CITY OF SUTHERLIN

TRANSPORTATION SYSTEM PLAN

Volume I

July 2020

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SUTHERLIN TRANSPORTATION SYSTEM PLAN

JULY 2020

City of Sutherlin
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Sutherlin, Oregon 97479

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The inclusion of an improvement in this Transportation System Plan does not represent a commitment by the City of Sutherlin or Oregon Department of Transportation to fund, allow, or construct the project. Projects on the State of Oregon highway system that are contained in the TSP Update are not considered "planned" projects until they are programmed into the STIP. As such, projects in the TSP Update that are located on state highways cannot be considered for future development or land use actions until they are programmed into the STIP, or ODOT provides a written statement that a project is "reasonably likely" to be funded in the STIP. State highway projects that are programmed to be constructed may have to be altered or cancelled at a later time to meet changing budgets or unanticipated conditions such as environmental constraints. The contents of this document do not necessarily reflect views or policies of the State of Oregon.

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ACKNOWLEDGEMENTS

The development of the Sutherlin Transportation System Plan (TSP) was guided by the Project Management Team (PMT) and a volunteer Project Advisory Committee (PAC). The City of Sutherlin would like to thank each of these individuals who devoted their time, expertise, and local insight into the development of the plan.

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EXECUTIVE SUMMARY

The Sutherlin transportation system plan (TSP) is a long-range plan that sets the vision for the city's transportation system, facilities, and services to meet state, regional, and local needs for the next 20 years. The purpose of the 2020 TSP update is to address growth in Sutherlin as well as address regulatory changes that have occurred in the region since 2005. The TSP addresses compliance with new or amended federal, state, and local plans, policies, and regulations including the Oregon Transportation Plan (OTP), the state's Transportation Planning Rule (TPR), the Oregon Highway Plan (OHP), and presents the investments and priorities for the Pedestrian, Bicycle, Transit, Motor Vehicle, and other transportation systems.

TSP ORGANIZATION

The Sutherlin TSP is comprised of the main TSP summary document (Volume I, this document) and a volume of supporting technical appendices and other supporting documentation (Volume II). Volume I is organized in the following major sections:

- Section 1 – TSP Development Process
- Section 2 – Transportation Goals and Objectives
- Section 3 – Transportation Improvement Projects Overview
- Section 4 – Pedestrian System
- Section 5 – Bicycle System
- Section 6 – Transit System
- Section 7 – Motor Vehicle System
- Section 8 – Other Travel Modes
- Section 9 – Funding and Implementation

PLANNED TRANSPORTATION IMPROVEMENTS

Planned transportation improvements were developed with a focus on creating a balanced system capable of providing travel options for a wide variety of needs and users. The list of recommended projects was prioritized using guidance provided by the project goals and objectives and with input from technical experts, Sutherlin planning staff, City Engineer of Record, community stakeholders, and interested citizens.

Transportation improvement projects were developed for all of the major travel modes within Sutherlin. The project list is composed of three main project categories:

- Financially Constrained Projects - The highest priority projects that could potentially be constructed with anticipated funding over the next 20 years.
- Tier 2 Projects – Projects that have measurable transportation value, but due to funding constraints, are unable to be included in the Financially Constrained list. Should new or additional funding sources become available, the Tier 2 projects will warrant consideration for implementation.
- Tier 3 (Aspirational Projects) – Projects that would provide local or regional circulation value, but have project costs that significantly exceed known funding capabilities, have major implementation questions, or require further engineering evaluation beyond the planning depths of a typical TSP.

Table 1 and **Figure 1** summarize the improvement details for the highest priority (Financially Constrained) projects including improvement type, location, description, planning level cost estimate, and potential funding source. All other Tier 2 and Tier 3 (Aspirational Projects) are summarized in the individual modal plans of the TSP.

Table 1: Financially Constrained Project List				
Project ID	**Improvement Type**	**Location**	**Project Cost (2020 $)[3]**	**Funding Source[5]**
T1	New Transit Routes	Western Sutherlin (Preliminary Route Shown)	$25,000	City/UPTD
	Explore opportunities to provide new transit service in Western Sutherlin through collaboration with Douglas County Transportation District. This project should be coupled with **T3**.			
T2	Transit Stop Enhancements	Existing Transit Stops/Location Varies	$200,000	City/UPTD
	Improve station amenities by adding benches, signage, lighting, garbage cans, and transit maps. Project cost assumes amenities upgrades at all eight (8) existing transit stops.			
T3	New Transit Stops	Western Sutherlin	$25,000	City/UPTD
	Explore opportunities to provide new transit stops in Western Sutherlin through collaboration with Douglas County Transportation District. New transit stop locations should be based on future identified transit routes. This project should be coupled with project **T1**.			
R1	Segment Enhancement	W Sixth Avenue	$2,930,000	City
	Widen and reconstruct the roadway from N Comstock to N State Street to meet the multimodal Minor Collector street standards.			
R2	Segment Enhancement	E Fourth Avenue – West	$2,170,000	City
	Reconstruct E Fourth Street to meet the multimodal Minor Collector street standards from N State Street to Mardonna Way.			
R3	Segment Enhancement	Mardonna Way	$360,000	City
	Reconstruct Mardonna Way from E Fourth Avenue to Central Avenue to meet the multimodal Minor Collector street standards.			
R4	Segment Enhancement	Waite Street[2]	$2,700,000	City
	Currently on the City's Capital Improvement Plan, widen and reconstruct the roadway between Central Avenue and South Side Road to meet the multimodal Minor Collector street standards.			
R5	Intersection Improvement	OR138W/Park Hill Lane	Total: $500,000 City Match: ($167,000)	City
	Install interim traffic signal at the OR138W/Park Hill Lane intersection until full Exit 136 IAMP improvements are implemented.			
R6	Intersection Improvement	OR138W/Dakota Street	Total: $500,000 City Match: ($167,000)	City
	Install traffic signal at the OR138W/Dakota Street intersection as envisioned in the larger Exit 136 IAMP.			

Table 1: Financially Constrained Project List				
Project ID	**Improvement Type**	**Location**	**Project Cost (2020 $)[3]**	**Funding Source[5]**
R7	Segment Enhancement	OR138W	Total: $1,400,000 City Match: $568,000	City
	Improve OR138W from Comstock Road to Dakota Street to a Major Arterial standard.			
SC1	Street Connectivity	Duke Avenue	$880,000	City
	Extend Duke Avenue east to create a new connection between Hawthorne Street and Taylor Street			
SC2	Street Connectivity	Fourth Avenue Extension	$1,035,000	City
	Extend Fourth Avenue to the west connecting to W Sixth Avenue.			
SC3	Street Connectivity	Robinson Street	$830,000	City
	Extend Myrtle Street to the north and east to connect to N Comstock Road, perpendicular to Robinson Street			
S1	Signing and Striping	S Calapooia Street/Exit 135 Connector	$25,000	City
	Install "Yield" signage and striping on the southbound right-turn lane.			

[1] The installation of an enhanced crossing must be supported by an engineering investigation and evaluated to determine the appropriate level of crosswalk enhancement for the specific location.
[2] Project identified in current City's Capital Improvement Plan.
[3] Project Costs are Planning Level Cost Estimates that do not include costs for Right-of-Way acquisitions and/or environmental mitigation. Future project design will need to estimate these additional project costs.

Note. Funding Sources: City = City of Sutherlin; UPTD = Umpqua Public Transportation District; State = Oregon Department of Transportation.

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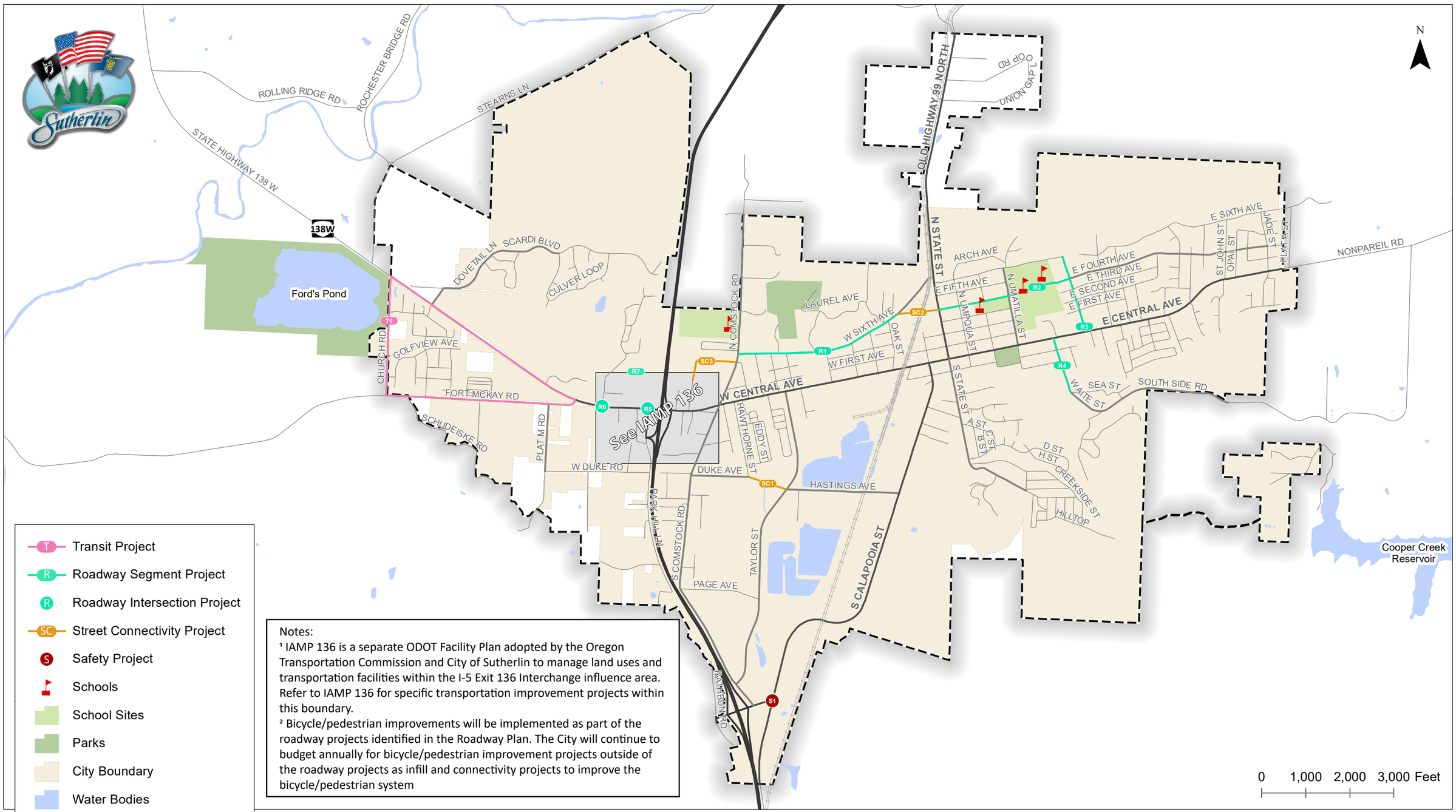

- Transit Project
- Roadway Segment Project
- Roadway Intersection Project
- Street Connectivity Project
- Safety Project
- Schools
- School Sites
- Parks
- City Boundary
- Water Bodies
- IAMP 136 Boundary[1]
- Urban Growth Boundary

Notes:
[1] IAMP 136 is a separate ODOT Facility Plan adopted by the Oregon Transportation Commission and City of Sutherlin to manage land uses and transportation facilities within the I-5 Exit 136 Interchange influence area. Refer to IAMP 136 for specific transportation improvement projects within this boundary.
[2] Bicycle/pedestrian improvements will be implemented as part of the roadway projects identified in the Roadway Plan. The City will continue to budget annually for bicycle/pedestrian improvement projects outside of the roadway projects as infill and connectivity projects to improve the bicycle/pedestrian system

Financially Constrained Project Map
Sutherlin, Oregon

Figure **1**

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Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl

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OVERVIEW OF SUTHERLIN IN 2020

The City of Sutherlin, incorporated in 1911, is located in central Douglas County, and is home to a population of approximately 8,235[1] people. The City's median age is 44.8 years, and nearly a quarter of the population 65 years of age or older. Sutherlin covers a total area of just over six square miles and is arranged generally east to west along OR 138 W (Elkton-Sutherlin Highway) and Central Avenue. The City is located approximately 14 miles north of the City of Roseburg.

Sutherlin is located in a valley between the Cascade Mountains and the Coast Range, with an average elevation of 518 feet above sea level. Sutherlin has a mild climate that is ideal for forestry and agriculture. The city's climate and rich nature and wildlife supply attract tourists interested in nature, hunting, and fishing. The city's commercial district is concentrated along West Central Avenue, an east-west roadway that bisects the city.

Sutherlin straddles Interstate 5 (I-5), and interchanges 135 and 136 are within the city limits. Traveling to and from Sutherlin is most commonly achieved along I-5, Oregon (OR) 138W, or OR 99. OR 138 W (Elkton-Sutherlin Highway) travels east-west and connects to the western edge of the city limits whereas I-5 and OR 99 travel north-south through the heart of the city.

Figure 2 illustrates the study area for the TSP update.

Sutherlin's local street network is bisected by OR 138 W (Elkton-Sutherlin Highway) / W Central Avenue. Commercial development predominately exists along W Central Avenue. Sutherlin's residential areas are found north and south of OR 138 W (Elkton-Sutherlin Highway) / W Central Avenue. East-west travel within Sutherlin is somewhat limited and constrained to OR 138 W (Elkton-Sutherlin Highway) / W Central Avenue. This roadway serves east-west connectivity across the I-5 barrier. Additionally, hilly terrain limits east-west connectivity options through Sutherlin. North-south travel within Sutherlin utilizes OR 99 and Comstock Road, connecting Sutherlin to its northern neighboring city of Oakland.

[1] Portland State University Estimate, December 2019.

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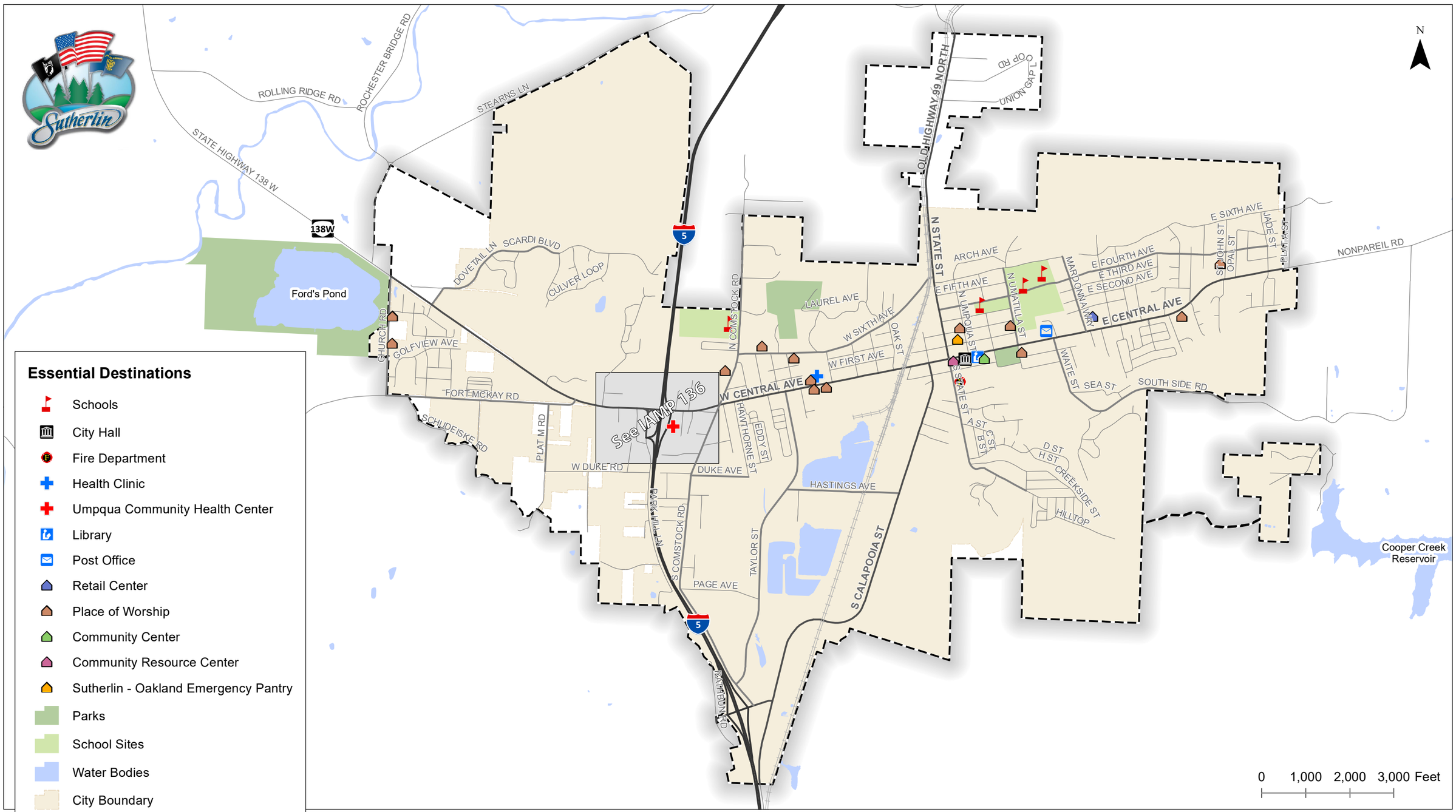

Essential Destinations

- Schools
- City Hall
- Fire Department
- Health Clinic
- Umpqua Community Health Center
- Library
- Post Office
- Retail Center
- Place of Worship
- Community Center
- Community Resource Center
- Sutherlin - Oakland Emergency Pantry
- Parks
- School Sites
- Water Bodies
- City Boundary
- IAMP 136 Boundary
- Urban Growth Boundary

Study Area
Sutherlin, Oregon

Figure **2**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl

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KEY DESTINATIONS & ACTIVITY CENTERS

Key destinations and activity centers are locations of daily needs and services that the residents of Sutherlin rely on. Accessing these locations should be achievable and convenient through the multimodal options of walking, biking, taking transit, and driving. Below is a list of the types of key destinations and activities centers defined through collaboration with the PAC and community within Sutherlin.

- Retail Center
- Place(s) of Worship
- Sutherlin – Oakland Emergency Pantry
- Community Center
- Community Resource Center
- Fire Department
- Health Clinic
- Umpqua Community Health Center
- City Hall
- Library
- Post Office

DEMOGRAPHICS

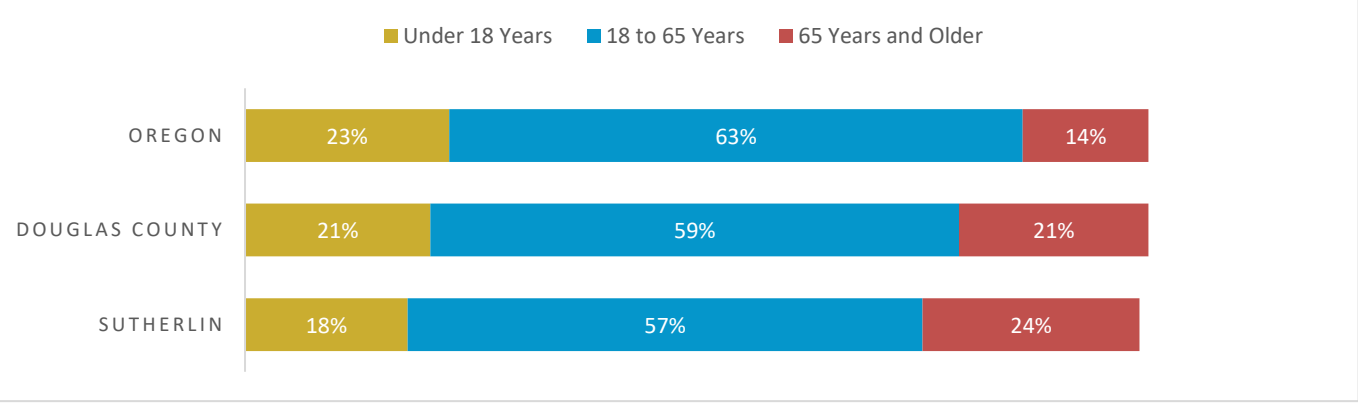
Understanding Sutherlin's demographics have a significant influence on the needs of the transportation system. Where people live, work, and play all contribute to the unique needs of Sutherlin's transportation system. How people move throughout Sutherlin is influenced by age, employment and dependent on socioeconomics. Federal law requires agencies undertaking federal projects to identify low-income and minority populations, assess whether high and adverse human health or environmental impacts would result from plan alternatives, and ensure participation of low-income and minority populations in the transportation decision making process.

Sutherlin's population is approximately 8,235[2] residents. The majority of these resident's work outside the City. Approximately 2,546 residents of Sutherlin work outside the City and 1,302 employees live outside Sutherlin but work within its city limits. Only 507 residents of Sutherlin reported living and working within the city limits[3].

Age

Age is an important attribute in planning for a transportation system that meets the needs of all users. Elderly residents are less likely to drive and may be more dependent on public transit, whereas most elementary and middle school children are dependent on walking, biking, and other forms of active transportation. **Exhibit 1** summarizes Sutherlin's age distribution as it related to Douglas County and State averages.

Exhibit 1: Elderly and Youth Population, City of Sutherlin, 2010 Decennial Census

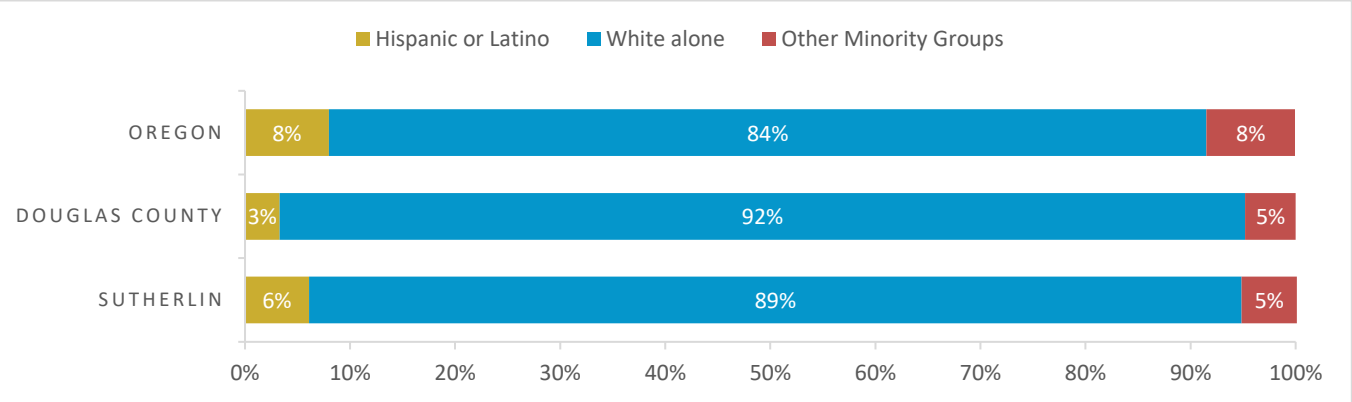


[2] Portland State University Estimate, December 2019
[3] According to 2017 Census on the Map Employment Statistics

Minority Population

Overall, Sutherlin's portion of minority population is lower compared to the State – 11 percent compared to over 16 percent. However, compared to the County, Sutherlin has a relatively high share of minority populations, particularly among Hispanic and American Indian groups. **Exhibit 2** provide a summary of minority populations for the State of Oregon, Douglas County, and the City of Sutherlin. There are multiple areas with high concentrations of minority groups. Among the areas with a minority population greater than 50 percent, only the location S State Street has a high total population of people within the Census Block. Other notable areas with high concentrations of minorities are located near the schools on E Fourth Avenue, near the intersection of N Comstock Avenue and W Sixth Avenue, and in the Dawn Rey Mobile Park located off W Central Avenue.

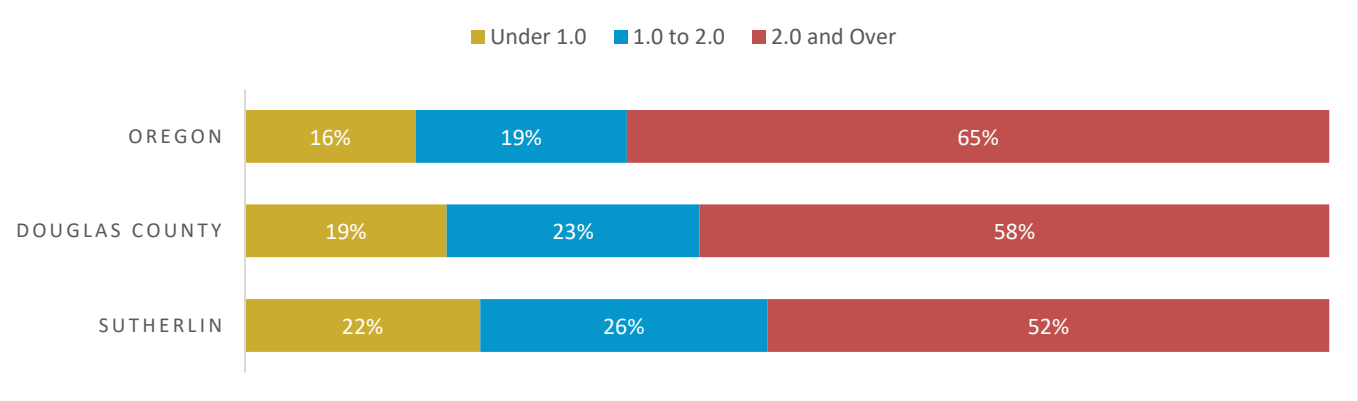
Exhibit 2: Race/Ethnicity, City of Sutherlin, 2010 Decennial Census



Low-Income Population

Poverty statistics shown in **Exhibit 3** are derived from American Community Survey 5-year data samples. Almost half of the population of Sutherlin – 48 percent – earn an income that is less than two-times the Federal Poverty Level (FPL)[4]. The percentage of Sutherlin's population earning less than two-times the FPL is higher compared to Douglas County (42 percent) and the state (35 percent). The largest concentration of low-income population is generally located in the southern portion of the city, between Central Avenue and the southern UGB. Only a portion of this area is zoned for residential, which limits the possible locations of low-income populations to areas closer to Central Avenue and S Comstock Road, or in the Timber Valley SKP Park located off S State Street. A portion of the low-income population is also located in the northern-most part of the city.

Exhibit 3: Ratio of Income to Poverty, City of Sutherlin, 2015 5-Year American Community Survey



[4] Many researchers consider the FPL to be too low to accurately represent income levels necessary for self-sufficiency; thus, using two-times the FPL may be a more accurate measure of income sufficiency.

TSP DEVELOPMENT PROCESS

WHAT IS THE SUTHERLIN TSP?

A TSP is the long-term vision for transportation system investments. A TSP establishes the framework for all modes of travel: pedestrian, bicycle, transit, vehicle, freight, air, water, rail, and pipeline.

The Sutherlin TSP serves as an opportunity to build upon the community's values and highlight what makes Sutherlin a great place to live, work, and play. The Sutherlin TSP contains goals, objectives, projects, and implementation guidelines needed to provide mobility for all users, now and in the future. The TSP examines the existing transportation system conditions and forecasts transportation system needs over the next 20 years based on growth in the city and surrounding communities. Elements of the TSP can be implemented by agencies (city, state, or federal) as well as private developers.

WHY UPDATE THE CURRENT TSP?

Sutherlin's last TSP was prepared and adopted in 2005. Since then, Sutherlin has experienced steady residential growth in the west and southeast portions of the City while recent land use and UGB modifications were adopted that will potentially accommodate more significant levels of growth in areas with multi-modal infrastructure needs. In 2009, an Interchange Area Management Plan (IAMP) plan was prepared for the Exit 136 interchange area. The IAMP is an ODOT Facility Plan adopted by the Oregon Transportation Commission (OTC) and City of Sutherlin to manage land uses and transportation facilities within the I-5 Exit 136 interchange influence area. This plan, along with several other smaller transportation planning efforts needed to be comprehensively integrated into the larger transportation plan. To address these changes, a TSP update was prepared that focuses on the following modes:

The TSP serves as the transportation element of the Sutherlin Comprehensive Plan. The Comprehensive Plan guides the community's land use, conservation of natural resources, economic development, and public facility investment.

TSP UPDATE PROCESS

The TSP update process began with a review of local, regional, and statewide plans and policies that guide land use and transportation planning in the City. Goals, objectives, and evaluation criteria were then developed to guide the evaluation of existing and future transportation system conditions as well as the development of planned improvements. An inventory of the multimodal transportation system was then conducted to serve as the basis for the existing and future conditions analyses. The existing and future conditions analyses focused on identifying gaps and deficiencies in the multimodal transportation system based on current and forecast future performance. For each gap and deficiency, several solutions were evaluated to address the system needs. This process led to the development of a large number of plans, programs, and projects. The plans, programs, and projects were then prioritized using the project evaluation criteria and organized into different prioritized project lists.

PROJECT ADVISORY COMMITTEE

The TSP Update was developed in close coordination with city staff along with key stakeholders and representatives from the community including the project advisory committee (PAC). The makeup of the PAC consisted of representatives from the City of Sutherlin Community Development Department, Douglas County Planning Department and Public Works Engineering Department, Oregon Department of Transportation (ODOT), Umpqua Public Transportation District (UPTD), Sutherlin School District, Sutherlin City Council, Sutherlin Planning Commission, Sutherlin Police Department, Sutherlin Fire Department, Oregon Department of Land Conservation and Development, Sutherlin Area Chamber of Commerce, Sutherlin Sanitary Service, Friends of Ford's Pond, and Cow Creek Tribe. The PAC provided technical guidance and coordination throughout the project, reviewed and provided feedback on technical memorandums, and attending community meetings and workshops.

PUBLIC INVOLVEMENT SUMMARY

Opportunities for public involvement were made available throughout the TSP update process. The opportunities consisted of a kick-off meeting and site visit, web-based communications about upcoming committee meetings and the project website (https://www.ci.sutherlin.or.us/news_detail_T3_R228.php). The project team met with the PAC five (5) times throughout the TSP update process and held two public open houses. Each PAC meeting was open to the general public. The goal of the public involvement process was to develop a TSP Update that addressed the gaps and deficiencies in the transportation system while meeting the needs of the community.

TRANSPORTATION GOALS AND OBJECTIVES

The project team in collaboration with the PAC developed goals and objectives for the TSP update to help guide the review and documentation of existing and future transportation system needs, the development and evaluation of potential solutions to address the needs, and the selection and prioritization of preferred solutions for inclusion in the TSP update. The goals and objectives also inform recommendations for policy language that will serve as guidance for future land use decision making, such as approval criteria related to zone change and comprehensive plan amendments.

The goals and objectives for the Sutherlin TSP update are based on an evaluation of the existing goals and policies in the 2005 Sutherlin TSP and 1990 Comprehensive Plan. The updated goals provide direction for where the City would like to go, while the updated objectives provide a more detailed breakdown of the goals with specific outcomes the City desires to achieve. In order to ensure compliance with the Transportation Planning Rule (TPR) and other state, regional, and local planning requirements, the goals and objectives presented below tend to favor improvements in active transportation facilities and services over capacity improvements. It is assumed that adoption of the TSP update will result in changes to the 1990 – 1991 Comprehensive Plan, including an update to the goals and policies related to transportation.

Goal 1: Safety

Provide a transportation system that enhances the safety and security of all transportation modes.

- Promote transportation safety through a comprehensive program of engineering, education, and enforcement.
- Address existing and potential future safety issues by identifying high crash locations and develop strategies to address those issues.
- Designate safe routes from residential areas to schools and identify transportation improvements needed to ensure the safety of Sutherlin's school children.
- Develop a safe, complete, attractive, efficient, and accessible system of pedestrian ways, bicycle ways and personal electric vehicle ways, including bike lanes, shared roadways, multi-use paths, and sidewalks.
- Use the Transportation System Plan as the legal basis and policy foundation for decisions involving transportation issues.

Goal 2: Mobility and Efficiency

Provide a balanced and efficient transportation system for all members of the community through effective transportation and land use planning.

- Reduce reliance on single occupancy vehicles by improving the quality of walking, biking, transit, and electric vehicle facilities. Identify strategies appropriate to the City of Sutherlin to help reduce vehicle miles traveled.
- Integrate transportation and land use into development ordinances to increase opportunities for multi-purposes trips.
- Manage projected travel demand consistent with community, land use, environmental, economic and livability goals.
- Manage the transportation system for adequate and efficient operations.

Goal 3: Health and Livability

Provide a transportation system that enhances the health and livability of local residents by promoting active modes of transportation.

- Enhance the livability of the Sutherlin Community through proper location and design of transportation facilities including multi-use paths to balance the needs of human use and enjoyment with resource conservation in areas identified in the Parks Master Plan and Comprehensive Plan.
- Design roadways to enhance livability by ensuring that aesthetics and landscaping are an integral part of Sutherlin's transportation system.
- Construct multi-use paths where they can be developed with satisfactory design components that address safety, security, maintainability, and acceptable uses.

Goal 4: Connectivity and Accessibility

Develop a comprehensive, multimodal transportation system that connects all members of the Sutherlin area to community destinations.

- Provide connectivity to each area of the City for convenient multi-modal access. Ensure pedestrian, bicycle, transit, and vehicle access to schools, parks, employment and recreational areas, and the Sutherlin core city area by identifying and developing improvements that address connectivity needs.
- Make better use of the southern interchange by connecting an east-west route to the southern interchange on both sides of Interstate-5.
- Identify opportunities to improve east-west travel for all modes of transportation across I-5.
- Balance the needed street function for all travel modes with adjacent land uses through the use of context-sensitive street and streetscape design techniques.
- Develop neighborhood and local connections to provide adequate circulation into and out of neighborhoods.
- Ensure that adequate access for emergency services vehicles is provided throughout the City.

Goal 5: Coordination and Integration

Ensure the local transportation system is integrated with County and State transportation systems and objectives, and with other related aspects of the community in Sutherlin, including land use planning, natural resource protection, housing, and economic development.

- Meet federal and state safety compliance standards for operation, construction, and maintenance of the rail system.
- Encourage the Central Oregon and Pacific Railroad to install railroad crossing arms with indicator lights at all railroad crossings.
- Provide safe routing of hazardous materials consistent with federal guidelines and provide for public involvement in the process.
- Engage community members and organizations in the development and design of the transportation facilities identified in the TSP.
- Work with regional and local public transportation providers to identify opportunities to expand public transportation service within the City and to surrounding communities. Encourage intercity public transportation connections for long-range public transportation. Enhance public volunteer transit system.
- Maintain access management standards for streets consistent with City, County, and State requirements to reduce conflicts between vehicles and trucks, and between vehicles, bicycles, and pedestrians. Develop access management strategies for all roadway classifications.

Goal 6: Strategic Economic Investment

Facilitate the provision of a multi-modal transport system for the efficient, safe, and competitive movement of goods and services to, from, and within the Sutherlin area.

- Construct all transportation facilities to meet the requirements of the Americans with Disabilities Act.
- Provide satisfactory levels of maintenance to the transportation system in order to preserve user safety, facility aesthetics, and the integrity of the system as a whole.
- Promote accessibility to transport modes that fulfill the needs of freight shippers.
- Strive to balance the needs of moving freight with community livability and land use decision making.
- Promote the appropriate location of freight routes and regional pipeline systems to enhance security, local service, and efficiency.
- Manage on-street parking by providing an appropriate supply and design of off-street parking facilities to promote economic vitality, neighborhood livability, efficient use of urban space, and reduced reliance on single occupancy motor vehicles.

Goal 7: Funding

Maintain a stable, flexible financial system for funding transportation improvements by working cooperatively with Federal, State, Regional, and Local governments.

- Develop a long-rang financial strategy to make needed improvements to the transportation system.
- Regularly update the City's System Development Charges, including adjusting inflation rates.
- Coordinate with all affected governmental units in the area (Douglas County, Oregon Department of Transportation, and Umpqua Public Transportation District).
- Secure adequate funding to support regional transportation, growth management, and air quality policies.
- Maintain a current capital improvement program (CIP).

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TRANSPORTATION IMPROVEMENT PROJECTS OVERVIEW

Recommended solutions were developed to be consistent with the project vision and goals and to focus on creating a balanced system able to provide travel options for a wide variety of needs and users. The list of recommended projects was prioritized using guidance provided by the project goals and objectives and with input from technical experts, Sutherlin planning staff , City Engineer of Record, community stakeholders, and interested citizens.

Transportation improvement projects were developed for all of the major travel modes within Sutherlin. The project lists are composed of three main categories:

- Financially Constrained Projects - The highest priority projects that could potentially be constructed with anticipated funding over the next 20 years.
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- Tier 3 (Aspirational Projects) – Projects that would provide local or regional circulation value, but have project costs that significantly exceed known funding capabilities, have major implementation questions, or require further engineering evaluation beyond the capabilities of a TSP.

It is recognized that the City of Sutherlin is not obligated to implement the Financially Constrained projects first. Priorities may change over time and unexpected opportunities may arise to fund particular projects. The purpose of the Financially Constrained project list is to establish reasonable expectations for the level of improvements that may occur and give preliminary direction on where funds should be allocated.

PEDESTRIAN SYSTEM

The pedestrian system in Sutherlin consists of sidewalks, multi-use paths, marked and unmarked, signalized and unsignalized pedestrian crossings. These facilities provide residents the ability to access local retail/commercial centers, recreational areas, and other land uses by foot. A safe, convenient, and continuous network of pedestrian facilities is essential to establishing a vibrant and healthy community while supporting the local economy.

PEDESTRIAN FACILITIES

Pedestrian facilities are the elements of the transportation system that enable people to walk safely and efficiently between neighborhoods, retail centers, employment areas, and transit stops. These include facilities for pedestrian movement along key roadways (e.g. sidewalks, multi-use paths, and off-street trails) and for safe roadway crossings (e.g. crosswalks, crossing beacons, pedestrian refuge islands). Each facility plays an important role in developing a comprehensive pedestrian system.

This section summarizes the pedestrian facilities that were determined to best address gaps and deficiencies in the pedestrian system and future needs. As indicated below, the most common overall need is to provide a safe and interconnected pedestrian system that encourages people to walk, especially for trips less than one-half mile in length.

Sidewalks

Sidewalks are the fundamental building blocks of the pedestrian system. They enable people to walk comfortably, conveniently, and safely from place to place. They also provide an important means of mobility for people with disabilities, families with strollers, and others who may not be able to travel on an unimproved roadside surface. Sidewalks are usually 6 to 8-feet wide and constructed from concrete. They are also frequently separated from the roadway by a curb, landscaping, and/or on-street parking. Sidewalks are widely used in urban and suburban settings. Ideally, sidewalks could be provided along both sides of the roadway; however, some areas with physical or right-of-way constraints may require that sidewalk be located on only one side. The pedestrian plan includes a significant number of projects that involve filling in the gaps and installing new sidewalks.

Multi-use Paths

Multi-use paths are paved, bi-directional, trails that can serve both pedestrians and bicyclists. Multi-use paths and trails can be constructed adjacent to roadways where the topography, right-of-way, or other issues don't allow for the construction of sidewalks and bicycle facilities. A minimum width of 10 feet is recommended for low-pedestrian/bicycle-traffic contexts; 12 to 14 feet should be considered in areas with moderate to high levels of bicycle and pedestrian traffic. Multi-use paths can be used to create longer-distance links within and between communities and provide regional connections. They play an integral role in recreation, commuting, and accessibility due to their appeal to users of all ages and skill levels.

Enhanced Pedestrian Crossings

Pedestrian crossing facilities enable pedestrians to safely and efficiently cross streets and other transportation facilities. Planning for appropriate pedestrian crossings requires the community to balance vehicular needs with providing crossing locations at desired routes for people walking. Enhanced pedestrian crossing treatments include:

- Median refuge islands
- High visibility pavement markings and signs
- Rapid rectangular flashing beacons (RRFB)
- Pedestrian Hybrid Beacons (HAWK)
- Curb extensions
- Pedestrian signals
- Pedestrian countdown heads
- Leading Pedestrian interval

The pedestrian plan includes several projects that involve enhancing pedestrian crossings. Many of the treatments listed above can be applied together at one crossing location to further alert drivers of the presence of pedestrians in the roadway.

Safe Routes to School

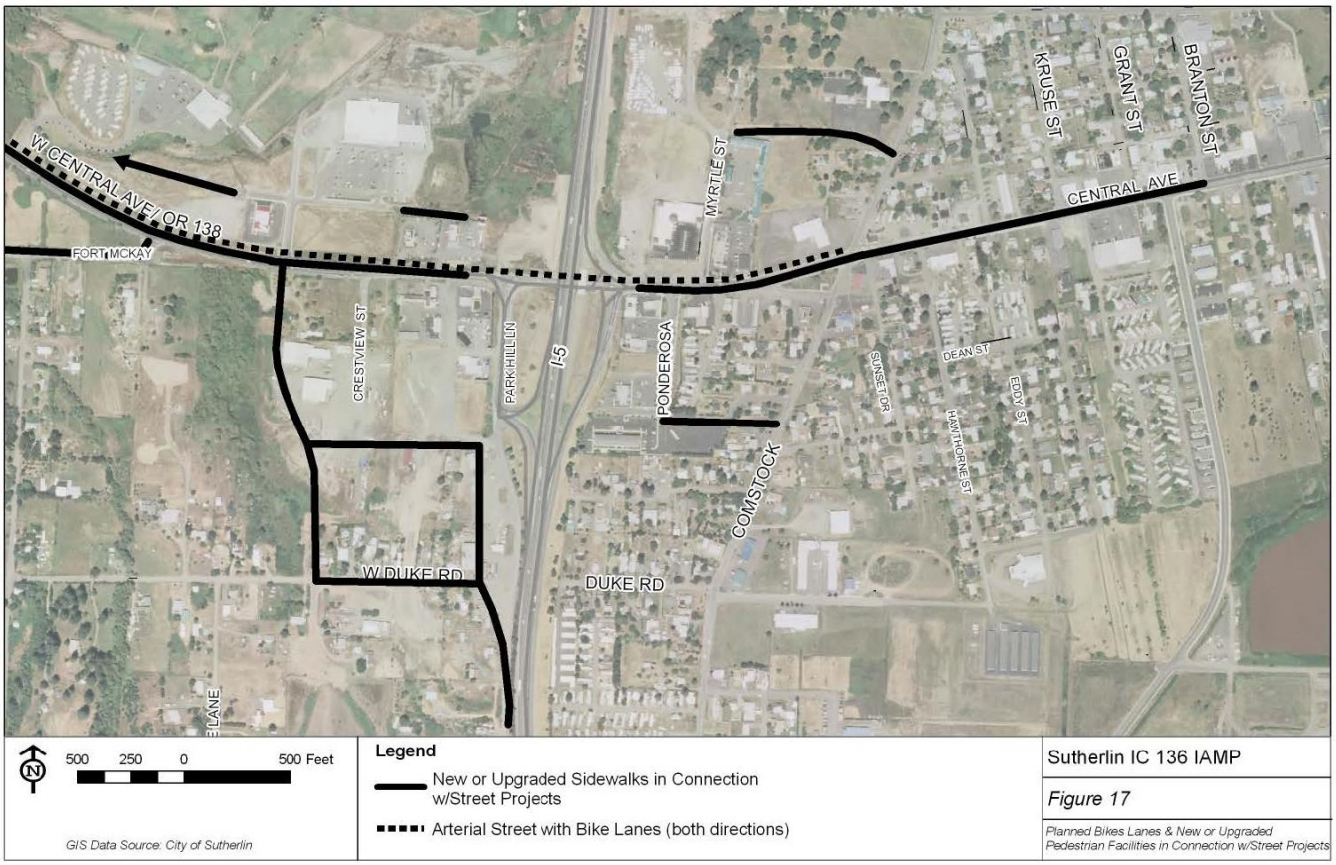
Safe Routes to School (SRTS) programs are intended to encourage children to walk, roll, and bicycle to school; to make walking, rolling[5], and bicycling to school safe and more appealing; and to facilitate the planning, development and implementation of projects that will improve safety near schools. Projects identified within a one-mile radius of schools are eligible for funding opportunities through the ODOT Safe Routes to School Infrastructure Program. Within the context of the TSP, new sidewalk, sidewalk infill, and enhanced crossing projects have been identified within each of the modal plans to improve multi-modal access to schools.

[5] Rolling includes any means of transportation that involves wheels including wheelchairs, scooters, skateboards, Onewheel, RipStik, Segway, or Two-wheeled Smartboard

EXIT 136 IAMP MULTIMODAL IMPROVEMENTS

As described previously, an Interchange Area Management Plan (IAMP) plan was prepared for the Exit 136 interchange area in 2009. While the document primarily focuses on geometric and operational improvements to the existing interchange to increase vehicular capacity and efficiency, the IAMP also identified several pedestrian and bicycle improvements along OR 138W (Elkton – Sutherlin Highway) within the study boundary. **Exhibit 4** illustrates the location of pedestrian and bicycle improvements identified as part of the Exit 136 IAMP.

Exhibit 4: Exit 136 IAMP Pedestrian and Bicycle Improvements



As illustrated in **Exhibit 4**, new or upgraded sidewalks in connection with street projects are identified along OR 138W (Elkton – Sutherlin Highway), W Central Avenue, Hospitality Way, W Duke Road, Myrtle Street, and future street connections in the southwest quadrant of the interchange area.

The TSP does not identify pedestrian and bicycle improvement projects located within the IAMP study area boundary. Instead, the TSP relies on and concurs with the identified IAMP pedestrian and bicycle improvements for consistency purposes between the two documents.

PEDESTRIAN PLAN

Table 2 identifies Sutherlin's Pedestrian Plan projects. Projects summarized in **Table 2** are intended to support active walking options in Sutherlin. Projects are organized by improvement type, location, project cost (2020 $), priority, and primary funding source. The priorities shown in are based on the project evaluation criteria and reflect input from the project team and the general public. The cost estimates are based on average unit costs for roadway improvements. The cost estimates do not include the cost of right-of-way. **Figure 3** illustrates the location of the pedestrian plan projects.

*Pedestrian improvements will be implemented as part of the roadway projects identified in the Roadway Plan. The City will continue to budget annually for Pedestrian improvement projects outside of the roadway projects as infill and connectivity projects to improve the pedestrian system including but not limited to the projects identified in **Table 2**.*

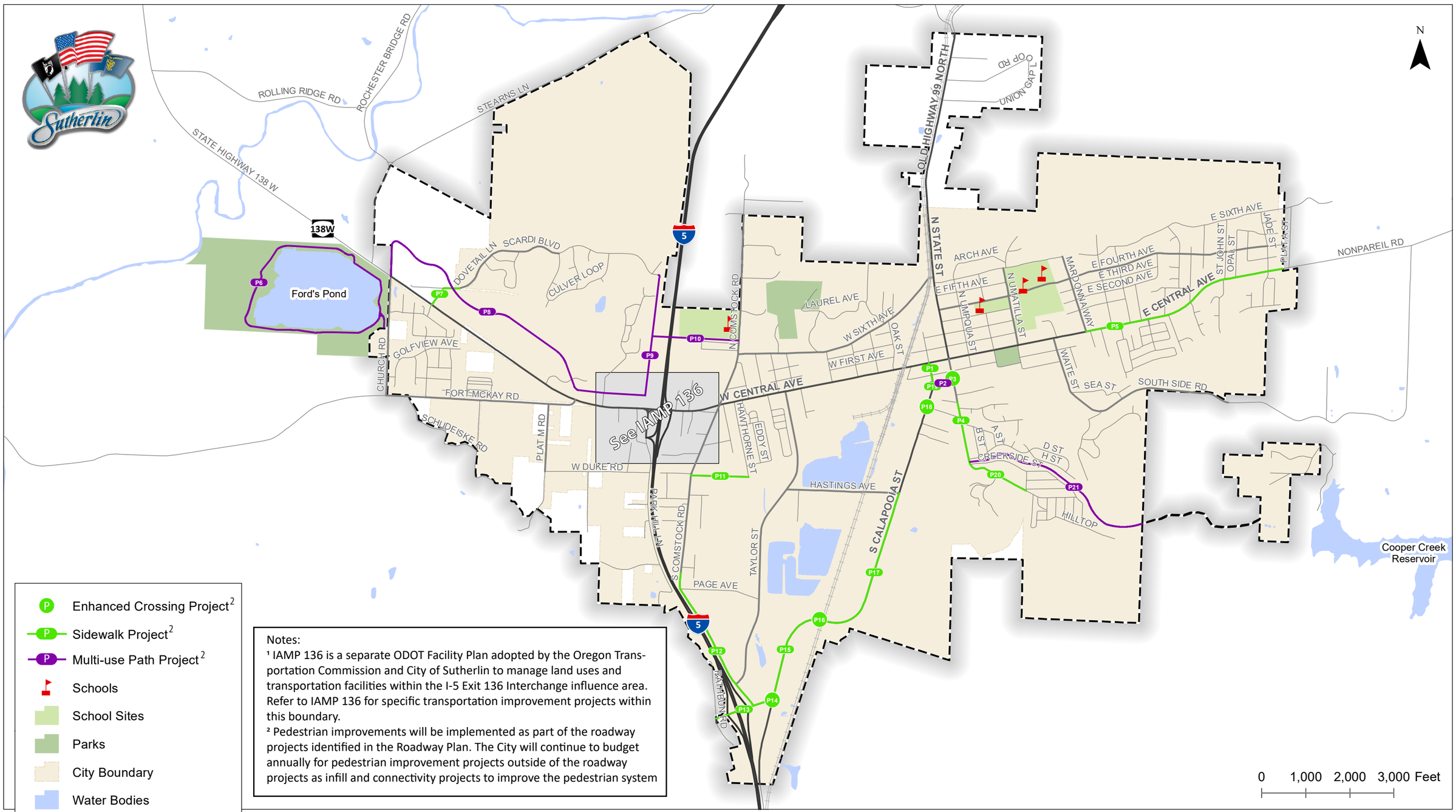
Table 2: Pedestrian Plan Improvement Projects

Project ID	Improvement Type	Location	Project Cost (2020 $)[3]	Priority	Primary Funding Source[3]
P1	Sidewalk	S Calapooia Street	$55,000	Tier 2	City
	Install sidewalks on both sides of the roadway from W Central Avenue to W Everett Avenue.				
P2	Multi-Use Path	Red Rock Trail Extension	$35,000	Tier 2	City
	Extend the Red Rock Trail west to connect to S Calapooia Street, parallel to the Sutherlin Creek.				
P3	Enhanced Crossing[1]	S State Street/Red Rocks Trail	$30,000	Tier 2	City
	Install enhanced pedestrian crossing at S State Street/Red Rock Trail extension. This project should be coupled with project P4.				
P4	Sidewalk	S State Street	$180,000	Tier 2	City/ Private Development
	Fill in sidewalk gaps along the west side of State Street between Azalea Court and D Street.				
P5	Sidewalk	Central Avenue	$545,000	Tier 2	City/ Private Development
	Install sidewalks and fill in sidewalk gaps between Mardonna Way and eastern city limits on both sides of the roadway.				
P6	Multi-use Path	Ford's Pond	N/A	Tier 2	City
	Develop a new multi-use path around Ford's Pond consistent with Ford's Pond Master Plan				
P7	Sidewalk	Dovetail Lane	$325,000	Tier 2	City
	Install sidewalks on both sides of the roadway between OR 138 W (Elkton-Sutherlin Highway) and Eagle Loop Road				
P8	Multi-use Path	OR 138 W (Elkton-Sutherlin Highway)[2]	$570,000	Tier 3/ Aspirational	City
	Develop a new multi-use path connecting OR 138 W (Elkton-Sutherlin Highway)/Church Street intersection, Dovetail Lane, Clover Leaf Loop Road				
P9	Multi-use Path	Scardi Boulevard	$210,000	Tier3/ Aspirational	City
	Develop a new multi-use path connecting the east end of Scardi Lane with the P8 multi use path				

Table 2: Pedestrian Plan Improvement Projects					
Project ID	**Improvement Type**	**Location**	**Project Cost (2020 $)[3]**	**Priority**	**Primary Funding Source[3]**
P10	Multi-use Path	I-5 Underpass	>$5M	Tier3/ Aspirational	City
	Develop a new multi-use path and I-5 underpass connecting the west side of I-5 to N Comstock Road				
P11	Sidewalk	E Duke Avenue	$325,000	Tier 2	City
	Install sidewalks on both sides of the roadway from S Comstock Road to eastern roadway terminus (extended as part of the Duke Avenue extension project)				
P12	Sidewalk	S Comstock Road	$410,000	Tier 2	City/County
	Install sidewalks on east side of the roadway from Page Avenue to135 Connector				
P13	Sidewalk	Exit 135 Connector[2]	$1,100,000	Tier 2	City/County
	Install sidewalks on both sides of the road from S Comstock Road to S Calapooia Street (OR 99)				
P14	Enhanced Crossing[1]	S Calapooia Street/ Exit 135 Connector	$30,000	Tier 2	City/County
	Install enhanced pedestrian crossing at S Calapooia Street/Exit 135 Connector to provide connection to existing transit stop.				
P15	Sidewalk	S Calapooia Street	$635,000	Tier 2	City/County
	Install sidewalks on east side of the roadway between railroad crossing and 135 Connector				
P16	Enhanced Crossing[1]	S Calapooia Street/ Railroad Crossing	$30,000	Tier 2	City/County
	Install enhanced pedestrian crossing at S Calapooia Street/near Railroad Crossing to provide connection to existing transit stop.				
P17	Sidewalk	S Calapooia Street	$775,000	Tier 2	City/County/ Private Development
	Fill in sidewalk gaps on the west side of the roadway between Hasting Avenue and railroad crossing				
P18	Enhanced Crossing[1]	S Calapooia Street/Valentine Street	$95,000	Tier 2	City
	Install enhanced pedestrian crossing at S Calapooia Street/Valentine Street to provide connection to existing transit stop.				
P19	Sidewalk	S Calapooia Street	$15,000	Tier 2	City/County
	Install sidewalks on east side of the roadway from W Everett Avenue to Sutherlin Creek Bridge				
P20	Sidewalk	S State Street	$200,000	Tier 2	City
	Install sidewalks on the south side of State Street from D Street to southern terminus of S State Street				
P21	Multi-use Path	Cooper Creek	$235,000	Tier 2	City
	Develop a new multi-use path connecting State Street to Cooper Creek Reservoir along the Cooper Creek alignment				

[1] The installation of an enhanced crossing must be supported by an engineering investigation and evaluated to determine the appropriate level of crosswalk enhancement for the specific location.
[2] Project will require coordination with ODOT and approval from the State and Region 3 Traffic Engineer
[3] Project Costs are Planning Level Cost Estimates that do not include costs for Right-of-Way acquisitions and/or environmental mitigation. Future project design will need to estimate these additional project costs.

Note: Funding Sources: City = City of Sutherlin; State = Oregon Department of Transportation; County = Douglas County



- Enhanced Crossing Project[2]
- Sidewalk Project[2]
- Multi-use Path Project[2]
- Schools
- School Sites
- Parks
- City Boundary
- Water Bodies
- IAMP 136 Boundary[1]
- Urban Growth Boundary

Notes:
[1] IAMP 136 is a separate ODOT Facility Plan adopted by the Oregon Transportation Commission and City of Sutherlin to manage land uses and transportation facilities within the I-5 Exit 136 Interchange influence area. Refer to IAMP 136 for specific transportation improvement projects within this boundary.
[2] Pedestrian improvements will be implemented as part of the roadway projects identified in the Roadway Plan. The City will continue to budget annually for pedestrian improvement projects outside of the roadway projects as infill and connectivity projects to improve the pedestrian system

Pedestrian Plan Projects
Sutherlin, Oregon

Figure **3**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl

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BICYCLE SYSTEM

The bicycle system within Sutherlin consist of shared-roadways, shoulder bikeways, and on-street bike lanes. These facilities provide local residents with the ability to access local retail/commercial centers, recreational areas, and other land uses within Sutherlin and neighboring areas by bicycle. A safe, convenient, and connected network of bicycle facilities is essential to establishing a vibrant and healthy community while supporting the local economy and providing transportation options to residents and visitors.

BICYCLE FACILITIES

Bicycle facilities are the elements of the transportation system that enable people to travel safely and efficiently by bicycle. These include facilities along key roadways (e.g. shared lane pavement markings, on-street bike lanes, and separated bike facilities) and facilities at key crossing locations (e.g., enhanced bike crossings). These also include end of trip facilities (e.g. secure bike parking, changing rooms, and showers at worksites); however, these facilities are typically addressed within the development code. Each facility plays an important role in developing a comprehensive bicycle system.

This section summarizes the bicycle facilities that were determined to best address gaps and deficiencies in the bicycle network and future needs. As indicated below, the most common overall need is to provide a safe and interconnected bicycle network that encourages people to bicycle.

On-Street Bicycle Lanes

On-street bike lanes are striped lanes including a bicycle stencil on the roadway dedicated for the exclusive use of cyclists. Bike lanes are typically placed at the outer edge of pavement (but to the inside of right-turn lanes and/or on-street parking). Bicycle lanes can improve safety and security of cyclists and (if comprehensive) can provide direct connections between origins and destinations. Bicycle lanes are most appropriate on collector and arterial roadways to provide a dedicated space for bicycling that is separate from the motor vehicle lane. ODOT standard width for a bicycle lane is six feet. The minimum width of a bicycle lane against a curb or adjacent parking lane is five feet. A bicycle lane may be as narrow as four feet, but only in very constrained situations.

Buffered Bike Lanes

Buffered bike lanes are enhanced versions of conventional on-street bike lanes that include an additional striped buffer of typically 2-3 feet between the bicycle lane and the vehicle travel lane and/or between the bicycle lane and the vehicle parking lane. They are typically located along streets that require a higher level of separation to improve the comfort of bicycling. Per the ODOT Highway Design Manual (HDM – Reference 1), Buffered Bike Lanes can be as narrow as 8 feet.

Separated Bike Lanes

Separated bike lanes (often called "cycle tracks") are bicycle lanes that are physically separated from motor vehicle traffic by a vertical element such as a planter, flexible post, parked car, or a mountable curb. One-way separated bike lanes are typically found on each side of the street, like conventional bike lanes, while two-way separated bike lanes are typically found on one side of the street.

Shoulder Bikeways

Shoulder bikeways are paved roadways that have striped shoulders wide enough for bicycle travel. ODOT recommends a six-foot paved shoulder to adequately provide for bicyclists, and a four-foot minimum width in constrained areas. Roadways with shoulders less than four feet are considered shared roadways. Shoulder bikeways are sometimes signed to alert motorists to expect bicycle travel along the roadway.

Shared Lane Pavement Markings and Signage

A shared roadway is one which a bicyclist and a motorist share the same travel lane. Shared lane pavement markings (often called "sharrows") are not a bicycle facility, but a wayfinding tool to navigate bicyclists along low-stress roadways with low vehicular volume and speeds. Sharrows may also be used to accommodate bicyclists on roadways where bike lanes are desirable but infeasible to construct. Sharrows indicate a shared roadway space for cyclists and motorists and are typically centered in the roadway or approximately four feet from the edge of the travel lane[6] and are recommended to be spaced approximately 50 to 250-feet apart dependent on the levels of traffic volume. Sharrows are suitable on roadways with relatively low travel speeds (≤30 mph) and low ADT (≤3,000 ADT); however, they may also be used to transition between discontinuous bicycle facilities. Sea Street is a shared roadway and provides shared-lane markings or "sharrows" throughout its entire length.

[6] If on-street parking is present, shared lane markings must be placed outside of the "door zone" or approximately 4' from the edge of the parking lane.

Enhanced Bicycle Crossings

Enhanced bicycle crossing facilities enable cyclists to safely cross streets, railroad tracks, and other transportation facilities. Planning for appropriate bicycle crossings requires the community to balance vehicular mobility needs with providing crossing locations along the desired routes of cyclists. Enhanced bicycle crossings include:

- Bike Boxes – designated space at an intersection that allows cyclists to wait in front of motor vehicles while waiting to turn or continue through the intersection.
- Two-Stage Left-turn Boxes – designated space at a signalized intersection outside of the travel lane that provides cyclists with a place to wait while making a two-stage left-turn.
- Pavement markings through intersections – pavement markings that extend a bike lane through an intersection.
- Bike Only Signals – A traffic signal that is dedicated for cyclists
- Bicycle Detection – Loop or intelligent transportation system (ITS) detection for bicycles

Wayfinding Signs

Wayfinding signs are physical signs or travel lane markings located along roadways or at intersections that direct bicyclists between destinations along low-stress and comfortable bicycle routes. Wayfinding signs help inexperienced and/or less confident cyclists overcome perceived barriers by identifying lower speed and lower volume routes that do not require a bicycle facility. They typically include distances and average walk/cycle times. Wayfinding signs are generally used on primary bicycle routes and multiuse paths.

Bicycle Parking

Secure bicycle parking is a vital component of a city's bicycle system and can be provided in a variety of sizes, shapes, and unique pieces of infrastructure that resemble the city's character. Bicycle parking can generally be categorized into two types: short-term and long-term.

- **Short-term bicycle parking** is designed to meet the needs of cyclists visiting businesses, institutions, and other destinations where visits typically last up to two hours. Short-term bicycle parking must be readily accessible, visible, and self-explanatory.
- **Long-term bicycle parking** places an emphasis on security, weather protection and is designed to meet the needs of cyclists who may leave their bicycle unattended for several hours or more. Long-term bicycle parking is typically located at residences or apartment buildings, workplaces, transit centers, and other routinely visited destinations.

BICYCLE/ROLLING PLAN

Table 3 identifies Sutherlin's Bicycle/Rolling Plan projects. Projects summarized in **Table 3** are intended to support active cycling and rolling options in Sutherlin. Projects are organized by improvement type, location, project cost (2020$), priority, and primary funding source. The priorities shown in are based on the project evaluation criteria and reflect input from the project team and the general public. The cost estimates are based on average unit costs for roadway improvements. The cost estimates do not include the cost of right-of-way. Right-of-way costs are included in the motor vehicle plan as applicable. **Figure 4** illustrates the location of the bicycle/rolling plan projects.

*Bicycle improvements will be implemented as part of the roadway projects identified in the Roadway Plan. The City will continue to budget annually for Bicycle improvement projects outside of the roadway projects as infill and connectivity projects to improve the bicycle system including but not limited to the projects identified in **Table 3**.*

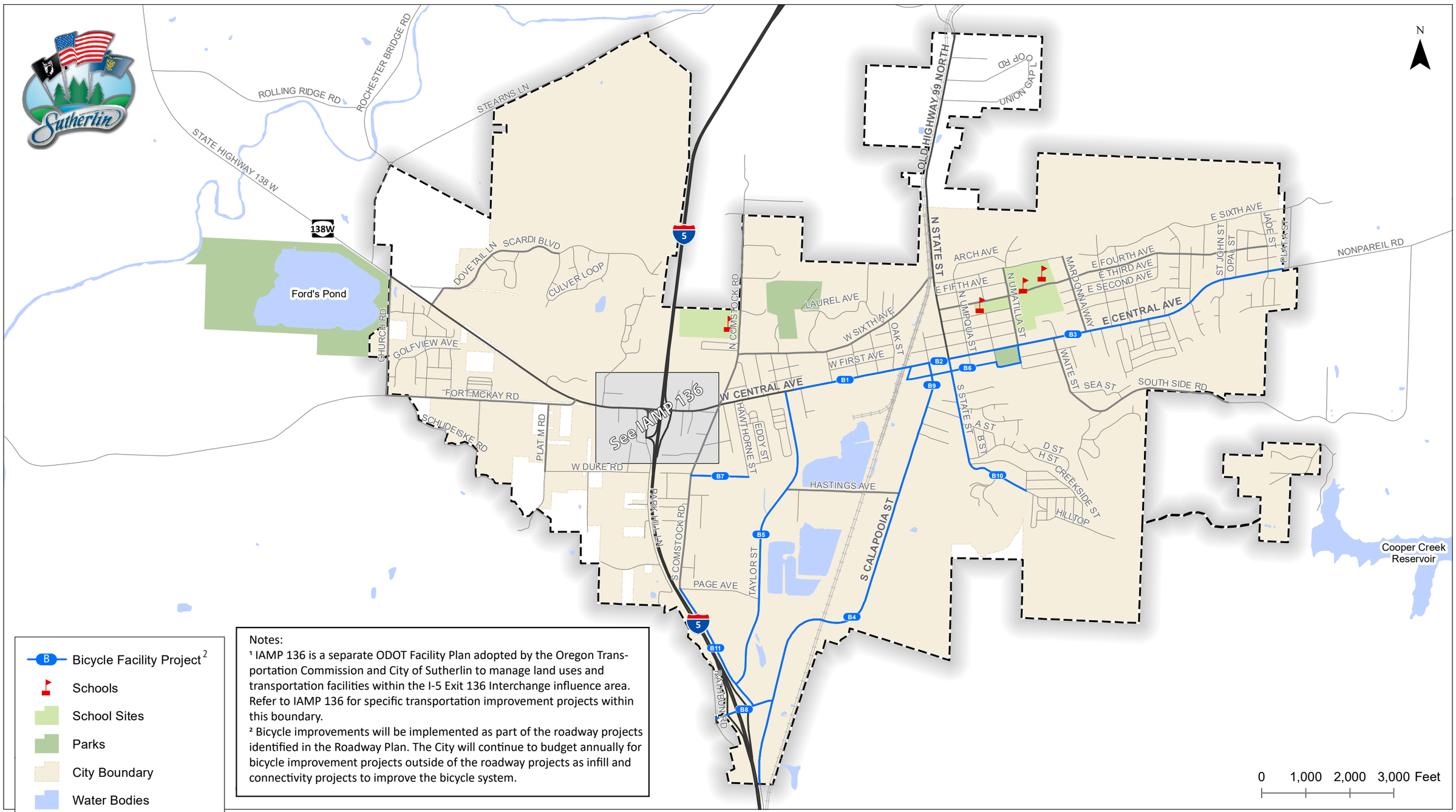
Table 3: Bicycle/Rolling Plan Improvement Projects

Project ID	Improvement Type	Location	Project Cost (2020 $)[2]	Priority	Primary Funding Source[2]
B1	Bike Lanes	Central Avenue	$30,000	Tier 2	City
	Install bike lane striping on both sides of the roadway from Branton Street to Front Street. *Note: Improvements along Central Avenue west of Branton Street are identified in the Exit 136 IAMP.*				
B2	Shared Lane Pavement Markings	Central Avenue	$35,000	Tier 2	City
	Install shared-lane pavement markings (sharrows) and signs on both sides of the roadway from Front Street to Umatilla Street.				
B3	Bike Lanes	Central Avenue	$45,000	Tier 2	City
	Install bike lanes on both sides of the road from Umatilla Street to eastern city limits.				
B4	Bike Lanes	S Calapooia Street	$15,000	Tier 2	City/County
	Stripe bike lane stencils on both sides of the roadway within existing shoulder from Valentine Street to 135 Connector.				
B5	Bike Lanes	Taylor Street	$50,000	Tier 2	City
	Install bike lane striping on both sides of the roadway from Central Avenue to S Comstock Road.				
B6	Shared Lane Pavement Markings	SW Front Street –Everett Avenue – Willamette Street– Dean Avenue	$15,000	Tier 2	City
	Install shared-lane pavement markings (sharrows) and signs on both sides of SW Front Street, Everett Avenue, Willamette Street, and Dean Avenue.				

Table 3: Bicycle/Rolling Plan Improvement Projects					
Project ID	**Improvement Type**	**Location**	**Project Cost (2020 $)[2]**	**Priority**	**Primary Funding Source[2]**
B7	Shared Lane Pavement Marking	Duke Avenue	$10,000	Tier 2	City
	Install shared lane pavement markings (sharrows) and signs on both sides of the road from S Comstock Road to east terminus,				
B8	Bike Lane	Exit 135 Connector[1]	$750,000	Tier 2	City
	Install bike lanes on both sides of the road from S Comstock Road to S Calapooia Street (OR 99).				
B9	Bike Lane	S Calapooia Street	$270,000	Tier 2	City
	Install bike lanes on both sides of the roadway from W Central Avenue to Valentine Street.				
B10	Shared Lane Pavement Marking	S State Street	$10,000	Tier 2	City
	Install shared-lane pavement markings (sharrows) and signs on both sides of the roadway from Central Avenue to southern terminus of S State Street.				
B11	Bike Lane	S Comstock Road	$835,000	Tier 2	City/County
	Install bike lanes on both sides of the roadway from Page Avenue to Exit 135 Connector				

[1] Project will require coordination with ODOT and approval from the State and Region 3 Traffic Engineer
[2] Project Costs are Planning Level Cost Estimates that do not include costs for Right-of-Way acquisitions and/or environmental mitigation. Future project design will need to estimate these additional project costs.

Note: Funding Sources: City = City of Sutherlin; State = Oregon Department of Transportation; County = Douglas County



B Bicycle Facility Project[2]

Schools

School Sites

Parks

City Boundary

Water Bodies

IAMP 136 Boundary[1]

Urban Growth Boundary

Notes:
[1] IAMP 136 is a separate ODOT Facility Plan adopted by the Oregon Transportation Commission and City of Sutherlin to manage land uses and transportation facilities within the I-5 Exit 136 Interchange influence area. Refer to IAMP 136 for specific transportation improvement projects within this boundary.
[2] Bicycle improvements will be implemented as part of the roadway projects identified in the Roadway Plan. The City will continue to budget annually for bicycle improvement projects outside of the roadway projects as infill and connectivity projects to improve the bicycle system.

Bicycle Plan Projects
Sutherlin, Oregon

Figure
4

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl

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TRANSIT SYSTEM

Transit is the most commonly used form of public transport in North America[7]. Transit facilities provide residents and visitors accessibility to, from, and through the City of Sutherlin. Reliable transit service is a critical component of a multi-modal transportation system. Transit provides access that may be unattainable by foot, bicycle, or other non-vehicular mode. Safe and reliable transit service is essential for elderly populations, persons with disabilities, and populations without access to vehicles. Transit provides access to schools, jobs, stores, and other cities and towns.

The Umpqua Public Transportation District (UPTD) is currently developing a Transit Master Plan (TMP). The projects identified within **Table 4** are intended to support the implementation of the TMP and serve as a resource for the TMP to build from. Upon completion of the UPTD TMP, it is recommended that the Sutherlin TSP transit section be updated to reflect and incorporate the transit projects and recommendations identified within the UPTD TMP. Many projects that enhance transit accessibility and connectivity have been identified in the pedestrian plan including sidewalk and enhanced crossing projects.

TRANSIT FACILITIES

This section summarizes the solutions considered for implementation within the City of Sutherlin to address existing gaps, deficiencies, and future needs in the transit system.

Transit Stop Amenities

Transit stops are necessary components of a well-functioning transit system. Transit stop facilities vary in size, type, design, and cost. At a minimum, transit stops should include signage and a seating area. Larger transit facilities may include shelters or covered waiting areas. Transit stop amenities may have restrooms, ticket kiosks, garbage cans, benches, lighting, signage, maps, or bicycle parking. Seating facilities accommodate elderly populations and persons with disabilities and lighting creates a safe and comfortable environment for transit riders. Flag stops may be used in place of designated bus stops to allow passengers to be picked up and dropped off at any safe location upon request. Transit stop enhancements include:

- Establishing permanent stop locations by analyzing boarding and alighting on a stop-by-stop basis to determine demand
- Conducting community outreach to identify new permanent stop locations, in addition to flag stops
- Evaluating highly trafficked transit stops and consider installing shelters
- Adding signage and benches to mark permanent transit stop locations
- Adding transit maps to permanent stop locations to improve wayfinding and encourage new ridership
- Adding garbage cans and lighting to permanent transit stops
- Connecting sidewalks to transit stops

Quality of Service

Transit quality of service is the overall measured or perceived performance of transit service from the passenger's point of view. Transit quality of service focuses on two metrics: transit availability and transit comfort and convenience[8]. Additionally, transit quality of service is determined by frequency and on-time reliability, schedule speed and travel time, and transit stop amenities.

The following enhancements are suggested as recommendations for transit providers to optimize transit quality of service within the city of Sutherlin:

[7] Transit Capacity and Quality of Service Manual, Third Edition

[8] Transit Cooperative Research Program Report 30: Transit Scheduling

- Provide more reliable service
- Conduct ridership surveys to determine optimal service span
- Improve access by identifying high demand origins and destinations
- Consider providing mid-day and weekend transit service
- Short headways during peak hours

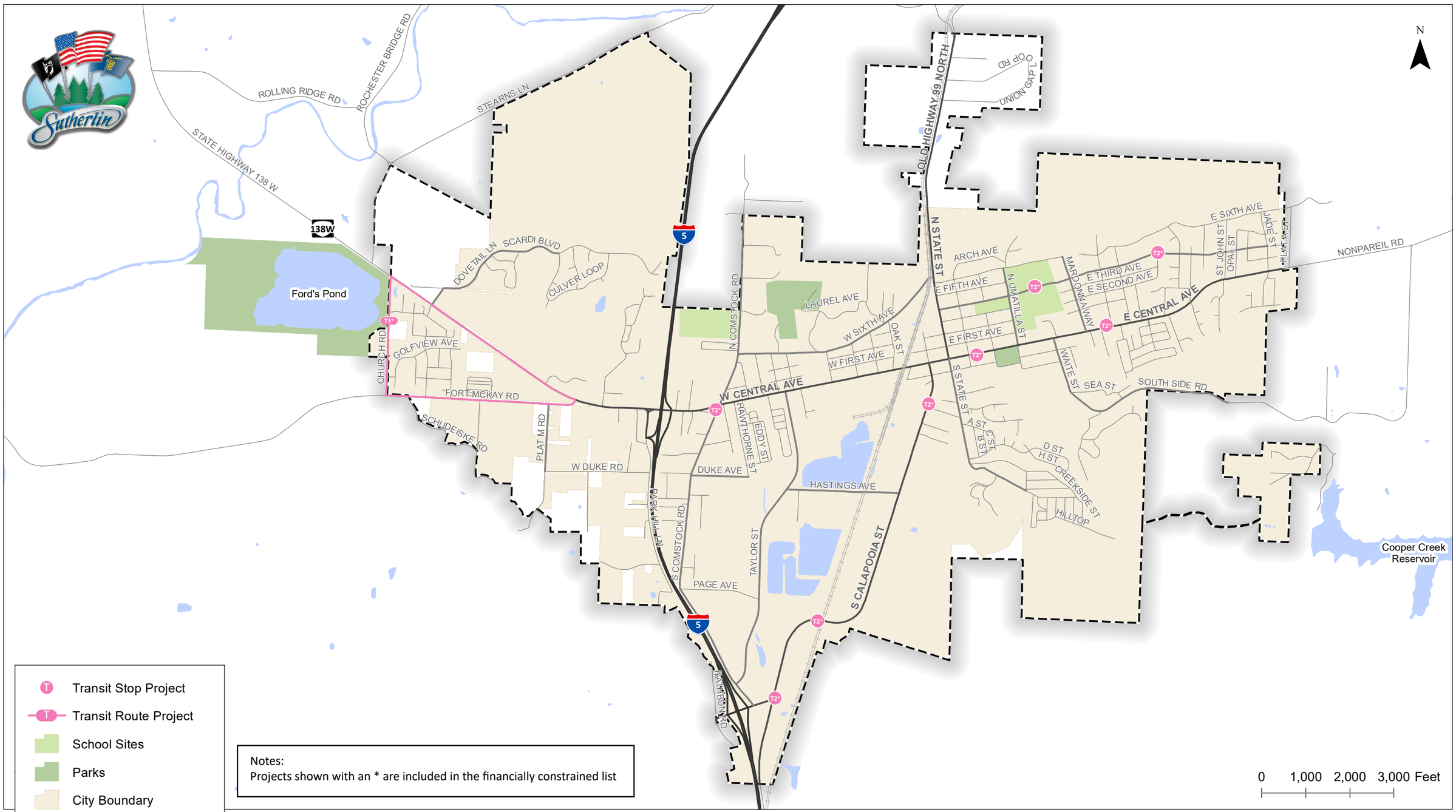
TRANSIT PLAN

Table 4 identifies Sutherlin's Transit Plan projects. UPTD is currently developing a Transit Master Plan that will assess additional transit system improvements and plans for future service in Sutherlin. Projects summarized in **Table 4** are intended to support the development and implementation of the UPTD Transit Master Plan. Projects are organized by improvement type, location, project cost (2020 $), priority, and primary funding source. The priorities shown in are based on the project evaluation criteria and reflect input from the project team and the general public. The cost estimates are based on average unit costs for roadway improvements. The cost estimates do not include the cost of right-of-way. **Figure 5** illustrates the location of the transit plan projects.

Table 4: Transit Plan Improvement Projects

Project ID	Improvement Type	Location	Project Cost (2020 $)[2]	Priority	Primary Funding Source[1]
T1	New Transit Routes	Western Sutherlin (Preliminary Route Shown)	$25,000	Financially Constrained	City/UPTD
	Explore opportunities to provide new transit services in Western Sutherlin through collaboration with UPTD. This project should be coupled with T3.				
T2	Stop Enhancements	Existing Transit Stops/Location Varies	$200,000	Financially Constrained	City/UPTD
	Improve station amenities by adding benches, signage, lighting, garbage cans, and transit maps. Project cost assumes amenities upgrades at all eight (8) existing transit stops.				
T3	New Transit Stops	Western Sutherlin	$25,000	Financially Constrained	City/UPTD
	Explore opportunities to provide new transit stops in Western Sutherlin. New transit stop locations should be based on future identified transit routes and coupled with project T1.				

[1] Funding Sources: City = City of Sutherlin; UPTD = Umpqua Public Transportation District
[2] Project Costs are Planning Level Cost Estimates that do not include costs for Right-of-Way acquisitions and/or environmental mitigation. Future project design will need to estimate these additional project costs.



Transit Plan Project
Sutherlin, Oregon

Figure **5**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl

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MOTOR VEHICLE SYSTEM PLAN

The motor vehicle system in Sutherlin includes private streets, city streets, County roads, and state highways. These facilities provide residents with the ability to access retail, commercial, recreational, and other land uses within Sutherlin and neighborhood cities by vehicle.

The roadway network within Sutherlin is well establish in areas; however, east-west connectivity across I-5 is limited to OR 138 W (Elkton-Sutherlin Highway)/Central Avenue. Providing increased options and parallel routes for people driving will increase the efficiency of the transportation system as well as improve access and circulation for all travel modes. Several intersections have been identified as having operational issues, other have been identified as having safety issues, The Motor Vehicle System Plan includes projects to increase the efficiency of the transportation system through changes in the functional classification of the roadway, refinement of roadway standards and standard cross sections, improvements to the street system connectivity, and improvements to local street connectivity.

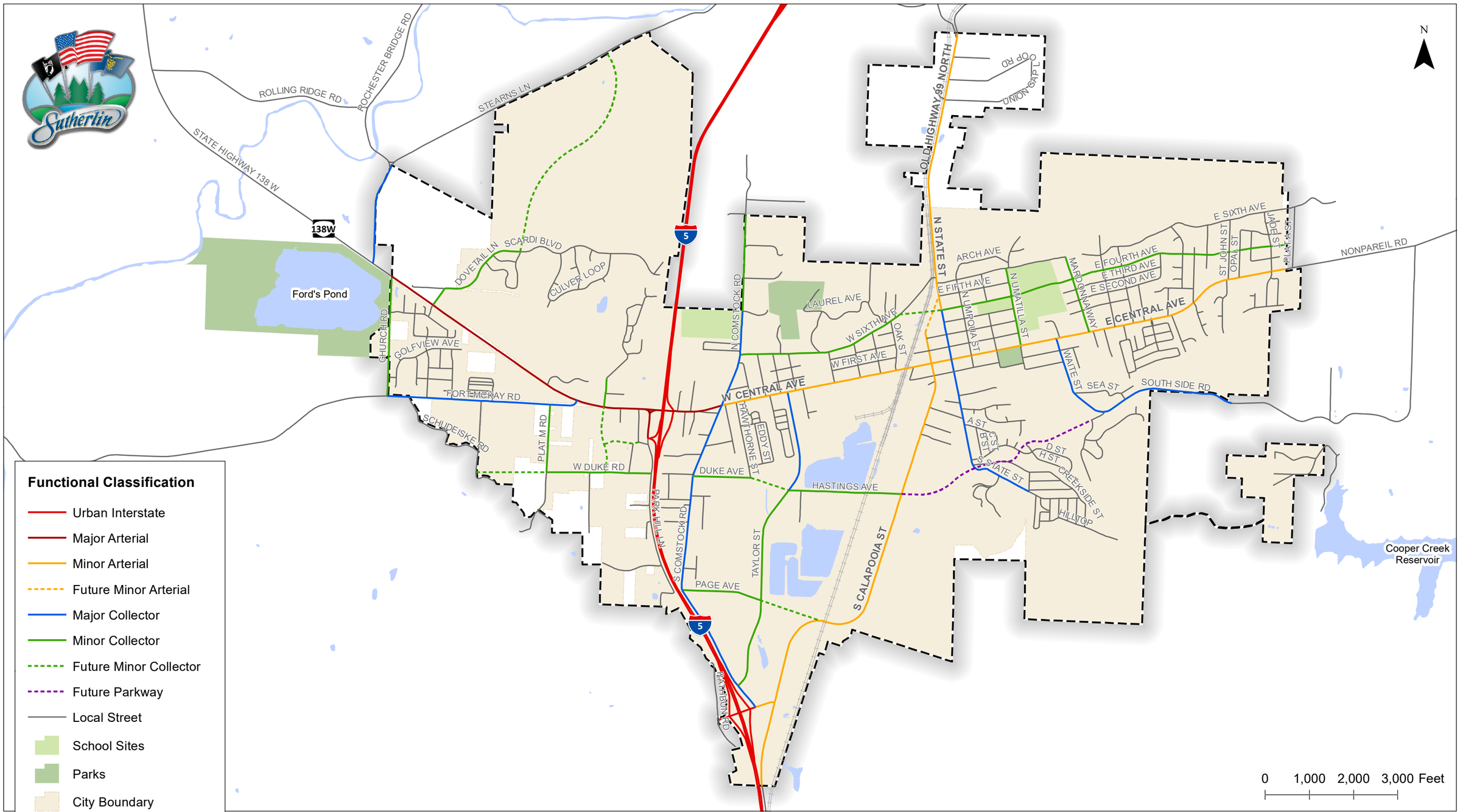
FUNCTIONAL CLASSIFICATION

Streets in Sutherlin are owned and maintained by three separate jurisdictions, including the City of Sutherlin, Douglas County, and the Oregon Department of Transportation (ODOT). Each jurisdiction is responsible for determining the street's functional classification, defining its major design and multimodal features, and approving construction and access permits. Coordination is required among jurisdictions to ensure that the streets are planned, operated, maintained, and improved to safely meet public needs. The Sutherlin classifies roadways into the following designations:

- ***Urban Interstate:*** The primary function of a principal highway is to provide a connection between communities, towns, and cities. It provides through traffic movement and distribution to lower-order facilities. Access is generally limited, as is on-street parking. Right-of-way width and pavement width are characteristics of the type of facility. The Principal Highway designation is reserved specifically for the ODOT owned/operated I-5 corridor.
- ***Major Arterial:*** The primary function of a major arterial is to provide regional through movement to vehicles and freight. These streets are generally characterized by a three to five lane cross section, and should accommodate pedestrian and bicycles movements. Major arterials have controlled access and no on-street parking. Bicycle lanes are required on major arterials even if they do not generate significant bicycle traffic. Sutherlin's major arterials are limited to state facilities and are subject to state standards and design practices.

- ***Minor Arterial:*** The primary function of a minor arterial is to provide through movement to traffic, distributing it to collector streets and principal highways, and providing limited land access. These streets are generally characterized by a three cross section, and should accommodate pedestrian and bicycles movements. Signalization should be provided at intersections with other arterials and collector streets, as warranted. Sutherlin's minor arterials are designed with large rights-of-way (60 to 80 feet wide) with pavement widths of at least 48 feet. Minor arterials have limited or controlled access to them and have little or no on-street parking. Oregon's Transportation Planning Rule requires bicycle lanes and sidewalks along minor arterials. Bicycle lanes are required on minor arterials even if they do not generate significant bicycle traffic.
- ***Major Collector:*** The primary function of a major collector is to move traffic between arterials and to provide access to adjacent uses. A major collector is generally characterized by a two or three lane cross section. Oregon's Transportation Planning Rule requires bicycle lanes and sidewalks along major collectors. Bicycle lanes are required on major collectors even if they do not generate significant bicycle traffic. Intersections with other collectors and arterials may be signalized, as warranted. Sutherlin's major collectors have a minimum right-of-way width of 52 feet with a minimum pavement width of 36 feet. Property access from collector streets should be discouraged.
- ***Minor Collector:*** The primary function of a minor collector is to move traffic between arterials and local streets, and to provide access to adjacent uses. Similar to a major collector, a minor collector is generally characterized by a two or three lane cross section. Intersections with other collectors and arterials may be signalized, as warranted. Sutherlin's major collectors have a minimum right-of-way width of 52 feet with a minimum pavement width of 36 feet. Property access from collector streets should be discouraged.
- ***Parkway:*** The primary function of the parkway is similar to the arterial function, which is to provide through movement to traffic, distributing it to Connectors and Urban Interstate, and providing limited land access. The parkway classification is generally characterized by a three- to five-lane cross section, and accommodates pedestrian and bicycles movements. Signalization or roundabouts should be provided at intersections with other Arterials and Collectors, as warranted and appropriate. The parkway is proposed to have limited or controlled access with a landscaped median/center left-turn lane at key intersections and accesses. Bicycle lanes and sidewalks/multi-use paths are proposed for the parkway along with landscaping and green bio-swales.
- ***Local Street:*** The function of local streets is to provide access to private dwellings and businesses. Local streets should focus on serving passenger cars, bicycles, and pedestrians. Oregon's Transportation Planning Rule requires bicycle lanes along most local roads. Generally, local streets have two lanes and can include parking on one or both sides. Transit and heavy truck traffic are generally discouraged from using local streets. The standard minimum right of way for local streets in Sutherlin is 48 feet with a minimum pavement width of 36 feet.

Figure 6 illustrates Sutherlin's functional Classification plan for all existing streets and future arterial and collector streets within the UGB. The alignment for future streets should be considered conceptual: the end points of the streets are fixed, but the alignments between intersections may vary depending on design requirements at the time the streets are constructed.



Functional Classification

- Urban Interstate
- Major Arterial
- Minor Arterial
- Future Minor Arterial
- Major Collector
- Minor Collector
- Future Minor Collector
- Future Parkway
- Local Street
- School Sites
- Parks
- City Boundary
- Water Bodies
- Urban Growth Boundary

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Functional Classification Plan
Sutherlin, Oregon

Figure **6**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl

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Functional Classification Comparison

Amongst the various Federal, State, County and City transportation planning efforts, functional classification assignments have been provided to roadways within Sutherlin. **Table 5** summarizes these classifications for all classified Collector and higher facilities within Sutherlin. The City and Federal Functional Classifications must be consistent as part of the TSP adoption. City classifications have been updated. In some insistences, the Federal Functional Classification must be updated to reflect the City classification based on the reality of the current roadway functionality i.e. Urban Local to Minor Collector. As such, the City of Sutherlin will work with ODOT to request Federal Functional Classification changes where inconsistent. In addition, the City of Sutherlin will work with Douglas County on future County TSP updates to request updates to the County classifications where inconsistent with Sutherlin classifications.

Table 5: Functional Classification Comparison[1]

Roadway	Federal Functional Classification	Oregon Highway Plan Classification	Douglas County Classification	Sutherlin Classification
Interstate-5	Urban Interstate	Interstate Highway	Interstate Highway	Urban Interstate
OR 138 W (Elkton-Sutherlin Highway)	Urban Minor Arterial	Regional Highway	Principal Highway	Major Arterial[2]
Park Hill Lane (OR 138 W to I-5 Southbound Off-ramp)	Urban Minor Arterial	-	-	Major Arterial[2]
Stearns Lane	Major Collector	-	Minor Collector	Major Collector
Fort McKay Road	Major Collector	-	Major Collector	Major Collector
Plat M Road	-	-	Local	Minor Collector[2]
Duke Avenue	-	-	Local	Minor Collector[2]
Church Road	-	-	-	Minor Collector[2]
Dove Tail Lane	-	-	-	Minor Collector[2]
Central Avenue	Minor Arterial	-	-	Minor Arterial
S Comstock Road	Major Collector	-	Minor Collector	Major Collector
N Comstock Road	Major Collector	-	-	Major Collector
Taylor Street	-	-	-	Major Collector[2]
S Calapooia Street	Minor Arterial	-	-	Minor Arterial
S State Street	Major Collector	-	-	Major Collector
N State Street	Minor Arterial	-	-	Minor Arterial
Waite Street	Major Collector	-	-	Major Collector
Mardonna Way	Major Collector	-	-	Minor Collector[2]
Sixth Avenue	Major Collector	-	-	Minor Collector[2]
Fourth Avenue	Major Collector	-	-	Minor Collector[2]
Hastings Avenue	-	-	-	Minor Collector[2]
South Side Road	Major Collector	-	-	Major Collector
Exit 135 Connector	Major Collector	-	-	Minor Arterial[2]
Page Avenue	-			Minor Collector[2]
Umatilla Street	-			Minor Collector[2]
Dakota Street	-			Minor Collector[2]

[1] Bold highlighting indicates jurisdictional ownership of the roadway.
[2] City will be requesting Federal Classifications to be updated for consistency purposes with Sutherlin Classifications.

OREGON DEPARTMENT OF TRANSPORTATION BLUEPRINT FOR URBAN DESIGN

On 12/15/2019, ODOT adopted the Blueprint for Urban Design (BUD) (see TSB 19-01(D). This document is a "bridging document" to the highway design manual, and is to be used when designing urban projects on the state system. It provides greater flexibility in urban design when confronted with constraints within the built environment.

The BUD applies to local, county, or state highway that is the crossroad between the interstate or freeway ramp terminals. When these ramp terminals connect to urban roadways, the crossroad between the ramp terminals is considered part of the urban network and not part of the interstate or freeway crossing it. The BUD further breaks down the urban functional classifications into Urban Contexts. When determining the context of a roadway section, roadway federal functional classification, state classification, adjacent land use, roadside context, roadway segment designation, traffic volume, and number of lanes is considered. Creating greater differentiation in contexts based on more specific parameters along a section of roadway that affect its use can provide flexibility. It also helps prioritize design elements to better address user and community needs, rather than a "one-size-fits-all" approach.

The BUD breaks down the state high facilities into six contexts, described in the table below. The six contexts include:

- Traditional Downtown/Central Business District
- Urban Mix
- Commercial Corridor
- Residential Corridor
- Suburban Fringe
- Rural Community

Urban Context	Target Speed (MPH)[4]	Travel Lanes[2]	Turn Lanes[1,2]	Shy Distance[1,3]	Median[1,2]	Bicycle Facility[1,2,5]	Sidewalk	Target Pedestrian Crossing Spacing Range (feet)[6]	On-street parking[1]
Traditional Downtown/ CBD	20-25	Start with minimum widths, wider by roadway characteristics	Minimize additional crossing width at intersections	Minimal	Optional, use as pedestrian crossing refuge	Start with separated bicycle facility	Ample space for sidewalk activity (e.g., sidewalk cafes, transit shelters)	250-550 (1-2 blocks)	Include on-street parking if possible
Urban Mix	25-30	Start with minimum widths, wider by roadway characteristics	Minimize additional crossing width at intersections	Minimal	Optional, use as pedestrian crossing refuge	Start with separated bicycle facility, consider roadway characteristics	Ample space for sidewalk activity (e.g., sidewalk cafes, transit shelters)	250-550 (1-2 blocks)	Consider on-street parking if space allows
Commercial Corridor	30-35	Start with minimum widths, wider by roadway characteristics	Balance crossing width and operations depending on desired use	Consider roadway characteristics, desired speeds	Typically used for safety/ operational management	Start with separated bicycle facility, consider roadway characteristics	Continuous and buffered sidewalks, with space for transit stations	500-1,000	Not Applicable
Residential Corridor	30-35	Start with minimum widths, wider by roadway characteristics	Balance crossing width and operations depending on desired use	Consider roadway characteristics, desired speeds	Optional, use as pedestrian crossing refuge	Start with separated bicycle facility, consider roadway characteristics	Continuous and buffered sidewalks	500-1,000	Generally Not Applicable, Consider roadway characteristics
Suburban Fringe	35-40	Start with minimum widths, wider by roadway characteristics	Balance crossing width and operations depending on desired use	Consider roadway characteristics, desired speeds	Optional, use as pedestrian crossing refuge	Start with separated bicycle facility, consider roadway characteristics	Continuous and buffered sidewalks	750-1,500	Not typical
Rural Community	25 - 35	Start with minimum widths, wider by roadway characteristics	Balance crossing width and operations depending on desired use	Consider roadway characteristics, desired speeds	Optional, use as pedestrian crossing refuge	Start with separated bicycle facility, consider roadway characteristics	Continuous and buffered sidewalks, sized for desired use	250-750	Consider on-street parking if space allows

ROADWAY CROSS SECTION STANDARDS

The Sutherlin Development Code Section 3.5.110 contains the proposed roadway cross section standards for the city that work together with the identified functional classification system shown in **Figure 6**.

ROADWAY PLAN

Roadway Segment Enhancement Plan

Table 6 identifies Sutherlin's Roadway Segment Enhancement Plan. Improvements are focused on existing roadways that are unimproved, are currently serving or projected to serve multi-modal travel demands, or are not meeting modern roadway design standards that could create safety and operational issues.

Table 6: Roadway Segment Enhancement Projects

Project ID	Improvement Type	Location	Project Cost (2020 $)[3]	Priority	Primary Funding Source[1]
R1	Segment Enhancement	W Sixth Avenue	$3,870,000	Financially Constrained	City
	Widen and reconstruct the roadway from N Comstock to N State Street to meet the multimodal Minor Collector street standards.				
R2	Segment Enhancement	E Fourth Avenue – East	$2,325,000	Financially Constrained	City
	Reconstruct E Fourth Street to meet the multimodal Minor Collector street standards from N State Street to Mardonna Way.				
R3	Segment Enhancement	Mardonna Way	$695,000	Financially Constrained	City
	Reconstruct Mardonna Way from E Fourth Avenue to Central Avenue to meet the multimodal Minor Collector street standards.				
R4	Segment Enhancement	Waite Street[2]	$2,700,000	Financially Constrained	City
	Currently on the City's Capital Improvement Plan, widen and reconstruct the roadway between Central Avenue and South Side Road to meet the multimodal Minor Collector street standards.				
R5	Intersection Improvement	OR138W/Park Hill Lane	Total: $500,000 City Match:$167,000	Financially Constrained	State/City
	Install interim traffic signal at the OR138W/Park Hill Lane intersection until full Exit 136 IAMP improvements are implemented.				
R6	Intersection Improvement	OR138W/Dakota Street	Total: $500,000 City Match:$167,000	Financially Constrained	State/City
	Install traffic signal at the OR138W/Dakota Street intersection as envisioned in the larger Exit 136 IAMP.				
R7	Segment Enhancement	OR 138 W (Elkton-Sutherlin Highway)	Total: $1,400,000 City Match:$568,000	Financially Constrained	State/City
	Improve OR138W from Comstock Road to Dakota Street to a Major Arterial standard.				
R8	Segment Enhancement	OR 138 W (Elkton-Sutherlin Highway)	$5,420,000	Tier3/ Aspirational	State/City/Private Development
	Widen and reconstruct the roadway between western city limits and Dakota Street to meet near-term, multimodal Major Arterial street standards.				
R9	Segment Enhancement	Fort McKay Road	$2,975,000	Tier 2	City/County/Private Development
	Widen and reconstruct the roadway between western city limits and OR 138 W (Elkton-Sutherlin Highway) to meet the multimodal Major Collector street standards.				

Table 6: Roadway Segment Enhancement Projects					
Project ID	**Improvement Type**	**Location**	**Project Cost (2020 $)[3]**	**Priority**	**Primary Funding Source[1]**
R10	Segment Enhancement	Plat M Road	$1,080,000	Tier 2	City/County/Private Development
	Widen and reconstruct the roadway between For McKay Road and W Duke Road to meet the multimodal Minor Collector street standards.				
R11	Segment Enhancement	W Duke Road	$1,655,000	Tier 2	City/County/ Private Development
	Widen and reconstruct the roadway between Park Hill Lane and Plat M Road to meet the multimodal Minor Collector street standards.				
R12	Segment Enhancement	N Comstock Road	$1,215,000	Tier3/ Aspirational	City/County/Private Development
	Widen and reconstruct the roadway between Laurel Avenue to northern city limits to meet the multimodal Minor Collector street standards.				
R13	Segment Enhancement	N Calapooia Street	$2,050,000	Tier 2	City/Private Development
	Widen and reconstruct the roadway between Central Avenue and Second Avenue to meet the multimodal Minor Arterial street standards and extend the roadway to merge into N State Street at Fifth Avenue.				
R14	Segment Enhancement	N State Street	$3,100,000	Tier 2	City/Private Development
	Widen and reconstruct the roadway from Fifth Avenue to northern city limits to meet the multimodal Minor Arterial street standards.				
R15	Segment Enhancement	E Fourth Avenue - West	$2,470,000	Tier 2	City/Private Development
	Reconstruct E Fourth Street to meet the multimodal Minor Collector street standards from Mardonna Way to Jade Street.				
R16	Segment Enhancement	Church Road	$1,760,000	Tier 2	City/County/Private Development
	Reconstruct Church Street to meet the multimodal Minor Collector street standards from OR 138W to Fort McKay Road.				

Note: All improved or newly constructed roadways are expected to meet the minimum multimodal requirements as identified by the functional classification standard for pedestrian and bicycle accommodations.
[1] Funding Sources: City = City of Sutherlin; State = Oregon Department of Transportation; County = Douglas County.
[2] Project identified in current City's Capital Improvement Plan.
[3] Project Costs are Planning Level Cost Estimates that do not include costs for Right-of-Way acquisitions and/or environmental mitigation. Future project design will need to estimate these additional project costs.

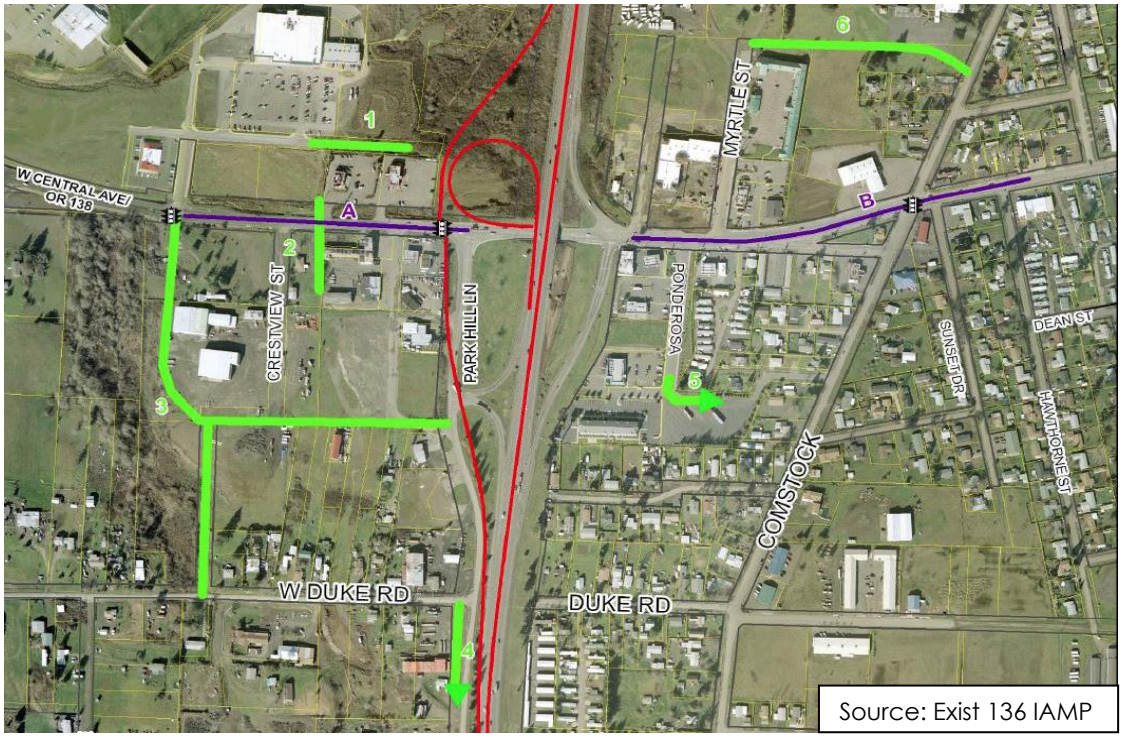
Exit 136 Interchange Area Improvement Plan

An interchange area improvement plan (IAMP) was adopted in April 2009 for Exit 136 to protect the near- and long-term function of the interchange and identify improvements needed to support long-term growth in Sutherlin. Through this analysis, the Exit 136 IAMP identified a preferred interchange design plan, access management plan, and local street connectivity plan to address long range growth and circulation needs. These projects are conceptually illustrated in **Exhibit 5**. The Exit 136 IAMP identified improvements at the following intersections.

- OR 138 W (Elkton-Sutherlin Highway)/Dakota Street
- OR 138 W (Elkton-Sutherlin Highway)/Park Hill Lane
- OR 138 W (Elkton-Sutherlin Highway)/I-5 Northbound Ramp Terminal
- OR 138 W (Elkton-Sutherlin Highway)/Ponderosa Drive
- OR 138 W (Elkton-Sutherlin Highway)/Comstock Road (east)

Refer to the Exit 136 IAMP for detailed information. **Figure 7** illustrates the location of the roadway plan projects.

Exhibit 5: Exit 136 IAMP Preferred Alternative

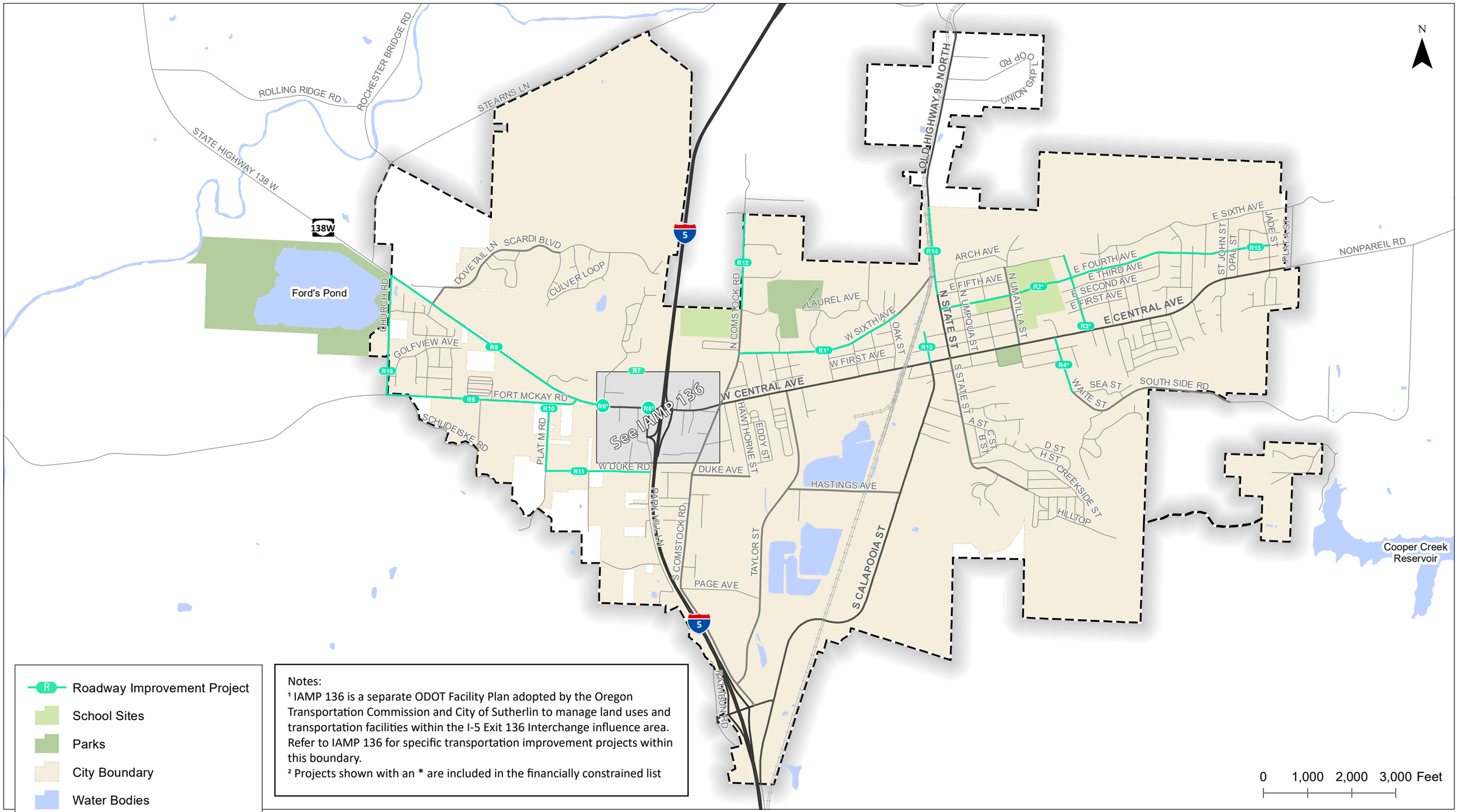


Source: Exist 136 IAMP

Legend:

1. Extend Clover Leaf Loop to east along the back of the parcel that fronts OR 138 W (Elkton-Sutherlin Highway).
2. Create new intermediate access (either local street or shared driveway) serving multiple parcels north and south of OR 138 W (Elkton-Sutherlin Highway). Initially, this is expected to be a full-movement intersection, but may be restricted to right-in, right-out when traffic volumes increase causing operational or safety problems.
3. Extend Dakota Street south to connect with W Duke Road. This new street will substitute for Park Hill Lane that must be abandoned in connection with the preferred interchange improvement project.
4. Develop new collector street (Park Hill Lane) south of W Duke Road.
5. Develop a local street connection from Ponderosa Drive to Comstock Road.
6. Develop new local street to provide alternative access between Myrtle Street and Comstock Road north of W Central Avenue.

A & B. Implement access management along OR 138 W (Elkton-Sutherlin Highway), east and west of the interchange.



- R — Roadway Improvement Project
- School Sites
- Parks
- City Boundary
- Water Bodies
- IAMP 136 Boundary [1]
- Urban Growth Boundary

Notes:
[1] IAMP 136 is a separate ODOT Facility Plan adopted by the Oregon Transportation Commission and City of Sutherlin to manage land uses and transportation facilities within the I-5 Exit 136 Interchange influence area. Refer to IAMP 136 for specific transportation improvement projects within this boundary.
[2] Projects shown with an * are included in the financially constrained list

Roadway Plan Projects
Sutherlin, Oregon

Figure **7**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl

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Street Connectivity Plan

The future street system needs to balance the benefits of providing a well-connected linear grid system with the challenges associated with existing development patterns, railroad, topography, and environmentally sensitive areas. Incremental improvements to the street system can be planned carefully to provide route choices for people walking, biking, and driving while accounting for potential neighborhood impacts. In addition, the quality of the transportation system can be improved by making connectivity improvements to the pedestrian and bicycle system separate from street connectivity. Future roadway connections should occur as development occurs or as funding become available.

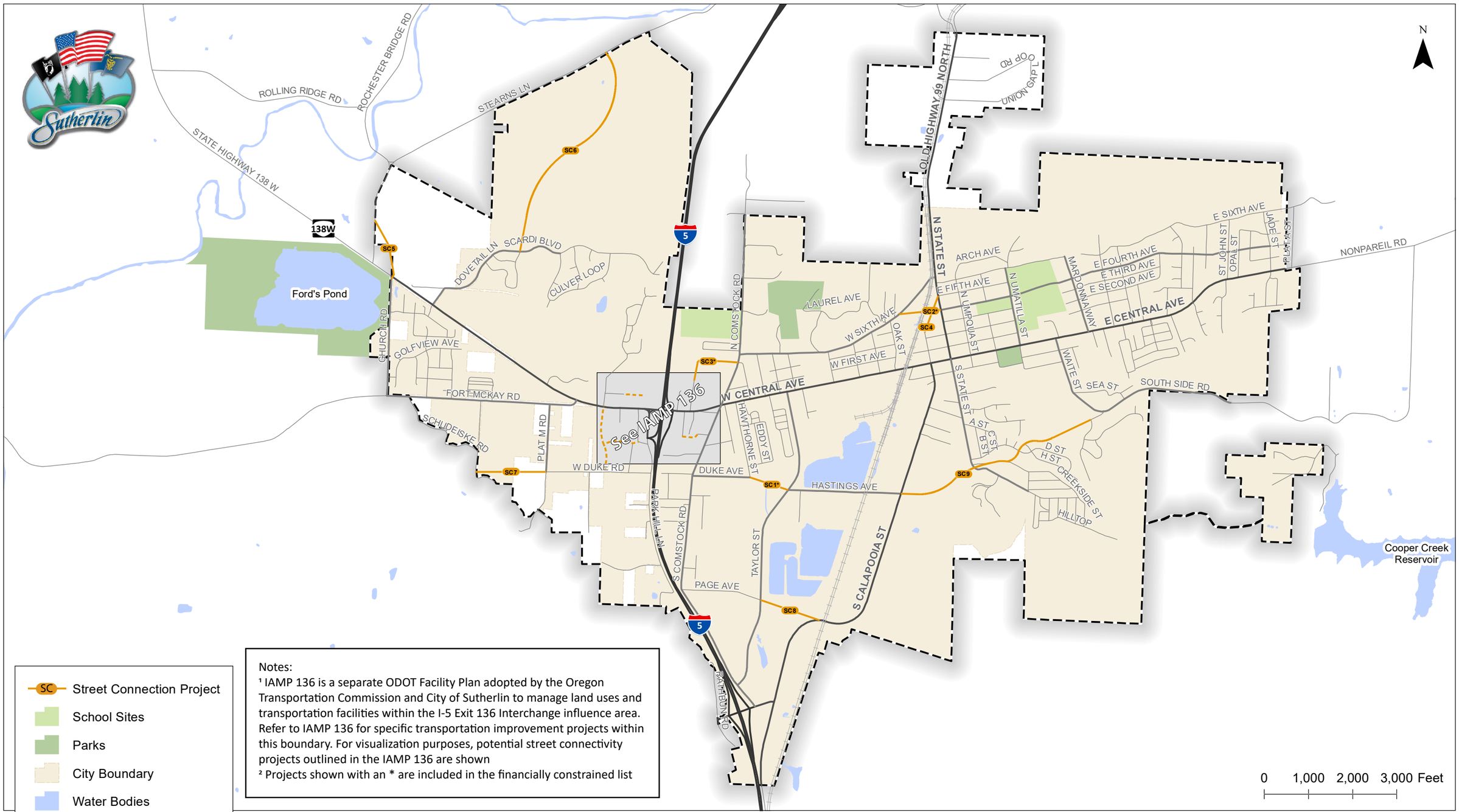
As described in Technical Memorandum #5: Transportation System Alternatives Analysis, a new Exit 136 interchange configuration and several local circulation improvements were evaluated to improve new local and regional street connections. The following section identifies additional Collector and Local Street connections that can further support street system connectivity within Sutherlin.

Figure 8 illustrates the location of Street Connectivity projects. **Table 7** summarizes the connections and identifies their priority based on the project evaluation criteria and input received through the TSP update process. Rough order of magnitude cost is provided for each project; however, in some cases future development may be responsible for implementation.

Local Street Connectivity Plan

The local street system in Sutherlin is a combination of traditional grid patterns north of Central Avenue, piecemeal development constrained by natural features and topography south of Central Avenue, and more traditional suburban layouts in western Sutherlin. However, in each of these areas, there are opportunities for new local streets, that if built, could improve access and circulation for all travel modes.

Figure 9 illustrates the general location of the local street connections that could be achieved as part of future residential development and redevelopment. Roadway alignments for each connection are not provided as they are anticipated to be determined as part of future development. Costs are not provided for these projects as they are anticipated to be constructed by future development.



SC Street Connection Project
School Sites
Parks
City Boundary
Water Bodies
IAMP 136 Boundary[1]
Urban Growth Boundary

Notes:
[1] IAMP 136 is a separate ODOT Facility Plan adopted by the Oregon Transportation Commission and City of Sutherlin to manage land uses and transportation facilities within the I-5 Exit 136 Interchange influence area. Refer to IAMP 136 for specific transportation improvement projects within this boundary. For visualization purposes, potential street connectivity projects outlined in the IAMP 136 are shown
[2] Projects shown with an * are included in the financially constrained list

Street Connectivity Plan Projects
Sutherlin, Oregon

Figure **8**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl

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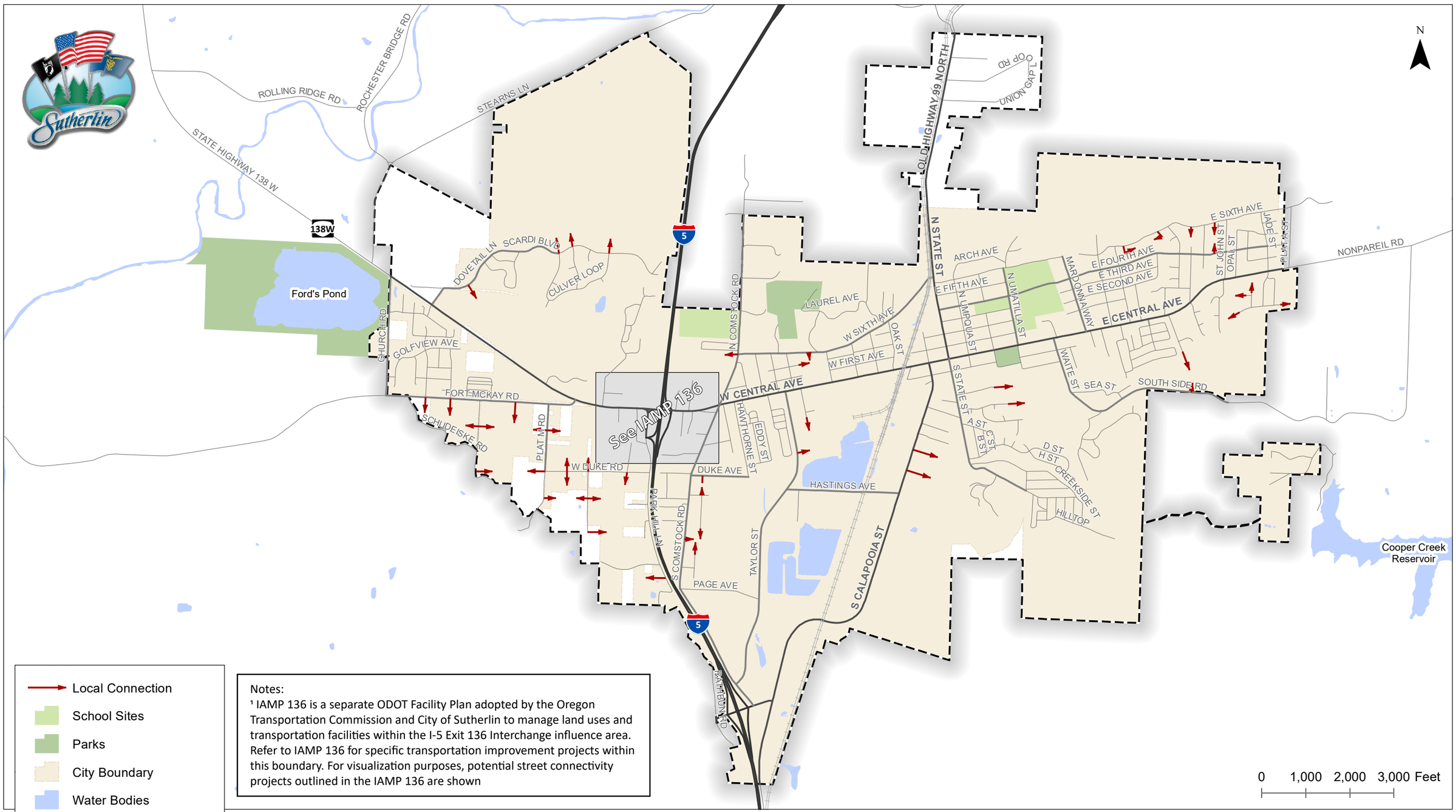
Table 7: Street Connectivity Projects					
Project ID	**Improvement Type**	**Location**	**Project Cost (2020 $)[3]**	**Priority**	**Primary Funding Source[2]**
SC1	Street Connectivity	Duke Avenue	$880,000	Financially Constrained	City
	Extend Duke Avenue east to create a new connection between Hawthorne Street and Taylor Street.				
SC2	Street Connectivity	Fourth Avenue Extension	$1,035,000	Financially Constrained	City/Private Development
	Extend Fourth Avenue to the west connecting to W Sixth Avenue.				
SC3	Street Connectivity	Robinson Street	$830,000	Financially Constrained	City/Private Development
	Extend Robinson Street to the west and south to connect to Myrtle Street.				
SC4	Street Connectivity	N Calapooia Street	$1,450,000	Tier3/ Aspirational	City/Private Development
	Extend N Calapooia Street north to connect to N State Street.				
SC5	Street Connectivity	Stearns Lane	$1,245,000	Tier 2	City/Private Development
	Realign Stearns Lane to intersect OR 138W (Elkton-Sutherlin Highway) across from realigned Church Road (eliminate skewed intersection angles)				
SC6	Street Connectivity	Dovetail Lane	$5,175,000	Tier 2	Private Development
	Extend Dovetail lane to the north to connect to Stearns Lane.				
SC7	Street Connectivity	W Duke Road	$1,555,000	Tier 2	City/Private Development
	Extend W Duke Road west to connect to Schudeiske Road.				
SC8	Street Connectivity	Page Avenue	$1,410,000	Tier 2	City/Private Development
	Extend Page Avenue west to create a new a connection between Taylor Street and S Calapooia Street.				
SC9	Street Connectivity	Southside Road[1]	$4,865,000	Tier3/ Aspirational	City/Private Development
	Extend Hastings Avenue east to create a new connection between S Calapooia Street and Waite Street.				

[1] This alternative is identified as part of the current 2005 TSP
[2] Funding Sources: City = City of Sutherlin
[3] Project Costs are Planning Level Cost Estimates that do not include costs for Right-of-Way acquisitions and/or environmental mitigation. Future project design will need to estimate these additional project costs.



- Local Connection
- School Sites
- Parks
- City Boundary
- Water Bodies
- IAMP Boundary[1]
- Urban Growth Boundary

Notes:
[1] IAMP 136 is a separate ODOT Facility Plan adopted by the Oregon Transportation Commission and City of Sutherlin to manage land uses and transportation facilities within the I-5 Exit 136 Interchange influence area. Refer to IAMP 136 for specific transportation improvement projects within this boundary. For visualization purposes, potential street connectivity projects outlined in the IAMP 136 are shown

Local Street Connectivity Plan
Sutherlin, Oregon

Figure **9**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl

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Vehicular Safety Plans

Roadway Segments

There are a variety of potential safety solutions that can be applied within Sutherlin to address systemic crashes that occur along roadway segments, such as head-on collisions, sideswipes, and run off the road crashes as well as general speeding and other driver behaviors.

- Enhanced signs and pavement markings for curves (with and without flashing beacons)
- Rumble strips (e.g. centerline, shoulder line, and edge line)
- Tree/vegetation removal
- Traffic calming
- Enhanced enforcement
- Road diet

Intersections

There are a variety of potential safety solutions that can be applied within Sutherlin to address systemic crashes that occur at intersections, such as angled crashes, turning movement crashes, rear-end crashes, and crashes that involve other travel modes (pedestrian, and bicycles).

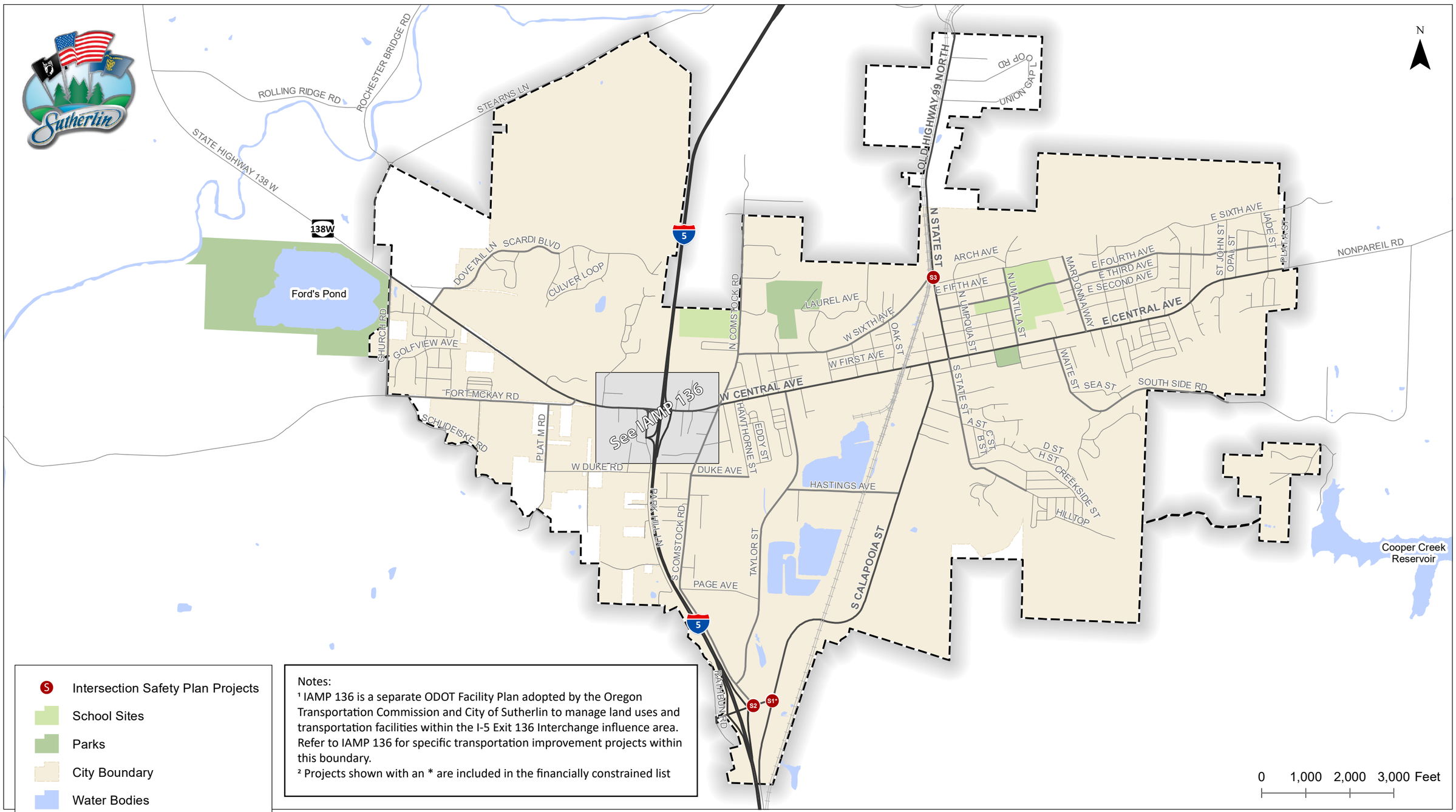
- Enhanced signs and pavement markings (e.g. stop signs, warning signs, and/or beacons)
- Application of traffic control devices (signs, markings, and signals)
- Signal improvements (e.g. signal timing, signal phasing)
- Left-turn phasing (e.g. permitted, protected, permitted-protected)
- Enhanced enforcement
- Pedestrian and bicycle improvements (see below)
- Intersection lighting
- Traffic calming
- Roundabout installation

Table 8 summarizes the safety improvements.

Table 8: Safety Plan Alternatives

Project ID	Improvement Type	Project Cost (2020 $)[3]	Priority	Primary Funding Source[2]
S1	S Calapooia Street/Exit 135 Connector	$25,000	Financially Constrained	County/State/City
	Install "Yield" signage and striping on the southbound right-turn lane.			
S2[1]	S Comstock Road/Exit 135 Connector	$100,000	Tier 3/Aspirational	County/State/ Private Development/ City/
	Limit future intersection access to right-in/right-out movements through installation of a raised median.			
S3	S Calapooia Street/Exit 135 Connector	Cost included with project SC2	Tier 3/Aspirational	City
	Install "Yield" signage and striping on the southbound right-turn lane			

[1] Access management on State Facilities will need to meet ODOT Access Management Standards and Notifications requirements.
[2] Funding Sources: City = City of Sutherlin; State = ODOT; County = Douglas County
[3] Project Costs are Planning Level Cost Estimates that do not include costs for Right-of-Way acquisitions and/or environmental mitigation. Future project design will need to estimate these additional project costs.



- Intersection Safety Plan Projects
- School Sites
- Parks
- City Boundary
- Water Bodies
- IAMP Boundary [1]
- Urban Growth Boundary

Notes:
[1] IAMP 136 is a separate ODOT Facility Plan adopted by the Oregon Transportation Commission and City of Sutherlin to manage land uses and transportation facilities within the I-5 Exit 136 Interchange influence area. Refer to IAMP 136 for specific transportation improvement projects within this boundary.
[2] Projects shown with an * are included in the financially constrained list

Safety Plan Projects
Sutherlin, Oregon

Figure **10**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl

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FREIGHT, RAIL, PIPELINE, AND AIR SYSTEM

Freight and rail systems in Sutherlin serve to transport goods to, from, and through the City. The following section summarizes the existing freight and rail facilities within the City of Sutherlin.

FREIGHT FACILITIES

ODOT's Motor Carrier Transportation Division (MCTD) routes, ORS 366.215 routes, and City of Sutherlin freight routes identified in the current TSP were reviewed to identify potential issues with freight truck movements. The MCTD routes are identified as state freight routes according to the *MCTD Mobility Map*, and these routes experience the highest percentage of heavy vehicle traffic within the State. As a result, they need to be able to accommodate efficient freight truck movement.

MCTD Freight Routes

Highways that are "unrestricted to standard freight truck traffic but are either weight or width restricted" include:

- OR 138 W (Elkton-Sutherlin Highway) – this three-lane highway does not allow freight vehicles over 14'6" in height for continuous movement, and it has weight restrictions on freight vehicles.

ORS 366.215 Freight Routes

Oregon law prohibits permanent reductions in vehicle carrying capacity on ORS 366.215 freight routes. The Oregon Transportation Commission may grant exceptions if freight movement is not unreasonably impeded. Treatments that may reduce the vehicle carrying capacity include raised pedestrian islands, bulb-outs, new signs or signals over the roadway, and raised medians/curbs. OR 138 W (Elkton-Sutherlin Highway) and I-5 are ORS 366.215 Freight Routes.

City Freight Routes

The City does not have a freight route policy in place that provides standards for restrictions to designated freight routes.

Based on the traffic data collected along OR 138 W (Elkton-Sutherlin Highway), heavy vehicle percentages range from approximately three to 12 percent during the weekday PM peak hour. Given the operations along OR 138 W (Elkton-Sutherlin Highway) meet the respective mobility targets as discussed in the Current Transportation System Operations sections, no current issues related to congestion have been identified.

FREIGHT PLAN

Motor Carrier Transportation Division (MCTD) Freight Routes

ODOT's MCTD identifies OR 138 W (Elkton-Sutherlin Highway) as a Blue Route between the western city limits and I-5 and W Central Avenue as an Orange Route between I-5 and Comstock Road. According to the ODOT's Freight Mobility Map (Reference 5), the following definitions are provided for each respective freight route designation.

- Blue Routes: Routes that are **unrestricted to standard freight truck traffic** but are either **weight or width restricted** for Non-Divisible and/or Heavy Haul loads.
- Orange Routes: **Generally unrestricted freight and oversize/overweight routes**. The most heavily used truck routes in the state.

No changes are likely necessary to the MCTD freight routes as part of the TSP Update.

ORS 366.215 Freight Routes

OR 138 W (Elkton-Sutherlin Highway) is classified as an ORS 366.215 Freight Route. Under this classification, Oregon law prohibits permanent reductions in vehicle carrying capacity. Exceptions are allowed if safety or access considerations require the reduction. An exception may be granted by the Oregon Transportation Commission (OTC) if it is in the best interest of the state and freight movement is not unreasonably impeded. Examples of features that may reduce the vehicle carrying capacity of a highway are:

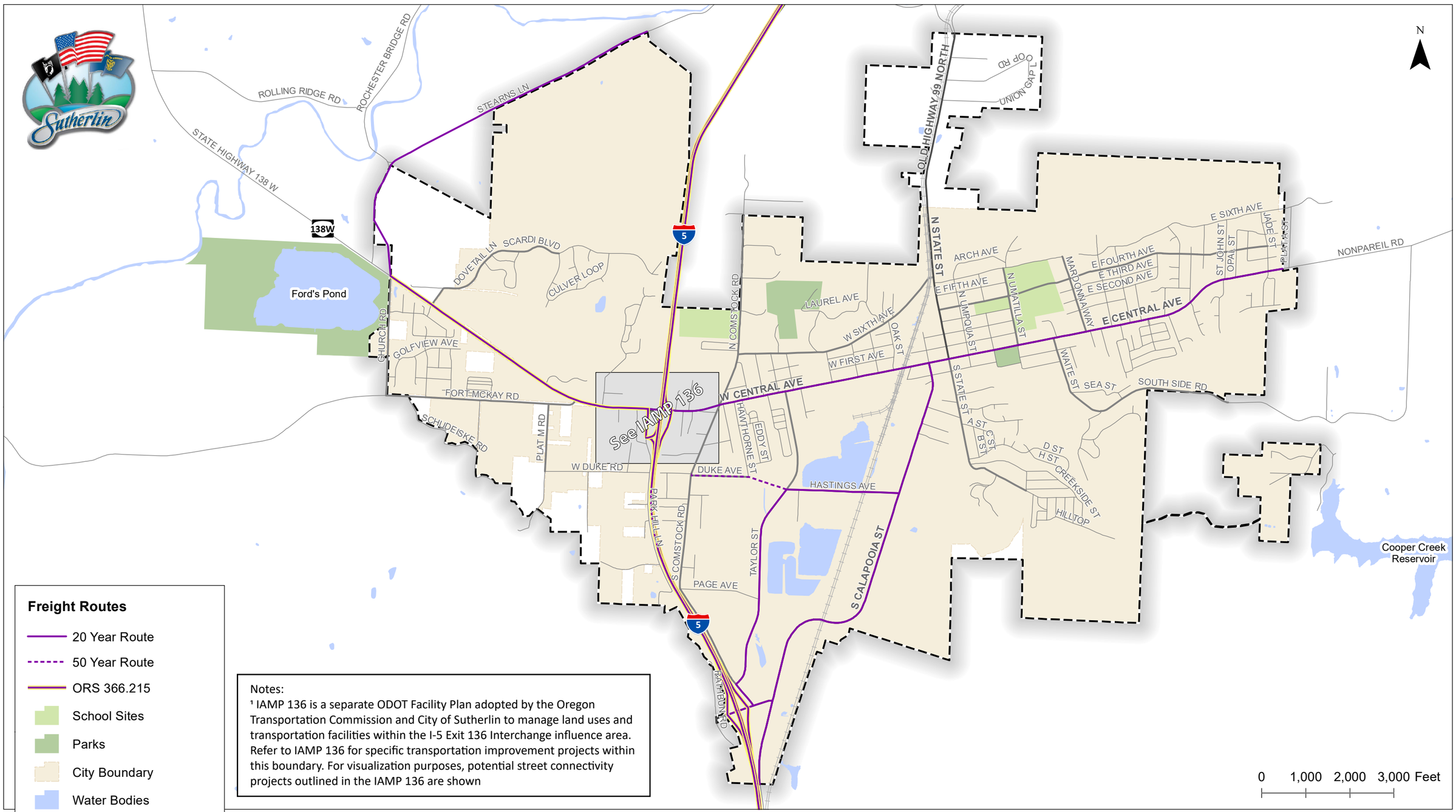
- Raised pedestrian islands
- Bulb-outs
- New sign or signal structures over the roadway
- Raised medians/curbs and traffic separators

City of Sutherlin Freight Routes

The Freight Plan designated freight routes are summarized in **Table 9** and illustrated in **Figure 11**.

Table 9: Designated Freight Routes

Roadway	From	To	Route Type/Change
N Calapooia Street	Central Avenue	N State Street	Freight Route (as part of R13/SC4 in **Figure 11**)
OR 138 W (Elkton-Sutherlin Highway)	Western City Limits	Park Hill Road	ORS 366.215
Park Hill Road	OR 138 W (Elkton-Sutherlin Highway)	SB Off-Ramp	ORS 366.215
Interstate 5 Exit 135 and Exit 136	Ramp Terminals		ORS 366.215
Central Avenue	Northbound I-5 Ramp	Eastern City Limits	20-Year Route
Taylor Street	Hasting Avenue	S Comstock Road	20-Year Route
S Comstock Road	Taylor Street	135 Connector	20-Year Route
S Calapooia Street	W Central Avenue	Southern City Limits	20-Year Route
Hasting Avenue	Taylor Street	S Calapooia Street	20-Year Route
Duke Avenue	S Comstock Road	Taylor Street	50-Year Route



Freight Routes

- 20 Year Route
- 50 Year Route
- ORS 366.215
- School Sites
- Parks
- City Boundary
- Water Bodies
- IAMP 136 Boundary [1]
- Urban Growth Boundary

Notes:
[1] IAMP 136 is a separate ODOT Facility Plan adopted by the Oregon Transportation Commission and City of Sutherlin to manage land uses and transportation facilities within the I-5 Exit 136 Interchange influence area. Refer to IAMP 136 for specific transportation improvement projects within this boundary. For visualization purposes, potential street connectivity projects outlined in the IAMP 136 are shown

Freight Route Plan
Sutherlin, Oregon

Figure **11**

Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet Intl

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RAIL FACILITIES

According to the City's current TSP, the rail freight portion of commodities accounts for approximately five to ten percent of the estimated 25 million tons annually moved through the I-5 corridor. If the railroad were not available to carry commodities, there would likely be an impact on state freight routes in southern Oregon, particularly along the I-5 corridor.

Railroad Crossings

Four railroad crossings exist within Sutherlin. These crossings are presented in **Table 10** along with the type of crossing and type of crossing protection devices. Within Sutherlin approximately three trains pass through the City limits per day. During this time, east-west mobility is limited due to the train cars bisecting W Central Avenue.

Table 10:Existing Railroad Grade Crossings

Roadway	Railroad Crossed	Type of Crossing	Warning Devices
S Calapooia Street	Central Oregon Pacific	At-grade	Gates
Hasting Avenue	Central Oregon Pacific	At-grade	Gates
Central Avenue	Central Oregon Pacific	At-grade	Gates
Sixth Avenue	Central Oregon Pacific	At-grade	Stop-Sign

The railroad crossing at W Central Avenue is just west of S Calapooia Street near downtown Sutherlin. W Central Avenue is the most heavily trafficked road in the City. When trains block the road, long vehicle queues can form, and there is no alternative route for traffic or emergency vehicles to pass. Traffic along Hastings Avenue and Sixth Avenue is relatively low resulting less significant abruptions of traffic comparatively to Central Avenue. The railroad crossing on S Calapooia Street can significantly disrupt traffic that runs between I-5 Exit 135 and downtown Sutherlin.

Passenger Rail

Passenger rail service is not provided within Sutherlin. The closest intercity passenger rail service is provided in Eugene which lies on the major north-south rail line connecting California with destinations to the north such as the Portland metro region, Washington, and British Columbia.

Automatic Gates/Lighting

Automatic gates serve as barriers across the roadway when a train is approaching or occupying the crossing. Gates are typically highly reflective to enhance visibility during darkness. As a train approaches an at-grade crossing, the automatic gates are activated in advance of the train (no more than three seconds) after the signal lights start to operate. Automatic gates/flashing lights can be equipped as overhead signals or active traffic control devices (at-grade).

Advance Warning Signage

Advance signage can be provided to indicate an at-grade railroad crossing approach. Signage must comply with the Manual on Uniform Traffic Control Devices (MUTCD).

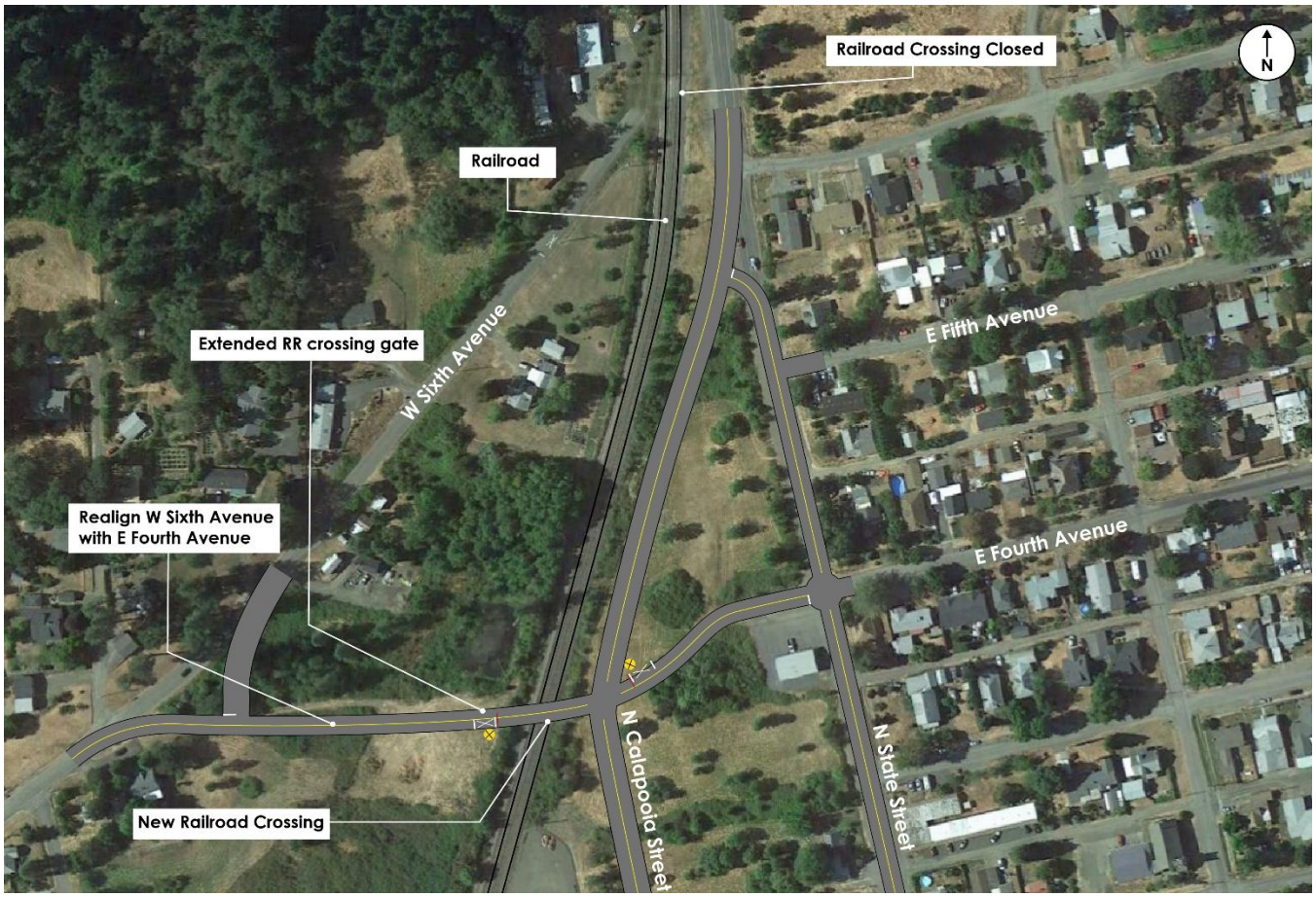
RAIL PLAN

Relocation of Sixth Avenue Railroad Crossing to New Fourth Avenue Alignment

As documented in Technical Memorandum #3: Current Transportation Operations, the N State Street/Sixth Avenue intersections is the only existing at-grade railroad crossing that does not provide gates or lighting. Rather than upgrade this crossing, an opportunity exists to realign W Sixth Avenue with E Fourth Avenue as previously documented in Project SC8 on **Figure 8**. In order to seek a potential new railroad crossing along the realigned Sixth Avenue to Fourth Avenue corridor, the existing W Sixth Avenue crossing would need to be closed.

In order to add or propose changes to an existing railroad crossing, coordination with ODOT rail must occur. When there is a formal interest to add a new crossing, or to modify or close an existing one, a review process initiated by the interested applicant must be submitted to ODOT Rail & Public Transit Division who will then work with the applicants and affected railroads and road authorities. As required by statue[9], ODOT must also examine opportunities to eliminate at-grade crossings, focusing on crossings that are redundant or have the greatest potential for conflicts between rains and other modes. **Exhibit 6** illustrates a planning-level concept diagram of the Sixth Avenue to Fourth Avenue realignment and new railroad crossing.

Exhibit 6: Fourth Avenue/ N State Street Rail Plan Alternative

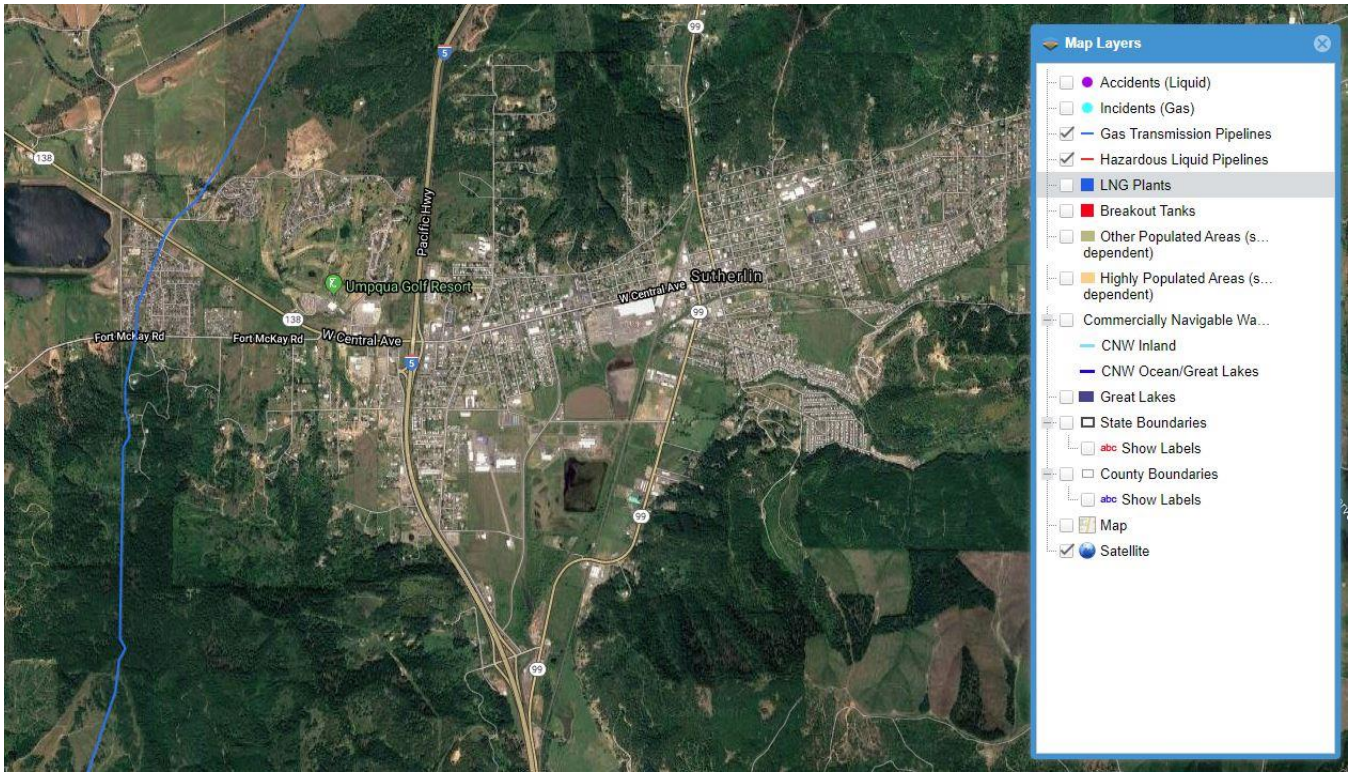


[9] ORS 824.202 requires ODOT to eliminate at-grade crossings wherever possible.

PIPELINE FACILITIES

Northwest Pipeline LLC operates a major natural gas pipeline located in western Sutherlin. Exhibit 7 illustrates the location of the Gas Transmission Pipeline.

Exhibit 7: Gas Transmission Pipeline



According to the National Pipeline Mapping System (NPMS) Public Viewer, the natural gas pipeline in Sutherlin is located on the Eugene/Grants Pass System and identified as Pipeline ID 2443. The pipeline is 34.66 miles in length and is currently Active (filled).[10]

AIR FACILITIES

There are no public or private airports located within Sutherlin. The closest public airport is the Roseburg Regional Airport located approximately 12 miles south of Sutherlin. No air projects or programs were identified as part of the TSP.

[10] https://pvnpms.phmsa.dot.gov/PublicViewer/

FUNDING AND IMPLEMENTATION

FUNDING PROGRAMS AND REVENUE

Funding Forecast

The City of Sutherlin has historically relied upon different revenue sources to fund transportation-related maintenance and make capital improvements. These revenue sources include taxes, inter-governmental sources, and miscellaneous funds such as system development changes.

- State Gas Tax - State gas taxes are comprised of proceeds from excise taxes imposed by the State and Federal government to generate revenue for transportation funding. The proceeds from these taxes are distributed to Oregon counties and cities in accordance with Oregon Revised Statute (ORS) 366.764, by county registered vehicle number, and ORS 366.805, by city population. The Oregon Constitution states that revenue from the state gas tax is to be used for the construction, reconstruction, improvement, maintenance, operation and use of public highways, roads, streets, and roadside rest areas.
- Inter-Governmental Sources - Inter-Governmental Sources in Sutherlin has historically included grant funds and special agreements.
- Miscellaneous - Miscellaneous revenue includes various funds received throughout the year from system development charges (SDC) and unanticipated activities including land sales and cost sharing of special projects.

Revenue estimates from each of the historical revenue sources were combined and projected out over the next 5, 10, and 22-year period to determine the total revenue that is estimated through 2040. **Table 11** provides a summary of the potential future funding through 2040.

Table 11: Future Transportation Funding Projections

Revenue Source	5-Year Forecast FY 2018-19 to FY 2022-2023	10-Year Forecast FY 2023-2024 to FY 2027-2028	22-Year Forecast FY 2028-2029 to 2039-2040
State Gas Tax	$2,400,000	$5,400,000	$15,200,000
Inter-Governmental Sources	$850,000	$1,700,000	$3,700,000
Miscellaneous	$660,000	$1,300,000	$3,000,000
Total	**$3,910,000**	**$8,400,000**	**$21,900,000**

Expenditure Forecast

The City organizes historical expenditures into three main categories, including Materials & Services, Maintenance, and Transfers.

- Materials & Services – Materials and Services consists of items that need to be purchased and one-time expenses including small equipment, tools and supplies, personnel training, insurance, and more.
- Maintenance – Maintenance expenditures are primarily used for general street and storm drainage maintenance; striping, filling potholes, clearing storm drains, fixing storm drains, small paving projects, and dust control.
- Transfers - Transfers have consisted primarily for the estimated labor and material costs to the General Fund for administration purposes and to the Public Works fund for street related services i.e., construction crews.

Table 12: Future Transportation Expenditure Projections			
Expenditure Source	**5-Year Forecast FY 2018-19 to FY 2022-2023**	**10-Year Forecast FY 2023-2024 to FY 2027-2028**	**22-Year Forecast FY 2028-2029 to 2039-2040**
Materials & Services	$450,000	$910,000	$2,000,000
Maintenance	$180,000	$360,000	$800,000
Transfers	$1,270,000	$2,540,000	$5,600,000
Total	**$1,900,000**	**$3,810,000**	**$8,400,000**

As shown in **Table 11** and **Table 12**, the projected funding from now through FY 2039-40 is approximately $21,900,000 and the projected expenditures are approximately $8,400,000. Based on these projections, the City is expected to have approximately $13,500,000 through the year 2040. The City should continue to identify other potential revenue sources to fund transportation projects including projects identified in the TSP update.

PLANNED TRANSPORTATION SYSTEM COST SUMMARY

Table 13 provides a summary of the full cost of the financially constrained and planned transportation system projects. As shown, the full cost of the planned system is approximately $65M over the 20-year period.

Table 13: Planned Transportation System Cost Summary				
Project Type	**High Priority / Financially Constrained Projects**	**Tier 2 / Unfunded Projects**	**Tier 3 / Aspirational Projects**	**Total**
Pedestrian	$1,555,000	$9,545,000	$780,000	11,880,000
Bicycle/Rolling	$190,000	$8,985,000	$0	9,175,000
Transit	$250,000	$0	$0	250,000
Street Connectivity	$2,745,000	$10,835,000	$4,865,000	18,445,000
Roadway Enhancement	$8,160,000	$12,585,000	$3,340,000	24,085,000
Safety	$25,000	$350,000	$0	375,000
Total	**12,925,000**	**$42,300,000**	**$8,985,000**	**$64,210,000**

POTENTIAL FUNDING SOURCES

The projected transportation funding analysis shows that the City of Sutherlin will have a limited source of funds that can solely be dedicated to transportation-related capital improvement projects over the next twenty years. As such, Sutherlin will need to seek additional funds via transportation improvement grants, partnerships with regional and state agencies, and other funding sources to help implement future transportation-related improvements.

Table 14 identifies a list of potential Grant sources and Partnering Opportunities to consider during the course of the 20-year planning horizon.

Table 14: Potential Grant Sources and Partnering Opportunities

Funding Source	Description	Potential Facility Benefit
Fixing America's Surface Transportation (FAST) Act	FAST Act funds surface transportation programs, including, but not limited to, federal-aid highways	• Roadway facilities
Surface Transportation Block Grant (STBG)	STBG funds are flexible funding sources for jurisdictions and are eligible to be used for non-motorized transportation projects	• Bicycle, pedestrian, and transit facilities
Highway Safety Improvement Program (HSIP)	HSIP is a core Federal-aid program with the purpose of achieving a significant reduction in traffic facilities and serious injuries on all public roads	• Safety
All Roads Transportation Safety (ARTS)	The ARTS is intended to address safety needs on all public roads in Oregon	• Safety
Connect Oregon	Connect Oregon is an initiative to invest in air, rail, marine, and bicycle and pedestrian infrastructure to ensure Oregon's transportation system is strong, diverse, and efficient	• Non-motorized
The Statewide Transportation Improvement Program (STIP)	The STIP is ODOT's four-year transportation capital improvement program	• Roadway, pedestrian, bicycle, and trail facilities
House Bill (HB) 2017 Transportation Investments	House Bill (HB) 2017 affects drivers, bicyclists, and payroll employees by increasing the gas tax, weight-mile tax, and other transportation-related fees	• Roadway, pedestrian, bicycle, transit, and trail facilities
Safe Routes to School (SRTS) Infrastructure Program	ODOT's Safe Routes to School (SRTS) infrastructure program is focused on providing grants to make is safer for children to walk and bike to school	• Pedestrian and bicycle facilities

Table 15 identifies a list of potential new funding sources for Sutherlin to consider in an effort to increase funds for additional capital improvement projects.

Table 15: Potential New Funding Sources for Future Consideration

Funding Source	Description	Potential Facility Benefit
Economic Improvement Districts (EIDs)	Economic Improvement Districts collect assessments or fees on businesses in order to fund improvements that benefit businesses and improve customer access within the district	• Roadway, pedestrian, and bicycle facilities
Local Improvement Districts (LIDs)	LIDs are most often used to construct projects such as streets, sidewalks, or bikeways	• Roadway, pedestrian, and bicycle facilities
Local Fuel Tax	A local tax assessed on fuel purchased within the jurisdiction that has assessed the tax	• Roadway facilities
Urban Renewal Districts/Tax Increment Financing	Urban Renewal Districts are separate taxing districts created to remove blight within a district	• Roadway, pedestrian, bicycle, transit, and trail facilities
Local Bond Measures	Local bond measures, or levies, are usually initiated by voter-approved general obligation bonds for specific projects	• Roadway facilities
Street Utility Fees/Road Maintenance Fee	Flat fee charged to each property, on the number of trips a particular land use generates, or some combination of both	• Roadway facilities
User Fees	Fees tied to the annual registration of a vehicle to pay for improvements, expansion, and maintenance to the street system	• Roadway facilities
Development Exactions	Infrastructure improvements conditioned on new development to offset the transportation infrastructure impacts of new development.	• Roadway, pedestrian, bicycle, transit, and trail facilities
Parking District Assessments	Taxes applied to businesses/property owners in areas where special parking districts are established. The funds generated by the taxes would go to the operation and maintenance of the parking district. Useful in areas where parking is a premium.	• On-street parking
Parking-in-lieu Fees	Special fees assessed on development that chooses to not provide on-site parking for the development.	• Roadway, pedestrian, bicycle, transit, and trail facilities

Table 15: Potential New Funding Sources for Future Consideration		
Funding Source	**Description**	**Potential Facility Benefit**
Public/Private Partnerships	Public transportation infrastructure that is paid for by private sector in exchange for the revenue generated by that infrastructure. Examples could include car charging stations, car share facilities, bike lockers, and public parking lots.	• Public parking lots, bike locker/storage facilities, car charging stations.
Streets District	Special taxing districts (separate from the City of Sutherlin) that are formed to help improve or maintain specific roadways within the district.	• Local streets (surface improvements, sidewalks, bicycle lanes)

IMPLEMENTATION

The Transportation Planning Rule (TPR), as codified in the Oregon Administrative Rules (OAR 660-012-0045, requires that local jurisdictions identify and adopt land use regulation and code amendments needed to implement the TSP. Recommended land use regulations and code amendments are provided in Volume III.

CITY OF SUTHERLIN TRANSPORTATION SYSTEM PLAN