

City of Camas

TRANSPORTATION SYSTEM PLAN

VOLUME 2

DRAFT OCTOBER 2026



TSP VOLUME 2: APPENDIX

Volume 2 of the Camas Transportation System Plan includes all background memoranda, and technical data that were the basis for its development. The contents of Volume 2 represent an iterative process in the development of the TSP. Refinements to various plan elements occurred throughout the process as new information was obtained. In all cases, the contents of Volume 1 supersede those in Volume 2.

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APPENDIX A. BACKGROUND PLANS, POLICIES AND TRAFFIC IMPACT FEE SUMMARY



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MEMORANDUM

DATE: May 15 2024

TO: Curleigh Carothers, City of Camas
Steve Wall, City of Camas

FROM: Reah Flisakowski, DKS Associates
Kevin Chewuk, DKS Associates
Veronica Sullivan, DKS Associates

SUBJECT: Camas Transportation Plan
Technical Memo #1a – Background Plans, Policies and Traffic Impact Fee Summary

P18039-000

This memorandum summarizes recent planning documents, policies and regulations that are applicable to the City of Camas Transportation Plan and Traffic Impact Fee (TIF) program. The transportation element of the City's current Comprehensive Plan will serve as the foundation for this process, upon which new information obtained from system analysis and stakeholder input will be applied to address changing transportation needs through the year 2040. As new strategies for addressing transportation needs are proposed, compliance and coordination with the plans, policies, and regulations described in this document will be required.

Note that this document does not include the full list of projects recommended from these plans. The list of previously recommended projects will be provided in Technical Memorandum #5 - Solutions Identification and Evaluation.

Planning Context

Growth Management Act (1990)

The Growth Management Act (GMA) was adopted in 1990 and includes both a set of high-level goals and a set of statutes and administrative codes that implement those goals. The two goals most relevant to transportation planning are Goal 2 and Goal 12:

- **Goal 2** – Transportation. Encourage efficient multimodal transportation systems.
- **Goal 12** – Public facilities and services. Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the

development is available for occupancy and use without decreasing current service levels below locally established minimum standards.

The provisions of the GMA govern the transportation element of comprehensive plans through two sections of statute and one section of administrative code:

- RCW 36.70A.070 Comprehensive plans – Mandatory elements
- RCW 36.70A.108, Transportation element – Multimodal transportation improvements and strategies
- WAC 365-196-430, Transportation element

The Department of Commerce’s Growth Management Services Division provides a useful and comprehensive checklist to help guide jurisdictions to update any element of the Comprehensive Plan to ensure compliance with the GMA. The checklist was last updated in 2014 and integrates all planning requirements defined in state statute or administrative code under the GMA.

The checklist summarizes the mandatory requirements under the GMA. Table 1 provides an overview of the topics addressed in the checklist and a summary of the mandatory elements related to each topic.

Table 1: Summary of Transportation Element Requirements of the GMA

Topic	Requirement(s)
Transportation inventory	Include an inventory of for all air, water, and ground transportation facilities.
Level of service standards	Plan must be regionally coordinated and must include standards for arterials, transit routes, and state highways.
Concurrency	Provide specific actions for bringing locally-owned facilities into compliance when below LOS standard.
Forecasting	Include a forecast of at least 10-years that provides information on the location and timing of capacity needs on the state and local system. The forecast must be based on growth assumptions in the Land Use Element.
Bicycle and pedestrian planning	Include a bicycle and pedestrian component.
Transportation Demand Management	Describe existing and planned TDM strategies. Camas is required to implement a Commute Trip Reduction (CTR) Program under the 2006 CTR Efficiency Act.
Funding	Include a multi-year financing plan that includes 6-year Transportation Improvement Program; Assess needs relative to funding sources; If funding is insufficient, identify how additional funds will be raised or modifications to land use assumptions to ensure LOS standards will be met.
Consistency and Coordination	Discuss intergovernmental coordination; Identify impact on adjacent jurisdiction; Demonstrate consistency with the regional transportation plan.

What this means for the Camas Transportation Plan: The GMA regulates both the process and content of the Transportation Element of comprehensive plans. The requirements of the GMA should be reviewed throughout development of the Transportation Plan.

WSDOT Highway System Plan (2007-2026)

The WSDOT (Washington State Department of Transportation) Highway System Plan is the element of the 2006 Washington's Transportation Plan (WTP) that identifies current and forecasted state highway needs based on the investment options identified in the WTP. The Plan identifies all the needs consistent with the WTP and provides strategies and performance measures to address those needs. This plan is based on the goals established in the WTP and supports the state's transportation policy goals contained in the RCW 47.04.280:

1. **Preservation:** to maintain, preserve and extend the life and utility of prior investments in transportation systems and services;
2. **Safety:** to provide for and improve the safety and security of transportation customers and the transportation system;
3. **Mobility:** to improve the predictable movement of goods and people throughout Washington state;
4. **Environment:** to enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities and protect the environment; and
5. **Stewardship:** to continuously improve the quality, effectiveness and efficiency of the transportation system.

What this means for the Camas Transportation Plan: The Plan will ensure consistency with the Highway System Plan. It will identify needs for SR 14 and SR 500 in Camas to ensure that the state's transportation network functions safely, efficiently, reliably and cost effectively.

Regional Transportation Plan for Clark County (2014)

Washington State's Growth Management Act approved the Regional Transportation Planning Program which created a formal mechanism for local governments and the state to coordinate transportation planning for regional transportation facilities. The Growth Management Act authorized the creation of Regional Transportation Planning Organizations (RTPOs) by units of local government. Southwest Washington Regional Transportation Council (RTC) is the designated RTPO for the three-county area of Clark, Skamania and Klickitat.

The duties of the RTPO include:

- Designation of the regional transportation system.
- Development of a six-year Transportation Improvement Program (TIP) to include regionally-significant city road projects, county road projects, transit capital projects and WSDOT transportation projects. The TIP must include a financial plan.
- Development of a Regional Transportation Plan (RTP) to include a regional transportation strategy, identification of existing and planned facilities and programs, Level of Service standards, a financial plan, assessment of regional development patterns and capital investment using a regional transportation approach. The Plan should also establish the relationship of High Capacity Transit to other public transportation providers. The concept of least cost planning is to be used in development of the RTP.
- Review of the Regional Transportation Plan at least every two years to ensure that it is current.
- Establish guidelines and principles for development and evaluation of local comprehensive plan transportation elements and certify that the transportation elements meet the requirements of the GMA and are consistent with the RTP.
- Develop a regional Level of Service (LOS) standard for the regional system as required by the LOS Bill.

Clark County's Regional Transportation Plan (RTP) is the region's long-range transportation planning document with a 2035 horizon. It is consistent with Federal and State requirements and builds upon strategies identified by State and local agencies to address short-, mid-, and long-term needs.

Sections relevant to Camas include:

- **Regional Transportation System:** The RTP focuses on the regional transportation system and identifies several streets in Camas as part of the system, including SR 14, SR 500, Lake Road - SE 1st Street, Parker Street, Pacific Rim Boulevard - 34th Street, NW 38th Avenue – SE 20th Street, NW 6th Avenue, and NE 3rd Avenue.

- **Highways of Statewide Significance (HSS):** SR 14 in Camas is designated as a highway facility of Statewide Significance. The State must give higher priority to correcting identified deficiencies on transportation facilities of statewide significance.
- **Level of service standards:** Level of Service for Highways of Statewide Significance is set by the State. In Clark County, the standard is set as LOS “D” for urban areas, including SR 14. Level of Service for regional state highway facilities (not part of the HSS), including SR 500 in Camas, is set through a Regional Transportation Planning Organization (RTPO). The RTC Board adopted LOS ‘E’ or better for non-HSS urban state highway facilities and LOS ‘C’ or better on rural non-HSS facilities.
- **Regional Transportation System Improvements:** The RTP identifies improvements necessary to meet the transportation needs within and through the region over the next 20-plus years on the RTP’s Designated Regional Transportation System.

What this means for the Camas Transportation Plan: The Plan will ensure consistency with the RTP, it will adopt the LOS standard for Highways of Statewide Significance and regionally significant roadways, and will identify capital projects for the Regional Transportation System in Camas.

2035 Camas Comprehensive Plan

The Camas Comprehensive Plan, adopted in 2016, includes the City’s transportation goals and policies. Comprehensive Plan Chapter 4, Transportation, provides the policy framework for the development and maintenance of the City’s streets, bicycle and pedestrian ways and transit facilities, low-impact development, safety, traffic calming, and transportation demand management.

Overall, there are 41 policies in the chapter on transportation, categorized by the transportation-related topics listed below

- **Street Goal:** Streets will function for all users including bicyclists, pedestrians, transit users and motorists. Policies T-1.1 to T-1.7.
- **Walking, Bicycling and ADA Mobility Goal:** The needs of bicyclists, pedestrians, transit users and accessibility (ADA-compliant) will be considered in all street improvements and will be integrated in all collector and arterial roadways projects, including regular safe street crossings. Policies T-2.1 to T-2.7.

- **Local and Regional Transit:** Regional Transit will provide safe, efficient, and dependable service to our community. Policies T-3.1 to T-3.2.
- **Design and Low-Impact Development:** The transportation system will be designed to support community character and environmental policies. Policies T-4.1 to T-4.4.
- **Safety and Traffic Calming:** Design and construct safe transportation facilities that meet applicable requirements. Policies T-5.1 to T-5.6.
- **Transportation Demand Management:** Transportation planning will achieve the efficient use of transportation infrastructure, increase its person-carrying capacity and accommodate and facilitate future growth consistent with land use objectives. Policies T-6.1 to T-6.4.
- **Concurrency and Level of Service:** The City will maintain the adopted LOS standards for all arterials, transit routes and highways. Policies T-7.1 to T-7.5.
- **Transportation Revenue:** Maximize the use of state and federal funds for transportation capital operating service and demand improvements. Policies T-8.1 to T-8.6.

The Transportation Comprehensive Plan Map provides a summary of existing and proposed transportation facilities in the City, including the number of travel lanes.

What this means for the Camas Transportation Plan: The TSP update process will provide an opportunity to review transportation policies, as well as supporting sections of the Comprehensive Plan transportation element, to better represent current state and local practices and objectives. Potential policy changes may reflect issues such as strategies to optimize transportation management and maximizing the efficiency of the existing transportation system, and the role the transportation system plays in human health. Particular attention will be given to ensuring that the TSP will be consistent with existing City policies.

Other Background Information for the Transportation Plan

The following sections summarize additional background information or guidance documents that will be used in for the Camas Transportation Plan.

SR-500/ 6th Avenue Corridor Analysis

The SR 500/ 6th Avenue Corridor Analysis identifies travel conditions for motor vehicles and future needs for pedestrians, bicycles and transit. The corridor was divided into six segments and improvement alternatives were identified and evaluated between the NW 6th Avenue/NW Norwood Street intersection to approximately 500 feet south of the SR 500/NE 3rd Street intersection.

What this means for the Camas Transportation Plan: The project list for the SR-500/ 6th Avenue Corridor Analysis potentially will need to be updated to reflect outcomes of the Transportation Plan process.

North Urban Growth Area Traffic Analysis

The North Urban Growth Area Traffic Analysis evaluates the potential lane configuration and roadway cross-section configuration for an arterial connection through this area. The North Urban Growth Area study area lies to the north of Lacamas Lake between NE 232nd Avenue and NE Everett Street (SR 500).

What this means for the Camas Transportation Plan: The findings for the North Urban Growth Area Traffic Analysis will be reviewed and updated if needed during the development of the Plan.

Crown Road Corridor Plan

PLACEHOLDER- The Crown Road Corridor Plan has not been completed.

Clark County Transportation Capital Facilities Plan (2016-2035)

The Clark County Transportation Capital Facilities Plan provides the County with a guide for transportation system improvements to meet existing and future travel needs while setting forth supporting goals and policies. The plan focuses on roadway facilities within the County that are outside of City limits, so there are no identified projects within Camas.

What this means for the Camas Transportation Plan: The Transportation Plan should be consistent with all relevant provisions of the County Transportation Capital Facilities Plan.

Clark County Bicycle and Pedestrian Plan (2010)

The Clark County Bicycle and Pedestrian Plan is a 20-year vision and implementation strategy that was developed to increase the number of people walking and bicycling while improving pedestrian and bicycling safety throughout the county. Clark County recognizes the importance of walkable, bikeable neighborhoods which can make a community more livable, attractive, healthier and increase spending on local goods and services. The Plan's recommendations focus on walkways, bikeways and trails that connect key destinations in Clark County.

The plan focuses on bicycle and pedestrian facilities within the County that are outside of City limits, so there are no newly identified projects within Camas. However, the plan's appendix provides a summary of existing, partially constructed and previously planned shared-use paths in Camas.

What this means for the Camas Transportation Plan: The Transportation Plan should be consistent with all relevant provisions of the County Bicycle and Pedestrian Plan.

Clark County Arterial Atlas with 2017 Amendments

The Clark County Arterial Atlas is a supporting document to Clark County's Comprehensive Growth Management Plan that outlines future growth and unites the long-range roadway system with land use plans. The Arterial Atlas provides guidance for developing a roadway system that will help fulfill the objectives of the comprehensive plan. The County's arterial functional classification system and the cross-sections for non-local roadways in the County's jurisdiction are provided in the adopted Arterial Atlas.

The relevant classifications in Camas are:

- **State Routes:** SR-14 and SR-500
- **Primary Arterials:** Lake Road, 6th Avenue, Adams Street, and 3rd Avenue
- **Arterial Roadways:** Pacific Rim Blvd, Brady Road, NW Parker St, NW 38th Ave, Astor St, 43rd Ave, Sierra St, Cascade St, NW 23rd Ave, 18th St, NW Fargo St, Leadbetter Rd, Crown Rd, Division St, and Whitney St

What this means for the Camas Transportation Plan: The functional classification system for the City will be revisited for the Transportation Plan. The Plan should be consistent with the Clark County classifications.

Vancouver Transportation Plan (2004)

The Vancouver Transportation Plan is the transportation element of the Vancouver Comprehensive Plan. The purpose of this transportation plan is to identify policies, objectives, programs and projects that will support future growth and development of Vancouver, as directed by the Vancouver Comprehensive Plan.

The plan identifies transportation improvements within the City of Vancouver. Some of these projects, specifically those that are in the portions of the City of Vancouver adjacent to Camas, may need to be integrated into the Camas Transportation Plan to ensure consistency among the transportation networks of the two cities.

What this means for the Camas Transportation Plan: The Transportation Plan will consider the projects in the Vancouver Transportation Plan that are adjacent to the City of Camas that will enhance regional connectivity.

Vancouver Transportation Improvement Program (2018-2023)

The Vancouver Six-Year Transportation Improvement Program identifies projects that are funded and expected to be constructed between the years 2018-2023.

The plan identifies transportation improvements within the City of Vancouver. Some of these projects, specifically those that are in the portions of the City of Vancouver adjacent to Camas, may need to be integrated into the Camas Transportation Plan to ensure consistency among the transportation networks of the two cities.

What this means for the Camas Transportation Plan: The Transportation Plan will consider the projects in the Vancouver Transportation Improvement Program that are adjacent to the City of Camas to ensure consistency.

Washougal Transportation Capital Facilities Plan (2016)

The Washougal Transportation Capital Facilities Plan provides the City of Washougal with a guide for transportation system improvements to meet existing and future travel needs while setting forth supporting goals and policies.

The plan identifies transportation improvements within the City of Washougal. Some of these projects, specifically those that are in the portions of the City of Washougal adjacent to Camas, may need to be integrated into the Camas Transportation Plan to ensure consistency among the transportation networks of the two cities.

What this means for the Camas Transportation Plan: The Transportation Plan will consider the projects in the Washougal Transportation Capital Facilities Plan that are adjacent to the City of Camas that will enhance regional connectivity.

Federal Functional Classifications

The federal government also has a functional classification system that is used to determine federal aid funding eligibility. Roadways federally designated as a major collector, minor arterial, principal arterial, or freeway/ expressway/ interstate are eligible for federal aid.

The following federal classifications apply to roadways in Camas:

- **Freeway/ expressway:** SR 14
- **Principal arterials:** NW 6th Avenue, NE Adams Street and NE 3rd Avenue
- **Minor arterials:** SR 500, NW 7th Avenue, NW Ivy Street, NW Forest Home Road, NW Astor Street, NW 18th Avenue, NW 16th Avenue, Brady Road, NW 18th Avenue, SE Payne Road, NW Pacific Rim Boulevard, NW Parker Street, NW 38th Avenue, NW 43rd Avenue, SW Sierra Street, NW Lake Road, NW Camas Meadows Drive, NW Friberg Street, NE Goodwin Road, NE Leadbetter Road and SE Crown Road
- **Major collectors:** SW 6th Avenue, Division Street, NW 18th Avenue, NW Fargo Street, NW Sierra Street, NW 23rd Avenue, NW Astor Street, NW 11th Avenue, NW McIntosh Road, NW Cascade Street, and NE 43rd Avenue

What this means for the Camas Transportation Plan: The functional classification system for the City will be revisited for the Transportation Plan. The Plan should be consistent with the Federal classifications.

Camas Transportation Impact Fee Summary

The TIF for the City of Camas (City) was most recently updated in May 2012 by DKS Associates. The TIF uses 2005 through 2035 as the analysis period for the TIF calculation. Total project costs in the TIF calculation equal \$135.9M and resulting TIF-eligible project costs were \$79.6M. The TIF also includes a \$3.0M bond reimbursement cost basis.

Project costs are allocated to one of two districts (save for one project, which is allocated by District proportionally): North District (roughly north of Lacamas Lake) and South District. The North District pays a larger TIF than the South District.

The memo uses a 60% reduction factor to the final calculated TIF to arrive at the net rate charged on development. Though it is unclear where this reduction factor is calculated, the 2012 update references previous work in determining the 60% reduction. The TIF update documents a 3.9% per year index factor. It appears that the City has indexed the TIF annually since the 2012 update.

The City charges the TIF per P.M. Peak Hour Trip basis. The charge for a given development is based on the latest edition of the Institute of Transportation Engineer's *Trip Generation Handbook*.

What this means for the Camas Transportation Plan: The Transportation Impact Fee will be updated as needed and incorporated into the Transportation Plan funding strategy.

APPENDIX B. GOALS, POLICIES AND EVALUATION CRITERIA



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MEMORANDUM

DATE: May 15, 2024

TO: Curleigh Carothers, City of Camas
Steve Wall, City of Camas

FROM: Reah Flisakowski, DKS Associates
Kevin Chewuk, DKS Associates

SUBJECT: Camas Transportation Plan
Technical Memo #1b – Goals, Policies and Evaluation Criteria

P18039-000

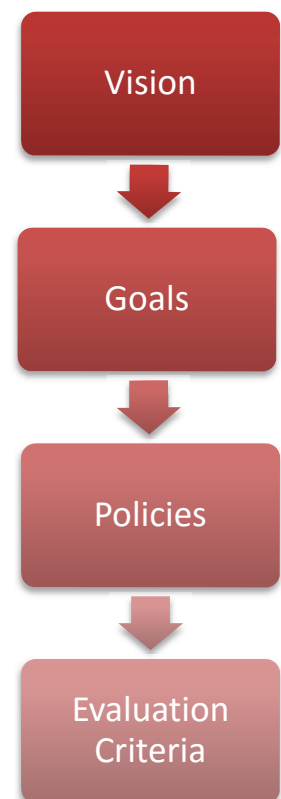
The purpose of this memorandum is to initiate the process of developing the transportation-related vision, goals, policies, and evaluation criteria that will help guide the development of the Camas Transportation Plan (TP), and future investment decisions. This effort will continue through the planning process, shaped by input received from the Stakeholder Advisory Committee, Economic Development Committee and the general public.

Setting Direction for Transportation Planning

Collectively, the transportation-related goals, policies, and evaluation criteria describe what the community wants the transportation system to do in the future, as summarized by a **vision statement**. A vision statement generally consists of an imaginative description of the desired condition in the future. It is important that the vision statement for transportation align with the community's core values.

Goals and policies create manageable stepping stones through which the broad vision statement can be achieved. **Goals** are the first step down from the broader vision. They are broad statements that should focus on outcomes, describing a desired end state. Goals should be challenging, but not unreasonable.

Each goal must be supported by more finite **policies**. In contrast to goals, policies should be specific and measurable. Where feasible, providing a targeted time period helps with policy prioritization and achievement. When developing policies, it is helpful to identify key issues or concerns that are related to the attainment of the goal.



The solutions recommended through the TP must be consistent with the goals and objectives. To accomplish this, measurable **evaluation criteria** that are based on the goals and objectives will be developed. For the Camas TP, they will be used to inform the selection and prioritization of projects and policies for the plan by describing how well the alternatives considered support goal areas.

Developing Goals and Policies

The Camas 2035 Comprehensive Plan (adopted in June 2016) will provide the transportation vision, goals and policies for the Camas TP. The policies from the Camas 2035 Comprehensive Plan that set transportation standards were omitted from this memorandum. They will be reviewed with other transportation standards later in the planning process.

Transportation Vision Statement

In 2035, residents of Camas continue to appreciate their safe, diverse, and welcoming community as a livable place for people of all ages. Quality public facilities, services, and utilities contribute to their high quality of life.

Transportation Goals and Policies

Streets

Goal

Streets will function for all users including bicyclists, pedestrians, transit users, and motorists.

Policies

- Maintain the livability of Camas through proper location and design of transportation facilities, consistent with the Camas Transportation Plan map and 6-year street plan.
- Support the need for regular street maintenance, safety and efficiency improvements, and access management measures.
- Construct streets that are interconnected and avoid long cul-de-sacs or dead ends. Block lengths should be less than 1,000 feet.
- Maintain the transportation system at a level that preserves user safety, facility aesthetics, and the overall integrity of the system.
- Provide attractive streetscapes through design standards that encourage appropriate traffic volumes, speeds, and multi-modal safety.
- Minimize access to new development and redevelopment along the City's arterials, and consolidate access points when spacing is insufficient.
- Include enhanced roadway features such as roundabouts, decorative lighting, and landscaping for gateways.

Walking, Bicycling, and ADA Mobility

Goal

The needs of bicyclists, pedestrians, transit users, and accessibility (ADA-compliant) will be considered in all street improvements and will be integrated in all collector and arterial roadway projects, including regular safe street crossings.

Policies

- Enhance travel choices and provide pedestrian and bicycle routes designed especially for them, not simply along routes designed for cars. Route planning should seek shortcuts and other opportunities that give walking or biking advantages over the automobile.
- Support opportunities to increase participation of school-age children in walking or biking to school to improve their health and reduce traffic congestion.
- Include pedestrian and bicycle linkages in the construction of cul-de-sacs and other forms of dead-end streets. Existing dead-end streets should be retrofitted to provide bicycle and pedestrian linkages as practicable.
- Recognize and support Complete Street implementation in all new and retrofit development to better the health of the community.
- Coordinate with schools and the community to designate safe pedestrian and bicycle routes between residential areas, schools, and public facilities.
- Increase wayfinding signage for outdoor destinations throughout the City.
- Support enhanced pedestrian improvements in the downtown and other economic development areas.

Local and Regional Transit

Goal

Regional transit will provide safe, efficient, and dependable service to our community.

Policies

- Coordinate with local municipalities, the Washington State Department of Transportation, adjacent counties, and C-TRAN to ensure that minimum roadway and multi-modal design standards are consistent.
- Continue to advocate for quality regional transit services and an increase to service availability.

Design and Low-Impact Development

Goal

The transportation system will be designed to support community character and environmental policies.

Policies

- Provide attractive streetscapes through design standards that encourage appropriate traffic volumes, speeds, robust landscaping, and safety for pedestrians and bicyclists.
- Minimize cut and fill in roadway design and minimize restructuring the natural contours of the land.
- Encourage the inclusion of LID design features (e.g., rain gardens, grass pavers, pervious pavement) in the design of private driveways, parking lots, and other road surfaces.
- Continue implementing new strategies such as LED lights as a standard for new development and replacing existing inventory.

Safety and Traffic Calming

Goal

Design and construct safe transportation facilities that meet applicable requirements.

Policies

- Encourage traffic safety through education, enforcement, and engineering.
- Ensure that adequate access for emergency services vehicles is provided throughout the City.
- Provide design standards that encourage appropriate traffic volumes, speeds, and pedestrian safety.
- Incorporate safe pedestrian and bicycle routes between residential areas, schools, and public facilities in development.
- Require new developments to implement design standards using the Neighborhood Traffic Management Plan.
- Identify high accident areas, and implement specific measures to reduce their occurrence.

Transportation Demand Management

Goal

Transportation planning will achieve the efficient use of transportation infrastructure, increase its person carrying capacity, and accommodate and facilitate future growth consistent with land use objectives.

Policies

- Require large employers to implement a commute trip reduction program for employees, as mandated by the state's Commute Trip Reduction law.
- Develop Complete Street design that is supportive of the use of alternative modes of travel and adopt engineering design standards consistent with these goals.
- Support intergovernmental development review.
- Support RTC with funding and staff participation to the extent possible.

Concurrency and Level of Service

Goal

- The City will maintain the adopted LOS standards for all arterials, transit routes, and highways.

Policies

- Encourage growth in areas with existing or planned infrastructure capacity.
- Require new development to demonstrate that adequate person trips are available, or that multi-modal improvements to the transportation system are made to accommodate the impacts concurrent with the development.
- Utilize traffic impact fee studies, development traffic impact analyses, and corridor studies to identify deficiencies and plan improvements to maintain or improve level-of-service standards.
- Take the following actions (not in priority order) if probable funding falls short of meeting identified needs:
 - o Delay development until programs, facilities, or services can be funded;
 - o Obtain needed revenue or revise the transportation plan to reflect known financial resources.
 - o As a last choice, change the transportation LOS standard.

Transportation Revenue

Goal

Maximize the use of state and federal funds for transportation capital, operating, service, and demand improvements.

Policies

- Maintain a capital improvement plan that identifies construction and improvement priorities and funding.
- Ensure that the transportation impact fee program responds to land use changes, so that connectivity occurs and new development pays its proportionate share of needed capacity.
- Support the Pavement Management System to ensure cost-effective maintenance of transportation facilities and efficient use of public funds.
- Develop equitable transportation impact fees by which land developers are assessed fair-share contributions for any transportation improvements.
- Direct transportation funding primarily toward multi-modal improvements that will enhance safety and circulation within and between infill areas, schools, and employment centers within City limits.
- Focus transportation projects in economic development areas to act as catalysts for job growth.

Developing Evaluation Criteria

As transportation improvement alternatives are developed, many of the policies will be used as evaluation criteria to assess the relative value of each project considered for inclusion in the TP. This will include criteria that are both qualitative and quantitative in nature. While some goals include more policies than others, all goals will be weighted equally unless the project team decides that some are more important than others. Using the evaluation criteria, considered projects will be rated and categorized as high, medium, or low priorities according to their ability to meet a broad range of community objectives.

APPENDIX C. EXISTING CONDITIONS ANALYSIS



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MEMORANDUM

DATE: May 15, 2024

TO: Curleigh Carothers, City of Camas
Steve Wall, City of Camas

FROM: Reah Flisakowski, DKS Associates
Kevin Chewuk, DKS Associates

SUBJECT: Camas Transportation Plan
Technical Memo 2 – Existing Conditions Analysis

P18039-000

This memorandum summarizes the existing transportation conditions in Camas. Included is a summary of where people travel, why they travel there, how they get there, what transportation infrastructure is available along those routes, and how the existing transportation system is operating for pedestrian, bicyclists, transit riders, and motor vehicles.

Introduction

The City of Camas, incorporated in 1906, is located along the Columbia River in the hills of eastern Clark County. Camas is home to approximately 23,000 people and is a part of the Portland-Vancouver Metropolitan Area with a total population of approximately 2.4 million people.

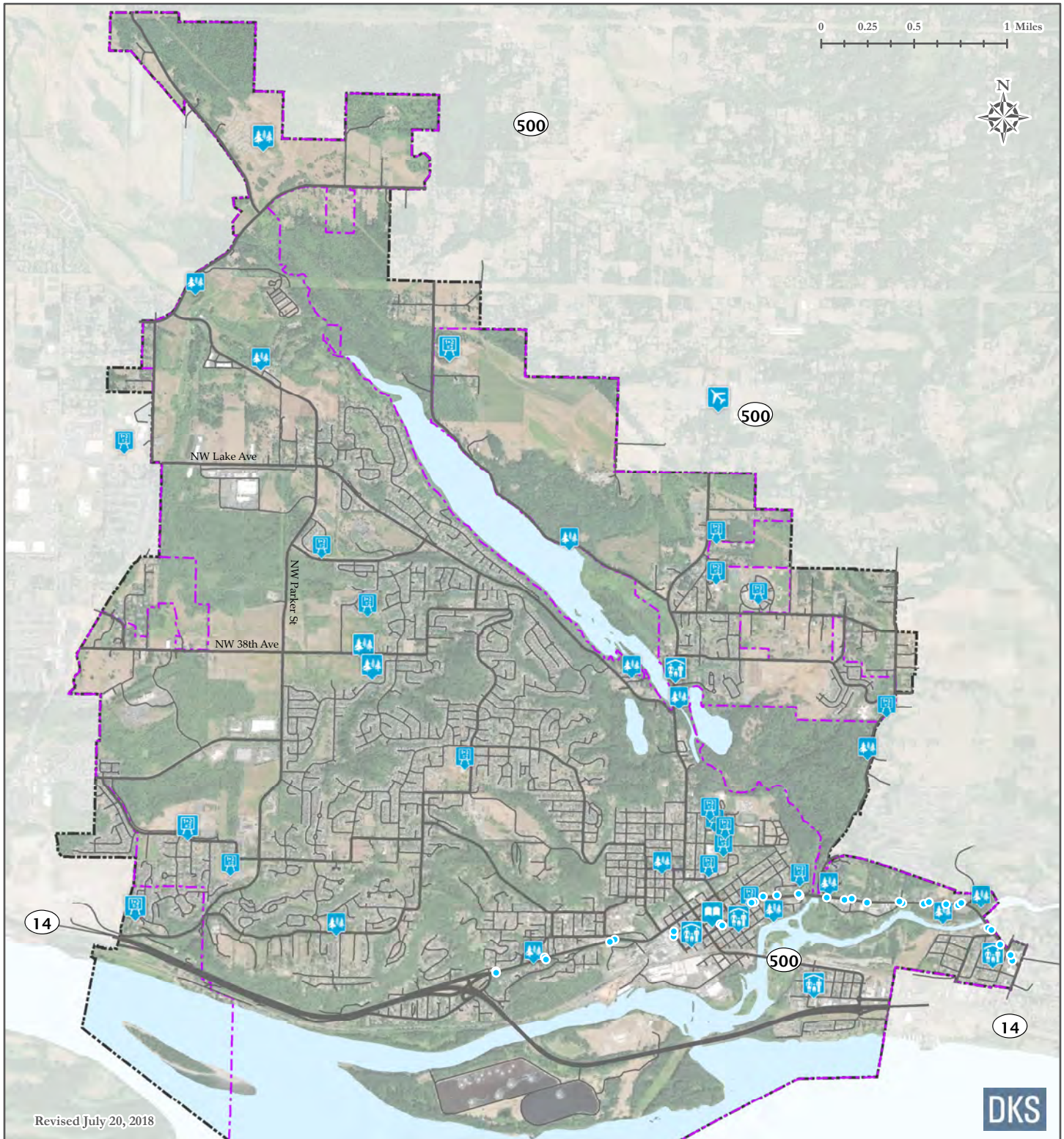
Located just east of Vancouver and on the door-step of the Columbia River Gorge, Camas is a short 30 to 40-minute drive from downtown Portland. This unique location offers diverse housing, employment and recreation opportunities. The city is home to several large, hi-tech manufacturing industries, a vibrant downtown, and many new and established neighborhoods.

Key Destinations

The first step in planning an effective transportation system is understanding the key destinations throughout the city. These destinations, also called ‘activity generators’, typically fall into the categories of residential areas, employment, shopping, schools, civic buildings, recreation, and entertainment.

Within the City

Key activity generators in Camas are mapped in Figure 1. Most homes are located to the south of Lacamas Lake, with larger employment areas in the downtown (central), and the west. The elementary, middle, and high schools are located throughout the city and most civic buildings are near downtown. The city owns and maintains 16 parks; the majority — in number and in acreage — are located in the southern half of the city. Shopping and entertainment opportunities are generally found in the downtown, and the southeastern part of the city.



Legend:

Major Activity Generators:

- | | | | |
|---|---------|---|-------------------|
|  | Airport |  | School |
|  | Library |  | Community Amenity |
|  | Park |  | C-TRAN Stop |

- | | |
|---|-------------------|
|  | Urban Growth Area |
|  | Camas City Limit |

Outside of the City

Having safe and efficient access to areas outside of the city is critical for many people who either live or work outside of Camas. Much of the traffic in Camas, especially during the more congested weekday peak periods, is related to employment. As shown in Table 1, more than 80 percent of the workers in Camas live in another city that is located more than three miles away. Residents of Camas also contribute to travel between cities, as shown in Table 2. Nearly 90 percent of workers living in Camas commute to employment locations at least three miles outside of the city.

Table 1: Where Camas Workers Live

Camas workers who:	Percent of Camas Residents	Distance from Camas
Live in Camas	17%	-
Live outside Camas	83%	-
<i>Live in Vancouver</i>	24%	5+ miles
<i>Live in Washougal</i>	8%	3+ miles
<i>Live in Portland</i>	5%	15+ miles
<i>Live in Battle Ground</i>	2%	20+ miles
<i>Live in Other Places</i>	44%	10+ miles
Source: Home Destination Report, On The Map, US Census Bureau, 2015		

Table 2: Where Camas Residents Work

Camas residents who:	Percent of Camas Workers	Distance from Camas
Work in Camas	13%	-
Work outside Camas	87%	-
<i>Work in Vancouver</i>	28%	5+ miles
<i>Work in Portland</i>	20%	15+ miles
<i>Work in Washougal</i>	3%	3+ miles
<i>Work in Beaverton or Hillsboro</i>	3%	28+ miles
<i>Work in Gresham</i>	2%	20+ miles
<i>Work in Other Places</i>	31%	10+ miles
Source: Work Destination Report, On The Map, US Census Bureau, 2015		

What Factors Affect How People Travel?

Travelers often weigh a variety of factors when deciding how to commute to their destination. Whether the trip will be via motor vehicle, walking, bicycle, or public transportation, the choice is often a balance between ease and convenience of travel, travel cost, and travel time.

Where are you going? Whether you are going to work, school, shopping, or to a park, your trip type (or your destination point) often determines your mode of transportation. Those destined for a park or school generally have a higher likelihood to walk or bicycle than those going to work or shopping. The distance of that destination plays a role in mode choice. Trips that are shorter generally present a better opportunity to walk or bicycle; longer distance trips more often require transit or motor vehicle modes.

Will you have to cross a busy road or walk or bike along a road without comfortable facilities? The availability of sidewalks, shared-use paths, curb ramps to provide wheelchair access, crosswalks, and bicycle lanes increases the comfort and access of walking and biking. The lack of or poor quality of these facilities, particularly on higher volume or higher speed roadways, discourages people from utilizing non-motorized vehicle modes of transportation.

Where you work and how long it takes you to get there. Camas residents who work outside of the city (as well as people who work in Camas but live elsewhere) are likely to commute by motor vehicle due to travel distance and commute time. However, some commuters may choose to bike or use transit if the regional transportation system offers convenient and comfortable biking facilities or transit services between cities.

What public transportation service is available? Distance to bus stops, frequency of service, route coverage, connections to other transportation options, and amenities at stops are some of the factors that play a role in a user's decision to utilize public transportation. For those who cannot afford or are unable to drive, transit is an attractive option for making longer trips.

Age and income. Demographic characteristics, such as age and income, play a key role in selecting a mode of transportation. Camas residents with lower incomes, as well as the youngest and oldest residents, often account for more trips via walking, biking, and public transportation.

As seen in Table 3, the central and southeast/Downtown part of the city has the lowest median household income, and accounts for some of the highest proportion of residents over 65. This may be an area of the city where transit enhancements could be focused.

About 37 percent of Camas residents living in the northwest part of the city are school-age children. The north-central part of Camas has the highest median household income (over \$125,000), which is up to \$55,000 more than the income of households located in other sections of Camas.

Table 3: Key Demographics in Camas

Demographic	Northwest Camas	Northeast Camas	Southwest Camas	North-Central Camas	Central Camas	Southeast Camas / Downtown
Age (by percent of residents)						
<i>School-Aged (Under 18)</i>	37%	31%	32%	33%	28%	23%
<i>College-Aged (18-24)</i>	2%	6%	4%	4%	6%	3%
<i>Middle-Aged (25 to 64)</i>	49%	49%	53%	52%	54%	59%
<i>Retired-Aged (65+)</i>	12%	14%	10%	11%	12%	15%
Median Household Income	\$103,214	\$76,222	\$97,738	\$125,430	\$68,475	\$70,729

Source: US Census Bureau, 2012-2016 American Community Survey

Is it cold or raining? Weather plays a role in determining how trips are made. Camas experiences cool, rainy winters, with mild and generally dry summers. According to the Oregon Climate Service, average temperatures in the winter months (December to February) are around 42 degrees Fahrenheit, with measurable rainfall occurring about 18 days each winter month. The spring and fall months (March to May, and September to November) are slightly warmer and dryer, with average temperatures around 52 degrees Fahrenheit, and about 14 days of measurable rainfall. The summer months (June to August) are typically very pleasant, with average temperatures around 67 degrees Fahrenheit, and less than 4 days of measurable rainfall each month¹. Cold, rainy weather can make walking and biking trips less attractive, encouraging users to make a trip by motor vehicle.

How are People Choosing to Travel?

The number of people who choose to walk, bike, ride transit or drive is important for assessing how well existing transportation facilities serve the needs of users. Available data on commuter travel mode choices and peak hour travel demand is used to better understand travel behavior in the community and inform the needs analysis for the existing transportation system.

¹ Climate Summary for Vancouver (no data was available for Camas), Oregon Climate Service.

Commute Mode of Camas Residents

Most Camas residents commuted to work between the years 2012 and 2016 by single-occupant motor vehicles (about 75 percent). About three percent of residents walked and biked to work, and approximately three percent used public transportation.

The commute mode choices of Camas residents are compared with other cities in the region in Table 4. The single-occupant motor vehicle commute share in Camas was lower than that of Washougal, and comparable to that of Vancouver. The walking and biking commute share in Camas was similar to that of Vancouver and Washougal, and much lower than that of Portland. Commuting to work via public transportation was not common in most of these cities (three percent or less)².

Table 4: Transportation Modes Used by Employees to Commute to Work

Transportation Mode	Percent of Commuters			
	Camas	Vancouver	Washougal	Portland
<i>Workers over 16 years</i>	10,202	78,689	6,758	325,341
Motor Vehicle- Single Occupant	75%	76%	80%	58%
Motor Vehicle- Carpool	8%	11%	9%	9%
Walked	2%	3%	3%	6%
Biked	1%	0%	0%	7%
Public Transportation	3%	3%	2%	12%
Worked at Home	11%	5%	5%	8%
Other	1%	1%	2%	1%

Source: US Census Bureau, 2012-2016 American Community Survey

Commute Mode of Camas Employees

The travel choices of those who work in Camas, including people who live outside of the city, are important community considerations for economic reasons as well as quality of life. Over 80 percent of the commuters destined for jobs in northeast, and central Camas commute to work by single-occupant motor vehicle (see Table 5). This is slightly higher than the shares of single-occupant motor

² Although the US Census Bureau is a valuable source of information for work-related commute patterns, it does not truly represent the full range of travel within Camas. Non-motorized vehicle transportation modes are likely higher in Camas for other types of travel including trips to school, recreation, or access to transit.

vehicle commuters destined for jobs in southwest, north-central, and southeast/Downtown Camas, which are around 75 percent. Walking and biking to work is more common in southeast/Downtown Camas (6 percent). The highest usage of public transportation for commuting occurs in central Camas (5 percent).

Table 5: Transportation Modes Used by Employees to Commute to Work in Camas

Transportation Mode	Percent of Commuters					
	Northwest Camas	Northeast Camas	Southwest Camas	North-Central Camas	Central Camas	Southeast Camas / Downtown
Motor Vehicle- Single Occupant	66%	85%	75%	77%	81%	77%
Motor Vehicle- Carpool	11%	7%	8%	10%	5%	7%
Walked	1%	1%	2%	0%	1%	6%
Biked	0%	0%	1%	1%	1%	0%
Public Transportation	1%	1%	3%	1%	5%	1%
Worked at Home	19%	6%	10%	11%	6%	8%
Other	2%	1%	2%	0%	2%	1%

Source: US Census Bureau, 2012-2016 American Community Survey

Transportation Demand by Mode

Pedestrian, bicycle, and motor vehicle traffic counts were conducted at key intersections throughout Camas on typical weekdays³. This information indicates where and when travel demand is highest for each mode of travel. It also provides a basis for assessing how well existing transportation facilities are able to meet the needs of users during peak demand periods.

- **Pedestrian volumes** during the PM peak hour are generally highest near downtown Camas, including along NE 3rd Avenue and NE Adams Street (the traffic count summary is included in the appendix). The highest hourly pedestrian activity during the evening peak occurred at the NW Sierra Drive intersection with NW 28th Avenue, with 30 pedestrian crossings in the one-hour period. Other study intersections with more than 15 pedestrian crossings during the one-

³ Based on counts conducted in April of 2018.

hour period included NE 6th Avenue at NE Adams Street, NE 3rd Avenue at NE Dallas Street, NE 3rd Avenue at NE 4th Street, and Weir Road at NE 3rd Avenue.

- **Bicycle volumes** indicate limited biking, with the highest volumes along NW Lake Road, and NW Sierra Street (the traffic count summary is included in the appendix). During the evening peak hour, 20 of the 50 study intersections had no observed bicyclists during the one-hour period. The NW Lake Road at SR 500, NW Lake Road at NW Sierra Street, NW Lake Road at NW Leadbetter Drive, NW Sierra Street at NW 45th Avenue, and NE 6th Avenue at NE Garfield Street intersections had the highest observed bicycle volumes, with 4 or more bicyclists counted during the single hour at each of the intersections.
- **Motor vehicle volumes** on the roadways in Camas (the traffic count summary is included in the appendix) most commonly peak during weekday evenings between 4:50 p.m. and 5:50 p.m. The highest hourly motor vehicle volumes during the evening peak occurred along the NW 6th Avenue corridor between the SR 14 ramps and NE Adams Street, with more than 1,300 trips during the one-hour period. The NW Lake Road at NE Everett Street, and NW 6th Avenue at SR 14 Ramps intersections had the highest observed volumes, with more than 1,800 entering vehicle trips during the single hour at each of the intersections.

What transportation infrastructure is available?

Existing transportation infrastructure includes a range of facilities for people who drive, walk, ride bikes, or use transit. The following sections summarize the existing infrastructure for the pedestrian, bicycle, transit, and roadway systems.

Pedestrian System

Walking plays a key role in Camas' transportation network. Planning for pedestrians not only helps the city provide a complete, multi-modal transportation system, it supports healthy lifestyles and addresses a social equity issue, ensuring that the young, the elderly, and those not financially able to afford motorized transport have access to goods, services, employment, and education.

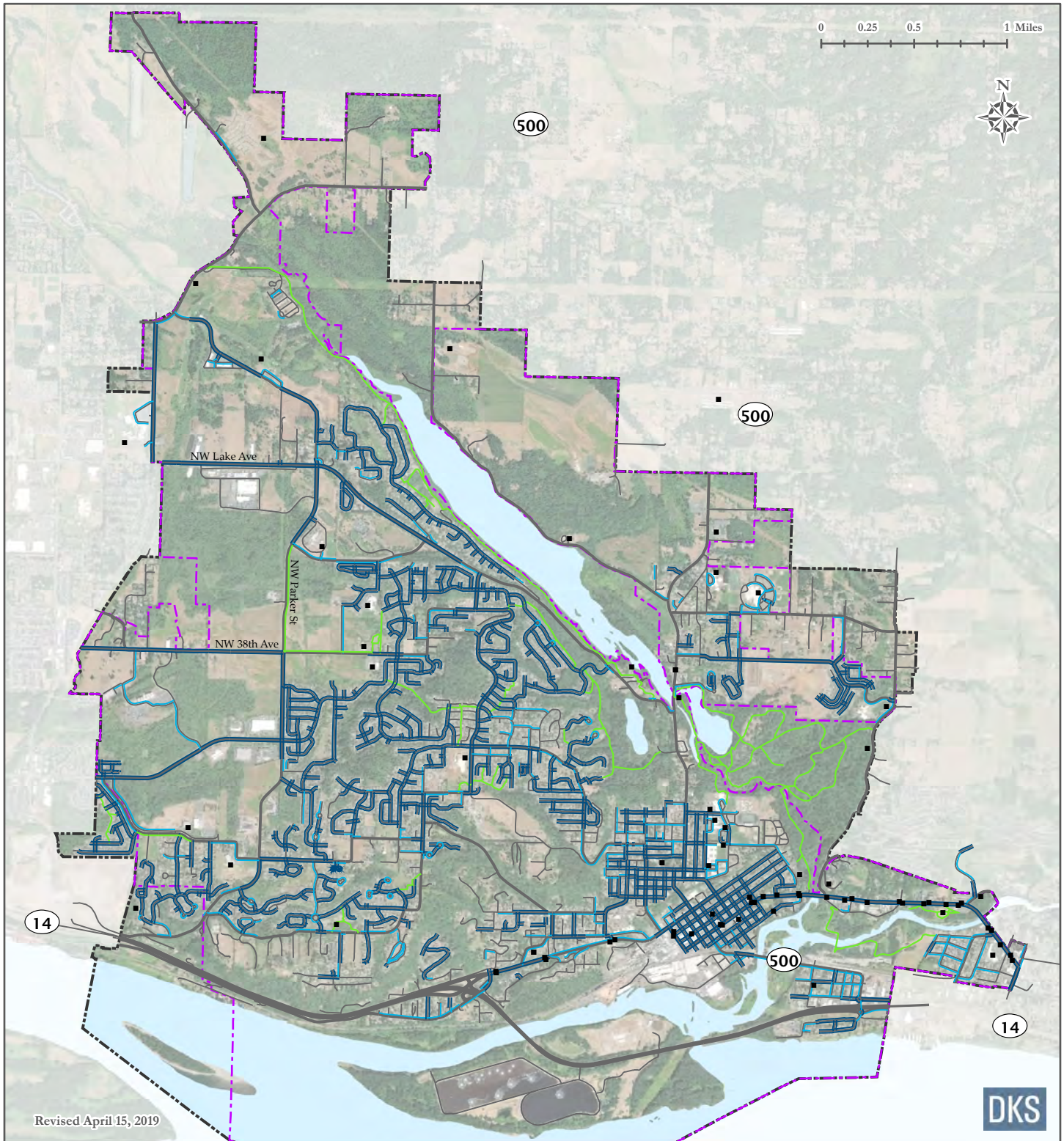
Approximately two percent of commuters in the city walk to work, with another three percent utilizing public transportation to get to work, which generally includes a walking trip at the beginning or end. In addition to the work commute trips, walking trips are made to and from recreational or shopping areas, schools, or other activity generators. Continuous sidewalk connections between all activity generators and arterial/collector roadways are desirable to allow for safe and attractive non-motorized travel options.

The walking network in Camas, shown in Figure 2, is composed of sidewalks, and shared-use paths, and is fairly well developed. A large part of downtown Camas was developed prior to 1950, a time in

which sidewalks were incorporated into the design of neighborhoods and streets. Although most areas incorporated into Camas over the following decades have sidewalk coverage, a few areas do not have complete sidewalks on one side of the street, or even on both sides. These gaps are most significant in southwest, southeast, and northeast Camas, and on roadway segments outside the city limits.

Paved shared-use paths exist along portions of NW Parker Street, NW 18th Avenue, Lacamas Lake, Washougal River, and scattered throughout the residential neighborhoods. Unpaved pedestrian only trails are located throughout the city.

Many intersections in older parts of the city lack ADA-compliant ramps, which provide important connections between sidewalks, making it easier to cross streets and handle the vertical drop at curbs. However, the city has been recently installing new curb ramps in many of these locations. The presence of curb ramps is fairly consistent along streets in downtown Camas, and in the newer neighborhoods in the city.

**Legend:****Pedestrian Facilities**

- Sidewalk on Both Sides
- Sidewalk on One Side
- Trails

- Arterial or Collector Street
- Major Activity Generator

- Urban Growth Area
- Camas City Limit

Bicycle System

The bicycle system provides a non-motorized travel option for trips that are longer than a comfortable walking distance. A well-developed bicycle system promotes a healthy and active lifestyle for the residents, and visitors of Camas. Approximately one percent of commuters in the city bicycle to work. In addition to the work commute trips, bicycle trips are made to and from recreational or shopping areas, schools, or other activity generators. Continuous bicycle connections between all activity generators and arterial/collector roadways are desirable to allow for safe and attractive non-motorized travel options.

The bicycle network in Camas, shown in Figure 3, is composed of bike lanes, roadway shoulders, shared roadways, and shared-use paths.

- **Bike lanes** are portions of the roadway designated specifically for bicycle travel via a striped lane and pavement stencils. Standard width for a bicycle lane is six feet. The minimum width of a bicycle lane against a curb or adjacent to a parking lane is five feet. A bicycle lane may be as narrow as four feet, but only in very constrained situations. Bike lanes are most appropriate on arterials and collectors, where high traffic volumes and speeds warrant greater separation of the travel modes. Significant segments of continuous bicycle lanes exist along portions of NW Lake Road, NW 38th Avenue, NW Parker Street, NW Friberg-Strunk Street, and SR 500.
- **Shoulder bikeways** are paved with striped shoulders wide enough for bicycle travel. A six-foot paved shoulder is desired to adequately provide for bicyclists, with a four-foot minimum width in constrained areas. Roadways with shoulders less than four feet are considered shared roadways. Some shoulder bikeways are signed to alert motorists to expect bicycle travel along the roadway.
- **Shared roadways** include those on which bicyclists and motorists share the same travel lane. The most suitable roadways for shared bicycle use are those with low speeds (25 mph or less) and low traffic volumes (3,000 vehicles or fewer per day). Shared roadways, often signed as bicycle routes, serve to provide continuity to other bicycle facilities (e.g., bicycle lanes) or can be designated as a preferred route through the community. Common practice is to sign a route with standard Manual on Uniform Traffic Control Devices (MUTCD) green bicycle route signs with directional arrows and/or pavement markings. Shared roadways can have signs that highlight a special route or provide directional information in bicycling minutes or distance. Most local roadways in the city are considered shared roadways, but do not have signs or pavement markings.
- **Shared-use paths** provide off-street travel for bicyclists and pedestrians, and are wider than an average sidewalk (e.g., 10 – 14 feet). Shared-use paths are typically paved (asphalt or concrete),

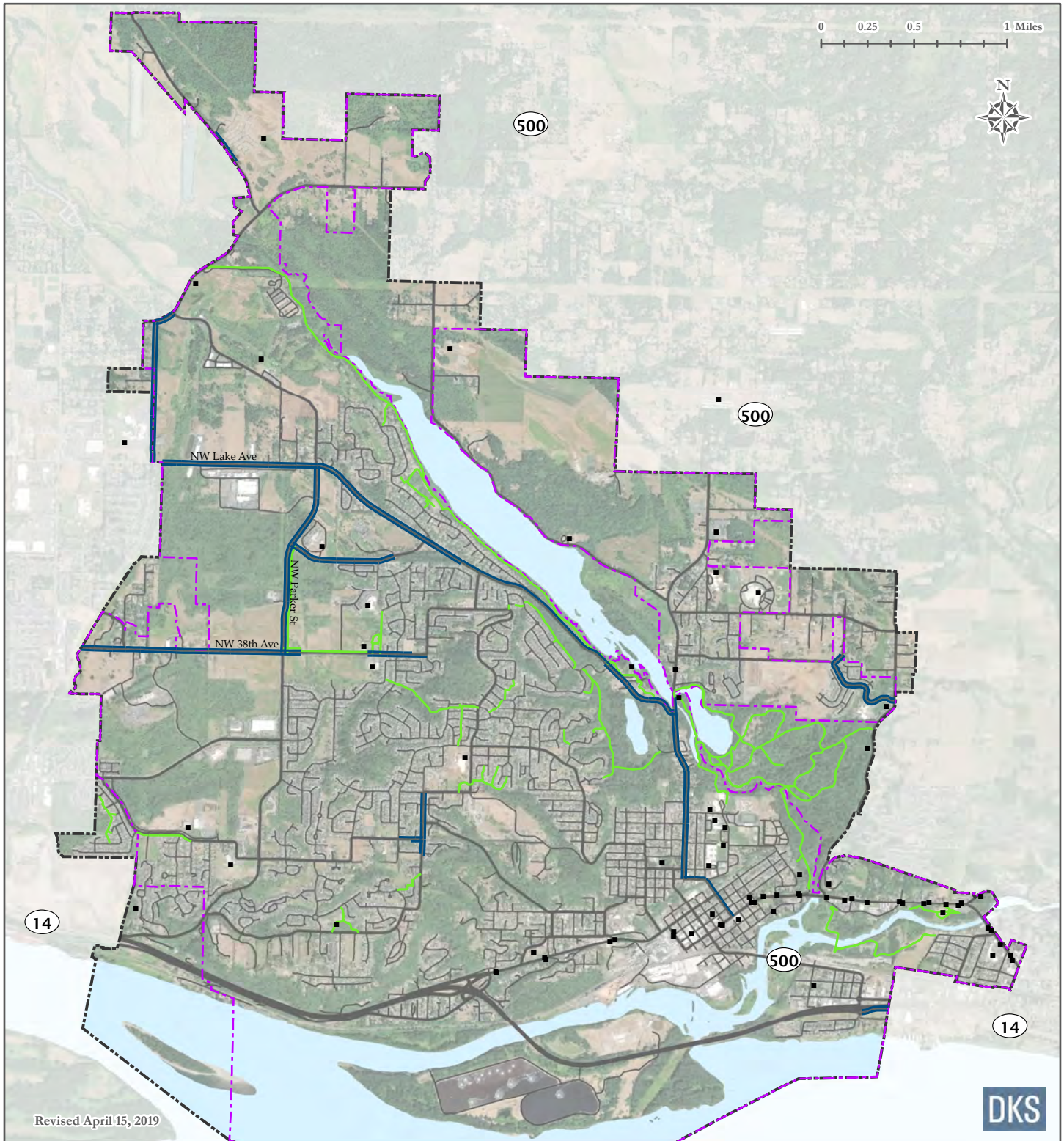
but may also consist of an unpaved smooth surface as long as it meets Americans with Disabilities Act (ADA) standards. Paved shared-use paths exist along portions of NW Parker Street, NW 18th Avenue, Lacamas Lake, Washougal River, and scattered throughout the residential neighborhoods.

Bicycle Parking

End-of-trip bicycle facilities are a fundamental component of a bicycle network. Lack of safe and secure facilities for either short-term or long-term parking can be an obstacle to promoting bicycle riding.

Short-term parking accommodates visitors, customers, and others expecting to depart within two hours. It requires a standard rack, appropriate location and placement, and weather protection.

Long-term parking accommodates employees, students, residents, commuters, and others who park for more than two hours. This parking requires a secure, weather-protected manner and location.



Legend:

Bicycle Facilities

 Bike Lane

 Trails

 Arterial or Collector Street

 Major Activity Generator

 Urban Growth Area

 Camas City Limit

Transit System

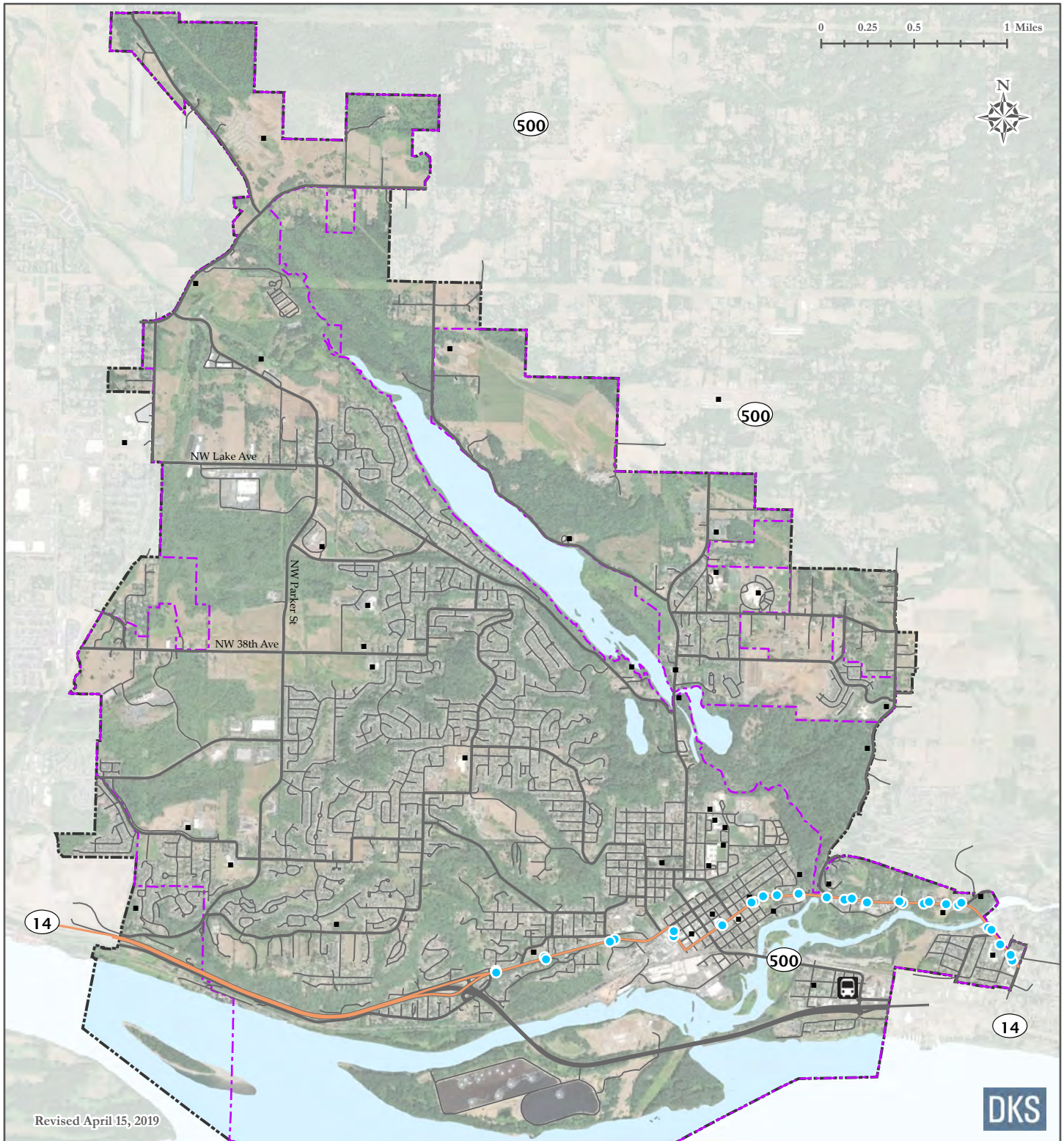
C-TRAN provides transit service in Camas via one fixed bus route connecting the city with Vancouver and Washougal. Transit riders can transfer to other C-TRAN routes at the Fisher's Landing Transit Center in Vancouver. Figure 4 shows the routes in Camas.

Bus stops in Camas are located along NW 6th Avenue near the SR 14 Ramps, NW Ivy Street, and NW Drake Street intersections, at the NE Adams Street / NE 5th Avenue, and along NE 3rd Avenue near the NE Franklin Street, NE Joy Street, NE 3rd Place, E. 1st Avenue, SE Crown Road, NE Summer Street, NE 3rd Loop, NE Shepherd Road, NE 2nd Avenue, NE Weir Street and NE Lechner Street intersections.

Each of the bus-stops are signed and the eastbound stop along NW 6th Avenue near the SR 14 Ramps provides a bus pull-out. The bus stop along NE 3rd Avenue at NE Franklin Street (near Camas City Hall) provides a bench and shelter. All remaining bus stops have no amenities. Most transit users in the city are more than a half-mile from a bus stop. A park-and-ride facility is located along SE Tampa Street, near the SE 8th Avenue / SE Union Street intersection. However, the park-and-ride is currently served by only the Connector service and not a fixed route.

The Camas/Washougal C-TRAN route travels through Camas eastbound and westbound approximately every half-hour between 6:00 AM and 7:30 PM on weekdays. Service on Saturday is provided approximately every half-hour between 8:00 AM and 7:30 PM, and approximately every hour between 8:00 AM and 6:00 PM on Sunday.

Key destinations along this route include Forest Home Park, Georgia Pacific, downtown Camas, Camas Municipal Center, Safeway, Louis Bloch Park, Washougal River Greenway, Camas Police Department, and the Lacamas Center. C-TRAN buses are equipped with a lift to allow for wheelchair access and include bicycle racks.



Legend:

Transit Facilities:

● C-TRAN Bus Stop

— Transit Route



Park and Ride

— Arterial or Collector Street

■ Major Activity Generator



Urban Growth Area

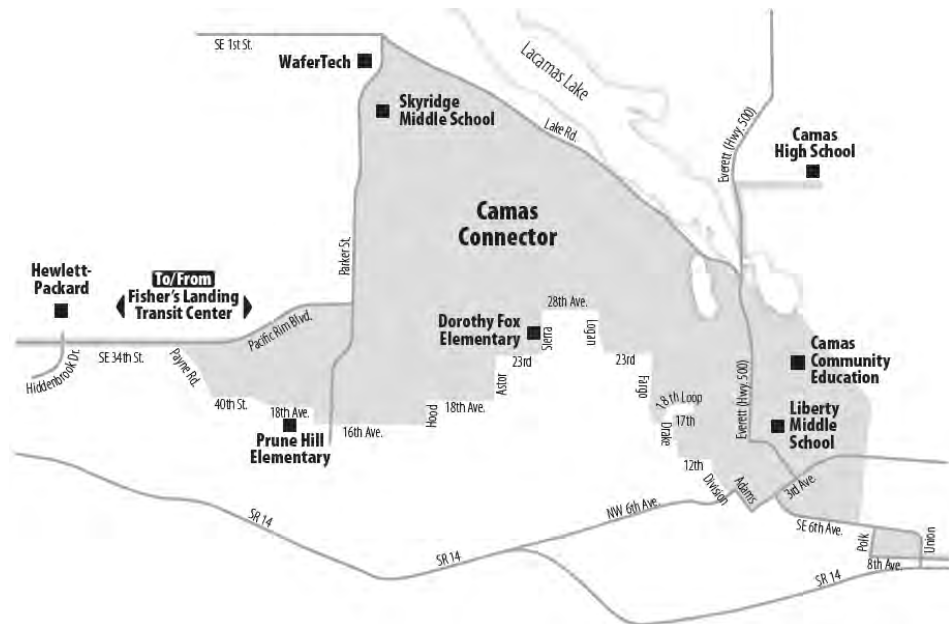


Camas City Limit

C-TRAN's "Connector" service provides Camas with fully accessible dial-a-ride (reservation based service) and scheduled stop service (no reservation required) at designated stops within the service area. Connector fixed route service is provided from the Fisher's Landing Transit Center in Vancouver to near the SE 34th Street / SE Hiddenbrook Drive intersection just to the west of Camas.

The route provides scheduled service four times daily each weekday. Connector reservation based service is available within the service area from 5:30 AM to 9:15 AM and 2:00 PM to 7:00 PM each weekday. The Connector service area in Camas is shown in Figure 5. The Connector bus service is not available on weekends.

Figure 5: Connector Bus Service



Roadway System

Camas streets are well connected and generally follow a grid pattern in the downtown area and nearby neighborhoods. However, the streets in the newer neighborhoods outside of these areas are more disconnected, limited at times by the topography. The major transportation routes through Camas include SR 14, SR 500, as well as a few key city roadways. SR 14 runs east-west through Camas parallel to the Columbia River. SR 14 connects Camas to Vancouver, Interstate 5 and Interstate 205 to the west, and Camas to Washougal to the east. SR 500 runs north-south through the city connecting SR 14 south of downtown with NE Fourth Plain Boulevard north of the city. In the downtown area, it runs along portions of SE 6th Avenue, NE Dallas Street, NE 3rd Avenue and NE Garfield Street.

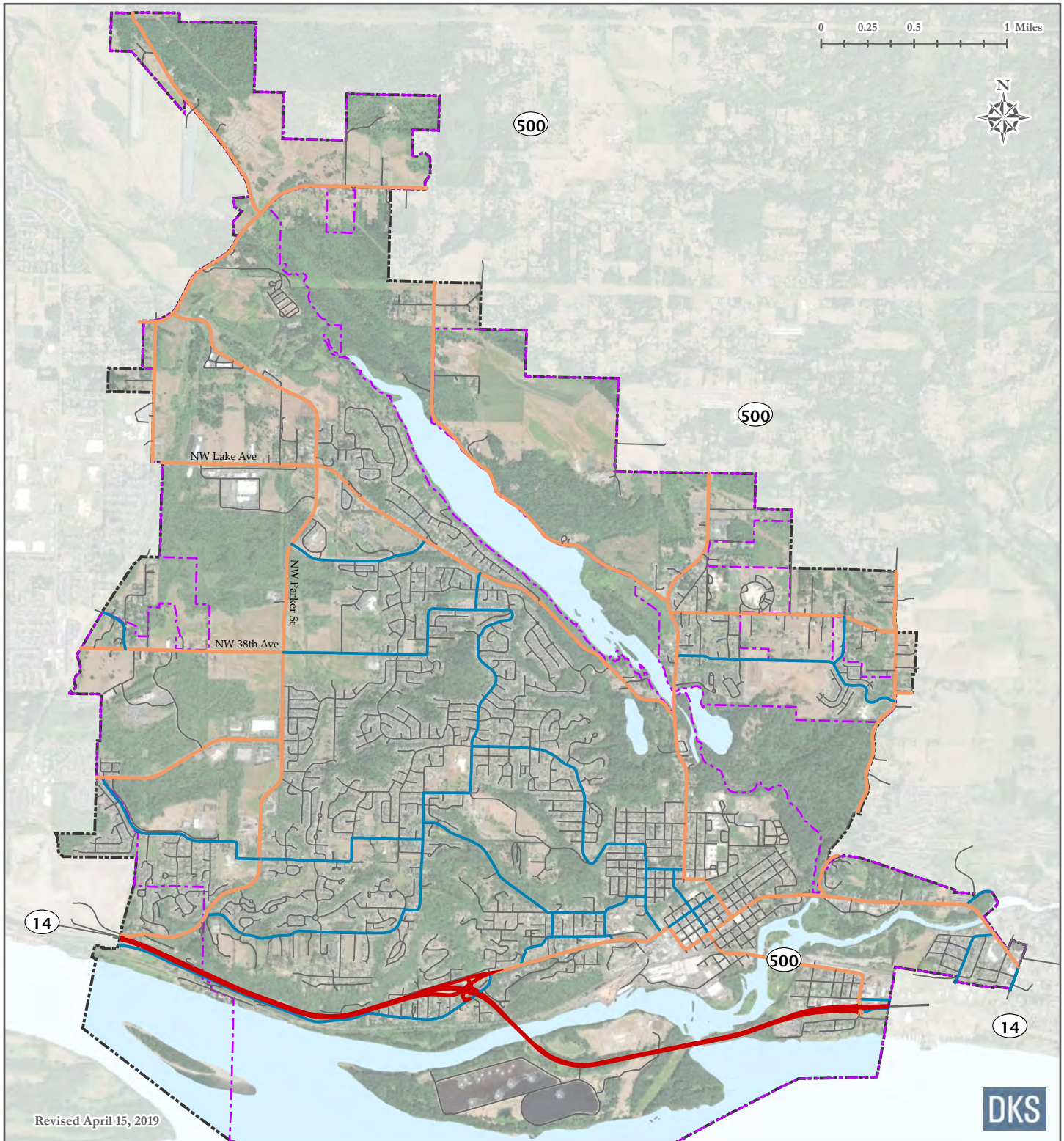
A few key city roadways that provide north-south access are NW Brady Road, NW Parker Street, Division Street, NW Fargo Street, NW Astor Street, NW Sierra Drive, and SE Crown Road. NW Brady Road and NW Parker Street provide a connection on the west side of Camas, Division Street, NW Fargo Street, NW Astor Street and NW Sierra Drive provide connections through the central neighborhoods of Camas, and SE Crown Road provides a connection on the east side of Camas. Key east-west city roadways include NW 6th Avenue, NE 3rd Avenue, NW Pacific Rim Boulevard, NW 38th Avenue, NW Lake Road, and NE Goodwin Road, with NW 6th Avenue and NE 3rd Avenue towards

the south end of the city, NW Pacific Rim Boulevard and NW 38th Avenue centered in the middle, and NW Lake Road and NE Goodwin Road in the north end of the city.

Functional Classification

To manage the street network, the city classified the streets based on a hierarchy according to the intended purpose of each (as shown in Figure 6). From highest to lowest intended usage, the classifications are principal arterial, arterial, collector, and local streets. Streets with higher intended usage generally limit access to adjacent property in favor of more efficient motor vehicle traffic movement (i.e., mobility). Local roadways with lower intended usage have more driveway access and intersections, and generally accommodate shorter trips to nearby destinations.

- **Principal Arterials** serve as the main travel routes through the city and serve the highest volume of motor vehicle traffic. SR 14 is the only principal arterial in Camas. Principal arterials are generally for longer motor vehicle trips with limited local access. The posted speed limit on SR 14 is 60 miles per hour.
- **Arterials** connect many parts of the city and often serve traffic traveling to and from principal arterials. These roadways provide greater accessibility to neighborhoods, connect to major activity generators, and provide efficient through movement for local traffic. In Camas, portions of SR 500, NW Lake Road, NW Brady Road, NW Parker Street, NW 6th Avenue and NE 3rd Avenue are examples of arterials. Posted speeds on arterial streets in Camas typically range between 25 (in residential areas) and 50 miles per hour (in rural areas).
- **Collectors** connect neighborhoods to arterials. These streets serve as major neighborhood routes and generally provide more direct property access or driveways than arterial streets. In Camas, portions of Division Street, NW Forest Home Road, NW Fargo Street, NW Sierra Drive, and SE Payne Road are examples of collector streets. Posted speeds on collector streets in Camas typically range between 25 and 35 miles per hour.
- **Local Streets** provide more direct access to residences without serving through travel in Camas. These roadways generally are lined with residences and are designed to serve lower volumes of traffic with a speed limit of 25 miles per hour.

**Legend:****Functional Classification:**

- | | |
|--|---|
|  Principal Arterial |  Collector |
|  Arterial |  Local Streets |

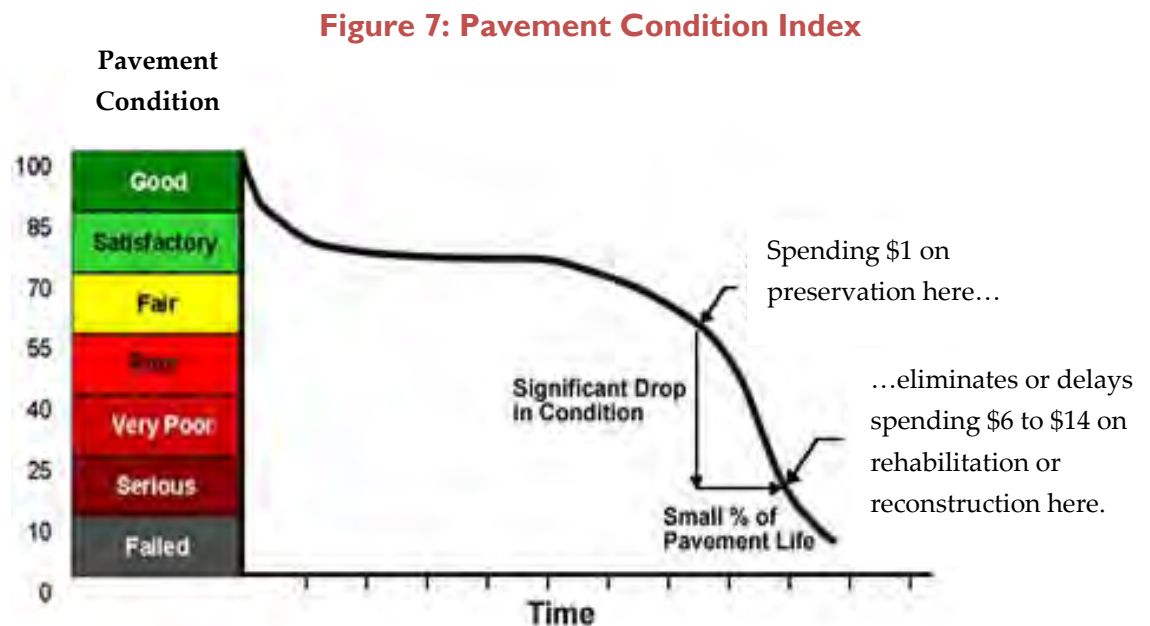
- | | |
|---|-------------------|
|  | Urban Growth Area |
|  | Camas City Limit |

The Washington State Department of Transportation (WSDOT) and the Southwest Washington Regional Transportation Council (RTC) also classify roadways in Camas. Within Camas, SR 14 is classified by WSDOT as a Highway of Statewide Significance (HSS)⁴, and SR 500 is classified as a non-HSS facility.

RTC has identified several streets in Camas as part of the regional transportation system in the Regional Transportation Plan for Clark County, including SR 14, SR 500, Lake Road - SE 1st Street, Parker Street, Pacific Rim Boulevard - 34th Street, NW 38th Avenue – SE 20th Street, NW 6th Avenue, and NE 3rd Avenue.

Pavement Quality

The Pavement Condition Index (PCI) is a numerical index between 0 and 100 which is used to indicate the general condition of pavement. Deferring necessary repair and preservation means spending much more to fix the same roadways later, and repair costs rise



exponentially as roadways are left unmaintained (see Figure 7). Every \$1 spent to keep a roadway in good condition avoids \$6 to \$14 needed later to rebuild the same roadway once it has deteriorated significantly⁵. Figure 8 displays the PCI ratings of roadways in Camas. About 75 percent of the roadway miles in Camas have pavement in good or satisfactory condition, 13 percent in fair condition, six percent in poor condition, and six percent in very poor or worse condition.

⁴ Highways of Statewide Significance, WSDOT, <http://www.wsdot.wa.gov/planning/HSS/>

⁵ Smart Growth America, Repair Priorities 2014, American Association of State Highway Officials (AASHTO)

Figure 8: Pavement Quality of Roadways in Camas (by percent of roadway miles)



Bridges

There are 15 bridges within the Camas Urban Growth Area, with eight along state facilities and seven along city or county facilities, as shown in Figure 9. Seven bridges are flagged as functionally obsolete⁶, including:

- The bridge along SW 6th Avenue over SR 14.
- The bridge along SR 500 over the Washougal River.
- The bridge along SR 500 over Lacamas Lake.
- The bridge along NE 3rd Avenue over the Washougal River. This bridge is scheduled for seismic upgrades in 2020.
- The bridge along NE Goodwin Road over Lacamas Creek.
- The bridge along Division Street over Mill Ditch.
- The bridge along NE Dallas Street over Mill Ditch.

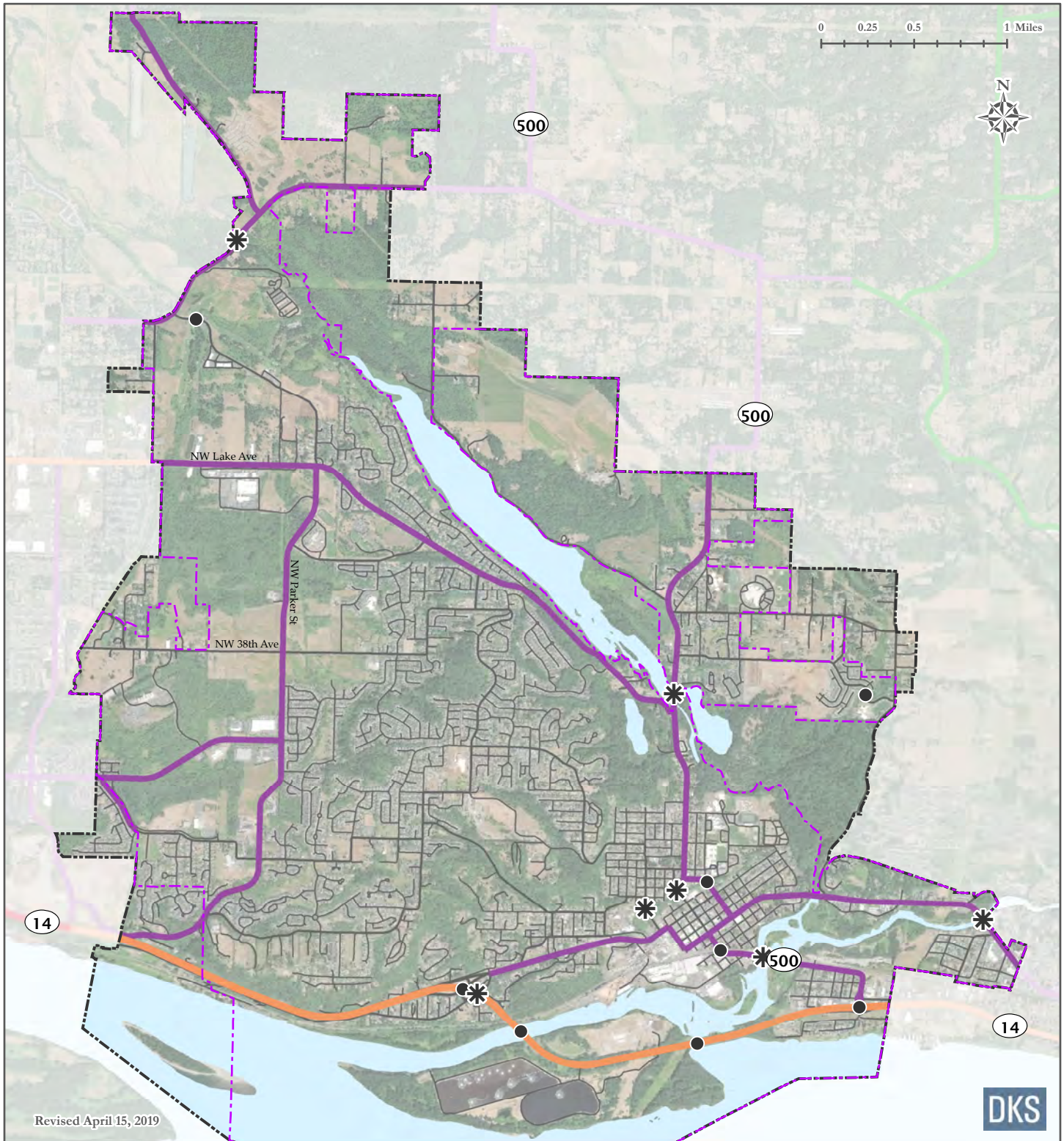
⁶ Functionally obsolete bridges are those that do not have adequate lane widths, shoulder widths, or vertical clearances to serve current traffic demand, or those that may be occasionally flooded.

Freight

Efficient truck movement plays a vital role in the economical movement of raw materials and finished products. The designation of through truck routes provides for this efficient movement, while maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system. The Washington State Freight and Goods Transportation System (FGTS) tonnage classification system identifies different categories of freight corridors based on annual freight tonnage moved. It defines tonnage thresholds and identifies heavily used truck freight corridors within the state. Washington State FGTS truck freight corridors are classified into five categories, T-1 through T-5, based on annual gross truck tonnage. The following corridors are identified in Camas (see Figure 9).

- **T-1:** more than 10 million tons per year. There are no T-1 corridors in Camas.
- **T-2:** 4 million to 10 million tons per year. SR 14 is the only T-2 corridor in Camas.
- **T-3:** 300,000 to 4 million tons per year. In Camas, portions of NW 6th Avenue, NE Adams Street, NE 3rd Avenue, SR 500, NW Lake Road, NW Parker Street, NW Brady Road, NW Pacific Rim Boulevard, NE Goodwin Road, NE 28th Street, and NE Ingle Road are T-3 corridors.
- **T-4:** 100,000 to 300,000 tons per year. There are no T-4 corridors in Camas.
- **T-5:** at least 20,000 tons in 60 days and less than 100,000 tons per year. There are no T-5 corridors in Camas.

Heavy vehicles account for approximately four percent of the traffic on NE 3rd Street, three percent on SR 500, NW Pacific Rim Boulevard and Lake Road, two percent on NW 6th Avenue and NE Goodwin Road, and one percent on NW Brady Road and NW Parker Street through Camas during an average weekday. Traffic count data including heavy vehicle percentages is summarized in the appendix.



Legend:

Bridge Condition:

- Not Deficient
- * Functionally Obsolete

Freight Corridors

- T-2 Truck Freight Corridor
- T-3 Truck Freight Corridor

Urban Growth Area

Camas City Limit

Arterial or Collector Street

Rail

Freight rail service is provided to Camas by the BNSF Railway (see Figure 10). The main line enters the city from the west between the Columbia River and SR 14, before crossing under SR 14 north of the Camas Slough near SW 6th Avenue. The line parallels the Camas Slough before crossing under SR 500 and over the Washougal River, before running east into Washougal north of SR 14.

The BNSF Railway through Camas serves up to 40 trains each day. Within Camas there are a total of eight rail crossings, with three of the crossings public and five private. The public crossings are all grade separated and the private crossings are all stop controlled.

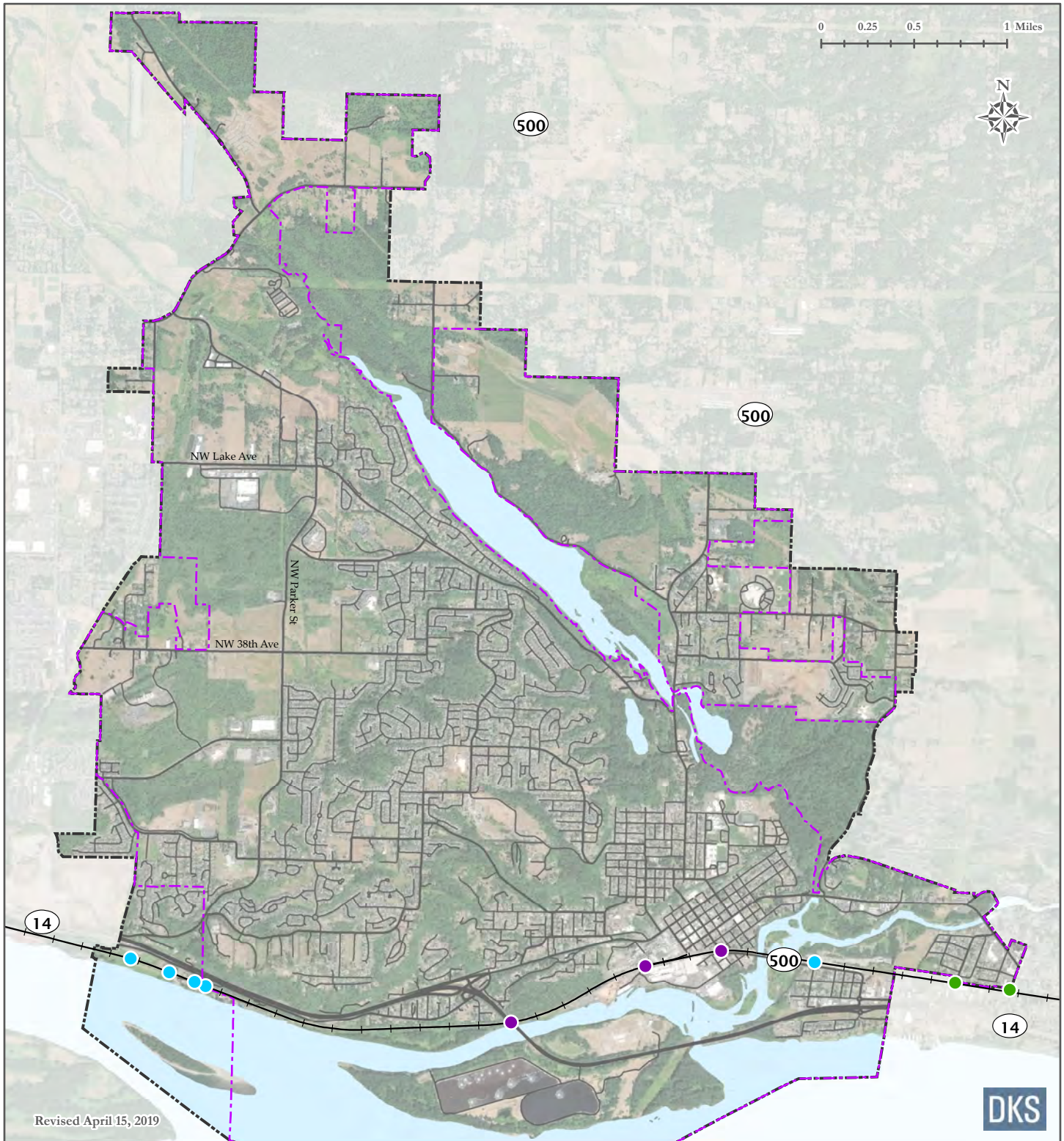
Amtrak passenger service is available in Vancouver, less than 15 miles away. Connections to the Amtrak depot in Vancouver can be made via C-TRAN.

Air

Grove Field, owned and operated by the Port of Camas-Washougal, is a public use airport located along SR 500, about four miles from downtown. The airport is a local general aviation facility, which primarily supports single engine, general aviation aircraft, but is capable of accommodating smaller twin-engine general aviation aircraft. It also supports local air transportation needs and special use aviation activities. The airport provides support to 51 based aircraft. Services and facilities available include: hangar storage, tie-downs, fixed base operator services and training facilities, aircraft rental, aircraft maintenance, and fueling. The airport has one runway, and serves 9,800 annual operations (i.e., take-offs or landings).

Regional and international air service for passengers and freight is provided via Portland International Airport (PDX). The airport is located approximately 12 miles (or under 20 minutes) to the west of Camas and is connected via SR-14 and I-205.

The current Airport master plan calls for construction of additional hangar storage.

**Legend:****Rail:**

- At-Grade Crossing, gated
- At-Grade Crossing, ungated
- Grade Separated Crossing

—+—+— Railroad

Urban Growth Area

Camas City Limit

Arterial or Collector Street

What is the Condition of the Existing Transportation System?

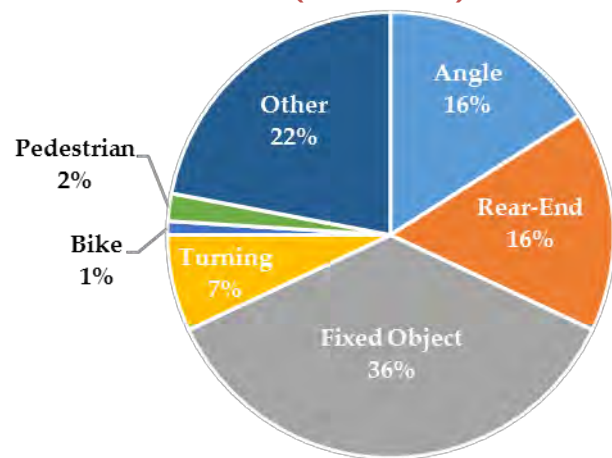
The transportation system in Camas is managed with a variety of measures designed to ensure that the transportation infrastructure in the city maintains acceptable quality and performance.

Performance is evaluated based on the history of crashes and various measures of the pedestrian, bicycle, and motor vehicle transportation system.

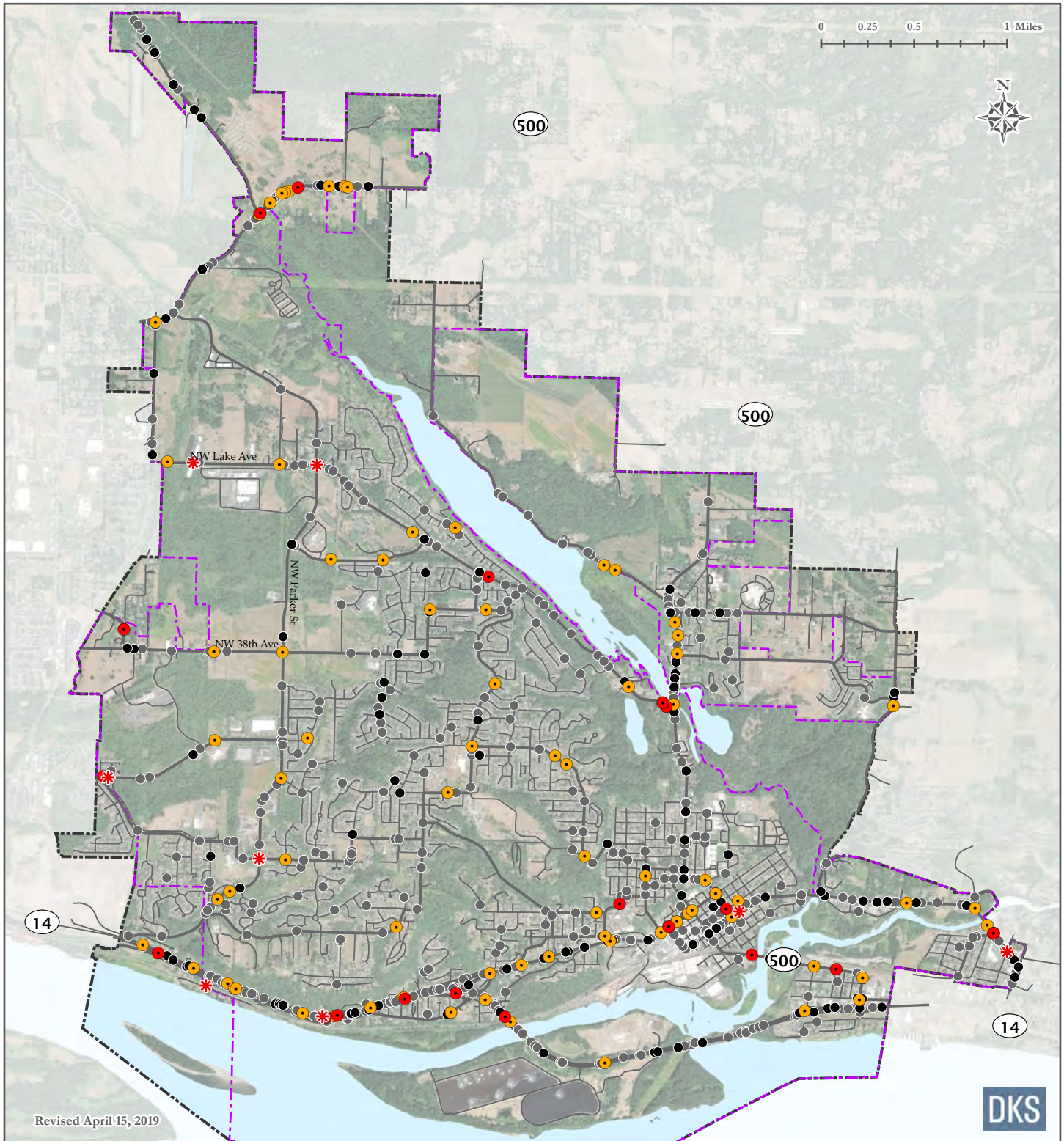
Safety Evaluation

A review of available crash data identified patterns of motor vehicle, pedestrian, and bicyclist crashes. WSDOT's crash data from January 2013 through January 2018 (the most recent five years of available data) for all roadways within the Urban Growth Area of Camas showed a total of 880 crashes (an average of 176 crashes a year). A majority of these (about 75 percent) were either rear-end, turning, angle, or fixed-object type crashes (see Figure 11). Two percent of the crashes (about three per year) involved pedestrians and one percent (about two per year) involved bicycles. Figure 12 shows the high crash locations within the Urban Growth Area.

**Figure 11: Crash Types
(2013-2018)**



Eight crashes resulted in deaths during this period, and an additional 20 crashes caused serious injuries. The high-severity crashes are a small portion of all crashes, making up only 11 percent of all reported crashes. However, the overall severity of crashes in Camas over the past five years is generally low, with 88 percent involving only property damage (no injuries) or minor injuries.

**Legend:****Collision Severity:**

- * Fatality
- Severe
- Moderate
- Minor
- Property Damage Only

- Urban Growth Area
- Camas City Limit
- Arterial or Collector Street

Causes of Crashes

The City of Camas, Clark County and WSDOT strive to provide roads that are engineered to be as safe as possible. However, engineering is only one part of the road safety equation. Education and enforcement are critical elements in promoting safe driver behavior. The five most common driver errors are responsible for nearly 60 percent of all crashes in Camas.

- Inattention (29 percent)
- Did Not Yield Right-of-Way (13 percent)
- Followed Too Closely (10 percent)
- Disregarded Traffic Signal or Stop Sign (3 percent)
- Operating Defective Equipment (3 percent)

Risky behavior choices not only contribute to a substantial number of crashes in Camas, they generally lead to more severe outcomes for the people involved. Alcohol and/or drug use was involved in 79 crashes, including seven serious injuries. This represents around nine percent of all crashes and 25 percent of high-severity crashes. Speeding or driving too fast for conditions, was involved in 123 crashes (14 percent of all crashes), 10 of which were high-severity, including three deaths (36 percent of high-severity crashes).

Pedestrian Safety

There were 14 pedestrian-involved crashes over the past five years. They occurred most frequently downtown (five crashes involving a pedestrian), and along NE 3rd Avenue between NE 4th Street and NE Weir Street (two crashes involving a pedestrian).

Pedestrians sustained severe injuries in three crashes, one of which resulted in a death; at the NE 3rd Avenue / NE 4th Street, NE 3rd Avenue / NE Weir Street, and the SR 500 / NE 4th Avenue intersections. Moderate injuries to pedestrians were sustained in six of the crashes.

The majority of pedestrian-involved crashes (79 percent) were caused by drivers failing to yield the right of way to a pedestrian in a crosswalk or on a sidewalk. All of the pedestrian-involved crashes occurred during the day or at night in a location with street lighting.

The dominant trends observed in the crash data for pedestrian-involved crashes indicate that actions aimed at improving driver yield rates for pedestrians would be valuable in reducing the number of pedestrian-involved crashes. Engineering countermeasures to achieve this include: ensuring adequate signing indicating pedestrian crossing locations and state laws on yielding, providing and enhancing

lighting at crossings and locations with high pedestrian traffic, modifying traffic signal phasing to reduce pedestrian conflict opportunities, or improving roadside pedestrian visibility.

The data also indicates that actions focusing on motorist behaviors may be effective, including targeted enforcement and education efforts in the downtown area. These could include actions such as police enforcement of crosswalk laws through staged crossings, or efforts to increase general compliance with red lights and stop signs.

Bicycle Safety

There were 12 bicycle-involved crashes over the past five years. The majority of the bicycle-involved crashes occurred at intersections, with one at a traffic signal and six at stop controlled locations. A cyclist sustained moderate injuries in six of the crashes. The bicycle-involved collisions occurred most often along NE 3rd Avenue between NE Sumner Court and NE Weir Street (three collisions involving a bicycle) and along SR 500 (NE Everett Street) between NE 38th Avenue and NW Lake Road (two collisions involving a bicycle).

Most of the crashes involving a bicyclist were caused by drivers failing to yield the right of way when turning (58 percent). About 17 percent of the crashes were caused by either a bicycle or motorist failing to obey traffic control devices. The vast majority of bicycle crashes occurred during the day.

The dominant trends observed in the crash data for bicycle-involved crashes indicate that actions aimed at improving driver yield rates at intersections, specifically while turning, would be valuable in reducing the number of bicycle-involved crashes. Engineering countermeasures to achieve this include actions to increase the visibility of bicycling and encourage drivers to expect bikes at intersections, such as by providing highly visible space for bicycles and signing. Other engineering approaches include reducing conflict opportunities at intersections, such as through bike boxes or bike-specific signal phasing.

Ensuring a comprehensive bicycle network, including crossing opportunities, can also reduce conflicts between bicycles and motor vehicles. Effective bicycle detection at signals, and an evaluation of stop-controlled intersections along popular biking routes, may promote bicyclist adherence to traffic control devices.

The data also indicates that actions focusing on motorist and bicyclist behaviors may be effective, including targeted enforcement and education efforts along portions of SR 500 and NE 3rd Avenue.

Intersection Safety

Crash rates provide an additional perspective on intersection safety and identify locations where people have a higher risk of being involved in a crash. Crash frequencies (the number of crashes in a period of time) tend to increase with higher vehicle traffic. With more exposure to vehicles, there are

more opportunities for crashes to occur. Crash rates consider the amount of crashes relative to the traffic volume at the intersection, and are expressed in units of crashes per million entering vehicles (MEV). Where an intersection's crash rate is at or greater than 1.0 MEV, it is an indication that a problem might exist and that further study is warranted.

There was one intersection, NE Ingle Road at NE 28th Street, with a crash rate that exceeded 1.0 MEV as shown in Table 6. This table also includes the other nine intersections with the highest crash rates in the city. The crash rates for all study intersections are provided in the appendix.

Table 6: Study Intersections with Highest Crash Rates

Intersection	Total Collisions (2013 to 2018)	Collision Type				Collision Severity		Collision Rate per MEV*
		Rear-end	Angle	Pedestrian / Bike	Other	Property Damage Only	Injury	
14 NE 13th Street at NW Friberg-Strunk Street	7	3	0	1	3	5	2	0.42
16 NE Ingle Road at NE 28th Street	15	5	2	0	8	10	5	1.03
17 NE 232nd Avenue at NE 28th Street	5	0	1	0	4	5	0	0.48
19 NE 199th Avenue at SR 500-NE 58th Street	7	0	5	0	2	5	2	0.46
20 SR 500 at NE 3rd Street	4	0	0	0	4	3	1	0.43
31 NW Sierra Drive at NW 28th Avenue	4	0	3	0	1	3	1	0.40
42 NE 6th Avenue at SR 500-NE Garfield Street	11	2	7	0	2	7	4	0.60
43 NE 3rd Avenue at SR 500-NE Garfield Street	13	3	2	2	6	8	5	0.49
44 NE 3rd Avenue at SR 500-NE Dallas Street	11	3	2	0	6	8	3	0.52
49 SE 283rd Avenue at SE 23rd Street	4	0	1	0	3	2	2	0.68

Note: * Per MEV = Crashes per million entering vehicles

The study intersections with the highest crash rates are discussed below.

- **NE 13th Street / NW Friberg-Strunk Street (signalized):** Rear-end crashes were most prominent here, caused primarily by inattention and following too close between vehicles traveling on NE 13th Street-Goodwin Road going eastbound or westbound. Less than a third of the crashes resulted in injuries (2 of 7).
- **NE Ingle Road / NE 28th Street-Goodwin Road (stop controlled):** This three-leg intersection with stop control on NE Ingle Road, had 15 collisions. Rear-end and fixed object crashes were the most prominent here. The majority of the rear-end crashes were on NE 28th Street-Goodwin Road traveling north-eastbound, while a majority of the fixed object crashes were on NE Ingle Road traveling south-eastbound. Following too close and driver inattention were the leading causes of crashes at this location. A third of the crashes resulted in injuries (5 of 15).
- **NE 232nd Avenue / NE 28th Street (stop controlled):** This is a three-leg intersection with stop control on NE 232nd Avenue (the north leg of the intersection is a private driveway). Turning movement crashes were most common here, caused by drivers failing to yield or making improper turns. None of the crashes resulted in injuries.
- **NE 199th Avenue at NE 58th Street-SR 500 (stop controlled):** This is a three-leg intersection with stop control on NE 199th Avenue. Angle crashes were most prominent here, caused by drivers failing to yield. Less than a third of the crashes resulted in injuries (2 of 7).
- **SR 500 at NE 3rd Street (stop controlled):** Fixed object crashes were the most prominent here. The intersection is within a curve along SR 500. Speeding was the most common cause of crashes. A quarter of the crashes resulted in injuries (1 of 4).
- **NW Sierra Drive at NW 28th Avenue (all-way stop):** Angle crashes were most prominent here, caused by drivers passing the stop sign or failing to yield. A quarter of the crashes resulted in injuries (1 of 4).
- **NE 6th Avenue at SR 500-NE Garfield Street (stop controlled):** This is a four-leg intersection with stop control on NE 6th Avenue. Angle crashes were most prominent here, caused by drivers passing the stop sign or failing to yield. Less than a third of the crashes resulted in injuries (4 of 11).
- **NE 3rd Avenue at SR 500-NE Garfield Street (signalized):** Turning and angle crashes were the most prominent here. The intersection has a permitted left turn on the eastbound NE 3rd Avenue approach. Disregarding traffic controls and failure to yield were the most common causes of crashes, possibly related to the permissive turn phasing. There were two pedestrian

crashes caused by a driver failing to yield when making a left turn from NE Garfield Street to eastbound NE 3rd Avenue. Less than a third of the crashes resulted in injuries (5 of 13).

- **NE 3rd Avenue at SR 500-NE Dallas Street (signalized):** Turning and angle crashes were the most prominent here. The intersection has permitted left turn lanes on all approaches. Disregarding traffic controls and failure to yield were the most common causes of crashes, possibly related to the permissive turn phasing. More than a quarter of the crashes resulted in injuries (3 of 11).
- **SE 283rd Avenue at SE 23rd Street (stop controlled):** This is a three-leg intersection with stop control on SE 23rd Street. Fixed object crashes were the most prominent here. The majority of the fixed object crashes were on SE 283rd Avenue traveling northbound or southbound. Speeding and driver inattention were the leading causes of crashes at this location. Half of the crashes resulted in injuries (2 of 4).

Walking and Bicycle Network Conditions

To assess the pedestrian and bicycle network conditions within the study area, a high-level qualitative evaluation was conducted. The quality and availability of various characteristics are rated system-wide as “Excellent”, “Good”, “Fair”, or “Poor”. The intent of the analysis is to show the extent to which the pedestrian and bicycle network provides a level of comfort and safety for users. The analysis will be used to inform, create, and confirm recommendations for pedestrian and bicycle projects.

Qualitative Pedestrian Network Assessment

For the pedestrian network evaluation, consideration is given to the presence of a sidewalk or path, a buffer zone (i.e., bike lane, shoulder, landscape strip, or on-street parking) and street lighting, and traffic volumes, number of travel lanes and travel speeds along the adjacent roadway.

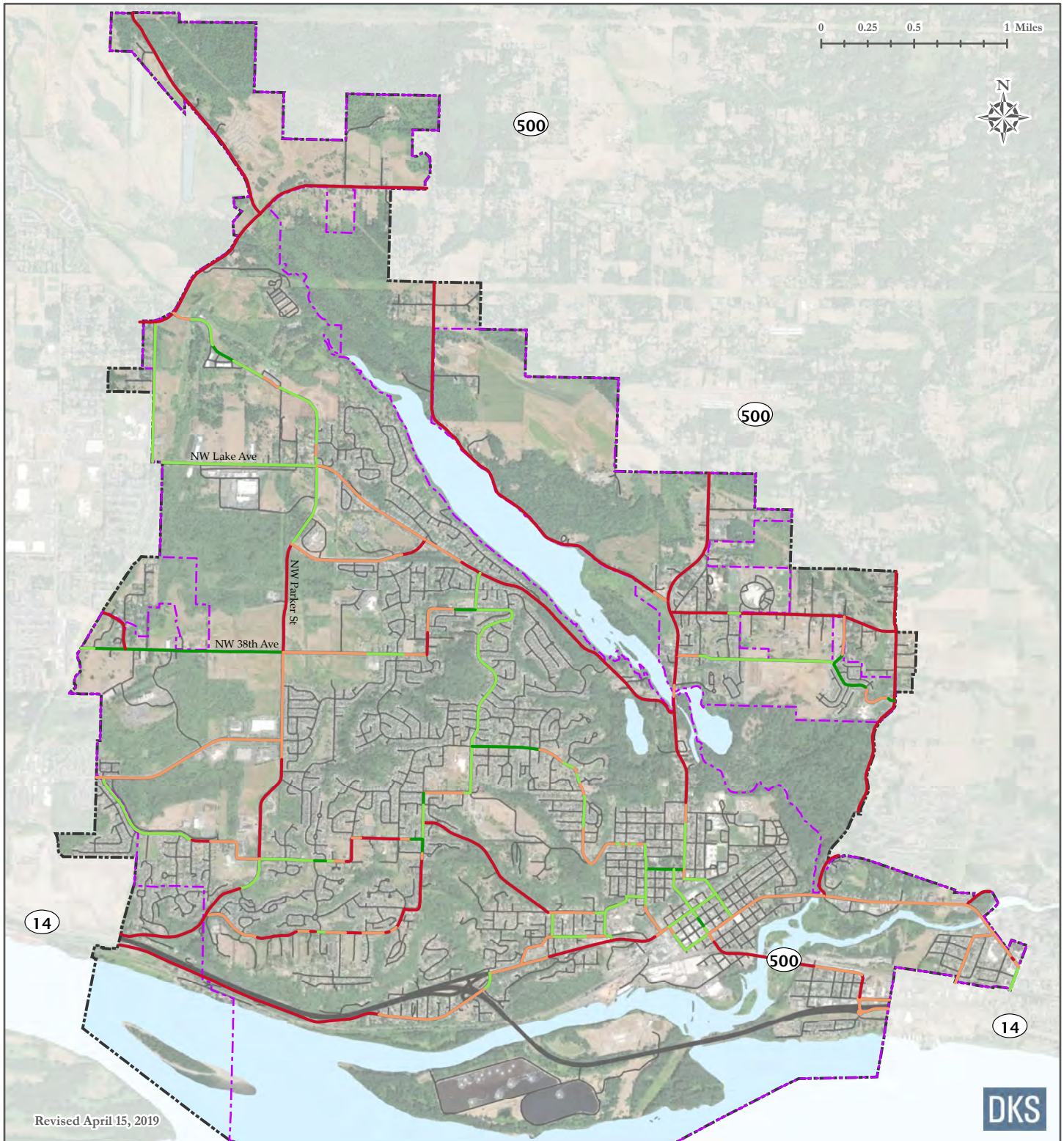
In Camas, an “Excellent” rating requires sidewalks on both sides of the roadway, along with a desirable buffer zone given the roadway characteristics. A “Good” rating requires sidewalks on both sides of the roadway and a buffer zone, but without the desirable features or widths given the roadway characteristics. A “Fair” rating is given to a roadway with sidewalks on both sides, but without an adequate buffer zone. A “Poor” rating denotes gaps within the pedestrian facilities along that corridor.

Figure 13 summarizes the pedestrian network conditions in Camas. Overall, the network rates relatively high near downtown, and poor towards the edges of the city.

Qualitative Bicycle Network Assessment

For the bicycle network evaluation, consideration is given to the presence and width of bike facilities (i.e., bike lane, shoulder, path, shared roadway), grade and pavement conditions of the roadway, and the number of travel lanes, motor vehicle volumes, and travel speeds along the adjacent roadway. In Camas, an “Excellent” rating requires separated bicycle facilities. A “Good” rating requires adequate bicycle facilities and width given the segment characteristics. A “Fair” rating is given to a roadway with bicycle facilities, but without the preferred facility type or width given the segment characteristics. A “Poor” rating denotes gaps within the bike network along that corridor.

Figure 14 summarizes the bicycle network conditions in Camas. This analysis shows that the arterial and collector streets in Camas rate relatively high on the northwest side of the city, and poor on the south and east side. The streets with the lowest ratings are the streets important for local and regional through travel (i.e., portions of NW 6th Avenue, NE 3rd Avenue, and SR 500), where most businesses and services are located. These streets rate low due to the relatively high motor vehicle traffic volumes and speeds and lack of separated bicycle facilities.

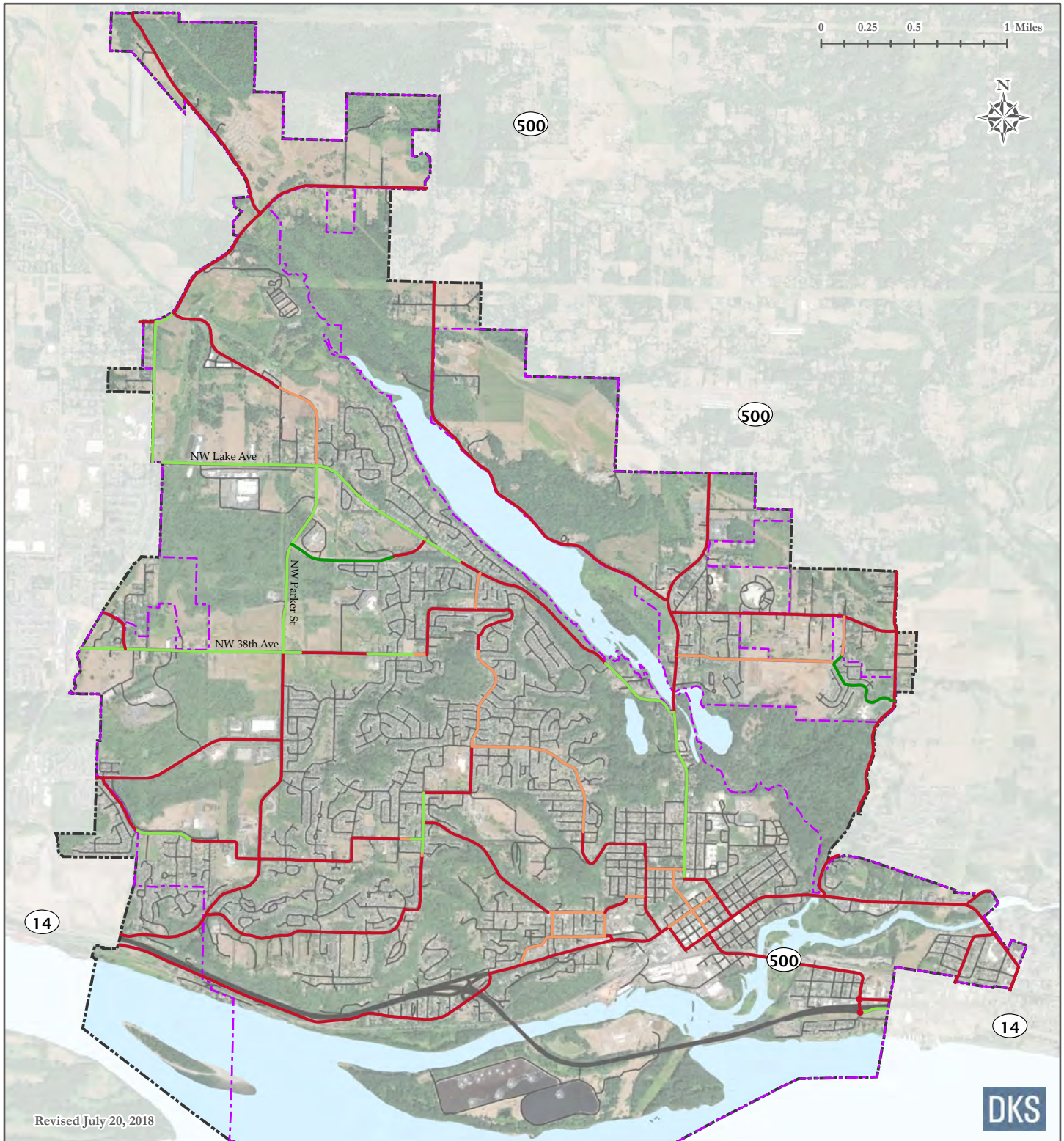
**Legend:****Qualitative Pedestrian Network Assessment:**

- | | |
|--|--|
| — Excellent | — Fair |
| — Good | — Poor |

Note:

Rating is based on a combination of sidewalk presence, speed limit, presence of buffers, roadway volume, number of lanes, shoulder widths and presence of lighting. Rating calculated on Collectors and Arterials.

- | | |
|--|-------------------|
| | Urban Growth Area |
| | Camas City Limit |

**Legend:****Qualitative Bicycle Network Assessment:**

- | | |
|--|--|
| — Excellent | — Fair |
| — Good | — Poor |

- | | |
|--|-------------------|
| | Urban Growth Area |
| | Camas City Limit |

Note:

Rating is based on a combination of speed limit, presence of bicycle facilities, presence of buffers, on-street parking, access and other street characteristics. Rating calculated on Collectors and Arterials.

Roadway Network Conditions

The Transportation Plan compares intersections in Camas to mobility standards intended to maintain a minimum level of efficiency for motor vehicle travel. Two methods to gauge intersection operations include volume-to-capacity (v/c) ratios and level of service (LOS).

- **Volume-to-capacity (v/c) ratio:** A decimal representation (between 0.00 and 1.00) of the proportion of occupied capacity (capacity defined as the theoretical maximum vehicle throughput in a given time frame) at a turn movement, approach leg, or intersection. It is the peak hour traffic volume divided by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. A ratio approaching 1.00 indicates increased congestion and reduced performance. A ratio greater than 1.00 indicates the turn movement, approach leg, or intersection is oversaturated, which usually results in excessive queues and long delays.
- **Level of service (LOS):** A “report card” rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay has become excessive and traffic is highly congested.

Intersection mobility targets vary by jurisdiction of the roadways. Level of Service for Highways of Statewide Significance is set by the State. In Clark County, the standard is set as LOS “D” for urban areas, including SR 14. Level of Service for regional state highway facilities (not part of the HSS), including SR 500 in Camas, is set through the Southwest Washington Regional Transportation Council (RTC). The Southwest Washington RTC Board adopted LOS ‘E’ or better for non-HSS urban state highway facilities.

A LOS “D” is the minimum performance standard during the peak-hour for intersections along arterial and collector roadways under city jurisdiction. At roundabout intersections, v/c ratio of 0.90 also applies along arterial roadways and a v/c ratio of 0.85 along collector roadways.

The applicable mobility standards at each study intersection in the city are identified in the appendix. Study intersections that do not meet the mobility standards shown may require mitigation strategies to be identified in the Transportation Plan.

Intersection Operations

Table 7 shows the study intersections that do not meet mobility standards under the existing (2018) p.m. peak hour. A complete listing of operating conditions at study intersections is provided in the appendix. Of the 50 study intersections, four city locations do not meet their respective mobility standard under existing p.m. peak hour conditions.

Table 7: Study Intersections That Do Not Meet Mobility Standards (2018 PM Peak)					
	Intersection	Mobility Target	Delay	Level of Service	Volume / Capacity
4	Pacific Rim Boulevard at Payne Road	LOS D	103.5	F	0.98
38	NW 6th Avenue at NW Ivy Street	LOS D	39.0	E	0.13
39	NW 6th Avenue at Drake Street	LOS D	41.7	E	0.50
40	NE 6th Avenue at NE Division Street	LOS D	61.1	F	0.31
<u>Signalized intersections:</u>		<u>Stop Controlled intersections:</u>			
LOS = Level of Service of Intersection		LOS = Level of Service of Worst Movement			
V/C = Volume-to-Capacity Ratio of Intersection		V/C = Volume-to-Capacity Ratio of Worst Movement			

Summary of Key Findings

Below is a summary of key findings from the analysis of existing transportation conditions that helps establish a baseline for system performance.

Pedestrian Network

- Traveling by foot is far more common near downtown.
- Gaps in the sidewalk system are more common in southwest, southeast, and northeast Camas, and on roadway segments outside the city limits.
- Most crashes involving pedestrians occur downtown, and along NE 3rd Avenue between NE 4th Street and NE Weir Street.
- The vast majority of pedestrian-involved crashes (79 percent) were caused by drivers failing to yield the right of way to a pedestrian in a crosswalk or along a sidewalk.
- Overall, the walking network rates relatively high near downtown, and poor towards the edges of the city.

Bicycle Network

- Traveling by bicycle is more common along NW Lake Road, and NW Sierra Street.
- Significant segments of continuous bicycle lanes exist along portions of NW Lake Road, NW 38th Avenue, NW Parker Street, NW Friberg-Strunk Street, and SR 500.
- Most crashes involving bicycles occur at intersections.
- Most of the crashes involving a bicyclist were caused by drivers failing to yield the right of way when turning.
- The arterial and collector streets in Camas rate relatively high on the northwest side of the city, and poor on the south and east side. The streets with the lowest ratings are the streets important for local and regional through travel, where most businesses and services are located.

Transit System

- C-TRAN provides transit service in Camas via one fixed bus route connecting the city with Vancouver and Washougal. Transit riders can transfer to other C-TRAN routes at the Fisher's Landing Transit Center in Vancouver.
- Bus stops in Camas are located along NW 6th Avenue near the SR 14 Ramps, NW Ivy Street, and NW Drake Street intersections, at the NE Adams Street / NE 5th Avenue, and along NE 3rd

Avenue near the NE Franklin Street, NE Joy Street, NE 3rd Place, E. 1st Avenue, SE Crown Road, NE Summer Street, NE 3rd Loop, NE Shepherd Road, NE 2nd Avenue, NE Weir Street and NE Lechner Street intersections.

- Each of the bus-stops are signed and the eastbound stop along NW 6th Avenue near the SR 14 Ramps provides a bus pull-out. The bus stop along NE 3rd Avenue at NE Franklin Street (near Camas City Hall) provides a bench and shelter.
- All remaining bus stops have no amenities.
- C-TRAN's "Connector" service provides Camas with fully accessible dial-a-ride and scheduled stop service at designated stops within the service area.
- Most transit users in the city are more than a half-mile from a bus stop.

Roadway Network

- More than half of the workers in Camas live in another city that is located more than ten miles away, creating many long commute trips and encouraging travel by motor vehicle.
- Motor vehicle volumes on the roadways in Camas most commonly peak during weekday evenings between 4:50 p.m. and 5:50 p.m.
- Camas experiences an average of around 176 crashes a year, though the severity of most crashes is generally low, with 88 percent involving only property damage or minor injuries.
- The NE Ingle Road at NE 28th Street intersection in Camas was noted as having a high rate of crashes.
- The five most common driver errors are responsible for nearly 60 percent of all crashes in Camas.
 1. Inattention (29 percent)
 2. Did Not Yield Right-of-Way (13 percent)
 3. Followed Too Closely (10 percent)
 4. Disregarded Traffic Signal or Stop Sign (3 percent)
 5. Operating Defective Equipment (3 percent)
- Of the 50 study intersections, four city locations do not meet their respective mobility standard under existing p.m. peak hour conditions, including Pacific Rim Boulevard at Payne Road, NW

6th Avenue at NW Ivy Street, NW 6th Avenue at Drake Street, and NE 6th Avenue at NE Division Street.

- About 75 percent of the roadway miles in Camas have pavement in good or satisfactory condition, 13 percent in fair condition, six percent in poor condition, and six percent in very poor or worse condition.

Other Modes of Travel

- Seven bridges are flagged as functionally obsolete, including along SW 6th Avenue over SR 14, along SR 500 over the Washougal River, along SR 500 over Lacamas Lake, along NE 3rd Avenue over the Washougal River (this bridge is scheduled for seismic upgrades in 2020), along NE Goodwin Road over Lacamas Creek, along Division Street over Mill Ditch, and along NE Dallas Street over Mill Ditch.
- Within Camas, SR 14 is classified as a T-2 truck freight corridor, while portions of NW 6th Avenue, NE Adams Street, NE 3rd Avenue, SR 500, NW Lake Road, NW Parker Street, NW Brady Road, NW Pacific Rim Boulevard, NE Goodwin Road, NE 28th Street, and NE Ingle Road are T-3 corridors.
- Freight rail service is provided to Camas by the BNSF Railway.
- Grove Field serves 9,800 annual operations (i.e., take-offs or landings).
- Regional and international air service for passengers and freight is provided via Portland International Airport (PDX).

APPENDIX D. FUTURE BASELINE CONDITIONS ANALYSIS



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MEMORANDUM

DATE: May 15, 2024

TO: Curleigh Carothers, City of Camas
Steve Wall, City of Camas

FROM: Reah Flisakowski, DKS Associates
Kevin Chewuk, DKS Associates

SUBJECT: Camas Transportation Plan
Technical Memo 3 – Future Baseline Conditions Analysis

P18039-000

The condition of Camas' future transportation system depends on the growth in population and employment, future travel patterns (e.g., choice of modes, routes, and frequency of trips), and community investment decisions. Growth in population and the number of jobs is forecast based on trends and knowledge of the city and region. Future travel patterns are more difficult to predict as the community's investment decisions and the economy can have significant effect on choice of modes and routes. The objective of the transportation planning process is to generate information necessary for making decisions that will result in safe and efficient travel options through 2040.

Methodology for Estimating Future Travel

The 2040 transportation conditions in Camas were forecasted based on trips that new growth will generate, assuming no new investments in infrastructure beyond what is funded for construction already. It describes where the transportation system will perform satisfactorily and areas of the network likely to be congested or in need of investments to function adequately in the future. Subsequent memos will explore potential solutions for addressing future transportation system needs.

Future Estimates of Walking, Biking, and Transit

Methodology for determining future needs for walking, biking, and transit in Camas begins with an assessment of who is walking, biking, and taking transit now and where they are traveling. Technical Memorandum #2 (Existing Conditions Analysis) answers these questions for pedestrians, bicyclists and transit riders and details existing conditions of the infrastructure.

The existing facilities were then compared to major growth areas of the city, and in proximity to key destinations, such as schools, parks, transit stops, shopping and employment. A review of the city shows that the walking and biking infrastructure is inadequate in anticipated major growth areas and

near key destinations, which have the potential to attract significant walking and biking trips. The inadequate walking and biking infrastructure further hinders transit riders, as these users typically utilize these facilities at the beginning and end of their trip.

Baseline Street Network Performance

The baseline condition reflects the street network performance for motor vehicles, assuming only transportation projects with secured funding will be built. Other identified TIF projects that are not fully funded will be evaluated as potential solutions in Technical Memorandum #5 to validate their need in the future.

The following motor vehicle capacity projects have been completed or have funding identified in the Camas Transportation Plan study area through 2040:

- Eastbound left-turn pocket added to NW Brady Road at the NW Grand Ridge Drive intersection (study intersection #1)
- Traffic signal installed at the **NW Brady Road intersection with NW 16th Avenue** and left-turn pockets for all approaches (study intersection #3)
- Traffic signal installed at the **Pacific Rim Boulevard intersection with Payne Road** and left-turn pockets for the northbound and southbound approaches (study intersection #4)
- Traffic signal installed at **SE 20th Street/38th Avenue intersection with SE Bybee Road/NW Fisher Creek Drive** and realign SE Bybee Road so that it intersects with NW Fisher Creek Drive (study intersection #8)
- Traffic signal installed at the **NE Ingle Road intersection with NE 28th Street-NE Goodwin Road** (study intersection #16)
- Install a roundabout at the **SR 500 (NE Everett Street) intersection with NE 3rd Street** (study intersection #20)
- Roundabout installed at the **SR 500 (NE Everett Street) intersection with NE Lake Road** (study intersection #24)
- **Larkspur Street** improved between NW Lake Road and NW Camas Meadows Drive, including sidewalks and bike lanes
- **NW Brady Road** improved between NW 16th Avenue and NW Pacific Rim Boulevard, including sidewalks and bike lanes
- Improve NW 38th Avenue between NW Parker Street and Grass Valley Park

Camas 2040

Future land use changes and growth in population, housing, and employment within Camas' urban growth area (UGA) will have a significant impact on the existing transportation system and will create new travel demands. These growth projections and how they translate to new trips on the transportation network are key elements of the future conditions and performance analysis.

The Southwest Washington Regional Transportation Council (RTC) travel demand model is the primary tool used to determine future traffic volumes in Camas and the surrounding region. The RTC model forecasts travel changes in response to future land use and transportation scenarios. This model translates estimated land uses into person trips, selects travel modes and assigns motor vehicle trips to the roadway network. It is an informational tool to assist with decision making, providing objective and quantitative information exploring the potential impacts of alternative transportation system investments.

Forecasted Population and Employment Growth

Understanding the influence of area land uses on the transportation system is a key factor in transportation system planning. The amount of land that is to be developed, the types of land uses, and their proximity to each other have a direct relationship to expected demands on the transportation system.

The RTC model includes forecasted land uses for the Camas Transportation Plan study area. The land uses reflect Camas' Comprehensive Plan and growth assumptions identified for the year 2040. Complete land use data sets are developed for both the 2015 base year and 2040 future year. The land use information has been coordinated with all the other jurisdictions in the RTC travel area. A sub-area level model was also created for the Camas planning area that included a 2040 planning horizon. Local land uses were developed for 2040 with input from City staff. Future year land use and trips were adjusted based on the adopted changes from the Camas Northshore Subarea Plan.

Table 1 summarizes baseline and projected future totals for households and employment within the Camas Transportation Plan study area, from which traffic growth estimates were made. These values indicate that growth in employment is expected to outpace residential development, both overall and as a percentage increase. Most household growth is assumed to occur in the north area of the city, while employment growth is generally assumed to occur in the southwest and northeast.

Table 1: Land Use Assumptions for Camas

Camas Transportation Plan Study Area*	2015	2040	Change (2040-2015)	Percent Increase (2040-2015)
RTC Model Households	9,580	15,220	5,640	59%
RTC Model Employment	8,947	21,243	12,296	137%
Northshore Plan Household Updates**	-	+1,918	-	-
Northshore Plan Employment Updates**	-	-2,508	-	-
Total Households (with Northshore Plan Updates)	9,580	17,138	7,558	79%
Total Employment (with Northshore Plan Updates)	8,947	18,735	9,788	109%
* These locations are based on boundaries approximated by the model TAZ boundaries and may not match current and future city limits.				
** This reflects the difference between the 2040 land use included in the RTC model for the Northshore Subarea Plan area (i.e., 2,232 households and 4,476 jobs) and the 2040 land use from adopted changes from the Northshore Subarea Plan (i.e., 4,150 households and 1,968 jobs).				

Future Travel Growth

With more jobs, residents, and through travel, the street network in Camas must accommodate about 9,000 additional motor vehicle trip ends during the weekday evening peak hour. Today, the Camas street network is generally able to handle the evening peak hour trips; however, the evening peak hour motor vehicle trips are likely to increase significantly by the end of 2040.

Forecasted 2040 motor vehicle volumes for peak hour conditions were utilized to determine areas on the baseline roadway network that will be congested and may require future investments to accommodate forecasted growth. The 2040 baseline motor vehicle volumes for study intersections in the appendix show volumes are anticipated to be highest along major roadways that connect the surrounding region to the employment areas in Camas, including NW Pacific Rim Boulevard, NW 38th Avenue, NW Parker Street, NW Lake Road, SR 500-NE Everett Street, NW 6th Avenue and NE 3rd Avenue. Other roadways expected to experience significant traffic increases include NE Goodwin Road, NE Ingle Road and NE 28th Street. Each of these roadways connects a major residential and/or employment growth area in the City.

Where Transportation Improvements May be Needed

Review of the expected growth throughout the city and existing gaps and deficiencies of the transportation system identified the following locations as possible candidates for improvements.

Walking Network Needs

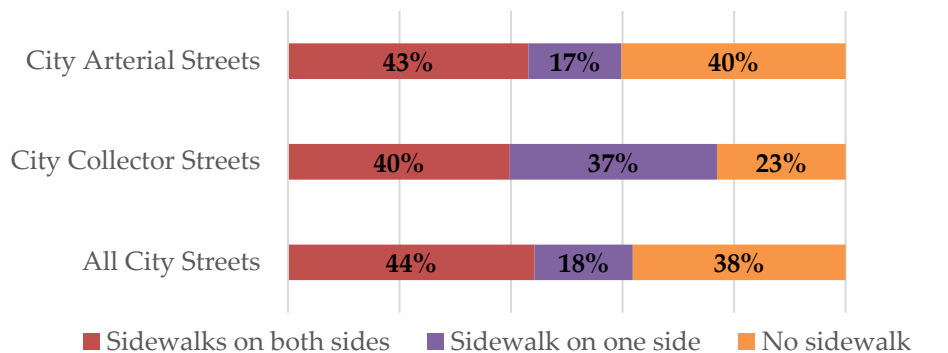
The following section describes the walking network needs identified for the 2040 Baseline street network.

Future Walking Network

The percent of roadways with sidewalks (see Figure 1) will improve slightly from existing conditions. About 56 percent of City street miles (including City arterial, collector and local streets) lack sidewalk coverage along one or both sides. With a few projects currently committed for funding, the 2040 Baseline pedestrian network is similar to today's conditions. These numbers do not incorporate off-street shared-use paths that may run alongside some roadways.

Any future streets constructed in association with development projects will be required to construct sidewalks as well, increasing the overall sidewalk supply.

Figure 1: Street Miles with Sidewalks within Camas



Future Qualitative Pedestrian Assessment

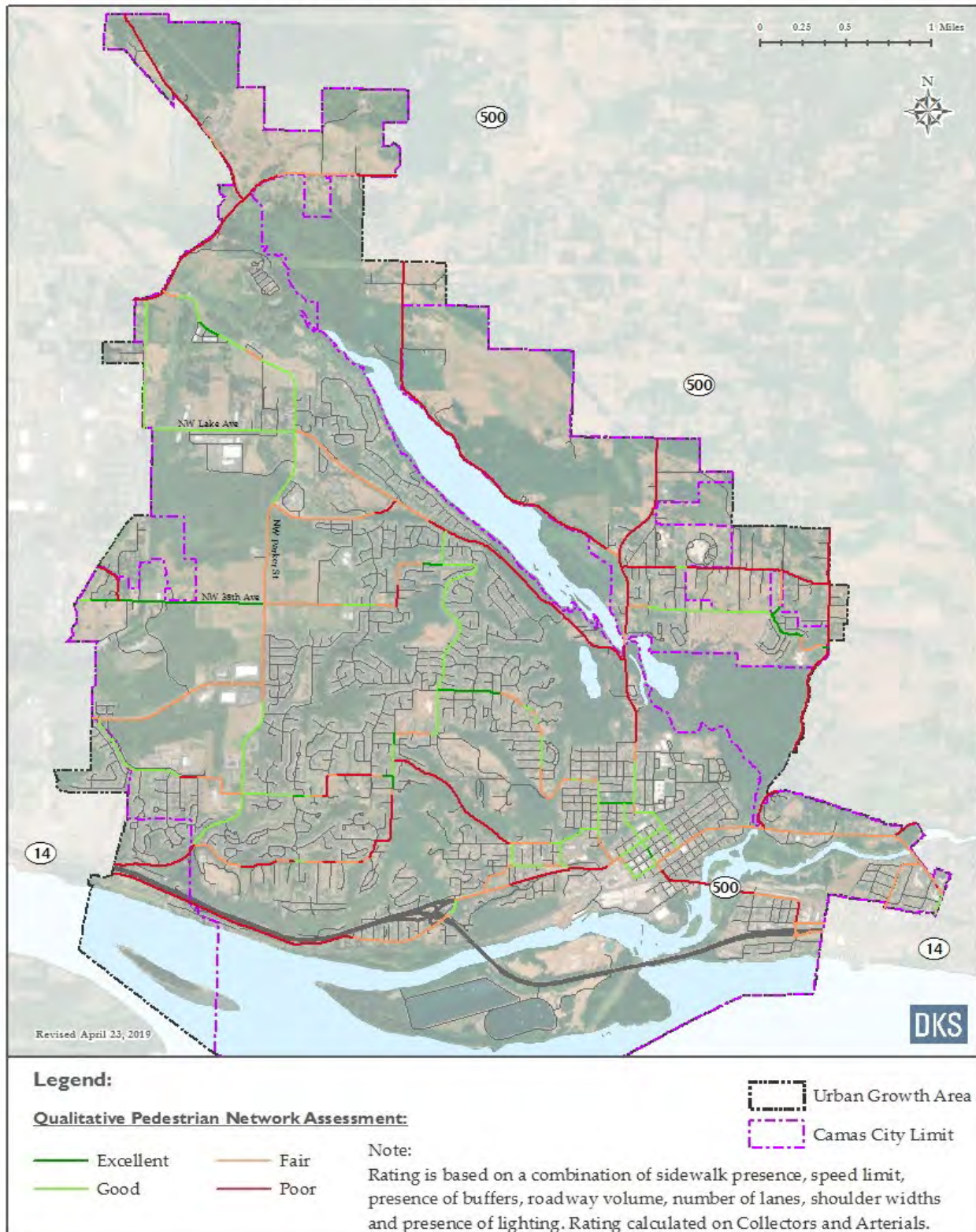
The Qualitative Pedestrian Network Assessment shows the extent to which the walking network on collector and arterial streets provides a level of comfort and safety for users. The assessment method and conditions of the pedestrian network are summarized in a previous memo¹. Since traffic volume is the only input factor anticipated to change significantly under future conditions, there were no significant changes made to the street segment quality ratings identified in existing conditions (see Figure 2).

About 30 percent of the collector and arterial street miles' in Camas rate "good" or "excellent" for pedestrians. However, over 35 percent of the collector and arterial street miles' rate poorly. Most of the street miles' rated "poor" are located in high growth areas (i.e., household or employment growth). The pedestrian network in these areas is largely unimproved due to the rural nature of the surrounding land use but will likely be improved as future development occurs. Overall, the pedestrian network continues to rate relatively high near downtown, and poor towards the edges of the City.

¹ See Technical Memorandum #2: Existing Conditions Analysis, July 20, 2018

2

Future Pedestrian Network Assessment



Walking Facility Gaps

Despite the high level of sidewalk coverage towards downtown, parts of the City experience sidewalk gaps. These gaps are predominately concentrated on the edge of the City. However, there are segments along streets near downtown, and other segments that provide important connections that lack sidewalks on one or both sides of the street.

Missing segments in developed areas include:

- NW Brady Road, south of NW McIntosh Road
- NW McIntosh Road, east of NW Brady Road
- NW Lake Road, west of SR 500-NE Everett Street
- SR 500-NE Everett Street, south of NW Lake Road

Segments in undeveloped areas where future development will require sidewalks include:

- NW Parker Street, north of NW Pacific Rim Boulevard
- NE Goodwin Road-NE 28th Street, east of NW Friberg-Strunk Street
- NE Ingle Road, north of NE Goodwin Road
- NE 232nd Avenue-NE Leadbetter Road, west of SR 500-NE Everett Street (note that this segment to eventually be partially closed to motorist traffic and made into a trail)
- NE 43rd Avenue-SE 15th Street, east of SR 500-NE Everett Street
- SR 500-NE Everett Street, north of NW Lake Road

In addition to the areas where these gaps already exist, future pedestrian infrastructure needs can be identified based on anticipated growth. Higher densities and more people require more pedestrian infrastructure to accommodate demand. Where growth is anticipated, street segments with “poor” or “fair” pedestrian network qualitative assessment scores will need enhancements in order to improve their conditions. These segments include:

- NW 38th Avenue, east of NW Parker Street (note that multimodal improvements are being constructed on NW 38th Avenue between NW Parker Street and Grass Valley Park in 2024).
- NW Pacific Rim Boulevard, west of NW Parker Street
- NW 6th Avenue, west of NE Adams Street

Methodology to Address Deficiencies

A list of potential pedestrian network improvement projects will be developed in Technical Memorandum #5 based on streets with pedestrian deficiencies. A street is considered deficient for walking if it meets one or more of the following conditions:

- Arterial or collector street without pedestrian facilities
- “Poor” qualitative pedestrian assessment rating
- Qualitative pedestrian assessment rating less than “good” in close proximity to parks, schools, transit stops, or other important destinations

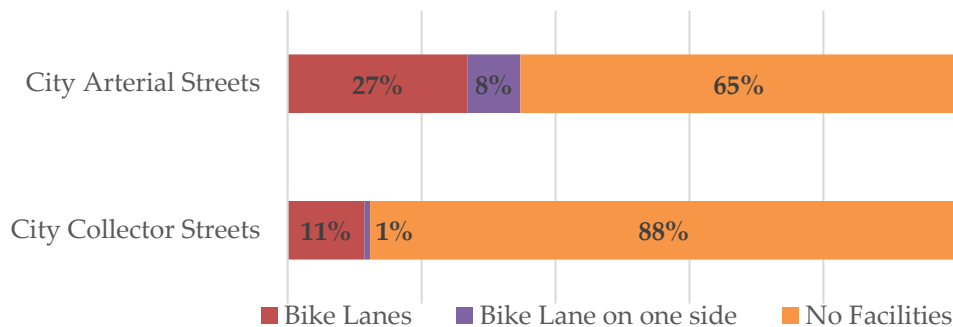
Bicycle Network Needs

The following section describes the bicycle network needs identified for the 2040 Baseline street network.

Future Bicycle Network

Little is expected to change from the existing bicycle network (see Figure 3). About 65 percent of City arterial street miles and 88 percent of City collector street miles lack bicycle facilities (bike lanes or shoulder bikeways). With a few projects currently committed for funding, the 2040 Baseline bicycle network is similar to today’s conditions. These numbers do not incorporate off-street shared-use paths that may run alongside some roadways.

Figure 3: Street Miles with Bike Facilities within Camas



Future Qualitative Bicycle Assessment

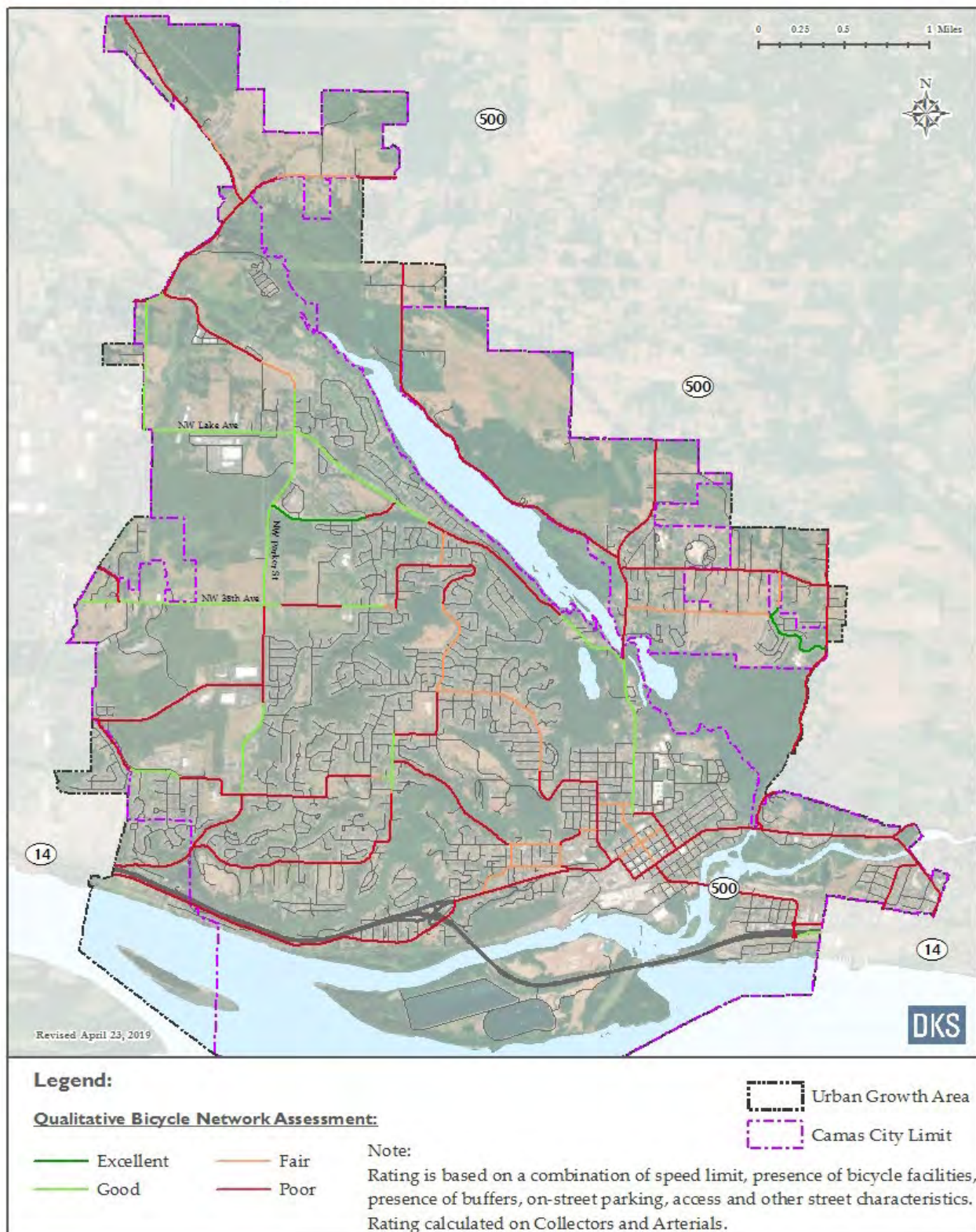
The Qualitative Bicycle Network Assessment shows the extent to which the bicycle network on collector and arterial streets provides a level of comfort and safety for users. The assessment method and conditions of the bicycle network are summarized in a previous memo². Since traffic volume is the only input factor anticipated to change significantly under future conditions, there were no significant changes made to the street segment quality ratings identified in existing conditions (see Figure 4).

About 20 percent of the collector and arterial street miles' in Camas rate "good" or "excellent" for bicyclists. However, about 65 percent of the collector and arterial street miles' rate poorly for bicyclists. Overall, the bicycle network continues to rate relatively high on the northwest side of the city and poor on the south and east side. The streets with the lowest ratings are the streets important for local and regional through travel (i.e., portions of NW 6th Avenue, NE 3rd Avenue, and SR 500), where most businesses and services are located. These streets rate low due to the relatively high motor vehicle traffic volumes and speeds and lack of separated bicycle facilities.

² See Technical Memorandum #2: Existing Conditions Analysis, July 20, 2018

4

Future Bicycle Network Assessment



Bicycle Facility Gaps

Bicycle network gaps are spread throughout the City. These gaps are predominately located on segments of streets in undeveloped areas, or on segments of streets that have no on-street bike facilities that would better connect the bicycle network. Some of these segments include:

- NW Brady Road-NW Parker Street, south of NW 38th Avenue
- NW Pacific Rim Boulevard, west of NW Parker Street
- NW 38th Avenue, east of NW Parker Street (note that multimodal improvements are being constructed on NW 38th Avenue between NW Parker Street and Grass Valley Park in 2024).
- NW Lake Road, west of Sierra Street to Lacamas Lane (eastbound only)
- NE Goodwin Road-NE 28th Street, east of NW Friberg-Strunk Street
- SR 500-NE Everett Street, north of NW Lake Road
- SE 6th Avenue, south of NE 3rd Avenue
- NE 3rd Avenue, east of NE Adams Street
- NE Adams Street, between NE 3rd Avenue and NW 6th Avenue
- NW 6th Avenue, west of NE Adams Street

In addition to these missing segments, future bicycle needs can be identified based on where growth is expected to occur. The areas with the greatest increase in employment and population densities are listed below. As most of these areas are undeveloped, future bicycle infrastructure is likely to be provided or enhanced through development of the local street system.

- In north Camas, north of NW Lake Road
- In southwest Camas, west of NW Brady Road-NW Parker Street
- In northeast Camas, east of NW 232nd Avenue

Major street segments with “poor” bicycle network qualitative assessment scores include:

- NW Brady Road-NW Parker Street, south of NW 38th Avenue
- NE Ingle Road, north of NE Goodwin Road
- NW Lake Road, between NW Sierra Street and NW Lacamas Lane (eastbound only)
- SR 500-NE Everett Street, north of NW Lake Road
- SE 6th Avenue, south of NE 3rd Avenue
- NE 3rd Avenue, east of NE Adams Street

- NW 6th Avenue, west of NE Adams Street

Generally, improvements are needed if the City prioritizes more bicycle friendly streets for novice riders. Such improvements would focus on improving the density and connectivity of low-stress bike routes, and in some cases identified bicycle deficiencies and gaps can be addressed by providing accommodations on nearby streets.

Other Bicycle Needs

Other bicycle needs identified through field observations and transportation analysis include enhancing bicycle connections to key destinations and expanding low stress bicycle routes. Not all of the roadways lacking bicycle facilities will be able to accommodate bike lanes due to right-of-way constraints, limited funding, and/or fewer constraints on parallel corridors. A network of low stress bikeways will be considered to relieve some of the right-of-way constraints posed on streets where bikeways are rated poor, but space does not permit consideration of bike lanes or buffered bike lanes.

As mitigations for motor vehicle travel are considered for intersections and along roadway segments, innovative designs may be considered to avoid undesirable impacts on bicycle safety and connectivity.

Methodology to Address Deficiencies

A list of potential bicycle network improvement projects will be developed in Technical Memorandum #5 based on streets with bicycle deficiencies. A street is considered deficient if it meets one or more of the following conditions:

- Arterial or collector street without bicycle facilities or adjacent corridor with bicycle facilities
- “Poor” qualitative bicycle assessment rating
- Qualitative bicycle assessment rating less than “good” in close proximity to parks, schools, transit stops, or other important destinations

Motor Vehicle Network Needs

An increase in motor vehicle travel leads to an increase in congestion. Travel activity, as reflected by evening peak hour motor vehicle trips beginning or ending in Camas, is expected to increase significantly through 2040. Through trips (i.e., trips that neither begin nor end in Camas) are also expected to increase through 2040 and are generally representative of increased growth in statewide travel and in neighboring cities such as Vancouver and Washougal.

Study intersection operations were analyzed in the same manner as was done for existing conditions³. Forecasted intersection capacity and level of service were compared to applicable agency mobility standards to identify where significant congestion is likely to occur. Table 2 shows the study intersections that do not meet mobility standards under the 2040 peak hour conditions. A complete listing of operating conditions at study intersections is provided in the appendix.

Of the 50 study intersections, 16 would not meet their respective mobility standard during the 2040 peak hour conditions. Three of these intersections also did not meet the mobility targets under existing p.m. peak hour conditions (NW 6th Avenue at NW Ivy Street, NW 6th Avenue at Drake Street and NE 6th Avenue at NE Division Street). Four of the substandard intersections are along SR 500.

Table 2: Study Intersections That Do Not Meet Mobility Standards (2040 PM Peak)

	Intersection	Mobility Target*	Delay	Level of Service	Volume / Capacity
6	Pacific Rim Boulevard at NW Parker Street	LOS D; v/c 0.85	42	E	0.84
17	NE 232nd Avenue at NE 28th Street	LOS E; v/c 0.90	>300	F	>2.0
18	NE 28th Street at SR 500-NE 242nd Avenue	LOS E	>300	F	>2.0
19	NE 199th Avenue at SR 500-NE 58th Street	LOS E	>300	F	1.96
23	SR 500-NE Everett Street at NE 38th Ave	LOS E	98	F	0.67
25	NW Lake Road at NW Lacamas Lane	LOS E; v/c 0.90	63	F	0.38
26	NW Lake Road at NW Sierra Street	LOS E; v/c 0.90	>300	F	1.77
27	NW Lake Road at NW Leadbetter Drive	LOS E; v/c 0.90	106	F	0.92
29	NW Dahlia Drive at NW 38th Avenue	LOS E; v/c 0.90	56	F	0.72
36	NW 6th Avenue at NW Norwood Street	LOS D	44	E	1.08

³ Technical Memorandum #2: Existing Conditions Analysis, July 20, 2018

Table 2: Study Intersections That Do Not Meet Mobility Standards (2040 PM Peak)

Intersection	Mobility Target*	Delay	Level of Service	Volume / Capacity
38 NW 6th Avenue at NW Ivy Street	LOS E; v/c 0.90	100	F	0.26
39 NW 6th Avenue at Drake Street	LOS E; v/c 0.90	99	F	0.73
40 NE 6th Avenue at NE Division Street	LOS E; v/c 0.90	207	F	0.68
41 NE 6th Avenue at NW Adams Street	LOS E; v/c 0.90	55	F	0.98
42 NE 6th Avenue at SR 500-NE Garfield St	LOS E	66	F	0.78
48 NE Weir Street at NE 3rd Avenue	LOS E; v/c 0.90	110	F	1.02

*Recommended mobility targets for City intersections

Signalized intersections:

LOS = Level of Service of Intersection

V/C = Volume-to-Capacity Ratio of Intersection

Stop Controlled intersections:

LOS = Level of Service of Worst Movement

V/C = Volume-to-Capacity Ratio of Worst Movement

Corridor Needs

With projected population and employment growth in Camas, a few roadway segments are expected to be deficient by 2040 during the evening peak period. In addition, a few major corridors lack adequate walking or biking facilities. With growing traffic volumes through 2040, these problematic areas will likely persist and may even become progressively worse. These corridors include:

- SR 500-NE Everett Street between NE 23rd Avenue and SE Leadbetter Road
- NW 6th Avenue between Norwood Street and Adams Street
- NE 3rd Avenue between NE Dallas Street and SE Lechner Street

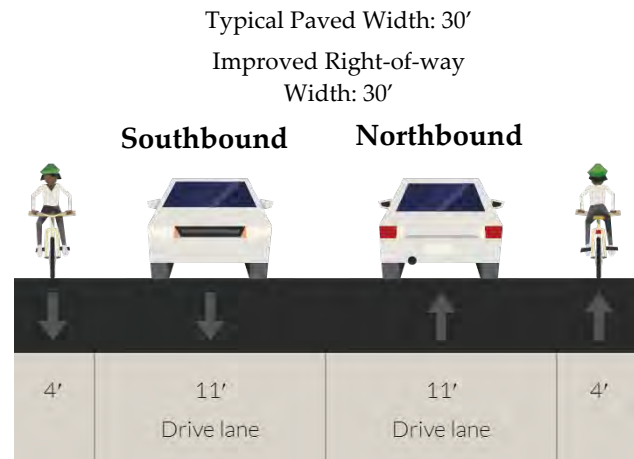
The following sections summarize the evaluation of improvement options to provide early direction in developing recommended solutions for these street segments. The options consider the available right-of way and environmental constraints to ease implementation. These design options are preliminary and are subject to change. Community input and further technical analysis will ultimately lead to a recommended solution to be included in the Transportation Plan.

Segment I: SR 500-NE Everett Street between NE 23rd Avenue and NW Lake Road

The segment of SR 500-NE Everett Street between NE 23rd Avenue and NW Lake Road includes two travel lanes and four-foot bike lanes. It lacks adequate pedestrian facilities. This segment also lacks an adequate pedestrian and bicycle crossing between the trails in Fallen Leaf Lake Park on the west side and Lacamas Park on the east side of SR 500. There is approximately 60 feet of right-of-way at the north end of the corridor and 80 to 100 feet of right-of-way at the south end. Long segments of the corridor are constrained with adjacent steep slopes or drainage areas that limit the ability to widen the corridor. Five design options were evaluated along this segment. These options are:

Option 1a: Do Nothing

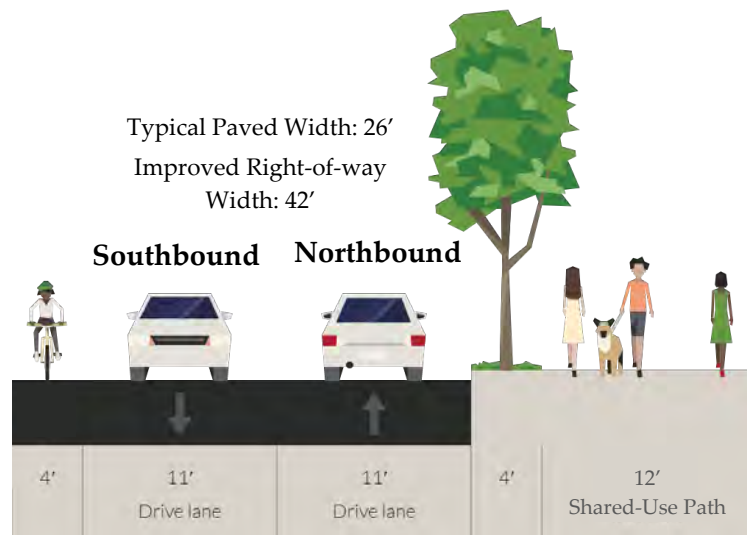
SR 500-NE Everett Street would retain two travel lanes with no pedestrian facilities and substandard bike lanes.



Option 1a: Do Nothing

Option 1b: Widen to include an adjacent shared-use path

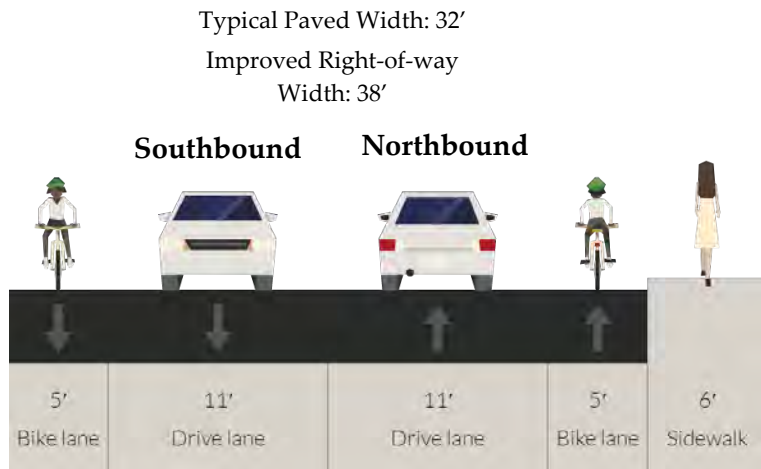
SR 500-NE Everett Street would retain one travel lane in each direction. The segment would include a shared-use path on the east side. A buffer would be between the roadway and shared-use path. This option fits within the existing right-of-way and would require no roadway widening but would require construction of a buffer and shared-use path on the east side. This option does not provide pedestrian access on both sides.



Option 1b: Add a shared-use path

Option 1c: Widen to include bike lanes and a sidewalk

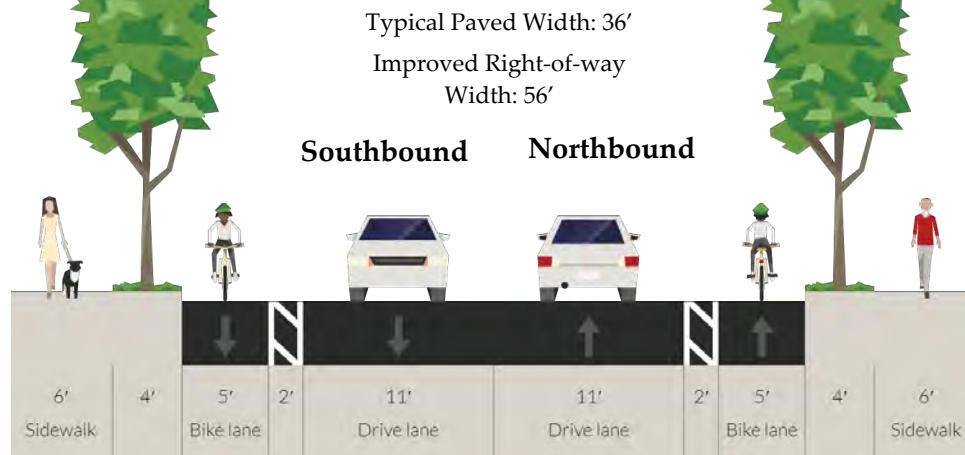
SR 500-NE Everett Street would be widened to provide standard width bike lanes in both directions and a sidewalk on one side of the street. This option fits within the existing right-of-way but would require some roadway widening and construction of a sidewalk and drainage system on the east side. This option does not provide pedestrian access on both sides.



Option 1c: Widen to include bike lanes and a sidewalk

Option 1d: Widen to include buffered bike lanes and a sidewalk on both sides

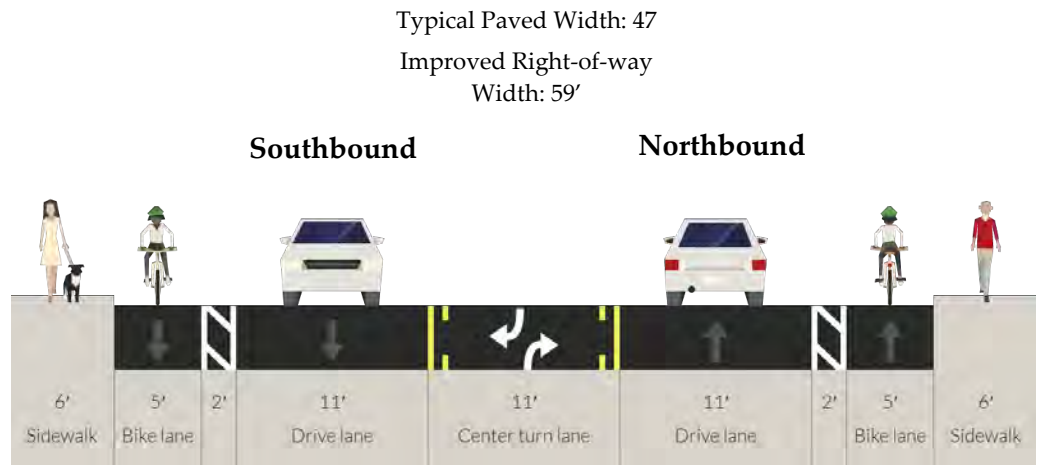
SR 500-NE Everett Street would be widened to provide bike lanes and striped buffers between the bike lane and travel lane. A buffer and sidewalk would also be added to both sides of the street. This option would require roadway widening and construction of a sidewalk and drainage system on both sides. In addition, it may not fit within the existing right-of-way given the steep driveways on the west side requiring severe elevation change.



Option 1d: Widen to include buffered bike lanes and a sidewalk on both sides

Option 1e: Widen to include a center turn lane, buffered bike lanes and a sidewalk on both sides

SR 500-NE Everett Street would be widened to provide a center turn lane, bike lanes and striped buffers between the bike lane and travel lane, and sidewalks on both sides of the street. This option would require roadway widening and construction of a sidewalk and drainage system on both sides. In addition, it may not fit within the existing right-of-way given the steep driveways on the west side requiring severe elevation change.



Option 1e: Widen to include a center turn lane, buffered bike lanes and a sidewalk on both sides

Evaluation of Design Options:

The evaluation summary of key criteria is shown in Table 3. Option 1b to 1e have the greatest likelihood to address the identified gaps and deficiencies since Option 1a (Do Nothing) does not provide adequate pedestrian or bicycle facilities. Most options will fit within the existing right-of-way along the segment, but Options 1d and 1e will require the most significant widening.

Table 3: SR 500-NE Everett Street (NE 23rd Avenue and NW Lake Road) Design Options Evaluation

Design Options	Fits in Existing Right-of-way	Improves Pedestrian and Bicycle Facilities	Improves Safety	Impact to Motor Vehicle Operations	Expected Cost
Option 1a					N/A
Option 1b					\$\$\$
Option 1c					\$\$\$\$
Option 1d					\$\$\$\$\$
Option 1e					\$\$\$\$\$

Segment 2: SR 500-NE Everett Street between NE 35th Avenue and SE Leadbetter Road

The segment of SR 500-NE Everett Street between NE 35th Avenue and SE Leadbetter Road includes two travel lanes. It lacks adequate pedestrian or bicycle facilities. There is at least 60 feet of right-of-way along this segment. Three design options were evaluated along this segment. These options are:

Option 2a: Do Nothing

SR 500-NE Everett Street would retain two travel lanes with no pedestrian or bicycle facilities.

Typical Paved Width: 22'

Improved Right-of-way
Width: 22'

Southbound Northbound



Option 2a: Do Nothing

Option 2b: Widen to include an adjacent shared-use path

SR 500-NE Everett Street would retain one travel lane in each direction. The segment would include a shared-use path on the east side. A buffer would be between the roadway and shared-use path. This option fits within the existing right-of-way and would require no roadway widening but would require construction of a buffer and shared-use path on the east side.

Typical Paved Width: 22'

Improved Right-of-way
Width: 38'

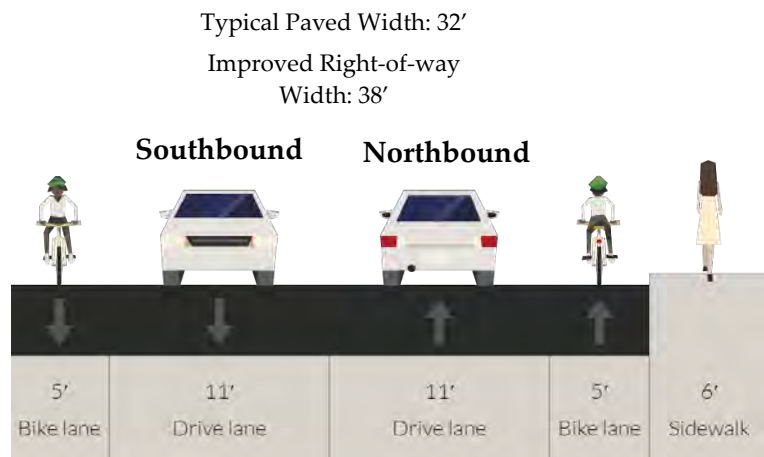
Southbound Northbound



Option 2b: Add a shared-use path

Option 2c: Widen to include bike lanes and a sidewalk

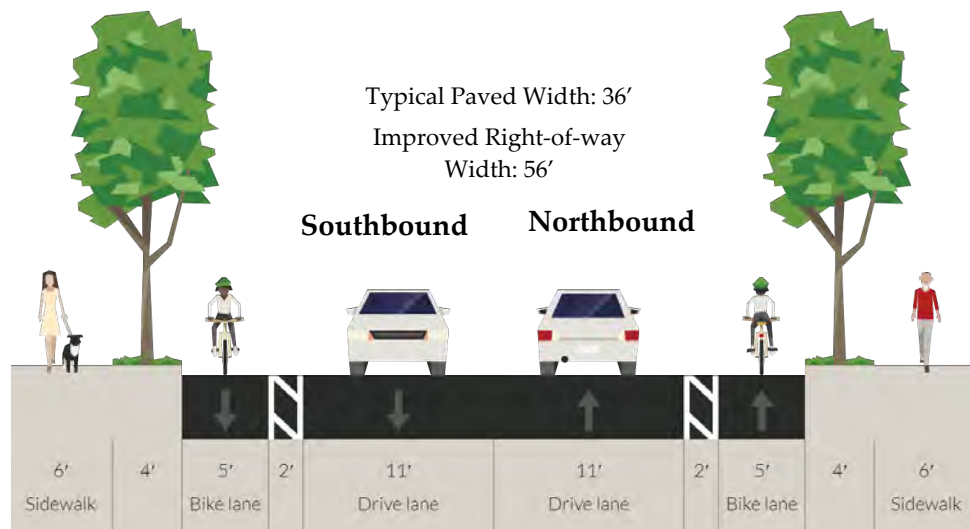
SR 500-NE Everett Street would be widened to provide bike lanes and a sidewalk on one side of the street. This option fits within the existing right-of-way but would require some roadway widening and construction of a sidewalk on the east side.



Option 2c: Widen to include bike lanes and a sidewalk

Option 2d: Widen to include buffered bike lanes and a sidewalk on both sides

SR 500-NE Everett Street would be widened to provide bike lanes and striped buffers between the bike lane and travel lane. A buffer and sidewalk would also be added to both sides of the street. This option fits within the existing right-of-way but would require roadway widening and construction of a sidewalk and drainage system on both sides.



Option 2d: Widen to include buffered bike lanes and a sidewalk on both sides

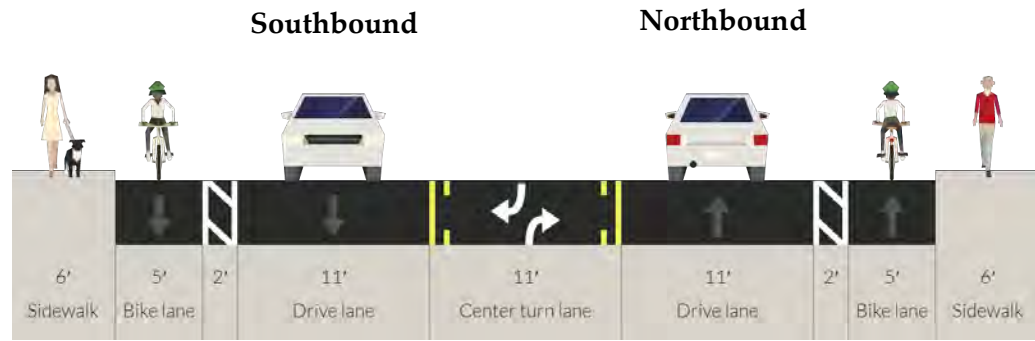
Option 2e: Widen to include a center turn lane, buffered bike lanes and a sidewalk on both sides

SR 500-NE Everett

Street would be widened to provide a center turn lane, bike lanes and striped buffers between the bike lane and travel lane, and sidewalks on both sides of the street. This option fits within the existing right-of-way but would require roadway widening and construction of a sidewalk and drainage system on both sides.

Typical Paved Width: 47'

Improved Right-of-way
Width: 59'



Option 2e: Widen to include a center turn lane, buffered bike lanes and a sidewalk on both sides

Evaluation of Design Options: The evaluation summary of key criteria is shown in Table 4. Options 2b to 2e have the greatest likelihood to address the identified gaps and deficiencies since Option 2a (Do Nothing) does not provide adequate pedestrian or bicycle facilities. All options will fit within the existing right-of-way along the segment, but Options 2d and 2e will require the most significant widening.

Table 4: SR 500-NE Everett Street (NE 35th Avenue and SE Leadbetter Road)
Design Options Evaluation

Design Options	Fits in Existing Right-of-way	Improves Pedestrian and Bicycle Facilities	Improves Safety	Impact to Motor Vehicle Operations	Expected Cost
Option 2a					N/A
Option 2b					\$\$\$
Option 2c					\$\$\$
Option 2d					\$\$\$\$\$
Option 2e					\$\$\$\$\$

Segment 3: NW 6th Avenue between Norwood Street and Adams Street

The segment of NW 6th Avenue between Norwood Street and Adams Street includes four travel lanes and a sidewalk on the north side, and a sidewalk on the south side west of NW Ivy Street. It lacks adequate bicycle facilities. This segment has several driveway and street connections to NW 6th Avenue and lacks a center turn lane for decelerating left turning vehicles to move out of the path of through traffic. Keeping those vehicles out of the mainline could prevent rear-end collisions. This segment has bus stops on both sides and there is at least 80 feet of right-of-way. Four design options were evaluated along this segment.

Option 3a: Do Nothing

NW 6th Avenue would retain four travel lanes with a roadway adjacent sidewalk and no bike facilities.



Option 3a: Do Nothing

Option 3b: Widen to five lanes, with a sidewalk and bike lanes

NW 6th Avenue would be widened to provide five lanes (two travel lanes in each direction and a center turn lane), in addition to bike lanes and a sidewalk. The segment would include a buffer and sidewalk on only the north side. This option would not fit within existing buildable right-of-way due to slopes on the south side and could impact adjacent development to the north side. The addition of a center-turn lane would provide a safety benefit.



Option 3b: Widen to five lanes, with a sidewalk and bike lanes

Option 3c: Reconfigure to three lanes and bike lanes

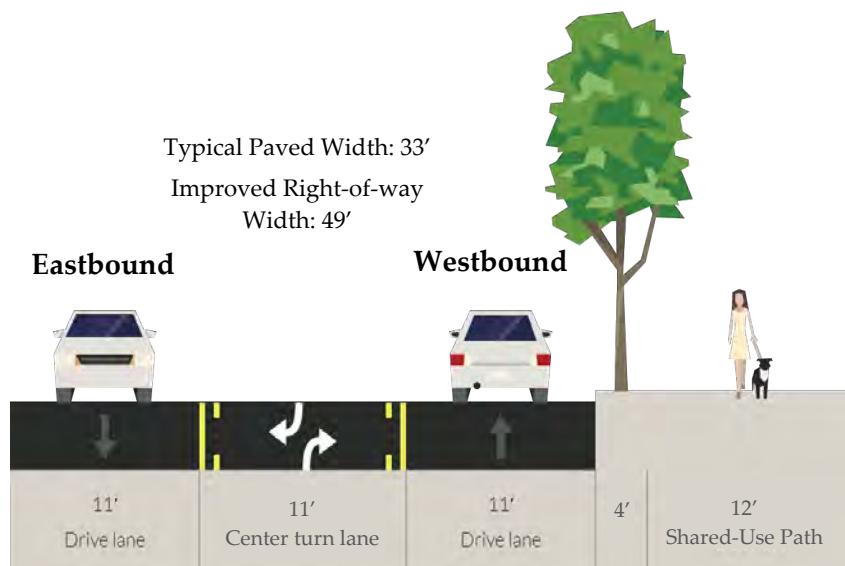
NW 6th Avenue would drop one travel lane in each direction and add bike lanes. The segment would include the existing sidewalks. The elimination of travel lanes for motor vehicles would increase congestion somewhat; however, future traffic demand on this segment is below the capacity of a three-lane roadway, and the resulting operation would be similar to the three-lane section of NW 6th Avenue near Norwood Street. This option would eliminate the existing motor vehicle passing opportunities along NW 6th Avenue. The addition of a center-turn lane would provide a safety benefit. This option fits within the existing right-of-way and would require no widening.



Option 3c: Reconfigure to three lanes and bike lanes

Option 3d: Reconfigure to three lanes and an adjacent shared-use path

NW 6th Avenue would drop one travel lane in each direction. The segment would include a shared-use path on the north side. A buffer would be between the roadway and shared-use path. The elimination of travel lanes for motor vehicles could increase congestion somewhat; however, future traffic demand on this segment is below the capacity of a three-lane roadway, and the resulting operation would be similar to the three-lane section of NW 6th Avenue near Norwood Street. This option would

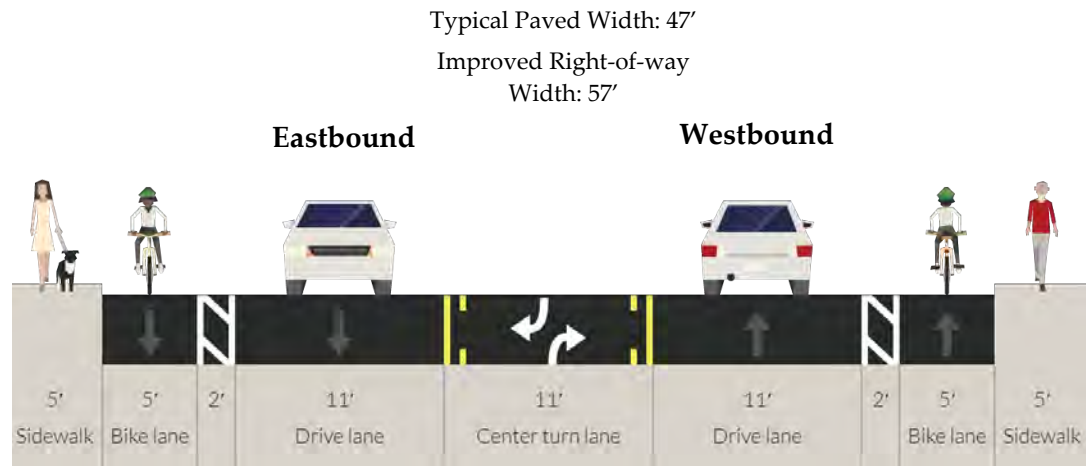


Option 3d: Reconfigure to three lanes and a shared-use path

eliminate the existing motor vehicle passing opportunities along NW 6th Avenue. The addition of a center-turn lane would provide a safety benefit. This option fits within the existing right-of-way and would require no roadway widening but would require reconstruction on the north side to include a buffer and shared-use path.

Option 3e: Reconfigure to three lanes with buffered bike lanes and a sidewalk on both sides

NW 6th Avenue would drop one travel lane in each direction. The segment would include bike lanes and striped buffers between the bike lane and travel lane, and sidewalks on both sides of the street. The



Option 3e: Reconfigure to three lanes with buffered bike lanes and a sidewalk on both sides

elimination of travel lanes for motor vehicles could increase congestion somewhat; however, future traffic demand on this segment is below the capacity of a three-lane roadway, and the resulting operation would be similar to the three-lane section of NW 6th Avenue near Norwood Street. This option would eliminate the existing motor vehicle passing opportunities along NW 6th Avenue. The addition of a center-turn lane would provide a safety benefit. This option fits within the existing right-of-way and would but require roadway widening and a retaining wall on the south side.

Evaluation of Design Options: The evaluation summary of key criteria is shown in Table 5. Options 3c, 3d and 3e have the greatest likelihood to address the identified gaps and deficiencies along the segment. Option 3a (Do Nothing) does not provide adequate bicycle facilities or improve safety along the segment. Options 3b and 3e will require the most significant widening and will not fit within existing buildable right-of-way. Options 3c and 3d can fit within existing paved roadway width but will eliminate travel lanes to accommodate the center turn lane and pedestrian and bicycle facilities.

Table 5: NW 6th Avenue Design Options Evaluation

Design Options	Fits in Existing Right-of-way	Improves Pedestrian and Bicycle Facilities	Improves Safety	Impact to Motor Vehicle Operations	Expected Cost
Option 3a					N/A
Option 3b					\$\$\$\$\$
Option 3c					\$
Option 3d					\$\$\$
Option 3e					\$\$\$\$

Segment 4: NE 3rd Avenue between NE Garfield Street and SE Crown Road

The segment of NE 3rd Avenue between NE Garfield Street and SE Crown Road generally includes four travel lanes and roadway adjacent sidewalks (the street section along this segment varies some). It lacks adequate bicycle facilities. This segment has several driveway and street connections to NE 3rd Avenue and lacks a center turn lane for decelerating left turning vehicles to move out of the path of through traffic. Keeping those vehicles out of the through travel lane could prevent rear-end collisions. There is about 70 feet of right-of-way along this segment. Three design options were evaluated.

Option 4a: Do Nothing

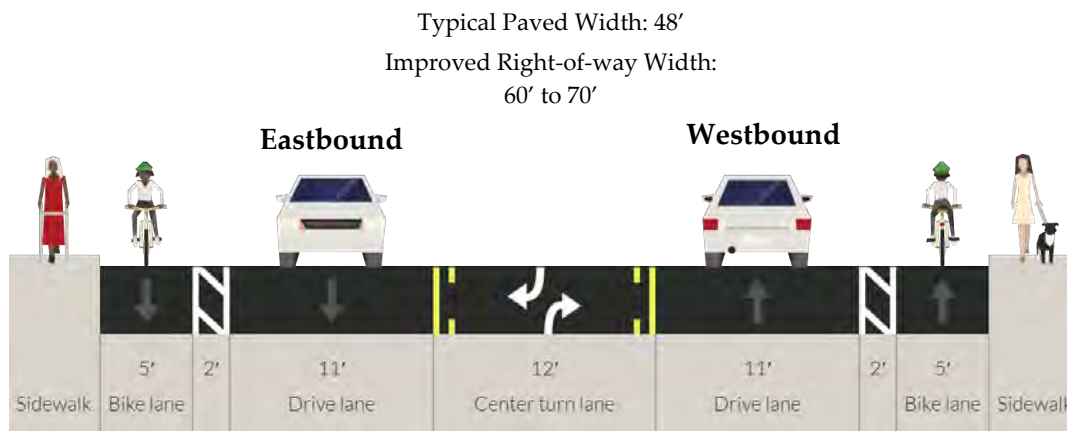
NE 3rd Avenue would retain four travel lanes with roadway adjacent sidewalks and no bike facilities.



Option 4a: Do Nothing

Option 4b: Reconfigure to three lanes, buffered bike lanes and wider sidewalks

NE 3rd Avenue would drop one travel lane in each direction and add bike lanes and striped buffers between the bike lane and travel lane. The existing sidewalks would be widened. The elimination of travel lanes for motor vehicles could increase congestion somewhat; however, future traffic demand for this segment is below the capacity of a three-lane roadway, and the resulting congestion would be similar to the three-lane section east of SE Lechner Street. The addition of a center-turn lane would provide a safety benefit.



Option 4b: Reconfigure to three lanes, buffered bike lanes and wider sidewalks

Option 4c: Reconfigure to two lanes with bike lanes, parking and wider sidewalks

NE 3rd Avenue would drop one travel lane in each direction and add bike lanes and on-street parking. The existing sidewalks would be widened. The elimination of travel lanes for motor vehicles could increase congestion somewhat; however, future traffic demand on this segment is below the capacity of a two-lane roadway, and the resulting congestion would be similar to the two-lane section west of NE Dallas Street.



Option 4c: Reconfigure to two lanes, with bike lanes, parking and wider sidewalks

Evaluation of Design Options: The evaluation summary of key criteria is shown in Table 6. Options 4b and 4c have the greatest likelihood to address the identified gaps and deficiencies along the segment. Option 4a (Do Nothing) does not provide adequate bicycle facilities or improve safety along the segment. Options 4b and 4c can fit within the existing paved roadway width but will eliminate travel lanes to accommodate the center turn lane and bicycle facilities.

Table 6: NE 3rd Avenue (NE Dallas Street to SE Crown Road) Design Options Evaluation

Design Options	Fits in Existing Right-of-way	Improves Pedestrian and Bicycle Facilities	Improves Safety	Impact to Motor Vehicle Operations	Expected Cost
Option 4a					N/A
Option 4b					\$
Option 4c					\$

Segment 5: NE 3rd Avenue between SE Crown Road and SE Lechner Street

The segment of NE 3rd Avenue between SE Crown Road and SE Lechner Street includes four to five travel lanes and roadway adjacent sidewalks. It lacks adequate bicycle facilities. There were several pedestrian and bicycle involved collisions along this segment over the previous five years. There is at least 90 feet of right-of-way along this segment. Three design options were evaluated.

Option 5a: Do Nothing

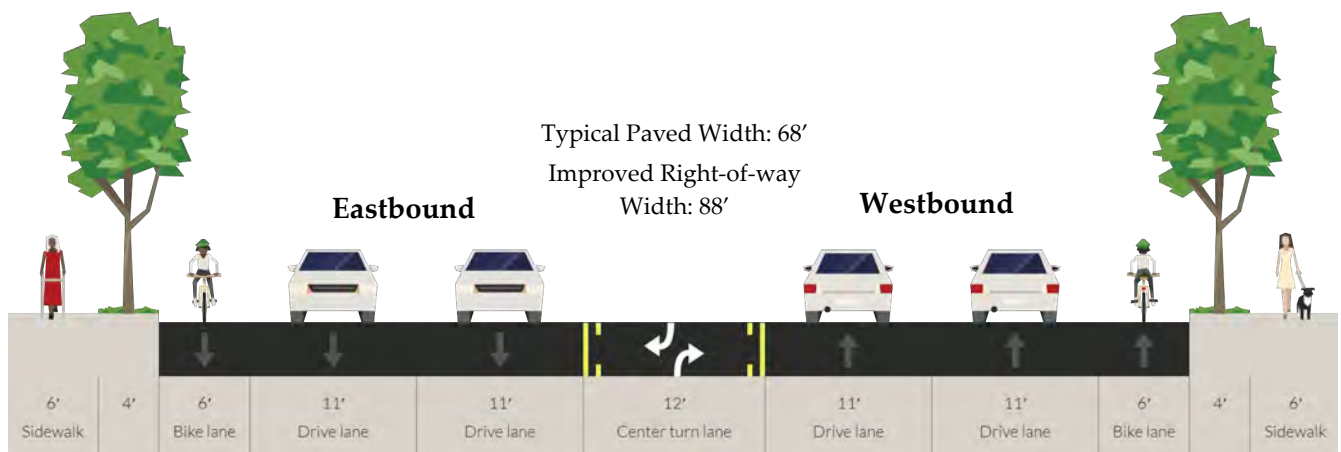
NE 3rd Avenue would retain four to five travel lanes with roadway adjacent sidewalks and no bike facilities. The existing five-lane section is shown below.



Option 5a: Do Nothing

Option 5b: Widen to five lanes, with sidewalks and bike lanes

NE 3rd Avenue would be widened to provide five lanes (two travel lanes in each direction and a center turn lane), in addition to the bike lanes. The segment would include a buffer and sidewalk on



Option 5b: Widen to five lanes, with sidewalks and bike lanes

both sides. This option would fit within existing buildable right-of-way, but would require significant widening and could impact adjacent development.

Option 5c: Reconfigure to three lanes and buffered bike lanes

NE 3rd Avenue would drop one travel lane in each direction and add bike lanes and striped buffers between the bike lane and travel lane. No changes would be made to the existing sidewalks along the four lane segments. However, they would be reconstructed along the five-lane segment to include wider sidewalks and a buffer. The elimination of travel lanes for motor vehicles could increase congestion somewhat; however, future traffic demand on this segment is below the capacity of a three-lane roadway, and the resulting congestion would be similar to the three-lane section east of SE Lechner Street.



Option 5c: Reconfigure to three lanes and buffered bike lanes

Evaluation of Design Options: The evaluation summary of key criteria is shown in Table 7. Options 5b and 5c have the greatest likelihood to address the identified gaps and deficiencies along the segment. Option 5a (Do Nothing) does not provide adequate bicycle facilities or improve safety along the segment. Option 5c can fit within the existing paved roadway width but will eliminate travel lanes to accommodate the center turn lane and bicycle facilities. Option 5b does not improve safety as much as Option 5c due to the width of the roadway creating longer crossings for pedestrians and bicyclists.

Table 7: NE 3rd Avenue (SE Crown Road and SE Lechner Street) Design Options Evaluation

Design Options	Fits in Existing Right-of-way	Improves Pedestrian and Bicycle Facilities	Improves Safety	Impact to Motor Vehicle Operations	Expected Cost
Option 5a					N/A
Option 5b					\$\$\$\$\$
Option 5c					\$

Safety Needs

A few locations were identified in Technical Memorandum #2 as high collision locations. With growing traffic volumes, these problematic areas likely will persist, and may even become progressively worse. There are no additional safety needs identified for future conditions other than those previously identified in Technical Memorandum #2.

Freight Needs

With growing traffic volumes from existing conditions, 17 intersections along Washington State Freight corridors would not meet their respective mobility targets during the 2040 design hour conditions.

Other Needs

Technical Memorandum #2 identified existing transit, bridge, rail and air needs. There are no additional needs identified for future conditions other than those previously identified in Technical Memorandum #2.

Next Steps

The system needs identified in this memorandum will be revised based on input received from City staff and the Transportation Plan Project Advisory Committee to develop a preliminary project list in Technical Memo 5 – Solutions Identification and Evaluation.

**APPENDIX E. RECOMMENDED TRANSPORTATION
STANDARDS**



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MEMORANDUM

DATE: May 15, 2024

TO: Curleigh Carothers, City of Camas
Steve Wall, City of Camas

FROM: Reah Flisakowski, DKS Associates
Kevin Chewuk, DKS Associates

SUBJECT: Camas Transportation Plan
Technical Memo 4 – Recommended Transportation Standards

P18039-000

This document provides an overview of the transportation system standards recommended for adoption as part of the Transportation Plan for Camas. Included is a detail of the roadway functional classification system, typical designs for roadways and shared use paths, special route designations, access spacing and mobility standards, and guidance for Traffic Impact Analysis requirements. Together, these standards will help ensure future facilities are designed appropriately and that all facilities are managed to serve their intended purpose.

Multi-Modal Street System

Traditional roadway designs focus on the safety and flow of motor vehicle traffic. The one size fits all design approach is less effective at integrating the roadway with the character of the surrounding area and addressing the needs of other users of a roadway. For instance, the design of an arterial roadway through a commercial area has often traditionally been the same as one through a residential neighborhood, both primarily focused on the movement of motor vehicles.

In Camas, all roadways are proposed to be multi-modal or “complete streets”, with each street serving the needs of the various travel modes. Streets in the city will not all be designed the same. It is recommended that Camas classify the street system into a hierarchy organized by functional classification and street type (representative of their places). These classifications ensure that the streets reflect the neighborhood through which they pass, consisting of a scale and design appropriate to the character of the abutting properties and land uses. The classifications also provide for and balance the needs of all travel modes including pedestrians, bicyclists, transit riders, motor vehicles and freight. Within these street classifications, context sensitive design may result in alternative cross-sections.

Functional Classification

Traditionally, roadways are classified based on the type of vehicular travel they are intended to serve (local versus through traffic). In Camas, the functional classification of a roadway (shown in Figure 1) is recommended to determine the level of mobility for all travel modes, level of access, and use. The roadway functional classification system recognizes that individual roadways do not act independently, but instead form a network that serves travel needs on a local and regional level. From highest to lowest intended use, the recommended classifications are freeway, arterial, collector and local streets. Streets with higher intended usage generally limit access to adjacent property in favor of more efficient motor vehicle traffic movement (i.e., mobility). Local roadways with lower intended usage have more driveway access and intersections, and generally accommodate shorter trips to nearby destinations.

Functional Classification Designations

Table 1 shows the recommended changes to the existing functional classifications of roadways in Camas to better reflect their intended use. Since SR 14 serves regional travel through the city, it is recommended to be a freeway. Roadways providing primary access to SR 14 are recommended to be arterials. Roadways providing primary access to neighborhoods and activity generators in Camas are recommended to be collectors. All other roadways are recommended to be classified as local streets. The Camas Multi-Modal Street System map (Figure 1) shows the recommended designations of roadways within the Urban Growth Area (UGA) only; refer to the county plan for designations of other roadways outside of the UGA.

- **Freeways** serve as the main travel routes through the city and serve the highest volume of motor vehicle traffic. SR 14 is the only freeway in Camas. Freeways are generally for longer motor vehicle trips with limited local access. The posted speed limit on SR 14 is 60 miles per hour.
- **Arterials** connect many parts of the city and often serve traffic traveling to and from freeways. These roadways provide greater accessibility to neighborhoods, connect to major activity generators, and provide efficient through movement for local traffic. In Camas, portions of SR 500, NW Lake Road, NW Brady Road, NW Parker Street, NW 6th Avenue and NE 3rd Avenue are examples of arterials. Posted speeds on arterial streets in Camas typically range between 25 (in residential areas) and 50 miles per hour (in rural areas).
- **Collectors** connect neighborhoods to arterials. These streets serve as major neighborhood routes and generally provide more direct property access or driveways than arterial streets. In Camas, portions of Division Street, NW Forest Home Road, NW Fargo Street, and NW Sierra

Drive are examples of collector streets. Posted speeds on collector streets in Camas typically range between 25 and 35 miles per hour.

- **Local Streets** provide more direct access to residences without serving through travel in Camas. These roadways generally are lined with residences and are designed to serve lower volumes of traffic with a speed limit of 25 miles per hour.

Table 1: Recommended Functional Classification Changes

Roadway	From	To	Change from Prior Functional Classification*
N Shepherd Road	NE 3 rd Avenue	UGB	Upgrade from Local Street to Collector
NE 2 nd Avenue	NE 3 rd Avenue	NE Whitney Street	Upgrade from Local Street to Collector
NE 15 th Avenue	Division Street	NE Everett Street	Upgrade from Local Street to Collector
NE Dallas Street	NE 15 th Avenue	NE 6 th Avenue	Upgrade from Local Street to Collector
NE Goodwin Road	NW Friberg-Strunk Street	NW Alexandra Lane	Upgrade from Local Street to Arterial
NE Ingle Road	NE Goodwin Road	UGB	Upgrade from Collector to Arterial
NE Leadbetter Road	NE 9 th Street	NE Everett Street	Upgrade from Local Street to Arterial
NE Whitney Street	NE 2 nd Avenue	UGB	Upgrade from Local Street to Collector
NW 7 th Avenue	NW Ivy Street	NW Drake Street	Upgrade from Local Street to Collector
NW 12 th Avenue	NW Benton Street	Division Street	Upgrade from Local Street to Collector
NW 23 rd Avenue	NW Cascade Street	NW Astor Street	Downgrade from Collector to Local Street
NW 26 th Avenue	NW Julia Street	NW Maryland Street	Downgrade from Collector to Local Street
NW 28 th Avenue	NW Cascade Street	NW Sierra Street	Downgrade from Collector to Local Street
NW 29 th Avenue	NW Dahlia Drive	NW Valley Street	Downgrade from Collector to Local Street
NW 37 th Avenue	NW Endicott Street	NW Dahlia Drive	Downgrade from Collector to Local Street
NW Benton Street	NW Drake Street	NW 12 th Avenue	Upgrade from Local Street to Collector
NW Cascade Street	NW 18 th Avenue	NW 28 th Avenue	Downgrade from Collector to Local Street
NW Dahlia Drive	NW 38 th Avenue	NW 29 th Avenue	Downgrade from Collector to Local Street
NW Endicott Street	NW Pacific Rim Drive	NW 37 th Avenue	Downgrade from Collector to Local Street
NW Fremont Street	NW Grass Valley Drive	NW Leadbetter Drive	Downgrade from Collector to Local Street
NW Grass Valley Drive	NW Inglewood Street	NW Fremont Street	Downgrade from Collector to Local Street
NW Inglewood Street	NW 38 th Avenue	NW Grass Valley Drive	Downgrade from Collector to Local Street
NW Ivy Street	NW 6 th Avenue	NW 7 th Avenue	Downgrade from Collector to Local Street

Table 1: Recommended Functional Classification Changes

Roadway	From	To	Change from Prior Functional Classification*
NW Julia Street	NW Pacific Rim Drive	NW 26 th Avenue	Downgrade from Collector to Local Street
NW Logan Street	NW 6 th Avenue	NW 7 th Avenue	Upgrade from Local Street to Collector
NW Maryland Street	NW 26 th Avenue	Southern terminus	Downgrade from Collector to Local Street
NW Ogden Street	NW 16 th Avenue	Northern terminus	Downgrade from Collector to Local Street
NW Pacific Rim Drive	NW Parker Street	NW Endicott Street	Downgrade from Collector to Local Street
NW Utah Street	NW Valley Street	NW 28 th Avenue	Downgrade from Collector to Local Street
NW Valley Street	NW 29 th Avenue	NW Utah Street	Downgrade from Collector to Local Street
SE 23 rd Street	SE 283 rd Avenue	UGB	Upgrade from Collector to Arterial
SE Lechner Street	NE 3 rd Avenue	UGB	Upgrade from Local Street to Collector

* Existing functional classifications as shown in the Camas Transportation Comprehensive Plan Map

The Washington State Department of Transportation (WSDOT), Federal Government, and the Southwest Washington Regional Transportation Council (RTC) also classify roadways in Camas. Within Camas, SR 14 is classified by WSDOT as a Highway of Statewide Significance (HSS)¹, and SR 500 is classified as a non-HSS facility.

The federal government also has a functional classification system that is used to determine federal aid funding eligibility. Roadways federally designated as a major collector, minor arterial, principal arterial, or interstate are eligible for federal aid. Camas' functional classification system uses the similar designations as the federal government (e.g., a city designated arterial is intended to be the same as a federally designated minor arterial and a city designated collector is intended to be the same as a federally designated major collector). Future updates to the federal functional classification system should incorporate the designations reflected in the Transportation Plan along city roadways.

RTC has identified several streets in Camas as part of the regional transportation system in the Regional Transportation Plan for Clark County, including SR 14, SR 500, Lake Road - SE 1st Street, Parker Street, Pacific Rim Boulevard - 34th Street, NW 38th Avenue – SE 20th Street, NW 6th Avenue, and NE 3rd Avenue.

¹ Highways of Statewide Significance, WSDOT, <http://www.wsdot.wa.gov/planning/HSS/>

Multi-Modal Street Type

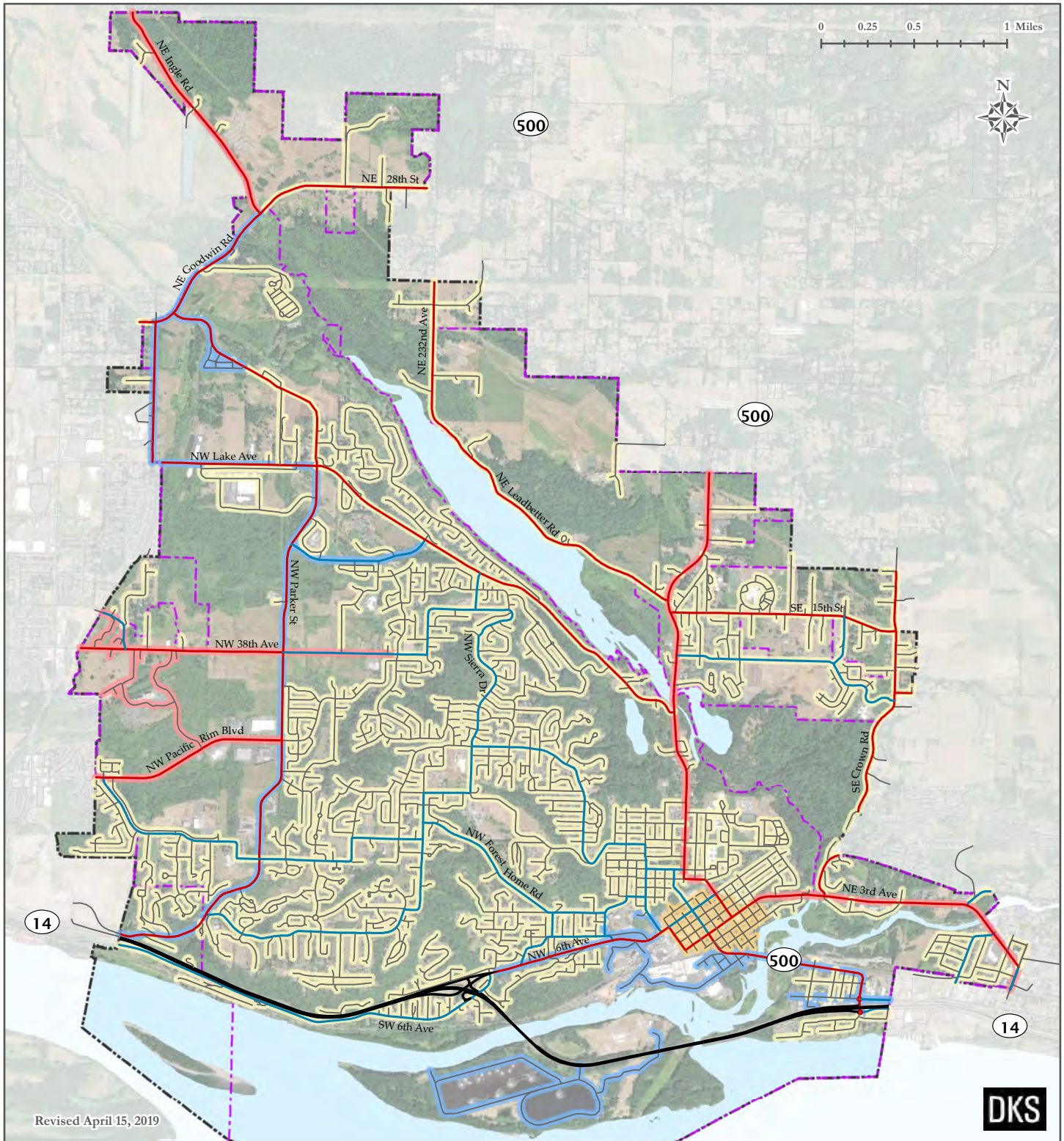
It is recommended that Camas further classify the roadways within the city based on the neighborhood it serves and the intended function for pedestrians, bicyclists and transit riders in that specific area. Within the context of Camas' recommended "complete street" system that serves all modes, the street type of a roadway defines its cross-section characteristics and determines how users of a roadway interact with the surrounding land use. Since the type and intensity of adjacent land uses and zoning directly influence the level of use by pedestrians, bicyclists and transit riders, the design of a street (including its intersections, sidewalks, and transit stops) should reflect its surroundings.

The street types attempt to strike a balance between street functional classification, adjacent land use, zoning designation and the competing travel needs by prioritizing various design elements. Four street types are recommended and described below for Camas:

- **Mixed-Use Streets** typically have a higher amount of pedestrian activity and are often on a transit route. These streets should emphasize a variety of travel choices such as pedestrian, bicycle and transit use to complement the development along the street. Since mixed-use streets typically serve pedestrian oriented land uses, walking should receive the highest priority of all the travel modes. They should be designed with features such as wider sidewalks, pedestrian amenities, transit amenities, attractive landscaping, on-street parking, pedestrian crossing enhancements and bicycle lanes.
- **Residential Streets** are generally surrounded by residential uses, although various small shops may be embedded within the neighborhood. These streets often connect neighborhoods to local parks, schools and mixed-use areas. They should be designed to emphasize walking, while still accommodating the needs of bicyclists and motor vehicles. A high priority should be given to design elements such as traffic calming, landscaped buffers, walkways/pathways/trails, on-street parking and pedestrian safety enhancements.
- **Commercial Streets** are primarily lined with retail and large employment complexes. These uses serve customers throughout the city and region and may not have a direct relationship with nearby residential neighborhoods. These streets are somewhat more auto-oriented but should still accommodate pedestrians and bicyclists safely and comfortably. Design features should include landscaped medians or a two-way left turn lane, sidewalks and bike lanes, pedestrian crossing enhancements and a buffer between the roadway and the sidewalk. On-street parking should be discouraged.
- **Industrial Streets** serve industrial areas. These streets are designed to accommodate a high volume of large vehicles such as trucks, trailers and other delivery vehicles. Pedestrians and

bicyclists may be less frequent in these areas but should still be accommodated safely and comfortably. Roadway widths are typically wider to accommodate larger vehicles. On-street parking should be discouraged.

The Camas Multi-Modal Street System map (Figure 1) shows the recommended street types of roadways within the UGA.

**Legend:****Functional Classification:**

- Freeway
- Arterial
- Collector
- Local Street

Street Type:

- Mixed-Use
- Residential
- Commercial
- Industrial

- Urban Growth Area
- Camas City Limit

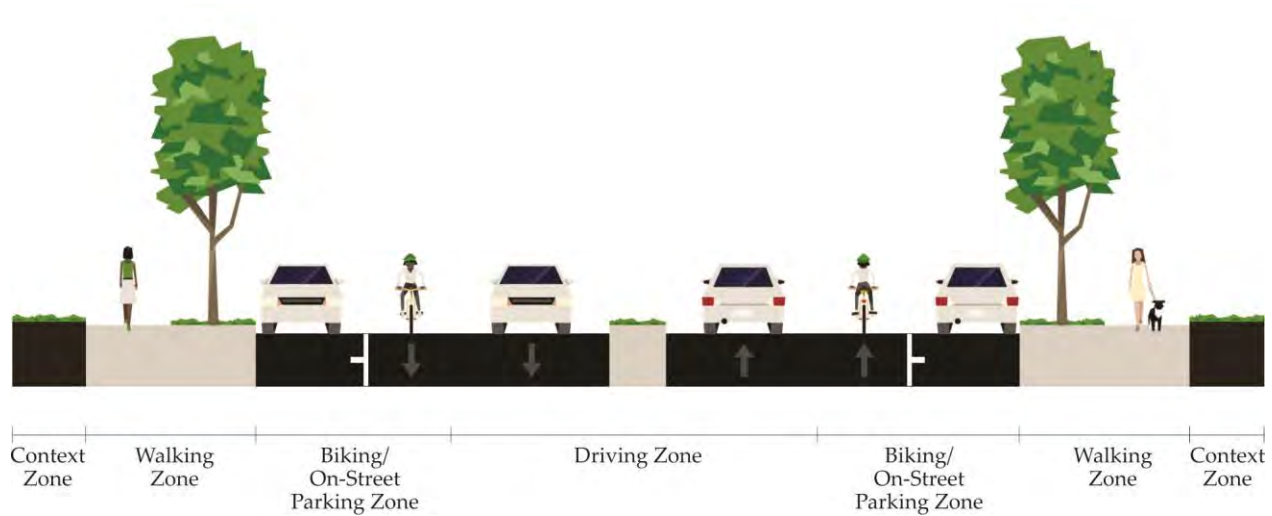
Design Types of Streets

The recommended design of the streets in Camas requires attention to many elements of the public right-of-way and considers how the street interacts with the adjoining properties. The four zones that are recommended to comprise the cross-section of streets in Camas, include the context zone, walking zone, biking/on-street parking zone and driving zone, are shown in Figure 2.

- **Context Zone:** The context zone is the point at which the sidewalk interacts with the adjacent buildings or private property. The purpose of this zone is to provide a buffer between land use adjacent to the street and to ensure that all street users have safe interactions. This zone is typically outside of the public right-of-way.
- **Walking Zone:** This is the zone in which pedestrians travel. The walking zone is determined by the street type and should be a high priority in mixed-use and residential areas. It includes a minimum six-foot clear throughway for walking, an area for street furnishings or landscaping (e.g. benches, transit stops and/or plantings) and a clearance distance between curbside on-street parking and the street furnishing area or landscape strip (so parking vehicles or opening doors do not interfere with street furnishings and/or landscaping). Streets located along a transit route should incorporate furnishings to support transit ridership, such as transit shelters and benches, into the furnishings/landscape strip adjacent to the biking/on-street parking zone.
- **Biking/On-Street Parking Zone:** This is the zone for biking and on-street parking and is the location where users will access transit. It should include minimum 6-foot bike lanes. The biking/on-street parking zone is determined by the street type and in some cases the functional classification and should be a high priority in mixed-use and residential areas. Mixed use and residential areas should include a minimum 6-foot striped bike lane with on-street parking. Streets in commercial or industrial areas should include minimum 6-foot bike lanes, with no on-street parking.
- **Driving Zone:** This is the throughway zone for drivers, including cars, buses and trucks and should be a high priority in commercial/employment and industrial areas. The functional classification of the street generally determines the number of through lanes, lane widths, and median and left-turn lane requirements. However, the route designations (such as transit street or freight route) take precedence when determining the appropriate lane width in spite of the functional classification. Wider lanes (between 13 to 14 feet) should only be used for short distances as needed to help buses and trucks negotiate right-turns without encroaching into adjacent or opposing travel lanes. Streets that require a raised median should include a minimum 6-foot-wide pedestrian refuge at marked crossings. Otherwise, the median can be

reduced to a minimum of 4 feet at midblock locations, before widening at intersections for left-turn lanes (where required or needed).

Figure 2: Components of Camas Streets



The design of these zones varies based on the functional classification and street type. Overall, there are 12 different design types recommended for streets, ranging from mixed-use arterial to industrial local street. Note that a design type is not available for limited access roadways classified as freeways (e.g., SR 14).

The typical roadway cross-section standards recommended for streets can be seen in Figures 3 through 5 and Tables 2 through 4. Arterial roadways are recommended to include buffered bike lanes (5-foot bike lane with a 2-foot buffer) since they have higher traffic volumes and speeds. Arterial roadways in mixed-used areas are recommended to include wider sidewalks (8 feet versus 6 feet in the current standard) to complement the street side environment. Those in mixed-use and residential areas are recommended to have narrower travel lanes (11 feet versus 12 feet in the current standard) to encourage slower travel speeds. Collector roadways are recommended to include narrower travel lanes (11 feet versus 12 feet in the current standard) in favor of wider bike lanes (6 feet versus 5 feet in the current standard). Local streets are recommended to include narrower travel lanes in favor of wider sidewalks (6 feet versus 5 feet in the current standard).

A center turn lane/median is recommended on arterial and collector streets in commercial and industrial areas since they have more trucks and turning maneuvers into driveways when compared to mixed-use and residential areas. Two lanes are recommended in mixed-use and residential areas to encourage narrow streets and a more pedestrian friendly environment. Parking is recommended to be allowed on mixed-use and residential streets, but not along commercial or industrial streets.

Narrower parking lanes are recommended on collector and local streets in residential areas (7 feet versus 8 feet in the current standard).

The Transportation Plan does not modify the design standards for SR 14, the city's only freeway.

Figure 3a: Mixed-Use Arterial

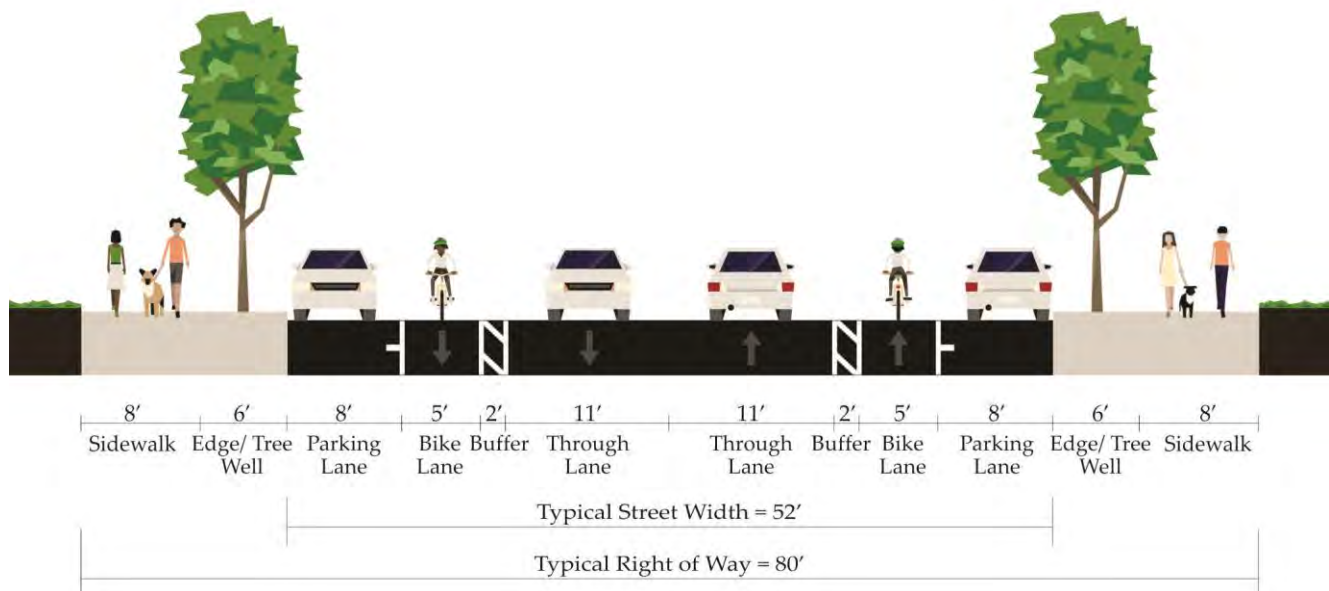


Figure 3b: Residential Arterial

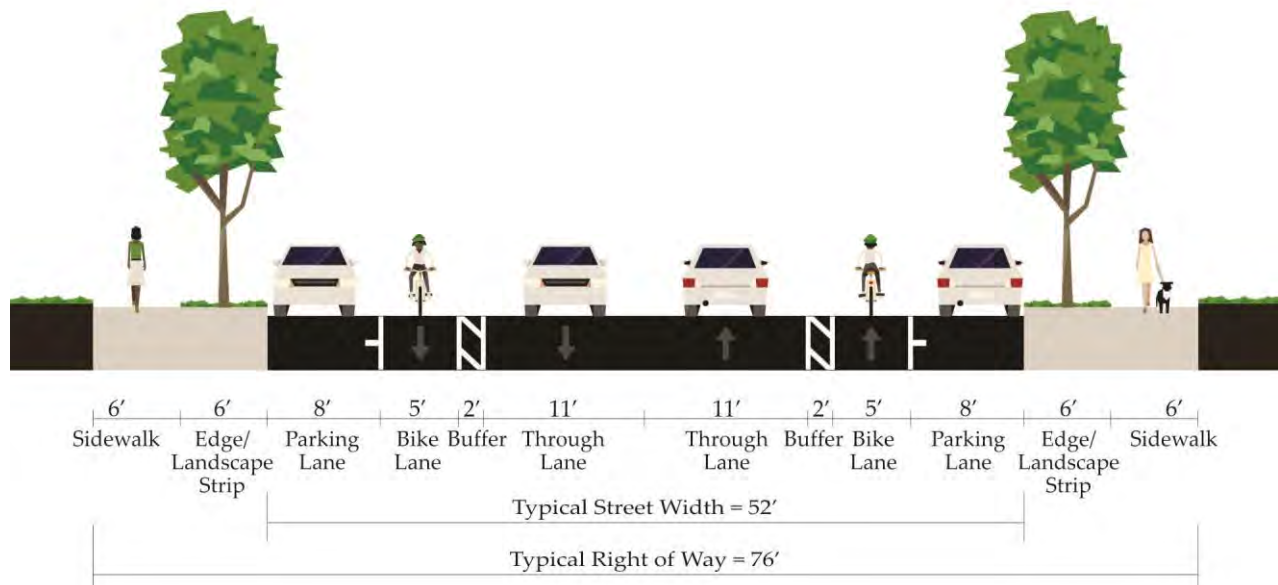


Figure 3c: Commercial Arterial

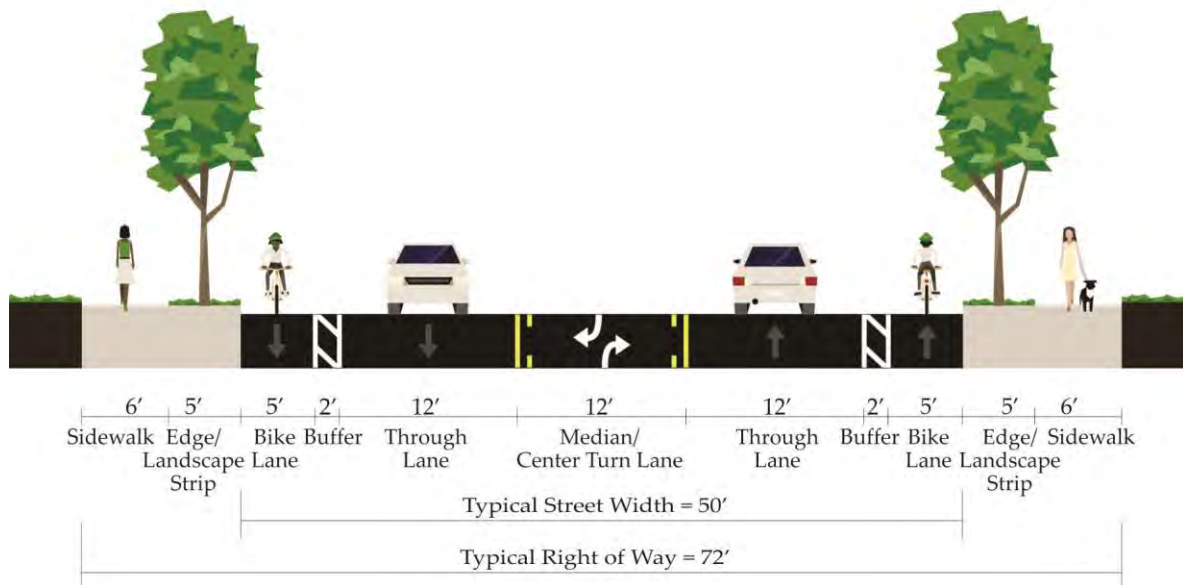


Figure 3d: Industrial Arterial

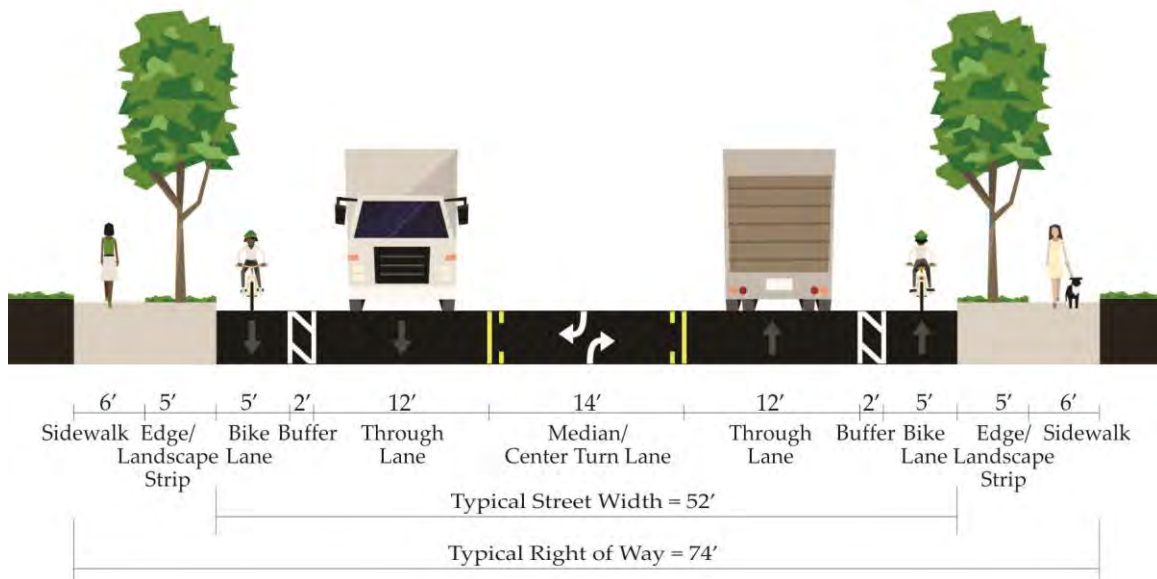


Table 2: Recommended Typical Roadway Cross-section Standards for Arterials

	Mixed-Use	Residential	Commercial	Industrial
Walking Zone				
Minimum Walkway Width	14 ft.	12 ft.	11 ft.	11 ft.
Walkway Type (throughway)	8 ft. sidewalk	6 ft. sidewalk	6 ft. sidewalk	6 ft. sidewalk
Minimum Furnishings/ Landscape Strip Width	4.5 ft. tree well	4.5 ft. landscape strip	4.5 ft. landscape strip	4.5 ft. landscape strip
Edge (Curb and Clearance between Furnishings/ Landscape Strip)	1.5 ft.	1.5 ft.	0.5 ft.	0.5 ft.
Biking / On-Street Parking Zone				
Biking Facility	7 ft. Buffered Bike Lanes (includes 2 ft. buffer)	7 ft. Buffered Bike Lanes (includes 2 ft. buffer)	7 ft. Buffered Bike Lanes (includes 2 ft. buffer)	7 ft. Buffered Bike Lanes (includes 2 ft. buffer)
Minimum On-Street Parking Width	8 ft.	8 ft.	None	None
Driving Zone				
Through Lanes	2	2	2 to 4	2 to 4
Minimum Lane Width	11 ft.	11 ft.	12 ft.	12 to 14 ft.
Median/ Turn Lane	Required 11 ft. left turn lane at intersections	Required 11 ft. left turn lane at intersections	Required 12 ft. median/ center turn lane	Required 14 ft. center turn lane
Street Width and Right of Way				
Typical Street Width	52 ft	52 ft	50 to 74 ft	52 to 76 ft
Typical Right of Way	80 ft.	76 ft.	72 to 96 ft.	74 to 98 ft.

Figure 4a: Mixed-Use Collector

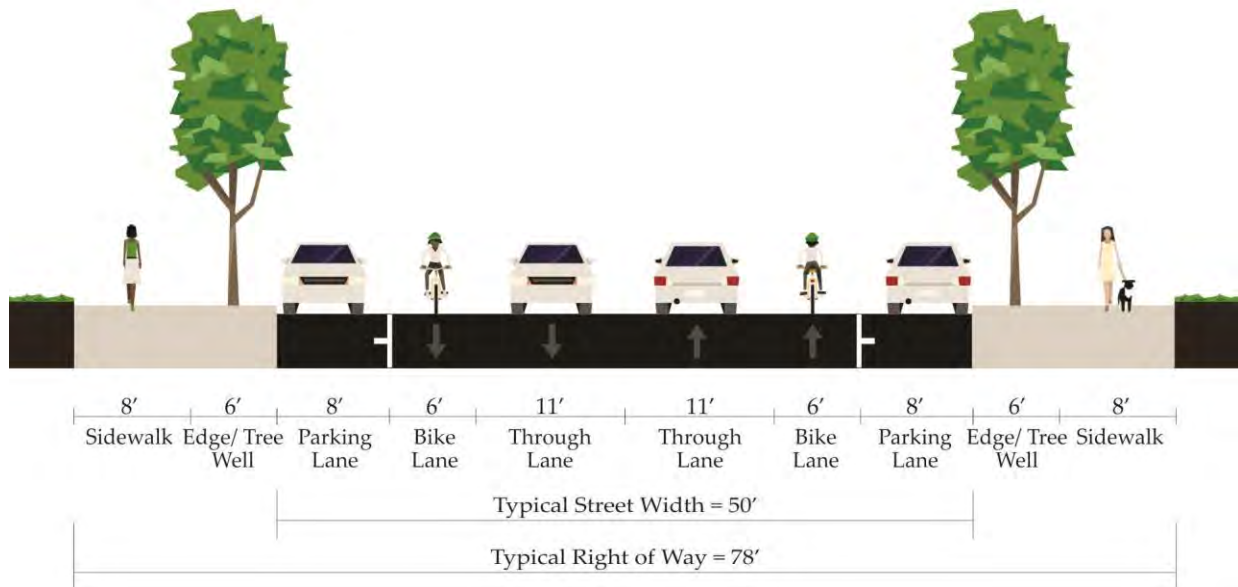


Figure 4b: Residential Collector

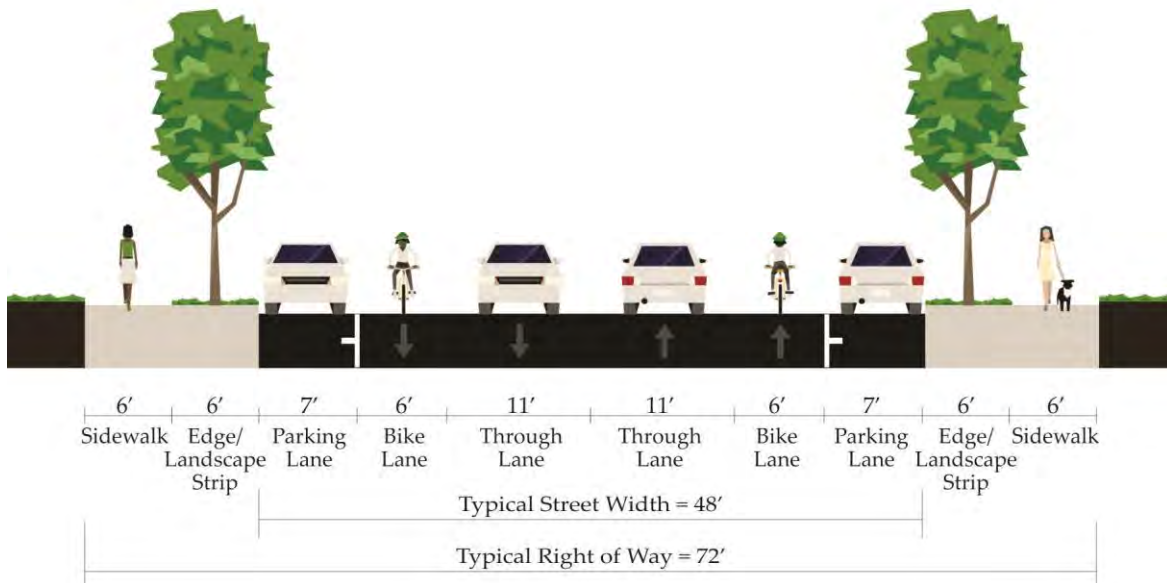


Figure 4c: Commercial Collector

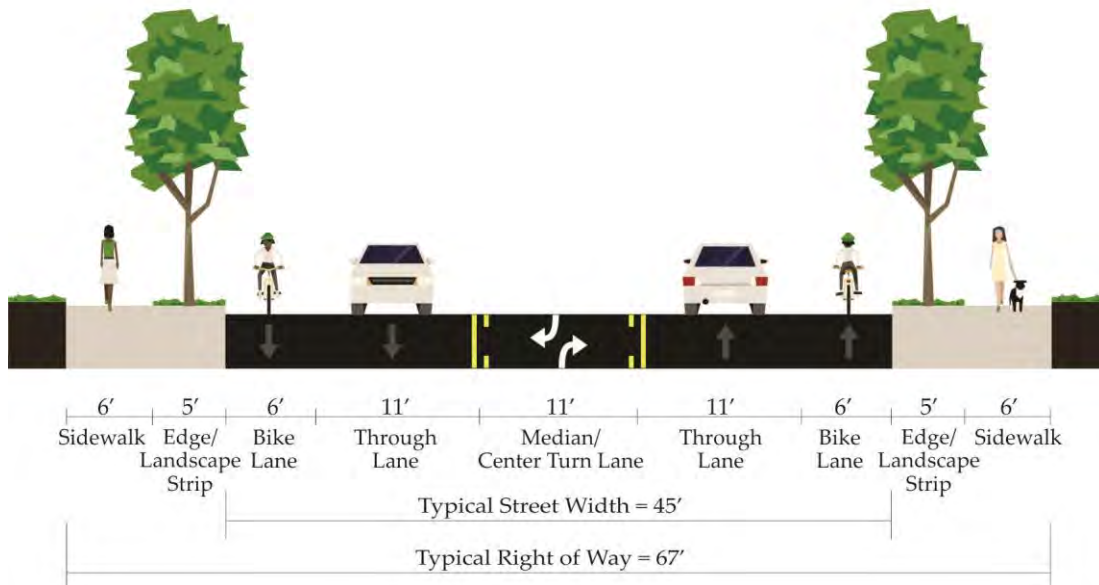


Figure 4d: Industrial Collector

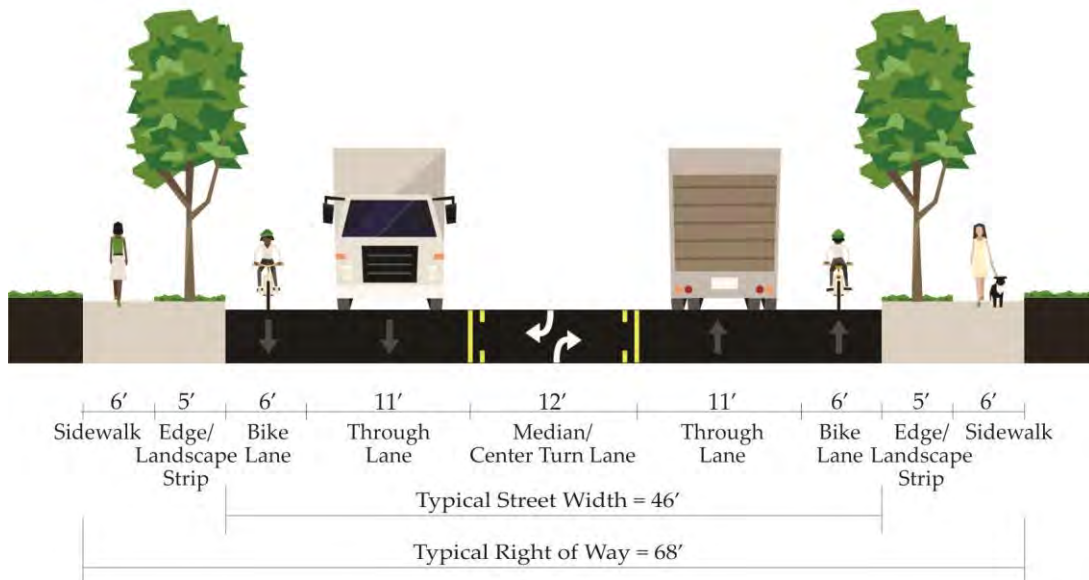


Table 3: Recommended Typical Roadway Cross-section Standards for Collectors

	Mixed-Use	Residential	Commercial	Industrial
Walking Zone				
Minimum Walkway Width	14 ft.	12 ft.	11 ft.	11 ft.
Walkway Type (throughway)	8 ft. sidewalk	6 ft. sidewalk	6 ft. sidewalk	6 ft. sidewalk
Minimum Furnishings/ Landscape Strip Width	4.5 ft. tree well	4.5 ft. landscape strip	4.5 ft. landscape strip	4.5 ft. landscape strip
Edge (Curb and Clearance between Furnishings/ Landscape Strip)	1.5 ft.	1.5 ft.	0.5 ft.	0.5 ft.
Biking / On-Street Parking Zone				
Biking Facility	6 ft. Bike Lanes	6 ft. Bike Lanes	6 ft. Bike Lanes	6 ft. Bike Lanes
Minimum On-Street Parking Width	8 ft.	7 ft.	None	None
Driving Zone				
Through Lanes	2	2	2	2
Minimum Lane Width	11 ft.	11 ft.	11 ft.	11 to 12 ft.
Median/ Turn Lane	None	None	Required 11 ft. left turn lane at intersections	Required 12 ft. center turn lane
Street Width and Right of Way				
Typical Street Width	50 ft	48 ft	45 ft	46 ft
Typical Right of Way	78 ft.	72 ft.	67 ft.	68 ft.

Figure 5a: Mixed-Use Local

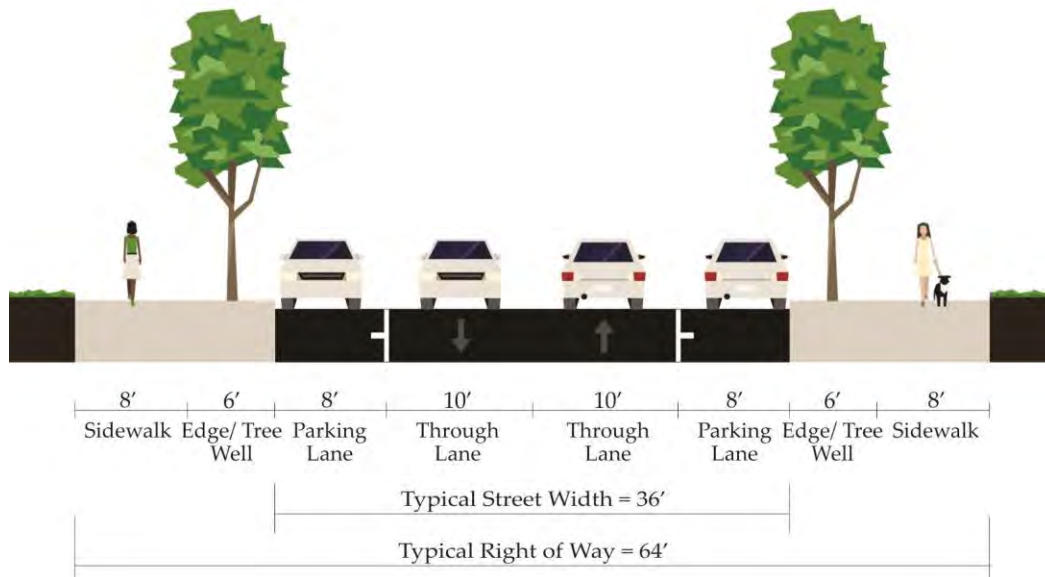


Figure 5b: Residential Local

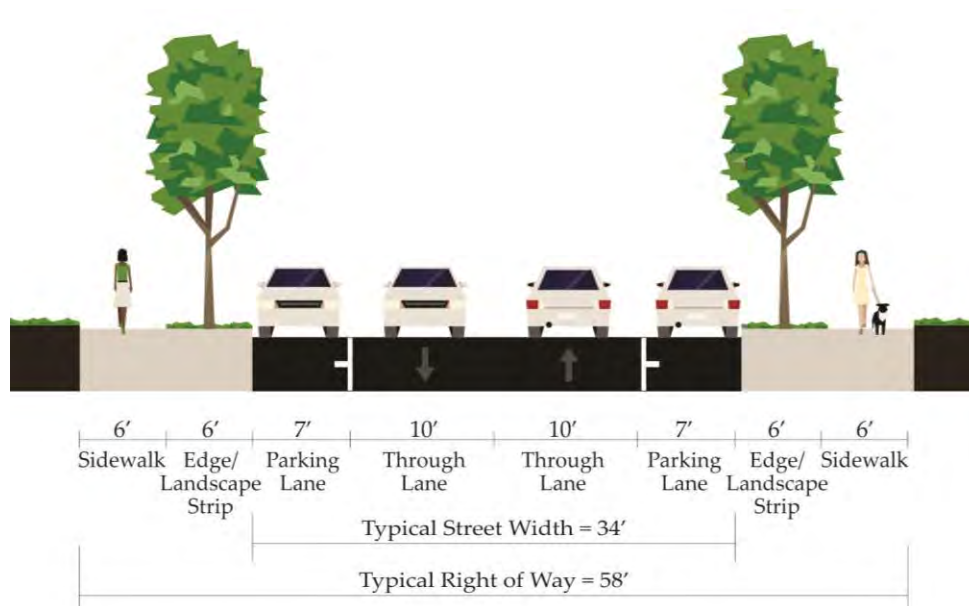


Figure 5c: Commercial Local

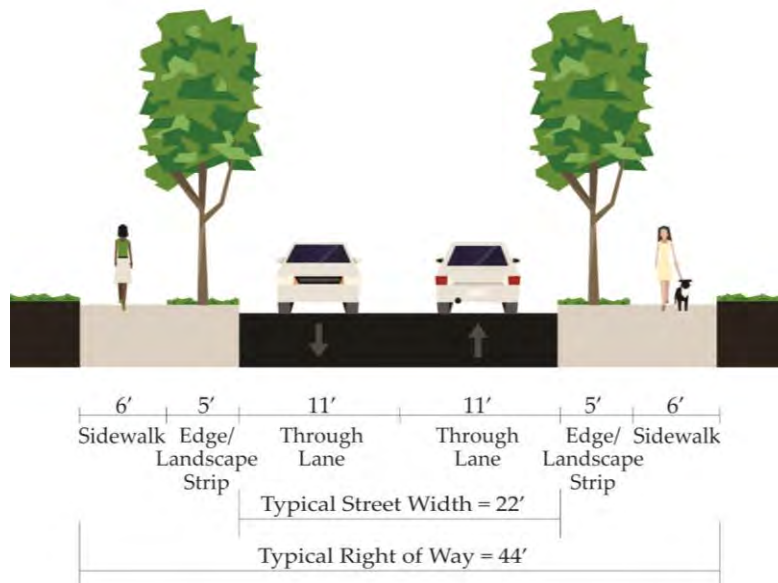


Figure 5d: Industrial Local

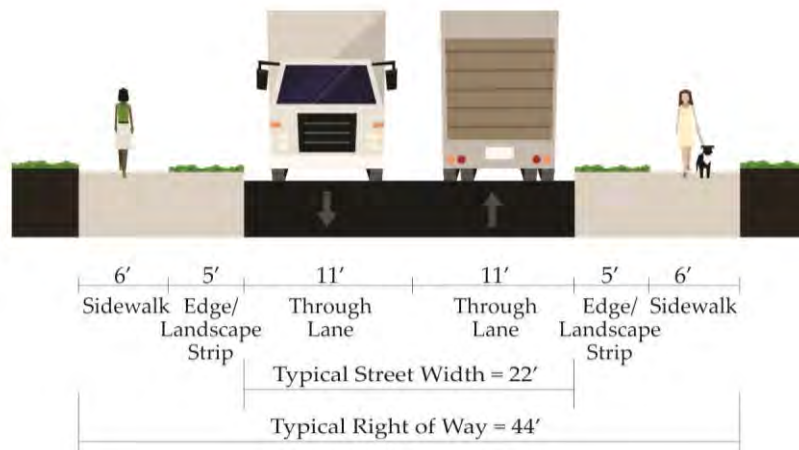


Table 4: Recommended Typical Roadway Cross-section Standards for Local Streets

	Mixed-Use	Residential	Commercial	Industrial
Walking Zone				
Minimum Walkway Width	14 ft.	12 ft.	11 ft.	11 ft.
Walkway Type (throughway)	8 ft. sidewalk	6 ft. sidewalk	6 ft. sidewalk	6 ft. sidewalk
Minimum Furnishings/ Landscape Strip Width	4.5 ft. tree well	4.5 ft. landscape strip	4.5 ft. landscape strip	4.5 ft. landscape strip
Edge (Curb and Clearance between Furnishings/ Landscape Strip)	1.5 ft.	1.5 ft.	0.5 ft.	0.5 ft.
Biking / On-Street Parking Zone				
Biking Facility	Shared Lanes	Shared Lanes	Shared Lanes	Shared Lanes
Minimum On-Street Parking Width	8 ft.	7 ft.	None	None
Driving Zone				
Through Lanes	2	2	2	2
Minimum Lane Width	10 ft.	10 ft.	11 ft.	11 to 12 ft.
Median/ Turn Lane	None	None	None	None
Street Width and Right of Way				
Typical Street Width	36 ft	34 ft	22 ft	22 ft
Typical Right of Way	64 ft.	58 ft.	44 ft.	44 ft.

Constrained Roadway Option

Constrained Streets are generally those where the construction may be challenging due to topography or environmentally sensitive, historic, or developed areas. These streets may require modified designs that may not be to scale with the adjacent land use to allow for reasonable construction costs.

Constrained elements may include narrower or limited travel lanes, and pedestrian and bicycle facilities, or accommodations that generally match those provided by the surrounding developed land uses. Recommended guidance for modifications to the standard designs is provided in Table 5. Any modification of a standard design requires approval of a deviation prior to construction.

Table 5: Recommended Constrained Roadway Options

	Arterials	Collectors	Local Streets
Walking Zone			
Minimum Walkway Width	9.5 ft.	8.5 ft.	8.5 ft.
Walkway Type (throughway)	6 ft. sidewalk	5 ft. sidewalk	5 ft. sidewalk
Minimum Furnishings/ Landscape Strip Width	3 ft.	3 ft.	3 ft.
Edge (Curb and Clearance between Furnishings/ Landscape Strip)	0.5 ft.	0.5 ft.	0.5 ft.
Biking / On-Street Parking Zone			
Biking Facility	6 ft. Bike Lanes	5 ft. Bike Lanes; or Bikeway on Adjacent Corridor	None
Minimum On-Street Parking Width	None	None	None
Driving Zone			
Through Lanes	2	2	2
Minimum Lane Width	11 ft.	10 ft.	10 ft.
Median/ Turn Lane	As Needed	As Needed	None

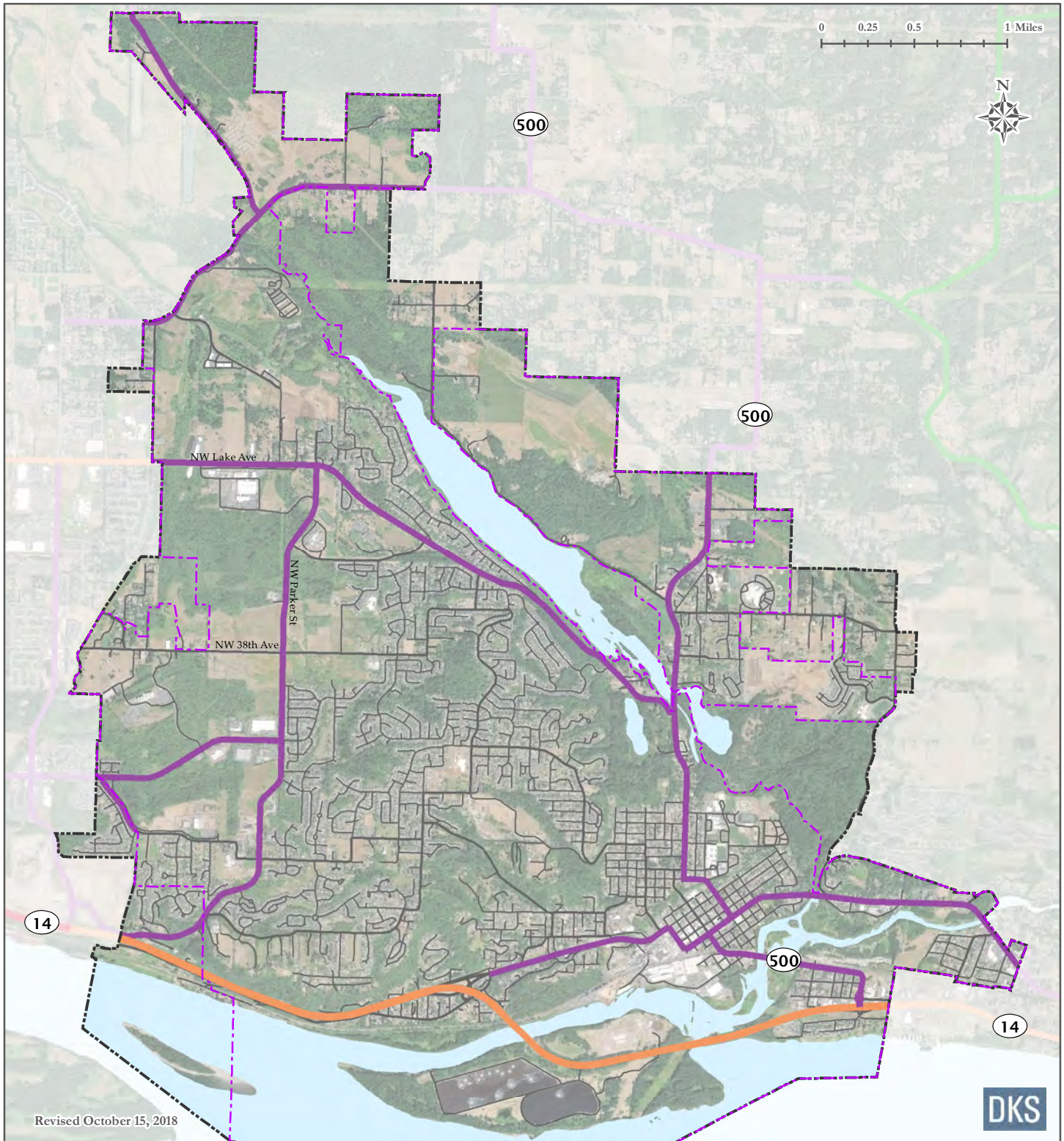
Freight and Truck Routes

Figure 6 shows roadways designated to help ensure trucks can efficiently travel through and access major destinations in Camas. These routes play a vital role in the economical movement of raw materials and finished products, while maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system.

The Washington State Freight and Goods Transportation System (FGTS) tonnage classification system identifies different categories of freight corridors based on annual freight tonnage moved. It defines tonnage thresholds and identifies heavily used truck freight corridors within the state. Washington State FGTS truck freight corridors are classified into five categories, T-1 through T-5, based on annual gross truck tonnage. The following corridors are identified in Camas (see Figure 2).

- **T-1:** more than 10 million tons per year. There are no T-1 corridors in Camas.
- **T-2:** 4 million to 10 million tons per year. SR 14 is the only T-2 corridor in Camas.
- **T-3:** 300,000 to 4 million tons per year. In Camas, portions of NW 6th Avenue, NE Adams Street, NE 3rd Avenue, SR 500, NW Lake Road, NW Parker Street, NW Brady Road, NW Pacific Rim Boulevard, NE Goodwin Road, NE 28th Street, and NE Ingle Road are T-3 corridors.
- **T-4:** 100,000 to 300,000 tons per year. There are no T-4 corridors in Camas.
- **T-5:** at least 20,000 tons in 60 days and less than 100,000 tons per year. There are no T-5 corridors in Camas.

The Transportation Plan has not changed the Washington FGTS designations.

**Legend:****Freight Corridors**

- T-2 Truck Freight Corridor
- T-3 Truck Freight Corridor

- Urban Growth Area
- Camas City Limit
- Arterial or Collector Street

Walking and Biking Design Standards

The following sections detail various walking and biking standards and treatment guidelines.

Walking and Biking Facilities

As shown in Figures 3 to 5, the existing city roadway design standards are recommended to be modified to require buffered bike lanes along arterial roadways and wider bike lanes along collector roadways. Local streets are also recommended to require wider sidewalks in mixed-use, residential and commercial areas. Newly constructed roadways are recommended to provide accommodations to walking users via a 8-foot sidewalk in mixed-use areas and a six-foot sidewalk in residential, commercial and industrial areas. Biking users are recommended to be accommodated with a five-foot bike lane with 2-foot buffer along arterial roadways and a six-foot bike lane along collector roadways. Shared streets for bikes are also recommended to be designated throughout the city and should include pavement markings/ signage.

Shared-Use Paths

Shared-use paths provide off-roadway facilities for walking and biking travel. Depending on their location, they can serve both recreational and transportation needs. Shared-use path designs vary in surface types and widths. Hard surfaces are generally better for bicycle travel. Widths need to provide ample space for both walking and biking and should be able to accommodate maintenance vehicles.

The design standards from the Camas Parks, Recreation and Open Space Comprehensive Plan (PROS) are recommended in the Transportation Plan. A paved regional shared-use path should be at least 12 feet wide (see Figure 7). A paved local shared-use path should be at least 10 feet wide in areas with significant walking or biking demand; otherwise, it should be a minimum 6 feet wide (see Figure 8).

Figure 7: Typical Design for Regional Shared-Use Paths

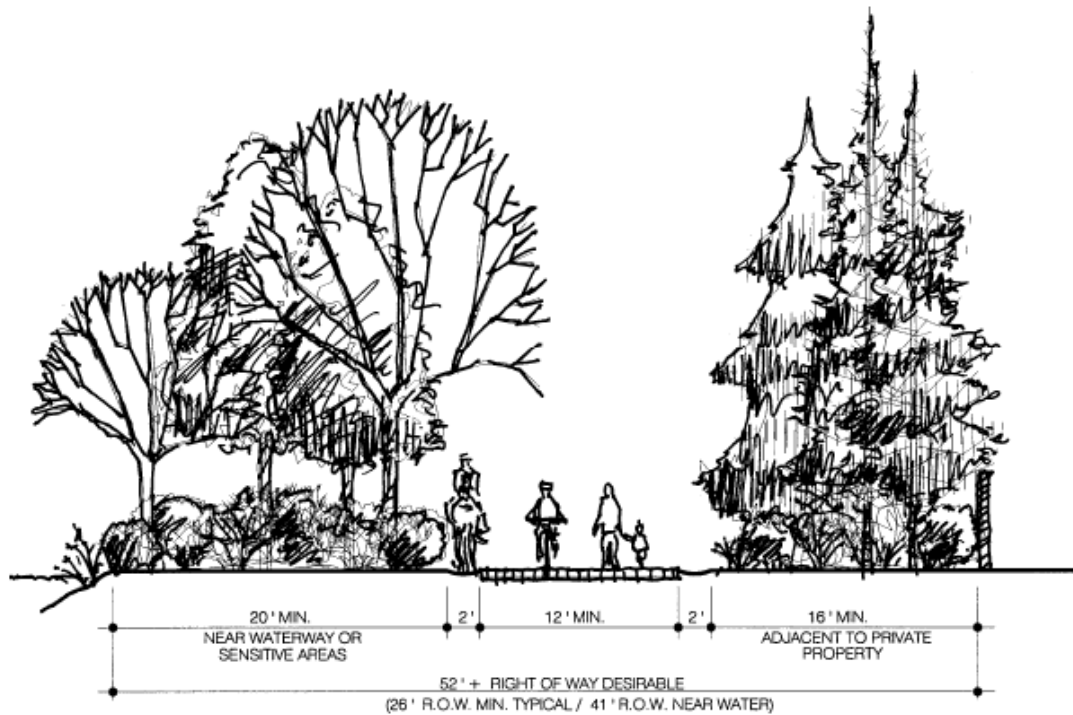
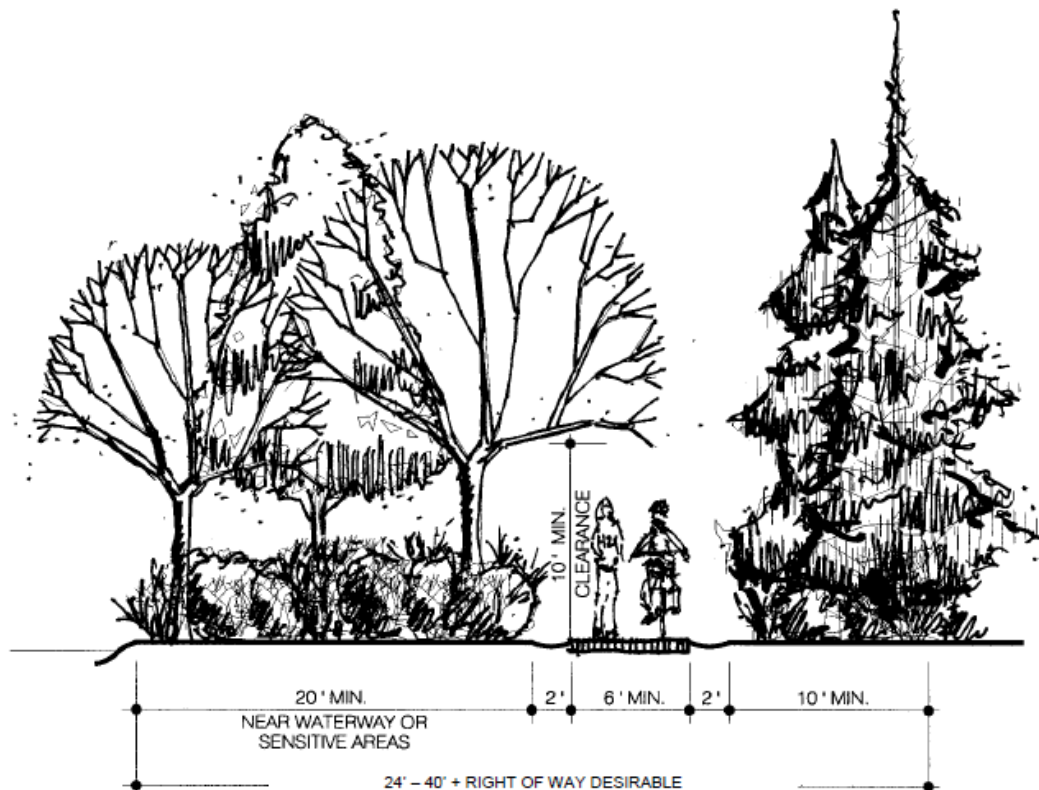


Figure 8: Typical Design for Local Shared-Use Paths



Street Crossings

Roadways with high traffic volumes and/or speeds in areas with nearby transit stops, residential uses, schools, parks, shopping and employment destinations generally require enhanced street crossings with treatments, such as marked crosswalks, high visibility crossings, and curb extensions to improve the safety and convenience. Crossings should be consistent with the recommended block spacing standards shown in Table 6 and mid-block pedestrian and bicycle accessways are recommended to be provided at spacing no more than 330 feet. Exceptions include where the connection is impractical due to topography, inadequate sight distance, high vehicle travel speeds, lack of supporting land use or other factors that may prevent safe crossing (as determined by the city).

Roadway and Access Spacing Standards

Access management is a broad set of techniques that balance the need to provide for efficient, safe, and timely travel with the ability to allow access to individual destinations. Appropriate access management standards and techniques can reduce congestion and accident rates and may lessen the need for construction of additional roadway capacity.

Table 6 identifies recommended maximum and minimum public roadway intersection, minimum private access, and maximum pedestrian and bicycle accessway spacing standards for roadways in Camas. The only recommended change is a new minimum spacing standard for right-in, right-out driveways from adjacent intersections. New roadways or redeveloping properties must comply with these standards to the extent practical, as determined by the city. As the opportunity arises through redevelopment, roadways not complying with these standards could improve with strategies such as shared access points, access restrictions (through the use of a median or channelization islands), or closure of unnecessary access points, as feasible.

Table 6: Roadway and Access Spacing Standards

	Arterials	Collectors	Local Streets
Maximum Block Size (Public Street to Public Street)	1,000 ft.	600 ft.	600 ft.
Minimum Block Size (Public Street to Public Street)	660 ft.	330 ft.	110 ft.
Minimum Driveway Spacing (Public Street to Driveway and Driveway to Driveway)	660 ft.**	330 ft.**	110 ft.
Minimum Full-access Driveway Setback from Intersection	300 ft.	110 ft.	n/a
Minimum Right-in, Right-out Driveway Setback from Intersection	150 ft.	55 ft.	n/a
Maximum Distance between Pedestrian/ Bicycle Accessways (Public Street to Public Street, Public Street to Accessway or Accessway to Accessway) *	330 ft.	330 ft.	330 ft.
Note: all distances measured from the edge of adjacent approaches.			
* Mid-block pedestrian and bicycle accessways on public easements or rights-of-way must be provided at spacing no more than 330 feet, unless the connection is impractical due to existing development, topography, environmental constraints, lack of supporting land use or other factors (as determined by the city).			
** New residential accesses are not permitted along arterials or collectors			

Mobility Standards

Mobility standards for streets and intersections in Camas provide a metric for assessing the impacts of new development on the existing transportation system and for identifying where capacity improvements may be needed. They are the basis for requiring improvements needed to sustain the transportation system as growth and development occur. Two methods used to gauge operational conditions for motor vehicles include volume-to-capacity (v/c) ratios and level of service (LOS).

- **Volume-to-capacity (v/c) ratio:** A v/c ratio is a decimal representation (between 0.00 and 1.00) of the proportion of capacity that is being used at a turn movement, approach leg, or intersection. The ratio is the peak hour traffic volume divided by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. A ratio approaching 1.00 indicates increased congestion and reduced performance.
- **Level of service (LOS):** LOS is a “report card” rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic

moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay is excessive, and demand exceeds capacity, typically resulting in long queues and delays.

The Transportation Plan recommends separate mobility standards, one that applies to signalized, all-way stop and roundabout controlled intersections and another that applies to two-way stop and yield controlled intersections under city jurisdiction. A new v/c standard is also recommended to be applied to intersections.

A LOS “D” and a v/c ratio not higher than 0.85 is the minimum recommended performance standard during the peak-hour for signalized, all-way stop and roundabout controlled intersections under city jurisdiction. These standards are recommended to be applied to the intersection as a whole.

A LOS “E” and a v/c ratio not higher than 0.90 is the minimum recommended performance standard during the peak-hour for two-way stop and yield controlled intersections under city jurisdiction. These standards are recommended to be applied to all intersection approaches serving more than 20 vehicles. Mobility standards are recommended to not apply to approaches at intersections serving 20 vehicles or fewer during the peak hour.

Level of Service for Highways of Statewide Significance is set by the State. In Clark County, the standard is set as LOS “D” for urban areas, including SR 14. Level of Service for regional state highway facilities (not part of the HSS), including SR 500 in Camas, is set through the Southwest Washington Regional Transportation Council (RTC). The Southwest Washington RTC Board adopted LOS ‘E’ or better for non-HSS urban state highway facilities.

Traffic Calming

Traffic calming (primarily in residential and mixed-use areas) refers to street design techniques that slow traffic and make streets safer and more pleasant for users and adjoining land uses without significantly changing their vehicle capacity.

Table 7 lists common traffic calming applications and suggests which devices may be appropriate for streets in Camas. Traffic calming measures must balance vehicle speeds and volumes with mobility, circulation, and function. Any traffic calming project should include coordination with emergency service providers to ensure the project does not impede response.

Traffic calming influences driver behavior through physical and psychological means, by using one or more of the following:

- Narrowing of the street by providing curb extensions or bulbouts, or mid-block pedestrian refuge islands

- Deflecting the vehicle path vertically by installing speed humps, speed tables, or raised intersections
- Deflecting the vehicle path horizontally with chicanes, roundabouts, and mini-roundabouts
- Providing visual cues such as placing buildings, street trees, on-street parking, and landscaping next to the street to create a sense of enclosure that prompts drivers to reduce vehicle speeds

Table 7: Traffic Calming Measures by Street Functional Classification

	Arterials	Collectors	Local Streets
Narrowing travel lanes	Yes	Yes	Most calming measures are generally appropriate on local streets that connect to two or more streets and are infrequent emergency response routes.
Placing buildings, street trees, on-street parking, and landscaping next to the street	Yes	Yes	
Curb Extensions or Bulbouts	Yes	Yes	
Roundabouts	Yes	Yes	
Mini-Roundabouts	No	Yes	
Medians and Pedestrian Islands	Yes	Yes	
Pavement Texture	Yes	Yes	
Speed Hump or Speed Table	No	No	
Raised Intersection or Crosswalk	No	No	
Speed Cushion (provides fire apparatus pass-through with no vertical deflection)	No	Yes	
Choker	No	No	
Traffic Circle	No	No	
Diverter (with emergency vehicle pass through)	No	Yes	
Chicanes	No	No	

APPENDIX F. SOLUTIONS IDENTIFICATION AND EVALUATION



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MEMORANDUM

DATE: May 16, 2024

TO: Curleigh Carothers, City of Camas
Steve Wall, City of Camas

FROM: Reah Flisakowski, DKS Associates
Kevin Chewuk, DKS Associates

SUBJECT: Camas Transportation Plan
Technical Memo 5 – Solutions Identification and Evaluation

P18039-000

This document details the transportation system investments recommended to serve travel in Camas. Included is a summary of the process utilized to develop and analyze the solutions and a description of the projects identified to improve the transportation system in the City.

Transportation Vision Statement

Before developing projects, we must first talk about the ideal transportation system for the City. The following vision statement was developed to provide direction for the future of the transportation system.

In 2040, residents of Camas continue to appreciate their safe, diverse, and welcoming community as a livable place for people of all ages. Quality public facilities, services, and utilities contribute to their high quality of life.

The vision statement and eight associated goals (see Technical Memorandum #1b: Goals, Policies and Evaluation Criteria) describe the desires of the City for their transportation system. The eight transportation goals also help set priorities for transportation solutions. It is not the expectation that the City must fully achieve this vision, but instead that it act as a guide for developing and prioritizing projects within the transportation plan.

Approach to Developing Project

Camas' approach to developing transportation projects included consideration of a wide range of options that:

- Preserve the function of the system through cost-effective management practices such as improved traffic signal operations, encouraging alternative modes of travel, and implementation of new policies and standards.
- Improve existing facility efficiency through minor enhancement projects that upgrade roads to desired standards, fill important system connectivity gaps, or include safety improvements to intersections and corridors.
- Add capacity to the system by widening, constructing major improvements to existing roadways, or extending existing roadways to create parallel routes to congested corridors.
- Add capacity to the system by constructing new facilities.

The project team recommended solution types to address identified needs based on a projects cost-effectiveness, ability to support the transportation goals of the City, and community input. This process allows the City to maximize use of available funds, minimize impacts to the natural and built environments, and balance investments across all modes of travel.

Each goal included policies that act as measurable evaluation criteria (see Technical Memorandum #1b: Goals, Policies and Evaluation Criteria). These will be used to screen and prioritize the preliminary transportation solutions. Projects deemed to contribute more towards achieving the transportation goals of Camas will be ranked higher, and the plan will assign higher priority to their implementation (see Figure 1). Recommended projects will be consistent with the community goals and policies.

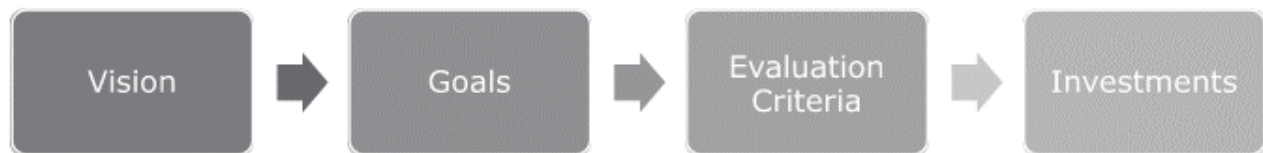


Figure 1: Project Prioritization Process

This memorandum presents the preliminary project list to address all of the identified City transportation needs, regardless of the ability to fund them. The complete list of projects, shown in Table 1, is referred to as Aspirational Projects. The list will be refined based on input received from the Project Advisory Committee and the public to indicate the highest priority projects and anticipated funding potential. Figures 2 through 4 illustrate the preliminary motor vehicle, pedestrian and bicycle projects in Camas.

Table 1: Aspirational Project List

ID	Project Description	Project Elements**	Project Purpose
Demand and System Management Projects			
A	Bike Parking Program	Install new bike parking throughout the City.	Increase bike parking
B	Wayfinding Signage Program	Install wayfinding signage to assist pedestrians and bicyclists in choosing comfortable routes and to help visitors navigate through the City.	Improve wayfinding signage
Transit Projects			
T1	Facility Improvements	Improve transit stop amenities as needed, to include sheltered stops with seating, landing pads, route information, sidewalk connections, bicycle parking and lighting.	Enhance transit service and amenities
Motor Vehicle Projects			
M1	NW Pacific Rim Boulevard reconfiguration between SE Payne Road and NW Parker Street	Reconfigure the existing paved width of NW Pacific Rim Boulevard between SE Payne Road and NW Parker Street to address safety and bicycle facility gaps. Requires coordination with the City of Vancouver.	Safety; Bicycle facility gap
M2	NE 6 th Avenue reconfiguration between Norwood Street and Adams Street	Reconfigure the existing paved width of NE 6 th Avenue between Norwood Street and Adams Street to address safety and bicycle facility gaps. Included in 2023 six-year Transportation Improvement Program as Priority #12.	Safety; Bicycle facility gap
M3	NE 3 rd Avenue reconfiguration between NE Garfield Street and 4 th Street	Reconfigure the existing paved width of NE 3 rd Avenue between NE Garfield Street and 4 th Street to address safety and bicycle facility gaps.	Safety; Bicycle facility gap
M4	NE 3 rd Avenue reconfiguration between 4 th Street and SE Lechner Street	Reconfigure the existing paved width of NE 3 rd Avenue between 4 th Street and SE Lechner Street to address safety, pedestrian and bicycle facility gaps.	Pedestrian and bicycle facility gap
M5	NE Laurel Street extension to SE 15 th Street	Extend NE Laurel Street to SE 15 th Street. This street should be constructed as a Collector, with sidewalks and bike lanes.	Street connectivity; Pedestrian and bicycle facility gap
M6	NE Pioneer Street extension to SE 15 th Street	Extend NE Pioneer Street to SE 15 th Street. This street should be constructed as a Collector, with sidewalks and bike lanes.	Street connectivity; Pedestrian and bicycle facility gap
M7	NE Pioneer Street extension to SE 8 th Street extension	Extend NE Pioneer Street from SE 15 th Street to the SE 8 th Street extension. This street should be constructed as a Collector, with sidewalks and bike lanes.	Street connectivity; Pedestrian and bicycle facility gap

Table 1: Aspirational Project List

ID	Project Description	Project Elements**	Project Purpose
M8	NE Umatilla Street extension to SE 8 th Street extension	Extend NE Umatilla Street from SE 15 th Street to the SE 8 th Street extension. This street should be constructed as a Collector, with sidewalks and bike lanes.	Street connectivity; Pedestrian and bicycle facility gap
M9	SE 8 th Street extension between SR 500-NE Everett Street and SE 283 rd Avenue	Extend SE 8 th Street from SR 500-NE Everett Street to SE 283 rd Avenue. This street should be constructed as a Collector, with sidewalks and bike lanes.	Street connectivity; Pedestrian and bicycle facility gap
M10	SR 500-NE Everett Street widening between NW Lake Road and the UGA	Widen SR 500-NE Everett Street between NW Lake Road and the UGA boundary to include bike lanes and sidewalks. Includes bridge replacement. Included in 2023 six-year Transportation Improvement Program as Priority #2.	Safety; Pedestrian and Bicycle facility gap
M11	SE 8 th Avenue extension (Roadway C) to Northshore Subarea Roadway D	Extend SE 8 th Avenue (Northshore Subarea Roadway C) from SR 500-NE Everett Street to Northshore Subarea Roadway D. This street should be constructed as a Collector, with sidewalks and bike lanes. Alignment based on Northshore subarea plan Option B, Roadway C.	Street connectivity; Pedestrian and bicycle facility gap
M12	SE 8 th Avenue extension (Roadway C) to Northshore Boulevard	Extend SE 8 th Avenue (Northshore Subarea Roadway C) from Northshore Subarea Roadway D to Northshore Boulevard. This street should be constructed as a Collector, with sidewalks and bike lanes. Alignment based on Northshore subarea plan Option B, Roadway C.	Street connectivity; Pedestrian and bicycle facility gap
M13	Northshore Boulevard extension to NE 3 rd Street-Northshore Subarea Roadway D	Extend Northshore Boulevard to NE 3 rd Street-Northshore Subarea Roadway D. This street should be constructed as an Arterial, with sidewalks and bike lanes. Included in 2023 six-year Transportation Improvement Program as Priority #10.	Street connectivity; Pedestrian and bicycle facility gap
M14	NE 232 nd Avenue widening between Northshore Boulevard and the UGA	Widen NE 232 nd Avenue between Northshore Boulevard and the UGA boundary to include one travel lane in each direction, a center turn-lane/median, a bike lane and sidewalk on the west side and a shared-use path on the east side. Included in 2023 six-year Transportation Improvement Program as Priority #28.	Safety; Pedestrian and Bicycle facility gap
M15	Northshore Subarea Roadway D from SE 8 th Avenue (Northshore Subarea Roadway C) to Northshore Subarea Roadway A	Construct a new street between SE 8 th Avenue (Northshore Subarea Roadway C) and Northshore Subarea Roadway A. This street should be constructed as a Collector, with sidewalks and bike lanes. Alignment based on Northshore subarea plan Option B, Roadway D.	Street connectivity; walking and biking facility gap
M16	Northshore Subarea Roadway E from Northshore Subarea Roadway D to the SE 8 th Avenue extension (Northshore Subarea Roadway C)	Construct a new street between Northshore Subarea Roadway D and the SE 8 th Avenue extension (Northshore Subarea Roadway C). This street should be constructed as a Collector, with sidewalks and bike lanes. Alignment based on Northshore subarea plan Option B, Roadway E.	Street connectivity; walking and biking facility gap

Table 1: Aspirational Project List

ID	Project Description	Project Elements**	Project Purpose
M17	Northshore Subarea Roadway A from NE 242 nd Avenue-NE 14 th Street to the Leadbetter House	Construct a new street between NE 242 nd Avenue-NE 14 th Street and the Leadbetter House. This street should be constructed as a Collector, with sidewalks and bike lanes. Alignment based on Northshore subarea plan Option B, Roadway A.	Street connectivity; Pedestrian and bicycle facility gap
M18	Northshore Boulevard intersection improvements	Intersection improvements at Northshore Subarea Roadway E and Northshore Subarea Roadway A (e.g., installation of a roundabout). Based on Northshore subarea plan Option B.	Motor vehicle congestion and safety
M19	NE 28 th Street widening between N Juniper Street and NE 232 nd Avenue	Widen NE 28 th Street between N Juniper Street and NE 232 nd Avenue to include one travel lane in each direction, a center turn-lane/median, bike lanes and sidewalks.	Safety; Pedestrian and Bicycle facility gap
M20	NE 28 th Street widening between NE Ingle Road and N Juniper Street	Widen NE 28 th Street between NE Ingle Road and N Juniper Street to include one travel lane in each direction, a center turn-lane/median, bike lanes and sidewalks.	Safety; Pedestrian and Bicycle facility gap
M21	NE Goodwin Road widening between NE Ingle Road and NE 13 th Street	Widen NE Goodwin Road between NE Ingle Road and NE 13 th Street to include bike lanes and sidewalks. Included in 2023 six-year Transportation Improvement Program as Priority #9.	Safety; Pedestrian and Bicycle facility gap
M22	NE Ingle Road widening between NE 28 th Street and the UGA	Widen NE Ingle Road between NE 28 th Street and the UGA to include one travel lane in each direction, a center turn-lane/median, bike lanes and sidewalks. Included in 2023 six-year Transportation Improvement Program as Priority #40.	Safety; Pedestrian and Bicycle facility gap
M23	SE Bybee Road realignment to NW Fisher Creek Drive	Realign SE Bybee Road to intersect with NW 38 th Avenue at NW Fisher Creek Drive. This street should be constructed as a Collector, with sidewalks and bike lanes. Included in 2023 six-year Transportation Improvement Program as Priority #13.	Street connectivity; Pedestrian and bicycle facility gap
M24	NW 38 th Avenue widening between NW Parker Street and Grass Valley Park	Widen NW 38 th Avenue between NW Parker Street and Grass Valley Park to include one travel lane in each direction, a center turn-lane/median, bike lanes and sidewalks. Included in 2023 six-year Transportation Improvement Program as Priority #1.	Safety; Pedestrian and Bicycle facility gap
M25	NW 38 th Avenue-NW Astor Street-NW 43 rd Avenue widening between NW Dahlia Drive and NW Sierra Street	Widen NW 38 th Avenue-NW Astor Street-NW 43 rd Avenue between NW Dahlia Drive and NW Sierra Street to include one travel lane in each direction, a center turn-lane/median, bike lanes and sidewalks. Included in 2023 six-year Transportation Improvement Program as Priority #27.	Safety; Pedestrian and Bicycle facility gap
M26	NW 16 th Avenue-NW Hood Street-NW 18 th Street widening between NW Klickitat Street and NW Astor Court	Widen NW 16 th Avenue-NW Hood Street-NW 18 th Street between NW Klickitat Street and NW Astor Court to include one travel lane in each direction, a center turn-lane/median, bike lanes and sidewalks. Included in 2023 six-year Transportation Improvement Program as Priority #7 and #24.	Safety; Pedestrian and Bicycle facility gap

Table 1: Aspirational Project List

ID	Project Description	Project Elements**	Project Purpose
M27	NW 11 th Avenue-NW Astor Street widening between NW McIntosh Road and NW 16 th Avenue	Widen NW 11 th Avenue-NW Astor Street between NW McIntosh Road and NW 16 th Avenue to include one travel lane in each direction, a center turn-lane/median, bike lanes and sidewalks. Included in 2023 six-year Transportation Improvement Program as Priority #23.	Safety; Pedestrian and Bicycle facility gap
M28	NW McIntosh Road widening between NW Brady Road and NW 11 th Avenue	Widen NW McIntosh Road between NW Brady Road and NW 11 th Avenue to include one travel lane in each direction, a center turn-lane/median, bike lanes and sidewalks. Included in 2023 six-year Transportation Improvement Program as Priority #29.	Safety; Pedestrian and Bicycle facility gap
M29	SE Crown Road widening between NE 3 rd Avenue and NE Woodburn Drive	Widen SE Crown Road between NE 3 rd Avenue and NE Woodburn Drive to include one travel lane in each direction, left-turn lanes at intersections and a shared-use path (per the Crown Road Corridor Study). Widen the SE Crown Road approach to NE 3 rd Avenue to accommodate westbound truck turning maneuvers. Requires coordination with Washougal and Clark County. Included in 2023 six-year Transportation Improvement Program as Priority #6.	Safety; Pedestrian and Bicycle facility gap
M30	SE 283 rd Avenue widening between NE Woodburn Drive and the SE 8 th Street extension	Widen SE 283 rd Avenue between NE Woodburn Drive and the SE 8 th Street extension to include one travel lane in each direction, left-turn lanes at intersections and a shared-use path. Requires coordination with Clark County.	Safety; Pedestrian and Bicycle facility gap
M31	SE Lechner Street reconfiguration between NE 3 rd Avenue and the UGA boundary	Reconfigure SE Lechner Street between NE 3 rd Avenue and the UGA boundary to include one travel lane in each direction, a center turn-lane/median and bike lanes.	Safety; Pedestrian and Bicycle facility gap
M32	NE 6 th Avenue / NE Adams Street intersection improvements	Intersection improvements (e.g., Per the Camas Safety Plan this should include the installation of a roundabout and intersection lighting; retain eastbound right-turn slip lane).	Motor vehicle congestion and safety
M33	NE 6 th Avenue / SR 500-NE Garfield Street intersection improvements	Intersection improvements (i.e., restripe the eastbound NE 6 th Avenue approach to include a separate left-turn and through/right turn lane; requires removal of on-street parking along the south side of NE 6 th Avenue within 75 feet of the intersection).	Motor vehicle congestion
M34	SE Crown Road / SE 23 rd Street-NE Woodburn Drive intersection improvements	Intersection improvements (e.g., installation of a roundabout per the Crown Road Corridor Study). Realign SE 23 rd Street to intersect with NE Woodburn Drive. This street should be constructed as an Arterial, with sidewalks and bike lane. Realignment included in 2023 six-year Transportation Improvement Program as Priority #30.	Motor vehicle safety
M35	SR 500-NE Everett Street / NE 38 th Avenue intersection improvements	Intersection improvements (i.e., installation of roundabout or a southbound left-turn lane on SR 500-NE Everett Street).	Motor vehicle congestion and safety

Table 1: Aspirational Project List

ID	Project Description	Project Elements**	Project Purpose
M36	SR 500-NE Everett Street / NE 43rd Avenue intersection improvements	Intersection improvements (i.e., potential installation of roundabout per the Northshore Subarea Plan).	Motor vehicle congestion and safety
M37	SR 500-NE Everett Street / SE Leadbetter Road intersection improvements	Intersection improvements (i.e., installation of a median to limit SE Leadbetter Road access to left-in, right-in, right-out only).	Motor vehicle safety
M38	SR 500-NE Everett Street / SE 8 th Street intersection improvements	Intersection improvements (e.g., potential installation of a roundabout per Northshore Subarea Plan).	Motor vehicle safety
M39 *	SR 500-NE Everett Street / SE NE 3rd Street / NE Robinson Road intersection improvements	Intersection improvements (e.g., installation of a roundabout). Requires coordination with WSDOT and Clark County.	Motor vehicle safety
M40 *	NE 28 th Street / SR 500-NE 242nd Avenue intersection improvements	Intersection improvements (e.g., installation of a southbound left-turn lane on SR 500-NE Everett Street, eastbound left-turn lane on NE 28 th Street and traffic signal, or installation of a roundabout). Requires coordination with WSDOT and Clark County.	Motor vehicle congestion
M41 *	NE 232nd Avenue / NE 28th Street intersection improvements	Intersection improvements (e.g., installation of a roundabout or traffic signal). Requires coordination with Clark County. Included in 2023 six-year Transportation Improvement Program as Priority #21.	Motor vehicle congestion
M42 *	NE 199th Avenue / SR 500-NE 58th Street intersection improvements	Intersection improvements (e.g., installation of a westbound left-turn lane and eastbound right-turn lane on SR 500-NE 58th Street and traffic signal, or installation of a roundabout). Requires coordination with WSDOT and Clark County.	Motor vehicle congestion
M43	NW Camas Meadows Drive / NE Goodwin Road intersection improvements	Intersection improvements (i.e., installation of a roundabout or traffic signal). Included in 2023 six-year Transportation Improvement Program as Priority #38.	Motor vehicle congestion
M44	NW Lake Road / NW Sierra Street intersection improvements	Intersection improvements (i.e., installation of a roundabout). Included in 2023 six-year Transportation Improvement Program as Priority #3.	Motor vehicle congestion
M45	Pacific Rim Boulevard / NW Parker Street intersection improvements	Intersection improvements (i.e., installation of a traffic signal). Included in 2023 six-year Transportation Improvement Program as Priority #39.	Motor vehicle congestion
M46	NW Lake Road safety improvements from NE Everett Street to NW Leadbetter Drive	Implement safety improvements along NW Lake Road safety improvements from NE Everett Street to NW Leadbetter Drive. These include horizontal curve signing, profiled pavement marking and shoulder widening per the Camas Safety Plan.	Multimodal Safety
M47	NE Goodwin Road / NE Ingle Road intersection improvements	Intersection improvements (i.e., installation of a traffic signal). Project has been completed.	Motor vehicle congestion

Table 1: Aspirational Project List

ID	Project Description	Project Elements**	Project Purpose
M48	SR-14 West Camas Slough Bridge widening	Widen the SR-14 West Camas Slough Bridge to four lanes. Included in 2023 six-year Transportation Improvement Program as Priority #8. WSDOT project.	Motor vehicle congestion
Pedestrian Projects			
P1	Pedestrian improvements on NW 7 th Avenue between NW Fargo Street and NW Drake Street	Add pedestrian improvements to NW 7 th Avenue between NW Fargo Street and NW Drake Street (i.e., complete sidewalk gaps on the south side).	Pedestrian facility gap
P2	Pedestrian improvements on NW 10 th Avenue between NW Forest Home Road and NW Elm Street	Add pedestrian improvements to NW 10 th Avenue between NW Forest Home Road and NW Elm Street (i.e., complete sidewalk gaps on the north side).	Pedestrian facility gap
P3	Pedestrian improvements on Division Street between NW 6 th Avenue and NW 11 th Avenue	Add pedestrian improvements to Division Street between NW 6 th Avenue and NW 11 th Avenue (i.e., complete sidewalk gaps on the west side).	Pedestrian facility gap
P4	Pedestrian improvements on SR 500-SE Union Street between SE 8 th Avenue and SE 6 th Avenue	Add pedestrian improvements to SR 500-SE Union Street between SE 8 th Avenue and SE 6 th Avenue (i.e., complete sidewalk gaps on the east side).	Pedestrian facility gap
P5	Pedestrian improvements on NE 2 nd Avenue-NE Whitney Street between NE 3 rd Avenue and SE James Street	Add pedestrian improvements to NE 2 nd Avenue-NE Whitney Street between NE 3 rd Avenue and SE James Street (i.e., complete sidewalk gaps on the east side).	Pedestrian facility gap
P6	Pedestrian improvements on SR 500-NE Everett Street between NE 23 rd Avenue and Fallen Leaf Lake Park	Add pedestrian improvements to SR 500-NE Everett Street between NE 23 rd Avenue and Fallen Leaf Lake Park (i.e., complete sidewalk gaps on both sides).	Pedestrian facility gap
P7	Pedestrian improvements on NW Lake Road between NW Lacamas Lane and the Lacamas Lake Lodge	Add pedestrian improvements to NW Lake Road between NW Lacamas Lane and the Lacamas Lake Lodge (i.e., complete sidewalk gaps on both sides). Included in 2023 six-year Transportation Improvement Program as Priority #4.	Pedestrian facility gap
P8	Pedestrian improvements on NE Umatilla Street between NE Woodburn Drive and SE 15 th Street	Add pedestrian improvements to NE Umatilla Street between NE Woodburn Drive and SE 15 th Street (i.e., complete sidewalk gaps on the east side). Requires right-of-way acquisition, outside current city limits, in part.	Pedestrian facility gap
P9	Pedestrian improvements on NE 43 rd Avenue-SE 15 th Street between SR 500-NE Everett Street and SE Crown Road	Add pedestrian improvements to NE 43 rd Avenue-SE 15 th Street between SR 500-NE Everett Street and SE Crown Road (i.e., complete sidewalk gaps on both sides). Included in 2023 six-year Transportation Improvement Program as Priority #14 and #31.	Pedestrian facility gap

Table 1: Aspirational Project List

ID	Project Description	Project Elements**	Project Purpose
P10	Pedestrian improvements on NW Camas Meadows Drive between NE Goodwin Road and NW Payne Street	Add pedestrian improvements to NW Camas Meadows Drive between NE Goodwin Road and NW Payne Street (i.e., complete sidewalk gaps on the south side).	Pedestrian facility gap
P11	Pedestrian improvements on NW Leadbetter Drive between NW Parker Street and NW Lake Road	Add pedestrian improvements to NW Leadbetter Drive between NW Parker Street and NW Lake Road (i.e., complete sidewalk gaps on both sides). Included in 2023 six-year Transportation Improvement Program as Priority #20.	Pedestrian facility gap
P12	Pedestrian improvements on NW Parker Street between NW Leadbetter Drive and NW 38 th Avenue	Add pedestrian improvements to NW Parker Street between NW Leadbetter Drive and NW 38 th Avenue (i.e., complete sidewalk gaps on the west side).	Pedestrian facility gap
P13	Pedestrian improvements on SE Bybee Road between SE 196 th Avenue and the SE Bybee Road realignment	Add pedestrian improvements to SE Bybee Road between SE 196 th Avenue and the SE Bybee Road realignment (i.e., complete sidewalk gaps on both sides).	Pedestrian facility gap
P14	Pedestrian improvements on NW Fargo Street between NW Kent Street and NW Fargo Loop	Add pedestrian improvements to NW Fargo Street between NW Kent Street and NW Fargo Loop (i.e., complete sidewalk gaps on the north/east side).	Pedestrian facility gap
P15	Pedestrian improvements on NW 23 rd Avenue between NW Astor Street and NW Tanner Street	Add pedestrian improvements to NW 23 rd Avenue between NW Astor Street and NW Tanner Street (i.e., complete sidewalk gaps on both sides). Included in 2023 six-year Transportation Improvement Program as Priority #18.	Pedestrian facility gap
P16	Pedestrian improvements on NW 18 th Avenue-NW Tidland Street-NW 16 th Avenue between NW Whitman Street and NW Brady Road	Add pedestrian improvements to NW 18 th Avenue-NW Tidland Street-NW 16 th Avenue between NW Whitman Street and NW Brady Road (i.e., complete sidewalk gaps on north/east side). Included in 2023 six-year Transportation Improvement Program as Priority #25 and #26.	Pedestrian facility gap
P17	Pedestrian improvements on NW 10 th Avenue west of NW Norwood Street	Add pedestrian improvements to NW 10 th Avenue west of NW Norwood Street (i.e., complete sidewalk gaps on the south side).	Pedestrian facility gap
Bicycle Projects			
B1	Bicycle improvements on NW Ivy Street-NW 7 th Avenue from NW 6 th Avenue to NW Drake Street	Add bicycle improvements to NW Ivy Street-NW 7 th Avenue from NW 6 th Avenue to NW Drake Street (i.e., pavement markings/ signage designating it as a shared street for bikes).	Bicycle facility gap
B2	Bicycle improvements on NW Drake Street between NW 7 th Avenue and NW 12 th Avenue	Add bicycle improvements to NW Drake Street between NW 7 th Avenue and NW 12 th Avenue (i.e., restripe with bike lanes).	Bicycle facility gap

Table 1: Aspirational Project List

ID	Project Description	Project Elements**	Project Purpose
B3	Bicycle improvements on NW 12 th Avenue-Division Street-NE 15 th Avenue-NE 18 th Avenue-NE 21 st Avenue between NW Drake Street and SR 500-NE Everett Street	Add bicycle improvements to NW 12 th Avenue-Division Street-NE 15 th Avenue-NE 18 th Avenue-NE 21 st Avenue between NW Drake Street and SR 500-NE Everett Street (i.e., pavement markings/ signage designating it as a shared street for bikes).	Bicycle facility gap
B4	Bicycle improvements on NE 22 nd Avenue-NE Ione Street-NE 19 th Avenue-NE Oak Street-NE 6 th Avenue between SR 500-NE Everett Street and NE Joy Street	Add bicycle improvements to NE 22 nd Avenue-NE Ione Street-NE 19 th Avenue-NE Oak Street-NE 6 th Avenue between SR 500-NE Everett Street and SR 500-NE Joy Street (i.e., pavement markings/ signage designating it as a shared street for bikes).	Bicycle facility gap
B5	Bicycle improvements on NE 6 th Avenue-NE Dallas Street-NE Joy Street between NE Adams Street and NE 3 rd Avenue	Add bicycle improvements to NE 6 th Avenue-NE Dallas Street-NE Joy Street between NE Adams Street and NE 3 rd Avenue (i.e., pavement markings/ signage designating it as a shared street for bikes).	Bicycle facility gap
B6	Bicycle improvements on NE Woodburn Drive between Laurel Street and the NE Umatilla Street	Add bicycle improvements to NE Woodburn Drive between Laurel Street and the NE Umatilla Street (i.e., widen for bike lanes).	Bicycle facility gap
B7	Bicycle improvements on NE Umatilla Street between NE Woodburn Drive and SE 15 th Street	Add bicycle improvements to NE Umatilla Street between NE Woodburn Drive and SE 15 th Street (i.e., widen for bike lanes).	Bicycle facility gap
B8	Bicycle improvements on NE 43 rd Avenue-SE 15 th Street between SR 500-NE Everett Street and SE Crown Road	Add bicycle improvements to NE 43 rd Avenue-SE 15 th Street between SR 500-NE Everett Street and SE Crown Road (i.e., widen for bike lanes). Included in 2023 six-year Transportation Improvement Program as Priority #14 and #31.	Bicycle facility gap
B9	Bicycle improvements on SE Bybee Road between SE 196 th Avenue and the SE Bybee Road realignment	Add bicycle improvements to SE Bybee Road between SE 196 th Avenue and the SE Bybee Road realignment (i.e., widen for bike lanes).	Bicycle facility gap
B10	Bicycle improvements on NW Leadbetter Drive between NW Fremont Street and NW Lake Road	Add bicycle improvements to NW Leadbetter Drive between NW Fremont Street and NW Lake Road (i.e., restripe with bike lanes).	Bicycle facility gap
B11	Bicycle improvements on NW Sierra Street between NW Lake Road and NW 43 rd Avenue	Add bicycle improvements to NW Sierra Street between NW Lake Road and NW 43 rd Avenue (i.e., restripe with bike lanes; requires removal of left-turn lane to NW 44 th Avenue; at the NW Lake Road intersection stripe with a southbound bike lane and shared northbound left and right turn-lanes).	Bicycle facility gap

Table 1: Aspirational Project List

ID	Project Description	Project Elements**	Project Purpose
B12	Bicycle improvements on NE Fremont Street-NW Leadbetter Parkway-NW Dahlia Drive-NW 29 th Avenue-NW Valley Street-NW Utah Street between NW Leadbetter Drive and NW 28 th Avenue	Add bicycle improvements to NE Fremont Street-NW Leadbetter Parkway-NW Dahlia Drive-NW 29 th Avenue-NW Valley Street-NW Utah Street between NW Leadbetter Drive and NW 28 th Avenue (i.e., pavement markings/ signage designating it as a shared street for bikes).	Bicycle facility gap
B13	Bicycle improvements on NW 44 th Avenue-NW Bass Street-NW 45 th Avenue-NW 44 th Avenue-NW Lacamas Lane-NW 35 th Avenue-NW 34 th Avenue-NW Norwood Street between NW Dahlia Drive and NW 28 th Avenue	Add bicycle improvements to NW 44 th Avenue-NW Bass Street-NW 45 th Avenue-NW 44 th Avenue-NW Lacamas Lane-NW 35 th Avenue-NW 34 th Avenue-NW Norwood Street between NW Dahlia Drive and NW 28 th Avenue (i.e., pavement markings/ signage designating it as a shared street for bikes).	Bicycle facility gap
B14	Bicycle improvements on NW 28 th Avenue-NW Fargo Street between NW Sierra Street and NW 18 th Avenue	Add bicycle improvements to NW 28 th Avenue-NW Fargo Street between NW Sierra Street and NW 18 th Avenue (i.e., pavement markings/ signage designating it as a shared street for bikes).	Bicycle facility gap
B15	Bicycle improvements on NW 18 th Loop between NW 18 th Avenue and NW Couch Street	Add bicycle improvements to NW 18 th Loop between NW 18 th Avenue and NW Couch Street (i.e., restripe with a bike lane on the uphill side).	Bicycle facility gap
B16	Bicycle improvements on NW Sierra Street between NW 28 th Avenue and NW 23 rd Avenue	Add bicycle improvements to NW Sierra Street between NW 28 th Avenue and NW 23 rd Avenue (i.e., restripe with bike lanes).	Bicycle facility gap
B17	Bicycle improvements on NW 23 rd Avenue between NW Astor Street and NW Sierra Street	Add bicycle improvements to NW 23 rd Avenue between NW Astor Street and NW Sierra Street (i.e., widen for bike lanes). Included in 2023 six-year Transportation Improvement Program as Priority #18.	Bicycle facility gap
B18	Bicycle improvements on NW Pacific Rim Drive-NW Endicott Street-NW 37 th Avenue between NW Parker Street and NW Dahlia Drive	Add bicycle improvements to NW Pacific Rim Drive-NW Endicott Street-NW 37 th Avenue between NW Parker Street and NW Dahlia Drive (i.e., pavement markings/ signage designating it as a shared street for bikes).	Bicycle facility gap
B19	Bicycle improvements on NW Julia Street-NW 26 th Avenue-NW Maryland Street-NW Larkspur Street-NW Klickitat Street between NW Pacific Rim Drive and NW 16 th Avenue	Add bicycle improvements to NW Julia Street-NW 26 th Avenue-NW Maryland Street-NW Larkspur Street-NW Klickitat Street between NW Pacific Rim Drive and NW 16 th Avenue (i.e., pavement markings/ signage designating it as a shared street for bikes).	Bicycle facility gap

Table 1: Aspirational Project List

ID	Project Description	Project Elements**	Project Purpose
B20	Bicycle improvements on NW Klickitat Street between NW 16 th Avenue and NW McIntosh Road	Add bicycle improvements to NW Klickitat Street between NW 16 th Avenue and NW McIntosh Road (i.e., pavement markings/ signage designating it as a shared street for bikes).	Bicycle facility gap
B21	Bicycle improvements on SE Payne Road-NW 18 th Avenue-NW Tidland Street-NW 16 th Avenue between NW Pacific Rim Boulevard and NW Brady Road	Add bicycle improvements to SE Payne Road-NW 18 th Avenue-NW Tidland Street-NW 16 th Avenue between NW Pacific Rim Boulevard and NW Brady Road (i.e., widen for bike lanes). Included in 2023 six-year Transportation Improvement Program as Priority #25 and #26.	Bicycle facility gap
B22	Bicycle improvements on NW 10 th Avenue between NW 10 th Place and NW Drake Street	Add bicycle improvements to NW 10 th Avenue between NW 10 th Place and NW Drake Street (i.e., pavement markings/ signage designating it as a shared street for bikes).	Bicycle facility gap
Shared Pedestrian and Bicycle Projects			
S1	Shared-use path on NW Brady Road between the City limits and NW McIntosh Road	Create a shared-use path connection along the north side of NW Brady Road between the City limits and NW McIntosh Road. Included in 2023 six-year Transportation Improvement Program as Priority #22.	Pedestrian and bicycle facility gap
S2	Shared-use path between NW 11 th Avenue and NW 10 th Avenue	Create a shared-use path connection between NW 11 th Avenue and NW 10 th Avenue. Will require grading, switchbacks and/or stairs to navigate the steep slopes.	Pedestrian and bicycle facility gap
S3	Shared-use path between NW 18 th Avenue and NW Brady Road	Create a shared-use path connection between NW 18 th Avenue and NW Brady Road.	Pedestrian and bicycle facility gap
S4	Fallen Leaf Lake Park Crossing	Install a pedestrian and bicycle crossing on SR 500-NE Everett Street at Fallen Leaf Lake Park. This improvement includes a continental crossing, a median refuge island and pedestrian crosswalk signs.	Pedestrian and bicycle facility gap
S5	Shared-use path on NE Leadbetter Road between SR 500-NE Everett Street and the Lacamas Lake boat ramp	Create a shared-use path connection along the north side of NE Leadbetter Road between SR 500-NE Everett Street and the Lacamas Lake boat ramp.	Pedestrian and bicycle facility gap
S6	Shared-use path on NE Leadbetter Road between the Lacamas Lake boat ramp and NE 232 nd Avenue-Northshore Boulevard	Close NE Leadbetter Road to motor vehicle traffic (except emergency services) between the Lacamas Lake boat ramp and NE 232 nd Avenue-Northshore Boulevard and convert the roadway surface to a shared-use path.	Pedestrian and bicycle facility gap
S7	Lacamas Trail SE Crown Road Crossing	Install a pedestrian and bicycle crossing on Crown Road at the Lacamas Trail. As part of this project, extend the sidewalk along the west side of SE Crown Road from Woodburn Elementary to the Lacamas Trail. This improvement includes a continental crossing, a median refuge island and pedestrian crosswalk signs.	Pedestrian and bicycle facility gap

Table 1: Aspirational Project List

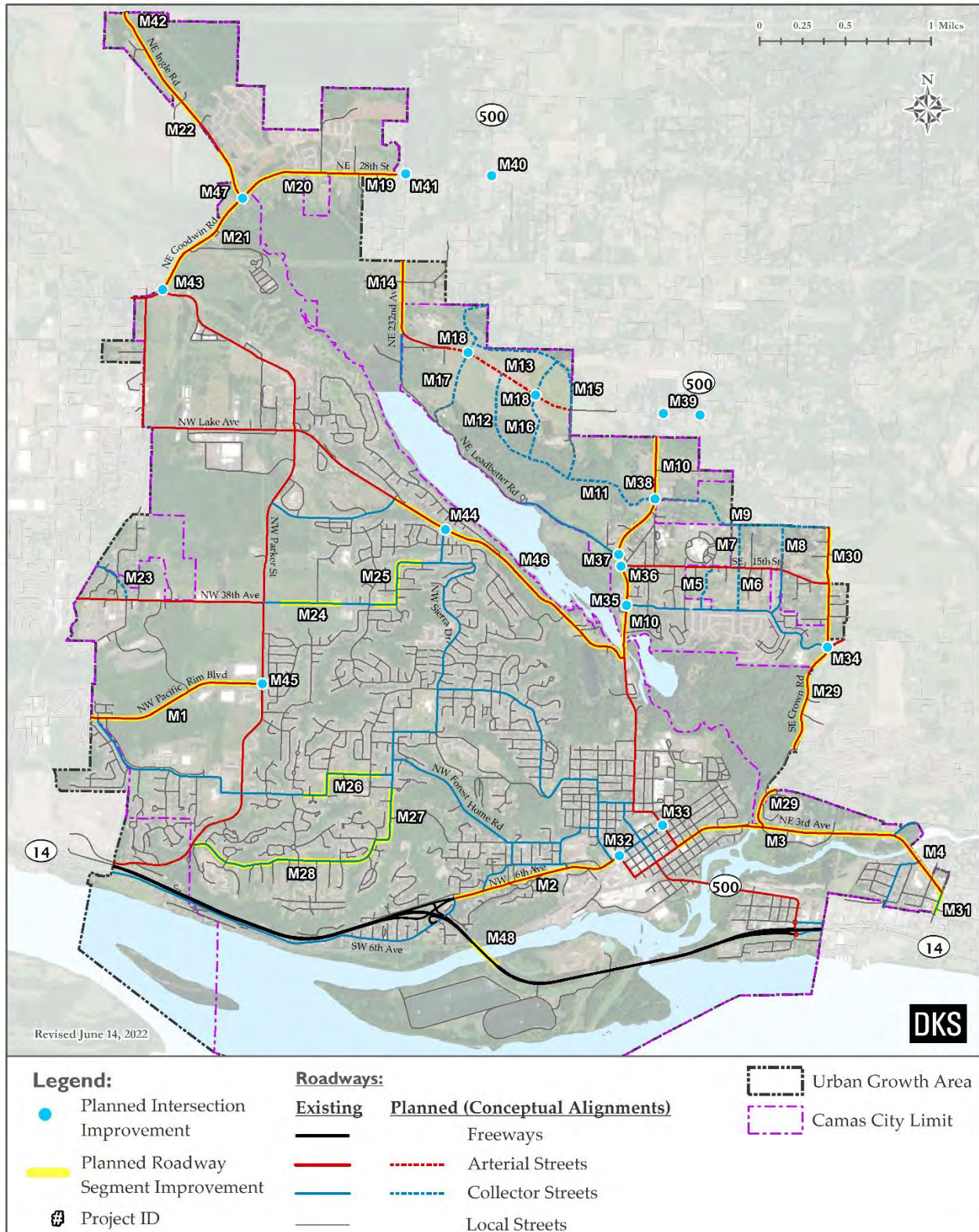
ID	Project Description	Project Elements**	Project Purpose
S8	E 1 st Avenue Crossing	Install a pedestrian and bicycle crossing on NE 3 rd Avenue at E 1 st Avenue. This improvement includes a continental crossing, a median refuge island and pedestrian crosswalk signs.	Pedestrian and bicycle facility gap
S9	NE Weir Street Crossing	Install a pedestrian and bicycle crossing on NE 3 rd Avenue at NE Weir Street. This improvement includes a continental crossing, a median refuge island and pedestrian crosswalk signs.	Pedestrian and bicycle facility gap

Note: * Project (or a portion of the alignment) is located outside the UGA and is shown for future planning purposes only.

** The project design elements depicted are identified for planning purposes. The actual design elements for any project are subject to change and will ultimately be determined through a preliminary and final design process and are subject to City and/or WSDOT approval.

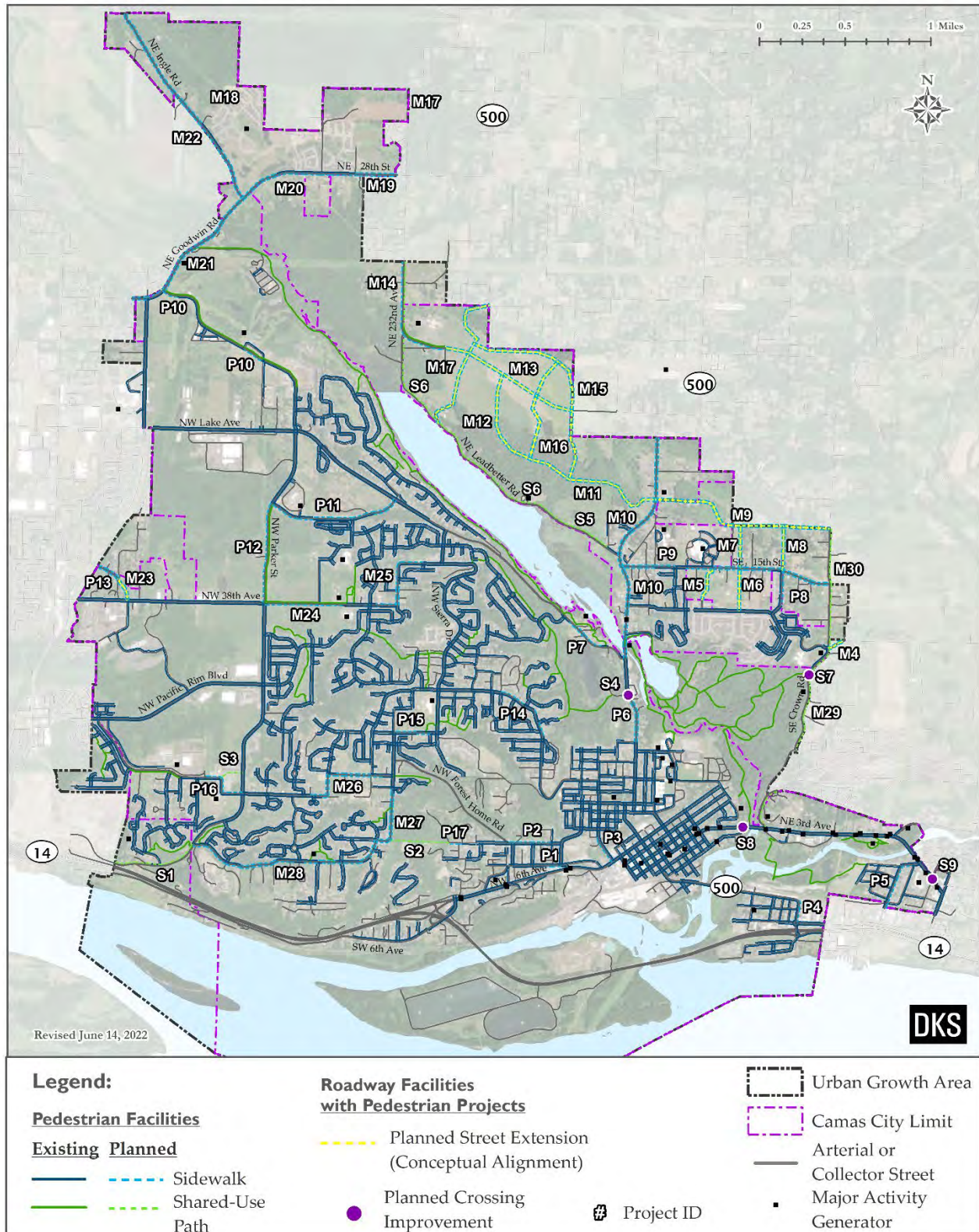
2

Motor Vehicle Projects



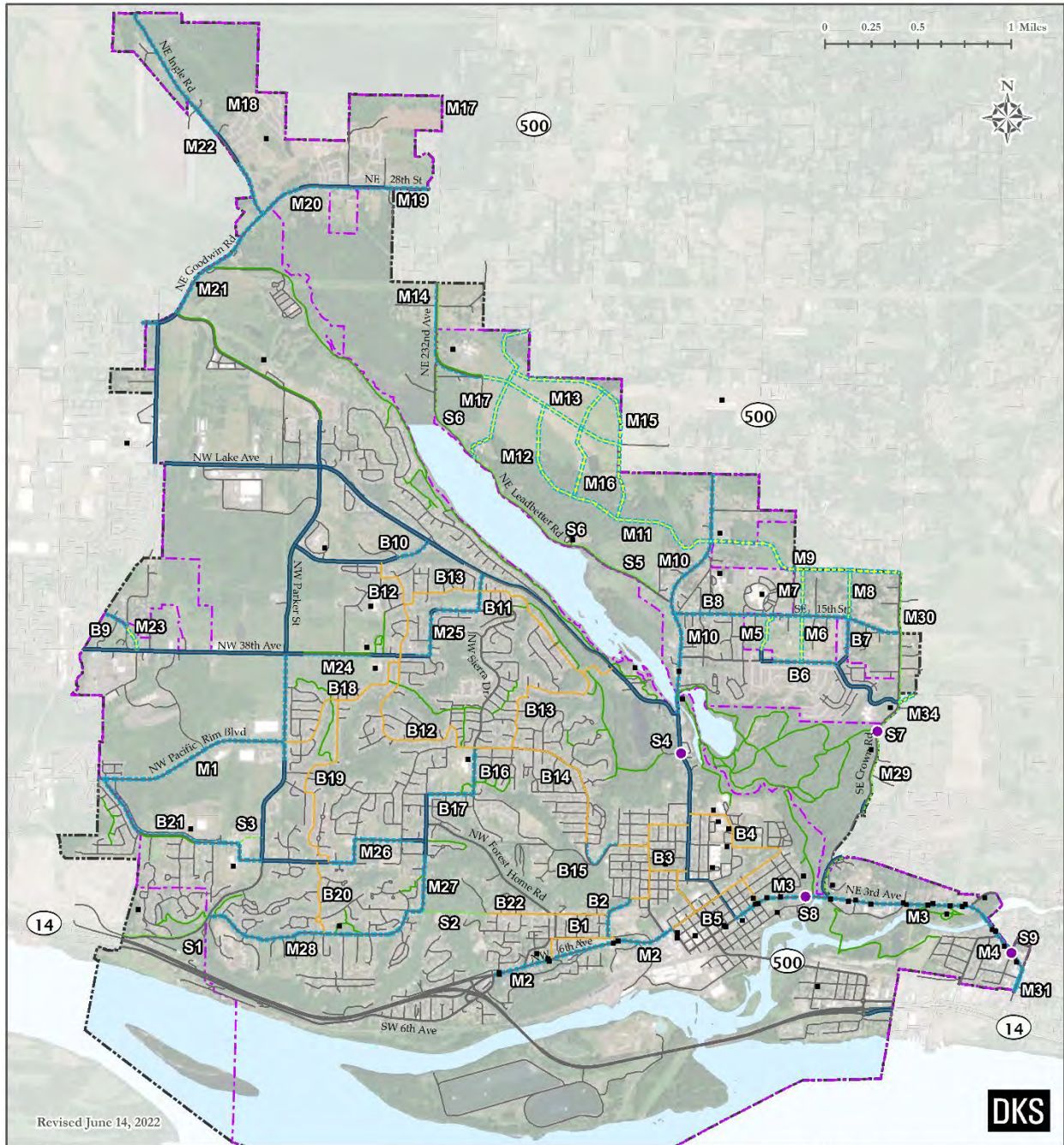
3

Pedestrian Projects



4

Bicycle Projects



Legend:

Bicycle Facilities

Existing Planned

- Bike Lane
- Shared-Use Path
- Planned Shared Street

Roadway Facilities with Bicycle Projects

- Planned Street Extension (Conceptual Alignment)
- Planned Crossing Improvement
- # Project ID

- Urban Growth Area
- Camas City Limit
- Arterial or Collector Street
- Major Activity Generator

APPENDIX G. TRAFFIC IMPACT FEE STUDY

City of Camas

Traffic Impact Fee Study

Draft Methodology Report

March 2025

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PURPOSE

The purpose of this memorandum is to describe the Camas Traffic Impact Fee (TIF) methodology that has been developed during the 2024 Transportation System Plan (TSP) update by DKS Associates. This methodology provides a fee update calculated using the prior/current TIF methodology (assuming that there are two districts that will serve the City of Camas) and a new alternative (which considers a citywide fee) with expected levels of trip growth rates and project costs, as described below.

BACKGROUND

An impact fee is a one-time fee paid at the time of development, intended to represent the share of system capacity that will serve growth. Traffic impact fees are authorized under Washington law (RCW 82.02) to promote orderly growth and development. The Washington Growth Management Act allows cities, counties and towns to establish standards, by ordinance, which requires new growth and development to pay a share of the cost of the new facilities needed to serve growth and development. This share of the cost, herein called the “private share,” is collected at the time of new development and is one source of funding for the transportation capital improvement program.

The TIF project list provided in **Appendix A** was developed to meet the long-range land use growth goals articulated in the *Camas TSP (Amended 2025)*.

Additionally, per RCW 82.02.050, “impact fees (a) can be imposed for system improvements that are reasonably related to the new development; (b) cannot exceed a proportionate share of the costs of system improvements that are reasonably related to the new development, and (c) should be used for system improvements that will reasonably benefit the new development.”

The law also provides for “the imposition of an impact fee for system improvement costs previously incurred by a county, city, or town to the extent that new growth and development will be served by the previously constructed improvements provided such fee shall not be imposed to make up for any system improvement deficiencies.” If applicable, an existing capacity component of the fee would be made up of the cost of available, unused capacity in the existing system, with possible adjustments for grant-funded and contributed infrastructure. This TIF update is consistent with the prior adopted methodology in that it does not include any additional fees for the existing remaining capacity in the transportation system.

RCW 82.02.070 further requires that impact fee receipts should be earmarked specifically and retained in special interest-bearing accounts, and, absent a compelling reason, must be expended or encumbered for permissible use within ten years of receipt.

The existing Camas transportation impact fee administrative procedures are described in Chapter 3.88 of the Camas Municipal Code. In general, Traffic Impact Fees are calculated using the following formula:

$$\text{TIF} = T \times (1-B-D) \times C \times A$$

Whereas:

“TIF” means the traffic impact component of the total development impact fee.

“T” means the average PM peak hour vehicle trip ends for each use, estimated by the current edition of the ITE Trip Generation Manual, computed by taking the size of the development times the PM peak hour trip generation rate.

“B” is the reduction for bypass trips for ITE land use codes in the 800s and 900s estimated by the current edition of the ITE Trip Generation Handbook.

"D" is the reduction for diverted linked trips for ITE land use codes in the 800s and 900s estimated by the current edition of the ITE Trip Generation Handbook.

"C" is the cost per PM peak hour trip end.

"A" is an adjustment to the cost of public facilities within the curb-to-curb section of project capacity improvements for past or future payments made or reasonably anticipated to be made in the form of user fees, debt service payments, taxes, or other payments earmarked for or pro-ratable to traffic system improvements contained in the capital facilities plan. This adjustment is determined to be 10 percent so that "A" equals 90 percent.

RCW 82.02.060 requires that "an adjustment to the cost of the public facilities for past and future payments made or reasonably anticipated to be made by new development to pay for particular system improvements in the form of user fees, debt service payments, taxes, or other payments earmarked for or pro-ratable to the particular system improvement" must be made to the total cost basis. Therefore, additional funding sources such as sales tax revenues, transfers from the general fund etc. must be prorated between the existing population and projected growth. This requirement is met through the TIF adjustment described above in the formula variable "A."

This report provides a traffic impact fee methodology that is consistent with the current Camas TIF program formula which splits the city into north and south service areas as well as an alternative methodology that calculates the fee on a citywide basis.

The recommended maximum Traffic Impact Fee is calculated per PM Peak Hour Vehicle Trip (PHVT) generated, which is calculated by estimating the net cost of applicable improvements and dividing by the estimated number of new trips expected between 2025 and 2045.

The city council may decide to implement the new TIF rate upon adoption of this Technical Document or could instruct city staff to phase-in the new TIF rate over time. A phase-in approach would result in foregone local transportation revenue that would need to be funded by alternative funding sources, such as General Funds or Local Improvement Districts.

GROWTH IN TRIPS

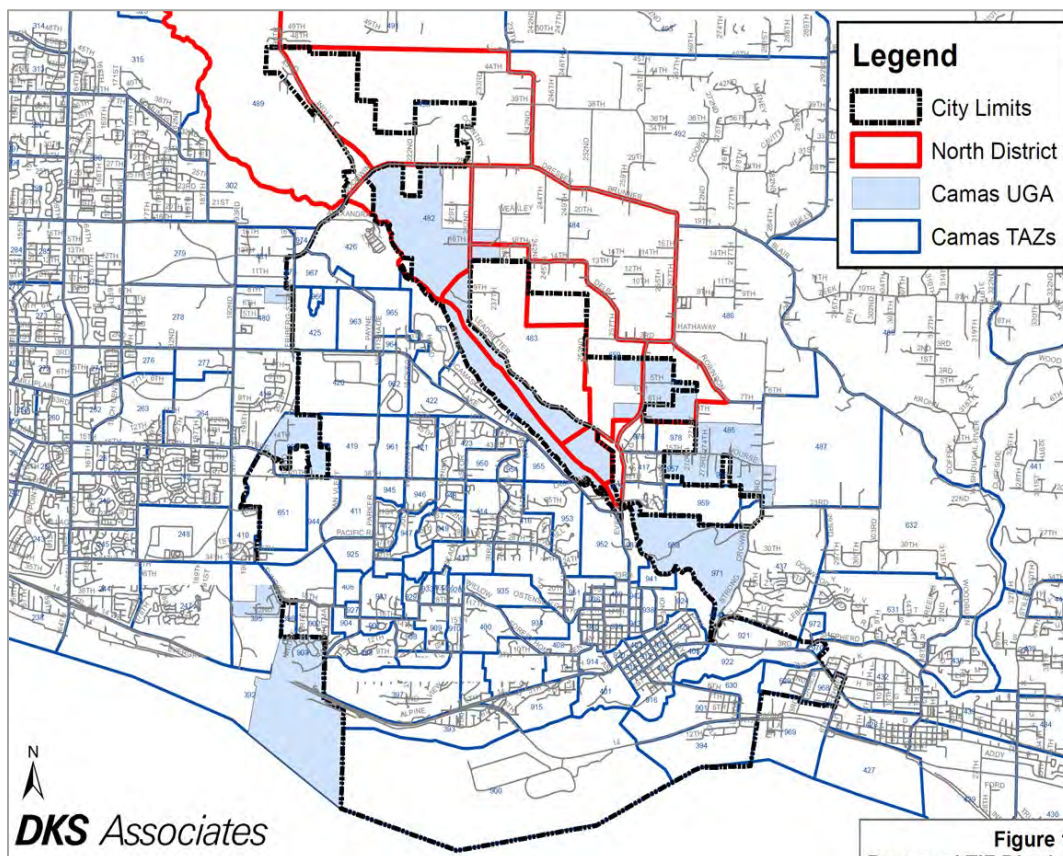
Before determining the total cost of TIF eligible capital projects, the level of future trip growth must be determined. **Exhibit 1** shows the projected growth in PM Peak Hour Vehicle Trips (PHVT), the basis for determining the portion of total costs to be included in the TIF. The amount of PHVT is estimated for 2015, 2025 and forecasted for 2045. The 2025-2045 growth forecast serves as the denominator in the TIF calculation.

Citywide trip growth is assumed to equal 7,129 net new trips by 2045. It is projected that 3,472 of those new trips will be generated in the North District, a 76% growth share. In the more built out South District 3,657 trips are expected to be added which represents a 29% growth share. The overall citywide growth share is estimated at 41%.

Exhibit 1: Projected Trip Growth, City of Camas

Area	Trip-Ends in 2015	Trip Ends in 2040	2015-2040 AGR	Trip Ends 2025 est.	Trip Ends 2045 proj.	New Trip Ends from 2025 to 2045	Average Growth Share
North District	530	3,185	7.43%	1,086	4,558	3,472	76%
South District	7,745	11,786	1.69%	9,162	12,819	3,657	29%
Total	8,276	14,971	2.40%	10,248	17,377	7,129	41%

Source: DKS Associates, 2015-2040 forecast, extrapolated to 2045.



TIF COST BASIS

RCW 82.02.050 specifies that transportation impact fees are to be spent on “system improvements.” System improvements can include physical changes to existing roadways, as well as new roadway connections that are built to benefit projected needs of the transportation system. Each project listed in **Appendix A** meets these requirements and are required to meet future growth needs.

The portion of each project facility that is TIF-eligible is calculated by dividing the total capital costs of the identified improvement projects by the projected increase in demand (measured in terms of vehicle trips).

TIFs are collected to pay for a portion of the transportation improvements needed to accommodate traffic resulting from new development. TIFs are paid only for new development or redevelopment which would add trips compared to its current use. The fee is assessed by examining the number of trips expected to be generated from that development. The fees collected can be used to expand existing transportation facilities and to build new facilities.

During the TIF update process, updated cost estimates (in Year 2024 dollars) were developed for facilities needed to address future transportation needs. Some improvements are eligible for TIF funds, while others are not.

TIF eligible projects were determined using the following criteria:

- ✓ Roads classified as principal or minor arterials, and State Highways.
- ✓ Roads that serve primarily citywide trips, regional trips or trips over multiple land uses that serve the majority of trips to and from Camas.
- ✓ Roads that serve to reduce impacts on adjacent facilities.

Frontage improvements and right-of-way outside the curb-to-curb section, including landscaping and sidewalks are not included in TIF calculation. In most instances, the costs of frontage improvements will be borne by the adjacent development.

The TIF eligible cost basis for each cost category listed in **Appendix A** accounts for the total capital cost of the project less safety related project elements, and non-TIF eligible (private share) elements.

In theory, a new collector or arterial roadway that is explicitly needed to serve future growth within the City could be 100% TIF cost eligible (before fee adjustments or credits).

The maximum TIF related ‘growth share’ for an upgrade to an existing transportation facility, based on **Exhibit 1**, is the percentage of total trips in 2045 that can be attributed to future growth. As discussed above, this is calculated as the net change in trips from 2025 to 2045 divided by future trips in year 2045. This equates to 41% citywide; or 76% in the North District, and 29% in the South District. These figures represent the maximum TIF share that would be used for an add capacity to an existing transportation facility.

Most upgrades to existing transportation facilities will result in significantly less TIF eligible funding. However, the determination of the TIF eligible cost shares and creditable private improvements usually vary from project to project.

City staff compiled the CIP with estimates of total transportation project costs after accounting for improvements that are planned to be constructed between 2025 and 2045 at a total cost of \$187.3 million (**Exhibit 2**).

Exhibit 2: Summary of Camas Transportation Projects: 2025-2045

Project Type	Count	Total Cost
Bike	22 \$	21,425,000
DSM	2 \$	450,000
Intermodal	19 \$	64,200,000
Motor Vehicle	29 \$	71,700,000
Pedestrian	17 \$	16,125,000
Shared	9 \$	5,400,000
Transit	1 \$	1,000,000
Total (2024\$)	99 \$	180,300,000
Total (2025\$)	\$	187,330,000

Source: DKS Associates, Sept. 28, 2024.

TSDC OVERLAY METHODOLOGY

The updated TIF methodology is calculated by determining the City's cost share of the capacity-increasing improvements, which are estimated at \$41.7 M in the North District and \$48.2 M in the South District) and removing for existing TIF fund balances: estimated at \$1.1 M in the North District, and \$2.9 M in the South District.

As shown in **Exhibit 3**, the adjusted TIF cost basis for each district is divided by the projected trip growth between 2025 and 2045 (3,472 in the North District, 3,657 in the South District). After accounting for the TIF reduction factor of 10%, the resulting net TIF equates to \$10,518 per PHVT in the North District and \$11,142 per PHVT in the South District.

Exhibit 3: Camas TIF Calculation: Alt. 1 Two Districts

	North District	South District	Citywide
Total Capital Facility Costs	\$ 76,916,865	\$ 110,414,835	\$ 187,331,700
Less Non-Capacity Related Facility Costs	\$ (35,209,563)	\$ (62,248,392)	\$ (97,457,955)
Unadjusted Future TIF Project Cost Basis	\$ 41,707,302	\$ 48,166,443	\$ 89,873,745
Less Estimated TIF Fund Balance	\$ (1,136,561)	\$ (2,895,232)	\$ (4,031,793)
Total Current TIF Cost Basis	\$ 40,570,741	\$ 45,271,211	\$ 85,841,952
Growth in Trips	3,472	3,657	7,129
Unadjusted TIF per PM peak hour vehicle trip end	\$11,686	\$12,379	\$12,042
Reduction Factor*	10.0%	10.0%	10.0%
Calculated TIF per PM peak hour vehicle trip end	\$10,518	\$11,142	\$10,838

*Reduction factor reflects estimated additional share of capacity projects (curb-to-curb sections only) funded by non-TIF and/or private sources.

This calculation represents the maximum defensible impact fees that the City of Camas may adopt in part or in full.

A summary of the maximum defensible TIF for selected land use development types is shown in **Exhibit 4**.

Exhibit 4: Camas TIF for Selected Land Use Type: Alt. 1

Camas TIF Update, Updated Fee Calculations for Selected Development Types (before credits)

Type	Unit	Existing North Fee	Existing South Fee	Updated North Fee	Updated South Fee
Single-family Detached	Dwelling Unit	\$10,633	\$4,102	\$9,293	\$9,845
Apartments	Dwelling Unit	\$5,972	\$2,273	\$3,856	\$4,084
Duplexes/Townhomes	Dwelling Unit	\$6,391	\$2,433	\$5,042	\$5,341
ADU (Internal)*	Dwelling Unit	\$2,593	\$987	\$3,233	\$3,425
ADU (External)**	Dwelling Unit	\$3,630	\$1,382	\$4,554	\$4,824
Commercial	PM Peak Hour Trip	\$10,633	\$4,102	\$10,518	\$11,142

*Calculated based on a 0.71 factor applied to ITE Code 223 per 11th Edition of Trip Generation

**Calculated based on current city policy ratio of 0.41 x SFD trip rate; also applies to affordable housing units

Note: TIF charges may be exempted by council policy for ADUs and affordable housing units.

TSDC CITYWIDE METHODOLOGY

The citywide alternative TIF methodology is calculated by determining the City's cost share of the capacity improvements (\$89.9 M) and removing for existing TIF fund balance (\$4 M). As shown in **Exhibit 5**, the adjusted TIF cost basis is divided by the projected trip growth between 2025 and 2045 (7,129). The resulting net TIF equates to \$10,838 per PHVT citywide.

Exhibit 5: Citywide Camas Transportation Impact Fee Calculation: Alt. 2

	Single District
Total Capital Facility Costs	\$ 187,331,700
Less Non-Capacity Related Facility Costs	\$ (97,457,955)
Unadjusted Future Project Cost Basis	\$ 89,873,745
Less Estimated TIF Fund Balance	\$ (4,031,793)
Updated Future TIF Cost Basis	\$ 85,841,952
(a) Unadjusted Future TIF cost basis share of total cost	48.0%
(b) Recent Avg. City Share of Future Curb-to-Curb Cost	46.3%
Total Current TIF Cost Basis	\$ 85,841,953
Growth in Trips (PMPHVT)	7,129
Unadjusted TIF per PM peak hour vehicle trip end	\$ 12,041.83
Reduction Factor*	10.0%
Reduction Amount	\$ (1,204.18)
Calculated TIF per PM peak hour vehicle trip end	\$ 10,837.65

*Reduction factor reflects estimated additional share of capacity projects (curb-to-curb sections only) funded by non-TIF and/or private sources.

This calculation represents the maximum defensible impact fees that the City of Camas may adopt in part or in full.

A summary of the maximum defensible TIF for selected land use development types is shown in **Exhibit 6**, with amounts rounded to the nearest dollar.

Exhibit 6: Camas TIF for Selected Land Uses: Alt. 2 One Service District

Camas TIF Update, Updated Fee Calculations for Selected Development Types (before credits)

Type	Unit	Existing North Fee	Existing South Fee	Updated Citywide Fee
Single-family Detached	Dwelling Unit	\$10,633	\$4,102	\$10,187
Apartments (low rise)	Dwelling Unit	\$6,122	\$2,362	\$5,196
Duplexes/Townhomes	Dwelling Unit	\$6,551	\$2,527	\$5,196
ADU (Internal)*	Dwelling Unit	\$2,658	\$1,025	\$3,544
ADU (External)**	Dwelling Unit	\$3,721	\$1,436	\$4,992
Commercial	PM Peak Hour Trip	\$10,740	\$4,143	\$10,838

*Calculated based on a 0.71 factor applied to ITE Code 223 per 11th Edition of Trip Generation

**Calculated based on current city policy ratio of 0.41 x SFD trip rate; also applies to affordable housing units

Note: TIF charges may be exempted by council policy for ADUs and affordable housing units.

FEES BY HOME SIZE

New Washington State law requires a scaling impact fee schedule for impact fees charged to residential dwelling units. This is discussed in RCW 82.02.060(1), which states that the schedule for TIFs “shall reflect the proportionate impact of new housing units... based on the square footage, number of bedrooms, or trips generated.” Per the same code section, this scaling requirement is intended “to produce a proportionally lower impact fee for smaller housing units.” This requirement is not just for single-family dwelling units, but also for multi-family dwelling units.

One approach for scaling the TIF is to estimate the smallest dwelling unit size (inclusive of single-family and multi-family dwelling units) necessary to accommodate one resident in Camas, and thereby calculate the TIF per dwelling unit as a per square foot charge. The Census Bureau’s statistics from the American Community Survey state that the average occupancy per dwelling unit in Camas in 2020 was 2.78. Per Clark County Assessor’s data, the City’s estimated average dwelling unit size (inclusive of both single-family and multi-family dwelling units) is 2,277 square feet. That means that, on average, 738 square feet accommodates one resident, and 1 square foot will accommodate 0.0014 residents.

American Housing Survey data for the Portland Metro Area shows that, to a point, house size is positively correlated with the number of occupants. After about 2,605 square feet, that correlation dissipates. Therefore, we recommend that the City scale its transportation impact fee for residential developments up to a maximum of 2,605 square feet. Using the citywide approach detailed below as an example, scaling would set a minimum TIF of \$2,625 for dwelling units at 738 square feet or less, and a maximum TIF of \$9,265 at 2,605 square feet or more. Each intermediate square foot would increase the TIF by \$3.56. The approach for each scenario is summarized in **Exhibit 7** below.

Exhibit 7: Scaled Residential TIF Calculations

Needs to be updated

North Area Approach			
TIF Schedule for a Single-Family Home	Square Feet	Residents	TIF
TIF per resident	738	1.0000	\$4,534
TIF per square foot of single-family residence	1	0.0014	\$6.14
Maximum SDC per single-family residence	2,605	3.5294	\$16,001
South Area Approach			
TIF Schedule for a Single-Family Home	Square Feet	Residents	TIF
TIF per resident	738	1.0000	\$1,132
TIF per square foot of single-family residence	1	0.0014	\$1.53
Maximum SDC per single-family residence	2,605	3.5294	\$3,994
Citywide Approach			
TIF Schedule for a Single-Family Home	Square Feet	Residents	TIF
TIF per resident	738	1.0000	\$2,625
TIF per square foot of single-family residence	1	0.0014	\$3.56
Maximum SDC per single-family residence	2,605	3.5294	\$9,265
Source: ITE Manual, 11th Edition, and U.S. Census, American Community Survey, Portland-Vancouver MSA			

The City can use the summary provided in **Exhibit 8** to generate a TIF schedule to be applied to both single-family and multi-family residential units based on their total square footage (SF). **Exhibit 8** provides an example of such a schedule where housing units are sorted into different SF ranges, with each range being assigned a SF for the purpose of calculating the TIF.

Exhibit 8: Scaled Single Family Residential TIF Schedule

Needs to be updated

Dwelling Floor Area (Sq. Ft.)	Uniform Citywide Alt.	Two District Alt.	
		North District	South District
< 1,000	\$3,002	\$5,184	\$1,294
1,000-2,000	\$4,890	\$8,445	\$2,108
2,001 to 2,605	\$8,317	\$14,364	\$3,585
>2,606	\$9,265	\$16,001	\$3,994
Source: Previous Tables			

In addition to requirements for scaling laid out in RCW 82.02.060(1), state law also puts restrictions on the impact fees that can be charged to accessory dwelling units (ADUs). Per RCW 36.70A.681(a), the city may not assess impact fees on ADUs that are greater than 50 percent of the charge assessed to the principal or standard size dwelling unit. Therefore, if the City implements a scaling schedule as laid out in **Exhibit 8**, the City should also ensure that its code limits the charge for an ADU to 50 percent of the charge assessed to the principal dwelling unit.

APPENDIX A – PROJECT CAPACITY SHARE PERCENTAGES CALCULATED BY TRIP
DISTRIBUTION

Needs to be updated

APPENDIX B – PROPOSED TIF RATE SCHEDULE: FY 2026

APPENDIX C - WASHINGTON REQUIREMENTS FOR FEES BY HOME SIZE

RCW [82.02.060](#)

Impact fees—Local ordinances—Required provisions—Exemptions.

The local ordinance by which impact fees are imposed:

(1) Shall include a schedule of impact fees which shall be adopted for each type of development activity that is subject to impact fees, specifying the amount of the impact fee to be imposed for each type of system improvement. The schedule shall be based upon a formula or other method of calculating such impact fees. The schedule shall reflect the proportionate impact of new housing units, including multifamily and condominium units, based on the square footage, number of bedrooms, or trips generated, in the housing unit in order to produce a proportionally lower impact fee for smaller housing units. In determining proportionate share, the formula or other method of calculating impact fees shall incorporate, among other things, the following:

- (a) The cost of public facilities necessitated by new development;
- (b) An adjustment to the cost of the public facilities for past or future payments made or reasonably anticipated to be made by new development to pay for particular system improvements in the form of user fees, debt service payments, taxes, or other payments earmarked for or proratable to the particular system improvement;
- (c) The availability of other means of funding public facility improvements;
- (d) The cost of existing public facilities improvements; and
- (e) The methods by which public facilities improvements were financed;

(2) May provide an exemption for low-income housing, and other development activities with broad public purposes, including development of an early learning facility, from these impact fees, provided that the impact fees for such development activity shall be paid from public funds other than impact fee accounts;

(3)(a) May not impose an impact fee on development activities of an early learning facility greater than that imposed on commercial retail or commercial office development activities that generate a similar number, volume, type, and duration of vehicle trips;

(b) When a facility or development has more than one use, the limitations in this subsection (3) or the exemption applicable to an early learning facility in subsections (2) and (4) of this section only apply to that portion that is developed as an early learning facility. The impact fee assessed on an early learning facility in such a development or facility may not exceed the least of the impact fees assessed on comparable businesses in the facility or development;

(4) May provide an exemption from impact fees for low-income housing or for early learning facilities. Local governments that grant exemptions for low-income housing or for early learning facilities under this subsection (4) may either: Grant a partial exemption of not more than eighty percent of impact fees, in which case there is no explicit requirement to pay the exempted portion of the fee from public funds other than impact fee accounts; or provide a full waiver, in which case the

remaining percentage of the exempted fee must be paid from public funds other than impact fee accounts, except as provided in (b) of this subsection. These exemptions are subject to the following requirements:

- (a) An exemption for low-income housing granted under subsection (2) of this section or this subsection (4) must be conditioned upon requiring the developer to record a covenant that, except as provided otherwise by this subsection, prohibits using the property for any purpose other than for low-income housing. At a minimum, the covenant must address price restrictions and household income limits for the low-income housing, and that if the property is converted to a use other than for low-income housing, the property owner must pay the applicable impact fees in effect at the time of conversion;
- (b) An exemption for early learning facilities granted under subsection (2) of this section or this subsection (4) may be a full waiver without an explicit requirement to pay the exempted portion of the fee from public funds other than impact fee accounts if the local government requires the developer to record a covenant that requires that at least 25 percent of the children and families using the early learning facility qualify for state subsidized child care, including early childhood education and assistance under chapter [43.216 RCW](#), and that provides that if the property is converted to a use other than for an early learning facility, the property owner must pay the applicable impact fees in effect at the time of conversion, and that also provides that if at no point during a calendar year does the early learning facility achieve the required percentage of children and families qualified for state subsidized child care using the early learning facility, the property owner must pay 20 percent of the impact fee that would have been imposed on the development had there not been an exemption within 90 days of the local government notifying the property owner of the breach, and any balance remaining thereafter shall be a lien on the property; and
- (c) Covenants required by (a) and (b) of this subsection must be recorded with the applicable county auditor or recording officer. A local government granting an exemption under subsection (2) of this section or this subsection (4) for low-income housing or an early learning facility may not collect revenue lost through granting an exemption by increasing impact fees unrelated to the exemption. A school district who receives school impact fees must approve any exemption under subsection (2) of this section or this subsection (4);
- (5) Shall provide a credit for the value of any dedication of land for, improvement to, or new construction of any system improvements provided by the developer, to facilities that are identified in the capital facilities plan and that are required by the county, city, or town as a condition of approving the development activity;
- (6) Shall allow the county, city, or town imposing the impact fees to adjust the standard impact fee at the time the fee is imposed to consider unusual circumstances in specific cases to ensure that impact fees are imposed fairly;
- (7) Shall include a provision for calculating the amount of the fee to be imposed on a particular development that permits consideration of studies and data submitted by the developer to adjust the amount of the fee;
- (8) Shall establish one or more reasonable service areas within which it shall calculate and impose impact fees for various land use categories per unit of development;

(9) May provide for the imposition of an impact fee for system improvement costs previously incurred by a county, city, or town to the extent that new growth and development will be served by the previously constructed improvements provided such fee shall not be imposed to make up for any system improvement deficiencies; and

(10) Must adopt or amend by ordinance, and incorporate into their development regulations, zoning regulations, and other official controls the requirements of this section to take effect six months after the jurisdiction's next periodic comprehensive plan update required under RCW [36.70A.130](#).

For purposes of this section, "low-income housing" means housing with a monthly housing expense, that is no greater than thirty percent of eighty percent of the median family income adjusted for family size, for the county where the project is located, as reported by the United States department of housing and urban development.

For the purposes of this section, "early learning facility" has the same meaning as in RCW [43.31.565](#).