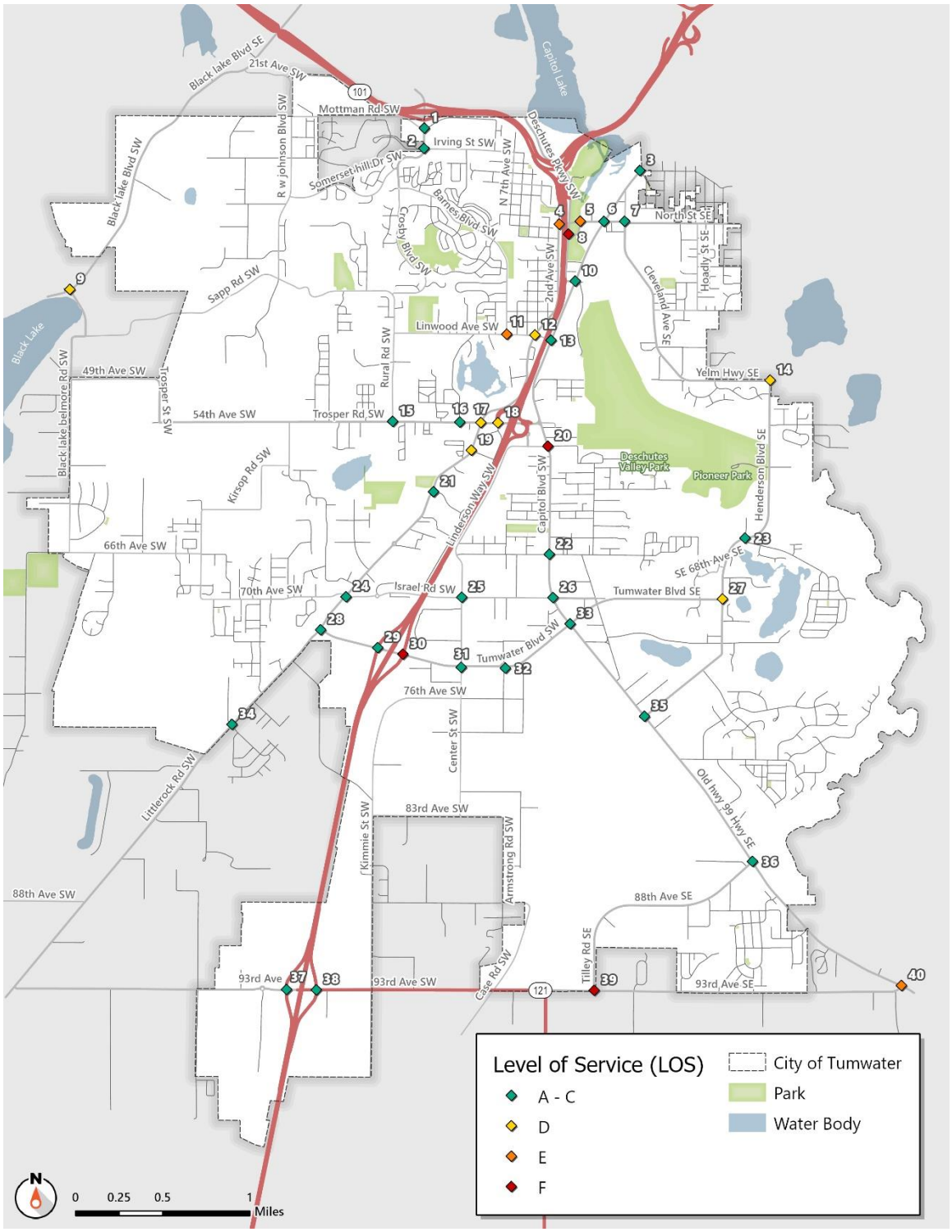

Figure 3: Intersection Level of Service

Source: Fehr & Peers, 2025

Out of the 40 intersections analyzed, four were failing based on the City's adopted LOS standards in 2024 (both stop controlled). Of these, the stop-controlled intersection of I-5 NB Ramp with Tumwater Boulevard is of particular concern since delays exceed 150 seconds. Additionally, there are four intersections nearing failure operating at a level of service E.

Segment Analysis

Ten roadway segments (as shown in

Table 4) were studied for their volume to capacity (v/c) ratio considering an LOS Standard of D. A value less than one indicates less volume compared to the theoretical capacity of a roadway operating at LOS D, while more than one indicates volumes over that theoretical capacity.

Other than Custer Way between Capitol Boulevard SW and North 2nd Avenue SW, all other segments were operating at an acceptable v/c ratio. This is consistent with intersection operations as both Custer Way / North 2nd Avenue SW and Custer Way / Boston Street both operate at LOS E. Additionally, the southbound direction of Old Highway 99 SE is nearing capacity.

Table 4: Volume / Capacity Ratios for select roadway segments

Road Segment	From	To	V/C Ratio NB	V/C Ratio SB	V/C Ratio EB	V/C Ratio WB
Deschutes Way	E Street SW	Boston Street SW	0.33	0.15	-	-
Custer Way	Capitol Boulevard SW	Cleveland Avenue SW	-	-	0.64	0.45
Custer Way	North 2nd Ave SW	Capitol Boulevard SW	-	-	**1.35**	**1.02**
Henderson Boulevard	Tumwater Boulevard SW	Yelm Highway SE	-	-	0.30	0.29
Cleveland Avenue SW	Custer Way	Yelm Highway SE	0.38	0.55	-	-
Old Highway 99 SE	Tumwater Boulevard SW	Henderson Boulevard SE	0.65	0.86	-	-
Old Highway 99 SE	Henderson Boulevard SE	88th Ave SE	0.62	0.91	-	-
Capitol Boulevard SW	Tumwater Boulevard SW	Linderson Avenue SW	0.38	0.42	-	-
Capitol Boulevard SW	Linderson Way SW	Linwood Way SW	0.26	0.31	-	-
Littlerock Road SW	Trosper Road SW	Kingswood Drive SW	0.30	0.35	-	-
Tumwater Boulevard	Capitol Boulevard SW	Linderson Way SW	-	-	0.36	0.52

Note: Segments in **bold** do not meet their LOS threshold. V/C Ratios were calculated based on the Florida Department of Transportation QLOS Handbook using peak hour directional capacities associated with a threshold LOS D for different lane numbers in a suburban residential context.

Active Transportation

Tumwater's pedestrian and bicycle network consists of sidewalks, trails, bike lanes, and shared use paths. Generally, sidewalks are available along many arterials, streets within the central business district, and in newer subdivisions. However, older residential areas often feature incomplete or poorly maintained sidewalks. Of 70 total sidewalk miles, about 47 percent – roughly 33 miles – are complete with pedestrian facilities on both sides of the street.

Bicycle infrastructure within the city primarily consists of bike lanes and shared-use trails. The Deschutes Valley Trail is a shared-use trail path that is planned to connect Pioneer Park to Capitol

Lake. Of 87 total miles of the Bike Network about 31 percent – roughly 27 miles – are complete with bike facilities on both sides of the street.

Tumwater classifies its active transportation network into primary and secondary routes, with other streets and facilities playing a vital role connecting neighborhoods to those networks.

- Primary Network: backbone of the system, offering direct connections to the majority of important community destinations. Primary Network routes are often the most attractive route in terms of convenience. Includes trails. Tumwater's Primary Pedestrian Network is 33.2 miles in total length and Primary Bike Network is 57 miles.
- Secondary Network: supportive role to Primary Network, providing system continuity by connecting segments of the Primary Network with on-street or off-street facilities. Secondary Network routes sometimes offer more comfortable routes on quieter streets, though the route may not be as direct as Primary Network routes. The City's Secondary Pedestrian Network is 36.8 miles in length and Secondary Bike Network is 30.3 miles in length.
- Other streets: the majority of streets, including residential neighborhood streets. Many have bicycle and pedestrian facilities, and most future streets will fall into this category as a result of updated street standards. Other Streets provide access to Primary and Secondary networks.

Despite pedestrian facility coverage on most arterials in the city, not all parts of the city are equally conducive to walking and biking due to land use patterns and the prevalence of residential-only neighborhoods in Tumwater. Bicyclists also encounter challenges navigating Tumwater's street network due to a lack of connectivity and shared-use paths. **Figure 4** provides the locations of pedestrian facilities and **Figure 5** shows bike lanes and trails in the city.

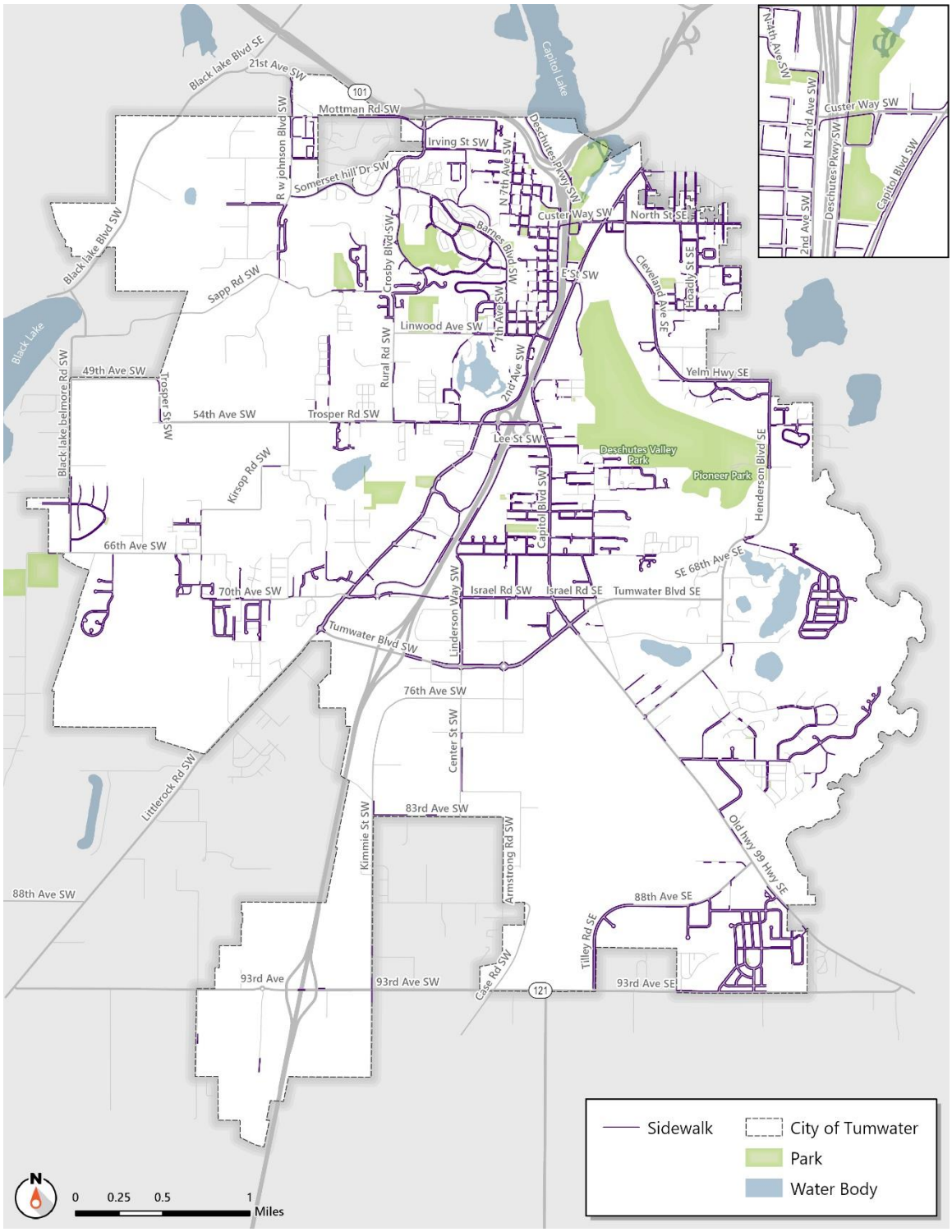

Figure 4: Existing Pedestrian Facilities

Source: Fehr & Peers, 2025.

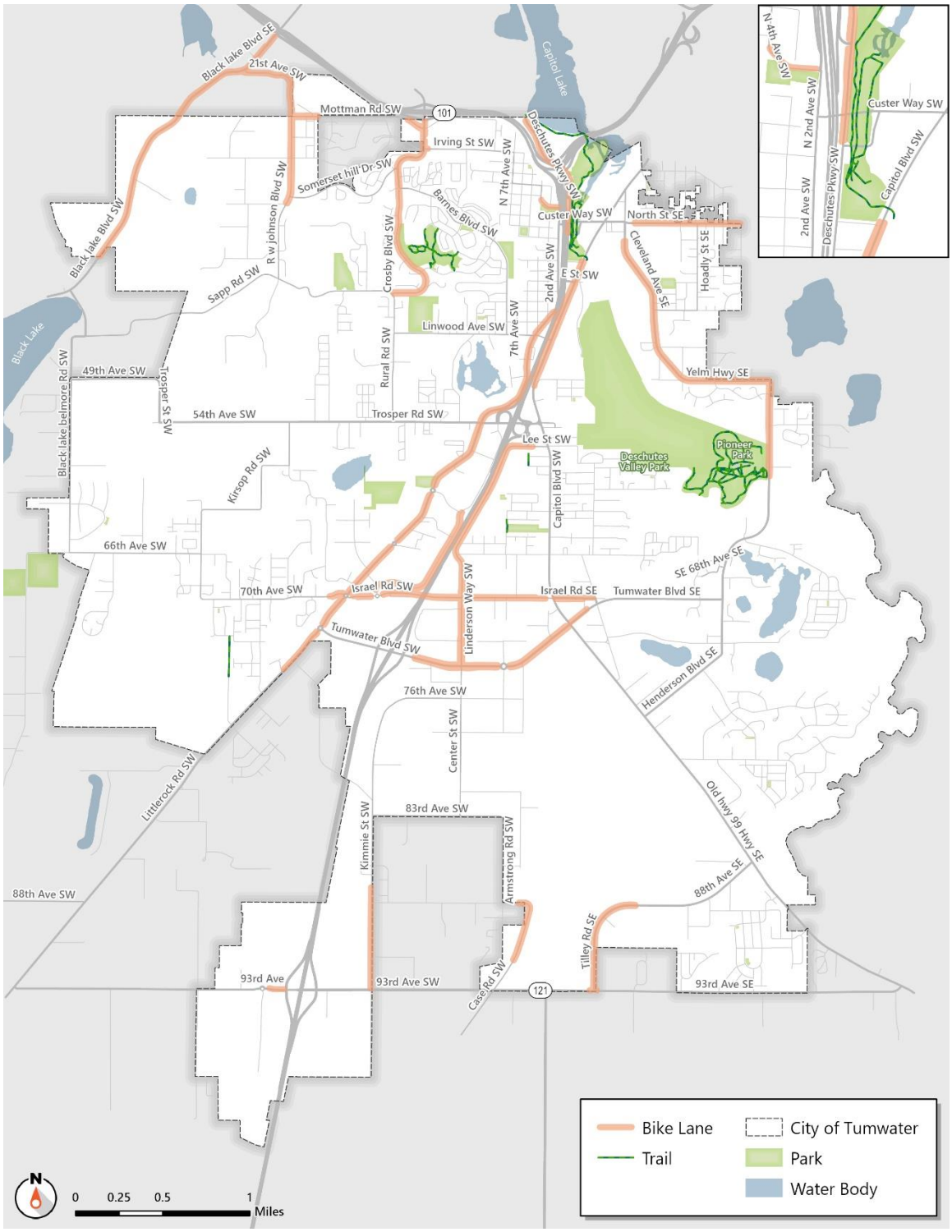

Figure 5: Existing Bicycle Facilities

Source: Fehr & Peers, 2025.

Level of Traffic Stress

Congestion and delay are how we measure vehicle level of service, but this is not an appropriate way to evaluate the system performance of active transportation facilities. The City recently adopted the use of multimodal level of service (MMLOS), which is a practical means of evaluating the adequacy of the non-motorized network with the potential for prioritizing needed investments. Tumwater is exploring ways to integrate MMLOS into its concurrency program.

Level of traffic stress (LTS) provides a quantifiable tool to gauge the comfort and safety of active transportation infrastructure. The lowest level of traffic stress is classified as LTS 1, where a wide range of users feel safe and comfortable. LTS 4 represents the highest level of traffic stress where most users feel uncomfortable and will likely not choose to walk or bike. **Figure 6** illustrates all four levels. Given that LTS levels for biking and walking are influenced by slightly different factors, the breakdown for bike LTS (BLTS) and pedestrian LTS (PLTS) varies slightly.

Figure 6: LTS Level Breakdown

Source: Fehr & Peers, 2025.

Pedestrian facilities in Tumwater consist of sidewalks and shared-use trails. PLTS is based on the roadway classification and presence of pedestrian facilities. **Table 5** illustrates the breakdown of PLTS values. **Figure 7** shows the PLTS throughout the City, with major arterials typically receiving PLTS 2 given the presence of sidewalks on both sides. Where there are no pedestrian facilities, PLTS 4 is assigned.

The PLTS value does not account for roadway crossing comfort, sidewalk quality, accessibility standards, or factors such as landscaping strips and greater horizontal separation from high-speed roadways. When designing pedestrian projects, developers and the City should consider these pedestrian comfort factors in addition to the presence or lack of sidewalks.

Table 5: Pedestrian Level of Traffic Stress Table

Roadway Classification	Pedestrian Facility			
	No Ped Facility	Sidewalk One Side	Sidewalk Both Sides	Separated Path/Trail
Local	4	2	1	1
Collector	4	2	2	1
Arterial	4	3	2	1

Source: Fehr & Peers, 2025.

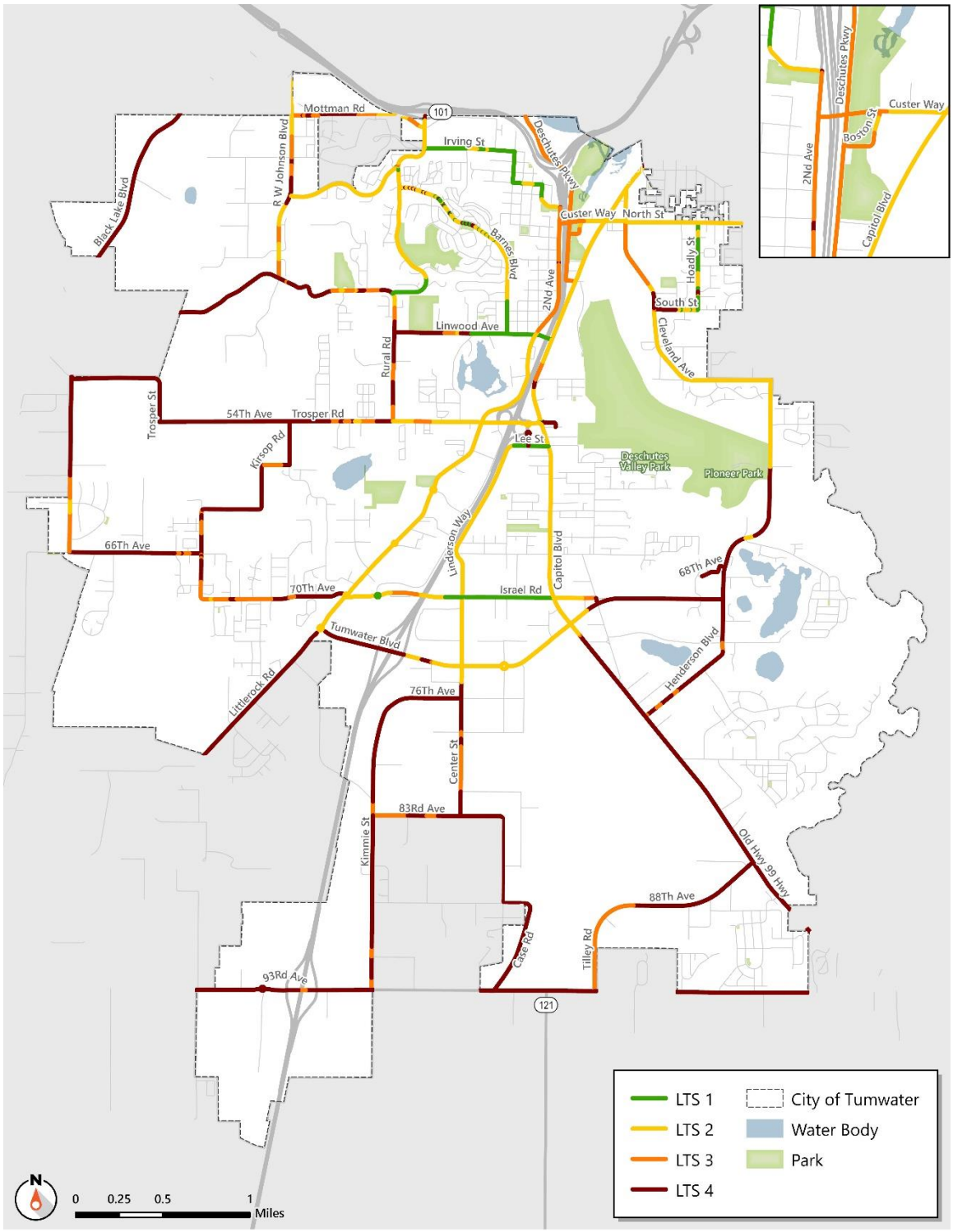

Figure 7: Existing Pedestrian Level of Traffic Stress

Source: Fehr & Peers, 2025.

The breakdown of the BLTS classifications is provided in Error! Reference source not found.. This breakdown incorporates factors such as speed limit, annual average daily traffic (AADT), and type of bicycle facilities. Although features like buffered bike lanes and separated bike lanes are largely absent in Tumwater today, they are included for future reference.

Facilities like shared-use paths consistently receive LTS 1, as they are entirely separated from the roadway and are not affected by vehicular traffic. Striped bike lanes, which are common in Tumwater, exhibit different LTS depending on the roadway speed limit and AADT. **Figure 8** demonstrates the LTS of bicycle facilities in Tumwater.

The LTS analysis pinpoints the gaps within both the bicycle and pedestrian networks. However, it is crucial to acknowledge that both PLTS and BLTS assessments lack considerations for factors such as maintenance, roadway crossings, and facility width, which are crucial in ensuring optimal user experiences. Thus, any formulation of future bike and pedestrian projects in Tumwater should use the PLTS and BLTS map as a reference and holistically address these additional considerations.

Table 6: Bicycle Level of Traffic Stress Table

Roadway Characteristics		Bicycle Facility Component					
Speed Limit (mph)	AADT	No Bicycle Facility	Wide Shoulder	Striped Bike Lane	Buffered Bike Lane (Horizontal)	Separated Bike Lane (Vertical)	Shared Use Path
25	<1,500	3	1	1	1	1	1
	1,500 – 7,000	3	2	2	2	1	1
	>7,000	4	2	2	2	1	1
30	<7,000	4	3	2	2	1	1
	7,000 – 15,000	4	3	3	2	1	1
	>15,000	4	4	3	3	2	1
35	<15,000	4	4	3	3	3	1
	>15,000	4	4	4	3	3	1
>35	Any	4	4	4	4	3	1

Source: Fehr & Peers, 2025.

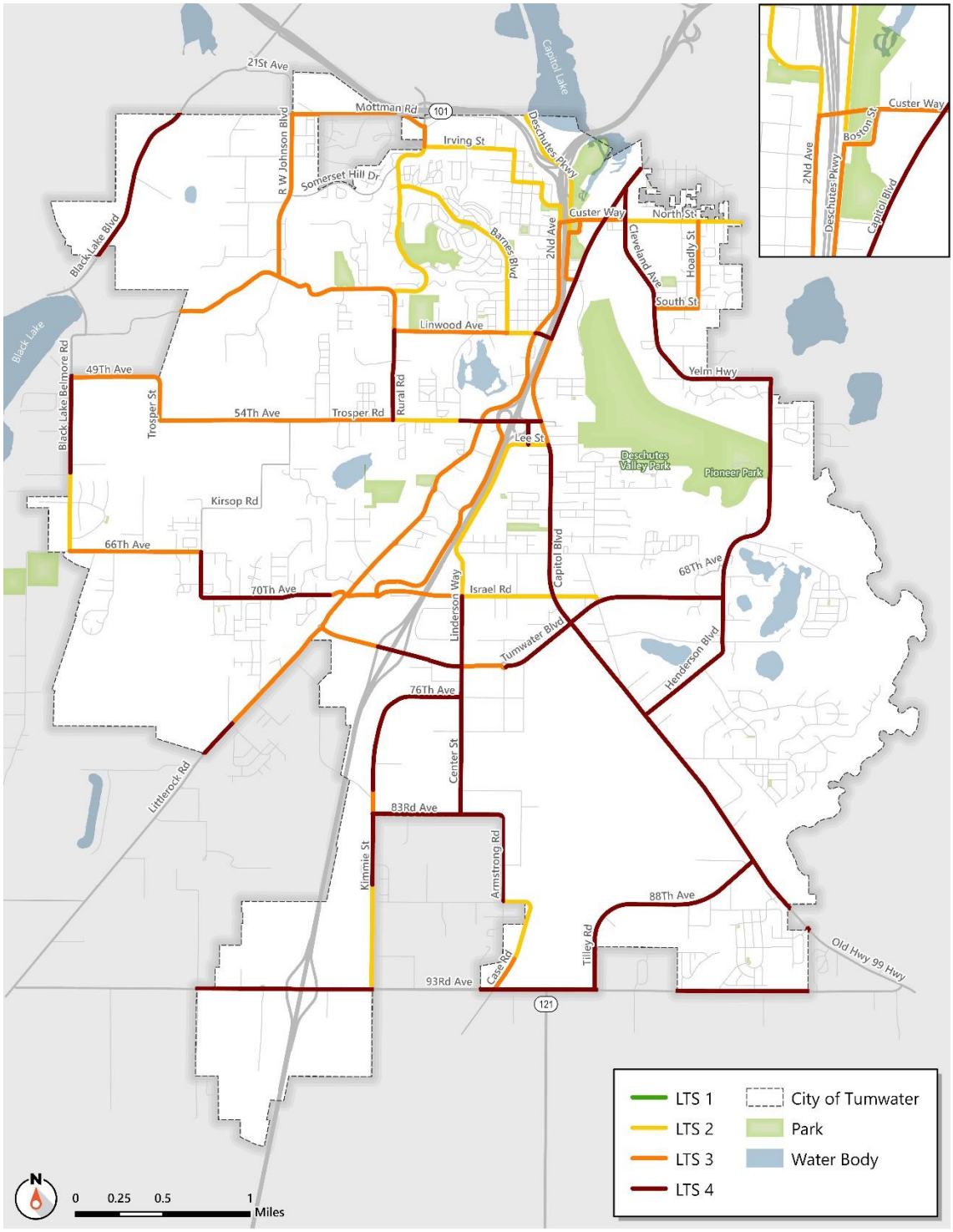

Figure 8: Existing Bicycle Level of Traffic Stress

Source: Fehr & Peers, 2025.

Transit Network

Intercity Transit (IT) provides transit service in Tumwater and is an important partner in meeting the city's mobility needs. IT operates 71 buses with 19 local routes in the Tumwater, Olympia, Lacey, and Yelm area. IT also operates five express routes to Lakewood and Tacoma, offering connections to Pierce Transit and Sound Transit.

Four local transit routes currently serve the Tumwater area (12, 13, 42, and 68) as shown in **Figure 9** below. Intercity Transit's routes cover distinct areas, including connecting Olympia Transit Center to Tumwater Square (13) and the State Department of Labor and Industries building (12, 13), connecting Lacey Transit Center to Tumwater Square (68), providing service to South Puget Sound Community College (12, 42, 68), and providing service to the Thurston County Family Court and Accountability and Restitution Center in Mottman Industrial Park (42). Routes 12 and 13 serve as high-frequency weekday service routes with 15-minute headways during peak commuting hours. Intercity Transit service to the state office buildings provides a critical component of the City's commute trip reduction strategy.

All IT buses are equipped with bike racks and all buses are ADA accessible. In addition, IT operates a complementary paratransit service called "Dial-A-Lift" (DAL) with 35 vans. IT also maintains an extensive Village Vans program with 150 active vans carrying hundreds of people each workday between work and home efficiently and cost-effectively. Tumwater's only park-and-ride lot, collocated with the Department of Health parking lot at the corner of Bonniewood Drive & Israel Road, closed in 2016. While Routes 12 and 13 still service this area, IT has not opened an alternate park-and-ride location in Tumwater.

Impacts of Covid-19 and service changes have impacted transit ridership within Tumwater. Intercity Transit has struggled to return to pre-Covid service levels and paused their expansion plans. In its 2023-2028 Transit Development Plan forecast, IT expects to restore nearly all fixed-route and DAL service that was reduced or suspended during the pandemic.

Tumwater supports Intercity Transit's strategic plans and continues to coordinate with the agency to identify how transit needs should be addressed. Transit will be prioritized as redevelopment occurs along the urban corridors and within the City's planning sub-areas.

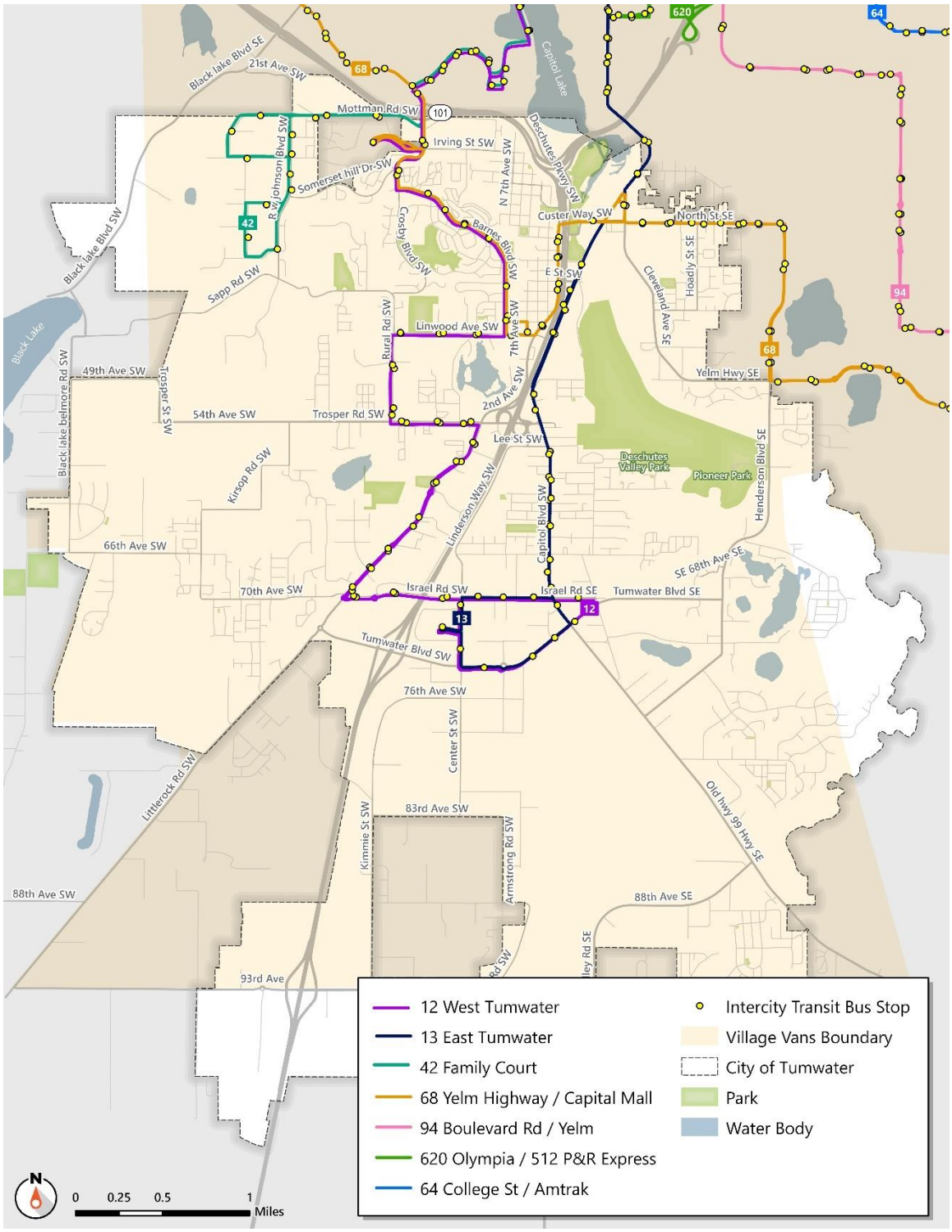

Figure 9: Existing Transit Facilities

Source: Fehr & Peers, 2025.

Freight and Truck Mobility

The Washington State Department of Transportation (WSDOT) employs a classification to designate strategic freight corridors within the state as part of the Freight and Goods Transportation System (FGTS). The classifications (T-1 through T-5) are based on annual freight tonnage moved along a corridor. The breakdown of freight corridor classifications is shown in **Table 7**. In Tumwater, the primary transportation of freight is facilitated through I-5 as well as one state route (SR 121) and several arterials.

Department of Transportation designates SR 121 / 93rd Avenue as a T-2 freight corridor freeway east of the I-5 interchange. This corridor establishes a connection between industrial centers in southeast Tumwater and I-5. This corridor carries 4,600,000 tons per year and has 1,100 average daily truck volume. WSDOT changed the classification of SR 121 in 2019-2021, changing it from T-3 to T-2.

Mottman Road is an industrial collector serving Tumwater's industrial center in the northwest of the city. Mottman Road SW, from RW Johnson Boulevard to Crosby Boulevard, is recognized as a T-2 freight corridor. This roadway begins in Tumwater city limits with a portion of this corridor running through Olympia city limits before returning to Tumwater. Mottman Road provides connections to Crosby Boulevard and ultimately US-101 and has an annual truck tonnage of 2,703,000. Crosby Boulevard, from Mottman Road to Olympia city limits, is recognized as a T-2 corridor.

First/last mile connector routes are truck routes that connect freight-intensive land uses to T-1 and T-2 freight corridors and alternate freight routes. They provide connections to major freight intermodal facilities and freight-intensive land uses, such as manufacturing and industrial lands. These connectors are critical for the timely and reliable movement of freight to their origins and destinations, and freight transfer between different modes. Tumwater has five first/last mile connector routes including:

- 93rd Avenue SW (from Blomberg Street SW to I-5)
- Capitol Boulevard (from Tumwater Boulevard to Carlyon Avenue SE)
- Old Highway 99 SE (from 88th Avenue SE to Tumwater Boulevard)
- RW Johnson Road SW (from Sapp Road SW to Mottman Road SW)
- Trosper Road SW (from Tyee Drive SW to Capitol Boulevard.

Figure 10 illustrates the WSDOT FGTS freight corridors and additional truck routes assigned by the City of Tumwater.

Table 7: WSDOT Freight Classifications in Tumwater

Freight Corridor	Description	Example in Tumwater
T-1	More than 10 million tons of freight per year	I-5
T-2	4 million to 10 million tons per year	SR 121, Mottman Road, Crosby Boulevard, Yelm Highway SE
T-3	300,000 to 4 million tons per year	Capitol Boulevard, Tumwater Boulevard
T-4	100,000 to 300,000 tons per year	49th Avenue SW
T-5	At least 20,000 tons in 60 days	No streets classified

Source: WSDOT, Fehr & Peers, 2025

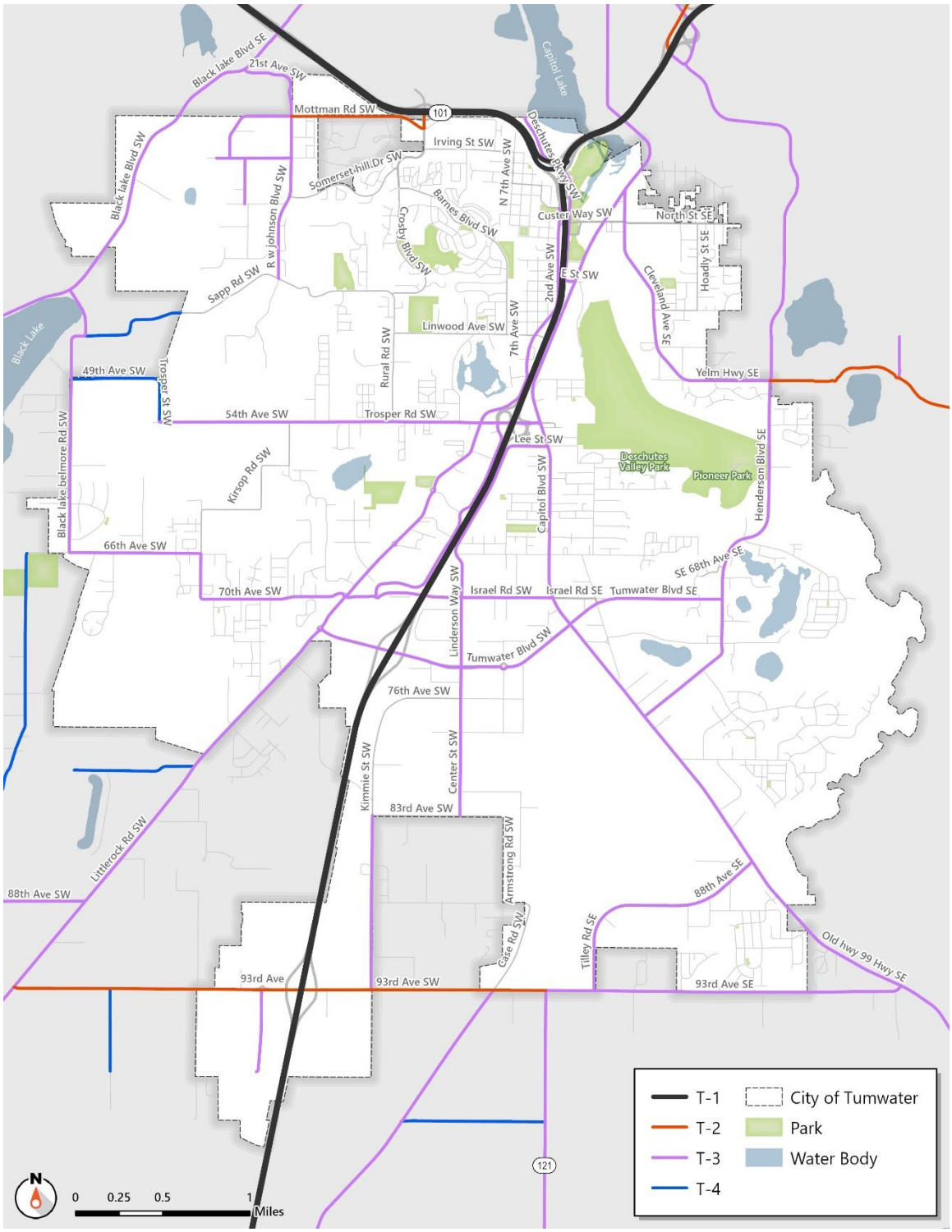

Figure 10: Existing Freight Routes

Source: WSDOT, Fehr & Peers, 2025

Collision Data

Collision data was obtained from WSDOT to identify safety hotspots and overall collision trends for the City of Tumwater. Most collisions occur on state routes such as US 101 or I-5 which are not considered as part of this analysis. The analysis covered a five-year period from January 2019 to December 2023, the most recent available data. The analysis revealed a total of 1,447 reported collisions within city limits with 22 serious injury collisions and 4 fatalities.

Of 1,447 reported collisions, 28 included pedestrians and 24 involved bicyclists. Six pedestrians and one bicyclist were seriously injured, while four pedestrians were killed. **Table 8** provides a breakdown of collisions by injury severity. Collisions where people are killed or seriously injured (KSI) make up about 2% of all collisions but when vulnerable users (pedestrians and bicyclists) are involved, there is a greater proportion of KSIs (~20%). While the sample size for pedestrians and bicycle collisions is small, the percentages are indicative of their vulnerability on the vehicle network. Further analysis is necessary to determine potential deficiencies on the pedestrian, bicycle, and vehicle facilities that may result in higher KSI percentages.

Figure 11 displays a heat map of all-modes collisions across the study area, visually representing collision density – darker regions indicate higher concentrations of collisions and points show KSI collisions. **Figure 12** presents all pedestrians and bicycle collisions during the same timeframe.

Table 8: Collisions by Injury Severity

Severity	Number of Collisions	% of Collisions
All Collisions	**1,449**	**100%**
Property Damage Only	1,034	71%
Minor injury (Including Possible and Unknown Injuries)	389	27%
Serious Injury	22	1%
Fatality	4	<1%
Pedestrian Collisions	**24**	**1%**
Serious Injury Pedestrian Collisions	6	<1%
Fatal Pedestrian Collisions	4	<1%
Bicycle Collisions	**28**	**1%**
Serious Injury Bicycle Collisions	1	<1%
Fatal Bicycle Collisions	0	0%

Notes: [1] Does not include US 101 & I-5.
Source: Fehr & Peers, 2025

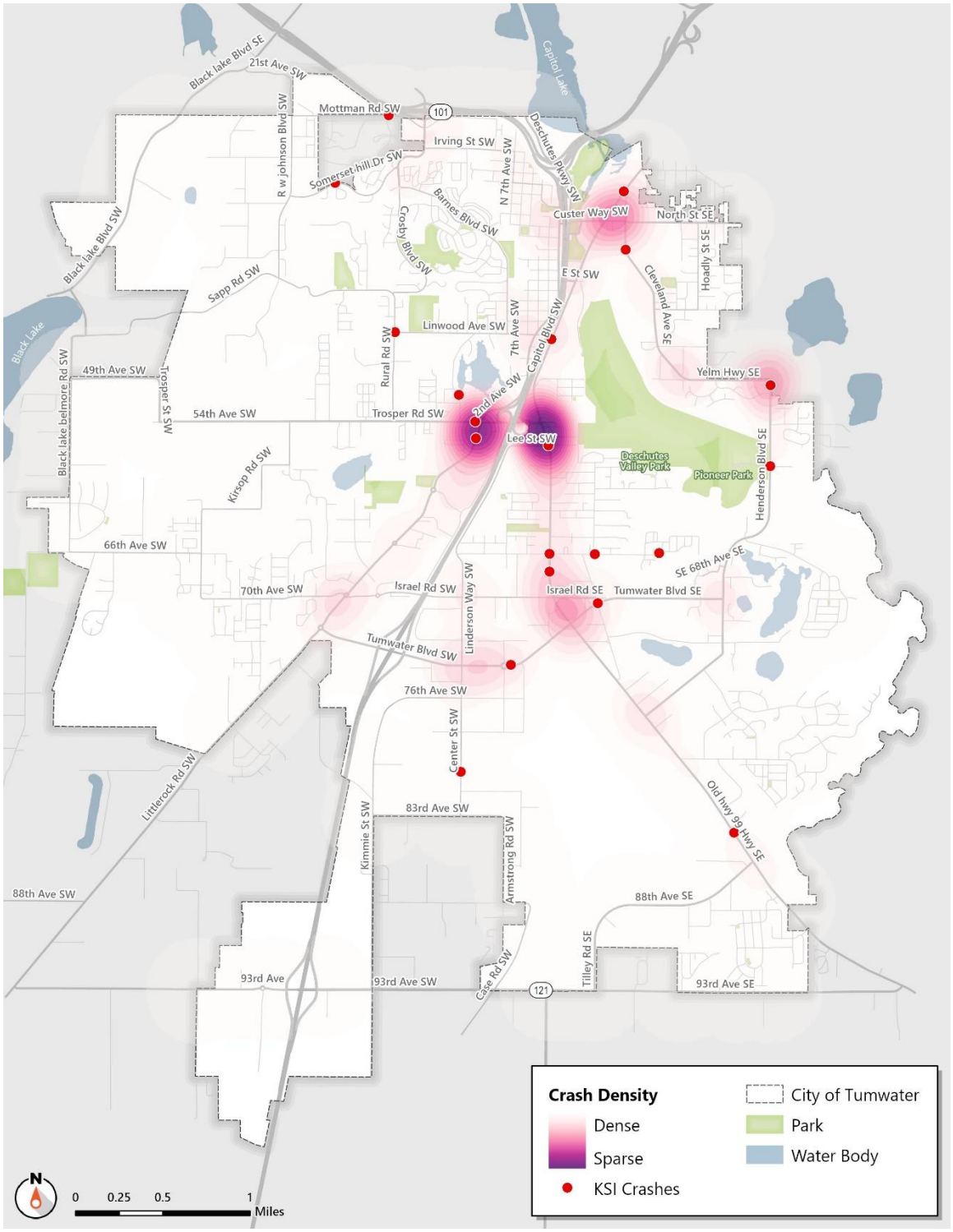

Figure 11: All-Mode Collisions

Source: Fehr & Peers, 2025

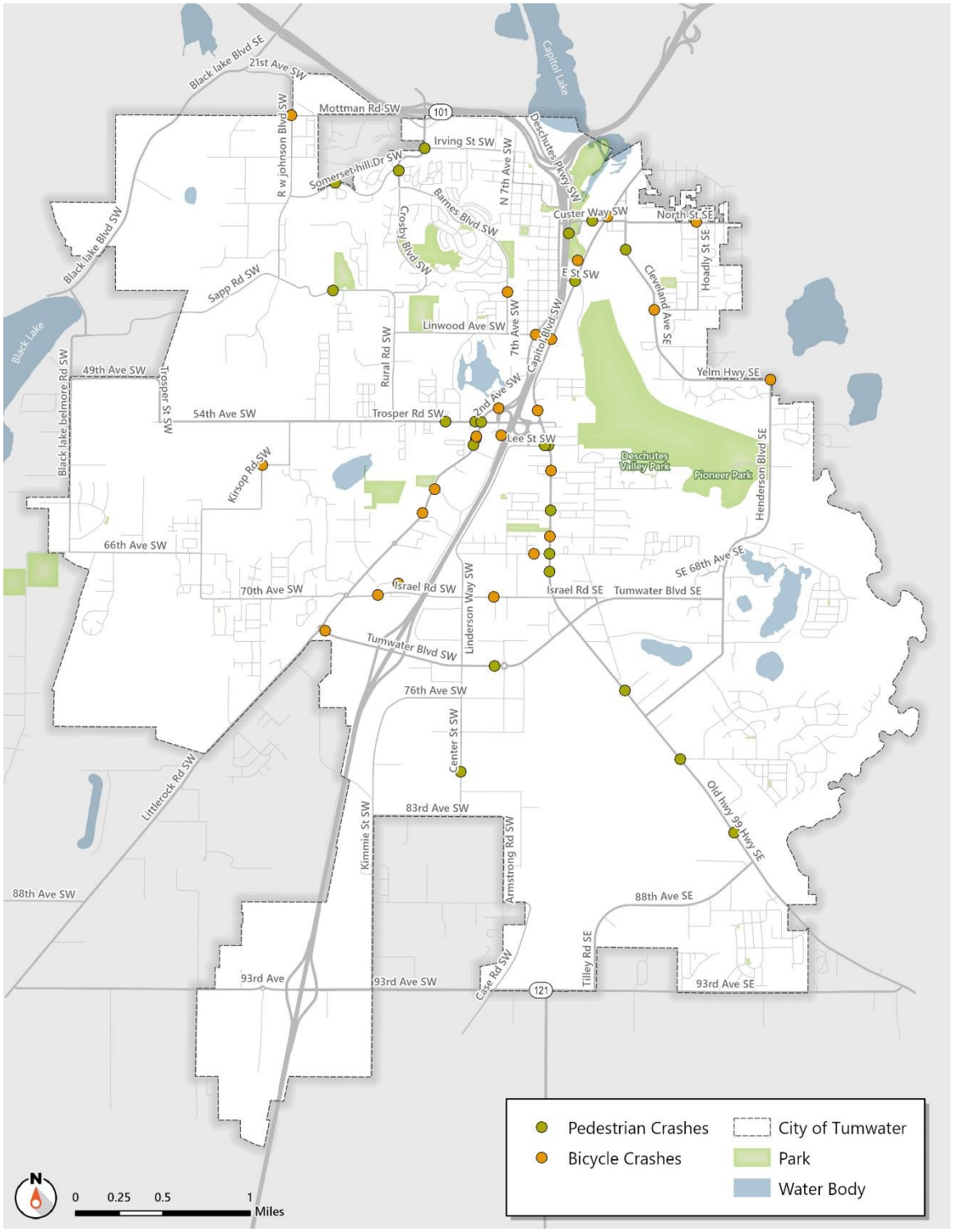

Figure 12: Pedestrian and Bicycle Collisions

Source: Fehr & Peers, 2025

Equity

Transportation equity occurs when all people benefit from the transportation network and future investments, regardless of race, native language, national origin, ability, income, or age. Tumwater is committed to ensure that transportation investments are equitable to all segments of the community in terms of costs associated with relocations, health impacts, and land use disruptions, as well as the benefits derived from system performance and travel choices.

Tumwater's goal is to ensure transportation system investments support the special travel needs of youth, elders, people with disabilities, people with literacy and language barriers, those with low incomes, and other affected groups. The City's transportation plan is guided by this goal.

Since not everyone is able to drive a car, Tumwater seeks to provide equitable access to multiple kinds of transportation so all members of the population can access basic necessities such as grocery stores, schools, employment, transit stops, and parks. Tumwater's partnership with Intercity Transit is a key component in ensuring mobility options are available for all people.

The TRPC RTP calls for the burdens and benefits of transportation decisions and investments to be equally shared. Transportation facilities and programs must comply with the ADA and reduce barriers for people who do not speak English. The RTP also calls for jurisdictions to present information and provide public participation opportunities for everyone.

Tumwater is committed to including equity in part of its transportation planning process. To meet this goal, the City must engage in equitable public outreach, present information, and provide public participation opportunities for everyone regardless of age, income, ability, language spoken, military status, or housing status.

Current Trends and Opportunities

This section documents existing trends that will impact Tumwater as it prepares for future growth. Although automobile travel currently dominates the transportation network, Tumwater is working to create an improved transportation network for all types with better connectivity Understanding and addressing transportation trends and finding opportunities to realize Tumwater's vision and goals will be key to its success.

Active Transportation

Tumwater has a strong network of pedestrian and bicycle infrastructure, but gaps exist in the network. Many streets lack pedestrian or bicycle facilities. Many roadways with bike lanes have high traffic volumes and high speeds. LTS 3 and LTS 4 bicycle facilities may not be a viable transportation choice for all users. Tumwater's vision of expanding its multiuse trail network will help improve the connectivity of the existing active transportation network, increase the amount of LTS 1 facilities in the City, and meet VMT targets.

Schools

Schools are a significant focus for improved multimodal access and equitable transportation options. Key travel modes that serve schools include walking, biking, carpools, personal vehicles, and school buses. The transportation networks surrounding these schools can become congested before and after the school day, raising safety concerns due to the simultaneous use of various modes of transportation within a compressed timeframe. Schools that do not have safe or accessible routes for people walking, rolling, and bicycling generally experience more intense vehicle traffic in the peak periods and are more likely to have that traffic spill over onto the transportation network. Overall, many public schools in Tumwater do not effectively accommodate the current vehicle queuing demand for parent pick-up/drop-off.

Electric Vehicle Infrastructure

With electric vehicles (EVs) becoming more common, the city needs more vehicle charging infrastructure that can serve the needs of the existing fleet and encourage greater EV usage. Electric vehicles can help reduce emissions in Tumwater and will help meet its greenhouse gas reduction goals to reduce locally generated emissions 85% below 2015 levels by 2050.

Safety

Between 2019 and 2023, Tumwater experienced nearly 1,500 collisions, with 26 of these resulting in a fatality or serious injury. This accounts for approximately 2% of the total collisions, which is in line with the proportion of fatalities or suspected serious injuries seen across all cities in Washington. Tumwater has investing in pedestrian infrastructure and safer crossings to increase pedestrian safety. by. Sidewalks are generally available along arterials, streets within the central

business district, and in newer subdivisions. However, the level of comfort experienced by pedestrians along some corridors facilities is low. Currently, Tumwater does not have a local road safety plan and is therefore not eligible for Highway Safety Improvement Program funding to address critical safety needs. Looking ahead, the City may explore the development of a Comprehensive Safety Action Plan (CSAP) using grant funding from the federal Safe Streets and Roads for All (SS4A) program.

Network Connectivity

Few east-west arterials serve the entire city because barriers, including the Burlington Northern/Santa Fe Railroad, I-5, and the Deschutes River, limit connectivity. These barriers affect all modes of travel and lead to increased congestion, especially on the east side of the city.

These barriers are further exacerbated by low density developments and a lack of connectivity between development projects around the city. There is a desire for greater connectivity for all modes between residences, commercial areas, and employment hubs.

Active transportation could be an alternative to driving on congested roadways, but the existing infrastructure between major areas of interest suffers from a disconnected roadway network and low levels of comfort.

Local and Regional Growth

Current development activities in the city include industrial and commercial projects, with some multi-family housing. The majority of Tumwater consists of low-density single-family housing. Growth outside the city will also play a major role in the growing demands on Tumwater's transportation network. Tumwater is working to accommodate both local and regional growth, investing in improving opportunities to travel by all modes.