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DRAFT TRANSPORTATION SYSTEM PLAN

Date: August 27, 2021

To: Project Management Team, Project Advisory Committee, & Technical Advisory Committee

From: Matt Kittelson, PE, Julia Kuhn, PE, and Miranda Barrus, PE

Project: Town of Lakeview Transportation System Plan Update

Subject: Draft Transportation System Plan

This document presents the Draft Town of Lakeview Transportation System Plan (Draft TSP), developed through a collaboration with Town staff and agency partners, feedback received from the community and stakeholders, and the results of technical and policy analyses. Following review by the PMT, and Advisory Committee, the Town will consider the document for adoption. The final plan presented will reflect a more graphical and visually accessible document to appeal to all audiences.

CHAPTER 1: INTRODUCTION

This TSP establishes a vision for the transportation system within the Town of Lakeview for the next 20 years, including supporting projects, programs, and studies. Once adopted, the TSP will serve as the transportation element of the Town's Comprehensive Plan.

The Town's transportation system supports how people and goods move to, through, and within the community to get to work, school, socialize, and gather basic needs. The community relies on freight to ensure goods are available for purchase and economic vitality remains. Increasingly, people are relying on transportation facilities to achieve health objectives including robust walking and biking routes that help maintain physical and mental wellbeing. As technologies that support transportation change, the Town's infrastructure needs may also change in response to adapting to this rapidly evolving sector. Simply put, the transportation system is the backbone of the community that supports the Town and contributes to the place that Lakeview is today and will be in the future.

TSP ORGANIZATION

The TSP is presented in two volumes. Volume 1 is the main document and includes the items that will be of interest to the broadest audience. Volume 2 contains the technical memoranda, data, and related transportation plans that enhance and support Volume 1.

VOLUME 1

Volume 1 includes the following:

- Chapter 1: A brief overview of the planning context for the TSP
- Chapter 2: Goals and policies that express the Town's long-range vision for the transportation system
- Chapter 3: The transportation system deficiencies and needs as well as the collaborative process that led to the development of the TSP's list of planned capital improvements and transportation programs
- Chapter 4: An overview of the recommended projects for the multimodal system
- Chapter 5: A list of the multimodal projects and the costs estimated for their construction
- Chapter 6: A summary of transportation funding and implementation, including estimated revenue stream, cost of 20-year needs, and potential funding sources

Volume 1 Attachments

- Attachment 1: Intersection Concepts & Cost Estimates
- Attachment 2: Toolboxes
- Attachment 3: Project Prospectus Sheets

VOLUME 2

Volume 2 includes the following technical documents:

- Appendix A: Plans and Policy Review
- Appendix B: Goals, Objectives, and Evaluation Criteria
- Appendix C: Analysis and Assumptions Methodology
- Appendix D: Existing Conditions Analysis
- Appendix E: Future Systems Conditions
- Appendix F: Solutions Analysis
- Appendix G: Identification of Preferred Solutions
- Appendix H: Sidewalk Project Planning-Level Cost Estimates

While not all of Volume 2 is adopted as part of the TSP, all of the documents provide useful information regarding the basis for the decisions presented in Volume 1.

PURPOSE

The TSP identifies the transportation facilities and services that can support the Town's adopted Comprehensive Plan. This TSP provides for a long-term community approach to support both existing and future residents and employees within the Town through maintaining and providing changes to transportation facilities that support all users over the next 20 years.

The TSP also serves as a resource for future transportation and land use decision-making by providing:

- Solutions to address existing and future transportation needs for people biking, walking, using transit, driving, freight, air, and rail;
- A blueprint for investments in transportation projects and programs that improve safety and access for all travelers, especially those that address safety and facilities for people walking or biking;
- A tool for coordination with regional and local agencies and governments;
- Information to ensure prudent land use and transportation choices;
- Order of magnitude cost estimates for transportation infrastructure investments needed to support economic development and growth, and possible sources of funding these improvements;
- Function, capacity, and location of future streets, sidewalks, bikeways, pathways, transit, and other transportation facilities; and
- Potential programs to help improve maintain existing facilities and to embrace emerging technologies that may affect the transportation system.

The TSP satisfies the state's requirements for a local transportation system plan as prescribed by Oregon Statewide Planning Goal 12: Transportation.

GUIDING PRINCIPLES AND CONTEXT

The TSP provides a flexible, adaptable framework for making transportation decisions in an increasingly unpredictable and financially constrained future. Decisions about the Town's transportation system will be guided by the goals and policies contained in Chapter 2, but ultimately the decisions will be made within the overall context of the Town's land use plans, support for local and regional Economic Development. These guiding plans and principles provide a foundation for the TSP's goals, policies, and potential actions.

The Oregon Revised Statutes require that the TSP be based on the Comprehensive Plan land uses and provide for a transportation system that accommodates the expected growth in population and employment. Development of this TSP was guided by Oregon Revised Statute (ORS) 197.712 and the Department of Land Conservation and Development (DLCD) administrative rule known as the Transportation Planning Rule (TPR, OAR 660-012).

Per the TPR, this TSP identifies multimodal transportation needs to serve users of all ages, abilities, and incomes. As such, solutions to address existing and future transportation needs for bicycling, walking, transit, motor vehicles, freight, and rail, and improved safety for all travelers are included. Further, one of the implementation steps of the TSP will include adoption of land use and land division ordinance amendments needed to protect transportation facilities and provide active transportation facilities between residential, commercial, and employment/institutional areas. Finally, as required by the TPR, this TSP was developed in coordination with local, regional, and state transportation plans.

REGIONAL COORDINATION & COMMUNITY ENGAGEMENT

The Town, in its role as an economic driver for Lake County and the greater South Central Oregon area, coordinated the development of the TSP with community members, businesses, and key agency partners to reflect overall goals and needs of the region. This feedback occurred via a range of venues, such as:

- The TSP website included project updates, all technical reports, meeting summaries, and links to engagement opportunities;
- Regular Project Management Team (PMT) Meetings attended by Town and ODOT staff;
- Four Public Advisory Committee (PAC) Meetings;
- Two public open houses; and
- Town Planning Commission and Town Council work sessions and public hearings.

These activities provided members of the public with a variety of forums to provide feedback and share their priorities for future transportation projects, programs, and policies.

CHAPTER 2: GOALS & POLICIES

The TSP Goals are intended to be broad statements that characterize the community's desires and vision for the future transportation system. The goals are intended to be aspirational and may not be fully attained within the 20-year planning horizon of this plan. The goals are intended to be supported by the policies as well as specific implementation items for the Town to address after the TSP has been adopted.

Goal 1: Accessibility & Connectivity: Develop an interconnected, multimodal transportation network that connects all members of the community to destinations within and beyond Lakeview.

1.1 Improve existing and create new multimodal connections between households and schools, parks, transit stops, employers, neighborhood commercial centers, health and social services, and other essential destinations; ensure multimodal access for all members of the community including people of color, children, disabled, low-income, and elderly populations.

1.2 Provide a network of arterials, collectors, and local streets that are interconnected, appropriately spaced, and reasonably direct in accordance with Town and state design and connectivity standards.

Goal 2: Community & Economic Vitality: Provide a transportation system that supports existing businesses and encourages economic development in Lakeview.

2.1 Improve the movement of goods and delivery of services throughout Lakeview while balancing the needs of all users and preserving livability in residential areas and established neighborhoods.

2.2 Update and implement development standards for transportation improvements that support the development of desired land uses and activities.

2.3 Encourage tourism by developing connections to and between recreational locations and destinations and key services in Lakeview.

2.4 Promote street maintenance and necessary funding to preserve and maintain the existing transportation system in a state of good repair.

Goal 3: Equity: Provide an equitable, balanced, and connected multi-modal transportation system.

3.1 Provide equitable multi-modal access for underserved and vulnerable populations to schools, parks, employers, neighborhood commercial centers, health and social services, and other essential destinations.

3.2 Provide connections for all modes that meet applicable Town and Americans with Disabilities Act (ADA) standards.

3.3 Ensure ADA compliance for new and non-compliant transportation facility infrastructure.

3.4 Support implementation of the Lake County Coordinated Human Services Public Transportation Plan.

Goal 4: Mobility: Optimize the performance of the transportation system for the efficient movement of people and goods.

4.1 Develop and maintain street functional classifications, along with operational guidance and cross-sectional and right-of-way standards, to ensure streets serve their intended purpose.

4.2 Reduce reliance on single-occupancy vehicle trips by developing and maintaining bicycle and pedestrian facilities that encourage non-vehicular travel and provide safe, convenient, and attractive passage for pedestrians and bicyclists.

4.3 Reduce reliance on the state highway system for making local trips.

4.4 Balance local circulation and pedestrian and bicycle needs with freight mobility needs through planning and design guidance and coordination; prioritize efficient freight movement on identified freight routes versus local streets.

4.5 Support emergency services through an efficient and well-connected transportation system.

4.6 Support local and regional Transportation Systems Management and Operations (TSMO) system elements.

Goal 5: Safety & Health: Provide a transportation system that is safe and secure for all transportation modes and all ability levels and enhances the health of residents and users.

5.1 Address existing safety issues and assess and improve locations with a history or high risk of crashes for vehicles, bicycles, and pedestrians.

5.2 Provide safe, convenient, and direct pedestrian and bicycle facilities and routes to promote health and the physical and social well-being of Lakeview residents, to reduce vehicular traffic congestion, to enhance air quality, to provide transportation and recreational alternatives, and to support multi-modal access to health-supportive goods and services.

5.3 Develop a Safe Routes to School (SRTS) plan to prioritize improvements that encourage walking and biking and to reduce traffic volumes and speeds near schools.

Goal 6: Sustainability: Provide a sustainable transportation system by promoting transportation choices and encouraging efficient design that consider and preserve environmental resources.

6.1 Avoid or minimize impacts of the transportation system to the scenic, natural, and cultural resources in Lakeview; consider alternative transportation facility designs in constrained areas.

6.2 Develop a traffic counting program for key intersections roadways in Lakeview to regularly monitor traffic operations for needed improvements.

Goal 7: Communication, Collaboration and Coordination: Develop and maintain a Transportation System Plan that is consistent with the goals and objectives of the Town, Lake County, and the state.

7.1 Ensure consistency with state, regional and local planning rules, regulations, and standards.

7.2 Coordinate land use and transportation decisions to efficiently use public infrastructure investments to:

a. Maintain the mobility and safety of the roadway system;

b. Foster efficient development patterns;

c. Encourage the availability and use of transportation options such as biking, walking and taking transit; and

d. Plan for efficient and safe emergency response and evacuation needs.

7.3 Coordinate with Lake County and the Oregon Department of Transportation to implement system management and operations strategies.

7.4 Incorporate needs and projects identified in other state, regional, or local plans.

Goal 8: Funding: Provide a sustainable transportation system through responsible stewardship of financial resources.

8.1 Pursue grants and collaboration with other agencies to efficiently fund transportation improvements and supporting programs.

8.2 Identify and maintain stable and diverse revenue sources to meet the need for transportation investments in the Town.

8.3 Identify new and creative funding sources to leverage high priority transportation projects

CHAPTER 3: NEEDS ASSESSMENT & EVALUATION

The TSP goals, policies, projects, and potential implementing actions are based on analysis by, and input received from, the community, Town staff, partner agency staff, and Town policy-makers. This review included analysis of existing transportation conditions for all modes of travel, forecast deficiencies in the transportation system, an evaluation of possible changes to the transportation improvements that can meet the needs for all users (including the transportation disadvantaged), and address the need for movement of goods and services to support local and regional economic development priorities. The list of recommended projects and programs was identified based on an analysis of the Town's transportation needs, potential system solutions, and a detailed review of relevant state, regional, and local plans, policies, and funding opportunities. The following sections outline the key findings from the existing and future needs analyses that helped shape the recommendations.

EXISTING TRANSPORTATION CONDITIONS

Existing transportation needs, opportunities, and constraints reflect an inventory of the sidewalks, bike facilities, streets, pathways, air and rail services within the Town's UGB in 2020. Key roadway features, traffic conditions, safety performance, bicycle and pedestrian facilities, and transit service, among other topics, were analyzed. Detailed findings of the technical analysis are summarized in Volume 2, Appendix D: Existing Conditions Analysis. Key findings of this review are outlined below.

- Transportation disadvantaged populations exist throughout the Lakeview community, highlighting the need to provide options for people to safely and efficiently travel to work, services, and recreation.
- Sidewalks are provided primarily along arterials and collectors in the denser residential and commercial areas of Town. Areas away from the downtown core are less likely to have an existing or complete sidewalk system.
- Additional pedestrian crossing locations of US 395 and OR 140 would improve connectivity for people walking.
- People riding bicycles "share the road" with motorists along most of the streets within the Town.
- Lake County Senior Citizens Association (LCSCA) and the Inner Court Family Center services provide rides through demand-responsive (e.g., curb-to-curb trips scheduled by advance reservation) and dial-a-ride shuttle service for seniors, persons with disabilities, and the general public. LCSCA also has a monthly roundtrip to La Pine and is piloting a service to Alturas. No dedicated transit facilities exist in Lakeview.
- No vehicular capacity-based deficiencies were identified on the State or local roadway system.
- No intersections or street segments were identified to exceed the state's applicable crash thresholds except the section of US 395 north of OR 140.
- Several intersections along US 395 would benefit from geometric changes to reduce driver confusion and limit crossing distances for people walking or biking.
- OR 140 and US 395 are designated Oregon Highway Plan (OHP) freight routes serving as important connections between Southern and Central Oregon and California. Trucks account for approximately 27 percent of OR 140 daily traffic, 16 percent of US 395 daily traffic north of OR 140, and 30 percent of US 395 daily traffic south of OR 140.

BASIS OF NEED ASSESSMENT

The TSP addresses the projects, programs, and policies needed to support the Lakeview community today and to the year 2040. Over time, the Town will work together with agency partners to monitor transportation needs within the urban area and periodically update the TSP to respond to changing conditions.

The needs assessment and resulting projects (set forth in Chapter 5) are intended to serve the pedestrian, bicycle and vehicular traffic generated by future land use development in accordance with the Town's Adopted

Comprehensive Plan. The TSP reflects the Town's priority to maintain existing facilities while providing a vision to provide a safe, efficient transportation system that provides choices for all users.

As presented in the following sections, the baseline evaluation highlighted the following primary deficiencies:

- Changes to the US 395/OR 140 and US 395/J Street/Missouri Avenue intersection could alleviate some of the existing driver confusion at these intersections and also shorten the crossing distances for people walking or cycling through the intersection.
- Improving the range of transportation choices, especially for the transportation disadvantaged, can help contribute to a healthy, equitable community. Connecting people walking and riding bikes between jobs, housing, and medical services, and providing transit serves those who need it most are important factors to evaluate.

Detailed findings of the technical analysis are summarized in Volume 2, Appendix E: Future Conditions Analysis.

POPULATION AND JOBS FORECASTS

The future street and intersection needs were identified based on forecast year 2040 traffic volumes. These volumes reflect estimates of household and job growth within the Town's adopted UGB as well as in Lake County and the overall Southern Oregon region. These population and employment forecasts were "coordinated" for compliance with Oregon transportation and land use planning requirements.

Within the Town's UGB, continued job growth is primarily anticipated within the industrial and commercial/office sectors whereas the population level is anticipated to remain fairly constant. Per the Town's buildable lands summary prepared in 2019, the jobs and households expected by the year 2040 can be accommodated within the existing UGB.

FUTURE BASELINE TRAFFIC ANALYSES

To understand the future needs for people driving within the Town, year 2040 intersection and roadway volumes were estimated at seven locations key locations throughout the community. Key findings and needs based on evaluation of these locations are presented in the sections below.

BASELINE INTERSECTION ANALYSES

The Baseline Analysis assumes the existing streets and intersections will remain the same as they are today in the Town because no changes to the roadway system are currently under construction or have funding that is already allocated that would materially affect traveler behaviors and traffic volumes in the future. The baseline analyses demonstrated that all intersections are expected to have ample capacity to serve people and goods traveling by vehicle through 2040. As such, projects and programs included in this TSP are not focused on expanding vehicular capacity at intersections or along roadways.

BASELINE SAFETY AND GEOMETRIC NEEDS

The current configuration of several intersections, including US 395/OR 140, US 395/J Street/Missouri Avenue, and US 395/Industrial Lane, may be confusing for drivers to navigate. At the same time, the design of these intersections results in long crossing distances for people walking or riding bikes. The TSP includes projects to address geometric needs at these and other intersections within the community to improve visibility of all users and accommodate everyone.

In addition, crashes recorded between 2014 and 2018 on US 395 between OR 140 and the northern Town UGB exceed rates that might be "expected" on similar facilities across the state of Oregon. The TSP includes a study to further explore crash trends along this segment and plan for walking and biking facilities to connect people with employment and recreation opportunities.

FUTURE ACTIVE TRANSPORTATION CONDITIONS

One of the key baseline needs for the Town is to improve the range of transportation choices, especially for the transportation disadvantaged. In particular, the TSP focuses on strengthening walking and bicycle connections between homes, jobs, schools, and other significant attractors

SIDEWALK SYSTEM

A connected system of sidewalks within the Town can contribute to support an economically vital, healthy, and equitable community. Today, sidewalks are provided primarily along arterials and collectors in the denser residential and commercial areas of Town. Further from the Town's core, sidewalks are generally not available and people walking must use the roadway edge or roadway shoulder, if available. Filling the primary gaps in the sidewalk system along collector and arterial streets along key streets will help people choose walking as a viable transportation option to access school, jobs, essential services, and recreation.

BICYCLE SYSTEM

Today, people riding bicycles primarily "share the road" with motorists on all of the arterials and collector streets. There are only three streets with striped bike lanes within the Town. A connected network of bicycle facilities within the Town would improve the comfort, convenience, and safety for people riding bicycles.

TRANSIT SYSTEM

Providing more transit options for people living or visiting Lakeview is a key need for the Town in the future. Key areas identified to focus expanded service include:

- Improved transit access to essential services such as shopping;
- Providing weekend and evening service;
- Increased coordination and education of services available; and
- Regional connections to other areas in Southern and Central Oregon.

CHAPTER 4: CREATING MULTIMODAL SYSTEMS

The TSP is a coordinated set of multimodal policies, programs, and projects that address the transportation needs within the Town's UGB over the next 20 years. This chapter provides an overview of the key regulatory and system elements that comprise the building blocks that can shape changes to the transportation system in the future. A detailed project list and associated cost estimates are shown in Chapter 5.

A network of "complete streets" helps create a connected transportation system that benefits all users and to support the local economy by providing a means to deliver goods and services to the community. Although automobiles will continue to be a primary mode of travel, and preservation and improvement of the existing street system remains important, providing options for everyone will increase transportation choices, reduce reliance on the automobile by better accommodating and encouraging travel by foot and bike for short trips, improve safety for all street users, and provide for improved transit service. The TSP, in partnership with the Town's adopted land use plans and regulations can contribute to land use patterns and a transportation system that make walking, cycling, and use of transit highly convenient so that, on balance, people need to and are likely to drive less than they do today.

ROADWAY JURISDICTION

The streets within the UGB are operated by the Town, Lake County, ODOT, Bureau of Land Management (BLM), and the United States Forest Service (USFS). The jurisdictional responsibility for these streets is shown in Figure 1. Local streets are owned and maintained by the Town. Some of the local roadway network is privately held.

The Town will operate and maintain facilities it owns and coordinate with other jurisdictions to maintain and grow an effective and efficient transportation network within the UGB.

FUNCTIONAL CLASSIFICATION

The Town, in coordination with Lake County and ODOT, organizes streets into a functional classification system based on a hierarchy of mobility and access to, through, and between different land use types. In compliance with the TPR, the TSP focuses on improvements to those streets classified as collectors and arterials. Table 1 summarizes the functional classifications within the Town.

Table 1: Roadway Functional Classifications

Functional Classification	Purpose	Example Streets
Arterials	▶ Represent the highest class of roadway ▶ Intended to serve higher traffic volumes and through traffic; speeds may be higher than on other roadways ▶ Serve trucks movements Note: All arterials in Lakeview are on the State Highway system	▶ OR 140 ▶ US 395
Collectors	▶ Provide connections between neighborhoods and employment areas and the state highway system. ▶ Provide access to schools, employment areas, and neighborhoods	▶ Roberta Avenue ▶ L Street ▶ S 3rd Street
Local Streets	▶ Provide access to adjacent land uses ▶ Operate with relatively low vehicular speeds ▶ Provide connections within neighborhoods for people walking and riding bikes ▶ Designed to discourage cut-through vehicular traffic	▶ S 1st Street ▶ G Street ▶ Millview Street

Figure 2 illustrates the designated functional classification of each of the Town's streets. No changes to this classification system were made as part of the TSP update.

STREET DESIGN STANDARDS

The Town's street standards provide guidance for designing and constructing new streets as well as making changes to existing streets. These standards are organized by functional classification as well as by the land use types that they serve (per the zoning designation). This is summarized in Table 2.

Table 2: Street Standards

Functional Classification	Right-of-Way Width (ft)	Travel Lanes (ft)	Median/ Center Turn Lane (ft)	Bike Lanes (ft)	On-Street Parking (ft)	Curb (in)	Planting Strip (ft)	Sidewalks (ft)
Arterial Streets								
Arterials within the study area, which are all on the State Highway system, are subject to State highway improvement standards or guidance.								
Collector Streets								
All Zones Except DSCSD[1]	60	11	None	Shared	7	6	0-6	6
DSCSD Zone	100	10	None	Shared	17 (angled)	6	0-8	6-15
Local Streets								
Industrial, Commercial, and High Density Residential (R-3) Zones	60	11	None	Shared	7	6	0-6	6
DSCSD Zone	100	10	None	Shared	17 (angled)	6	0-8	6-15
Single-Family and Multiple Family Residential Zones	60	10	None	Shared	8 (one side)	6	0-10	6
Alleys	16-20	N/A	N/A	N/A	None	None	None	None
Accessways and Multi-Use Paths	10-18	6-10	N/A	N/A	N/A	None	None	None

[1]DSCSD: Downtown Service Core

Changes to existing streets to meet these standards will be periodically evaluated and implemented by the Town through maintenance projects, capital projects, and partnerships with private development. In locations where topographic conditions or the built environment prevent constructing roadways to the identified standard, the Town may allow a modified cross section. All future changes to the state highways within the Town's UGB will be coordinated with the guidance contained in ODOT's Highway Design Manual (HDM) and *Blueprint for Urban Design*.

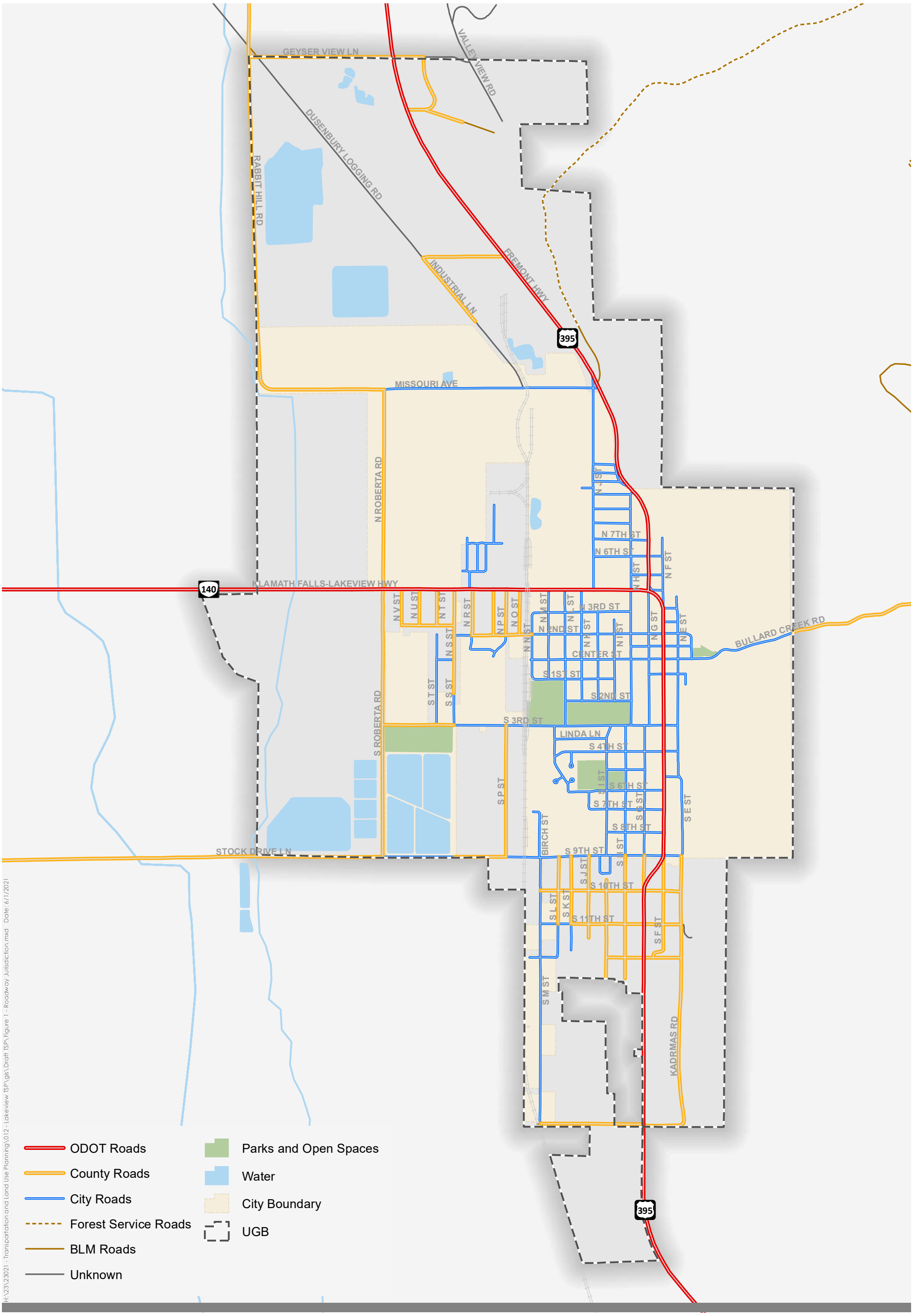


Figure 1

Roadway Jurisdiction
Lakeview, Oregon

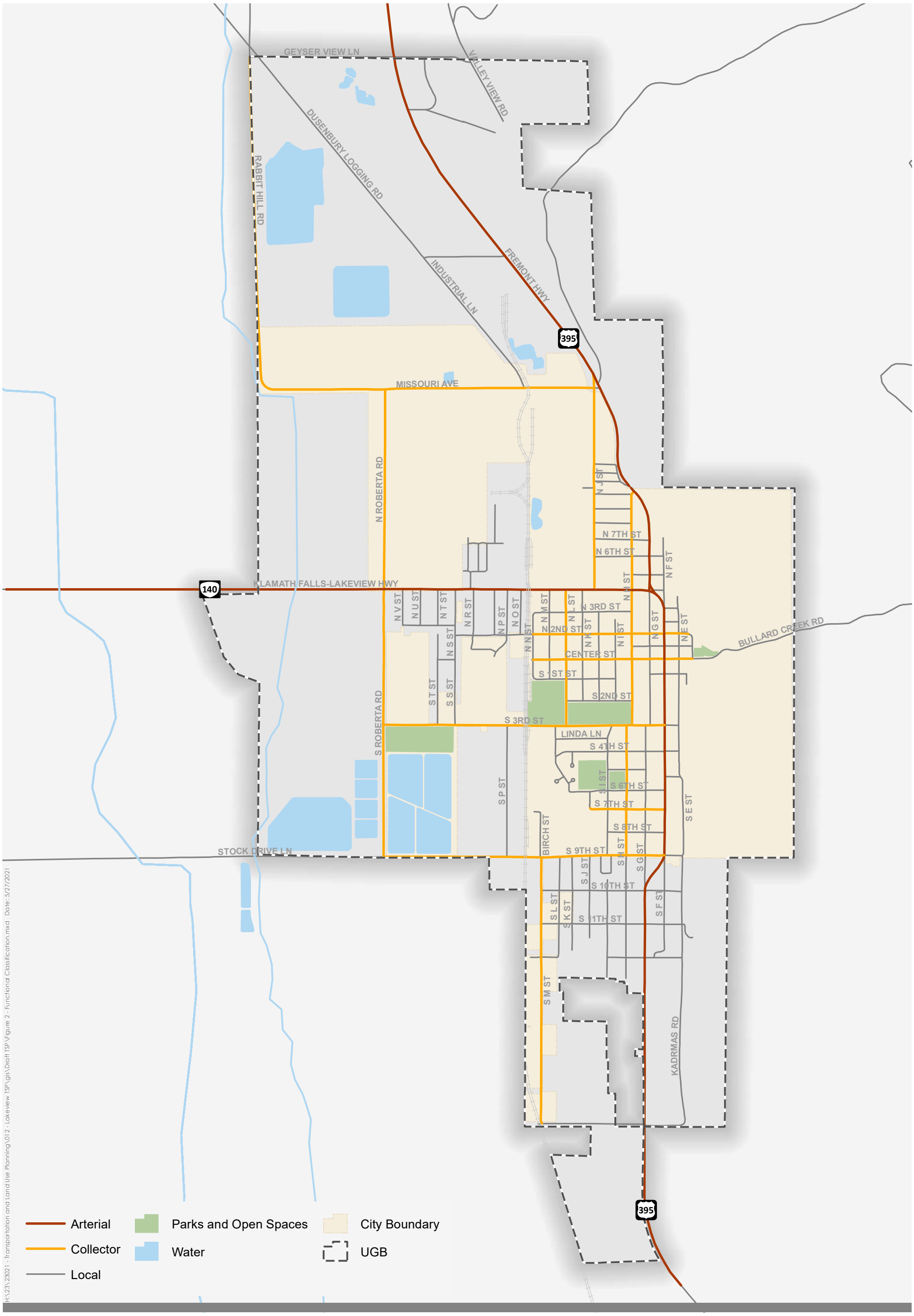


Figure 2

Functional Classification System
Lakeview, Oregon

ACCESS SPACING STANDARDS

Defining expectations on access to streets, land uses, and key destinations can help with the operation and planning of the Town's street system. The following sections document existing ODOT (as of 2021) and Town standards related to access spacing.

ODOT STANDARDS

Access management spacing standards established for the state highway system within Lakeview are maintained in Oregon Administrative Rule (OAR) OAR 734-051. As development and redevelopment occurs along these highways, ODOT and the Town will work in collaboration to meet spacing standards by consolidating existing and future accesses and encouraging crossover easements where feasible.

TOWN OF LAKEVIEW STANDARDS

The Town's access management standards are summarized in Table 4. The Town will prioritize meeting spacing standards as development occurs by consolidating existing and future accesses and encouraging crossover easements where feasible. In cases where physical constraints or characteristics limit the ability to achieve these access management standards, the Town reserves the right to grant access spacing variances.

Table 4: Town Access Management Standards

Functional Classification	Spacing Between Intersections of Public Streets (Feet)	Spacing Between Private Driveways and Alleys (Feet)
Arterial	See ODOT Standards	
Collector	300	100
Local	300	50

FREIGHT SYSTEM

OR 140 and US 395 are Oregon Highway Plan (OHP) designated freight routes within Lakeview, providing connections to Southern and Central Oregon and California. Both state highways are classified as Reduction Review Routes and have various Over-Dimension movement restrictions (e.g., Triples Combinations, mobile homes and modular buildings, length, width, and weight limits). While the local system is used periodically by freight, no local freight routes are designated. Lakeview's freight system is shown in Figure 3. The Town will coordinate with ODOT and partner agencies on changes to these routes needed for maintaining and supporting regional and local connectivity that moves goods and services.

AIR SYSTEM

The Lake County Airport is owned and operated by Lake County and is located southwest of Town limits. The airport is classified as a Category III – Regional General Aviation Airport, which typically supports most twin and single-engine aircraft and can accommodate business jet operations. They serve regional transportation needs with a large and often sparsely populated service area. No commercial airline service is provided at the airport, and as of 2021, the closest commercial service is available several driving hours away in Medford and Redmond. Future planning at the airport is subject to the Lake County Airport Master Plan. No element of the master plan, including imagery surfaces and protected airspace, is within Town limits.

RAIL SYSTEM

The Lake County Railroad is operated by Goose Lake Railway LLC and provides the only rail service through Lakeview. The rail line terminates in Lakeview and runs south into California, providing rail service between the study area and the communities of Alturas and Perez. The line is classified as a non-Class 1 railroad and only services freight rail. Non-Class 1 railroads provide important collector/distributor services for Class 1 railroads as well as local rail services for rural shippers. This rail service has exported goods over the last century such as timber, wheat, perlite, and livestock.

Within the UGB, the rail line runs north-south, west of US 395, adjacent to south M Street, and between north O and N streets. The line crosses south 9th and 3rd streets, north 2nd Street, OR 140, and Missouri Avenue with at-grade crossings, and terminates in the area west of US 395 and south of Industrial Lane near timber mills and similar industries. The line also crosses Deadman Creek, north of south 9th Street by way of a rail bridge.

Projects to improve and maintain rail service are within Lake County's jurisdiction and included in the Lake County Transportation System Plan. No projects apply to the Town's TSP.

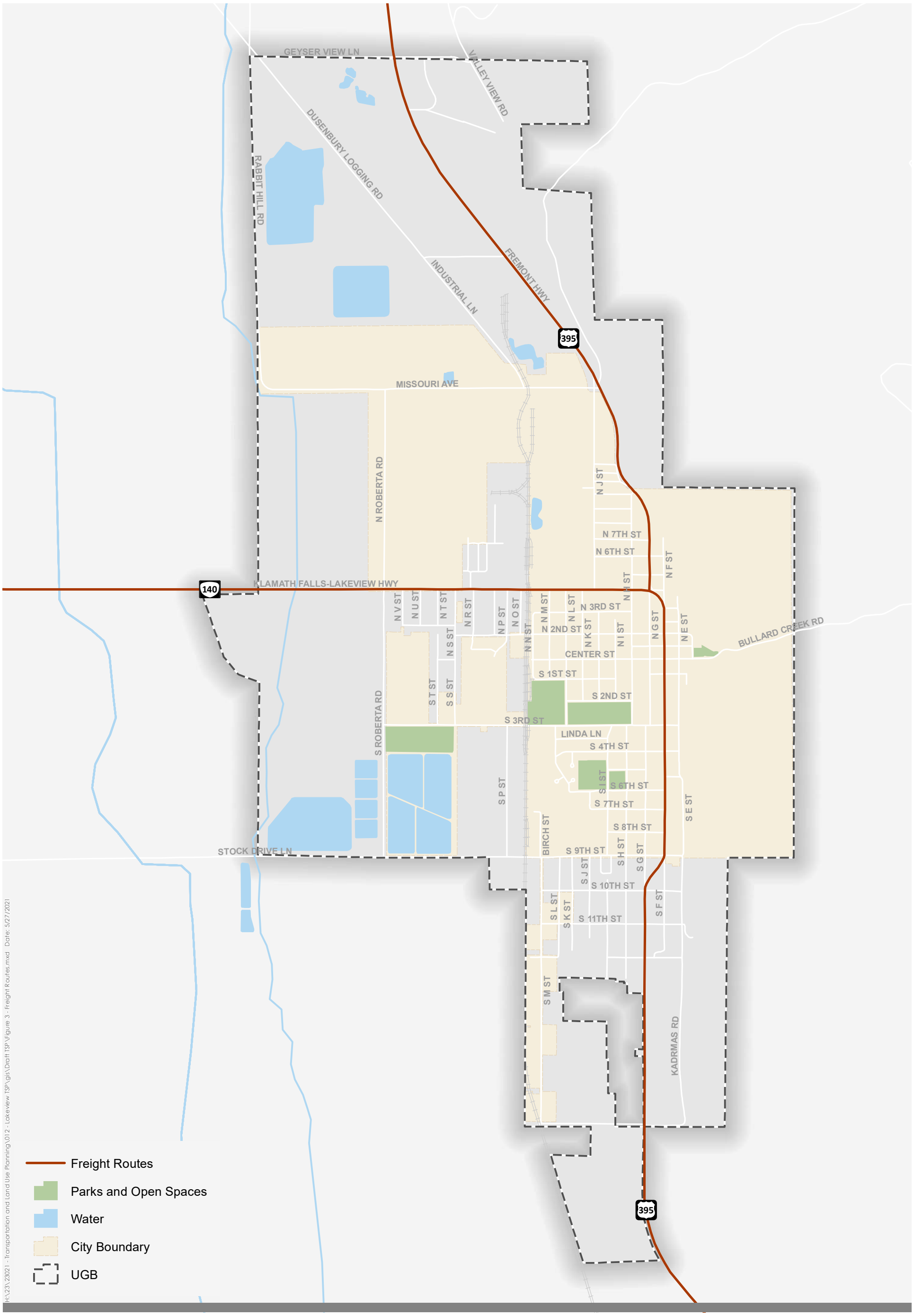
BRIDGE SYSTEM

ODOT maintains an inventory of bridge conditions within the state. Inspectors rate the bridges on structural integrity, functionality, scour rating, and other criteria, and assign a score called a sufficiency rating. The sufficiency rating is a numeric evaluation of a bridge's sufficiency to remain in service. Sufficiency ratings range from zero to 100, with zero being entirely insufficient and 100 percent entirely sufficient. The sufficiency rating considers structural adequacy, serviceability, functional obsolescence, importance for public use, eligibility for federal replacement funds, and a few lesser factors. Bridges receiving low scores are posted to restrict the allowable maximum vehicle weight, rehabilitated, or replaced.

A sufficiency rating below 50 implies that the bridge is in poor condition and needs to be replaced. Bridges rated between 50 and 80 indicate that the bridge is in fair condition, and that rehabilitation, if cost-effective, will bring the bridge up to current standards. Bridges with sufficiency ratings above 80 may have specific elements that do not meet current minimum standards, but overall are in good or adequate condition in all areas and are not eligible for federal funding. The most recent bridge inspection reports provided by ODOT (*ODOT Bridge Condition Report, 2020*) show that no bridge has a sufficiency rating below 80. Further, no bridge in the UGB is categorized as structurally or functionally obsolete.

PIPELINE SYSTEM

Major pipelines are not known to traverse Lakeview. However, the town is served by several local utilities that provide services to businesses and residents. These utilities are often within the public right-of-way and should be coordinated with in conjunction with modifications to the transportation system.



H:\23\23021 - Transportation and Land Use Planning\012 - Lakeview TSP\gis\Draft TSP\Figure 3 - Freight Routes.mxd Date: 5/27/2021

Figure 3

Freight System
Lakeview, Oregon

CHAPTER 5: TRANSPORTATION SOLUTIONS

The TSP recommends transportation programs and infrastructure changes intended to fulfil the plan's goals and policies. These are organized into categories that address intersection and street needs, access to schools, facilities for people walking, facilities for people riding bikes, emerging technologies, and transit service.

Some projects may be accelerated, and others postponed due to changing conditions, funding availability, public input, or more detailed study performed during programming and budgeting processes. Further, the projects included in the preferred TSP list represent the best estimation for appropriate design available at this time. The actual design of these projects may be changed before construction commences as public input, available funding, and unique site conditions are taken into consideration. Projects identified herein may be funded through a variety of sources including federal, state, or local transportation funds, through partnerships with private developers, or a combination of these sources.

It is also important to note that solutions related to people walking or riding bikes along ODOT facilities are identified for discussion and planning purposes and for determining a planning-level cost estimate only. Design elements for any state facility are subject to change, will be determined through preliminary and final design processes, and are subject to future ODOT approvals.

INTERSECTION AND STREET PROJECTS

Several intersections may be modified over time to improve the safety, comfort and convenience for people driving, walking, rolling, and/or riding bikes. Figure 4 identifies where these intersections are located within the Town and Table 5 details their changes and estimated planning-level costs in 2021 dollars.

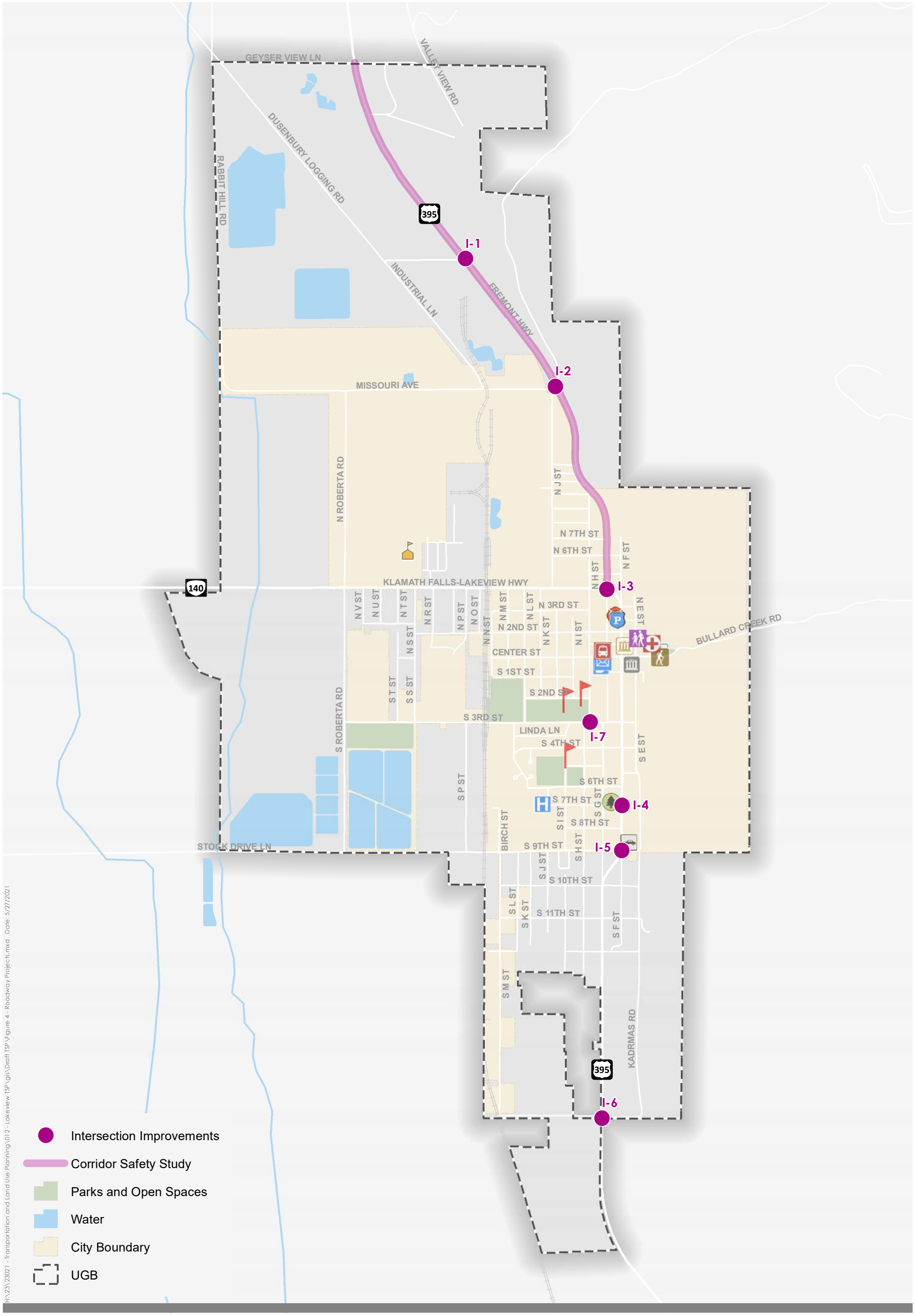


Figure 4

Intersection and Roadway Projects
Lakeview, Oregon

The planning-level cost estimates reflected in the table provide an order of magnitude that is useful for project and program planning and development and will be refined through specific project development and design efforts. More detail on each is included in Attachment 1.

Table 5: Intersection and Street Projects

Project ID	Project Location	Project Description	Cost Estimate	Funding Partner
I-1	US 395 / Industrial Lane	Changes to intersection layout and lane configuration	$50,000	ODOT
I-2	US 395 / Missouri Ave	Changes to intersection layout and lane configuration	$450,000	ODOT
I-3	US 395 / OR 140	Changes to intersection layout and lane configuration	$550,000	ODOT
I-4	US 395 / S 7th St	Emergency Service Access Monitoring	TBD	ODOT
I-5	US 395 / S 9th St	Emergency Service Access Monitoring	TBD	ODOT
I-6	US 395 / Kadrmas Rd	Monitor for future changes needed to support employment growth	TBD	ODOT
I-7	S H St / S 3rd St	Geometric Changes (overlaps with Project C-5)	$250,000	-
R-1	US 395: OR 140 to UGB	Corridor Safety & Multimodal Facility Study	$150,000	ODOT

TBD – Specific project needed and associated cost to be determined as changes in travel patterns or demand warrant intersection modification.

- **US 395/Industrial Lane (I-1) and US 395/Missouri Avenue (I-2):** Figure 1-1 and Figure 1-2 in Attachment 1 illustrate potential changes that can reduce driver confusion, shorten crossing distances for people walking, rolling, and biking, and more clearly communicate how people can safely navigate through the intersection.
- **US 395/OR 140 (I-3):** Figure 1-3 in Attachment 1 illustrates potential changes that can better delineate space within the intersection for people driving, walking, and riding bikes. Future project development will be coordinated with ODOT to further refine this concept and associated costs.
- **US 395/S 7th Street (I-4) and US 395/S 9th Street (I-5):** both intersections will be maintained regularly to provide adequate sight lines for Lake District Hospital emergency vehicles. Further, changes to the traffic volumes at both locations will be monitored over time to determine if and when turn-lane needs may be needed, especially for left-turning vehicles from US 395 accessing the hospital.
- **US 395/Kadrmas Road (I-6):** Changes in traffic volumes at this intersection will be monitored over time to determine if intersection improvements are needed to help support this important economic area of the community. In particular, changes that can help truck ingress and egress to the Red Rocks Biofuel facility and other future economic development opportunities will be monitored.
- **S H Street/S 3rd Street (I-7):** Figure 1-4 in Attachment 1 illustrates potential changes that reduce the turning radius for the southbound right-turn movement and shorten crossing distances for people walking and riding bikes. Future refinements to this concept will confirm preferred crossing locations, adequately accommodate the appropriate design vehicle, and provide improved street lighting for all users.
- **US 395 north of OR 140 (R-1):** ODOT and the Town will work together on conducting a more refined study of potential changes to the US 395 corridor north of OR 140, particularly for identified safety and multimodal needs. This future corridor plan can help identify changes to facilities for people driving, walking and riding bikes that address these needs.

STREET OPERATIONS AND PRESERVATION PROGRAM

The Town strives to operate and maintain a street system in a state of good repair. To accomplish this, the Town will seek regular funding sources to identify and perform necessary activities such as pavement and right-of-way maintenance on the existing street system, bridges, reconstruction of streets with failed pavement conditions, street sweeping, and snow removal and winter operations. As necessary, the Town will seek grants, agency partnerships, or other opportunities to obtain or leverage resources to complete operations or preservation needs.

SCHOOL CIRCULATION

Improved circulation near schools is a priority for the community, particularly for the Arthur D Hay and Fremont Elementary Schools. In particular, changes to how school buses and parent/care-giver vehicles operate during drop-off and pick-up times is of interest as are changes to the existing system that can be made for students walking, rolling, and/or biking to and from school. The Town will work with Lakeview High School and Arthur D Hay and Fremont elementary schools to develop circulation plans as well as routing options. These plans may include, but are not limited to, changes to parking lot signage and striping, enhanced pedestrian crossings, better definition of spaces within and adjacent to the schools designated for buses, vehicles and people walking and cycling.

TRANSPORTATION SAFETY TOOLBOXES

A number of "systemic engineering countermeasures" that can be implemented over time for relatively low cost. These countermeasures are intended to improve the safety for people traveling within and through the town. These may get implemented as part of ongoing maintenance activities by the Town or its partner agencies.

Table 6 and Table 7 summarize the potential roadway and intersection countermeasures. These are described further in Attachment 2. When available, both tables present the countermeasure effectiveness in reducing crashes based on associated Crash Reduction Factors (CRF).

Attachment 2 also includes speed management techniques that the Town can consider implementing, such as:

- **Dynamic Speed Displays and Vehicle-Actuated Signs/Speed Trailers:** these display the speed of approaching vehicles; warnings for motorists exceeding the posted speed may also be incorporated.
- **Enhanced Signing:** these may include oversized and fluorescent signage or retroflected strips on existing signage, such as chevrons or curve advisory signs to alert drivers to appropriate speeds.
- **Gateway Signage:** a type of sign or other visual cue that indicates that motorists are entering the Town limits.

Table 6: Systemic Safety Countermeasures for Roadway Segments			
Countermeasure	**Applicable Crash Types**	**Crash Reduction Factor (CRF)**	**Planning-Level Cost***
Roadway Segments			
Install Dynamic Speed Feedback Signs	All crash types	41%[1,3]	$10,000 per sign
Remove, Relocate, or Protect Fixed Objects Adjacent to Road	All crashes	38%[3]	Varies
Corridor Access Management			
Close, Consolidate, or Relocate Driveways (Access Management)	All injury crashes	Varies based on driveway density	Varies
Pedestrians & Bicyclists			
Install Pedestrian Refuge Island	Pedestrian crashes	26-31%[1,4]	$25,000
Curb Extensions	Pedestrian Crashes	37%	$20,000
Install Rectangular Rapid Flashing Beacon	Pedestrian crashes	10-56%[1]	$20,000 - $50,000
Install Pedestrian-Scale Lighting	Night-time pedestrian and bicycle crashes	42%[1,2]	$8,500 per pole
Bicycle Signage and Beacons at Pinch Points	Bicycle	N/A	$10,000

*Planning-level cost estimates were obtained from ODOT's list of approved CRFs.
Crash Reduction Factor Sources: [1] ODOT ARTS, [2] Highway Safety Manual, [3] CMF Clearinghouse, [4] NCHRP Report 841

Table 7: Systemic Safety Countermeasures for Intersections			
Countermeasure	**Applicable Crash Types**	**Crash Reduction Factor (CRF)**	**Planning-Level Cost***
Two-Way Stop-Controlled Intersections (Signing, Striping, Illumination)			
Increase Intersection Warning with Signing and Striping (FHWA low-cost systemic intersection recommendations)	All	11 – 55%[1,4]	Varies ($400 per new sign; $700 per oversized sign; $1,000 per Stop Ahead legend)
Install Raised Divider on Stop Approach (Splitter Island)	All crashes	15%[1]	$7.55 per sq ft
Provide "Stop Ahead" Pavement Markings	All crash types	31%[3]	$1,000 each
Provide Flashing Beacons at Stop-Controlled Intersections	Angle crashes	5-58%[1,2]	$5,000 per mount
Install intersection lighting	Nighttime	31 – 38%[1,2]	$8,500 per pole
Intersection Geometry			
Install a Roundabout	All crash types	19-82%[1,2]	$2.5M-3M*
Increase Sight Distance	All injury crashes	11-56%[1,3]	Varies
Install Left-Turn Lanes on Major Roads at Stop-Controlled Intersections	All crash types	33-58%[1,2]	Varies

*Planning-level cost estimates were obtained from ODOT's list of approved CRFs, unless marked with an asterisk (*).
Crash Reduction Factor Sources: [1] ODOT ARTS, [2] Highway Safety Manual, [3] CMF Clearinghouse, [4] Caltrans / Intersection Implementation Plan / ODOT

PEDESTRIAN SYSTEM SOLUTIONS

Maintaining and adding facilities for people walking within the Town can help safely and efficiently transport those who are unable or choose not to drive. Over time, the Town desires to have sidewalks on most streets, where feasible (as reflected in the street standards from Table 2). However, the Town does not have sufficient funding and/or available right-of-way to construct sidewalks of at least six feet in width along all the streets (excluding

alleys). Priority corridors identified through the TSP development are shown in Figure 5. These priority corridors establish a network of sidewalks and marked crossings between schools, residences, and businesses and provide alternate parallel routes to the state highway system. Key sidewalk infill and crossing needs to complete these priority corridors are summarized in Table 8 and Table 9. The detailed planning-level cost estimates from these tables are included in Volume 2.

Many of these key sidewalk infill projects are close to schools and may support Safe Routes to School (SRTS) projects in the future. The Town will coordinate specific planning, projects, or grant applications to identify and implement efforts to improve accessibility to schools, especially for those who are walking.

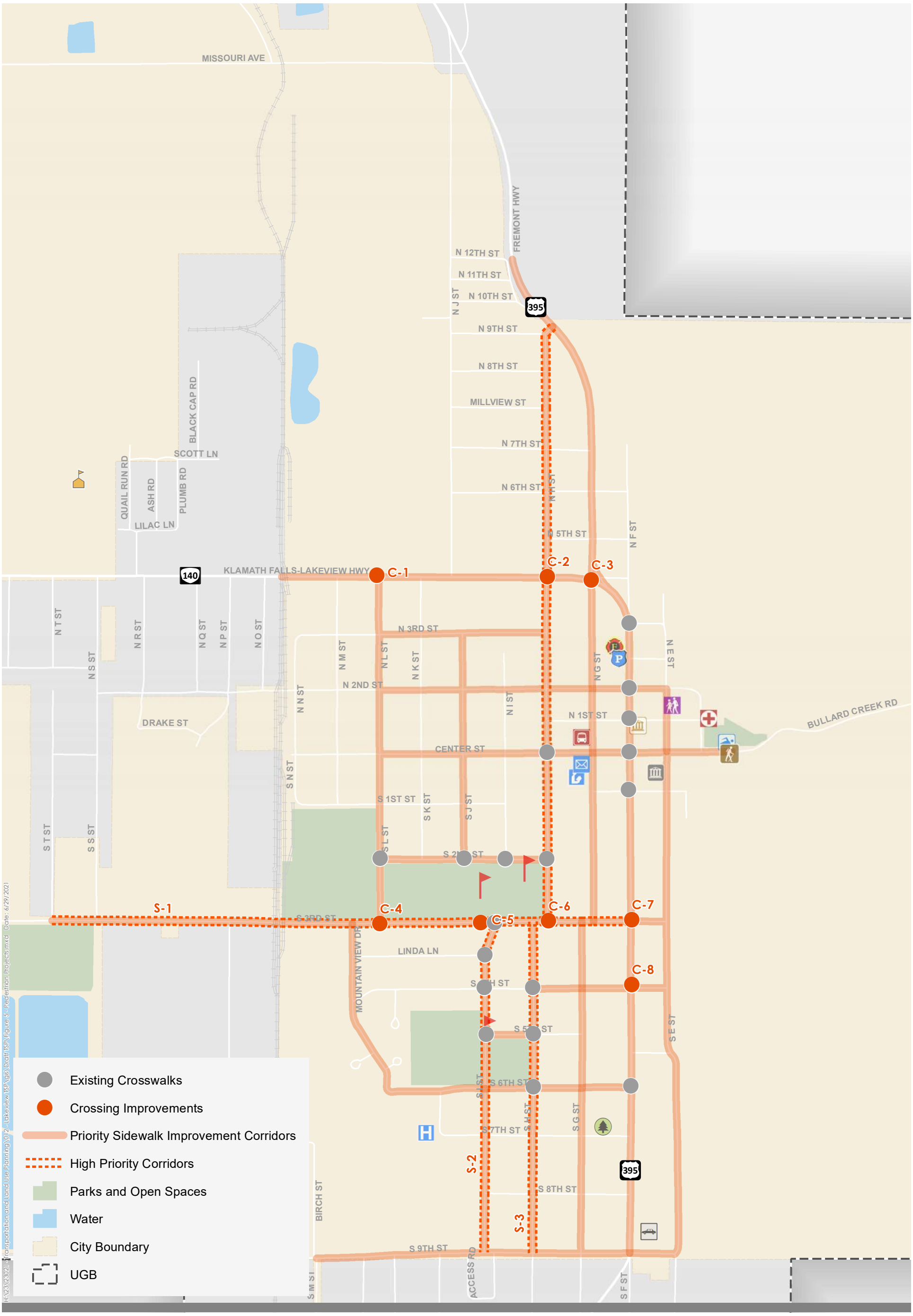


Figure 5

Pedestrian Projects
Lakeview, Oregon

Table 8: Priority Corridor Sidewalk Projects			
Corridor ID	**Corridor Name**	**Sidewalk Gaps**	**Cost Estimate**
S-1	S 3rd Street	S T Street to Mountain View Drive: Infill (Both Sides)	$950,000
		Mountainview Drive to S L Street: Infill (North Side)	$150,000
		Mountainview Drive to S H Street: Replacement (South Side)	$400,000
		S H Street to US 395: Replacement (Both Sides)	$450,000
		S-1 Subtotal:	***$1,950,000***
S-2	S I Street	S 9th Street to S 8th Street: Infill (Both Sides)	$300,000
		S 8th Street to S 6th Street: Replacement (Both Sides)	$450,000
		S 6th Street to S 5th Street: Infill (East Side)	$250,000
		S 5th Street to S 4th Street: Replacement (East Side)	$200,000
		S 4th Street to S 3rd Street: Replacement (Both Sides)	$350,000
		S-2 Subtotal:	***$1,550,000***
S-3	H Street	S 9th Street to S 3rd Street: Replacement (Both Sides)	$1,300,000
		S 3rd Street to S 2nd Street: Replacement (East Side)	$150,000
		S 2nd Street to Center Street: Replacement (Both Sides)	$450,000
		Center Street to N 2nd Street: Replacement (West Side)	$250,000
		N 2nd Street to OR 140: Replacement (Both Sides)	$450,000
		OR 140 to N 8th Street: Infill (Both Sides)	$850,000
		N 8th Street to US 395: Infill (West Side)	$250,000
		S-3 Subtotal:	***$3,700,000***

Table 9: Priority Pedestrian Crossing Projects				
Crossing ID	**Location**	**Project**	**Cost Estimate**	**Funding Partner**
C-1	N L St / OR 140	The Town and ODOT will coordinate on the design and construction of intersection crossing treatments to provide more comfortable and convenient options for people walking.	$100,000	ODOT
C-2	N H St / OR 140	The Town and ODOT will coordinate on the design and construction of intersection crossing treatments to provide more comfortable and convenient options for people walking.	$100,000	ODOT
C-3	US 395 / OR 140	Crossing enhancement in conjunction with project I-3	See I-3 Estimate	ODOT
C-4	S L St / S 3rd St	The Town and ODOT will coordinate on the design and construction of intersection crossing treatments to provide more comfortable and convenient options for people walking.	$100,000	-
C-5	S 3rd St west of S I St	The Town and ODOT will coordinate on the design and construction of intersection crossing treatments to provide more comfortable and convenient options for people walking.	$100,000	-
C-6	S H St / S 3rd St	The Town and ODOT will coordinate on the design and construction of intersection crossing treatments to provide more comfortable and convenient options for people walking. Should be coordinated with Project I-7	See I-7 Estimate	-
C-7	US 395 / S 3rd St	The Town and ODOT will coordinate on the design and construction of intersection crossing treatments to provide more comfortable and convenient options for people walking.	$100,000	ODOT
C-8	US 395 / S 4th St	The Town and ODOT will coordinate on the design and construction of intersection crossing treatments to provide more comfortable and convenient options for people walking.	$100,000	ODOT

BICYCLE SYSTEM SOLUTIONS

Consistent with Town standards, people riding bicycles along most streets today "share the road" with motorists, but most streets do not provide clear wayfinding to key destinations. The TSP prioritizes the development of local bikeway designations to help provide people options for riding bikes within and through the Town. These are shown in Figure 6.

Designating these corridors as bikeways may provide opportunities to improve the pavement condition, enhance the roadway with features like shared-lane markings and bicycle route wayfinding signage, and help to provide guidance for people riding bikes. To complement these bikeways, the Town can pursue public or private opportunities to provide bicycle parking near activity centers and commercial areas, including the downtown core; this may require revisions to the Town Development Code.

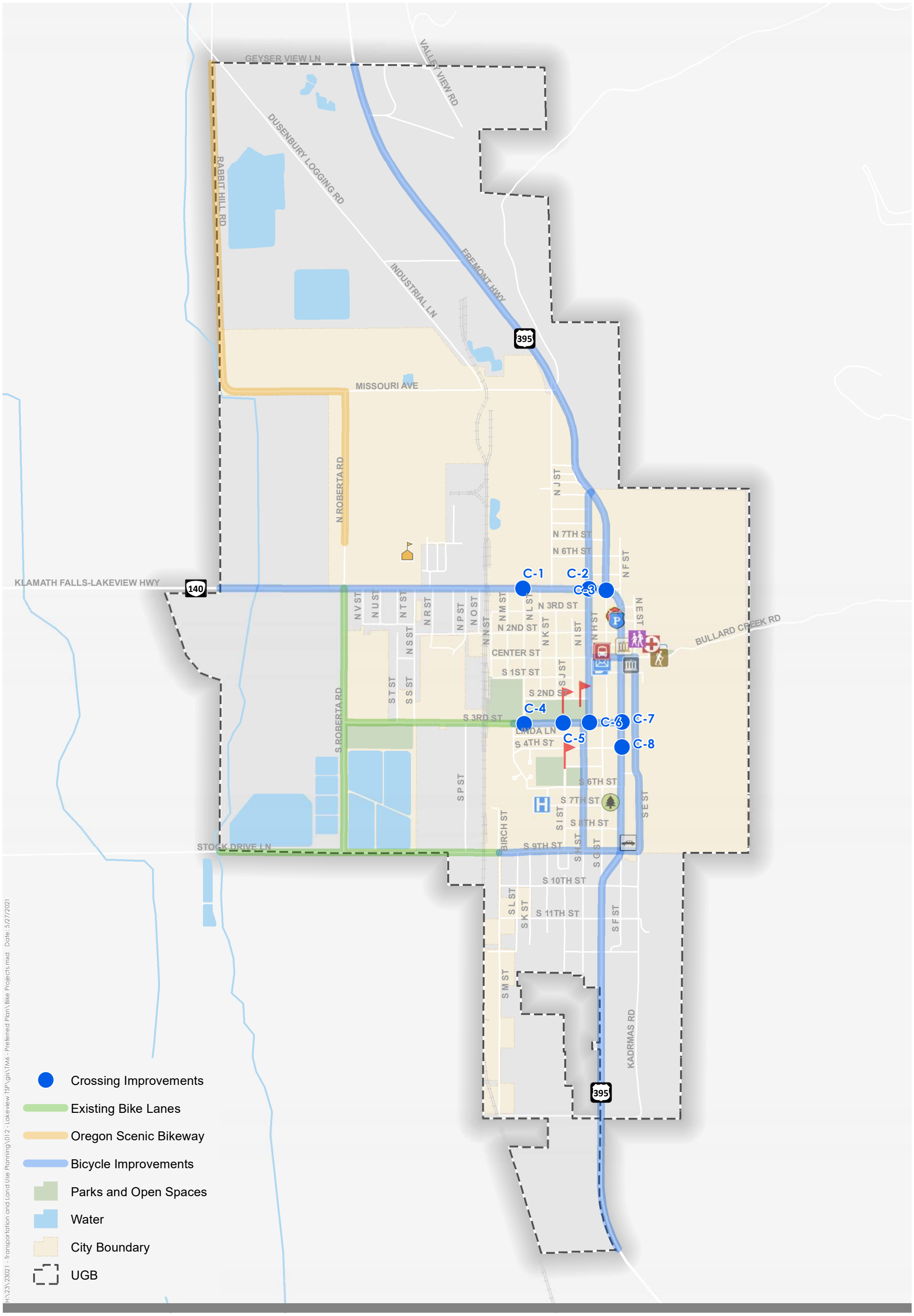
On state facilities, ODOT's *Blueprint for Urban Design* provides guidance for bicycle facilities along state highways. In conjunction with roadway enhancement or maintenance efforts, the Town and ODOT can coordinate on specific facilities needed. A planning-level assessment of facilities that may be provided is shown below.

- Separated Bikeways
  - OR 140: UGB to N Q Street
  - US 395: UGB to S 9th Street; OR 140 to UGB[1]
- Bike Lanes (Buffered Preferred)
  - OR 140: N Q Street to US 395
  - US 395: S 9th Street to OR 140

Changes to US 395 north of OR 140 will be identified by the recommended corridor safety and multimodal facility study for this roadway (project R-1).

Similar to the pedestrian system solutions, some of these bicycle system solutions can likely be incorporated into a SRTS plan if the Town chose to develop one, depending on their proximity to Lakeview schools.

[1] Facility type to be coordinated with proposed Corridor Study, as described previously in the memorandum



H:\23\2302 - Transportation and Land Use Planning\012 - Lakeview TSP\gis\TM6 - Preferred Plan\Bike Projects.mxd Date: 5/27/2021

Figure 5

Bicycle Projects
Lakeview, Oregon

EMERGING TECHNOLOGY SOLUTIONS

The Town of Lakeview plans to take pragmatic steps to accommodate and utilize emerging technologies that enhance and expand the effectiveness of its transportation system. The Town intends to monitor technologies and pursue projects and partnerships that enhance livability and economic viability for residents, businesses, and visitors. The Town may pursue the following initiatives, programs, or projects through individual actions or partnerships with supportive agencies or organizations. Additional elements not listed below may be pursued as technologies continue to evolve.

- **Electric bicycle and scooters evaluation study:** Evaluate needed updates to Town code, program feasibility, and partnership opportunities to implement or support program.
- **Electric vehicle charging station feasibility study:** Consider location, partnership opportunities (transit vehicles, partner agencies, etc.)
- **Curbside management strategies:** Evaluate drop off or curbside pickup locations within the downtown core and modifications needed to Town code.
- **Intelligent transportation systems: Use** speed feedback signs, weather reporting stations, etc., especially along the two state highways

TRANSIT SYSTEM SOLUTIONS

Public transportation service in the Lakeview community is provided mainly by the Lake County Senior Citizens Association (LCSCA). The Inner Court Family Center (ICFC) primarily services North Lake County and serves riders coming to Lakeview. The potential for changes to these services is discussed in the 2017 "Lake County Coordinated Transit Plan" and subsequent programming documents such as the Statewide Transportation Improvement Program Plan. Specific transit needs are regularly updated and include:

- **Maintaining existing local services:** Ongoing and reliable service is key to a well-functioning transit system.
- **Improved Lakeview service.** LCSCA recently began a regular, free, and open-to-the public shopping shuttle service for Lakeview residents running errands. LCSCA seeks to continue growing this service so it becomes a valuable component of the local transportation system.
- **Weekend service**: LCSCA and ICFC primarily operate during the day on weekdays. Little to no service is available during the evening and weekends.
- **Improved coordination.** LCSCA and ICFC continue to build coordination efforts to enhance service delivery for Lake County residents.
- **Education and awareness of public transportation options**. Those who need transportation services may not be aware of what is available to them. Promoting these services broadly may improve knowledge of available rides and overcome the misconception that services are only for seniors and persons with disabilities.
- **Increase regional connections**. Improved access to Klamath Falls, Alturas, La Pine, and connections to other intercity transit services [Sage Stage, Cascades East Transit (CET), Basin Transit Service (BTS), and Rogue Valley Transit District (RVTD)], is important for providing transportation options to those not able to drive but needing access to services outside of Lakeview.

CHAPTER 6: TRANSPORTATION FUNDING & SOLUTIONS

Today's fiscal environment is beset by uncertainty about future federal, state, and local funding for transportation projects. This uncertainty provides challenges to accurately forecast the amount of funding available for transportation investments and what projects or programs will receive funding. In this context, the TSP provides a prudent and conservative list of capital construction costs, an emphasis on lower cost methods of improving personal mobility with the Town, and an increased reliance on technologies that can improve the efficiencies of streets.

This chapter presents the transportation funding plan for the transportation solutions included in this TSP. The transportation funding plan includes the Town's historical transportation revenue, a summary of the estimated costs of the presented solutions, the funding gap between the two, and funding opportunities for implementing projects through the TSP horizon.

The timing of project implementation will depend on future policy direction and funding availability at the federal, state, and/or local level; changes in local development priorities; or the formation of public-private or public-public partnerships.

TRANSPORTATION REVENUE

The Town Street Fund Budget resources and expenditures shown in Table 10 provide a basis for extrapolating an estimate of revenues that might be available for transportation projects over the next 20 years. As presented, the Town has operated with a budget of about $170,000 to $190,00 annually for Personnel Services and Materials & Services. The Town has also received grant funding (i.e., Capital Outlay) to repave local streets. Resources and expenses have generally been equal in recent years and have not included any discretionary capital improvement projects undertaken by the Town. Maintaining adequate funding to preserve and identifying new sources to expand the transportation system as needed is a primary and important goal of the Town.

Table 10: Town of Lakeview Street Fund Budget History

	2016-2017	2017-2018	2018-2019	2019-2020	Adopted: 2020-2021
Total Resources	$136,600	$474,466	$483,600	$519,012	$430,214
Personnel Services *Materials & Services* *Capital Outlay*	*$91,255* *$75,337* *$0*	*$96,014* *$72,717* *$305,000*	*$106,550* *$70,050* *$305,000*	*$100,990* *$85,160* *$332,580*	*$103,009* *$86,002* *$305,000*
Total Expenditures	$168,258	$473,731	$481,600	$519,012	TBD
Net	**-$31,658**	**$735**	**$2,000**	**$0**	**-**

SUMMARY OF PROJECT COSTS

The Town of Lakeview typically has limited to no revenue for capital improvements based on available resources and ongoing regular maintenance needs. As such, new projects identified in this TSP are not considered financially constrained. The costs estimated for each project anticipated to be implemented by the TSP are order-of-magnitude (e.g., planning-level). Costs that reflect projects intended for construction – as opposed to studies or future monitoring – account for right-of-way, design engineering, construction, and a 30 percent contingency

factor. Costs were calculated using the methodology and procedures recommended by the American Association of Cost Engineers (Class 5 estimates). All costs are rounded to the nearest $50,000, provided in 2021 dollars, and summarized in Table 11 by transportation facility. Detailed cost estimate sheets with associated assumptions are included in Volume 2.

Table 11: Cost Estimates for Preferred Transportation Solutions

Facility Type	Total Cost ($2021)
Intersections	$1,300,000
Streets	$150,000
Sidewalks	$7,200,000
Crossings	$600,000
Total	**$9,250,000**

FUNDING GAP

In comparing Table 10 and Table 11, the Town will need to identify additional funding sources to implement future improvements to its transportation system (e.g., tax levy, fuel tax). As such, the Town will need to partner with other agencies, the private development community, and pursue alternative funding sources to address the 20-year transportation projects.

POTENTIAL FUNDING SOURCES

Given that Town resources and expenses have generally been equal in recent years and have not included any discretionary capital improvement projects undertaken by the Town, the Town will need to develop a strategy to fund the improvements identified in the TSP. Potential elements of this strategy are outlined in the following sections. In addition to the transportation-specific funds described below, the Town may also seek state and federal grant opportunities where transportation facilities are a secondary focus of the funds. For example, the recent Statewide Transportation Improvement Fund (STIF) is intended for improvements to transit service, facility, operations, etc., but improvements to transportation facilities that provide access to transit – such as sidewalks near the Lakeview Senior Center – could also be eligible for funds.

LOCAL FUNDING MECHANISMS

Potential local-level funding sources summarized in Table 12 can either be used currently to fund future projects or may be considered by the Town Council for implementation as new funding sources. Including this table into the TSP does not create new funding sources but rather presents the various funding sources that local governments throughout Oregon have utilized. In general, local funding sources are more flexible than funding obtained from state or federal grant sources.

Table 12: Potential Local Funding Mechanisms

Funding Source	Description	Potential Application
Street Utility Fees/ Road Maintenance Fees	A fee based on the number of automobile trips that a particular land use generates; usually collected through a regular utility bill. Fees can also be tied to the annual registration of a vehicle to pay for improvements, expansion, and maintenance of the street system.	System-wide transportation facilities including streets, sidewalks, and bikeways.
Transportation System	SDCs are impact fees assessed to development for the capacity demand it creates on public infrastructure. SDCs may be an improvement fee, a reimbursement fee,	SDCs may only be used for that portion of the transportation improvements

Table 12: Potential Local Funding Mechanisms		
Funding Source	**Description**	**Potential Application**
Development Charges (SDC)	or a combination thereof. Reimbursement fee revenues are dedicated to capital projects that increase capacity to meet the needs of growth. SDC credits are provided to developers for public improvements they construct which add capacity to the system beyond that required to serve their development. SDC credits may also be given for development provisions that reduce vehicular capacity demand on the transportation system, such as providing end-of-trip bike facilities within the new development.	which generate additional capacity demand related to growth.
Stormwater SDCs, Grants, and Loans	SDCs, grants, loans, and stormwater improvement fees can be obtained for improving stormwater management facilities constructed as part of transportation system improvements.	SDCs may only be used for that portion of the transportation improvements which generate additional stormwater management capacity related to growth.
Local Fuel Tax	A local tax can be assessed on the purchase of fuel within the Town. This tax is added to the cost of fuel at the pump, along with the state and federal fuel taxes.	System-wide transportation facilities including streets, sidewalks, and bikeways.
Incentives	The Town provides enticements such as bonus densities and flexibility in design in exchange for a public benefit. Examples might include providing additional bicycle parking in exchange for bonus densities. Incentives may be used with SDC methods to reduce transportation impacts from new development.	System-wide transportation facilities including streets, sidewalks, bikeways, and transit.
Public/Private Partnerships	Public/private partnerships have been used around the country to provide public transportation amenities within the public right-of-way in exchange for operational revenue from the facilities. These partnerships could be used to provide services such as vehicle charging stations, public parking lots, bicycle lockers, or car share facilities.	System-wide transportation facilities including streets, sidewalks, bikeways, and transit.
Tax Increment Financing (TIF)	TIF is a tool that cities may use to create special districts (tax increment areas) where public improvements are made to generate private-sector development. During a defined period, the Town freezes the tax base at the pre-development level. Property taxes for that period can be waived or paid, but taxes derived from increases in assessed values (the tax increment) resulting from new development can go into a special fund created to retire bonds issued to originate the development or leverage future improvements. A number of small-to-medium sized communities in Oregon have implemented, or consider implementing, urban renewal districts that will result in a TIF revenue stream.	System-wide transportation facilities including streets, sidewalks, bikeways, and transit.
Street District	Oregon state law (Oregon Revised Statute 371) allows for the formation of special streets taxing districts for purposes of constructing and maintaining streets within the taxing district boundaries. A Street District would be a separate entity from the Town of Lakeview, with its own property tax levy rate and an elected board of commissioners. Those within the potential district boundaries must vote on the creation of a Streets District.	Street improvement projects.
Revenue and General Obligation Bonds	Bonding allows municipal and county government to finance construction projects by borrowing money and paying it back over time, with interest. Financing requires	Construction of major capital improvement projects within the Town, street

Table 12: Potential Local Funding Mechanisms		
Funding Source	**Description**	**Potential Application**
	smaller regular payments over time compared to paying the full cost at once, but financing increases the total cost of the project by adding interest. General obligation bonds are often used to pay for construction of large capital improvements and must be approved by a public vote. These bonds add the cost of improvement to property taxes over time.	maintenance and incidental improvements.
Economic Improvement Districts (EIDs)	EIDs pool funds from area businesses to make improvements in the business district.	Transportation facilities including streets, sidewalks, bikeways, and transit located within the EID area.
Local Improvement Districts (LIDs)	LIDs pool funds from property owners to make local transportation improvements.	Transportation facilities including streets, sidewalks, bikeways, and transit located within the LID area.
Street Fund Serial Levy	This levy is a voter-approved property tax levied in addition to the permanent tax rate.	Operations or capital programs.
Vehicle Registration Fee	An extra fee on all registered motor vehicles in the County. Requires County-wide approval and implementation.	Operations or capital programs.

STATE AND FEDERAL GRANTS

In addition to local funding sources, the Town can seek to leverage opportunities for funding from grants at the state and federal levels for specific projects. Table 13 outlines state and federal sources and their potential applications. State and Federal sources change regularly as new transportation legislation is passed or existing legislation modified. Potential state funding sources are extremely limited, with some having significant competition. Any future improvements that rely on state funding may require Town and regional consensus that these improvements are more important than transportation needs elsewhere in the region and the state. It will likely be necessary to combine multiple funding sources to pay for a single improvement project (e.g., combining state, regional, and Town bicycle and pedestrian funds to pay for bikeways and sidewalks).

Table 13: Potential State and Federal Grants		
Funding Source	**Description**	**Potential Application**
Statewide Transportation Improvement Program (STIP)	STIP is the State of Oregon's four-year transportation capital improvement program. ODOT's system for distributing these funds has varied over recent years. Generally, local agencies apply in advance for projects to be funded in each four-year cycle.	Projects on any facility that meet the benefit categories of the STIP.
Transportation and Growth Management (TGM) Grants	TGM grants are planning grants administered by ODOT and awarded on an annual basis. The TGM grants are generally awarded to projects that will lead to more livable, economically vital, transportation efficient, sustainable, and pedestrian-friendly communities. The grants are awarded in two categories: transportation system planning and integrated land use/transportation planning.	Refinement of any identified of study projects.
All Roads Transportation Safety Program (ARTS)	The federal Highway Safety Improvement Program is administered as ARTS in Oregon. ARTS provides funding to infrastructure and non-infrastructure projects that improve safety on all public roads. ARTS requires a data-	Areas of safety concerns within the Town, consistent with Oregon's Transportation Safety Action Plan.

Table 13: Potential State and Federal Grants		
Funding Source	**Description**	**Potential Application**
	driven approach and prioritizes projects in demonstrated problem areas.	
Immediate Opportunity Fund (IOF)	This fund is discretionary and provides funding for transportation projects essential for supporting site-specific economic development projects. These funds are distributed on a case-by-case basis in cooperation with the Oregon Economic and Community Development Department. These funds can only be used when other sources of financial support are insufficient or unavailable. These funds are reserved for projects where a documented transportation problem exists or where private firm location decisions hinge on the immediate commitment of road construction. A minimum of 50 percent match is required from project applications.	Any identified projects that would improve economic development in the Town and where there are documented transportation problems.
Connect Oregon	Lottery-backed bonds distributed to air, marine, rail, transit, and pedestrian and bicycle projects statewide. No less than 10 percent of Connect Oregon IV funds must be distributed to each of the five regions of the state, if there are qualified projects in the region. The objective is to improve the connections between the highway system and other modes of transportation.	System-wide transportation facilities including shared-use paths and transit.
Oregon Parks and Recreation Local Government Grants	Oregon Parks and Recreation Department administers this program using Oregon Lottery revenues. These grants can fund acquisition, development, and major rehabilitation of public outdoor parks and recreation facilities. A match of at least 20 percent is required.	Trails and other recreational facility development or rehabilitation.
Oregon Transportation Infrastructure Bank (OTIB)	A statewide revolving loan fund is available to local governments for many transportation infrastructure improvements, including highway, transit, and non-motorized projects. Most funds made available through this program are federal; streets must be functionally classified as a major collector or higher to be eligible for loan funding.	Infrastructure improvements to major collectors or higher classified roads for vehicle, transit, and non-motorized travel.
State Highway Fuel Tax Increase or User Fee	ODOT is currently researching a state user fee for drivers to address steady or declining state gas tax revenues. An increase in the state gas tax or a user fee would need to pass through state legislation and would increase the state's transportation funds.	System-wide transportation facilities including streets, sidewalks, bikeways, and transit.
Multi-modal Active Transportation Fund	This fund invests in multimodal transportation infrastructure improvements across Oregon.	Pedestrian and bicycle-related projects.
Safe Routes to School (SRTS)	SRTS, administered by ODOT, focus on infrastructure and non-infrastructure programs to improve access and safety for children to walk, roll, and/or bike to school.	Pedestrian and bicycle-related projects within the vicinity of local schools.
Community Paths Program	This is a State of Oregon program focused on helping communities create and maintain connections through shared-use paths.	Shared-use paths.
Small City Allotment Funds	ODOT allocates dollars to fund transportation projects for Oregon's smallest communities. Eligible cities must have a population of less than 5,000 as of the most recent Census.	System-wide transportation facilities including streets, sidewalks, bikeways, and transit.
Various Public or Private Grant Programs	Many public and private grant programs exist, such as People for Bikes, that offer funding support for transportation infrastructure. New such grant programs for formed often and should be regularly tracked by the Town.	Various depending on the grant program.

ATTACHMENT 1 – PLANNING-LEVEL INTERSECTION CONCEPTS AND COST ESTIMATES

Additional Improvements:

- Intersection Ahead Warning Signs on Northbound and Southbound OR140
- Stop Ahead Warning Sign on Eastbound Industrial Lane
- Stripe fog lines, center lane, and stop bar

FIGURE 1-1
US 395/Industrial Lane Concept Drawing

Lakeview, Oregon

Lakeview TSP

I-1: US 395/Industrial Lane

ODOT

Engineer's Conceptual Estimate

Prepared By: JXG		*Date: March 2021*		
Reviewed By: DXH				
	This Estimate has a Rating of:	**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
Mobilization	LS	ALL	$3,000.00	$3,000.00
Traffic Control	LS	ALL	$2,000.00	$2,000.00
Erosion Control	LS	ALL	$0.00	$0.00
Removal of Structures and Obstructions	LS	ALL	$1,000.00	$1,000.00
Clearing and Grubbing	LS	ALL	$1,000.00	$1,000.00
Asphalt Roadway - Grind & Inlay (2" Depth)	SF	3,700	$4.10	$15,170.00
Storm Water System & Water Quality Treatment, Complete	LS	ALL	$6,000.00	$6,000.00
Pavement Markings, Complete	LS	ALL	$1,000.00	$1,000.00
Signage, Complete	LS	ALL	$1,000.00	$1,000.00
Illumination System, Complete	LS	ALL	$2,200.00	$2,200.00
TOTAL CONSTRUCTION COST			**$**	**32,400**
TOTAL PROJECT SUBTOTAL			**$**	**32,400**
40% Contingency			**$**	**13,000**
TOTAL ESTIMATED PROJECT COST			**$**	**45,400**

Assumptions:

- Minor realignment of industrial. Signing and striping upgrades
-
-
-
-
-
-

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

FIGURE 1-2
US 395/Missouri Avenue Concept Drawing

Lakeview, Oregon

Lakeview TSP

I-2: US 395/J Street/Missouri Avenue

ODOT

Engineer's Conceptual Estimate

Prepared By: JXG		*Date: March 2021*		
Reviewed By: DXH				
	This Estimate has a Rating of:	**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
Mobilization	LS	ALL	$19,000.00	$19,000.00
Traffic Control	LS	ALL	$9,000.00	$9,000.00
Erosion Control	LS	ALL	$3,000.00	$3,000.00
Removal of Structures and Obstructions	LS	ALL	$4,000.00	$4,000.00
Clearing and Grubbing	LS	ALL	$4,000.00	$4,000.00
General Earthworks	CY	800	$25.00	$20,000.00
Asphalt Roadway - Full Depth	SF	12,250	$7.90	$96,775.00
Subgrade Geotextile	SY	1,362	$1.00	$1,400.00
Storm Water System & Water Quality Treatment, Complete	LS	ALL	$42,000.00	$42,000.00
Pavement Markings, Complete	LS	ALL	$3,000.00	$3,000.00
Signage, Complete	LS	ALL	$2,000.00	$2,000.00
TOTAL CONSTRUCTION COST				**$ 204,200**
ENGINEERING SUPPORT				
Engineering & Construction Management	LS	ALL	$103,000.00	$103,000.00
ENGINEERING SUPPORT SUBTOTAL				**$ 103,000**
TOTAL PROJECT SUBTOTAL				**$ 307,200**
40% Contingency				**$ 122,900**
TOTAL ESTIMATED PROJECT COST				**$ 430,100**

Assumptions:

- Realignment of Missouri/US 395 and Missouri/J St
- Signing/striping upgrades
-
-
-
-
-

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

FIGURE 1-3
US 395/OR 140 Concept Drawing

Lakeview, Oregon

Lakeview TSP
I-3: US 395/OR 140
ODOT

Engineer's Conceptual Estimate

Prepared By: JXG		*Date: March 2021*		
Reviewed By: DXH				
	This Estimate has a Rating of:	**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
Mobilization	LS	ALL	$24,000.00	$24,000.00
Traffic Control	LS	ALL	$12,000.00	$12,000.00
Erosion Control	LS	ALL	$3,000.00	$3,000.00
Removal of Structures and Obstructions	LS	ALL	$11,000.00	$11,000.00
Clearing and Grubbing	LS	ALL	$5,000.00	$5,000.00
General Earthworks	CY	700	$25.00	$17,500.00
Asphalt Roadway - Full Depth	SF	3,400	$8.70	$29,600.00
Concrete Roadway - Full Depth	SF	950	$11.90	$11,300.00
Subgrade Geotextile	SY	378	$1.00	$400.00
Concrete Curbs - Mountable Curb	LF	135	$25.50	$3,400.00
Concrete Curbs - Standard Curb & Gutter	LF	920	$30.90	$28,400.00
Truck Apron (Concrete)	SF	450	$16.70	$7,500.00
Concrete Walks	SF	2,490	$7.40	$18,400.00
Detectable Warnings	EA	10	$500.00	$5,000.00
Storm Water System & Water Quality Treatment, Complete	LS	ALL	$43,000.00	$43,000.00
Permanent Landscaping	SF	3,200	$3.70	$11,800.00
Irrigation, Complete	SF	3,200	$2.50	$8,000.00
Pavement Markings, Complete	LS	ALL	$3,000.00	$3,000.00
Signage, Complete	LS	ALL	$2,000.00	$2,000.00
Illumination System, Complete	LS	ALL	$17,100.00	$17,100.00
TOTAL CONSTRUCTION COST				**$ 261,400**
ENGINEERING SUPPORT				
Engineering & Construction Management	LS	ALL	$131,000.00	$131,000.00
ENGINEERING SUPPORT SUBTOTAL				**$ 131,000**
TOTAL PROJECT SUBTOTAL				**$ 392,400**
40% Contingency				**$ 157,000**
TOTAL ESTIMATED PROJECT COST				**$ 549,400**

Assumptions:

- realignment. New curb at intersection. Concrete at RIRO and Asphalt for parking area
- new sidewalk along ne and nw corners
-
-
-
-
-

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Lakeview TSP

I-3: US 395/OR 140

ODOT

Engineer's Conceptual Estimate

Prepared By: JXG		*Date: March 2021*		
Reviewed By: DXH				
This Estimate has a Rating of:		**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

FIGURE 1-4
H Street/3rd Street Concept Drawing

Lakeview TSP

I-7: S H Street/S 3rd Street

ODOT

Engineer's Conceptual Estimate

Prepared By: JXG		*Date: March 2021*		
Reviewed By: DXH				
This Estimate has a Rating of:		**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
Mobilization	LS	ALL	$11,000.00	$11,000.00
Traffic Control	LS	ALL	$6,000.00	$6,000.00
Erosion Control	LS	ALL	$1,000.00	$1,000.00
Removal of Structures and Obstructions	LS	ALL	$3,000.00	$3,000.00
Clearing and Grubbing	LS	ALL	$2,000.00	$2,000.00
General Earthworks	CY	200	$25.00	$5,000.00
Asphalt Roadway - Grind & Inlay (2" Depth)	SF	9,000	$4.10	$36,900.00
Subgrade Geotextile	SY	0	$1.00	$0.00
Concrete Curbs - Standard Curb & Gutter	LF	300	$28.50	$8,600.00
Concrete Walks	SF	500	$7.40	$3,700.00
Detectable Warnings	EA	10	$500.00	$5,000.00
Storm Water System & Water Quality Treatment, Complete	LS	ALL	$21,000.00	$21,000.00
Permanent Landscaping	SF	2,000	$3.70	$7,400.00
Irrigation, Complete	SF	2,000	$2.50	$5,000.00
Pavement Markings, Complete	LS	ALL	$2,000.00	$2,000.00
Signage, Complete	LS	ALL	$1,000.00	$1,000.00
TOTAL CONSTRUCTION COST				**$ 118,600**
ENGINEERING SUPPORT				
Engineering & Construction Management	LS	ALL	$30,000.00	$30,000.00
ENGINEERING SUPPORT SUBTOTAL				**$ 30,000**
TOTAL PROJECT SUBTOTAL				**$ 148,600**
40% Contingency				**$ 59,500**
TOTAL ESTIMATED PROJECT COST				**$ 208,100**

Assumptions:

- G&I intersection, new curb at each corner
- new sidewalk on nw corner
- All crosswalks need to be upgraded
-
-
-
-

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

ATTACHMENT 2 – TRANSPORTATION TOOLBOXES

SAFETY COUNTERMEASURES FOR ROADWAY SEGMENTS

Install Dynamic Speed Feedback Signs

Dynamic speed feedback signs display the speed of approaching vehicles. Dynamic signs can display other information or signage that is triggered by an approaching vehicle.

Intersection or Segment	Segment
Applicable Collision Types	All collisions
Potential Collision Reduction	41%
Planning-Level Cost	$10,000

Source: FHWA

Remove, Relocate, or Protect Fixed Objects Adjacent to Road

Remove or relocate fixed objects adjacent to the roadway to increase the unpaved shoulder clear zone. Clearing or moving fixed-objects away from the roadway can reduce fixed-object crashes by providing a clear zone that gives drivers more space and time to correct their path should they leave the road.

Intersection or Segment	Segment
Applicable Collision Types	All collisions
Potential Collision Reduction	38%
Planning-Level Cost	Varies

Source: Florida Vegetation Management Association

Close, Consolidate, or Relocate Driveways (Access Management)

Access management refers to the control of entry and exit points along a roadway. Access management treatments can include closing, consolidating, or relocating driveways or restricting certain movements in and out of driveways. This treatment can enhance safety for all modes, facilitate walking and biking, reduce trip delay and congestion, and decrease vehicle conflicts.

Intersection or Segment	Segment
Applicable Collision Types	All injury crashes
Potential Collision Reduction	Varies based on driveway density
Planning-Level Cost	Varies

A raised median reduces conflict points along this roadway.

Source: FHWA

Pedestrian Refuge Island

Median refuge islands are physical crossing enhancements that allow for two-stage crossings (where people only need to cross one direction of travel at a time). This effectively shortens the crossing distance and reduces exposure to vehicles. Median refuge islands are most suitable for locations where pedestrians must cross three or more vehicle travel lanes (but may also be considered in other locations, space permitting). Medians may also support speed management on high-speed roadways at uncontrolled or midblock crossing locations.

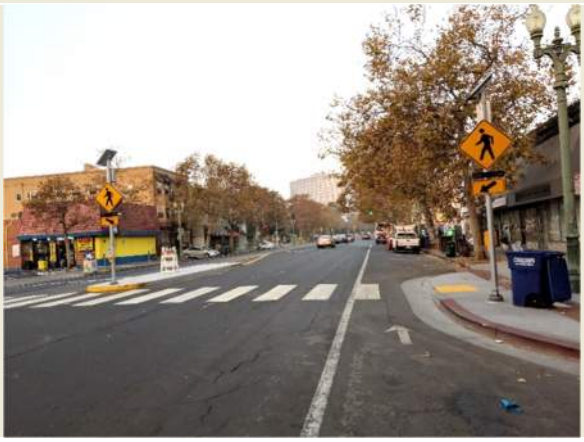
Intersection or Segment	Intersection/Segment
Applicable Collision Types	Pedestrian Collisions
Potential Collision Reduction	37%
Planning-Level Cost	$25,000

Source: New York City DOT

Curb Extensions

Curb extensions visually and physically narrow the roadway at pedestrian crossing locations and provide additional space to wait at street corners while reducing crossing distances for pedestrians. Curb extensions increase visibility of pedestrians by bringing the crossing further into the roadway. This is especially beneficial with the presence of on-street parking at the approach to the crossing. Curb extensions can also serve as transit stop locations to support bus priority in not leaving the traffic stream.

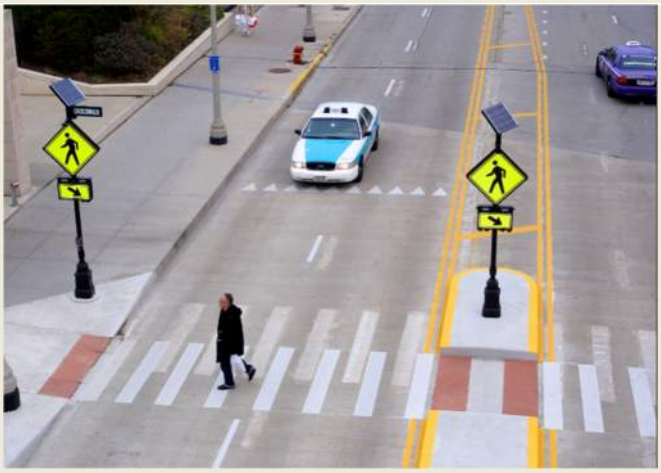
Intersection or Segment	Intersection/Segment
Applicable Collision Types	Pedestrian Collisions
Potential Collision Reduction	37%
Planning-Level Cost	$20,000



Rectangular Rapid Flashing Beacon (RRFB)

Rectangular rapid-flashing beacons (RRFBs) are pedestrian-actuated warning signs supplemented with high-visibility LED lights. When activated, RRFBs flash a high-visibility strobe-like light warning drivers when pedestrians are crossing. RRFBs have shown to reduce pedestrian collisions by up to 47%. RRFBs should be used in locations with high pedestrian safety issues as over-use may diminish their effectiveness. Installing median pedestrian islands with RRFBs can also reduce crashes at pedestrian crossings with more than two lanes.

Intersection or Segment	Segment
Applicable Collision Types	Pedestrian Collisions
Potential Collision Reduction	10 – 56%
Planning-Level Cost	$20,000 - $50,000



Source: FHWA

Pedestrian-Scale Lighting

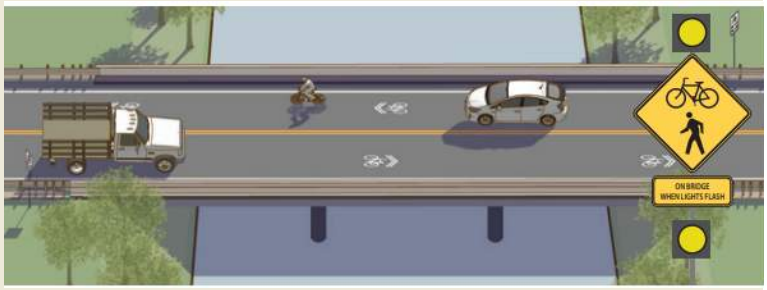
Pedestrian-scale lighting is lower to the ground and more closely spaced than street or intersection lighting. Pedestrian-scale lighting illuminates sidewalks, increases perception of personal security and comfort for pedestrians, and increase driver awareness and visibility of pedestrians.

Intersection or Segment	Intersection/segment
Applicable Collision Types	Nighttime Pedestrian and Bicycle Collisions
Potential Collision Reduction	42%
Planning-Level Cost	$8,500 per pole

Install Bicycle Signage and Beacons at Pinch Points

At locations with physical constraints, such as bridges and tunnels, active warning beacons, signage, and pavement markings may be used to alert drivers that bicyclists are on the roadway. It may be appropriate to reduce vehicle speeds through reduced posted or advisory speed limits and traffic calming measures to increase bicyclist comfort.

Intersection or Segment	Segment
Applicable Collision Types	Bicycle Collisions
Potential Collision Reduction	Not available
Planning-Level Cost	$10,000



Source: FHWA Small Town and Rural Multimodal Networks

SAFETY COUNTERMEASURES FOR INTERSECTIONS

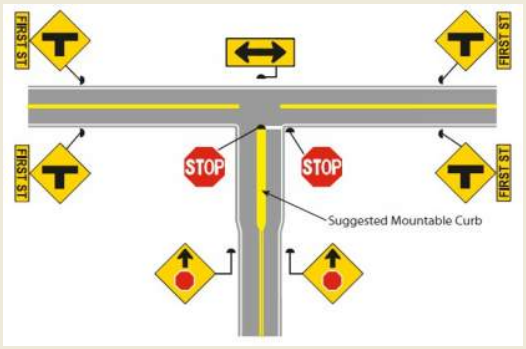
Increase Intersection Warning with Signing and Striping

Implementing a package of low-cost treatments can be used to increase intersection warning and improve safety performance at unsignalized intersections. The improvements may include:

- doubled (left and right) oversize warning signs,
- doubled STOP signs,
- a raised splitter island on the stop approach (if feasible),
- street name signs,
- stop bars,
- removing any limitations to sight distance, and
- double warning arrow at the stem of T-Intersections.

This set of enhancements combines multiple treatments to make the approach of two-way stop-controlled intersections more visible to the driver and increase awareness and visibility of potential conflicts. These treatments can help slow approaching vehicles and increase stop compliance on the controlled approaches. The Town should determine which treatments are appropriate at the individual locations where they are applied; some of the treatment options may not be applicable at every location.

Intersection or Segment	Intersection (Unsignalized)
Applicable Collision Types	All collisions
Potential Collision Reduction	11-55%
Planning-Level Cost	Varies: $400 per new sign; $700 per oversized sign; $1,000 per Stop Ahead legend



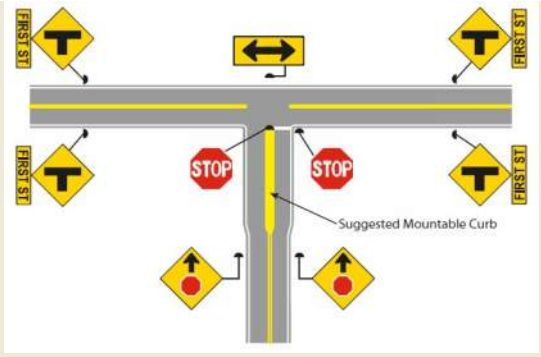
Source: FHWA

* FHWA, "Low-Cost Safety Enhancements for Stop-Controlled and Signalized Intersections," (2014)

Install Raised Divider on Stop Approach (Splitter Island)

Installing a raised divider (with mountable curb) on a stop-controlled approach to an intersection can increase intersection visibility by adding a left-side stop sign and better delineate vehicle paths at the intersection. Where possible, a minimum width of 6-feet should be used for the splitter island.

Intersection or Segment	Intersection (Unsignalized)
Applicable Collision Types	All collisions
Potential Collision Reduction	15%
Planning-Level Cost	$7.55 per sq ft



Source: FHWA

* FHWA, "Low-Cost Safety Enhancements for Stop-Controlled and Signalized Intersections," (2014)

Provide "Stop Ahead" Pavement Markings

Stop ahead pavement markings are used to alert drivers of the presence of an intersection and that stopping is required. These markings provide a supplementary message and should be used in conjunction with additional regulatory warning and stops signs.

Intersection or Segment	Intersection (Unsignalized)
Applicable Collision Types	All collisions
Potential Collision Reduction	31%
Planning-Level Cost	$1,000 each

Source: FHWA

Provide Flashing Beacons at Stop-Controlled Intersections

Flashing beacons can be placed above stop-signs, as well as above stop-ahead warning signs, to raise intersection visibility and awareness. Flashing beacons may flash continuously or be actuated when a vehicle approaches the intersection. This treatment may help reduce angle collisions at intersections where driver awareness of the approaching intersection is a challenge.

Intersection or Segment	Intersection (Unsignalized)
Applicable Collision Types	Angle collisions
Potential Collision Reduction	5-58%
Planning-Level Cost	$5,000 per mount

Source: FHWA

* FHWA, "Safety Evaluation of Flashing Beacons at Stop-Controlled Intersections," (2008) https://www.fhwa.dot.gov/publications/research/safety/08048/index.cfm

Intersection Lighting

Adding intersection lighting for signalized and non-signalized intersections helps improve the visibility of the intersection and potential conflicts. Intersection illumination, including pedestrian crossings, helps illuminate crossing pedestrians for approaching motorists and assists pedestrians in navigating the crossing.

Intersection or Segment	Intersection
Applicable Collision Types	Nighttime
Potential Collision Reduction	31 – 38%
Planning-Level Cost	$8,500 per pole

Roundabouts

Roundabouts feature channelized approaches and a central island to move traffic through an intersection. At roundabouts, entering traffic yields to vehicles already circulating, leading to improved operational performance. Single-lane roundabouts are typically designed so that drivers must approach the intersection at speeds below 25 miles per hour. The approach speed can reduce the severity of crashes when compared to other intersection forms. Roundabouts can be used in place of a two-way and all-way stop controlled intersection, and potentially traffic signals depending on volume. Replacing a rural two-way stop-controlled intersection with a single-lane roundabout has been shown to reduce injury crashes as much as 87 percent.

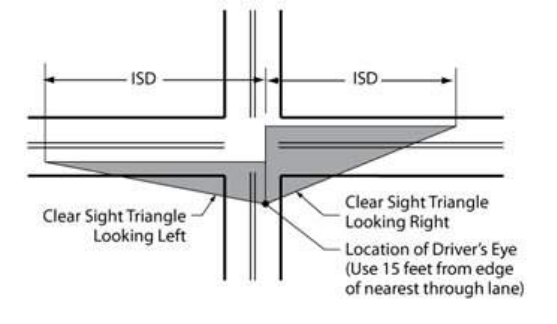
Intersection or Segment	Intersection
Applicable Collision Types	All
Potential Collision Reduction	19 – 82%
Planning-Level Cost	$2.5M - $3M

Source: FHWA

Increase Sight Distance

Increasing intersection sight distance may involve a variety of actions to increase the line of sight including clearing vegetation and embankments, relocating objects, implementing parking restrictions. By increasing intersection sight distance, drivers are provided with a greater distance to see potential conflicts and complete maneuvers to avoid potential collisions.

Intersection or Segment	Intersection (Signal and Unsignalized)
Applicable Collision Types	All injury collisions
Potential Collision Reduction	11-56%
Planning-Level Cost	Varies



Source: FHWA

** FHWA, "Intersection Safety: A Manual for Local Rural Road Owners,"*
https://www.fhwa.dot.gov/publications/research/safety/08048/index.cfm

Install Left-Turn Lanes on Major Roads at Stop Controlled Intersections

Left-turn lanes provide physical separation between turning vehicles and through traveling vehicles, thus separating the slowing vehicles from the rest of traffic and reducing the risk for rear-end crashes. Left-turn lanes allow drives to continue through the intersection without having to stop for traffic making left turns.

Intersection or Segment	Intersection (Signal and Unsignalized)
Applicable Collision Types	All collisions
Potential Collision Reduction	33-58%
Planning-Level Cost	Varies

Example of left-turn lanes.

Source: FHWA

SPEED MANAGEMENT COUNTERMEASURES

Dynamic Speed Displays and Vehicle-Actuated Signs / Speed Trailers

Description: Dynamic speed feedback signs display the speed of approaching vehicles. Dynamic signs can display other information or signage that is triggered by an approaching vehicle.

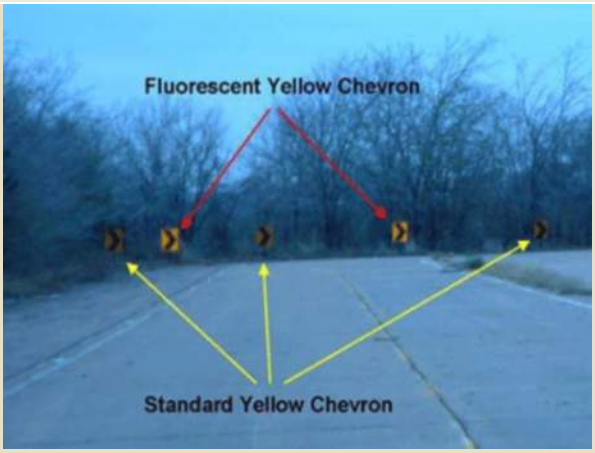
Application Guidance: Dynamic speed feedback signs on rural roadways may reduce 85th percentile speeds by 2 – 7 MPH. Typical applications include paring a dynamic speed feedback sign with a speed limit sign or curve advisory sign.

Source: FHWA

Enhanced Signing

Description: A number of enhanced signing techniques can be applied to rural roadways, including oversized and fluorescent signage. Other techniques include placing retroflected strips on existing signage, such as chevrons or curve advisory signs.

Application Guidance: Fluorescent or retroreflective sheeting on signage makes signage more visible, especially in low-light conditions. Retroreflective strips on signage may help reduce the number of vehicles exceeding the speed limit and a reduction in overall mean speed.



Source: Texas Transportation Institute

Community Gateway Signage

Description: Gateways are a type of sign or other visual cue that indicates that the motorist is entering a community or more urbanized area.

Application Guidance: Gateways may be placed overhead and completely span roadway or may simply be placed to the right of the road. Gateways are most effective when placed at transition zones into urban areas. Gateways have shown effectiveness at reducing speed in studies performed outside of the United States.

Source: Iowa State University, Speed Management Toolbox for Rural Communities

ATTACHMENT 3 – PROJECT PROSPECTUS SHEETS

US 395/INDUSTRIAL LANE GEOMETRIC IMPROVEMENTS (I-1)

PROJECT PURPOSE: IMPROVE INTERSECTION GEOMETRY TO BENEFIT ALL USERS

PROJECT INFORMATION

Description	This intersection serves some of the industrial sites within the Town. Changes to the existing intersection geometry reduce driver confusion, shorten crossing distances for people walking, rolling, and riding bikes, and communicate more clearly how people can safely navigate through the intersection.
Benefits	▸ Provides better delineation of the intersection and reduces excess pavement ▸ Includes "Intersection Ahead" warning signs on both US 395 approaches ▸ Includes "Stop Ahead" warning sign and stop bar on Industrial Lane approach ▸ Includes fog line and center line striping on all approaches
Constraints	▸ Funding ▸ Right-of-way (if Industrial Lane is aligned more perpendicular to US 395)
Planning-Level Cost Estimate	$50,000
Additional Considerations	Today, southbound trucks swing into northbound lane when making right turns onto Industrial. Truck turns should be evaluated during the design phase, especially for the northwest corner of the intersection. This concept can be further refined to include a southbound right-turn lane or a stronger alignment with US 395 that would likely require some of the property in the northwest corner. Future project development will be coordinated with ODOT to further refine this concept and associated costs.

US 395/MISSOURI AVENUE GEOMETRIC IMPROVEMENTS (I-2)

PROJECT PURPOSE: IMPROVE INTERSECTION GEOMETRY TO BENEFIT ALL USERS

PROJECT INFORMATION

Description	This intersection serves some of the industrial sites within the Town. Changes to the existing intersection geometry reduce driver confusion, shorten crossing distances for people walking, rolling, and riding bikes, and communicate more clearly how people can safely navigate through the intersection.
Benefits	▸ Provides better delineation of the intersection and reduces excess pavement ▸ Reduces conflict points by limiting one intersection with US 395 ▸ Includes "Intersection Ahead" warning signs on both US 395 approaches ▸ Includes "Stop Ahead" warning signs and stop bars on Missouri Avenue and J Street approaches ▸ Includes fog line and center line striping on all approaches
Constraints	▸ Funding
Planning-Level Cost Estimate	$450,000
Additional Considerations	Future project development will be coordinated with ODOT to further refine this concept and associated costs.

US 395/OR 140 GEOMETRIC IMPROVEMENTS (I-3)

PROJECT PURPOSE: IMPROVE INTERSECTION GEOMETRY TO BENEFIT ALL USERS

PROJECT INFORMATION

Description	This intersection serves as a key, central location for facilitating through movement on the highways (including freight) and connecting people between destinations within the Town. Today, the layout of the intersection has been observed to create confusion for people traveling through as it has several intersecting streets, doesn't have predictable or easily understandable traffic control, and has wide crossing distances for people walking through the intersection. Changes to the existing intersection geometry can better delineate intersection spaces for how people are to travel through it.
Benefits	▸ Provides better delineation of the intersection ▸ Allows drivers at east leg to travel northbound on US 395 and westbound on OR 140 ▸ Maintains access to all existing intersecting streets ▸ Establishes crossings on all approaches with shorter crossing distances
Constraints	▸ Funding ▸ Possible Right-of-way Needs
Planning-Level Cost Estimate	$550,000
Additional Considerations	Planning-level cost estimates included in this sheet are based on the configuration above. This concept assumes removal of the existing median in the northeast corner of the intersection and the curb line is drawn out, providing additional public space and visibility of pedestrians. Intersection improvements will be coordinated with identified crossing improvement needs (Project C-3). Future project development will be coordinated with ODOT to further refine this concept and associated costs.

US 395/S 7TH STREET INTERSECTION MONITORING (I-4)

PROJECT PURPOSE: INTERSECTION MONITORING FOR EMERGENCY SERVICE ACCESS NEEDS

PROJECT INFORMATION

Description	S 7th Street provides ingress and egress routes to the Lake District Hospital, which is west of US 395. The intersection should be regularly maintained to provide adequate sight lines for emergency vehicles. In addition, the intersection should be monitored for the need to provide turn lanes, especially for left-turning vehicles from US 395 accessing the hospital.
Benefits	▸ Maintains intersection sight distance ▸ Provides readiness to address intersection needs
Constraints	▸ N/A
Planning-Level Cost Estimate	To Be Determined
Additional Considerations	Future project development will be coordinated with ODOT.

US 395/S 9TH STREET INTERSECTION MONITORING (I-5)

PROJECT PURPOSE: INTERSECTION MONITORING FOR EMERGENCY SERVICE ACCESS NEEDS

PROJECT INFORMATION

Description	S 9th Street provides ingress and egress routes to the Lake District Hospital, which is west of US 395. The intersection should be regularly maintained to provide adequate sight lines for emergency vehicles. In addition, the intersection should be monitored for the need to provide turn lanes, especially for left-turning vehicles from US 395 accessing the hospital.
Benefits	▸ Maintains intersection sight distance ▸ Provides readiness to address intersection needs
Constraints	▸ N/A
Planning-Level Cost Estimate	To Be Determined
Additional Considerations	Future project development will be coordinated with ODOT.

US 395/KADRMAS ROAD INTERSECTION MONITORING (I-6)

PROJECT PURPOSE: INTERSECTION MONITORING FOR FUTURE EMPLOYMENT GROWTH NEEDS

PROJECT INFORMATION

Description	Kadmras Road provides access to important economic areas of the community, including the recently approved Red Rocks Biofuel facility. The US 395/Kadrmas Road intersection should be regularly monitored for needed changes to serve this area, especially as the ingress and egress of trucks increases over time.
Benefits	▶ Provides readiness to address intersection needs
Constraints	▶ N/A
Planning-Level Cost Estimate	To Be Determined
Additional Considerations	Future project development will be coordinated with ODOT.

S H STREET/S 3RD STREET GEOMETRIC IMPROVEMENTS (I-7)

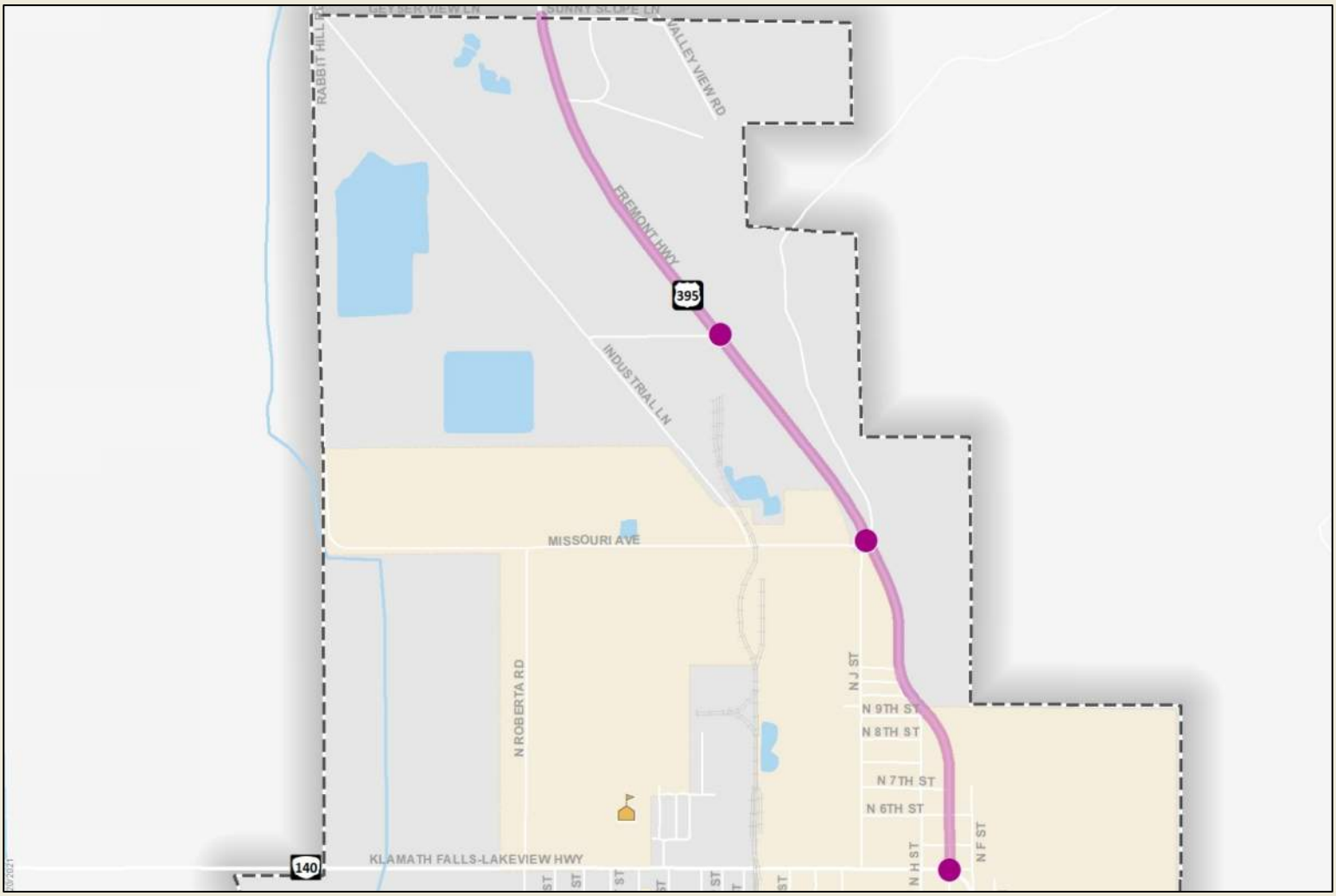
PROJECT PURPOSE: IMPROVE INTERSECTION GEOMETRY TO BENEFIT ALL USERS

PROJECT INFORMATION

Description	This intersection provides important community connections to the Lakeview High School. Today, the off-set intersection has a wide, sweeping southbound right-turn movement from S H Street that increases the distance for people walking and cycling long 3rd Street and encourages higher speeds around the corner. Changes to the existing intersection geometry can shorten crossing distances and keep driver speeds low.
Benefits	▸ Reduces excess pavement ▸ Slows southbound right-turning vehicles ▸ Increases driver awareness of pedestrians ▸ Shortens crossing distances
Constraints	▸ Funding
Planning-Level Cost Estimate	$250,000
Additional Considerations	Future refinements to this concept should confirm preferred crossing locations for users traveling along 3rd Street and along H Street, adequately accommodate the appropriate design vehicle, and provide improved illumination for all users. The extended northwest corner can be accomplished with concrete, landscaping, pavement markings/striping, etc. other alternatives may be considered (e.g., refuge islands). Speed management treatments in school zones may be necessary to complement these improvements. Intersection improvements will be coordinated with identified crossing improvement needs (Project C-6).

US 395 CORRIDOR SAFETY & MULTIMODAL FACILITY STUDY (R-1)

PROJECT PURPOSE: ADDRESS IDENTIFIED SAFETY AND MULTIMODAL NEEDS IN THE CORRIDOR

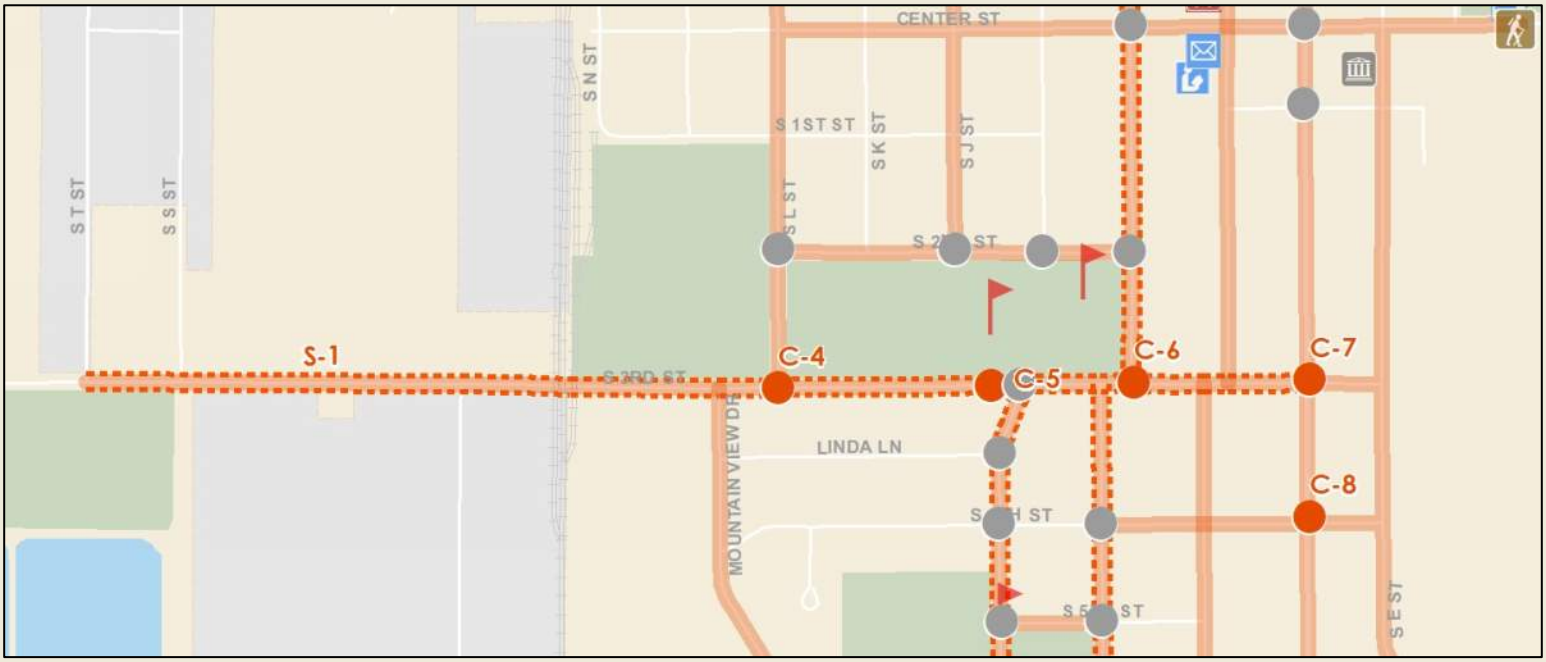


PROJECT INFORMATION

Description	Future safety-based changes to the northern section of the US 395 corridor could address the needs of people walking, riding bikes and driving. Today, this section of the corridor is rural in nature, transitions from a higher speed environment to the north of the UGB, and has locations where the documented crash history is higher than one would expect for similar facilities within Oregon. A further review of the specific treatments that could be used to provide changes to this section of the highway can be addressed through a comprehensive corridor plan that provides appropriate facilities that address systemic safety along the corridor and needed multimodal facilities, including pedestrian and bicycle facilities, along the highway.
Benefits	▸ Provides opportunity to further study specific corridor needs
Constraints	▸ Funding
Planning-Level Cost Estimate	$150,000
Additional Considerations	ODOT and the Town should conduct this more refined study following the TSP adoption. Interfaces with US 395 intersection improvements at Industrial Lane, Missouri Avenue, and OR 140.

S 3RD STREET SIDEWALK IMPROVEMENTS (S-1)

PROJECT PURPOSE: ADDRESS IDENTIFIED MULTIMODAL NEED IN THE CORRIDOR

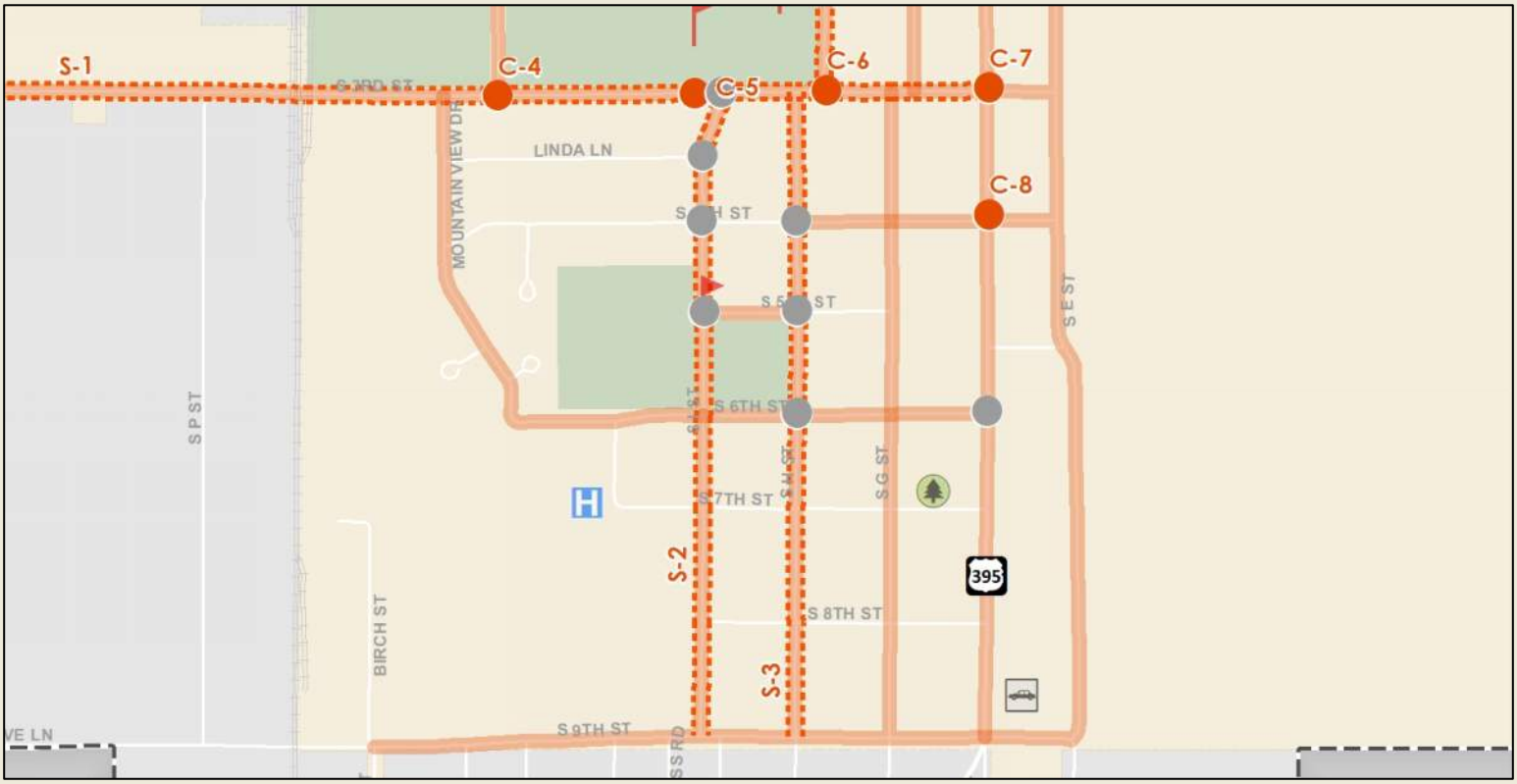


PROJECT INFORMATION

Description	S 3rd Street is a key facility within a network of priority corridors established for safely and efficiently transporting people who are unable or choose not to drive. Sidewalk infill and replacement from S T Street to US 395 would provide and maintain important walking and rolling connections between the Lakeview Little League fields, Soroptimist Fitness Park, Lakeview High School, and neighboring residences.
Benefits	▸ Improves overall connectivity for people walking and rolling ▸ Benefits non-vehicular modes ▸ Improves access to schools ▸ Urbanizes S 3rd Street and may encourage slower driver speeds in the corridor
Constraints	▸ Funding ▸ Right-of-way
Planning-Level Cost Estimate	$1,950,000
Additional Considerations	This key street intersects with other priority and high priority pedestrian corridors and also serves an existing crossing at S I Street and four (4) crossings planned for improvements (see corresponding project sheets). Sidewalk improvements should be coordinated with these crossing improvements.

S I STREET SIDEWALK IMPROVEMENTS (S-2)

PROJECT PURPOSE: ADDRESS IDENTIFIED MULTIMODAL NEED IN THE CORRIDOR

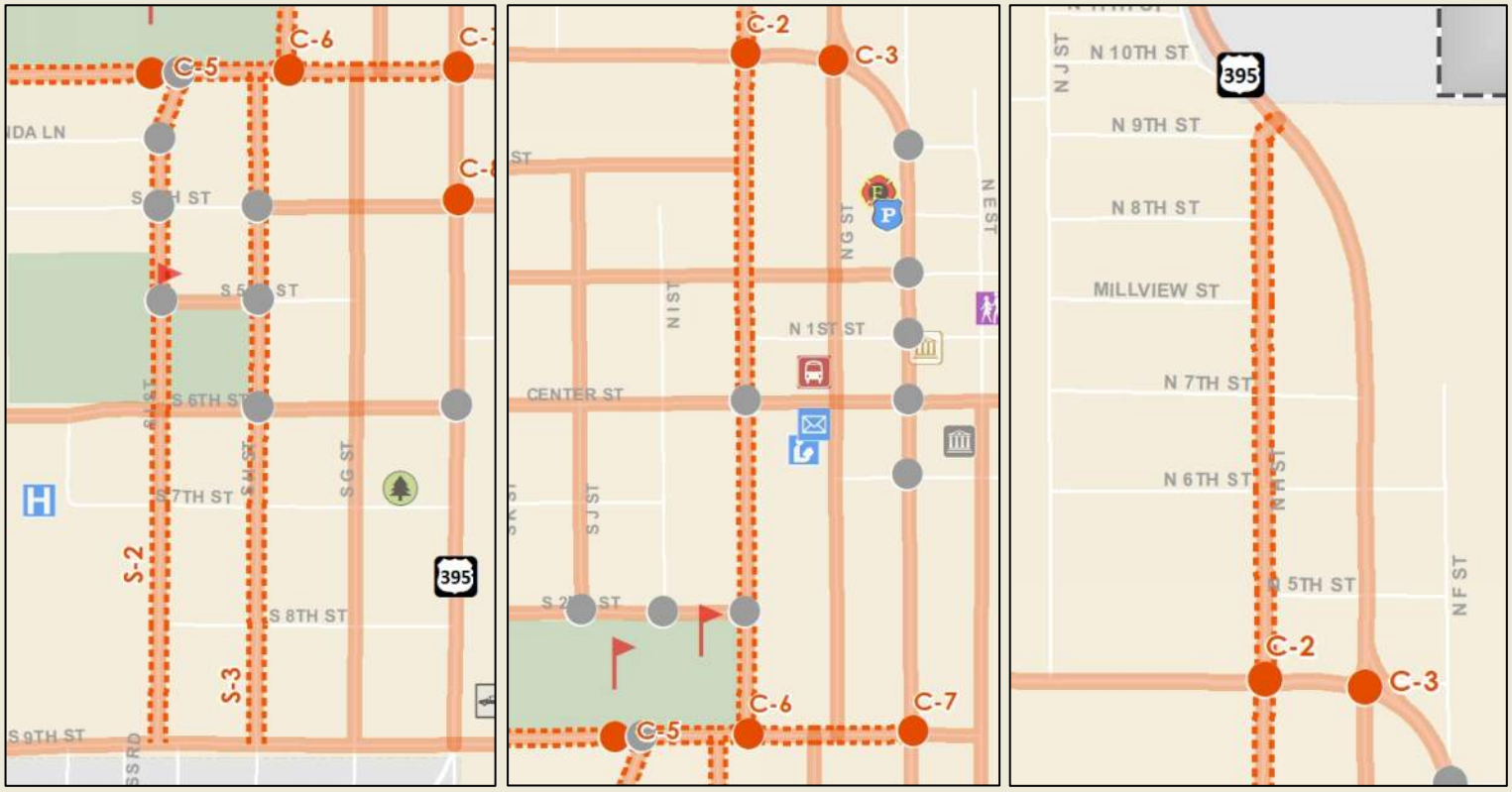


PROJECT INFORMATION

Description	S I Street is a key facility within a network of priority corridors established for safely and efficiently transporting people who are unable or choose not to drive. Sidewalk infill and replacement from S 9th Street to S 3rd Street would provide and maintain important walking and rolling connections between the Lake District Hospital, Arthur D Hay and Fremont elementary schools, Lakeview High School, and neighboring residences.
Benefits	▸ Improves overall connectivity for people walking and rolling ▸ Benefits non-vehicular modes ▸ Improves access to schools
Constraints	▸ Funding ▸ Right-of-way
Planning-Level Cost Estimate	$1,550,000
Additional Considerations	This key street intersects with other priority and high priority pedestrian corridors and also serves four (4) existing crossings.

H STREET SIDEWALK IMPROVEMENTS (S-3)

PROJECT PURPOSE: ADDRESS IDENTIFIED MULTIMODAL NEED IN THE CORRIDOR

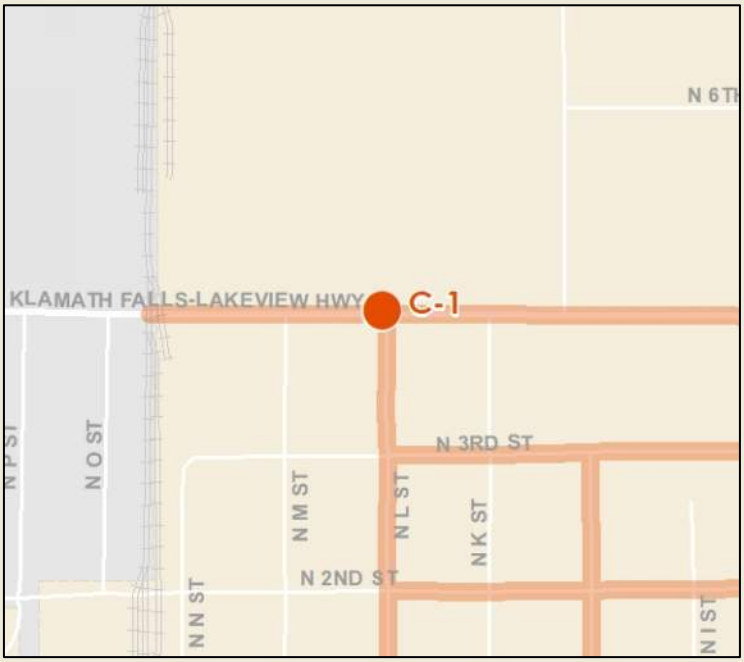


PROJECT INFORMATION

Description	H Street is a key facility within a network of priority corridors established for safely and efficiently transporting people who are unable or choose not to drive. Sidewalk infill and replacement from S 9th Street to US 395 would provide and maintain important walking and rolling connections between the Lake District Hospital, Arthur D Hay and Fremont elementary schools, Lakeview High School, and several neighboring residences.
Benefits	▸ Improves overall connectivity for people walking and rolling ▸ Provides an alternate parallel route to US 395 ▸ Benefits non-vehicular modes ▸ Improves access to schools
Constraints	▸ Funding ▸ Right-of-way
Planning-Level Cost Estimate	$3,700,000
Additional Considerations	This key street intersects with other priority and high priority pedestrian corridors and also serves five (5) existing crossings and two (2) crossings planned for improvements (see corresponding project sheets). Sidewalk improvements should be coordinated with these crossing improvements.

N L STREET/OR 140 CROSSING STUDY (C-1)

PROJECT PURPOSE: ADDRESS IDENTIFIED MULTIMODAL NEED IN PRIORITY CORRIDOR NETWORK

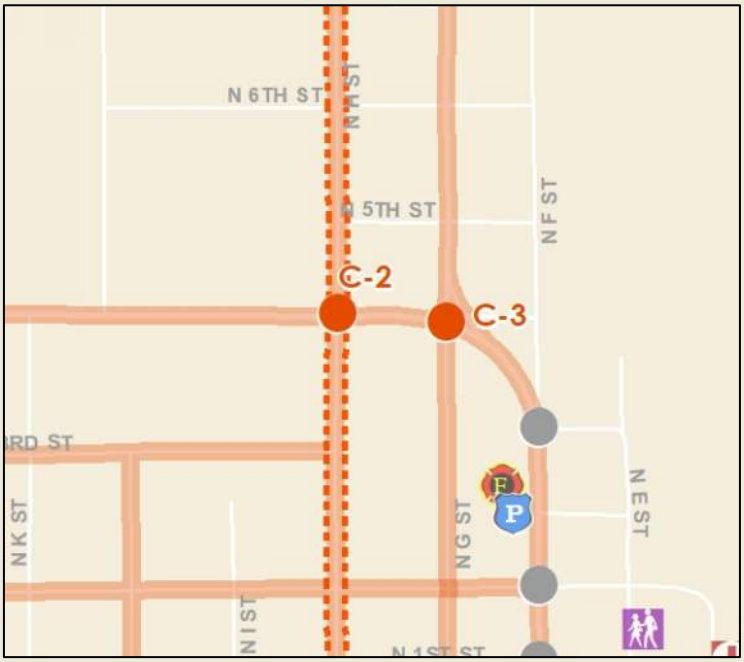


PROJECT INFORMATION

Description	The N L Street/OR 140 intersection is a key facility within a network of priority pedestrian and bicycle corridors for safely and efficiently facilitating non-motorized street crossings. A crossing study should be completed for this intersection to determine and implement the appropriate crossing treatment(s).
Benefits	▸ Improves overall connectivity for people walking, rolling, and biking ▸ Benefits non-vehicular modes ▸ May increase driver awareness of people walking, rolling, and biking and create traffic calming
Constraints	▸ Funding
Planning-Level Cost Estimate	$100,000
Additional Considerations	This key intersection serves priority corridors established for people walking, rolling, and biking. Identified crossing improvements should be coordinated with priority corridor improvements. Future project development will be coordinated with ODOT.

N H STREET/OR 140 CROSSING STUDY (C-2)

PROJECT PURPOSE: ADDRESS IDENTIFIED MULTIMODAL NEED IN PRIORITY CORRIDOR NETWORK

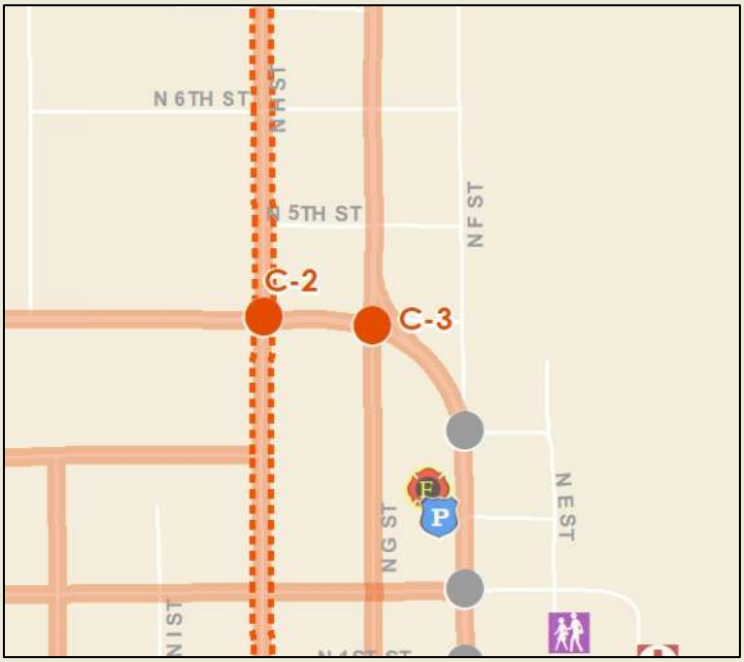


PROJECT INFORMATION

Description	The N H Street/OR 140 intersection is a key facility within a network of priority pedestrian and bicycle corridors for safely and efficiently facilitating non-motorized street crossings. A crossing study should be completed for this intersection to determine and implement the appropriate crossing treatment(s).
Benefits	▸ Improves overall connectivity for people walking, rolling, and biking ▸ Benefits non-vehicular modes ▸ May increase driver awareness of people walking, rolling, and biking and create traffic calming
Constraints	▸ Funding
Planning-Level Cost Estimate	$100,000
Additional Considerations	This key intersection serves priority and high priority corridors established for people walking, rolling, and biking. Identified crossing improvements should be coordinated with priority corridor improvements. Future project development will be coordinated with ODOT.

US 395/OR 140 CROSSING ENHACEMENTS (C-3)

PROJECT PURPOSE: ADDRESS IDENTIFIED MULTIMODAL NEED IN PRIORITY CORRIDOR NETWORK



PROJECT INFORMATION

Description	The US 395/OR 140 intersection is a key facility within a network of priority pedestrian and bicycle corridors for safely and efficiently facilitating non-motorized street crossings. It is also a central location within the Town. Crossing enhancements will be determined and implemented with the design and construction of the ultimate improvements identified at the intersection (see project sheet for US 395/OR 140 geometric improvements).
Benefits	▸ Improves overall connectivity for people walking, rolling, and biking ▸ Benefits non-vehicular modes ▸ May increase driver awareness of people walking, rolling, and biking and create traffic calming
Constraints	▸ Funding
Planning-Level Cost Estimate	See estimate from project sheet for US 395/OR 140 geometric improvements.
Additional Considerations	This key intersection serves priority corridors established for people walking, rolling, and biking. Crossing improvements will be coordinated with geometric changes at the intersection (Project I-3). Future project development will be coordinated with ODOT.

S L STREET/S 3RD STREET CROSSING STUDY (C-4)

PROJECT PURPOSE: ADDRESS IDENTIFIED MULTIMODAL NEED IN PRIORITY CORRIDOR NETWORK

PROJECT INFORMATION

Description	The S L Street/S 3rd Street intersection is a key facility within a network of priority pedestrian and bicycle corridors for safely and efficiently facilitating non-motorized street crossings. This intersection is also adjacent to Lakeview High School and serves students accessing the school. A crossing study should be completed for this intersection to determine and implement the appropriate crossing treatment(s).
Benefits	▸ Improves overall connectivity for people walking, rolling, and biking ▸ Benefits non-vehicular modes ▸ May increase driver awareness of people walking, rolling, and biking and create traffic calming ▸ Improves access to schools
Constraints	▸ Funding
Planning-Level Cost Estimate	$100,000
Additional Considerations	This key intersection serves priority and high priority corridors established for people walking, rolling, and biking. Identified crossing improvements should be coordinated with priority corridor improvements. Future project development should also be coordinated with Lakeview High School.

LAKEVIEW HIGH/S 3RD STREET CROSSING STUDY (C-5)

PROJECT PURPOSE: ADDRESS IDENTIFIED MULTIMODAL NEED IN PRIORITY CORRIDOR NETWORK

PROJECT INFORMATION

Description	The mid-block crossing located on S 3rd Street at Lakeview High School's main entrance is a key facility within a network of priority pedestrian and bicycle corridors for safely and efficiently facilitating non-motorized street crossings. This crossing is critical for students accessing the school, especially students walking, rolling, or biking from the elementary schools to travel home with older siblings. A crossing study should be completed for this intersection to determine and implement the appropriate crossing treatment(s).
Benefits	▸ Improves overall connectivity for people walking, rolling, and biking ▸ Benefits non-vehicular modes ▸ May increase driver awareness of people walking, rolling, and biking and create traffic calming ▸ Improves access to schools
Constraints	▸ Funding
Planning-Level Cost Estimate	$100,000
Additional Considerations	This crossing serves priority and high priority corridors established for people walking, rolling, and biking. Crossing improvements should consider limited visibility of pedestrians caused by the adjacent parking. Identified crossing improvements should be coordinated with priority corridor improvements. Future project development should be coordinated with Lakeview High School.

S H STREET/S 3RD STREET CROSSING ENHANCEMENTS (C-6)

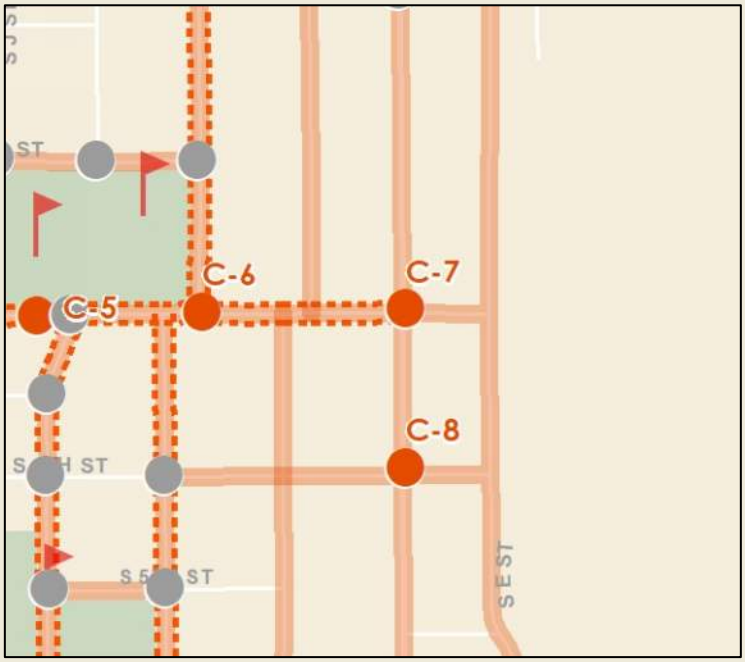
PROJECT PURPOSE: ADDRESS IDENTIFIED MULTIMODAL NEED IN PRIORITY CORRIDOR NETWORK

PROJECT INFORMATION

Description	The S H Street/S 3rd Street intersection is a key facility within a network of priority pedestrian and bicycle corridors for safely and efficiently facilitating non-motorized street crossings. This crossing is critical for students accessing the school, especially students walking, rolling, or biking from the elementary schools to travel home with older siblings. Crossing enhancements will be determined and implemented with the design and construction of the ultimate improvements identified at the intersection (see project sheet for S H Street/S 3rd Street geometric improvements).
Benefits	▸ Improves overall connectivity for people walking, rolling, and biking ▸ Benefits non-vehicular modes ▸ May increase driver awareness of people walking, rolling, and biking and create traffic calming ▸ Improves access to schools
Constraints	▸ Funding
Planning-Level Cost Estimate	See estimate from project sheet for S H Street/S 3rd Street geometric improvements.
Additional Considerations	This crossing serves priority and high priority corridors established for people walking, rolling, and biking. Crossing improvements will be coordinated with geometric changes at the intersection (Project I-7). Future project development should be coordinated with Lakeview High School.

US 395/S 3RD STREET CROSSING STUDY (C-7)

PROJECT PURPOSE: ADDRESS IDENTIFIED MULTIMODAL NEED IN PRIORITY CORRIDOR NETWORK

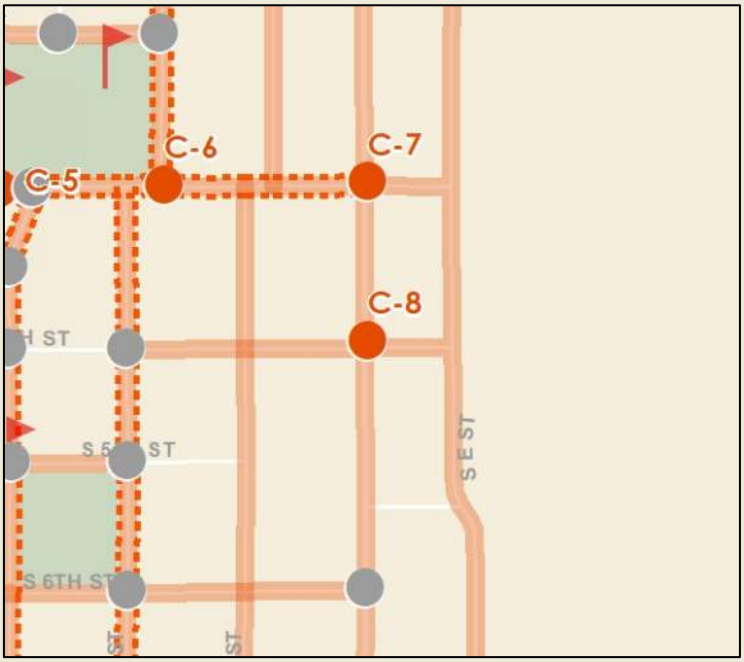


PROJECT INFORMATION

Description	The US 395/S 3rd Street intersection is a key facility within a network of priority pedestrian and bicycle corridors for safely and efficiently facilitating non-motorized street crossings. A crossing study should be completed for this intersection to determine and implement the appropriate crossing treatment(s).
Benefits	▸ Improves overall connectivity for people walking, rolling, and biking ▸ Benefits non-vehicular modes ▸ May increase driver awareness of people walking, rolling, and biking and create traffic calming
Constraints	▸ Funding
Planning-Level Cost Estimate	$100,000
Additional Considerations	This key intersection serves priority and high priority corridors established for people walking, rolling, and biking. Identified crossing improvements should be coordinated with priority corridor improvements. Future project development will be coordinated with ODOT.

US 395/S 4TH STREET CROSSING STUDY (C-8)

PROJECT PURPOSE: ADDRESS IDENTIFIED MULTIMODAL NEED IN PRIORITY CORRIDOR NETWORK



PROJECT INFORMATION

Description	The US 395/S 4th Street intersection is a key facility within a network of priority pedestrian and bicycle corridors for safely and efficiently facilitating non-motorized street crossings. A crossing study should be completed for this intersection to determine and implement the appropriate crossing treatment(s).
Benefits	▸ Improves overall connectivity for people walking, rolling, and biking ▸ Benefits non-vehicular modes ▸ May increase driver awareness of people walking, rolling, and biking and create traffic calming
Constraints	▸ Funding
Planning-Level Cost Estimate	$100,000
Additional Considerations	This key intersection serves priority corridors established for people walking, rolling, and biking. Identified crossing improvements should be coordinated with priority corridor improvements. Future project development will be coordinated with ODOT.