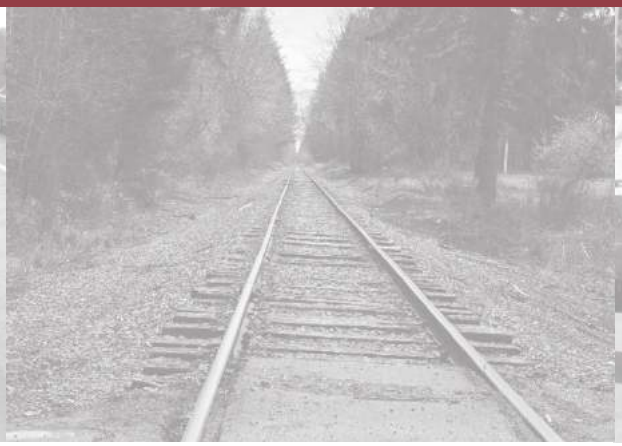
Tumwater City Plan 2036

Transportation Master Plan



November 2016

CITY OF TUMWATER

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CHAPTER 1

INTRODUCTION

INTRODUCTION

Long-range plans result from a civic discussion about the kind of place a community wants to be in the future; they offer a roadmap for how to get from "here" to "there." By their very nature, long-range plans take time to mature. Much like a tree, it can take many years for things described in long-range plans to come to fruition.

That is true with Tumwater's long-range planning efforts and it influences the shape of this Transportation Plan. The seeds of ideas planted in Tumwater's Comprehensive Plan in the 1990s are bearing fruit.

There are many more miles of sidewalks and bike lanes today than ever before, and Tumwater elements of the regional trail system are taking shape. Much of the city is served by transit, including premier 15-minute service on Tumwater's urban corridors. Coordination of land use and transportation decisions is resulting in more people living where real travel choices exist, where people can easily keep household travel costs down by not having to drive so much. Street and intersection design is making it safer and more reliable to travel by car, bike, and foot. Technology upgrades have brought the city's signal system into the 21st century while demand management programs are taking vehicles off our streets during the busiest times of the day. Kids are walking to school in larger numbers than we've seen in decades.

Tumwater is a different place in 2016 than it would have been without the policy directions established in that first Comprehensive Plan. We've been slowly but steadily changing course from the purely car-dependent city patterns that dominated our 20th century development to patterns that better support our 21st century needs and values. We've made some gains, and we better understand some challenges we face than we did back then. We have a lot of work to do but we're certainly not starting from scratch.

This Transportation Plan, Tumwater's fourth since passage of the Growth Management Act (GMA) in 1990, picks up where the planning horizon of that very first plan left off. It continues the fundamental policy framework set into place with that first Comp Plan, and is consistent with that of our neighboring communities and regional partners. What do the next 20 years hold? That is what this Plan will shape.

"…establish more walkable, people oriented neighborhoods…"

- This plan continues long-term efforts to establish more walkable, people-oriented neighborhoods that expand upon the array of lifestyle options and travel choices available in the City while reducing impacts on existing neighborhoods and rural lands.
- It takes as an integral assumption that our local transportation system is made up of a network of streets and roads, transit, sidewalks, bike lanes, and trails that all work together as part of one system. It is built on the assumption that investments should make the system safer for all users and more efficient for all modes of travel, and that we should keep life cycle and operating costs as low as possible.
- It continues to support the critical role that transportation plays in fostering and maintaining a strong and resilient economy in Tumwater, promoting the cost-effective and reliable transport of employees to jobs, customers to services and retail, and goods into and out of our city and onto store shelves.

- This plan advances policy direction regarding the role of transportation in public health, community character, and environmental stability, as well as overall quality of life.

Transportation policies derived from regionally-coordinated goals and policies underscore the relationship between efforts underway today in the city and broader, longer-term objectives. This provides good context for ensuing sections that describe the existing transportation system, the likely impacts on that system as the city grows, and measures to maintain adequate levels of service. This Plan introduces multimodal levels of service for non-motorized facilities in addition to traditional vehicle-based service standards. Projects are identified that will help the city achieve and maintain its level of service standards over the next 20 years. A financial summary demonstrates that recommendations in this plan are achievable. Finally, it concludes with some strategic initiatives to help further the vision and values embodied in this plan. The initiatives introduced at the end of this plan can be accomplished through annual work program activities, infrastructure investments and coordinated transportation and land use decision-making.

Throughout this plan readers will find examples of the linkage between Tumwater's transportation vision embodied in this Master Plan and associated goals and coordinated strategies. Look for the connection symbol to highlight these examples.

The Appendices include technical analyses supporting the forecast and project recommendations, as well as a briefing paper on multimodal levels of service, and relevant highlights from the Capitol Boulevard Corridor plan and the Brewery District plan that help shape the direction of this Transportation Master Plan.

Transportation Master Plan

CHAPTER 2

VISION

TUMWATER'S TRANSPORTATION VISION

This Transportation Master Plan provides the functional framework for realizing Tumwater's transportation vision:

Tumwater's transportation system provides for the safe, efficient, cost-effective movement of people and goods in ways that support adopted land use plans, enhance neighborhood and community livability, support a strong and resilient economy, and minimize environmental impacts.

Tumwater is employing new Low Impact Development techniques – such as this infiltration baffle shown under construction on Linderson Way – to reduce the effects on the environment of stormwater runoff.

Tumwater's Transportation Master Plan supports many of the City's Strategic Priorities, especially those related to transportation:

Create and Maintain a Transportation System for All Modes of Travel *¬ Construct an inter-connected bicycle and pedestrian system, including developing improved neighborhood connections and enhancing overall bicycle and pedestrian safety – Design and build the E Street Connection – Improve street and sidewalk maintenance – Complete the Tumwater Valley Trail – Explore and utilize lower cost pedestrian facilities (e.g., asphalt paths) as a transition to permanent and long-term facilities (City of Tumwater Strategic Priorities 2017-2022).*

“Create and Maintain a Transportation System for All Modes of Travel …”

This Plan provides the implementation framework for City priorities such as redevelopment of the Olympia Brewery and revitalization of the Brewery District, transformation of Capitol Boulevard from an old highway corridor to a vibrant, people-oriented, walkable district of interconnected neighborhoods and neighborhood-serving businesses, and continuing evolution of the Littlerock sub-area into a regionally-significant center of commerce. It supports the City’s commitment to increased “active travel” options that ensure walking and biking are viable choices for more people for more of their trip purposes. It builds on earlier work to enhance and maintain a transportation system that meets the needs of the City today and into the future.

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Transportation Master Plan

CHAPTER 3

SUB-AREA PLANS

Sub-Area Plans Incorporated into the Transportation Master Plan

Tumwater's Transportation Master Plan serves as the transportation element of the Comprehensive Plan. It includes the required traffic analyses and discussions that inform the Plan's policies and recommendations. It serves an important function beyond that plan, though. It incorporates the important policies and recommendations generated by on-going studies and sub-area plans. Several older plans – such as the Black Hills Sub-area Plan and the Littlerock Road Sub-area Plan – have shaped the City's development over the last ten years or longer. Since completion of the last Comprehensive Plan update, additional sub-area plans have been completed that are shaping the content of this Master Plan.

For over two decades, Tumwater has built on its accomplishments to achieve better alignment between its vision and on-the-ground realities. Its success is attributed in large measure to consistency and coordination between the long-range Transportation Plan and other city planning products.

Tumwater works to translate the community's vision into area-specific implementation and strategic plans; these plans evolve as conditions mature in these areas and as implementation moves to the next stages. Steady progress in implementing recommendations from these sub-area plans means that they are not static like the Comprehensive Plan. They are modified and revised as needed to support the implementation process, evolving much more frequently than the Comprehensive Plan itself.

Each sub-area plan is consistent with the overall land use vision put forward in the Comprehensive Plan; the Transportation Master Plan identifies transportation policies and investments that support those sub-area plans. Adopting those plans by

reference into the Comprehensive Plan enables them to provide nimble, adaptive guidance to the overall planning process, ensuring that the City's transportation policies and investments fully support the needs of these more detailed implementation plans while maintaining consistency with this Master Plan.

Brewery District Plan

The Brewery District Plan is intended to transform the Brewery District into a vibrant, mixed use, walkable area supporting a mix of local businesses and residential neighborhoods. The work built on analysis conducted by Tumwater in 2011 on revitalizing the former Olympia Brewery.

The Brewery District includes the former Olympia Brewery and the triangle of streets formed by Custer Way, Cleveland Avenue, and Capitol Boulevard. The district extends north to the Sunset Life property and south to E Street. Implementing the Brewery District action plan is a priority in the City's Strategic Plan.

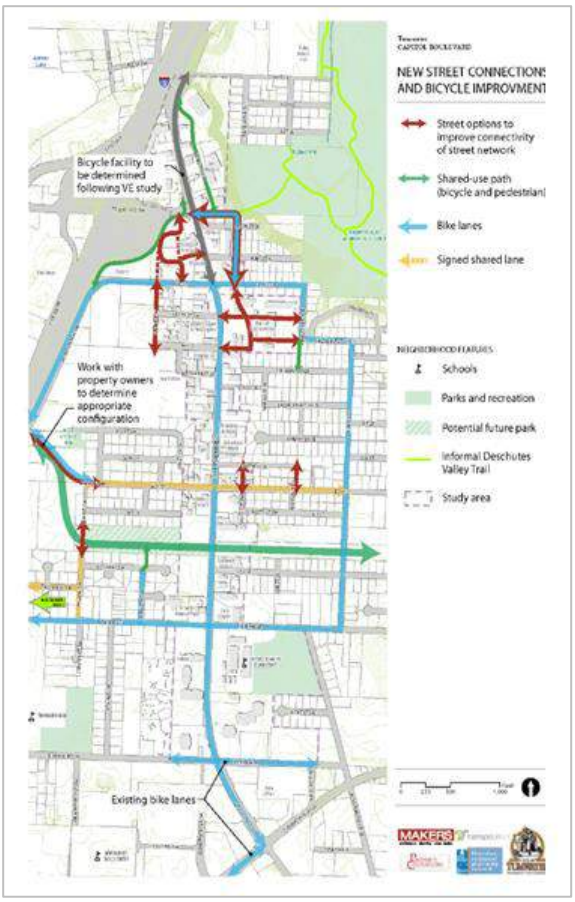
The Brewery District study identified the tools and opportunities needed to revive this historic part of Tumwater. Recommendations from the action plan are included in this Master Plan; they are informing the City as we implement design standards and development regulations. Highlights of

the plan that are relevant to this Transportation Master Plan can be found in Appendix D. The complete report as well as the implementing regulations resulting from the plan can be found at http://www.ci.tumwater.wa.us/departments/community-development/long-range-planning/brewery-district

Figure 3.4: A road diet on Cleveland Avenue will include adding bicycle facilities, widening sidewalks, and installing street trees and stormwater facilities. The calmed streetscape allows easier pedestrian crossings and creates a more welcoming environment for mixed-use (re)development along the "main street".

Capitol Boulevard Corridor Plan

The Capitol Boulevard Corridor Plan will stimulate the transformation of Capitol Boulevard between Southgate and Israel Road from an old federal highway route to a lively, mixed-use corridor. The goal of the effort is to improve the economic climate in the area and promote redevelopment along the corridor, improve the aesthetic appeal of the corridor, and improve safe and efficient travel choices for walkers, cyclists, transit riders, and motorists. Neighborhoods along the corridor engaged in the work by completing surveys, participating in workshops and meetings, and offering ideas and comments. Transformation of the corridor was identified as a priority item in the City's Economic Development Plan and the City's Strategic Plan.



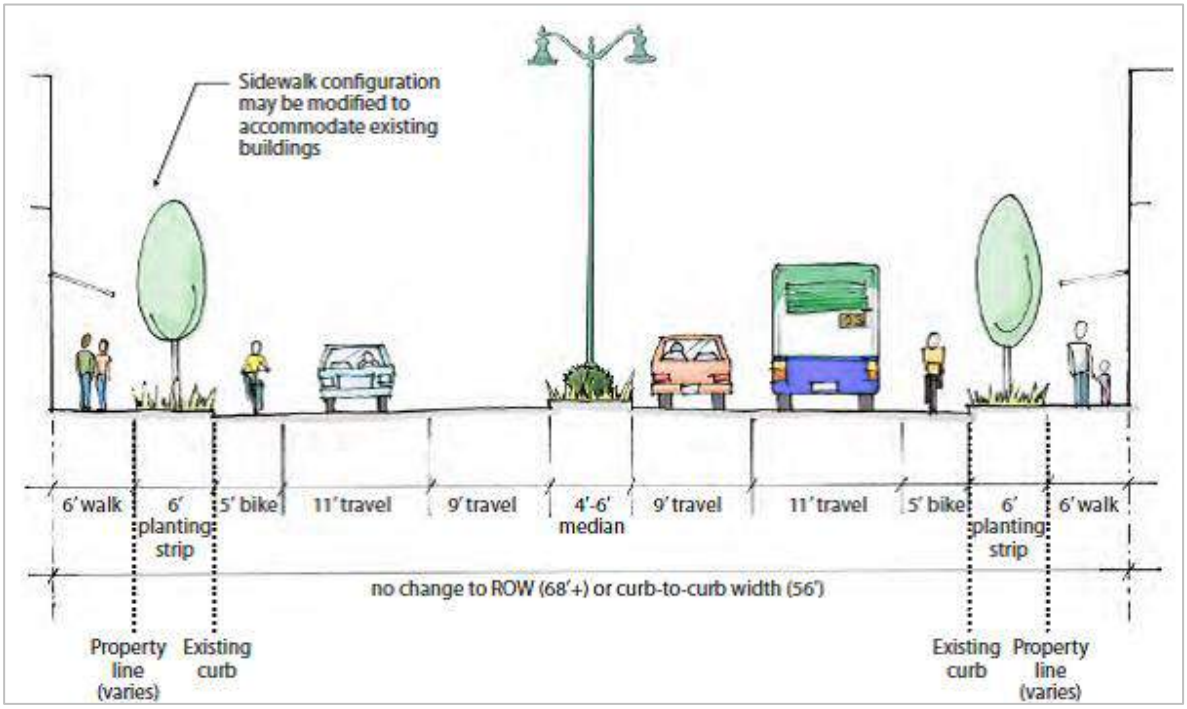
Transportation directives for this corridor provided parameters for the planning work. They included:

a. Reduce congestion growth
b. Provide for pedestrian and bicycle connectivity
c. Improve neighborhoods
d. Beautify the corridor
e. Mitigate new development impacts

These directives were accompanied by seven principles that informed the range of strategies considered and the resulting recommendations:

f. Added travel lanes to quell congestion is neither feasible or desired
g. A parallel street system should be pursued
h. Ensure traffic operations help prioritize premium transit
i. Enhance streetscape at major intersections and crossings
j. Integrate and enhance bus stop facilities
k. Establish parallel and intersecting bike network
l. Establish parallel and intersecting walking routes

Recommendations for transformation include access management that restricts left turn movements, roundabouts to facilitate u-turns, enhanced pedestrian crossings, wider sidewalks and buffers, and the repurposing of existing right-of-way to add bike lanes in each direction without having to reconstruct the street. Resulting traffic will be safer and flow smoother, access to corridor businesses will be enhanced, and the corridor will be more conducive to cycling, walking and transit as the plan is implemented.



Implementing regulations including the design guidelines and zoning have already been adopted. Work is underway now on the preliminary design and engineering work. Recommendations from the Capitol Boulevard Corridor plan are included in Appendix C of this Master Plan and are incorporated as appropriate in the project list. The full plan and its implementing regulations can be found at http://www.ci.tumwater.wa.us/departments/community-development/long-range-planning/capitol-boulevard-corridor-plan

Transportation Master Plan

CHAPTER 4

CONSISTENCY

Consistency with Countywide Planning Policies

Tumwater is required under GMA to ensure its planning process is consistent with adopted Countywide Planning Policies. Countywide Planning Policies (CWPP) are developed collaboratively between Tumwater and all the other jurisdictions in Thurston County to govern development of local comprehensive plans. The primary purpose of the CWPP is to ensure consistency between the comprehensive plans of jurisdictions sharing a common border or related regional issues. They also play an important role in facilitating the transformation of local governance in the unincorporated urban growth area as it is annexed or incorporated into a city, so that urban services are provided by cities and rural and regional services are provided by the county.

The first CWPP in the Thurston Region were adopted in 1992 and most recently amended in November 2015. Most of the CWPP pertain to other aspects of long-range planning but there are policies specific to transportation. This Transportation Master Plan is consistent with and works to implement these policies.

IX. TRANSPORTATION (Countywide Planning Policies, adopted November 2015)

9.1 Increase transportation choices to support all ranges of lifestyles, household incomes, abilities, and ages.

9.2 Increase opportunities for riding transit, biking, walking, ridesharing, allowing and encouraging flexible work schedules, and teleworking.

9.3 Encourage efficient multi-modal transportation systems that are based on regional priorities and are coordinated with county and city comprehensive plans.

a. Local comprehensive plans will consider the relationship between transportation and land use density and development standards.

b. Local comprehensive plans and development standards should provide for local and regional pedestrian and bicycle circulation.

c. Improved transit service will be based on Intercity Transit's plans, informed by and consistent with the regional transportation plan and local comprehensive plans.

d. Transportation Demand Management plans and programs required by State law will be implemented as a key part of the region's transportation program.

e. Improvements to the regional road network will be consistent with local and regional transportation plans.

f. The regional transportation planning process is the primary forum for setting countywide transportation policy.

9.4 The transportation element of each jurisdiction's comprehensive plan will be consistent with the land use element of that jurisdiction's comprehensive plan.

9.5 The transportation element of each jurisdiction's comprehensive plan will include level of service standards for all arterials and transit routes and services. Each jurisdiction will coordinate these level of service standards with all adjacent jurisdictions. Transit level of service standards will be consistent with Intercity Transit policies.

9.6 Each jurisdiction's transportation element will include an assessment of the impacts of the transportation plan and land use assumptions on the transportation systems of adjacent jurisdictions.

9.7 The transportation elements of comprehensive plans adopted by Thurston County and each city and town in the county will be consistent with the Regional Transportation Plan adopted by Thurston Regional Planning Council, in accordance with the provisions of the Washington State Growth Management Act.

9.8 The Regional Transportation Plan adopted by Thurston Regional Planning Council will be consistent with the land use elements of comprehensive plans adopted by Thurston County and the cities and towns within Thurston County and with state transportation plans. To ensure this, the Regional

Transportation Plan will be reviewed and updated, if necessary, at least every two years for consistency with these plans.

9.9 All transportation projects within Thurston County that have an impact upon facilities or services identified as regional in the Regional Transportation Plan will be consistent with the Regional Transportation Plan.

9.10 Local and regional transportation plans will consider maritime, aviation, and rail transportation as an integral link to the area's regional transportation needs.

Regional Consistency and Coordination

Tumwater's long-range transportation planning must be consistent with the Regional Transportation Plan, or RTP. The RTP is developed and maintained by Thurston Regional Planning Council (TRPC). It provides the primary policy framework for overall transportation system considerations at the local, regional, and state levels. All jurisdictions and other service partners in Thurston County work closely with TRPC at various stages throughout the long-range planning and forecasting process to ensure consistency with the RTP. This includes collaboration and agreement on:

- long-range growth and land use assumptions used to estimate future travel demand, among other things;
- level of service standards and times of "peak period" analysis;
- constraints such as limits to street widening; and
- overarching transportation system goals.

Consistency with the Regional Transportation Plan ensures consistency with applicable state and federal transportation planning requirements.

Starting in the late 1990s, regional collaboration and coordination resulted in a single coordinated growth forecast and travel demand model for use by all jurisdictions in the Thurston Region to evaluate the aggregate effects of growth and system improvements on future transportation needs. Previously, each jurisdiction developed its own growth and travel demand forecasts which were evaluated independently for regional consistency. Since 2000, consistency between local and regional analysis has been built right into the planning process.

Several significant regional initiatives are incorporated into the RTP and reflected in this plan, including:

- **Urban Corridors Task Force Recommendations** – The Urban Corridors Task Force worked to establish an objective understanding of background conditions along the region's key urban corridors including Capitol Boulevard, identified barriers to achieving adopted land use visions, and identified potential opportunities for addressing those barriers. Task Force members looked at the relationship between transportation and land use in these corridors, and worked to understand the market factors that influence the viability of infill and redevelopment projects in the region. That work helped inform Tumwater's focus on Capitol Boulevard and the Brewery District. For information on the Urban Corridors Task Force work and the resulting activities of the Corridor Communities Partnership, visit: http://www.trpc.org/173/Urban-Corridor-Communities

Tumwater's vision for the Brewery District and Capitol Boulevard are tangible applications of the principles and values inherent in the Urban Corridors Task Force recommendations. Reclaiming the old Capitol Way / Capitol Boulevard highway corridor and repurposing it as the transit-rich backbone of a 21st century urban community offering an array of car-lite lifestyle options supported by vibrant local businesses is at the heart of the two active subarea plans shaping the Brewery District and the Boulevard today.

- **Sustainable Thurston (Regional Sustainability Plan) –** This community-wide conversation was the first region-wide discussion since passage of the Growth Management Act about how to create a vibrant, healthy and resilient future for the Thurston region. It resulted in a vision endorsed by Tumwater and other communities across the region as well as the actions and responsibilities necessary to achieve it. For more information on Sustainable Thurston, see: http://www.trpc.org/259/Sustainable-Thurston

Tumwater's vision for future growth links directly back to key tenets of Sustainable Thurston's livability principles. This includes:

Providing more transportation choices that decrease household travel costs, promote active lifestyles and public health, reduce greenhouse gas emissions, improve air quality, and reduce dependence on foreign oil

Promoting equitable, affordable housing by expanding the availability of location-efficient housing on transit-rich corridors

Enhancing economic competitiveness with reliable and efficient access to jobs and good mobility for goods and services

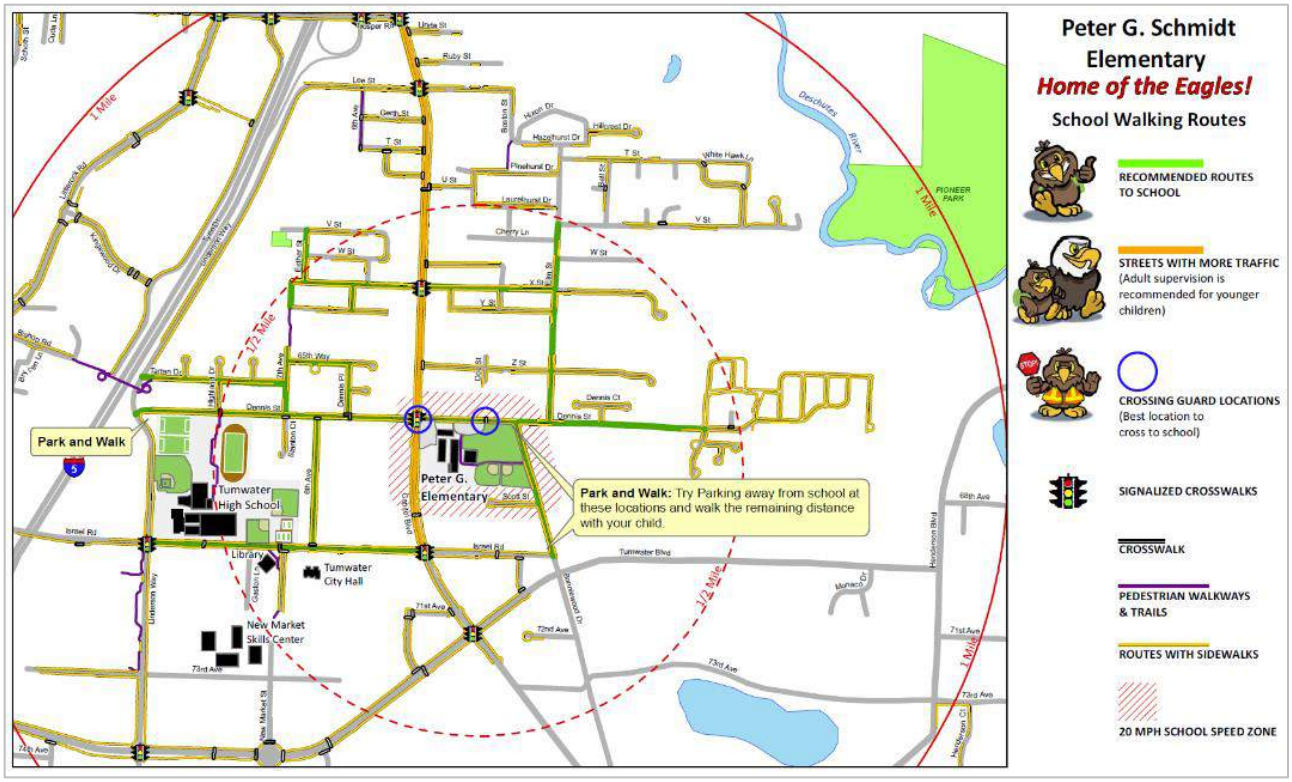
Supporting existing communities with strategies for infill and redevelopment that increase car-lite lifestyle opportunities while reducing pressure on existing neighborhoods and rural and resource lands

Coordinating policies and investments to better align the community's vision with day-to-day implementation activities and leverage available funding resources to get maximum value for the investments

Valuing neighborhoods and communities by investing in healthy, safe, walkable places supporting a variety of lifestyle choices

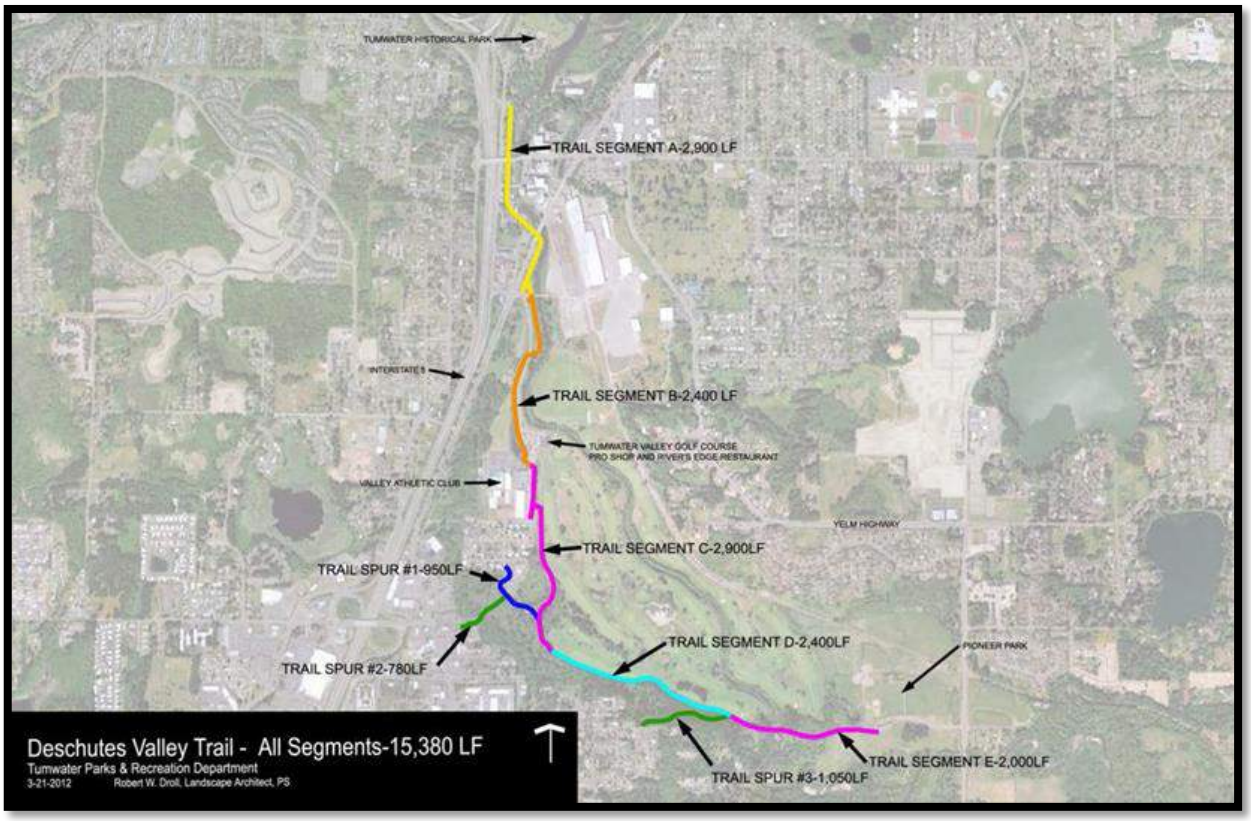
Tumwater is a founding signatory of the Healthy Kids – Safe Streets Action Plan. Two of the region's most active schools participating in the Walk and Roll Program, the centerpiece of the Action Plan, are Michael T. Simmons and Peter G. Schmidt elementary schools in Tumwater. Tumwater's new multimodal level of service approach puts a priority on completing sidewalk networks in the vicinity of schools to create a safe walking environment for school children

- **The Healthy Kids-Safe Streets Action Plan –** This initiative encourages kids to walk, bike, and bus to school by promoting physical activity and safety through education and encouragement programs, development and implementation of school siting criteria, and coordination of infrastructure improvements around schools. Tumwater embraced this plan with its support of Walk and Roll programs at Peter G. Schmidt and Michael T. Simmons schools. For more information on the Healthy Kids-Safe Streets Action Plan and the Walk-and-Roll Program, see: http://www.trpc.org/337/Walk-and-Roll-Program



- **Regional Trails Plan –** Establishing a comprehensive, well-connected non-motorized trail network that links all corners and communities in the region is a regional priority that is strongly supported by Tumwater. Efforts underway now on the Deschutes Valley Trail and the Black Lake-Belmore Trail are moving Tumwater's segments of this trail system to reality. A copy of the complete Regional Trails Plan can be found at http://www.trpc.org/DocumentCenter/View/928

Tumwater's vision of connecting Pioneer Park to Capitol Lake via the Deschutes Valley Trail is consistent with the Regional Trails Plan. This important linkage in the regional system will enhance connectivity to the regional trail system for Tumwater residents. Another important link in the regional trail system is located in Tumwater's urban growth area. The Gate-Belmore trail, currently being developed by Thurston County, will extend from the vicinity of the Black Lake Elementary School to the southwest corner of Thurston County near the Chehalis Reservation via an abandoned rail corridor



Tumwater's vision for the Brewery District and Capitol Boulevard is dependent on robust, high-frequency transit service. Tumwater and Intercity Transit are partnering on a redesign of the Tumwater Transit Station on Cleveland Avenue with a long-term goal of relocating the existing station to a more efficient location on Capitol Boulevard. IT service to the state office buildings provides a critical component of the City's commute trip reduction strategy

- **Intercity Transit -** The future role of transit in serving the transportation needs of the City and surrounding area is a regional priority. Tumwater supports Intercity Transit's strategic plans and continues to coordinate with the agency to identify how transit needs should be addressed, particularly as infill and redevelopment occurs along the urban corridors and within the City's planning sub-areas. Tumwater involves Intercity Transit in the development review process and future planning efforts to ensure that the goals of the City and Intercity Transit related to transit are being met.

Consistency with State Transportation Plans

The Washington State Department of Transportation (WSDOT) establishes planning priorities through its statewide and modal plans. As the Regional Transportation Planning Organization for the region, TRPC carefully monitors those planning priorities and works to ensure they are appropriately considered in the region's long-range plan and policies. Tumwater's close coordination and consistency with TRPC plans and policies ensures the City's Transportation Master Plan is also in line with those state guidelines.

Tumwater policies and investments support statewide transportation planning priorities. One of the most difficult challenges – ensuring adequate preservation of the existing system – was directly addressed through the 2015 Transportation Benefit District package approved by Tumwater voters. This new locally-determined funding source will enable the City to optimize its pavement preservation program over time and keep lifecycle costs as low as possible

The following transportation policy goals of the Washington Transportation Plan are addressed throughout the goals and policies in this plan, and its recommendations.

Preservation. Maintain, preserve, and extend the life and utility of prior investments in transportation systems and services.

Safety. Provide for and improve the safety and security of transportation customers and the transportation system.

Mobility. Improve the predictable movement of goods and people throughout Washington State.

Environment. Enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment.

Stewardship. Continuously improve the quality, effectiveness, and efficiency of the transportation system.

Economic Vitality. Promote and develop transportation systems that stimulate, support and enhance the movement of people and goods to ensure a prosperous economy.

<u>Results WSDOT</u> is a recent initiative that promotes:

- *Strategic Investments*
- *Modal Integration*
- *Environmental Stewardship*
- *Organizational Strength*
- *Community Engagement*
- *Smart Technology*

Tumwater's Transportation Master Plan is consistent with and supportive of WSDOT

INTERGOVERNMENTAL COORDINATION

Coordination between government agencies is a key tenet of the Growth Management Act. The transportation element must describe ***"intergovernmental coordination efforts, including an assessment of the impacts of the transportation plan and land use assumptions on the transportation systems of adjacent jurisdictions."*** This requirement makes good sense; Tumwater cannot develop a realistic plan for its growth without considering its impacts on adjacent communities and their impacts on Tumwater. Much of that coordination occurs at the regional level through TRPC, of which Tumwater is an active member. This Transportation Master Plan is the product of regional coordination, from population and employment forecasts to a unified regional modeling platform to coordinated corridor studies and development reviews. Tumwater's plan reflects the growth and investments anticipated in Olympia and Thurston County; in turn, its own growth and investments are reflected in their plans and strategies.

As a part of its intergovernmental coordination, Tumwater works closely with the Port of Olympia. The Port owns a significant amount of land in the city, where its airport is located alongside hundreds of acres of industrial property. The Port completed in 2016 its New Market Industrial Campus Real Estate Master Plan which provides a blueprint for how these industrial properties will develop over time. Tumwater participated in that planning process and will be active in the plan's implementation.

Another example of Tumwater's intergovernmental coordination related to transportation is its close working relationship with Intercity Transit. From including IT in its development review process and planning activities to its partnership with IT in redesigning the Tumwater Transit Station on Cleveland Avenue and identifying a location for a new park-and-ride facility, Tumwater works to maintain a close working relationship with its transit partner.

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Transportation Master Plan

CHAPTER 5

MODES OF TRAVEL

Planning for All Modes of Travel

Tumwater understands that the transportation system is more than just streets; its transportation system is made up of streets as well as transit, sidewalks, walkways, bike lanes, trails, highways, rail corridors, and the airport. It accommodates not just car drivers, but transit riders, walkers, cyclists, and freight. The transportation system is made up of a series of intersecting networks that ensure people and goods get to where they need to be. This is what is meant by a "multimodal" transportation system – it is one that accommodates the various modes of travel needed to support existing and future land use patterns.

Tumwater has long promoted biking and walking through its plans, policies, and investments. It is reflected in adopted street standards that require bike lanes and sidewalks with new construction. Long before the term "complete streets" became planning jargon Tumwater was committed to providing safe and convenient facilities enabling more people to bike and walk for more of their trips. Tumwater's street standards incorporate many recommendations found in the National Association of City Transportation Officials (NACTO) Urban Street Design Guidelines. Tumwater has applied for and received grants that help complete the bike and sidewalk networks, making them safer and more convenient for travelers.

In the City's 2015 Community Survey, over half the respondents identified the need for more transportation choices - connected, walkable, bike-able streets and transit that offer reliable, economical travel options that decrease household transportation costs, reduce dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health. Tumwater policies and standards are working to meet that need.

Tumwater works to leverage those complete streets with "complete neighborhoods" offering a mix of different activities close to each other, the kinds of neighborhoods that generate more walking and biking than occurs with traditional residential neighborhood or commercial development. This is a goal of the Brewery District and Capitol Boulevard Corridor strategies – to create the kind of places where driving is but one good option for getting between Point A and Point B.

These sub-area plans enable Tumwater to further align its commitment to a multimodal transportation system by expanding its approach to evaluating system performance. This Master Plan introduces the concept of multimodal system performance to explicitly consider how the sidewalk and bike

networks function in different parts of the city. In those areas intended to generate a greater share of walk and bike trips – where land use patterns are resulting in more complete neighborhoods offering a mix of activities in close proximity – this new performance measure will allow the City to more effectively evaluate development impacts and opportunities to determine the right mix of facilities to support that development. The chapter on System Performance describes this new approach to evaluating system performance.

Tumwater's policies are translated into guidelines and standards that define the design and relationship of streets and buildings. They are tailored for different parts of the City, and reflect underlying values and priorities in this transportation plan as well as the City's adopted land use strategies. In this way they help implement the Comprehensive Plan vision, providing clear direction to developers about City expectations for pedestrian oriented streets, signature roads, and other types of streets to achieve attractive, walkable, sustainable development that enhances the City's identity. For more details about the considerations and standards governing the design of streets and buildings, please see the Citywide Design Guidelines

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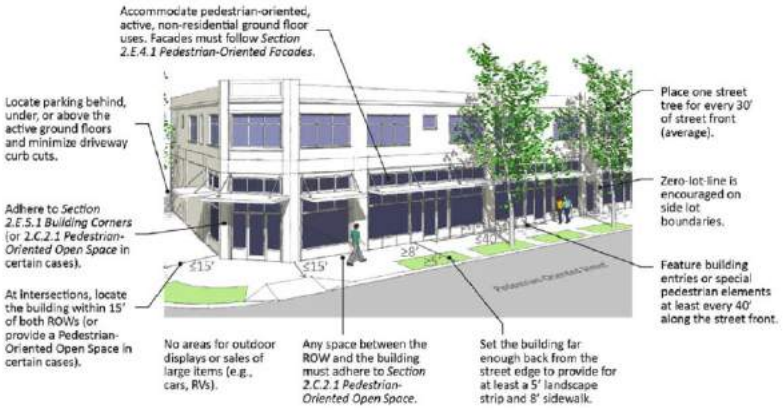

Figure 2.B.1-1. Pedestrian-Oriented Street requirements summary

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Transportation Master Plan

CHAPTER 6

MANAGING DEMAND

Managing Demand

Managing travel demand is one way to maximize operational efficiency and create more capacity within the existing transportation system. Demand management strategies, as the term implies, are strategies that change the demand for travel – typically lowering the demand for travel during peak congestion periods. Compared to most transportation strategies, demand management involves typically low-cost strategies that take many different forms.

Demand Management Programs

Commute Trip Reduction, implemented at the state level in 1993, requires large employers with 100 or more employees commuting during peak periods and all state agencies regardless of size to reduce the share of trips being made in single-occupant vehicles. This can be done via a myriad of strategies that encourage more commute trips by carpool or vanpool, transit, walking, or biking. Programs like the annual Bicycle Commuter Contest, administered by Intercity Transit since 2005, create awareness about travel alternatives in a fun way that also promotes broader CTR objectives.

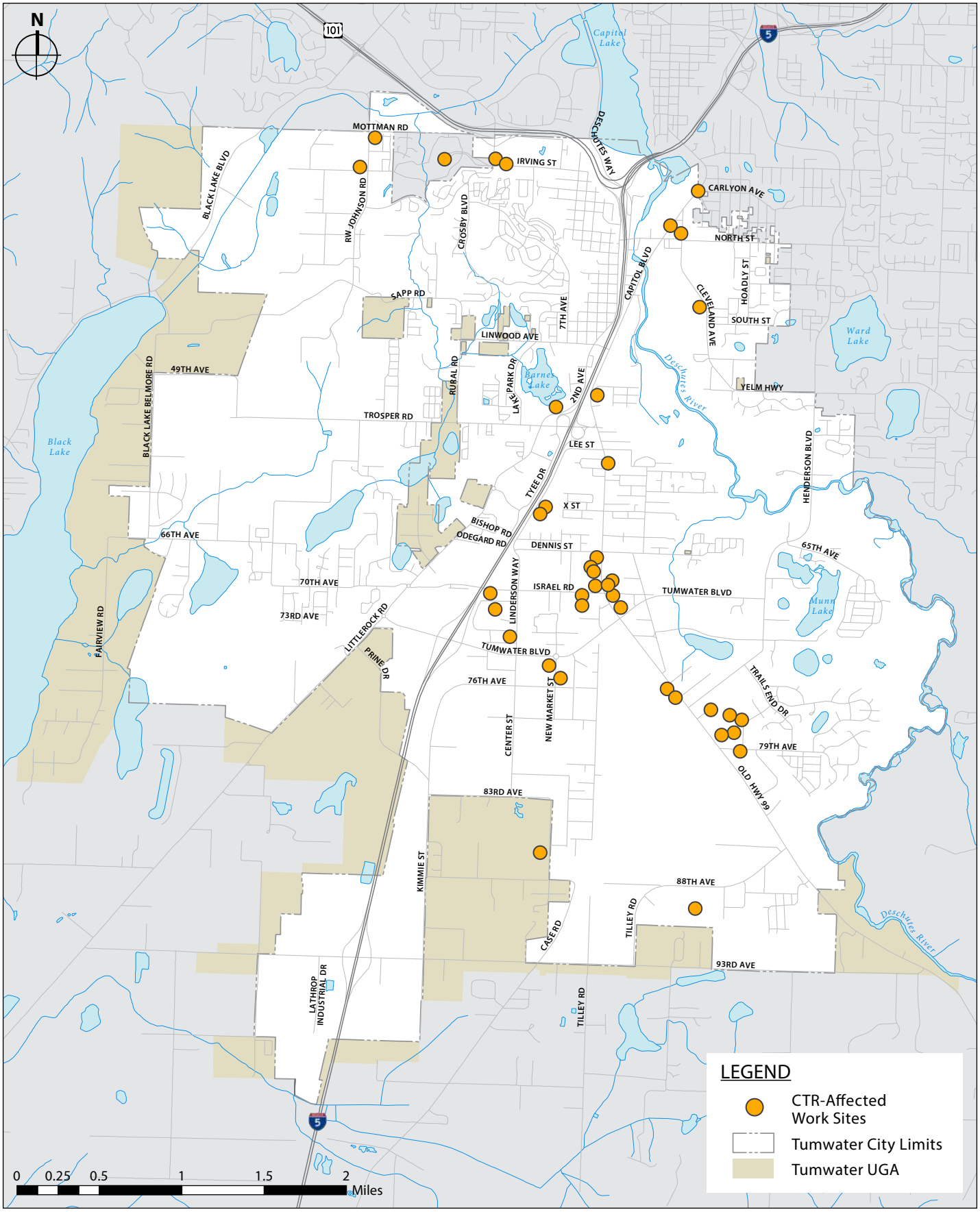
CTR can also include strategies that reduce the number of days an employee has to commute to work, like compressed work weeks that "compress" a five day week into a four day work week, or telework that allows some employees to work from home. It also includes parking pricing that eliminates the financial incentives to drive.

Since 2005, the region's CTR program is administered by TRPC in partnership with Intercity Transit. The CTR program includes 197 active worksites across the region of which 191 must participate and six do so voluntarily. TRPC and IT actively work with local jurisdictions and the State of Washington to improve the program.

Figure 1 shows the location of CTR-affected worksites in Tumwater. Many are located in areas with good transit service.

Details on the CTR program and its implementation in the Thurston Region can be found at: http://www.trpc.org/609/Commute-Trip-Reduction-CTR-101

Tumwater's 2008 Commute Trip Reduction Plan includes goals and strategies that help support regional CTR objectives.



CITY OF TUMWATER
Transportation Master Plan

Figure 1
Location of Tumwater's CTR-Affected Work Sites

School-based programs, like the "Walk & Roll" programs at Peter G. Schmidt and Michael T. Simmons elementary schools help reduce traffic congestion in the vicinity of schools created by parents dropping off or picking up their children. Intercity Transit leads these programs with federal funding from TRPC for this purpose. These innovative programs encourage kids to walk or bike to school more often, which also has health and learning benefits. Program components include field trips, school assemblies and special events, and school-wide "Bike and Walk to School" days. The intent of this award winning program is to build the next generation of safe and healthy bikers, walkers, and transit riders.

Parking management is another tool that Tumwater and many of its employment sites use to manage travel demand. Limiting the amount of parking that can be built, restricting the location of that parking on a building site, and even charging for the use of that parking can influence whether people decide to drive alone or travel differently. Details like locating carpool parking or bike parking closer to building entrances than general parking can help influence how some people travel.

IT's Vanpool Program is celebrating its 34th year of service in 2016. IT's 214 vanpools are carrying over 1,500 people to and from work on any given weekday. This helps free up street and highway capacity and makes the entire transportation system operate more efficiently.

Land use is an important demand management consideration. How communities are built – the proximity of uses within a neighborhood, residential and employment densities, the design of streets and buildings, street connections and infrastructure to support alternatives to driving – all of these are essential determinants in how much traveling people have to do and the choices they have in how they travel.

Traveler Information and Trip Planning Resources

Thurston Here to There is a one-stop resource for information on all different modes of travel and travel needs. Getting from Tumwater to Seattle by transit, planning a bicycle tour of South Thurston County's Bountiful Byways, locating a do-it-yourself bike repair shop, scheduling paratransit services, and figuring out how to take the bus to SeaTac airport – these are just a tiny sampling of the point-and-click resources available on this site, which can be found at http://thurstonheretothere.org/

Rideshare Online is a multi-county effort led by WSDOT and King County Metro. This on-line system, combined with a local database and personal assistance, helps customers identify carpool partners or get into a vanpool as well as evaluate alternate commuting opportunities, primarily in the central Puget Sound area or getting to and from that area. It can be found at www.rideshareonline.com

One Bus Away is an app that provides real-time individual bus arrival schedules so that users can know exactly when the next bus will arrive, thereby minimizing wait times for riders and enhancing the attractiveness of transit as an alternative to driving. It's supported by a consortium of public sector transit agencies and others with the goal of providing robust and real-time transit vehicle location data in combination with transit schedules and other related data. Intercity Transit has been a member of the One Bus Away consortium for several years. A link to the One Bus Away app can be found in the top right corner of Intercity Transit's home page, www.intercitytransit.com

On-Line Bike Maps maintained by Thurston Regional Planning Council allows users to customize their routes, perhaps avoiding certain intersections during the morning commute or maximizing distance traveled on dedicated trails instead of on-street facilities. On-line bike maps can be found at http://www.trpc.org/181/Online-Bike-Maps

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Transportation Master Plan

CHAPTER 7

FUTURE CONDITIONS

PLANNING FOR THE FUTURE

One of the great values of a long-range plan is in setting a course for how the City will grow over time. Many issues Tumwater grapples with today result from decisions made in the first half of the 20th century that differ from the values, needs, and priorities of the City's 21st century residents and businesses. Instead of simply settling for outdated land use patterns that don't afford the kind of lifestyles and travel choices envisioned today, the City is proactively working to change some of the patterns through its sub-area plans and land use policies.

"The vision includes transformation of the Brewery District, Capitol Boulevard Corridor and Tumwater Town Center…"

The City's vision is for the creation of a number of appropriately scaled and well-designed centers that accommodate increased densities and mix of activities. Work underway will result in a small number of truly urban neighborhoods offering a different range of lifestyles than is found in most parts of Tumwater and the Thurston metropolitan area today. The vision includes transformation of the Brewery District, Capitol Boulevard Corridor, and Tumwater Town Center near the airport. In addition, a number of small neighborhood centers are envisioned that will provide basic day-to-day services within walking distance to outlying residential neighborhoods.

Tumwater's land use vision is dependent on a supporting transportation system if it is to succeed. That is why this transportation plan must be consistent with and support the City's vision for how it will grow over time. Growth assumptions associated with the City's long-range vision for its future are the same as those used to estimate future travel needs identified in this Master Plan.

Established community visions combined with zoning, on-the-ground development patterns, and myriad other factors result in a forecast of how the city will grow over the next 25 years. The long-range land use forecast estimates how many people

and jobs Tumwater will have in 2040 and where they will be. The forecast depicts the densities likely to be built over time and the mix of land use activities envisioned in adopted planning policies.

Tumwater's land use forecast is developed and periodically updated in coordination with other jurisdictions in the Thurston region as part of a regional population and employment forecasting process conducted by Thurston Regional Planning Council (TRPC); it takes into consideration growth happening elsewhere in the region and state as well as in the City. Combined with the City's vision for the future, the forecast becomes the basis for the land use element of Tumwater's Comp Plan. The land use element and the forecast on which it is based sets the direction for the Transportation Master Plan.

The table below provides a summary of population and employment projections used to estimate travel demand in Tumwater over time based on its adopted land use policies and regional forecasting assumptions. The land use element of the Comprehensive Plan provides more detail on the geographic distribution of existing patterns and how that is envisioned to change over time.

Table 1: Forecasted 2040 Population and Employment for Tumwater

Forecasts	**2010 (actual)**	2020	2030	2040
Population	**23,720**	30,840	40,150	46,300
City	***17,370***	*22,930*	*28,440*	*32,550*
Urban Growth Area	***6,350***	*7,910*	*11,710*	*13,750*
Jobs	**29,655**	30,325	30,995	31,665

Source:
Thurston Regional Planning Council Population and Employment Forecasts (2013 update). Comprehensive documentation of the entire regional population and employment forecasting process can be found on the TRPC website: http://www.trpc.org/236/Population-Employment-Forecasting. Note that figures do not reflect the annexations completed in 2015, which will shift some share of the population and jobs in the Urban Growth Area into the City, earlier than shown

Transportation Master Plan

CHAPTER 8

GOALS AND POLICIES

Transportation Goals and Policies

Transportation goals and policies provide a framework for transportation decision-making. The policy elements in this Plan derive from a regionally-coordinated process and are consistent with the Regional Transportation Plan and Sustainable Thurston, both of which are regional policy initiatives supported by Tumwater. The goals and policies in this Transportation Master Plan support localized efforts while maintaining consistency with established regional objectives and the policy frameworks of adjacent communities.

In 1998, Tumwater and other members of Thurston Regional Planning Council adopted policies recognizing "strategy corridors" where street widening is no longer a suitable option for improving mobility. This may be because the streets are already at a maximum five-lane cross-section, or because they are built out and cannot be widened without significant community disruption, or simply because the facility is at the maximum appropriate width for the adjacent land uses. The preferred solutions for strategy corridors instead will be some combination of non-motorized or transit strategies, signal timing or other operational improvements, completing a street grid that offers a variety of travel routes and land use measures that attract more mixed-use, walkable, high density development where alternatives to driving are most feasible. A map of Tumwater's Strategy Corridors can be found in Figure 3 on page 71.

1. Transportation and Land Use Consistency

Goal: Ensure the design and function of transportation facilities are consistent with and support sustainable, healthy urban, suburban, and rural communities.

Policies:

a. Commit to the development and implementation of land use plans, development patterns, parking requirements, and design standards that encourage walking, bicycling, transit use, and other alternatives to driving alone.
b. Provide transportation facilities that support the location of jobs, housing, industry, and other activities as called for in Tumwater's adopted land use plan.
c. Support policies, programs, and procedures that promote urban infill, and make transportation investments that support increased urban densities and mix of uses consistent with Tumwater's plans for the Brewery District and Capitol Boulevard.
d. Create vibrant city centers and activity nodes that support active transportation and housing, jobs, and services as called for in Tumwater's Comprehensive Plan.
e. Create safe and vibrant neighborhoods with places that build community and encourage active travel.

f. Create urban parks and places that reduce pressure on the region's farms, forests, prairies, and open spaces.
g. Meet mobility, access, and economic goals in designated Strategy Corridors with an appropriate combination of investments, policies, and land use measures.
h. Design and invest in transportation projects that have a lasting positive impact, reflect the goals of the people who live and work in Tumwater, and contribute to a sense of place and community.
i. Ensure adequate transportation capacity to address growth consistent with this Comprehensive Plan.
j. Preserve and promote awareness of Tumwater's historic, cultural, and natural heritages.

2. Multimodal Transportation System

Goal: Work toward an integrated, multimodal transportation system that supports adopted land use plans, reduces overall need to drive, and provides alternative travel choices.

Policies:

a. Provide quality travel choices appropriate to existing and future land uses, including walking, bicycling, transit, motor vehicles including freight, and rail.

b. Ensure that development of transit transfer centers, activity centers, employment centers, schools, and the airport accommodate multiple modes of travel and safe, efficient connections among those modes of travel.
c. Invest in mode-specific strategies that contribute to overall development of an integrated, multimodal transportation system.
d. Promote public awareness on the rights and responsibilities of drivers, bicyclists, and walkers, and ways these modes can travel together safely and efficiently.
e. Incorporate practical design considerations where appropriate, designing to solve mobility problems more so than to meet design standards if doing so

increases functional mobility of the transportation system.

3. Barrier-free Transportation

Goal: Ensure transportation system investments support the special travel needs of youth, elders, people with disabilities, people with literacy or language barriers, those with low incomes, and other affected groups.

Policies:

a. Work over time to ensure that transportation facilities comply with the Americans with Disabilities Act.
b. Construct transit stops and walkway approaches that are accessible for those with differing capabilities.
c. Provide appropriate transportation services, facilities, programs, and on-line resources that reduce barriers to people who do not speak or read English.
d. Present information and provide public participation opportunities for everyone, including people with physical disabilities and/or people with limited literacy skills.
e. Implement land use policies that provide a variety of housing types on corridors with excellent transit service connecting to employment centers, services, retail, health care, and other essential services to support the lifestyles of people who cannot drive.

4. System Safety and Security

Goal: Enhance the safety and security of those who use, operate, and maintain the transportation system.

Policies:

a. Combine education, enforcement, engineering, and evaluation to maintain and enhance system safety.
b. Design transportation infrastructure to encourage safe user behavior.
c. Support projects that improve passenger safety and security at facilities like park-and-ride lots and transit transfer centers.

d. Provide safe walking routes to schools.
e. Retrofit essential transportation facilities where possible to improve their ability to withstand a major earthquake or other natural disaster.
f. Build in system redundancy through a well-connected street grid to support emergency response and reduce community disruption during natural or man-made disasters.
g. Encourage coordination between transportation system providers and emergency response providers who rely on that system.

5. System Maintenance and Repair

Goal: Protect investments that have already been made in the transportation system and keep life-cycle costs as low as possible.

Policies:

a. Prioritize maintenance, preservation, operation, and repair of the existing transportation system.
b. Use preventive maintenance programs to ensure lowest life-cycle costs.
c. Use street restoration standards and coordinate utility and street projects to minimize destructive impacts of utility projects on streets, leveraging where possible investments for both project types to deliver more cost-effective public facilities.
d. Explore innovative programs that reduce infrastructure life-cycle costs or increase efficiency of service delivery, including use of new materials, technologies, and resource partnerships.

In April 2015, Tumwater voters approved a two-tenths of one percent retail sales tax to be devoted to street and sidewalk maintenance. Transportation infrastructure is one of the City's most valuable investments. Inadequate local, state and federal funding had resulted in deferred maintenance which drives repair costs higher. Establishing a Transportation Benefit District with this funding authority helps ensure that over time Tumwater will be able to better preserve and maintain its city streets and sidewalks.

6. Travel Demand Management

Goal: Increase overall operating efficiency of the transportation system through the effective use of measures that reduce the need to drive alone.

Policies:

a. Promote transportation-efficient development and redevelopment, and site public services and facilities where transit, walking, and biking are now or will be viable alternatives to driving alone.
b. Encourage use of public transportation, ridesharing, biking, and walking by improving access, convenience, and reliability of those options.
c. Sustain and expand private and public sector programs and services that encourage employees to commute to work by means other than driving alone, or to change commuting patterns through teleworking, flex-time, or compressed work weeks.
d. Manage parking to improve consistency with transportation demand management objectives.
e. Promote technologies that enable people to meet their needs without having to travel.
f. Use travel demand management techniques to provide alternatives during temporary congestion, such as during major construction.
g. Work to mainstream telework as a primary transportation demand management strategy among public and private employers.
h. Strive to meet State Commute Trip Reduction targets for the City.

As a partner in the regional 'Smart Corridors' project, Tumwater is bringing its traffic signal system into the 21st century with modern technology and protocols that allow coordination with Intercity Transit buses.

7. Transportation Technologies

Goal: Use technology-based approaches to address transportation congestion, safety, efficiency, and operations.

Policies:

a. Use transportation technologies to improve the operating efficiency and safety of the existing transportation system.

b. Use transportation technologies to better integrate transportation modes.
c. Make short-range technology investments that support future technology implementation strategies.
d. Look for opportunity to integrate transportation technology considerations in all projects.
e. Recognize that transmittal of electronic information is an important function of a transportation system, and integrate this into transportation system evaluation, policies, and implementation strategies.

8. Freight Mobility

Goal: Promote efficient, cost-effective, timely, and safe movement of the freight within and through the region.

Policies:

a. Plan for freight access to and from highways and other major freight corridors, and between intermodal facilities and industrial areas.
b. Support efforts to increase the amount of freight that is moved by rail to enhance efficiency, productivity, safety, and mobility.
c. Explore strategies to reduce conflict and optimize safety for all transportation system users where industrial or commercial land uses are adjacent to highly urbanized areas.
d. Implement policies and design standards that support local economic vitality by accommodating delivery trucks serving businesses and services while minimizing impacts on local streets.

9. Streets, Roads, and Bridges

Goal: Establish a street and road network that provides for the safe and efficient movement of people and goods while supporting adopted land use goals.

Policies:

a. Design and construct multimodal, context-sensitive, complete streets and roads.
b. Coordinate regionally to identify new connections that provide more direct routes and reduce vehicle miles traveled.
c. Avoid widening any local arterial or collector more than two through-lanes in each direction with auxiliary turn lanes where warranted (maximum five lanes mid-block width) to preserve an acceptable community scale and minimize transportation impacts on non-motorized travelers and adjacent land uses.
d. Develop an interconnected grid of local streets and roads to increase individual travel options and neighborhood connectivity, while improving efficient use of the overall transportation system.
e. Use new technologies or alternative designs to safely and efficiently manage the flow of traffic, such as roundabouts where appropriate as alternatives to traffic signals or stop signs.
f. Use access management techniques to improve roadway capacity and operating efficiency, and increase overall system safety.
g. Ensure that street, road, and bridge projects are integrated with pedestrian amenities in districts and neighborhoods, and add lasting value to the community.
h. Incorporate alternative strategies to address congestion where road widening and traffic control devices are not suitable, particularly along Strategy Corridors.
m. Strategy Corridors are places where street widening is not a preferred option to address congestion problems. This may be because the street is already at the maximum number of lanes (5), or that adjacent land uses are either fully built out or are environmentally sensitive. In strategy corridors, level of service (LOS) may not meet adopted standards,

Tumwater's plans for the Brewery District and the Capitol Boulevard Corridor incorporate roundabouts as a safe, efficient intersection treatment that reduces impacts associated with signalized intersections on adjacent properties. The Boulevard will integrate roundabout treatments with the use of access management to smooth traffic flow and create safer turning opportunities while improving travel conditions for cyclists and pedestrians.

"Strategy Corridors are places where street widening is not a preferred option to address congestion problems…"

suggesting instead that a different approach is needed for maintaining access and mobility in these areas such as increased transit service, more sidewalks or bike facilities, a complete and connected street grid, transportation technology measures that improve system operating efficiency, access management, parking management, incentives for employees to telework or carpool, or land use measures that increase the density of land use activities in these corridors that support the best alternatives to driving.

i. Design and build streets that are important freight or bus routes to reduce weather-induced weight restrictions.

j. Meet pm peak Level of Service (LOS) standards:
    - LOS E or better in Urban Core Areas [where these areas overlap with Strategy Corridors the LOS may exceed adopted standards]
    - LOS D or better elsewhere inside the City limits

10. Public Transportation

Goal: Provide an appropriate level of reliable, effective public transportation options commensurate with the region's evolving needs.

Policies:

a. Support Intercity Transit's long-range plan emphasizing trunk and primary routes servicing core areas along designated Urban Corridors and other strategy corridors with supportive land use and appropriate design standards.

b. Increase the share of trips made by public transportation.

c. Support regional commuter vanpool programs to provide cost-effective, flexible alternatives to commuting in single-occupancy vehicles.

d. Support safe, convenient, and cost-effective transportation services for youth, elders, people with disabilities, and low-income populations by increasing the supply of housing on high-quality transit corridors.

e. Schedule public meetings where possible in locations served conveniently by transit; include transit route information on meeting notices.
f. Integrate public transportation considerations into the planning for newly emerging urban centers and locations such as those south and east of the airport, including innovative partnerships or programs where fixed-route service is not feasible in the near-term.

11. Bicycling

Goal: Increase the share of all trips made safely and conveniently by bicycle.

Policies:

n. Develop a continuous, safe, and convenient bicycle network that functions as an integral part of the whole transportation system.
o. Provide safe and convenient bicycle routes to all schools in the city, and encourage their use.
p. Participate with regional partners in developing a network of contiguous and interconnected north-south and east-west dedicated shared-use corridors to serve as the backbone for the region's non-motorized transportation system.
q. Provide bicycle parking facilities at transit centers, park-and-ride locations, and other multimodal locations.
r. Provide short- and long-term bicycle parking and other supporting facilities at locations like schools, employment sites, and activity centers.
s. Support education programs for motorists and bicyclists to increase understanding and awareness of bicycling laws, and encourage safe and lawful sharing of the streets.
t. Participate with regional partners in exploring long-term strategies for funding bicycle facilities and services.

While City codes require bike parking facilities with most new construction, some developers are catering to a growing interest in biking by offering even more amenities for resident cyclists. For example, Hearthstone Apartments in the Capitol Boulevard District offers a dedicated bike workshop space for residents. This supports increased bike use within the City's urban core and is an example of market forces aligning with City bike policies.

12. Walking

Goal: Increase the share of all trips made safely and conveniently by walking.

Policies:

a. Provide a convenient, interconnected, safe pedestrian network that supports existing and desired land uses.

b. Construct and maintain safe and accessible sidewalks and effective crossing opportunities within an appropriate distance of every school in the city, and encourage their use.

c. Provide frequent pedestrian crossings, especially in urban areas and on urban corridors, along transit routes, and near activity centers.

d. Develop and promote non-motorized connections for pedestrian and bike travel to shorten the length of trips to destinations where walking and biking are viable travel options.

e. Require pedestrian-friendly site design and building standards in activity centers, along urban corridors and other key transit routes, and in high density mixed-use zoning districts.

f. Provide street lighting, pedestrian buffers, trees, benches, and other street elements that make walking safe and pleasant.

g. Encourage neighborhood-scale planning efforts to identify and refine important pedestrian routes that increase connectivity and improve walkability.

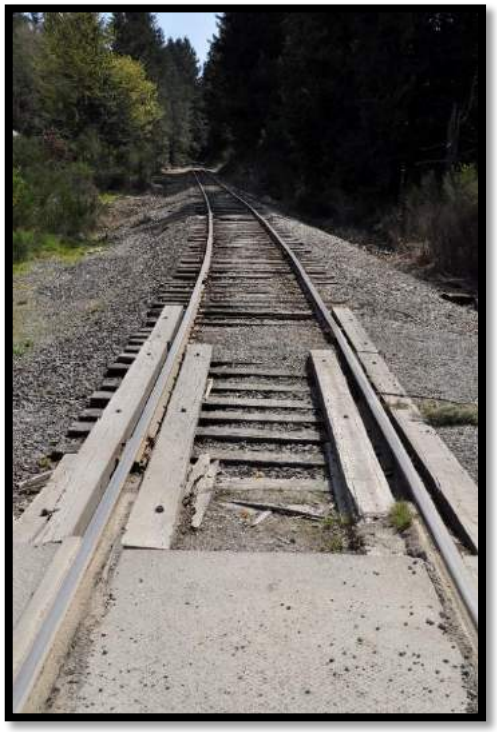
h. Consider asphalt walkways as appropriate practical solutions for sidewalks when functional pedestrian mobility needs to be improved prior to the availability of adequate funds for construction as called for in adopted sidewalk and street design standards.

Tumwater partners with the Tumwater School District and Intercity Transit to support "Walk and Roll" programs at area elementary and middle schools. These programs work with educators and school administrators to encourage children to walk and bike to school. This includes coordinated education and enforcement activities as well as a focused response to infrastructure needs in the vicinity of schools to make it safer and easier for students to walk to school.

13. Rail

Goal: Ensure the continued long term viability of existing and rail-banked rail lines for future freight and passenger rail travel.

Policies:



a. Support appropriate regional opportunities for the potential shared use of freight rail lines for passenger rail travel.
b. Advocate for regional acquisition and continued operation of short-line railroads where needed to support current and future economic development needs.
c. Use design techniques, technology, and operations coordination to minimize potential conflicts between trains and other modes of travel, and between trains and adjacent land uses.
d. Work with regional partners to acquire railroad rights-of-way threatened with abandonment in order to preserve these corridors for future transportation uses.
e. Participate as appropriate in the partnerships necessary to foster efficient, high-speed passenger rail service in the Pacific Northwest.
f. Coordinate with regional partners to position the Thurston Region for a commuter rail connection in the future.

14. Aviation

Goal: Provide an appropriate level of facilities and services to meet the general aviation needs of residents and businesses in the region.

Policies:

a. Coordinate with the Port of Olympia and Thurston County to maintain consistency between adopted land use plans and long-range airport development

strategies, and ensure land use compatibility in areas adjacent to the airport.

b. Support multimodal access to the Port of Olympia's airport terminal.

15. Public Involvement

Goal: Build a community of engaged and informed constituents that contributes ideas and supports actions to create a highly functional multimodal transportation system consistent with the goals and policies of this transportation element.

Policies:

a. Provide broad-based, early, and continuing public involvement opportunities in all aspects of the transportation planning process.
b. Ensure equal access to participation for all users of the transportation system.
c. Promote increased public understanding of the relationships between land use patterns and transportation choices facing Tumwater.
d. Explore innovative participation techniques to increase public involvement in transportation issues, and maximize use of "plain English" and other communication techniques to translate complex issues or decisions so they can be widely understood.

16. Intergovernmental Coordination

Goal: Ensure transportation facilities and programs function seamlessly across community borders.

Policies:

a. Participate in coordination activities at the local, regional, state, tribal, and federal level that address the condition or operations of the transportation system.
b. Work with other agencies to coordinate land use and public facility siting decisions, implement countywide planning policies, and refine the tools needed to achieve

transportation-efficient community development patterns.

c. Coordinate street projects with Olympia, Thurston County, WSDOT, and Intercity Transit as appropriate.
d. Coordinate development of local plan updates with regional efforts when possible to ensure consistency.
e. Collaborate with other local jurisdictions, TRPC, Intercity Transit, the Port of Olympia, the Thurston EDC, and other entities to facilitate informed, reasoned decision-making processes that advance shared transportation and land use objectives.

17. Environmental and Human Health

Goal: Minimize transportation impacts on the natural environment and the people who live and work in Tumwater.

Policies:

a. Protect water quality from the impacts of stormwater runoff by minimizing impervious surface area and by using low impact development methods where feasible to effectively treat and manage unavoidable runoff.
b. Use transportation planning, design, and construction measures that minimize negative impacts on priority fish-bearing streams and other environmentally sensitive areas.
c. Develop a transportation system that supports compact, mixed-use development and related non-motorized travel to curb growth in miles of motor vehicle travel, increase energy efficiency, reduce environmental impacts, and encourage physical activity and community health.
d. Support state and national efforts to promote the use of alternative fuels and technologies that reduce pollution and other environmental impacts from motorized vehicles.

Low Impact Development mimics the natural hydrologic action of watersheds by retaining and infiltrating stormwater runoff on or near the site, and by effectively treating unavoidable runoff, in addition to simply reducing the amount of paved surface area on a site.

e. Ensure federal Title VI requirements for environmental justice are met so that minority populations and people with low incomes do not incur disproportionately high and adverse human health or environmental impacts from transportation policies, programs, and investments.
f. Comply with federal Clean Air Act transportation requirements.
g. Support policies and programs that reduce greenhouse gas emissions associated with travel.
h. Reduce the impacts of transportation on the natural environment during construction, retrofit, and maintenance.
i. Plan and design for impacts associated with changing weather and climate patterns, such as increased flooding and extreme weather events.
j. Support regional efforts to decrease annual per capita vehicle miles traveled within the Thurston region to:
    - 1990 levels by 2020
    - 30 percent below 1990 levels by 2035
    - 50 percent below 1990 levels by 2050.

18. Performance Measures

Goal: Develop performance measures that are realistic, efficient to administer, effective in assessing performance, and meaningful to the public.

Policies:

a.Use transportation performance measures to evaluate, monitor, and respond to the performance of Tumwater policies and investments.

b. Use transportation performance measures that reflect priority city and regional objectives such as consistency of transportation and land use decision-making, improved mobility and access, adequate maintenance and repair of the system, environmental health, and safety.

c. Develop performance measures that reflect the needs and contributions of all modes of travel.
d. Where feasible, use performance measures consistent with those used by other agencies and organizations to enable compatible comparisons.

19. Transportation Funding
Goal: Secure adequate funding from all sources to implement the goals and policies in this plan.

Policies:

a. Provide timely and comprehensive public information about transportation funding issues and opportunities to better enable citizens to participate and make informed decisions on complex funding issues.
b. Prioritize the maintenance and preservation of the existing transportation system to minimize life-cycle costs.
c. Consider the full array of costs and benefits in the selection of transportation projects to ensure the best long-term investment decisions.
d. Make strategic transportation investments that reinforce land use and transportation decisions consistent with the goals and policies of this transportation element.
e. 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.
f. Support regional efforts to improve the availability, reliability, and flexibility of transportation revenues.
g. Use transportation funding policies and investments to make development decisions predictable, fair, and cost-effective.
h. Continue policies that require new development to pay for its share of impacts on the transportation system; where appropriate support multimodal mitigations and not just street capacity.

Transportation Master Plan

CHAPTER 9

SYSTEM INVENTORY

Transportation System Inventory

The transportation system is made up of a number of different networks. Combined, they connect people to the places they need to be and get freight into and out of our city and products to our stores. Following is an inventory of the existing transportation system serving Tumwater's residents and businesses.

City Streets

City streets are the most ubiquitous element of our transportation system. The City has about 113 centerline miles of streets it owns and is responsible for maintaining.

Some of the intersections where the streets meet need traffic control to enable safe crossing and turning movements. Tumwater has 23 traffic signals and five roundabouts to control traffic at its busiest intersections.

Figure 2 illustrates the City's street system by its functional classification. Functional classification is a way of characterizing the relative importance of a street in terms of the volumes of traffic it carries and its relation to other streets in the network. Some streets are intended to carry more traffic than other streets and serve large commercial or employment centers. Others are intended to connect residential areas with neighborhood centers and schools, carrying lower volumes at slower speeds. Still others provide circulation within a neighborhood and have the lowest volumes and slowest speeds. In this way arterials carry the highest volumes of traffic, followed by collectors, and then local access streets.

A well-connected street grid offering many route choices is the most efficient pattern for carrying and dispersing traffic. The more efficient the street network the less we have to rely on widening to address chronic congestion. We are challenged to complete that grid due to things like I-5 and topographic features that limit our ability to make street connections, but where possible we strive to maximize connectivity.

Tumwater has defined the functional classification of its streets in accordance with City standards in much the same way that Federal Highway Administration assigns Federal Functional Classification to the nation's streets and highways. While very similar, these are two different street classifications

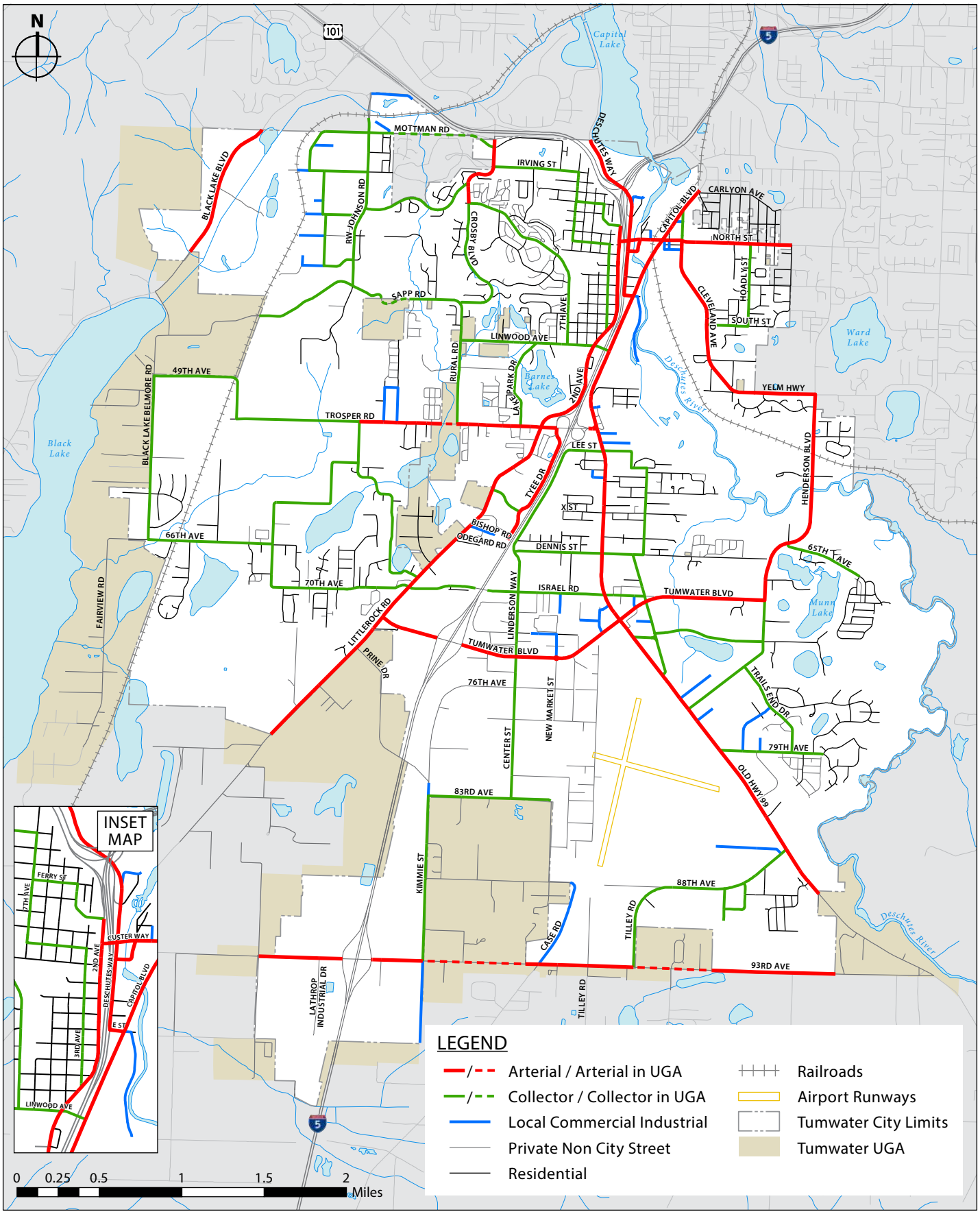


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Figure 2
Roadway Functional Classification

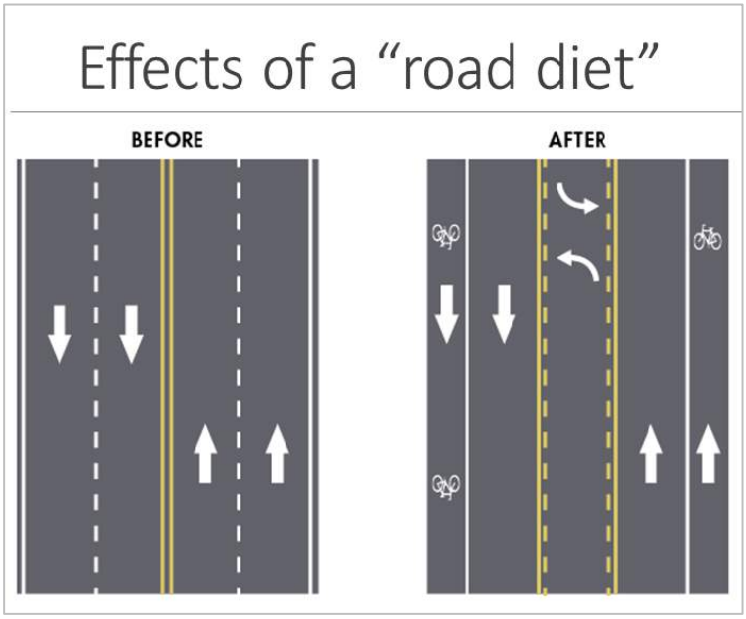
There is a practical limit to how wide we can build our streets and still maintain the character of our community. Regional policies put into place in the late 1990s restrict the width of arterials in our region to five lanes between intersections. This is two lanes in each direction plus a center turn lane, if needed. It was determined that streets wider than this would be inconsistent with the small city character of Tumwater and our neighboring jurisdictions. Our communities realized that traffic congestion cannot be solved by street widening – at best, it alleviates the problem for a while before congestion resumes at an even bigger scale. At worst, it creates bottlenecks elsewhere on the system and degrades the character of the place with facilities that are highway-like in form and function. Excessively wide streets undermine our efforts to create walkable, bike-friendly neighborhoods that are more oriented to people than cars.

TRPC policies identify 'strategy corridors' where widening is not a viable option due to existing street width or other constraints. Strategy corridors are those places where alternatives to widening are most needed to improve mobility and access. These strategies can include improved signal timing and operational enhancements; they can include improved transit, walking, and biking options; they can include access control that improves safety and efficiency by restricting turn movements.

Interestingly, strategies can also include more urban-style development on these corridors that results in a mix of activities in close proximity and that generates demand for walking, cycling, and transit. If that development were locating on the periphery of the city it would generate car traffic that further clogs these arterials. Locating that same development on our close-in corridors creates opportunities for travel choice that don't exist elsewhere. Figure 3 depicts the regionally-designated strategy corridors in Tumwater. They include Capitol Boulevard, Tumwater Boulevard, Cleveland Avenue and Yelm Highway, and Interstate 5.

Tumwater adheres to some general design principles for its streets, with the goal of creating a safe, convenient street system that supports community identity.

- Design streets to accommodate all travelers, not just drivers.
- Limit the width of streets, ensuring no arterials exceed five lanes mid-block and using “road diets” to repurpose existing rights-of-way where streets are unnecessarily wide.



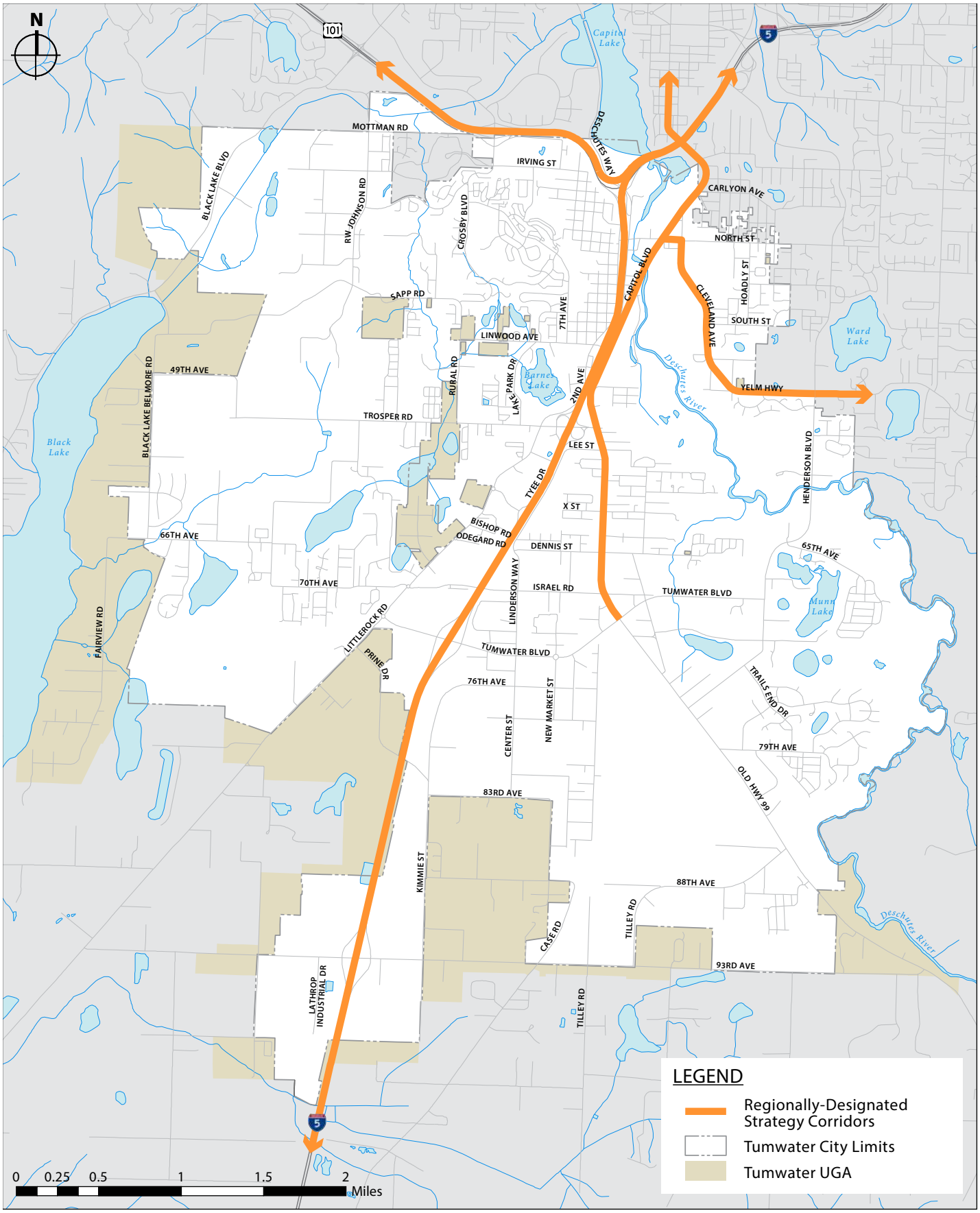


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Figure 3
Regionally-Designated Strategy Corridors in Tumwater

State Facilities

In addition to the city's streets, Tumwater is also served by two state highways – Interstate 5 and SR 121 – that are owned and managed by the Washington State Department of Transportation (WSDOT). US 101 and its interchanges, which provide access to and from Tumwater, is located in Olympia along Tumwater's northern border. I-5 is a Highway of Statewide Significance that bisects the City from north to south.

SR 121 includes 93rd Avenue between I-5 and Tilley Road, Tilley Road south to Maytown Road, and Maytown Road west to I-5.

National Highway System Routes

The National Highway System (NHS) includes the interstate highway system as well as other streets and highways important to the nation's economy, defense, and mobility. Local arterials are designated as a part of the NHS, as are other local streets that connect intermodal facilities like the airport to the interstate highway system. Figure 4 identifies the NHS routes in Tumwater. Golden colored facilities are state—owned while green colored facilities are local components of the NHS.

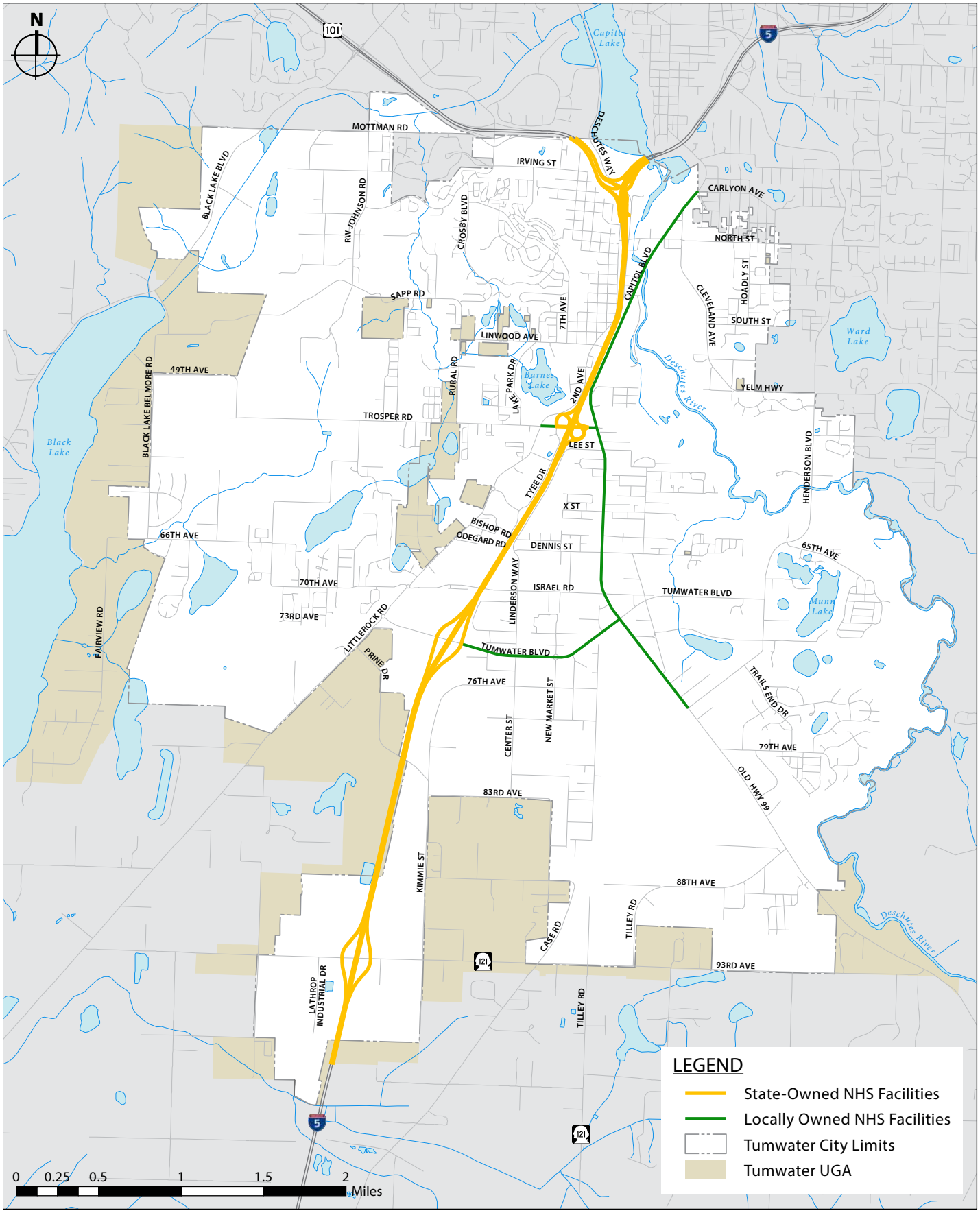

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Figure 4
National Highway System Routes in Tumwater

Public Transportation

Transit is an integral part of Tumwater's transportation system. A range of services, from general purpose to commuter to rural connectivity, make up the City's transit network.

Intercity Transit

Intercity Transit is an important partner in meeting the City's mobility needs. Intercity Transit (IT) is the region's public transportation service provider, operating a fleet of 71 buses with 20 local routes in the Tumwater, Olympia, Lacey, and Yelm area. IT also operates 5 Express routes to Lakewood and Tacoma offering connections to Pierce Transit and Sound Transit services. All buses are equipped with bike racks and all buses are ADA accessible. In addition, IT operates complementary paratransit service called "Dial-A-Lift", or DAL for short, with 35 vans; this service exceeds requirements of the Americans with Disabilities Act (ADA). IT also maintains an extensive commuter vanpool program with 200 active vans carrying over 1,500 people each workday between work and home efficiently and cost-effectively. IT supports its transit and vanpool program utilizing 7 park-and-ride lots throughout the region, including one in Tumwater located at the corner of Bonniewood Drive and Israel Road, in the Department of Health parking lot. In 2014, IT had 4.5 million boardings on its fixed-route service, over 154,000 boardings on its "Dial-A-Lift" paratransit service, and over 745,000 trips on its Commuter Vanpool service.

IT's commitment to efficiency results in the most frequent service operating along the region's urban corridors, the next most frequent service connecting neighborhoods to significant employment and activity centers, and the sparsest service connecting outlying areas to transit transfer centers. Five local transit routes currently serve the Tumwater area.

u. Route 12 operates between the Olympia Transit Center at the north to Tumwater Square and the

State's Department of Labor and Industries building on Linderson Way SW to the south, providing access to the west side of Tumwater via Littlerock Road, Trosper Road, and Linwood Avenue. Service is provided Monday through Friday between approximately 6:00 a.m. and 11:15 p.m. On the weekends service is provided between approximately 8:15 a.m. and 11:15 p.m.

v. Route 13 also operates between the Olympia Transit Center at the north to the Labor and Industries building on Linderson Way to the south via Capitol Way and Capitol Boulevard; it is a high frequency weekday service route offering 15 minute service frequency. Service is provided Monday through Friday between approximately 6:00 a.m. and 11:00 p.m. On Saturdays service is provided between approximately 8:45 a.m. and 11:00 p.m., and on Sundays from 8:45 a.m. to 8:15 p.m.

w. Route 42, a weekday circulator route, provides service to the Thurston County Family Court and the Accountability and Restitution Center (ARC), both located in Tumwater's Mottman Industrial Park. This route is also within ¼ mile of Quixote Village, the cottage community for previously homeless adults. Route 42 makes connections with the high frequency service corridors served by Routes 43 and 44 on Cooper Point Road and at the South Puget Sound Community College.

x. Route 43 operates between the Olympia Transit Center and the Tumwater Square Transfer Station, traveling along Deschutes Parkway, and serving the County Courthouse, Evergreen Park Drive, the South Puget Sound Community College, Barnes Hill, and back to Capitol Boulevard via the northwest part of Tumwater. Service is provided Monday through Friday between approximately 6:15 a.m. and 7:45 p.m. On

Saturdays, service is provided between approximately 8:45 a.m. and 7:00 p.m.

y. Route 68 travels between the Lacey Transit Center, Tumwater Square Transfer Station, and the Olympia Transit Center via the Yelm highway, providing access to parts of east Tumwater along the way. Service is provided Monday through Friday between approximately 6:00 a.m. and 8:30 p.m. On the weekends service is provided between approximately 8:30 a.m. and 8:30 p.m.

Intercity Transit also offers inter-regional service to and from Lakewood on weekdays with stops near the Labor and Industries and Department of Health buildings. Express Route 609 provides 10 northbound trips departing Tumwater from 5:00 a.m. to 5:20 p.m. and 11 southbound trips arriving in Tumwater from 6:50 a.m. to 7:30 p.m. Transfer points in Lakewood enable connections with Pierce Transit and Sound Transit's Sounder commuter rail and Express bus service to SeaTac airport and Seattle. This is a grant-funded pilot program through June 2017, to demonstrate the demand for express service between Tumwater, Olympia, Lacey, and Lakewood.

IT's service standards and facilities plans are guided by an annual update of both its six-year Transit Development Plan and its Strategic Plan. Together, these two plans help the agency prioritize its service and investments to maximize system performance. Seven essential design principles frame IT's decision-making processes and ensure coordination with Tumwater and other local jurisdictions:

- Operate a range of services, each designed to meet the needs and capabilities of the neighborhoods it serves.
- Strengthen service operating along major corridors.
- Reduce customer travel times with strategies such as:
    - Express services
    - Priority treatment for transit vehicles
    - More direct services linking major points of origin and destination
    - Fare policies that speed boarding times
- Keep pace with development.
- Expand regional express routes.

- Support a range of transportation alternatives.
- Provide fixed facilities and equipment that support the region's public transit infrastructure.

Figure 5 illustrates the extent of IT service within Tumwater, by route and service frequency. Note that all service in Tumwater is directly linked to service elsewhere within the metropolitan area. Thus, transit riders in Tumwater can easily connect in downtown Olympia with inter-regional service offered by Intercity Transit, Grays Harbor Transit, Mason Transit, and Greyhound, as well as to routes operating into Pierce County.

IT maintains the regional Tumwater Square Transfer Station on Cleveland Avenue, near the Safeway. Tumwater engages IT in reviewing land use permitting requests in order to maximize the opportunities for public transportation through effective land use planning and urban design. IT is also a regular stakeholder on the City's advisory committees convened for special studies and sub-area plans. IT and Tumwater are partnering on an upgrade to the Tumwater Square Transit Station to improve accessibility, pedestrian safety and bus alignments in support of Brewery District recommendations.

FIGURE 5: INTERCITY TRANSIT SYSTEM MAP

R/T – Rural & Tribal Transportation

R/T – the Rural & Tribal Transportation program – helps connect outlying communities outside of Intercity Transit's service area to the urban transit network. R/T provides accessible, fixed-route public transportation services for the Nisqually Indian Tribe, the Confederated Tribes of the Chehalis Reservation, and the communities of Bucoda, Rainier, Rochester, Tenino, Yelm, and Centralia, connecting those communities to Intercity Transit in Thurston County and Twin Transit in Lewis County. The north urban connection to Intercity Transit is in Tumwater, at the state office buildings located at Capitol Boulevard and Israel Road, and at the Tumwater Square Transfer Station.

- Route 2 makes arrivals in Tumwater from Rainier and Tenino beginning at 6:50 a.m. through about 5:00 p.m., with return trips leaving Tumwater from 7:00 a.m. until 5:00 p.m.
- Route 3 makes arrivals in Tumwater from the Chehalis Reservation, Rochester, and Grand Mound from 7:40 a.m. until 5:40 p.m., with return trips leaving Tumwater from 7:45 a.m. until 5:45 p.m.

Timed transfer points enable people to travel conveniently between rural communities in south Thurston County and north Lewis County and Tumwater.

Non-Motorized Facilities

Tumwater, like other jurisdictions in the Thurston region, places a high priority on "complete streets" that include infrastructure for all modes of travel and not just cars. For almost 20 years, Tumwater has had in place street standards that require sidewalks and bike lanes with street construction or reconstruction projects. Following is a summary description of these systems.

Pedestrian Facilities

Every single trip begins or ends with a walk for most people. Sidewalks and other elements of the pedestrian system are the facilities that make those walks to and from final destinations safe and convenient. Design guidelines specify how sidewalks are to be built – their width, their distance from the street,

whether they are on one side of the street or both sides. Different standards apply to different types of streets depending on the speed and volume of vehicular traffic, number of pedestrian-generating activities, and other factors.

Asphalt walkways, such as this walkway located on 70th Avenue, provide a cost-effective, practical solution for improving pedestrian mobility.

Most streets built or upgraded since the mid-1990s have sidewalks because of policies put into place after GMA that require streets to accommodate all travelers and not just those in cars. However, many older streets do not have sidewalks and adding them will be an expensive undertaking to be accomplished over many years. Tumwater is using asphalt walkways as a functional alternative to sidewalks in some locations that don't have sidewalks and will not for the foreseeable future due to costs, land acquisition, and other factors. Walkways are designed to solve a problem – lack of safe and convenient pedestrian facilities for the people who need to walk there. They provide functional, safe, and convenient connections at a fraction of the cost of full-standard sidewalks.

Crosswalks are what makes it possible for people to safely cross busy streets while giving drivers some predictability about where to expect pedestrians in the street. They come in various configurations and may be located at an intersection or "mid-block", enabling people to safely cross between intersections. Mid-block crossing opportunities are especially important on busy transit corridors because riders typically have to cross either going to or returning from their trips.

It takes more than sidewalks and crosswalks to make a comfortable and accessible pedestrian environment. Other elements that may be deployed include refuge islands for wide intersections, pedestrian-activated signals, planter strips, colored or textured pavement, street trees, and bulb-outs or

curb extensions. In more urbanized areas, building architecture and site design are also critical considerations that will either enhance or inhibit pedestrian access

Figure 6 delineates the existing pedestrian network, including sidewalks and sidewalks adjacent to planter strips, walkways that provide safe and functional places for people to walk, and multiuse pathways designed to serve pedestrians and cyclists.

A Walkability Audit conducted by Planning Commissioners and staff evaluated the condition and suitability of sidewalks in the Brewery District.

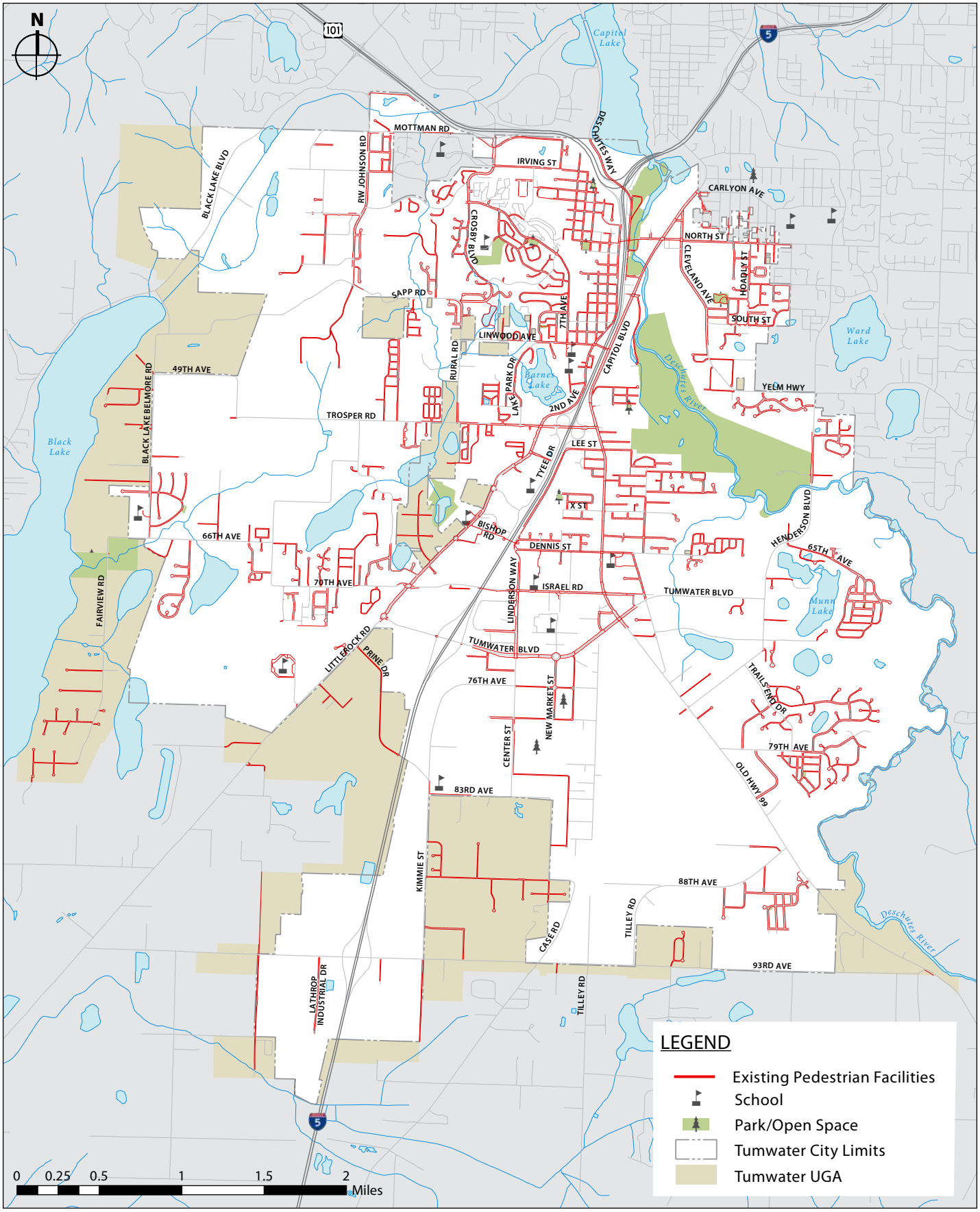

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Figure 6
Existing Pedestrian Facilities 2012

Despite rain, hills, and short winter days, biking is an increasingly popular mode of travel throughout Tumwater and the rest of the region. Designated bike routes include several different types of facilities with different types of treatments. What they have in common is that they are favorable routes for cyclists that connect important destinations or corridors.

Bike lanes are typically on-street facilities with a minimum width of five feet that are designed and signed to accommodate cyclists on existing streets. Bike lanes enable cyclists to travel on streets without having to ride in traffic by dedicating a part of the street for bike travel.

Wide shoulders can serve the function of bike lanes on some roads where a signed bike facility is not appropriate. This might be because additional paved width is not available, or where the space is shared with pedestrians because there are no sidewalks. Four feet of shoulder width can make biking safer and more comfortable for some people, even if it is not designated as a formal bike lane.

Multi-use pathways and trails provide off-street facilities that may be paved or unpaved but smooth, and which are designed to accommodate cyclists as well as pedestrians. Trails are sometimes discounted as being purely recreational in nature but in reality, a well-developed trail system is the backbone of the non-motorized network connecting far-flung activity centers and destinations with a dedicated route that is generally free of motorized traffic.

Finally, quiet parallel streets can offer ideal alternatives for many riders to busy streets with or without bike lanes. Quiet streets are typically low-volume, low-speed routes regularly used by riders due to their proximity to key corridors and destinations. Sometimes these are marked with a “sharrow” indicating the street is to be shared by cars and bikes alike, but just as often they are unmarked except on traveler resources like the Thurston County Bike Map developed and maintained by TRPC.

The availability of bike facilities is complemented by Intercity Transit’s policy of including bike racks on every bus, design standards that require convenient bike parking at buildings, and education and enforcement activities directed to cyclists and motorists alike. Figure 7 illustrates Tumwater’s bike facilities.

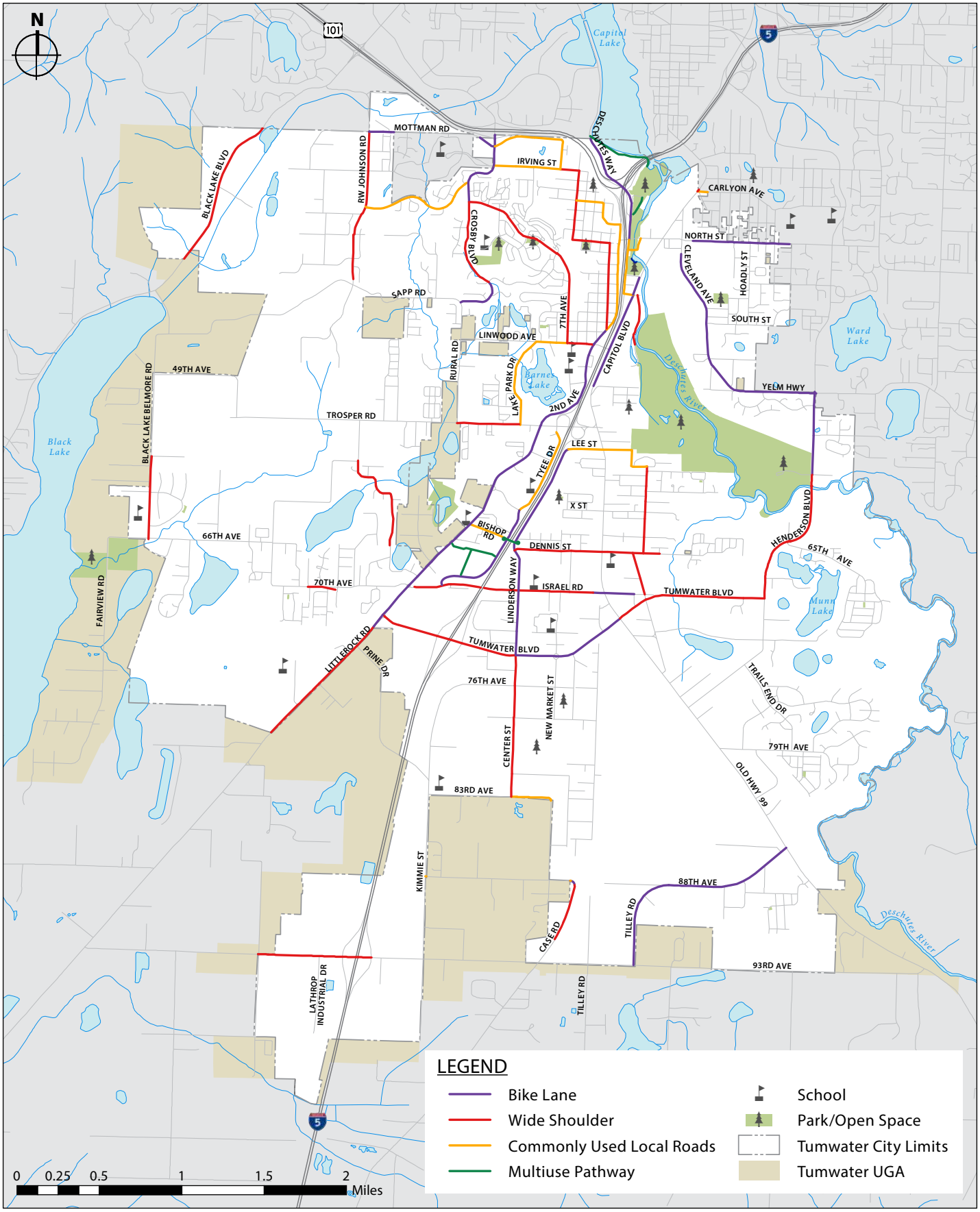

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Figure 7
Existing Bicycle Facilities by Type – 2016

AIRPORT

The Olympia Regional Airport is owned and operated by the Port of Olympia. It consists of 835 acres within the city limits of Tumwater. Uses at the airport include general aviation facilities as well as industrial, commercial and public uses. The airport accommodates a variety of users, ranging from single engine aircraft to business jets, and includes activity by helicopters, gliders, and ultralights. The airport does not have scheduled passenger flights.

The airport currently operates with two runways. Runway 17/35 is the primary runway at 5,501 feet in length and 150 feet in width. Runway 08/26 is the airport's crosswind runway and is 4,157 feet in length and 150 feet wide.

The airport is well connected to several arterial roadways that serve Tumwater. Vehicle access to the property is provided by Old Highway 99 along the east side of the property, Terminal Street and New Market Street along the northwest side of the property and Center Street and Case Road along the southwest side of the property. Tumwater Boulevard is adjacent to the northern boundary of the airport and provides direct access to I-5.

Rail

Two railroad facilities serve Tumwater, both owned by Union Pacific Railroad Company. One is the line that comes up through the Deschutes Valley from East Olympia, with connections to the former Olympia Brewery warehouses in Tumwater valley. This rail line intersects a spur line owned by Tacoma Municipal Belt line in Olympia at Capitol Lake; it provides service into and out of the Mottman Industrial Complex via Percival Creek Canyon. That second line extends south of 66th Avenue though it is active only to Sapp Road.

There are six at-grade crossings in Tumwater. They are located at R.W. Johnson Road SW, 29th Avenue, Sapp Road, Trosper Road SW at 49th Avenue SW, 66th Avenue, and Henderson Boulevard. Five crossings are active but lightly used, with a regulated low travel speed. The crossing at R.W. Johnson has lights, sound, and cross arms; the crossing at Henderson has lights and sound. The crossings at 29th Avenue, Sapp Road, and Trosper Road/49th Avenue have signs. The crossing at 66th Avenue is inactive. The rail corridor from 66th to 81st went into abandonment proceedings in 2016; Thurston County will acquire the corridor and incorporate it into the future Gate-Belmore Trail.

Designated Freight Routes on Local Streets

Freight mobility is an important function of the transportation system. It is how goods get to stores and how local businesses get products to their customers. Freight mobility is an integral part of the City's overall economy. Figure 8 illustrates the City's locally-designated freight routes. The State designates streets as freight routes based on the amount of tonnage carried on those streets.

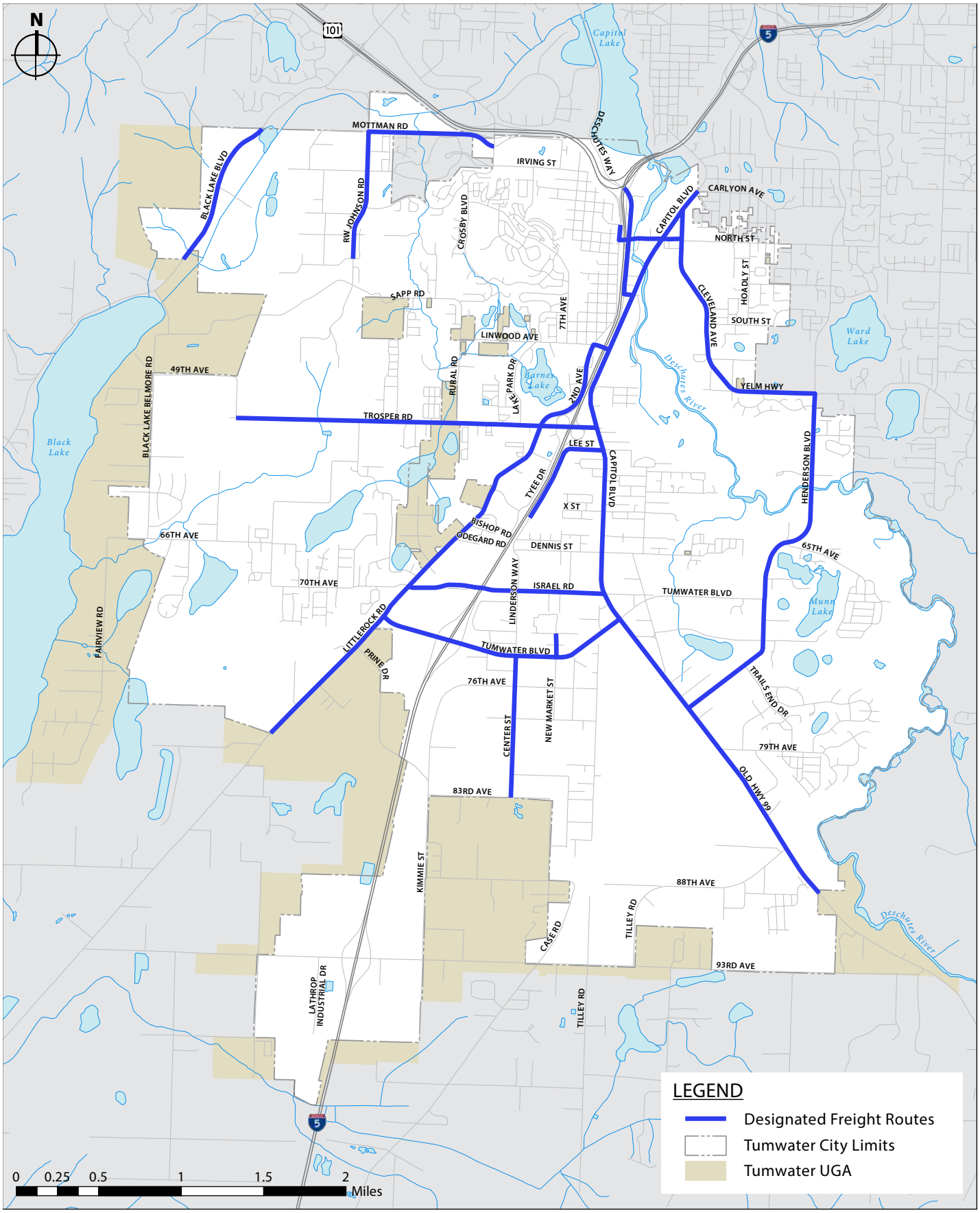

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Figure 8
Locally-Designated Freight Routes

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CHAPTER 10

SYSTEM PERFORMANCE

System Performance

The way we measure system performance is commonly referred to as its "level of service." Level of service standards, or LOS standards, describe our expectations about what is acceptable and unacceptable in terms of how our transportation system performs.

The GMA does not prescribe to Tumwater how to measure system performance, only that it must do so and that the standards it uses for arterials and collectors must be regionally coordinated. For decades Tumwater has used a traditional approach based on vehicle congestion and delay. With this Transportation Master Plan, Tumwater is advancing its system performance measures – its LOS – to include non-motorized networks in its evaluation process. It is initiating development of multimodal LOS standards.

The new multimodal standards do not replace the old standards. The City is introducing these new LOS standards to augment existing LOS standards for streets. The new standards will incorporate additional factors more appropriate for evaluating bike and sidewalk network performance in different parts of the city. The City is working to align its evaluation of transportation system performance with what it's trying to accomplish with infill and redevelopment in some of its sub-areas and the completion of walking routes around its schools.

Growth will continue to mitigate its impacts through fees, development and street standards, SEPA mitigations, and other mechanisms. The mitigations developers make derive from LOS evaluations and the criteria used to judge system performance. That's why it's important to measure what matters when looking at impacts and mitigations. These multimodal level of service standards give Tumwater a greater range of tools for managing impacts of growth and improving the quality and performance of the City's transportation system.

How Tumwater defines its system performance – its level of service – affects how it evaluates concurrency. Concurrency is the process describing how Tumwater calculates the impacts of future development on the transportation system. Like the Comprehensive Plan, concurrency is a process required by the GMA. It ensures system improvements are made "concurrent with" development so that the transportation system performs

as expected as the city grows. Concurrency is addressed in a different city process; what matters is that it is based on expectations of future system performance that are established in this transportation element. The rest of this section looks at system performance based on today's conditions and an analysis of system performance based on future growth in light of its adopted LOS standards. This includes some projects that resulted from the detailed sub-area plans for the Brewery District and Capitol Boulevard, projects that are needed to realize the community vision embodied in those plans.

Performance of City Streets

LOS standards for streets consider travel conditions perceived by motorists – travel speed, travel time, freedom to maneuver, traffic interruptions and delays, comfort, and convenience. These standards are typically expressed with letter designations ranging from A – completely free flow conditions – to F, or failing, when chronic congestion is predictable and extends well beyond a "peak 15 minutes" at the end of the work day.

Sometimes chronic congestion results not from too many vehicles but from system inefficiency – poorly timed signals, too many left-turning movements, inadequate storage space at intersections. Analysis of traffic operations can help determine whether the problem is one of too many cars or a need for better intersection or roadway design.

Tumwater will continue to evaluate the performance of its arterials and collectors using congestion measures that equate to delay. Since the late 1990s this has included acceptance of a bit more congestion on streets offering a wider range of travel choices, such as Capitol Boulevard. Expectations are that congestion will be less acceptable on more suburban streets like 70th Avenue or R.W. Johnson Boulevard.

The following LOS designations describe Tumwater's policy in the city and its urban growth area:

- For the designated "Urban Core Areas" LOS E is the acceptable standard of system performance. The Urban Core Areas are shown on Figure 9.
- For the rest of the City and its urban growth area, LOS D will apply.
- The City has established Tumwater Strategy Corridors where the local LOS standard still applies as a goal, but it is acknowledged that some intersections or roadways may experience periodic congestion that exceeds the applicable standard. The Tumwater Strategy Corridors are also shown on Figure 9.

Tumwater's use of regionally coordinated level of service standards for arterials and collectors ensures consistency in evaluation methods between Tumwater and its neighboring jurisdictions.

Figure 10 illustrates PM peak period level of service conditions in 2015 for the City's streets and intersections. Figure 11 shows corresponding 2015 traffic volumes in an order-of-magnitude map; Figure 12 shows those same facilities with 2040 traffic volumes. Figure 13 shows the resulting level of service conditions in 2040 if no projects were built between now and then, while Figure 14 demonstrates the improvement to adopted levels of service generated by the projects included in this plan.

Congestion is not the over-riding consideration in Strategy Corridors. In these areas the City will work with developers to mitigate impacts and enhance multimodal mobility to the extent practicable; however, the City may choose to permit development even if it exceeds LOS thresholds because that development supports broader City objectives about growth and urban form. In these areas extra emphasis is placed on operational efficiency and completeness of the multimodal network as this is where development is most likely to generate bike, walk and transit trips.

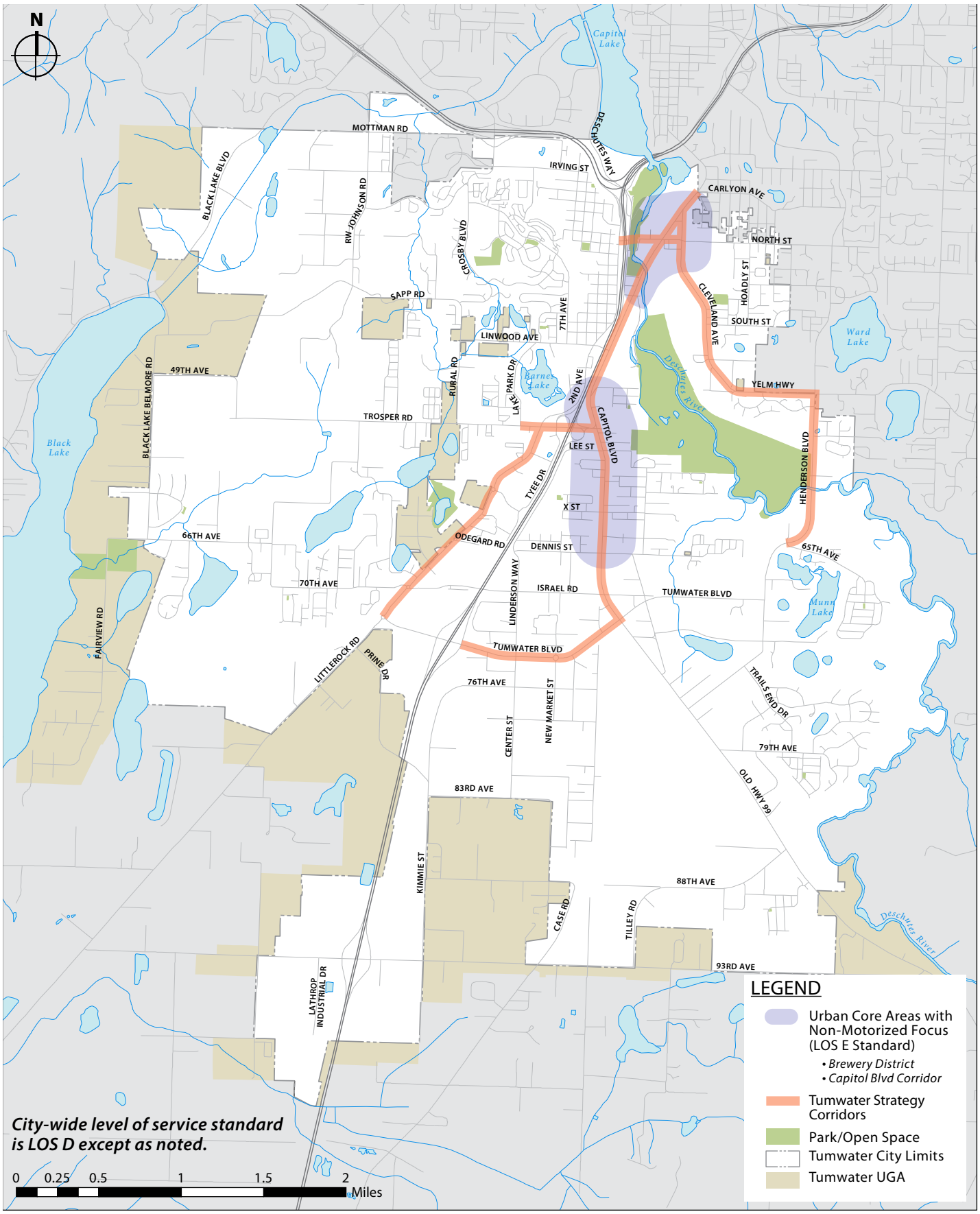

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Figure 9
Motorized Level of Service Standards

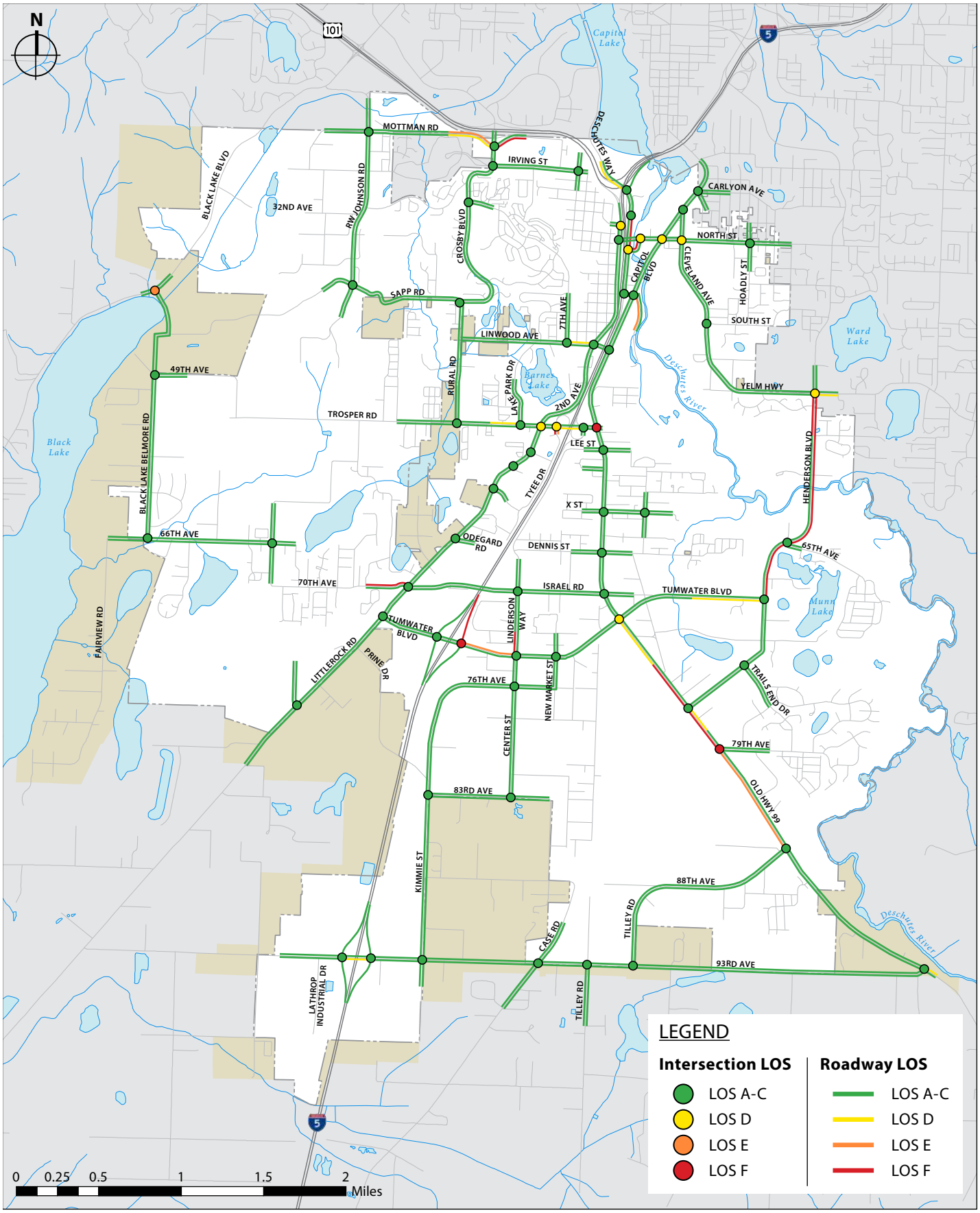

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Figure 10
2015 Intersection and Roadway Level of Service

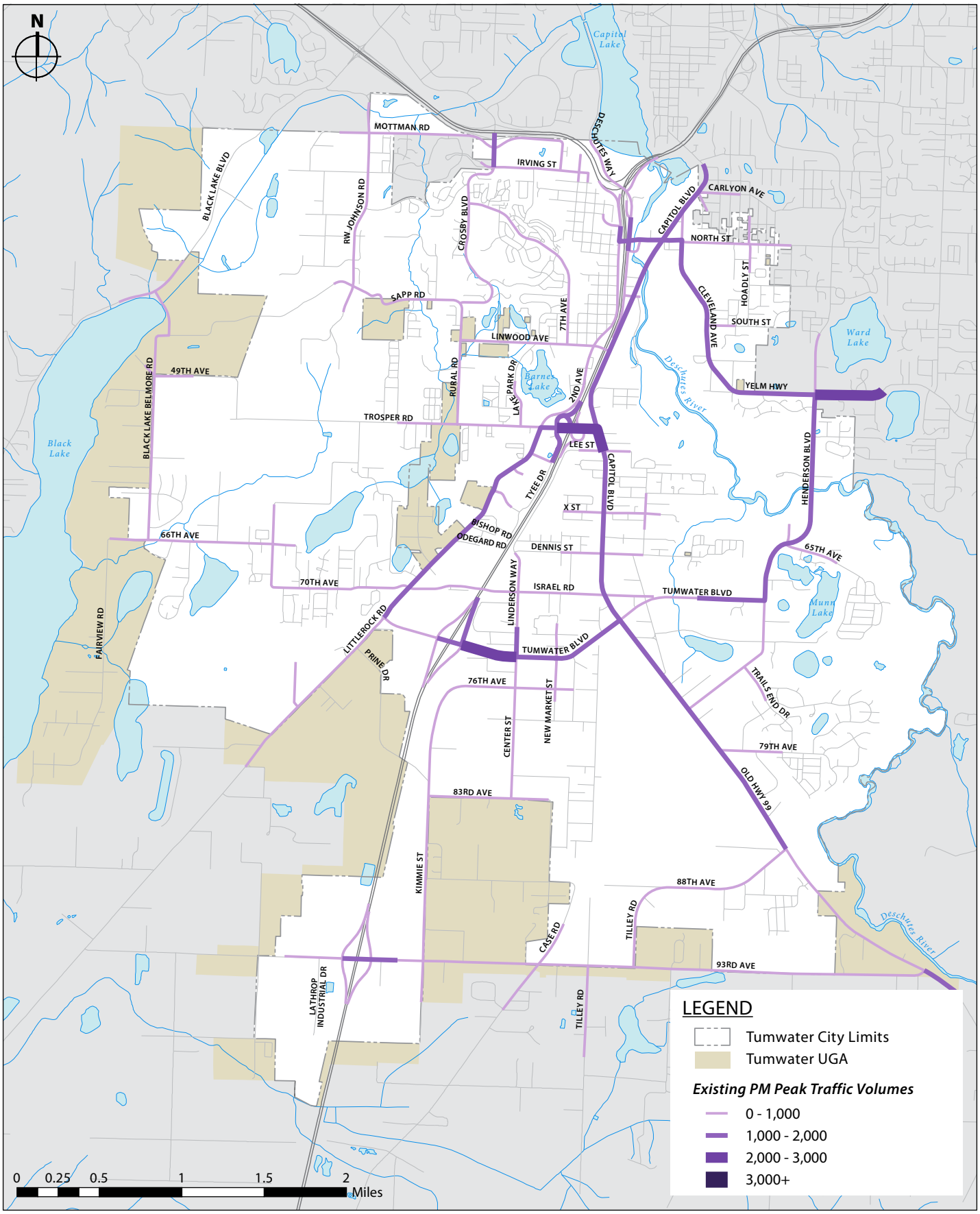

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Figure 11
2015 PM Peak Traffic Volumes

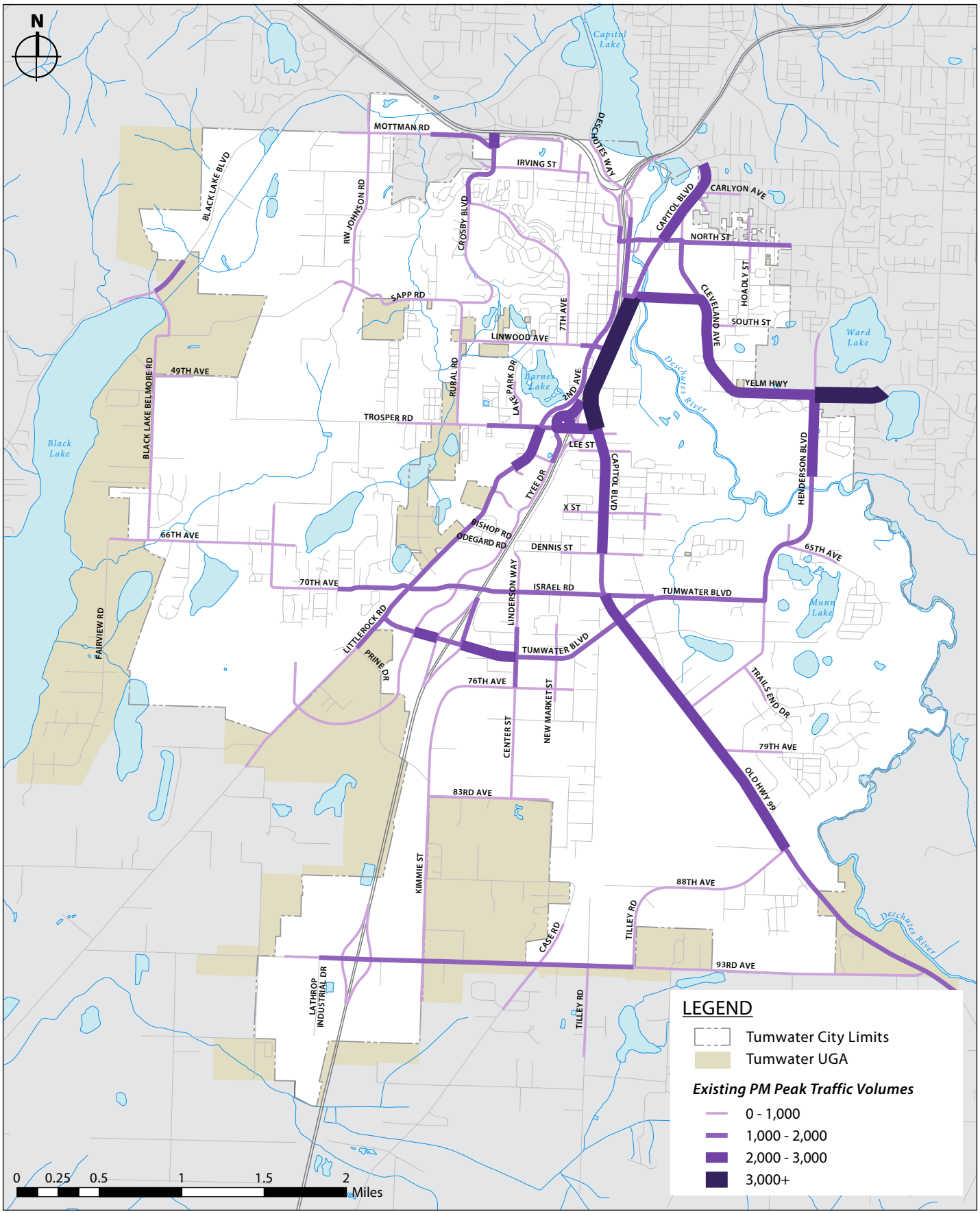

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Figure 12
2040 PM Peak Traffic Volumes

Determining Future Project Needs

In planning for the future, Tumwater establishes base line conditions reflecting today's system performance and then "grows" the demand for future travel based on adopted population and employment forecasts. This gives an estimation of what future conditions are likely to be absent any kind of system investment to improve operating performance. This is sometimes called the "no build" scenario as it illustrates the hypothetical situation of growth with no additional transportation projects between now and 2040. Tumwater then evaluates locations that are under-performing, working to identify what will be needed to restore system performance as the city grows. Sometimes no project is identified and instead, the area is watched for a period of time in order to determine the best strategy to address future needs. That is because occasionally a problem in one location may generate symptoms in another location; evaluating conditions at that site over time will help ensure the right strategy is identified to maintain system performance.

Often evaluation reveals areas that may need an improvement if the City grows as planned over the next 20-25 years, but it may also be a longer-term need. Forecasting growth over two or more decades is imprecise and the City does not want to overbuild its system. In those cases the areas are flagged and monitored, and will be addressed in subsequent plan updates as warranted.

Level of service is the measure of how well the transportation system is performing. As this section makes clear, LOS can be measured in different ways.

For example, LOS evaluation of intersections, such as those in the following table, is typically measured by seconds of delay. The fewer seconds of delay, generally, the better the intersection is said to perform. Long delays such as those experienced at Trosper Road and Capitol Boulevard during rush hour result in people sitting through several signal cycles before they can proceed; this creates long queues that can block driveways and side streets. Even though the problem is at the intersection itself delays can be felt several blocks away.

Another measure of vehicle LOS is known as "V/C ratio". V/C ratio stands for Volume to Capacity ratio. It is calculated by

dividing the number of vehicles to be accommodated on a street by the total capacity of the street. For example, if the street is designed to carry 800 vehicles an hour and during peak periods it is carrying 600 vehicles an hour then it has a V/C ratio of 0.75, which equates to an LOS C. The V/C ratio is a "percent of capacity" measure – what percent of the available capacity is consumed by traffic today and in the future.

The closer the capacity consumed is to 100% - the closer the V/C ratio is to 1.0 – the more friction and congestion drivers on that street will experience. It's even possible for a model to produce a V/C ratio in excess of 100%, which can seem impossible at first glance; no street can carry more vehicles than it was designed to carry. It doesn't, of course. It just means that there is much more demand for travel on that street during that period of time than can be accommodated. In reality it means that congestion will last longer, or that it may be faster to get around by walking or biking than by driving during rush hour.

Tables in the rest of this plan use intersection delay as well as V/C ratio to describe system performance of the motorized system. Table 2 provides the intersection operational results. It shows 2015 conditions for 69 intersections evaluated for this plan, what those conditions are likely to be in 2040 without any improvements, and 2040 conditions with proposed improvements. Details on proposed intersection improvements are in the Capital Improvements Chapter.

TABLE 2: LOS CONDITIONS FOR INTERSECTIONS - 2015 AND 2040

#	Intersection	2015 Conditions		2040 LOS No-Build	2040 Conditions with Improvements	
		Intersection Control	LOS (Delay, in seconds)		Improvement	LOS (Delay, in seconds)
1	RW Johnson Blvd/Mottman Rd	AWSC	B (12)	C (17)		
2	Crosby Blvd/Mottman Rd	Signal	B (16)	B (17)		
3	Crosby Blvd/Irving St	Signal	B (11)	B (12)		
4	7th Ave/Irving St	AWSC	A (9)	B (10)		
5	Crosby Blvd/Barnes Blvd	TWSC	C (22)	F (60)		
6	Black Lake Blvd/Black Lake Belmore Rd	TWSC	E (37)	F (200+)	RAB	B (11)
7	RW Johnson Blvd/Sapp Rd	TWSC	B (10)	B (15)		
8	Sapp Rd/Crosby Blvd	TWSC	B (12)	C (21)		
9	49th Ave/Black Lake Belmore Rd	TWSC	A (9)	B (12)		
10	Capitol Blvd/Carlyon Ave/Sunset Way	Signal	B (10)	B (12)*	RAB	B (12)*
11	Deschutes Way/I-5 NB On-Ramp	Yield	A (9)	A (9)		
12	Deschutes Way/US 101 WB On-Ramp	Yield	A (10)	B (11)		
13	I-5/US 101 Off-Ramps/Desoto St/2nd Ave	TWSC	D (32)	F (200+)	Lanes	E (50)
14	2nd Ave/Custer Way	Signal	B (15)	D (40)	Lanes	C (25)
15	Boston St/Custer Way	TWSC	D (30)	B (12)*	RAB	B (12)*
16	Deschutes Way/Boston St	AWSC	D (29)	C (20)*	Signal	C (20)*
17	Cleveland Ave/Capitol Blvd	TWSC	B (11)	B (10)*	RAB	B (10)*
18	Custer Way/Capitol Blvd	Signal	D (39)	D (36)*	RAB	D (36)*
19	Custer Way/North St/Cleveland Ave	Signal	D (48)	B (13)	RAB	B (13)*
20	Hoadly St/North St	TWSC	C (20)	F (54)		
21	Deschutes Way/I-5 NB Off-Ramp	TWSC	B (12)	D (30)*	Lanes	D (30)*
22	Capitol Blvd/E St	Signal	C (23)	D (38)*	RAB	D (38)*
23	Cleveland Ave/South St	TWSC	B (15)	C (21)		
24	7th Ave/Linwood Ave	TWSC	C (18)	D (33)		
25	2nd Ave/Linwood Ave	AWSC	C (25)	F (58)	RAB	B (19)
26	Capitol Blvd/Linwood Ave	Signal	B (17)	D (44)	RAB	B (17)
27	Henderson Blvd/Yelm Hwy	Signal	D (49)	F (82)	Signal	D (55)
28	Rural Rd/Trosper Rd	TWSC	C (16)	F (53)	Lanes	C (18)
29	Lake Park Dr/Trosper Rd	Signal	B (14)	B (14)		
30	Littlerock Rd/Trosper Rd	Signal	D (42)	E (58)	RAB	C (32)
31	I-5 SB Ramps/Tyee Dr/Trosper Rd	Signal	D (45)	D (50)	RAB	C (23)
32	I-5 NB Ramps/Trosper Rd	Signal	A (7)	C (19)*	TWSC	C (19)*
33	Capitol Blvd/Trosper Rd	Signal	F (30)	F (112)	RAB	C (26)
34	Capitol Blvd/Lee St	Signal	C (24)	C (25)		
35	Littlerock Rd/Fred Meyer/Costco Drwy	Signal	A (8)	A (10)		

AWSC – All-Way Stop Control	TWSC – Two-Way Stop Control	RAB - Roundabout

* Projects included in Regional Transportation Plan were included in the 2040 No-Build; these projects included associated local intersection improvements.

#	Intersection	2015 Conditions		2040 LOS No-Build	2040 Conditions with Improvements	
		Intersection Control	LOS (Delay, in seconds)		Improvement	LOS (Delay, in seconds)
36	Littlerock Rd/Costco Drwy	Signal	C (21)	C (27)		
37	Littlerock Rd/Kingswood Dr	RAB	A (6)	B (14)		
38	Capitol Blvd/X St	Signal	A (7)	A (10)	RAB	A (8)
39	Elm St/X St	TWSC	A (10)	A (10)		
40	Capitol Blvd/Dennis St	Signal	B (12)	B (16)	RAB	A (9)
41	Capitol Blvd/Israel Rd	Signal	C (22)	D (42)		
42	66th Ave/Black Lake Belmore Rd	TWSC	B (11)	C (16)		
43	Kirsop Rd/66th Ave	TWSC	B (13)	C (19)		
44	Littlerock Rd/Odegard Rd	RAB	A (5)	A (5)		
45	Littlerock Rd/Israel Rd/70th Ave	RAB	A (9)	C (25)		
46	Linderson Way/Israel Rd	Signal	B (17)	D (49)		
47	Littlerock Rd/Tumwater Blvd	RAB	A (8)	A (9)		
48	I-5 SB Ramps/Tumwater Blvd	Signal	B (12)	C (22)*	RAB	C (22)*
49	I-5 NB Ramps/Tumwater Blvd	TWSC	F (106)	A (7)*	RAB	A (7)*
50	Linderson Way/Tumwater Blvd	Signal	C (35)	D (47)		
51	New Market St/Tumwater Blvd	RAB	A (4)	A (6)		
52	Capitol Blvd/Tumwater Blvd	Signal	D (36)	D (55)		
53	65th Ave/Henderson Blvd	Signal	A (7)	B (10)		
54	Tumwater Blvd/Henderson Blvd	Signal	C (34)	D (45)		
55	Trails End Dr/Henderson Blvd	TWSC	B (13)	C (16)		
56	Littlerock Rd/Black Hills School Drwy	Signal	A (3)	A (4)	Lanes	C (27)
57	Center St/76th Ave	TWSC	C (17)	D (33)		
58	Old Hwy 99/Henderson Blvd	Signal	B (13)	B (11)*	RAB	B (11)*
59	Old Hwy 99/79th Ave	TWSC	F (64)	F (177)	RAB	A (8)
60	Kimmie St/83rd Ave	TWSC	A (9)	B (11)		
61	Center St/83rd Ave	TWSC	B (12)	C (15)		
62	Old Hwy 99/88th Ave	Signal	A (9)	A (8)*	RAB	A (8)*
63	I-5 SB Ramps/93rd Ave	Signal	B (20)	D (35)	Lanes	B (15)
64	I-5 NB Ramps/93rd Ave	TWSC	B (12)	F (112)	Signal	A (9)
65	Kimmie St/93rd Ave	TWSC	C (21)	D (34)	Signal	B (14)
66	Case Rd/93rd Ave	AWSC	C (20)	F (53)	RAB	B (16)
67	Tilley Rd (South)/93rd Ave	AWSC	B (15)	F (54)	RAB	B (17)
68	Tilley Rd (North)/93rd Ave	TWSC	B (14)	F (60)	RAB	B (12)
69	Old Hwy 99/93rd Ave	TWSC	C (18)	E (36)	RAB	C (24)

AWSC – All-Way Stop Control	TWSC – Two-Way Stop Control	RAB - Roundabout

* Projects included in Regional Transportation Plan were included in the 2040 No-Build; these projects included associated local intersection improvements.

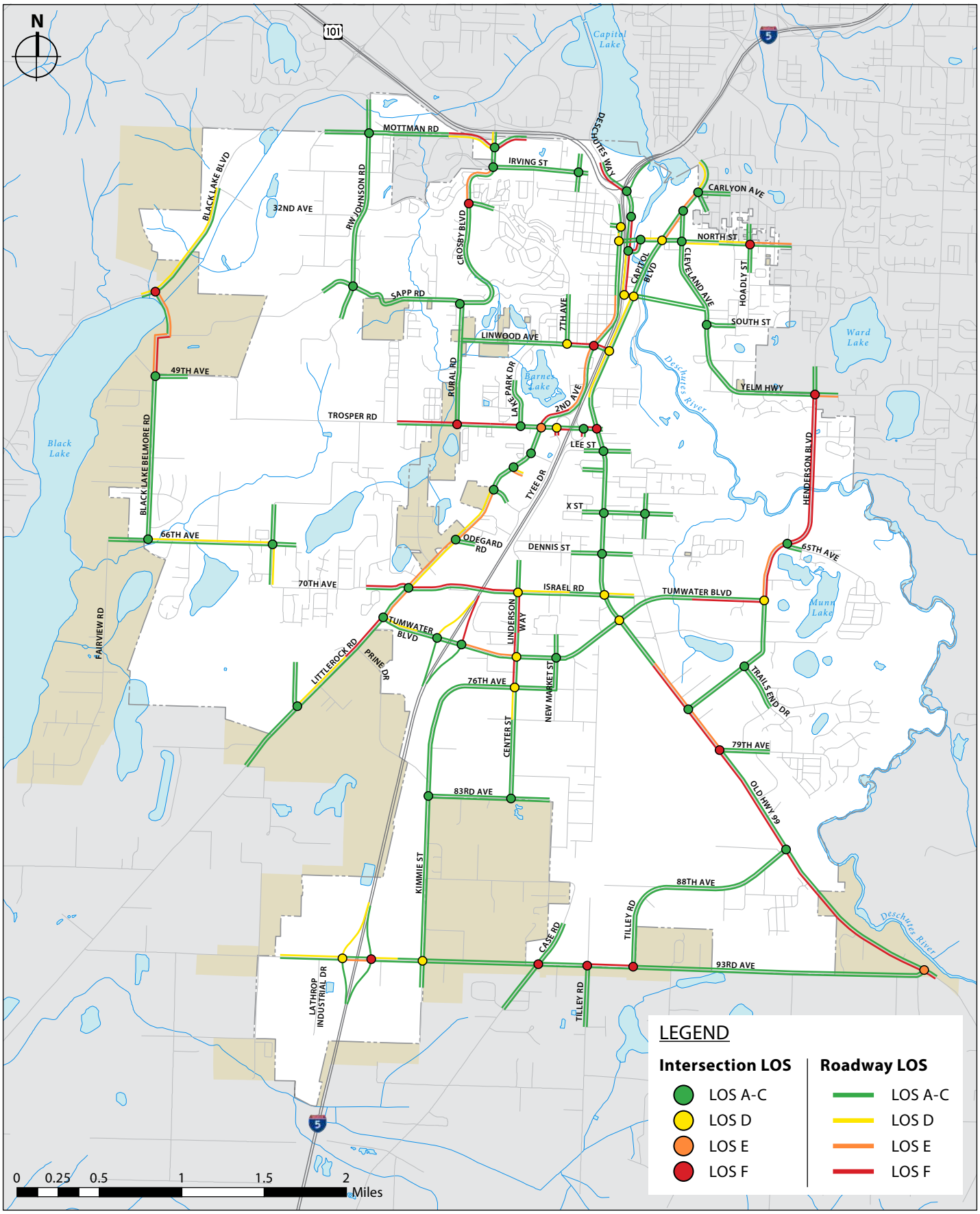

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Figure 13
2040 Intersection and Roadway Levels of Service – No Build

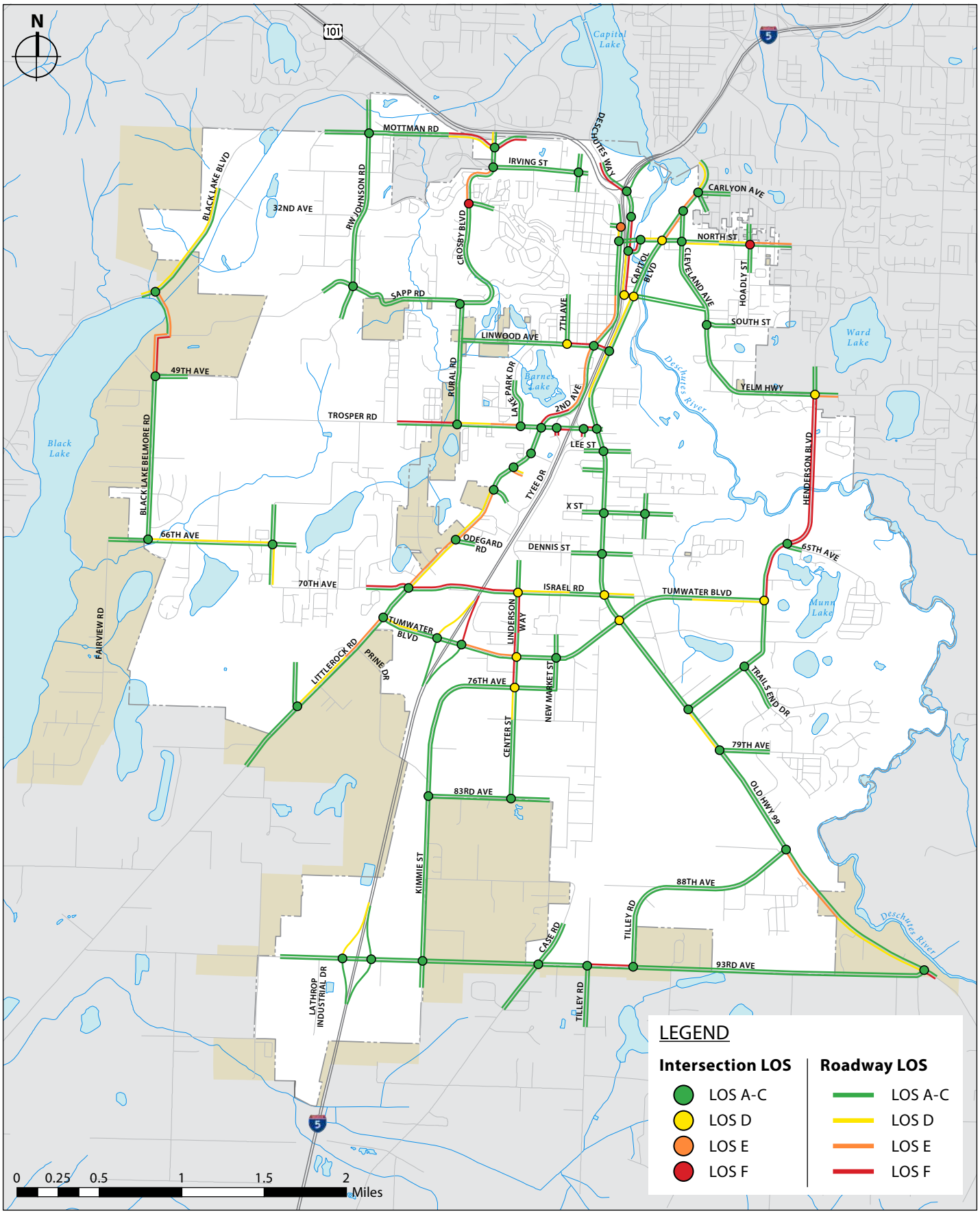

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Figure 14
2040 Intersection and Roadway Level of Service – With Improvements

PERFORMANCE OF PUBLIC TRANSPORTATION

Intercity Transit establishes and maintains its own level of service standards, which Tumwater supports and adopts by reference. These are governed by IT's six-year Transit Development Plan and its Strategic Plan, in which seven different service design principles are articulated.

Following is a summary of each service design principle and its implications for Tumwater.

1. Operate five different types of local service, each designed to meet the needs of the neighborhoods it serves.
   *IT operates five types of local service based on street network, residential densities, and levels of commercial activity in the areas being served***.**

TABLE 3: INTERCITY TRANSIT LOS STANDARDS

Service Type	Roadway Type	Service Frequency (A bus every x minutes)		
		Peak Svc	Midday Svc	Night Svc
Trunk	Major Arterial	15	15	30
Primary	Local	30	30	60
Secondary	Arterial, Local	30 / 60	60	None
Rural	Local	30 / 60	60	None

2. Strengthen service operating along major corridors.
   Services operating along major corridors will be strengthened by operating weekday services more frequently and by extending hours of operation. Major corridors also received new shelters and other stop upgrades in the past several years. Corridors in Tumwater with 15 minute, extended service are highlighted in yellow.

3. Reduce customer travel times.
   This is being accomplished by providing more direct service, increasing travel speeds through the use of transit priority measures, and by increasing service reliability. Tumwater partnered with IT in this effort by participating in the regional Smart Corridors project sponsored by TRPC, upgrading its signal system and adding Transit Signal Priority to assist IT in maintaining its schedules.

4. Keep pace with new high-density development.

This includes Tumwater Town Center, the area bordered by I-5, Tumwater Boulevard, Israel Road, and Capitol Boulevard. The number of state employees in this area continues to increase and plans call for increased residential and retail development. Fifteen minute service was introduced to this area in early 2008. Express service between Tumwater and Lakewood began September 30, 2013, funded by a regional mobility grant.

5. Expand regional express routes.
IT sought and received a regional mobility grant to pilot express inter-regional service between Tumwater, Olympia, Lacey and Lakewood.

6. Support a range of transportation alternatives.
These efforts include:

- On-going, active support of the Commute Trip Reduction program
- Addition of bike racks to all new IT buses
- On-going engagement with Tumwater schools supporting Walk N Roll programs and other Healthy Kids, Safe Streets implementation activities
- Encouraging land use patterns that support public transportation and coordinating with jurisdictions to ensure zoning ordinances and development standards support alternate modes by providing: sidewalks and street lighting; bus shelters and schedule information; convenient and safe pedestrian crossings; convenient pedestrian access to public buildings and businesses.
- Advocating and support for Tumwater's efforts to implement transit-oriented development in the vicinity of transit stations such as that at Tumwater Square, in the Brewery District
- Reviewing all development proposals and commenting on those impacting public transportation.

7. Provide fixed facilities and equipment that support the region's public transit infrastructure.
Intercity Transit is exploring opportunities for a more conveniently-located, permanent park-and-ride facility in

the vicinity of Tumwater Town Center to replace the interim facility at the corner of Bonniewood Drive and Israel Road.

Performance of Non-Motorized Networks

This Transportation Master Plan introduces new ways of looking at system performance. Specifically, this Plan introduces the concept of a multimodal level of service that focuses on how well the non-motorized network supports pedestrians and cyclists. Concepts introduced in this plan will be evaluated and tested with on-going work program activities where it will be refined and adapted to best suit Tumwater's needs.

Tumwater has had in place for many years a multimodal street policy and supportive design standards. What this means is that Tumwater includes sidewalks and bike lanes where feasible with new street construction projects and major reconstructions throughout the city as a standard procedure. Today there are many miles of sidewalks and bike lanes that would not have existed without these policies and design standards.

The multimodal system performance standards introduced with this plan do not replace those requirements. Instead, they will serve as an overlay to guide the retrofit of older infrastructure that was built with inadequate non-motorized infrastructure to satisfy current expectations about system performance. Standards must be responsive to the different place types throughout the city which include increasingly urbanized mixed-use neighborhoods, older established suburban neighborhoods and new suburban communities, regional commercial centers, and older rural areas that will transition over several decades into a more suburban character.

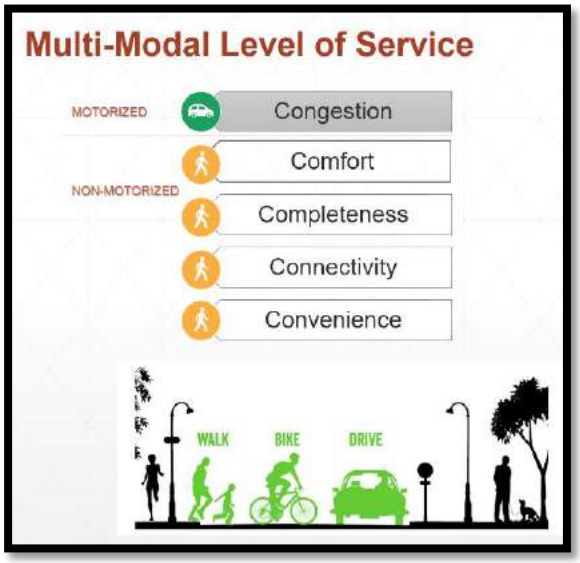
System Performance

As Tumwater expands its analysis of system performance to more explicitly consider non-motorized travel, it's important to expand its definitions of system performance. There are no congested sidewalks in Tumwater – congestion is not an

appropriate way to evaluate performance of these types of facilities in a small, predominately suburban city like Tumwater.

Instead, Tumwater is looking at other factors that influence how well the non-motorized network meets traveler expectations.

- **Comfort** pertains to the traveler's experience. It gets at the sense of safety people might feel when walking or biking along that street, and the effects that traffic volumes and speeds might have on that experience given the available infrastructure and whether it is appropriate for the speed and volume of traffic. It considers the ability of people to find their way easily, without confusion, what is referred to as the "legibility" of the network and signage. It includes things like pavement condition and lighting, which can greatly affect the comfort with which walkers and cyclists travel.
- **Completeness** relates to the area served by infrastructure. It gets at the degree of system continuity and the extent of the area served by the non-motorized system.
- **Connectivity** refers to the ways that infrastructure is considered in development patterns –street connections and non-motorized pathways increase traveler route choices. Connectivity also includes the ability to make modal linkages such as pedestrian connections from residential neighborhoods to high-frequency transit corridors.
- **Convenience** refers to the density and mix of uses within close proximity – walking distance – and the range of travel choices available to reach those destinations. This particular consideration is applicable where land use policies are deliberately working to create high density, mixed-use environments such as those envisioned for the Brewery District and the Capitol Boulevard Corridor.



This plan proposes a performance classification based on these considerations; it describes the non-motorized system in terms

of good, acceptable, and poor conditions. Table 4 on the following page describes these conditions as they might be experienced by travelers.

As with congestion-based performance standards for motor vehicles, the perception of system performance for non-motorized facilities is likely to be very subjective and reflect the individual experience and comfort level of each traveler in a variety of different conditions. Table 5 offers some illustrative examples of good, acceptable, and poor system performance conditions introduced in this plan.

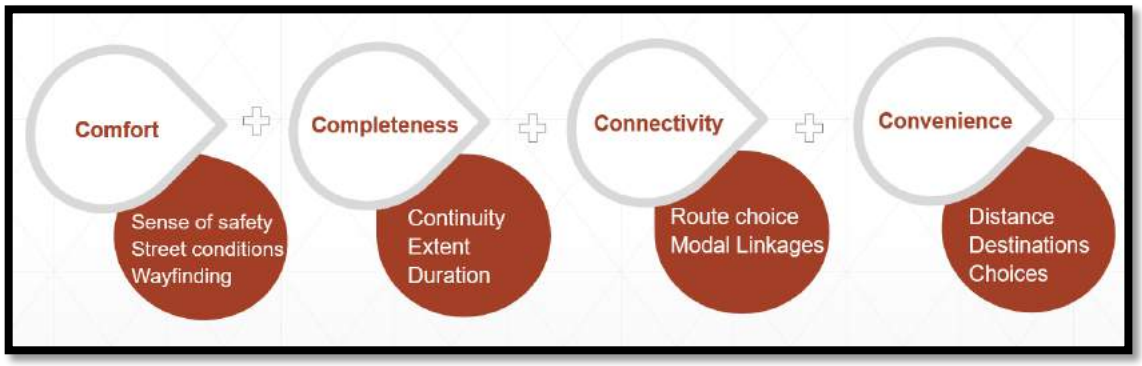


Table 4: **Proposed Non-Motorized System Performance Standards - Traveler Experience**

System Performance	Traveler Experience
Good	Direct routes. Well-connected network has good signage and is well lit. Non-motorized facilities are continuous, with infrequent gaps, and are the appropriate scale for the type of street. Frequent designated crossing opportunities, actuated signal controls, and design elements make travel comfortable for people of all abilities most of the time.
Acceptable	Routes may be less than direct but they are often quieter and more scenic than direct routes. Network connectivity is satisfactory though the connections may be far apart. Lighting in more rural areas is not oriented to pedestrians. Facilities are present but are discontinuous or only available on one side of the street, or may be somewhat undersized for the street type. Crossing opportunities are present but may lack actuated signal controls. Some travelers may have a less-than-comfortable travel experience some times of the day.
Poor	Routes are indirect and offer no parallel alternate routes on quieter streets. There are no network connections, no practical alternate routes. Lighting and signage are lacking. Facilities are non-existent, or are grossly undersized for the street type, or are in such poor physical condition that they constitute a hazard. Travel is stressful for most people even during off-peak travel times.

Table 5: **Proposed Non-Motorized System Performance Standards - Illustrative Examples**

System Performance	Illustrative Examples
GOOD Complete facilities with signage, crosswalk, both sides of street	
ACCEPTABLE Facilities on one side of the street, shared facilities off-street or on shoulder	
POOR No shoulders, large and busy intersections offer few amenities for non-motorized travel or comfort	

It's important to note that the quality of non-motorized system performance is an inherently subjective measure; what is considered acceptable, good, or poor performance often varies by person, location, and situation.

Non-motorized system performance in Tumwater is a qualitative measure more than a quantitative measure. The goal of this initial foray into multimodal system performance is not to derive a standardized two decimal-point numeric value to quantify multimodal level of service in a manner similar to congestion. Rather, it is to develop a practical framework for evaluating the quality of non-motorized travel in relation to the built environment. That is because the built environment – where we each live and work and shop and recreate – influences whether walking or biking or transit are viable travel options or whether driving is the only reasonable option. Non-motorized infrastructure is but one factor in determining how we each get from Point A to Point B. Going forward, Tumwater will refine this framework to ensure alignment between its non-motorized investments and its land use policies and objectives.

Primary and Secondary Networks

An efficient, well-functioning street system has a hierarchy of arterials, collectors, and residential streets to support the mobility, circulation, and access needs of drivers. In the same way, a mature non-motorized system will have an increasingly complete network of primary and secondary routes, with other streets and facilities playing a vital role connecting neighborhoods to those networks. Table 6 describes the central function and characteristics of these networks. This plan introduces a network concept for the bike and pedestrian systems that recognizes these distinct system functions.

TABLE 6: DESCRIPTION OF NON-MOTORIZED NETWORK HIERARCHY

Hierarchy	System Function
Primary Network	Backbone of the system. Offers direct connections to majority of important community destinations, usually on arterials or collectors. Primary Network routes are often the most attractive route in terms of convenience in urban areas. Includes trails.
Secondary Network	Supportive role to Primary Network, often providing system continuity by connecting segments of the primary network with on-street or off-street facilities. Secondary network routes sometimes offers more comfortable routes on quieter streets, throughout route may not be as direct as Primary network.
Other Streets	Majority of streets, including residential neighborhood streets. Many have bicycle and pedestrian facilities and most future streets in this category will as a result of street standards required of all development since the mid-late 1990s. Other Streets provide access to primary and secondary networks.

Due to the different travel characteristics of cyclists and pedestrians, there are differences in the designation of primary and secondary networks serving those two modes of travel.

Pedestrian Network

Designation of the Primary and Secondary pedestrian network is largely a reflection of destinations within walkable distances. The average person is willing to travel about one-quarter mile – roughly a five minute walk – for utilitarian trips such as going to the store or catching a bus to a more distant destination. Outside of the City's most urban corridors, these destinations tend to be schools, parks, trailheads, and other recreational opportunities. Along the City's most urban corridors walkable destinations also include stores, services, restaurants and coffee shops, pubs, entertainment, employment sites, and transit stops. The pedestrian network within one-quarter mile of community destinations is considered to be part of the Primary Network. Pedestrian infrastructure within one-quarter to one mile is considered as part of the Secondary Network.

Figure 15 illustrates the Pedestrian Network introduced in this plan. Based on these designations, Tumwater's Primary Pedestrian Network is 33.2 miles in total length and its Secondary Pedestrian Network is 36.8 miles in length. Of these 70 total miles about 47 percent – roughly 33 miles – are complete with pedestrian facilities on both sides of the street. The remaining network will be built out over the years via multimodal street projects, developer mitigations, and stand-alone projects.

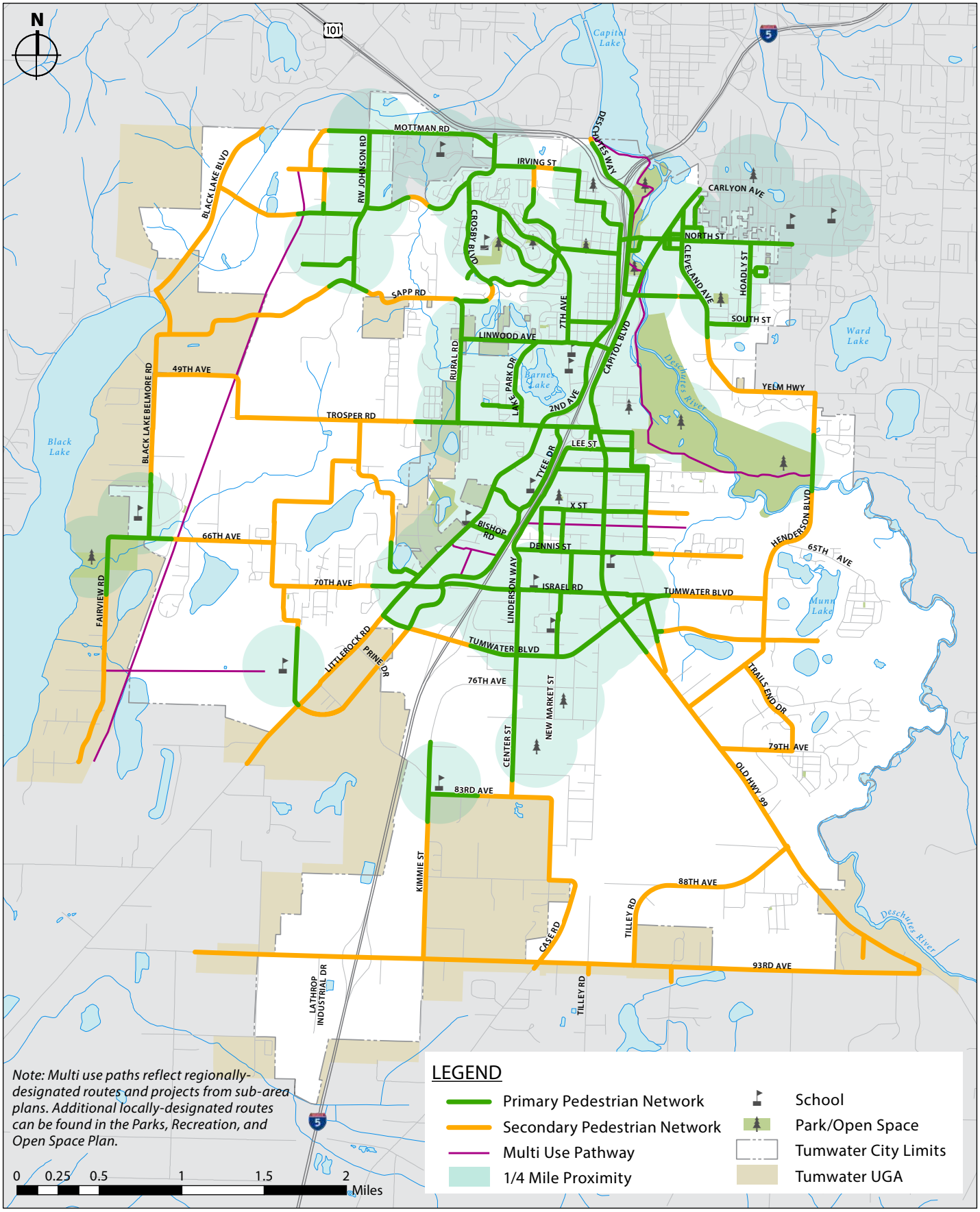


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Figure 15
Primary and Secondary Pedestrian Network

Bike Network

In contrast to the proximity and destination-oriented considerations in designating pedestrian networks, the Primary and Secondary bike network seeks to create a foundation of east-west and north-south routes that offer a mix of direct routes on streets often regarded as busy streets as well as alternate though often less-direct routes on lower volume streets. Trails – which provide a completely non-motorized travel route – are designated as part of the Primary Network.

Figure 16 illustrates the Primary and Secondary Bike Network introduced in this plan. Based on these designations, Tumwater's Primary Bike Network is 57 miles in total length and its Secondary Bike Network is 30.3 miles in length. Of these 87 total miles about 31 percent – roughly 27 miles – are complete with bike facilities on both sides of the street. As with the pedestrian network, the remaining bike network will be built out over the years via multimodal street projects, developer mitigations, and stand-alone projects. In some of the more rural parts of the city the future network is likely to include wide, multiuse shoulders that will accommodate cyclists and pedestrians.

Zonal Approach to Evaluating Infrastructure Needs

Not all parts of the city are equally conducive to walking and biking because of how land use patterns have evolved over the decades. The majority of people still prefer to live in residential-only neighborhoods; this is the predominant type of land use across the city. There are expectations that people should be able to walk and ride their bikes safely though it is not assumed that people will be able to reduce many vehicle trips to a significant degree because land use activities are so dispersed.

There are some areas, though, where land use patterns make it possible for more people to meet some of their travel needs by walking or biking or transit instead of driving. City policies are working to increase development activity in these areas, which in turn will generate even more demand for walking, biking and transit.

The multimodal levels of service introduced with this plan includes designation of two zones within which to evaluate and respond to system performance. One of these is referred to as

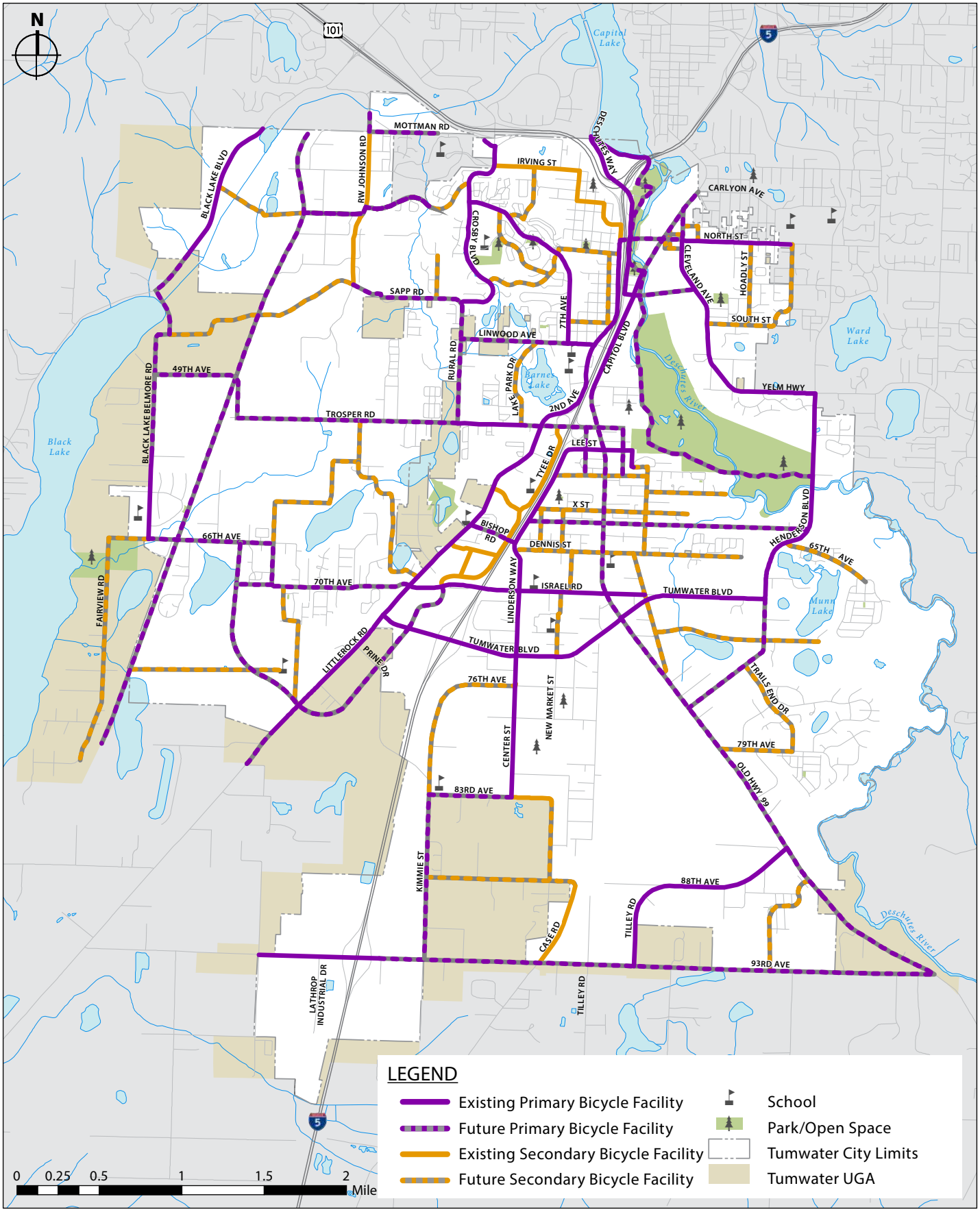

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Figure 16
Primary and Secondary Bicycle Network

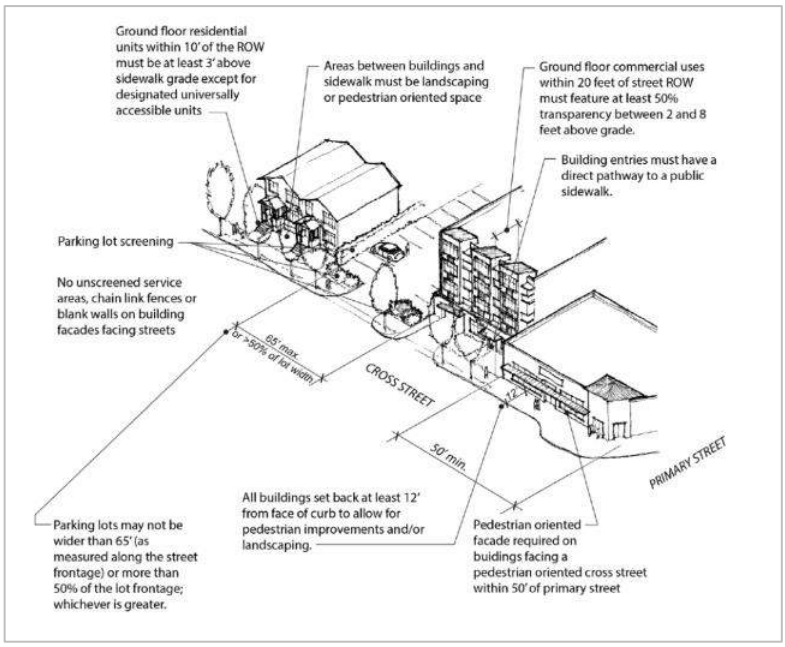
the Urban Corridor Zone; the second is referred to as the Practical Design Zone.

Urban Corridor Zone

The Urban Corridor Zone includes the Brewery District, the Capitol Boulevard Corridor, and Tumwater Town Center. These are the areas of focused study and policy development over the last few years on ways to revitalize the region's urban corridors.

Those studies pointed out the important role that non-motorized travel and access to transit play in fostering the kind of built environment people say they want in an urban area. Tumwater simply can't accommodate the kind of mixed-use, compact, walkable development desired in these areas without a robust non-motorized network; walking, biking, and transit are increasingly viable alternatives to driving as the mix and density of land uses increase. In many respects it can be said that Tumwater cannot achieve its land use vision within the Urban Corridor Zone without completing its non-motorized networks. Detailed sub-area studies evaluated access and circulation for all modes of travel, and identified critical connections, upgrades, and additions that will enable the non-motorized system to accommodate future growth.

Capitol Boulevard is an example of a city street with a pronounced pedestrian focus. Updated design standards specific to the Capitol Boulevard Corridor will ensure that future development is compatible with the intended pedestrian orientation of this important street while increasing internal access and circulation between businesses and properties. The Design Guidelines specify "primary" and "secondary" pedestrian cross streets with corresponding site and development standards.



Design standards are rigid in the Urban Corridor Zone. New facilities in these areas will be carefully designed to ensure they are compatible with adjacent land uses and building standards, and contribute to the overall sense of place in the public realm called for in adopted plans. Transportation drives land use development in this zone. In the Urban Corridor Zone, "form" or design is as important as "function" when it comes to the non-motorized system.

Practical Design Zone

This 6 foot wide asphalt pathway on 70th Avenue is a good example of how flexible design can result in critical infrastructure that would not have been achievable otherwise. Responding to area resident concerns about the lack of safe shoulders or sidewalks, the City constructed this pathway for a fraction of the cost of its standard frontage improvements. This means people had safe walking and biking options years before they would have under current standards.

Outside of the Urban Corridor Zone, the City's Comprehensive Plan calls for different types of land uses. The majority of lands are designated for residential-only neighborhoods, regional commercial centers, and industrial areas. While many developments over the last 15-20 year have included sidewalks and bike lanes, many older neighborhoods and streets have few facilities at all for walking or biking.

While there is no expectation that these areas will generate the same share of non-motorized trips as the Urban Corridor Zone, there are still important connections needed for walking and biking. Schools and parks are two of the most important destinations that need to be served by non-motorized infrastructure so that more people can access them safely without having to drive. There are also critical corridors that could accommodate longer bicycle trips if they had better infrastructure.

The imperative in these areas is to expand the functionality of the transportation system to accommodate these additional modes to the greatest extent possible. However, the distance between destinations in these areas is often great and it is beyond the City's fiscal capacity to build urban-style sidewalks and bike lanes throughout these areas. Instead, those multimodal system performance standards will allow the City greater flexibility in the design of facilities in the Practical Design Zone in order to maximize the linear feet of safe, non-motorized infrastructure.

While the City may adhere to its established "curb-gutter-sidewalk" development standards, it may also apply different standards if – after careful engineering evaluation - this results

in a significant increase in non-motorized infrastructure. This could mean wide asphalt walkways, or wide multi-use shoulders on rural roads. Practical designs can safely accommodate cyclists and pedestrians at a fraction of the cost of more rigid urban standards. Alternate designs can generate more miles of safe and efficient network in less time than is achievable with established standards. Transportation responds to land use development in this zone. In the Practical Design Zone, "function" can take precedence over "form" when appropriate.

Figure 17, on the next page, illustrates the two zones established for purposes of multimodal level of service evaluation in Tumwater.

As Tumwater works to apply these multimodal standards it may be necessary to modify their boundaries somewhat to better account for underlying land use and transportation patterns. For example, the older neighborhood along 2nd Avenue and Linwood Avenue has many characteristics reminiscent of neighborhoods in the Urban Corridor zone though it is separated from that zone by I-5. The Tumwater Transportation Master Plan introduces this concept of multimodal level of service analysis zones; implementation at the work program level is necessary to refine it further.

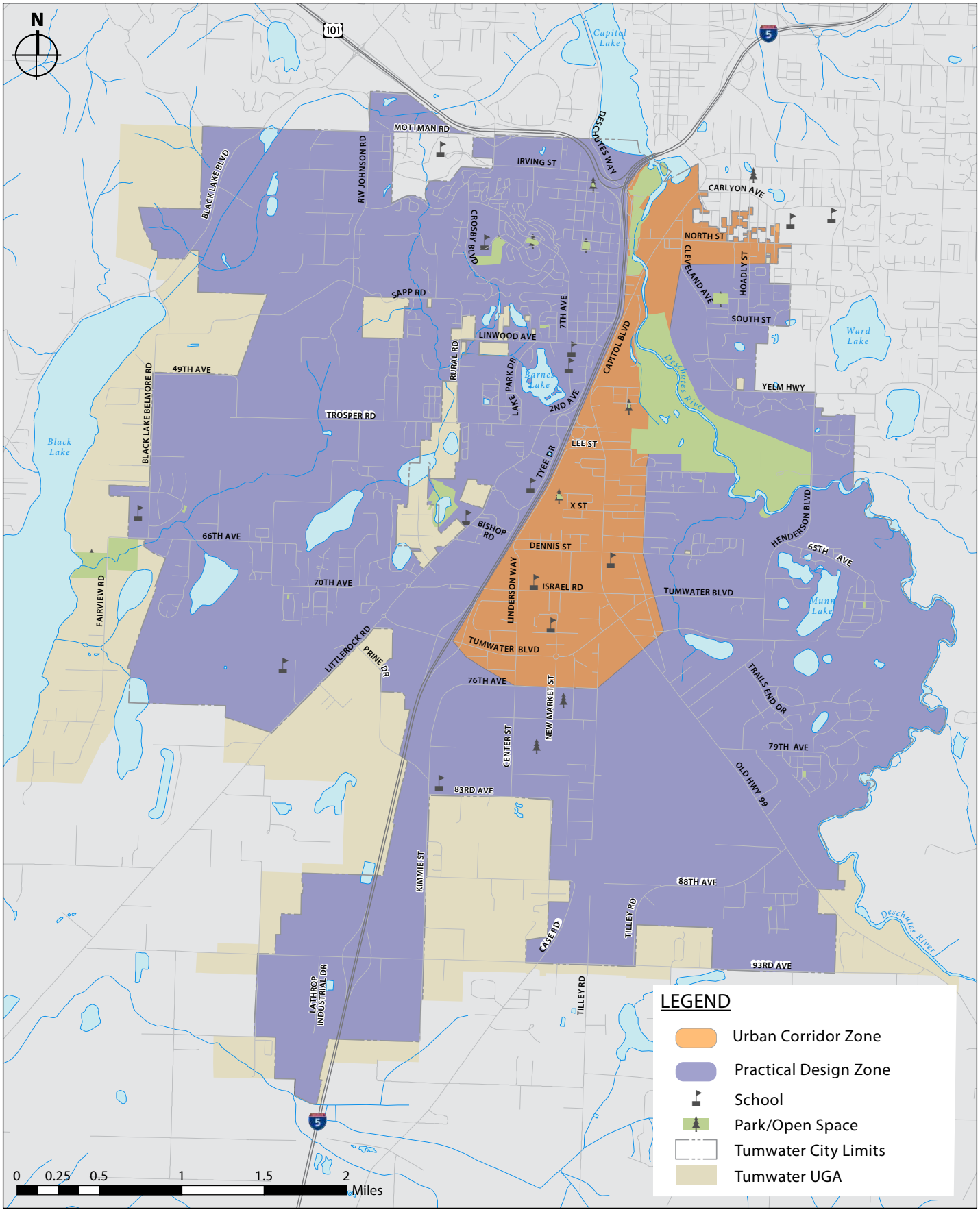


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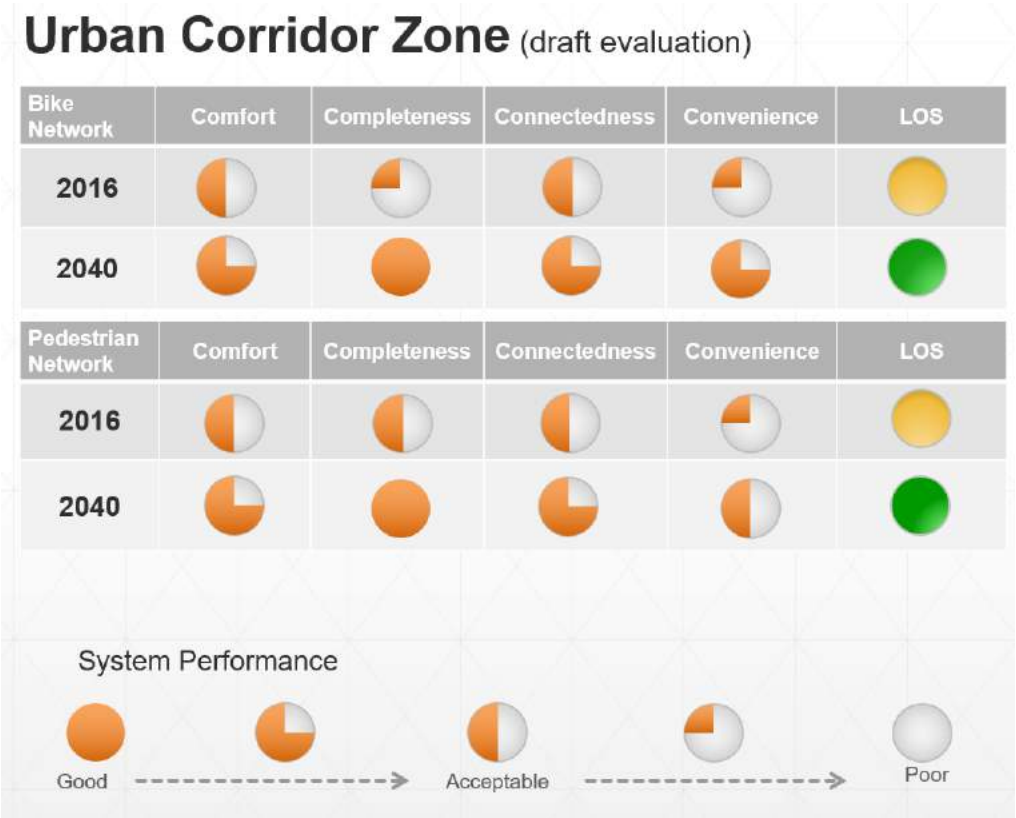
Figure 17
Urban Corridor and Practical Design Zones

Evaluating System Performance

This plan introduces a framework within which the City can evaluate the effectiveness of its policies and investments, prioritize scarce resources, and benchmark progress towards meeting long-range objectives. This initial evaluation is not yet tested with the realities of day-to-day implementation activities; the framework may need to be revised to accommodate practical needs. In the meantime, this plan offers an initial evaluation of non-motorized system performance.

Figure 18 suggests that while much remains to be done, taken as a whole the non-motorized system is generally acceptable in the Urban Corridor Zone. There are certainly system gaps – lack of bike lanes on Capitol Boulevard is a prominent example – but there is also some system redundancy and alternate routes due to the somewhat gridded street system. In fact, those alternate routes – such as Linderson Way – will always be more comfortable for some bikers than Capitol Way will be, even when it has bike lanes. Attractive destinations tend to be on busy streets; Capitol Way will always have a lot of traffic on it due to its role within the regional transportation system.

FIGURE 18: NON-MOTORIZED LOS EVALUATION IN THE URBAN CORRIDOR ZONE



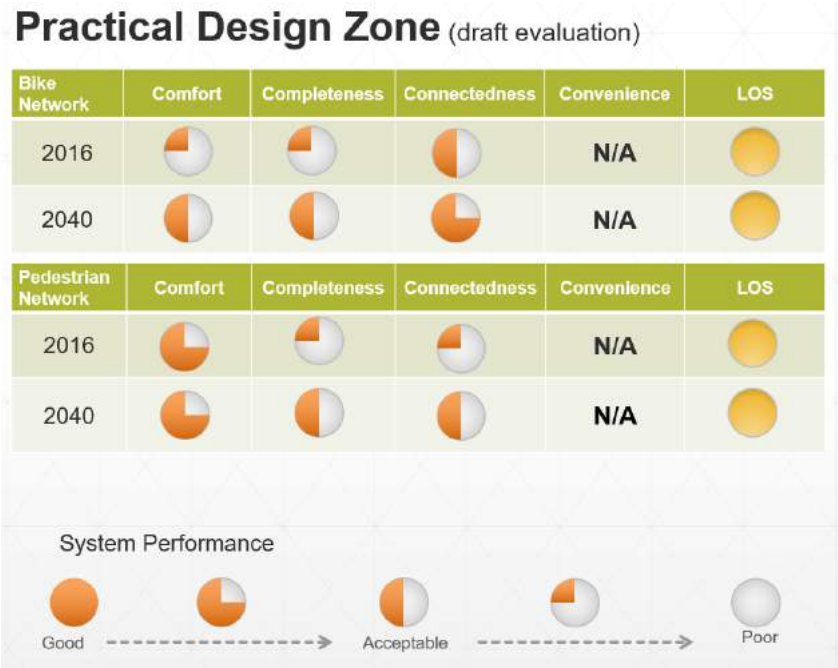
Deficiencies in system convenience is a land use issue as much as a transportation issue. Infill and redevelopment over time will increase the convenience factor in this zone.

Currently 78 percent of the Primary and Secondary Pedestrian Network within the Urban Corridor Zone is complete, with facilities on both sides of the street, and 37 percent of the Primary and Secondary Bike Network is complete. Implementation of the projects included in this plan could raise the non-motorized level of service in the Urban Corridor Zone to Good by 2040.

Factors affecting level of service in the Practical Design Zone are somewhat different than in the Urban Corridor Zone. Land uses are greatly dispersed. The transportation network has many fewer connections than in the Urban Corridor Zone so there are fewer alternate routes; even some direct routes are not very direct. Much of this zone has a distinctly rural feel to it.

Yet population is growing out at the fringes, especially around Black Lake to the west and around Trails End to the south. Residents must drive these "rural" roads to get to and from their day to day activities, creating suburban levels of traffic on streets, some of which still have a rural character. This makes biking and walking a challenging proposition if there are no shoulders.

FIGURE 19: NON-MOTORIZED LOS EVALUATION IN THE PRACTICAL DESIGN ZONE

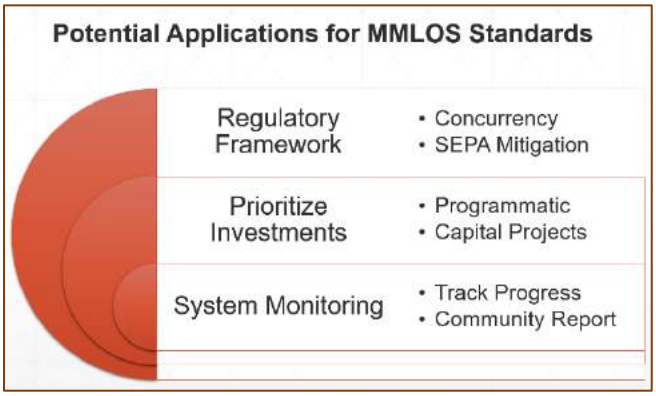


Outside of the oldest neighborhoods, such as those on Tumwater Hill or off of South Street, most non-motorized infrastructure was built to current standards over the last 15-20 years so travel on those facilities where they exist is relatively comfortable. The non-motorized infrastructure is sized appropriately for the adjacent traffic volumes and speeds. The problem is that there are vast stretches of relatively rural streets with no shoulders or off-street facilities, and these serve as important connections between destinations at either end. Currently 39 percent of the Primary and Secondary Pedestrian Network in the Practical Design Zone is complete, with facilities on both sides of the street, and 29 percent of the Bike Network is complete. The challenge in the Practical Design Zone will be to stretch resources as far as possible to maximize the extent of network available to make these connections and satisfy the longer distance travel needs of cyclists in particular. The intent of this zone is to give Tumwater Public Works the flexibility in design it needs to achieve this outcome.

As with the Urban Design Zone, there are serious gaps in the system but taken as a whole throughout the Practical Design Zone, non-motorized level of service is generally acceptable, given conditions of the built environment. Implementation of the projects included in this plan will improve travel conditions by 2040 though it is not expected to materially raise the level of service rating, which is expected to be Acceptable in 2040.

Potential Applications Outside of Transportation Master Plan

The framework introduced in this plan can be applied to a variety of different purposes outside of the long-range planning arena. That includes a potential role in the regulatory environment, as a tool to help prioritize projects and funding, and for monitoring progress over time in meeting City objectives, among other uses.



It will be necessary to take a more fine-grained look at the non-motorized network than can be done in a long-range plan in order to identify and prioritize problems and opportunities. Such an analysis may reveal improvements to the evaluation criteria that can be applied to future plan updates.

PERFORMANCE OF STATE HIGHWAY FACILITIES

Tumwater has sole authority to plan for and implement recommendations for its local transportation system, but not for state routes. The Washington State Department of Transportation (WSDOT) has sole authority to plan for and implement recommendations for I-5, which bisects the city. US 101 and its interchanges, while adjacent to Tumwater, are actually located in Olympia. WSDOT also owns and is responsible for SR 121; since this functions more like a local street than a highway, there is closer collaboration between WSDOT and Tumwater regarding this facility.

Among the various factors it considers when developing its plans, WSDOT uses output from the local long-range forecasting process to estimate how its highway system might perform in the future and where the hotspots are likely to be. WSDOT maintains its own transportation plans and project lists[1].

The GMA directs Tumwater to include level of service standards for state-owned highways in its transportation. However, chapters 47.06 and 47.80 of the Revised Code of Washington (RCW) explain that while the State may consult with local agencies in the matter of system performance, WSDOT retains the sole authority to establish level of service standards for state facilities. WSDOT has established LOS D for state highways within Tumwater's urban area (and that of Olympia and Lacey) and LOS C outside of it. Highways of Statewide Significance – I-5 for Tumwater – are exempted from complying with adopted level of service standards.

All systems analysis, even on local streets, considers projects identified in the statewide multimodal plan since they are incorporated by TRPC into the regional model, which is used by Tumwater for its analysis. WSDOT intends to extend its freeway cameras and other technology improvements through

[1] WSDOT is in the process of updating its Washington Transportation Plan: http://www.wsdot.wa.gov/planning/wtp/ WSDOT maintains a variety of inter-related transportation plans and project lists it uses to inform investment decisions. Projections from local forecasts, such as those required by the GMA, are but one input in its process.

Tumwater in the future. There is little else planned for WSDOT infrastructure in the future, though.

Areas that have been problematic for years will continue to be problematic in the future absent any implementation strategy in state plans to improve system efficiency. This includes at various times of the day the I-5/US 101 system interchange, the I-5 at Trosper Road interchange, the I-5 at Tumwater Boulevard interchange, and the US 101 at Crosby Boulevard interchange.

There are growing concerns about the performance of the 93rd Avenue interchange at I-5; outdated interchange design challenges the efficient movement of trucks on and off the highway there. Currently there are no WSDOT plans to improve mobility at these hotspots or through the Tumwater/Olympia/Lacey I-5 corridor.

Tables 7 and 8 show peak period level of service for I-5 in 2015 and in 2040. For planning purposes, Freeway capacity is 6,000 vehicles per hour northbound and 6,000 vehicles per hour southbound The LOS is based on lane capacity as derived from the regional travel demand model and does not take into account friction-causing factors like merging on or off the highway or weaving between lanes.

TABLE 7: 2015 I-5 MAINLINE PM PEAK PERIOD LEVEL OF SERVICE CONDITIONS

		Southbound		Northbound	
Freeway Segment	Freeway Capacity	Volume	Level of Service (V/C)	Volume	Level of Service (V/C)
South of 93rd Avenue	6000	2,440	A (0.41)	1,765	A (0.29)
South of Tumwater Boulevard	6000	3,045	A (0.51)	2,190	A (0.36)
South of Trosper Road	6000	3,295	A (0.55)	3,355	A (0.56)
South of Deschutes Way	6000	3,955	B (0.66)	4,245	C (0.71)
North of Deschutes Way	6000	3,955	B (0.66)	4,030	B (0.67)

TABLE 8: PROJECTED 2040 I-5 MAINLINE PM PEAK PERIOD LEVEL OF SERVICE CONDITIONS

Freeway Segment	Freeway Capacity	Southbound		Northbound	
		Volume	Level of Service (V/C)	Volume	Level of Service (V/C)
South of 93rd Avenue	6000	3,535	A (0.41)	2,645	A (0.44)
South of Tumwater Boulevard	6000	4,250	C (0.71)	3,095	A (0.52)
South of Trosper Road	6000	4,445	C (0.74	4,220	C (0.70)
South of Deschutes Way	6000	4,990	D (0.83)	5,335	D (0.89)
North of Deschutes Way	6000	4,990	D (0.83)	4,995	D (0.83)

CONCURRENCY

Concurrency, as noted previously, is the process of determining whether transportation infrastructure can accommodate new development and if not, what mitigation measures will be required. Concurrency can result in denial of a development proposal if it cannot mitigate its impacts on adopted LOS standards. In the legislation regarding the transportation element of the Comprehensive Plan, GMA stipulates ***"after adoption of the comprehensive plan…local jurisdictions must adopt and enforce ordinances which prohibit development approval if the development causes the level of service…to decline below the standards adopted in the transportation element…unless improvements or strategies to accommodate the impacts of development are made concurrent with the development."*** This reiterates the importance of LOS standards explained earlier. While the concurrency ordinance is not part of this transportation element, it is informed by the LOS standards and other considerations included in this element.

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Transportation Master Plan

CHAPTER 11

CAPITAL IMPROVEMENTS

Capital Improvements

The Transportation Master Plan includes a list of capital improvements needed in the city between now and 2040 to achieve and maintain adopted levels of service and accomplish other important transportation objectives for the city, such as supporting the development of more walkable, people-oriented places and promoting active travel options that encourage better public health. Following is a list of projects, by project type.

Non-Motorized Projects

Every street project in this transportation plan includes appropriate non-motorized facilities. Non-motorized facilities account for anywhere from 30 percent to 60 percent of the cost of typical street projects. This includes right-of-way acquisition, stormwater treatment, and additional materials in addition to the construction labor.

This 2014 Capitol Way project added bike lanes and improved the sidewalks in this part of the Brewery District in addition to improving stormwater runoff facilities.

The projects identified here are stand-alone projects. Some were previously identified in sub-area plans and other focused studies. Others were identified to support Safe Routes to School programs. The majority come from evaluation of the future needs suggested by the Primary and Secondary networks. The latter source merits some additional explanation to avoid confusion when looking at the map of future network needs and the project list.

For bike projects, "future network needs" were identified on an initial list of project needs. Comparison of that list to the list of street projects revealed a significant number of those non-motorized facilities slated to be built as a part of these street projects. Consequently, those projects are not included on this list as stand-alone projects.

The remaining projects were evaluated for potential low cost improvements. Some future needs can be met with a programmatic approach to non-motorized facility improvements such as striping, signage, and crosswalk improvements. A separate list of these programmatic upgrades is included at the end of the capital improvements list.

Those deficits that remained after consideration of street projects and programmatic opportunities comprised the list of stand-along bike projects found in Table 9. A map of those stand-alone projects can be found in Figure 20. Costs are not developed for these projects; most are still conceptual and others will be designed and built in the course of development or redevelopment projects. Costs will be developed as projects move into the six-year Transportation Improvement Program or as part of a more in-depth bike and pedestrian planning effort.

A slightly different approach was used to identify stand-alone pedestrian facilities.

Similar to bike facilities, many pedestrian deficiencies will be addressed with completion of proposed street projects. Figure 21 shows those deficiencies on the Primary and Secondary Network that will be addressed by future street projects; it also indicates whether the remaining deficiencies are attributed to needs on one side of the street or both.

In looking at the remaining deficiencies, particular attention was focused on the Urban Corridor Zone, where detailed sub-area plans have identified specific pedestrian improvements that will help accommodate future land use activities. Those needs constitute the majority of stand-alone pedestrian projects identified in Table 10. Some number of the remaining deficiencies are likely to be addressed with wide, multi-use shoulders in rural areas, or programmatic investments that create a safer and more comfortable walking route. A detailed pedestrian plan such as that identified in the chapter on Strategic Needs and Opportunities will be useful in identifying and prioritizing needs citywide.

Cost are not developed for these projects; most are still conceptual and others will be designed and built in the course of development or redevelopment projects. Costs will be developed as projects move into the six-year Transportation Improvement Program or as part of a more in-depth bike and pedestrian planning effort

Table 9 Stand-alone Bike Projects

ID	Project	Description
1	Public Alleyway Non-motorized Network	Improve alleyways within the Brewery District "triangle" to provide comfortable, attractive connections for cyclists and pedestrians that also enhance activities on the ground floors of adjacent buildings and increase access to transit.
2	Shared-use Path Along BPA Alignment	Establish a new shared-use pathway running through the east-west BPA alignment and connecting to Linderson Way.
3	Shared-use Path from Trosper Road to South of M Street	New non-motorized connection east of Capitol Boulevard linking the neighborhood in the vicinity of Linda Street and Ruby Street to Capitol Boulevard near M Street.
4	Mottman Road Sidewalk and Bike Lane Improvements	Install sidewalk on the north side of Mottman Road from the vicinity of Crosby Boulevard to R.W. Johnson Boulevard. Note that sidewalks and bike lanes will be added to both sides of Mottman between Mottman Court and R.W. Johnson Boulevard during a pavement resurfacing project.
5	76th Ave / Kimmie Street Bike Facilities (Port property)	From Center Street to 83rd Avenue (Port of Olympia project).
6	76th Ave / Kimmie Street Bike Facilities (City property)	From 83rd Avenue to 93rd Avenue.
7	83rd Avenue Bike Facilities	From Kimmie Street to Center Street
8	Armstrong Road Bike Facilities	From 83rd Avenue to 88th Avenue
9	93rd Avenue Bike Facilities	From I-5 to Old Highway 99
10	73rd Avenue Bike Facilities	From Bonniewood Drive to Henderson Boulevard
11	Bonniewood Drive Bike Facilities	From Dennis Street to Old Highway 99
12	49th Avenue / Trosper Road / 54th Avenue Bike Facilities	From Black Lake-Belmore Road to Rural Road
13	Sapp Road / Rural Road Bike Facilities	From Trosper Road to Black Lake-Belmore Road
14	Black Lake-Belmore Road Bike Lanes	From 66th Avenue to Black Lake Boulevard (some partial programmatic potential)
15	Linwood Avenue Bike Facilities	From Sapp Road to G Street
16	New Pathway to Black Hills High School	New dedicated pathway from the future Gate-Belmore Trail to Black Hills High School
17	Black Hills High School Neighborhood Connection	From Bronington Street to Black Hills High School
18	Kirsop Road Bike Facilities	From 54th Avenue / Trosper Road to 66th Avenue
19	66th Avenue / 70th Avenue Bike Lanes	From Black Lake-Belmore Road to Littlerock Road
20	93rd Avenue Bike Lanes West of I-5	From I-5 to the western City Limits, as development occurs
21	88th Avenue Bike Facilities	From just west of Cabot Drive to 85th Avenue
22	Israel Road Bike Facilities	From Nikolas Street to Bonniewood Drive
23	Desoto Street Bike Lanes	From 2nd Avenue to Emerson Street. Note that additional bike lanes in this vicinity are included as a programmatic improvement.
24	Deschutes Valley Trail	From Henderson Boulevard at Pioneer Park to Tumwater Historical Park
25	Gate to Mottman Trail	Conversion of the old Gate-Belmore rail corridor to a trail between Gate and Mottman. Note that conversion of this rail corridor to a trail south of 66th is in the works, led by Thurston County.

Table 9 Stand-alone Bike projects Continued

Programmatic Bike Improvements (low cost projects that can generally be completed within the existing right-of-way)		
ID	**Project**	**Description**
P1	Trosper Road Bike Facilities	From Lake Park Drive to Rural Road
P2	Center Street Bike Facilities	From Tumwater Boulevard to 83rd Avenue
P3	Trails End Road Bike Facilities	From Henderson Boulevard to 79th Avenue and then to Old Highway 99
P4	Lake Park Drive Bike Facilities	From Linwood Avenue to Trosper Road
P5	Vista Loop Bike Facilities	From Crosby Boulevard to Barnes Boulevard
P6	12th Avenue / Vista Loop Bike Facilities	From Barnes Road to Irving Street
P7	Somerset Hill Road Bike Facilities	From R.W. Johnson Boulevard to Crosby Boulevard
P8	Miner Drive Bike Facilities	From Kirsop Road to Littlerock Road
P9	South Street / Hoadly / Pifer Road Bike Facilities	From North Street to South Street. Note that some segments of this fall within the City of Olympia.
P10	Lee Street / Boston Avenue / Hazelhurst Bike Facilities	From Capitol Boulevard to Elm Street
P11	Dennis Street Bike Facilities	From Linderson Way to Capitol Boulevard, and from Capitol Boulevard to Elm Street
P12	Bates Street / 7th Avenue Bike Facilities	From 2nd Avenue to Irving Street
P13	Desoto / 4th / Ferry / Irving Street Bike Facilities	From 2nd Avenue to Crosby and 3rd Avenue
P14	Shared Bike Streets	Upgrade as necessary and sign with 'sharrows' the key shared bike streets identified in the Brewery District plan to provide good connections between adjacent neighborhoods and the stores and services in the District. (Programmatic potential)
P15	Shared-use Path from Linderson Way to Southgate Shopping Center	New non-motorized connection linking the neighborhood in the vicinity of Gerth Street to the Southgate Shopping Center. Potentially can be incorporated into the 6th Avenue Extension design. (Programmatic potential)
P16	X Street Shared Bike Streets	Upgrade as necessary and sign with 'sharrows' X Street, from Elm Street to 7th Ave. (Programmatic potential)

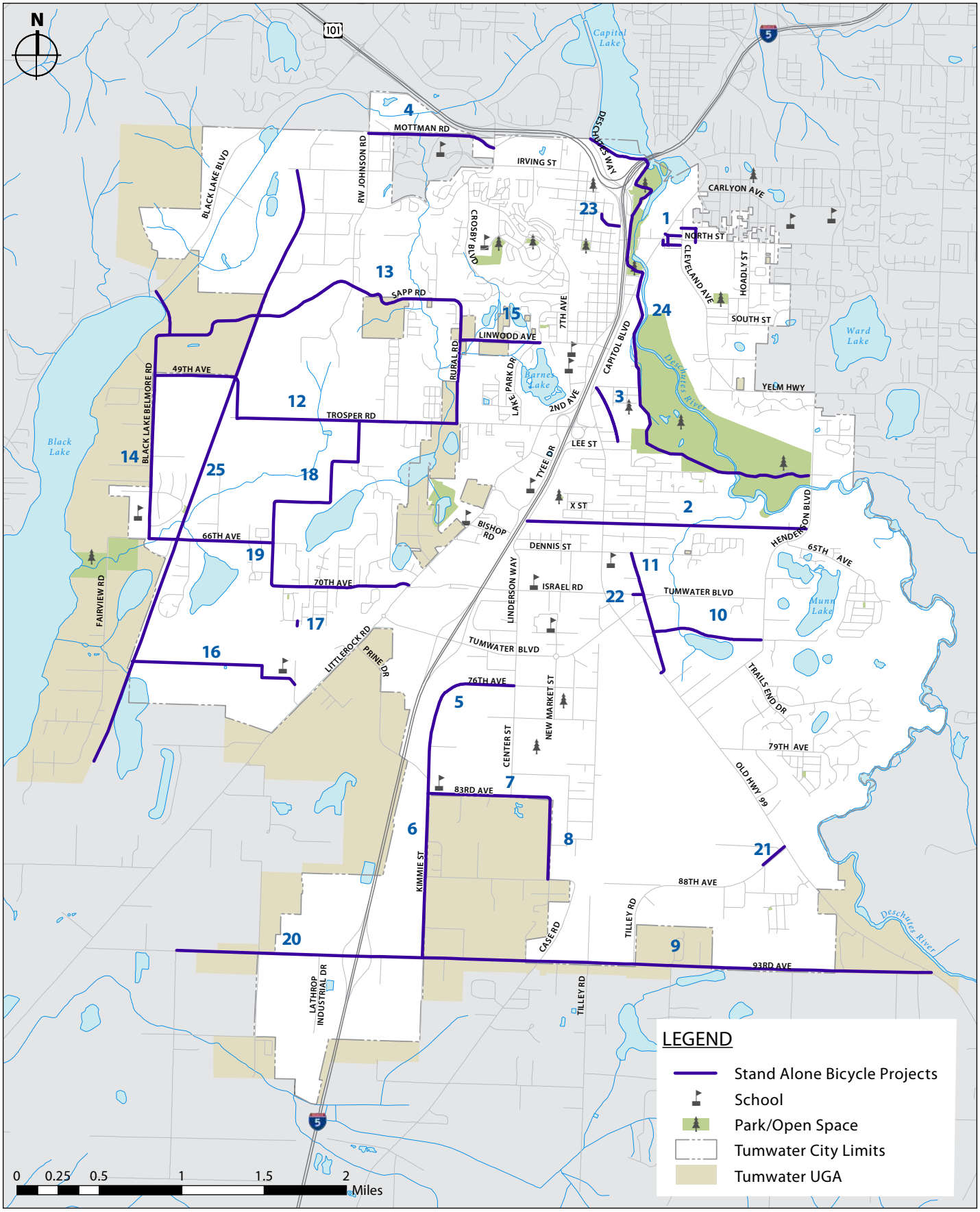

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Figure 20
Stand Alone Bicycle Projects

Table 10 Stand-alone Pedestrian Projects

ID	Project	Description
1	Public Alleyway Non-motorized Network	Improve alleyways within the Brewery District "triangle" to provide comfortable, attractive connections for cyclists and pedestrians that also enhance activities on the ground floors of adjacent buildings and increase access to transit.
2	Improved Sidewalks in Brewery District	Upgrade existing sidewalks (in addition to those being reconstructed as part of street projects) to improve access and circulation throughout the District, including well marked and designed pedestrian crossings at key locations.
3	Cleveland Avenue Retrofit	Retrofit Cleveland Avenue between Custer Way and Capitol Boulevard to be more pedestrian oriented.
4	Pedestrian Crossings at New Transit Station	When the Tumwater Square Transit Station is relocated to Capitol Boulevard establish new pedestrian crossings in the vicinity of the Station, incorporating high visibility flashers and other treatments to ensure safe pedestrian access.
5	New Pedestrian Connection from Linderson Way to Elm Street, in vicinity of T Street	Pedestrian facilities offering a direct route between Linderson Way and Elm Street with a crossing at Capitol Way. Preferred route roughly aligns with T Street and Pinehurst Drive.
6	Elm Street Sidewalks	Completion of sidewalk facilities on Elm Street between Pinehurst and W Street.
7	Shared-use Path Along BPA Alignment	Establish a new shared-use pathway running through the east-west BPA alignment that crosses Capitol Boulevard and connecting to Linderson Way.
8	Capitol Boulevard at U Street Pedestrian Improvement	Create a safe pedestrian crossing opportunity on Capitol Boulevard at U Street incorporating a refuge island and rectangular rapid flashing beacons.
9	North-South Pedestrian Connection between X Street and Dennis Street	Create a new pedestrian / non-motorized connection through the future shared-use pathway on the BPA alignment to connect X Street and Dennis Street in the vicinity of Tumwater High School.
10	Enhanced Access at I-5 Overcrossing	Upgrade pedestrian and cyclist access to the non-motorized crossing of I-5 near Dennis Street.
11	Pedestrian Improvements and Traffic Calming	Various locations throughout the city. Intent is to create a safer and more inviting pedestrian environment by improving crossing opportunities on busy streets and by installing traffic calming devices that slow vehicles in high pedestrian areas. Specific projects developed as a part of the six-year Transportation Improvement Program (TIP) process.
12	Safe Routes to School Projects	Pedestrian facility upgrades in the vicinity of Peter G. Schmidt and Michael T. Simmons schools to promote walking to and from school. Project details developed as a part of the six-year TIP process.
13	Mottman Road Sidewalk and Bike Lane Improvements	Install sidewalk on the north side of Mottman Road from the vicinity of Crosby Boulevard to R.W. Johnson Boulevard. Note that sidewalks and bike lanes will be added to both sides of Mottman between Mottman Court and R.W. Johnson Boulevard during a pavement resurfacing project.

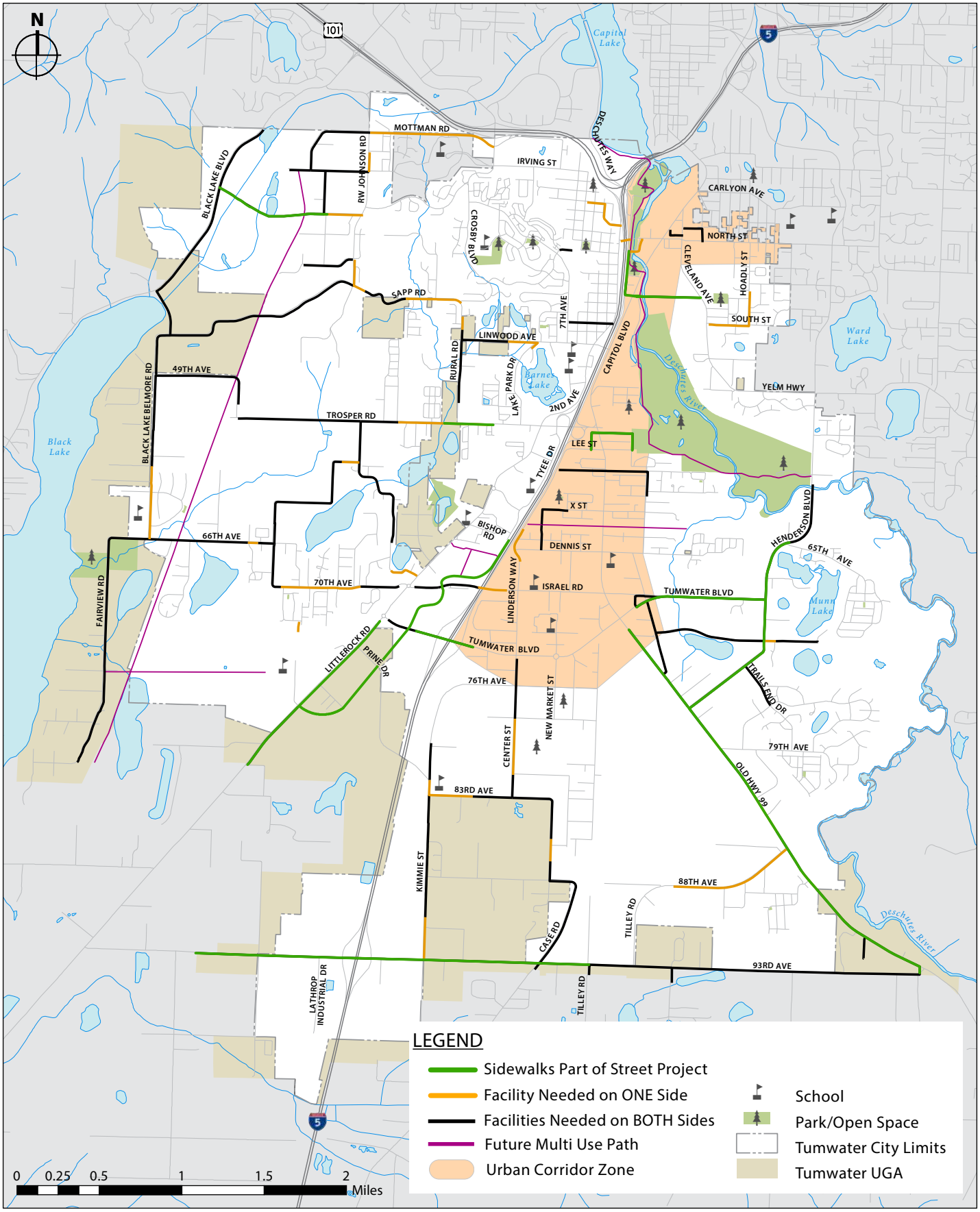

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Figure 21
Pedestrian Network Project Status

Motorized Projects

Motorized projects include street projects – widenings and new connections, primarily – and intersection projects. Tables on the next few pages identify projects needed between now and 2040 to meet adopted levels of service and achieve City objectives. Table 11 identifies roadway projects; Table 12 identifies intersection projects. A map of proposed projects is shown in Figure 22. Note that all street projects include appropriate non-motorized facilities according to City design standards.

TABLE 11: PROPOSED 2040 STREET PROJECTS W/ BIKE LANES AND SIDEWALKS

PROPOSED 2040 STREET PROJECTS w/ Bike Lanes and Sidewalks as Appropriate Based on Street Standards and Design Guidelines

	Street	Extents	Existing Conditions	Proposed Improvement	Notes
R1	Littlerock Road	Tumwater Blvd to Western City Limits	2 lanes, no bike lanes or sidewalks	Widen to 3 lane	Projected volume is approaching need for a 4/5 lane section. Monitor road as development occurs; all building construction should be set back to accommodate 5 lanes.
R2	Tyee Drive	Bishop Rd to Israel Rd	No road	New 3 lane extension with RAB at Israel Rd	This project is currently being designed.
R3	Tyee Drive	Israel Rd to Tumwater Blvd	No road	Construct 5 lane extension, including intersection improvements at Tumwater Blvd	Reassess need for a 5 lane section as the surrounding properties are developed
R4	Tyee Drive	Tumwater Blvd to Prine Dr	No road	Construct 5 lane extension, including intersection improvements at Prine Dr	Reassess need for a 5 lane section as the surrounding properties are developed
R5	Tyee Drive	Prine Dr to Littlerock Rd	No road	Construct 3 lane extension, including intersection improvements at Littlerock Rd	Reassess need for TWLTL as the surrounding properties are developed
R6	Trosper Road	Lake Park Dr to Rural Rd	2 lanes, on-street parking, partial bike lane, sidewalks	Repurpose asphalt to provide 3 travel lanes and bike lanes	
R7	Tumwater Blvd	Capitol Blvd to Henderson Blvd	2 lanes, wide shoulders and no bike lanes or sidewalks	Widen to 3 lanes, including intersection at Bonniewood Dr	
R8	Tumwater Blvd	I-5 Interchange	Currently 3 lane bridge	RAB Intersection control and wider bridge	Note: This is a WSDOT project
R9	Tumwater Blvd	I-5 SB Ramps to Tyee	3 lanes, no bike or sidewalks	Widen to 5 lanes	
R10	E Street	Capitol Blvd to Cleveland Ave	No road	Construct 4 lane extension across Tumwater Valley, incl: E St & Cleveland Ave intersections	This project will also provide access to properties on the valley floor.
R11	Old Highway 99	Tumwater Blvd to 73rd Av	2 lanes, no bike or sidewalks	Widen to 5 lanes	This project is already funded
R12	Old Highway 99	73rd Ave to 88th Ave	2 lanes, no bike lanes or sidewalks	Widen to 5 lanes, including intersection improvements at Bonniewood Dr, Henderson Blvd and 88th Ave	This widening will include the construction of RAB's at Henderson Blvd and 88th Ave
R13	Old Highway 99	88th Ave to 93rd Ave	2 lanes, no bike lanes or sidewalks	Widen to 3 lanes	Projected volume is approaching need for a 5 lane section. Widening Old Hwy 99 would not provide meaningful benefit unless continues south beyond city Limits. This road should be monitored as development occurs.
R14	Henderson Boulevard	Tumwater Blvd to 65th Ave	2 lanes, no bike lanes or sidewalks	Widen to 3 lanes	Construct left-turn lanes where needed, consider TWLTL or median for remaining sections
R15	Henderson Boulevard	Tumwater Blvd to Old Hwy 99	2 lanes, no bike lanes or sidewalks	Widen to 3 lanes	Construct left-turn lanes where needed, consider TWLTL or median for remaining sections
R16	32nd Street	Ferguson St to Black Lake Blvd	3 lanes with sidewalks, no bike lanes	Construct 3 lane extension, including intersection at Black Lake Blvd	This roadway project will be development driven
R17	70th Avenue Extension	Kirsop Rd to 73rd/66th Connector	2 lanes with partial sidewalks and no bike lanes	Construct 3 lane extension, including intersection improvements at Kirsop Rd	This roadway project will be development driven
R18	73rd Avenue	Prine Dr Ext to 73rd/66th Connector	No road	Construct 3 lane road	This roadway project will be development driven. Need for 3rd lane will be assessed during design
R19	Prine Drive	Tyee Rd to 73rd Ave	2 lanes, no bike lanes or sidewalks	Widen to 3 lanes between Tyee Rd & Tumwater Blvd. Construct 3 lane extension, including intersection improvements at Tumwater Blvd	This roadway project will be development driven.
R20	93rd Avenue	Lathrop Industrial Dr to I-5 SB Ramps	2 lanes, no bike lanes or sidewalks	Widen to 5 lanes, including intersection improvements at Lathrop Rd	5 lane section to accommodate commercial properties on both sides of 93rd Ave. Additional lanes will add/drop at Lathrop Industrial Dr and SB ramps (until project R24)

PROPOSED 2040 STREET PROJECTS w/ Bike Lanes and Sidewalks as Appropriate Based on Street Standards and Design Guidelines

	Street	Extents	Existing Conditions	Proposed Improvement	Notes
R21	SR 121 (93rd Avenue)	I-5 NB Ramps to Kimmie St	2 lanes, partial bike lanes and sidewalks	Widen to 5 lanes, including intersection improvements at Kimmie St	5 lane section to accommodate commercial properties on both sides of 93rd Ave. Additional lanes will add/drop at Kimmie St and NB ramps (until project R24)
R22	SR 121 (93rd Avenue)	Kimmie St to Tilley Rd (South)	2 lanes, no bike lanes or sidewalks	Widen to 3 lanes	New development setback for a 5 lane corridor allows for widening long term; 2040 volumes may exceed 3 lanes
R23	SR 121 (93rd Avenue)	Lathrop Industrial Dr to Western City Limits	2 lanes, partial bike lanes and sidewalks	Widen to 3 lanes	
R24	SR 121 (93rd Avenue)	I-5 Interchange	Currently 2 lane bridge	Widen bridge to 5 lanes	This will become a WSDOT project
R25	6th Ave	T St to Lee St	No road	Construct 3 lane roadway as part of Trosper Rd interchange improvements	The connection of this roadway to Trosper Road is included in the Trosper Interchange project
R26	Custer Way	Boston St to Cleveland Ave	4 lanes with sidewalk, no bike lanes	Reduce to 3 lanes, install bike lane EB	This project is dependent on construction of intersection projects I2, I4, I6, I7 and I8
R27	Capitol Boulevard	E St to Cleveland Ave	5 lanes with sidewalk, no bike lanes	Reduce to 3 lanes, install bike lanes	Requires construction of intersection projects I2, I4, I6, I7, I8
R28	Capitol Boulevard	Cleveland Ave to Carlyon Ave	5 lanes with sidewalk, no bike lanes	Reduce to 4 lanes, install bike lanes	Requires construction of intersection projects I2, I4, I6, I7, I8
R29	Capitol Boulevard	Israel Rd to M St	5 lanes with sidewalks, no bike lanes	Reduce to 4 lanes, install bike lanes and curbed median	Requires construction of intersection projects 15, 16, 17, I8
R30	New North/South St	Lee St to Trosper Rd	No road	Construct 2 lane road with sidewalks, bike lanes	
R31	Odegard Road	Littlerock Rd to Tyee Dr	2 lanes, no bike lanes or sidewalks	Construct 2 lane road with on-street parking	
R32	Bishop Road	Littlerock Rd to Tyee Dr	2 lanes, no bike lanes or sidewalks	Construct 2 lane road with on-street parking	
R33	73rd/66th Connector	66th Ave to 73rd Ave	No road	Construct 3 lane roadway	This roadway project will be development driven
R34	New Market Street	Tumwater Blvd to Israel Rd	2 lanes, no bike lanes or sidewalks	Construct 2 lane road with on-street parking	
R35	Town Center Connector	Tumwater Blvd to Israel Rd	No road	Construct 2 lane road with on-street parking	
R36	72nd Avenue	Cleanwater Dr to Linderson Way	Site Access	Construct 2 lane extension	
R37	Dolman Property	South of 73rd Ave	No roads	Construct road system as development occurs	This roadway project will be development driven
R38	Trosper Road Interchange	NB Ramps	Currently accesses Trosper Road	Reroute NB ramps to Ruby St at 6th Ave with new RAB. Existing WB to NB slip ramp (Trosper to I-5) remains. Includes upgrade of NB ramps	This project came out of a follow up to the Capitol Blvd Corridor Plan to address the Trosper Rd/Capitol Blvd intersection
R39	Deschutes Way	E St to US 101 WB On-Ramp	2 lanes, on street parking and sidewalk, no bike lanes	Undetermined	The specific improvement for this roadway will be determined in the E Street Extension project
R40	M Street Connection	M Street to Tumwater Valley Drive	No street	Construct 2 lane connection	
R41	Lambskin St Connection	Lambskin St to Sapp Rd	No street	Construct 2 lane connection	Developer funded

TABLE 12: PROPOSED 2040 INTERSECTION PROJECTS W/ PEDESTRIAN CROSSINGS AND ADA UPGRADES WHERE APPROPRIATE

PROPOSED 2040 INTERSECTION PROJECTS w/ Pedestrian Crossing and ADA Upgrades as Warranted

ID	Cross Streets	2015 Condition	Proposed Improvement	Notes
I1	Black Lake Belmore at Black Lake Blvd	TWSC	Install RAB	
I2	Capitol Blvd at Carlyon Ave	Signal	Install RAB	
I3	2nd Ave at Custer Way	Signal	Restripe SB through lane to be a shared through-left-turn lane	This improvement will provide improved lane utilization at the 2nd Ave at US 101/I-5 Off-ramps intersection
I4	Boston St at Custer Way	TWSC	Install RAB	
I5	Deschutes Way at Boston St	AWSC	Install Traffic Signal	
I6	Capitol Blvd at Cleveland Ave	TWSC	Install RAB	
I7	Capitol Blvd at Custer Way	Signal	Install RAB	
I8	Cleveland Ave at Custer Way/North St	Signal	Install RAB	
I9	Linwood Ave at 2nd Ave	AWSC	Install RAB	
I10	Capitol Blvd at Linwood Ave	Signal	Install RAB	This improvement is to facilitate access along Capitol Blvd as median treatment is installed as part of the Capitol Blvd Corridor Plan. It is not a capacity improvement
I11	Henderson Ave at Yelm Hwy	Signal	Construct a 2nd WB to SB left-turn lane	Construction of a 2 lane roundabout would also improve the traffic signal operations to LOS D. Both of these potential improvements present ROW challenges
I12	Trosper Rd at Rural Rd	TWSC	Construct EB left-turn lane and TWLTL east of Rural, allowing SB lefts to perform two-stage movements	These improvements could be constructed without repurposing the existing ROW along Trosper Rd to Lake Park Dr
I13	Trosper Rd at 2nd Ave/Littlerock Rd	Signal	Install RAB	Construction of a RAB will have ROW impacts. Without improvement intersection is expected to operate at LOS E with congestion along 2nd Ave and Littlerock Rd
I14	Trosper Rd at Tyee Dr/SB I-5 Ramps	Signal	Install RAB	Construction of a RAB will have ROW impacts. Without improvement intersection is expected to operate at LOS F with congestion along Tyee Dr, SB I-5 Ramps and Trosper Rd
I15	Trosper Rd at Capitol Blvd	Signal	Install RAB	
I16	T St at Capitol Blvd	TWSC	Install RAB	

PROPOSED 2040 INTERSECTION PROJECTS w/ Pedestrian Crossings and ADA Upgrades as Warranted

ID	Cross Streets	2015 Condition	Proposed Improvement	Notes
I17	X St at Capitol Blvd	Signal	Install RAB	
I18	Dennis St at Capitol Blvd	Signal	Install RAB	
I19	Old Hwy 99 at 79th Ave	TWSC	Install RAB	
I20	93rd Ave at I-5 NB Ramps	TWSC	Install Traffic Signal	
I21	93rd Ave at Kimmie St	TWSC	Install Traffic Signal	Current development mitigation plans call for a traffic signal here.
I22	93rd Ave at Case Rd	AWSC	Install RAB	
I23	93rd Ave at Tilley Rd (south)	AWSC	Install RAB	Construction of a RAB would be necessary should median control along 93rd Ave be implemented between Case Rd and Tilley Rd
I24	93rd Ave at Tilley Rd (north)	TWSC	Install RAB	
I25	93rd Ave at Old Hwy 99	TWSC	Install RAB	As traffic along Old Hwy 99 grows, acceleration lanes will not be sufficient to accommodate traffic on 93rd Ave

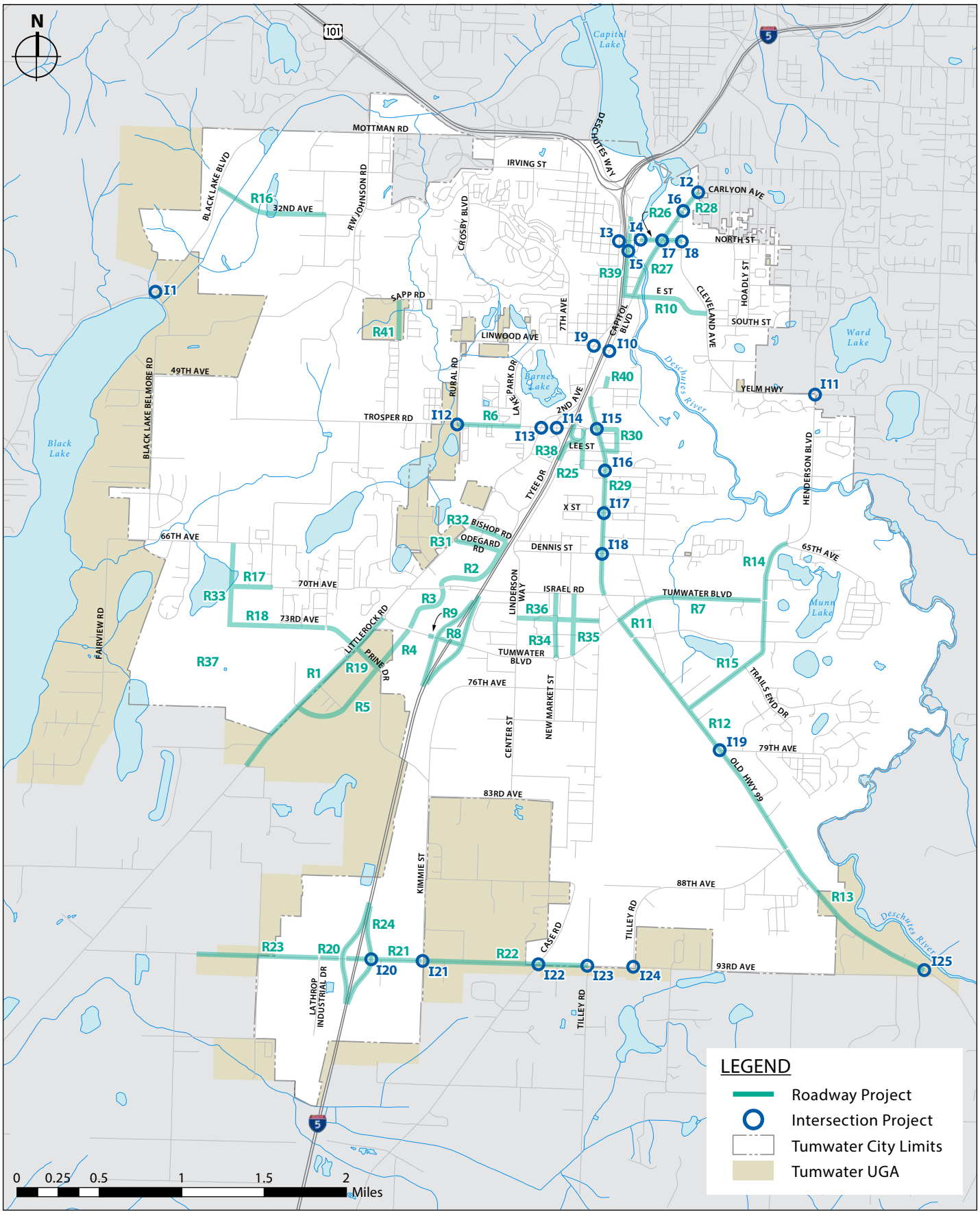
Abbreviations used in the 2040 street and intersection projects tables:

TWLTL Two-way left turn lane

RAB Roundabout

TWSC Two-way stop controlled intersection

AWSC All-way stop controlled intersection



CITY OF TUMWATER
Transportation Master Plan

Figure 22
2040 Street and Intersection Projects
(includes associated non-motorized facilities)

Transportation Master Plan

CHAPTER 12

FUNDING

Funding Analysis

Tumwater must demonstrate that it has the financial resources to accomplish recommended actions in this plan. If the City is unlikely to be able to afford the projects necessary to maintain its levels of service as it grows then either additional revenues must be generated, LOS standards need to be revised, future land use patterns need to be reevaluated, or some combination of these actions. It is important that the City's plan be reasonably achievable.

A funding analysis looks at two basic things – revenues and expenditures. This section summarizes key considerations for each and then concludes by demonstrating that the recommendations in this plan are achievable though additional resources may be needed in the outside years of this planning horizon.

Revenues

City revenues for transportation typically fall into three buckets: local revenues, state revenues, and federal revenues.

Local revenues are the ones over which the City has the greatest control and discretion. They come from a variety of different sources – utility tax, Real Estate Excise Tax, impact fees and other developer mitigations, and most recently, from a 2/10 of one percent retail sales tax approved by Tumwater voters to fund a Transportation Benefit District. All of those revenues are directed to capital projects except for Transportation Benefit District (TBD) revenue which is strictly limited to preservation. In addition, transportation receives revenue annually from the City's General Fund during the general budget process, and which is directed to maintenance and operations.

State revenues come primarily from the state gas tax, in two forms. Tumwater receives an annual direct distribution from the state gas tax that is earmarked for cities. The City also receives state grants that are funded by the state gas tax, either from WSDOT or more commonly, from the Transportation

Improvement Board. Grant revenue is project specific and depending on the nature of the grant program, can be for capital or operations.

Federal revenues, which are derived primarily from the federal gas tax, come from grants administered by Thurston Regional Planning Council and occasionally from WSDOT. These funds are typically applied to capital projects or larger preservation projects.

State and federal grants are unpredictable. An entity other than the City determines funding priorities in any particular year and decides which projects will be funded. Tumwater competes with other communities for scarce resources. This makes it difficult for Tumwater to establish a reliable, priority-based funding strategy

The forecast assumes that the City's actual transportation operating expenditures funded with General Fund revenues are an appropriate surrogate for estimating revenues available for operations. Revenues available for capital projects are identified specifically in the capital facilities plan. Transportation benefit district revenues are derived from city sales tax forecasts. This forecast assumes TBD revenue is reapproved in 2025, when the current tax expires.

The revenue forecast assumes a 4.16% average annual rate of change in General Fund revenues available for operations, based on the 2009-2015 rate of change in constant 2015 dollars. Forecasted revenues for capital projects are based on assumptions of 4.67% average annual rate of change for the utility tax, a 6.11% average annual rate of change for the direct distribution state gas tax, and a 3.00% average annual rate of change for real estate excise tax, all in constant 2015 dollars. Grant revenues are volatile; an average annual amount of $2.7 million was assumed, increasing to $3 million by 2022 and to $3.3 million by 2030. In reality, grants received will be higher in some years and lower in others. Impact fee revenues available for projects were assumed to be $600,000 per year for the forecast period. Miscellaneous revenues were assumed to be a flat $1.3 million per year; as with grants, some years will be

higher and others lower. TBD revenues were forecasted to grow at an average annual rate of 2% per year.

EXPENDITURES

City expenditures for transportation typically fall into two broad categories: capital expenditures and operating expenditures. Programs like preservation – which includes overlays, chip seal, fog seal, and other techniques – maintenance, signal timing, engineering, and striping are considered operating expenditures. Construction projects resulting in new or expanded infrastructure – streets, sidewalks, intersections – are considered capital expenditures. It can also include major reconstruction that significantly extends the life of these facilities.

The expenditure forecast assumes that operations expenditures will not exceed operations revenue, and that the additional preservation to be funded by the TBD will be commensurate with the available revenue. That leaves capital project costs to forecast.

Planning level estimates were made for each project in constant 2015 dollars. Professional judgment was used to estimate which projects would likely be wholly funded by developers as a condition of development entailing no direct costs to the city. This amounted to about $60 million in projects assumed to be developer-funded over the forecast period. Several projects will be WSDOT projects but are included to demonstrate projects needed to address future deficiencies. These are illustrative since they are not yet included on a WSDOT project list. These projects totaled about $43 million in costs, which are not included in the following table.

Between now and 2040 Tumwater may need to address other system needs that are not included in this forecast. This includes such things as stormwater retrofits, the upgrade of facilities annexed into the City and which do not meet adopted urban street standards, and potentially raising the elevation of some streets in the Salmon Creek basin. As those projects are defined and costs established they will be included in future updates of the Transportation Master Plan and Capital Facilities Plan.

FINANCIAL SUMMARY

Following is a summary of revenues and expenditures associated with the transportation recommendations included in this Transportation Master Plan. Revenues and expenditures are in constant 2015 dollars.

TABLE 13: REVENUE AND EXPENDITURE FORECAST SUMMARY, 2016-2040

Revenue (in $1,000s) by Functional Area

Time Period	Capital	Operations	TBD Revenue (additional maintenance)	Total
2016-2026	$ 65,645	$ 18,433	$ 10,538	$ 94,616
2027-2040	$ 104,504	$ 30,338	$ 17,200	$152,042
2016-2040	**$170,149**	**$ 48,771**	**$ 27,738**	**$246,658**

Expenditures (in $1,000s) by Functional Area

Time Period	Capital	Operations	Additional Maintenance (TBD-funded)	Total
2016-2026	$ 89,036	$ 18,024	$ 10,538	$117,598
2027-2040	$141,742	$ 28,209	$ 17,200	$187,151
2016-2040	**$230,778**	**$ 46,233**	**$ 27,738**	**$304,749**

This is a long-range plan; it is possible some projects will not be needed in this planning horizon and so total costs may be lower. If not, projected capital expenditures exceed projected revenues for capital projects by about $58 million. The Growth Management Act requires a discussion of how this gap will be closed if a deficit exists.

- Depending on what happens with the local, state, and national economies over the next 20+ years it may be necessary to identify additional revenues in the outside years of this forecast to accomplish some projects. These may come in the form of singularly large grants or appropriations, or some other new grant programs such as may be established in the future by TRPC or WSDOT utilizing newly appropriated revenues.
- Conversely, depending on what happens with the local, state, and national economics over the next couple of decades Tumwater's revenue growth may

exceed what is projected, which would lessen or eliminate the difference. One example of this is the new Toyota dealership relocating from Olympia to Tumwater. This is the region's largest auto dealership. Retail sales tax revenues from this new business is not included in any of these forecasts.

- Impact fee estimates used in this forecast are based on the current Transportation Impact Fee ordinance. Tumwater will update that ordinance after this plan is adopted, based on the new project list. This can result in additional revenues targeted towards capacity-related projects.
- In addition to impact fees, Tumwater can and does require development mitigation projects where appropriate. These are transportation improvements the City requires as a condition for development approval. Several projects on the City's long-range list will likely qualify as developer-funded mitigation projects.
- Tumwater may also choose to finance future projects. This forecast makes no assumptions about financing tools though several projects on Tumwater's list are good candidates for a Local Improvement District (LID), a late-comers agreement, or General Obligation bonds. Financing tools like an LID or a late-comers agreement generate new project revenues while General Obligation bonds provide financing at the front end that is paid off over time, in part by new residents and businesses in the area that benefit from these projects. Bonds incur additional debt service costs.
- Tumwater may also choose to adopt a more congestion-tolerant urban LOS commensurate with its maturation as a city, thereby reducing the number of congestion-related projects on the list. This might entail establishing LOS E as the standard not just on Capitol Way / Capitol Boulevard but on other arterials as well. It can also entail application of the multimodal LOS being introduced with this plan as a concurrency tool used to achieve adopted land use visions. By 2025 or 2030 it is conceivable that larger parts of the city will be more urban in character where

higher levels of congestion are tolerated and where greater emphasis on pedestrian and bike mobility combined with transit service is the preferred means of addressing LOS deficiencies.

- Finally, Tumwater will continue to work towards greater investment in infill and redevelopment of its key corridors as a strategy for addressing future congestion. That is because growth located on these key corridors generates greater opportunity for walking, biking, and transit – opportunities that are minimal or non-existent when growth locates on the outer fringes of the city and in its more rural areas. While it may seem counter-intuitive, attracting more mixed-use, compact development on key corridors is an effective strategy for addressing funding gaps between likely revenues and expensive street widening projects.

This forecast will be updated periodically between now and 2040, during which the underlying assumptions will be revisited and revised as warranted.

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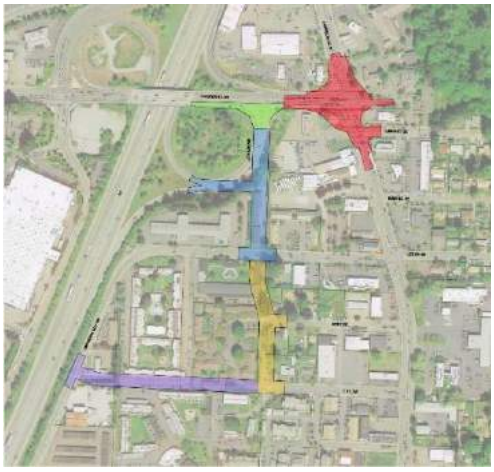
Transportation Master Plan

CHAPTER 13

OPPORTUNITIES & NEEDS

Strategic Opportunities and Needs

Developing the long-range Transportation Master Plan provides an opportunity to inject emerging local initiatives into the long-range planning framework. These are areas identified for follow-up that build on previous work and help the City achieve its broader strategic objectives. They also help support objectives of the City's Strategic Plan, particularly those associated with Strategic Priorities A- C:



Strategic Priority A: Aggressively pursue targeted community development opportunities (including the Brewery District and the Capitol Boulevard Corridor).

Strategic Priority B: Build a community recognized for quality (including sufficient facility maintenance).

Strategic Priority C: Create and maintain a transportation system for all modes of travel (including system maintenance, transformation of Capitol Boulevard, and design and construction of the E Street Connection).

Following are some notable local initiatives that will shape the City's transportation work program over the next few years.

Sub-Area Plan Implementation

Tumwater is implementing recommendations first identified by the Urban Corridors Task Force and later realized in its two seminal sub-area plans related to urban corridors, the Brewery District Plan and the Capitol Boulevard Corridor Plan. Each of those sub-area plans have moved into the implementation phase; work will continue to progress on both over the next several years.

Brewery District

Tumwater and Intercity Transit are partnering on a redesign of the existing Tumwater Square Transit Station to make better use of the right-of-way while enhancing pedestrian access and safety, and overall efficiency of Cleveland Street in the vicinity of the Safeway store. Concurrent with that 2016 work is the analysis and preliminary design of the new E Street Connection

that will divert a significant amount of through-traffic out of the Brewery District neighborhood itself. The City's website has current information on the status of projects and next steps in the implementation of Brewery District plan recommendations.

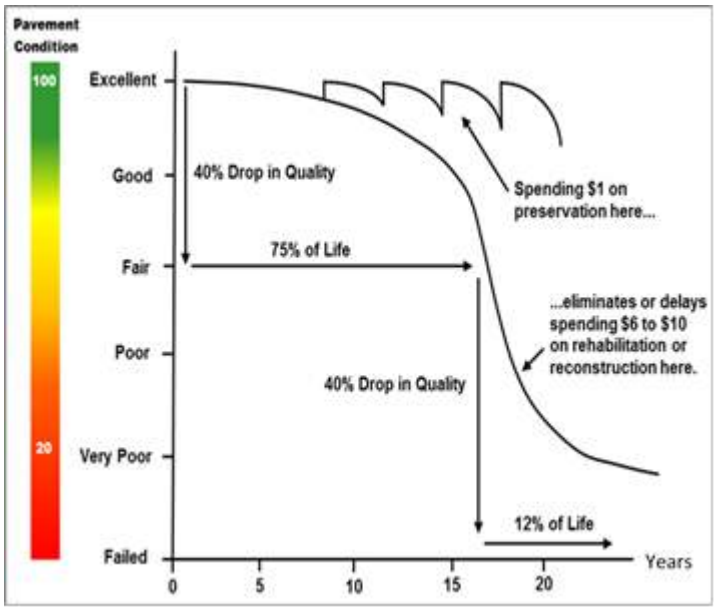
Capitol Boulevard Corridor

Design and engineering for projects identified in the corridor plan are underway. Engineering and design of improvements at the Trosper Road / Capitol Boulevard intersection are key to determining the design for other parts of the Boulevard. Conclusion of that work will result in additional recommendations and next steps in the transformation of this old highway corridor into a vibrant, mixed-use linear urban community. See the City's website for current information on the status of existing projects and next steps.

Pavement Management Program

The City of Tumwater's transportation system is worth hundreds of millions of dollars. As with any investment, it must be maintained so that it doesn't fall into disrepair. Similar to a house that needs routine maintenance in order to avoid expensive and disruptive repairs, pavement preservation helps to keep infrastructure in good shape for the traveling public while keeping lifecycle costs as low as possible.

Even if no vehicles traveled on pavement, especially asphalt pavement, it would degrade over time. The sun's ultraviolet rays break down the structure, and freezing rain seeps into fine cracks and enlarges them. Of course, our streets and roads are used, and this contributes to the degradation. Studded snow tires grind away at the surface, and heavy vehicles like garbage trucks and big freight trucks create ruts.



A regimen of relatively minor investments can avoid or postpone much more expensive reconstruction projects needed to restore a badly degraded facility. In fact, every dollar spent in an optimal pavement preservation

strategy saves anywhere from six to ten dollars needed to reconstruct and rehabilitate that facility later.

In 2015 Tumwater residents approved a Transportation Benefit District sales tax that is dedicated to restoring the City's streets to fair or better condition and keeping them that way at the lowest cost. A pavement management program will help the City know where to make investments to get the most out of its preservation program.

ADA Transition Plan

The 1990 Americans with Disabilities Act, or ADA, is a civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools, transportation, public places, and all private places that are open to the public. It is often regarded as one of America's most comprehensive pieces of civil rights legislation. Title II of the ADA requires state and local governments to make their programs and services accessible to people with disabilities.

All new transportation infrastructure built in Tumwater and all major infrastructure reconstruction activities result in either the addition of ADA facilities if they do not exist, or retrofitting older facilities to comply with new standards. The most common of these types of facilities are curb ramps. These are the ramps that enable someone in a wheelchair, or walking with a walker or cane, or traveling by means of a scooter to get off a sidewalk into a crosswalk and then back up onto a sidewalk on the other side of the street. There are other types of transportation facilities to consider, too, such as pedestrian crosswalk signals, parking lots, access to transit stops, and even the way construction zones are signed and barricaded.

While all new infrastructure is built to be ADA-compliant it is much more difficult retrofitting older infrastructure, especially as stand-alone projects. That is because there is no dedicated funding for this kind of work, which is often expensive and frequently entails the acquisition of right-of-way to accommodate ADA-compliant design standards. The standards change periodically, too, so that a facility brought into compliance in the early 2000s may not comply with today's standards.

The ADA legislation recognizes that Tumwater and other governments cannot afford to do a wholesale retrofit of all transportation infrastructure but it does expect the City to make progress in this regard. It expects communities to have a strategy for how it will approach this retrofit and to have a process in place to respond to specific needs as they arise.

An ADA transition plan is the tool used by communities like Tumwater to conduct a self-evaluation of transportation facilities, identify deficiencies, and then plan and budget for changes needed to increase accessibility.

Tumwater is currently developing its own ADA transition plan to help guide strategic investments. The Plan will identify and prioritize deficiencies, develop implementation strategies and include policies for collaboration and coordination with the disability community.

MULTIMODAL LOS CONCURRENCY PROGRAM

This Transportation Master Plan introduces the concept of multimodal level of service. It will result in a practical means of evaluating the adequacy of the non-motorized network with the potential for prioritizing needed investments.

To truly integrate its multimodal philosophy with its development regulations, Tumwater will explore ways of incorporating multimodalism into its concurrency program. The expectation is not that sidewalks or bike lanes or improved transit access will noticeably reduce congestion; rather, the expectation is that in select areas where regulatory policies are promoting transit-oriented, walkable, mixed-use development patterns greater benefit will be realized by a non-motorized project than a traditional street or intersection project. This is particularly true in the Brewery District and the Capitol Boulevard Corridor, where very little street widening will occur. In these areas the kind of growth envisioned will generate more bike and walk and transit trips than in other parts of the city; it is appropriate for growth in these areas to contribute towards the completion and improvement of the non-motorized network. That network is essential for the functioning of the districts.

This work program element will evaluate ways in which the existing concurrency ordinance can be modified to effectively

and defensibly incorporate stand-alone non-motorized facilities in the development review and fee collection processes. The objective is to help Tumwater put its growth-related resources where they will make the greatest impact by supporting system level needs and performance priorities, regardless of mode of travel.

Pedestrian Plan and Investment Strategy

This long-range plan attempts to identify and address non-motorized facility needs. This is particularly challenging for pedestrian facilities due to the scale of the pedestrian network and the range of factors that determine the walkability of a place, not just the presence of sidewalks. A citywide Pedestrian Facilities Plan can concentrate on facility needs at an appropriate scale. It should consider not just sidewalks but also crosswalks, street trees and other amenities, and cost-effective design alternatives to enable extension of the pedestrian system as fast as possible with the resources available. Such a plan will consider things like safe walking routes to schools and parks, and access to and from transit corridors. It can take into account those neighborhoods that tend to be transit-dependent due to income or age. It can identify priority pedestrian connections between neighborhoods should be coordinated with codes governing building and site design in order to account for the increased emphasis on pedestrian orientation in certain parts of the city. While a similar planning process for bike facilities would be beneficial, it is most needed for the pedestrian system. The City may consider a standing Pedestrian –Bicycle Advisory Committee advantageous for this effort.

North Street, before and after sidewalks were added.