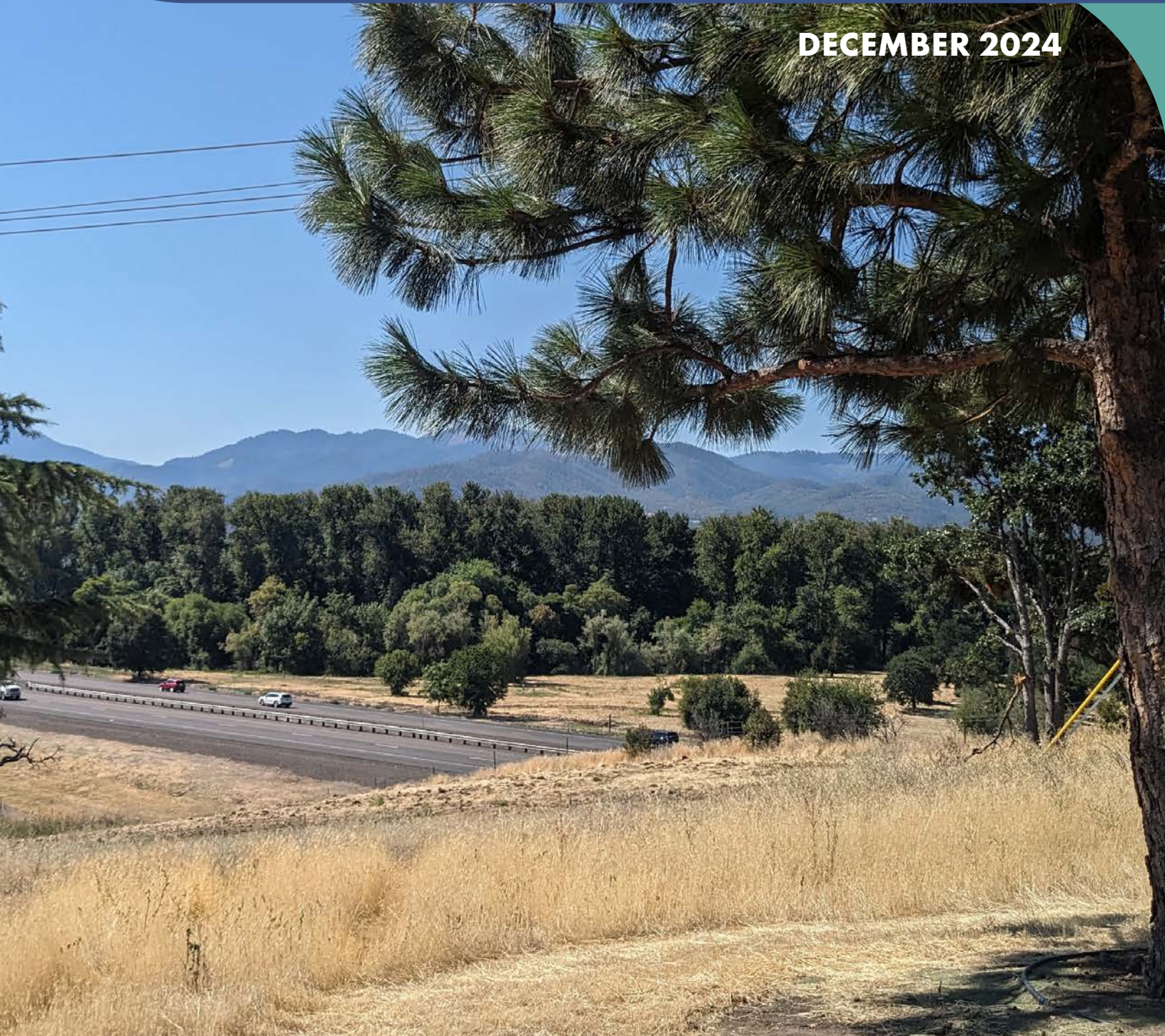


South Stage Road Extension Plan

DECEMBER 2024



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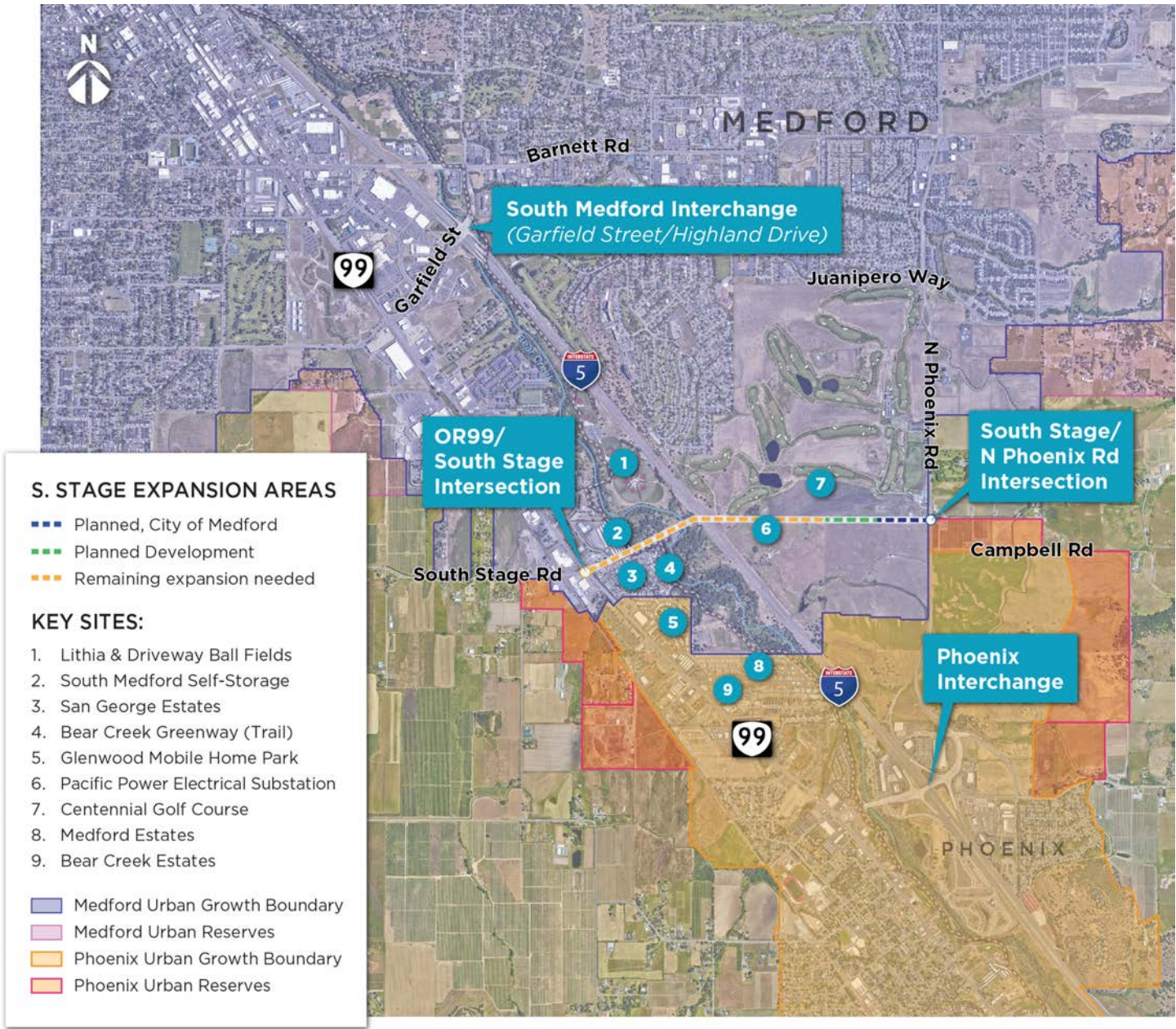
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THE STUDY AREA



1. Introduction

Bear Creek and Interstate 5 (I-5) limit east-west connectivity in South Medford and North Phoenix. Today, no streets cross either the creek or I-5 between the Phoenix Interchange (Exit 24) and South Medford Interchange (Exit 27).

Because there are no east-west roadways crossing I-5 and Bear Creek between the two interchanges along this 3-mile stretch, people have to travel out of their way to reach certain destinations and some streets are overburdened as a result. The South Medford Interchange is routinely congested, and it is expected to get worse in the future.

Enhancing East-West Connections

East-west connectivity, traffic safety, and emergency response times need to be improved in this rapidly growing area. The City of Medford and Oregon Department of Transportation (ODOT) have partnered to evaluate connectivity and how a potential overpass/underpass with or without an interchange of I-5 at South Stage Road could be built in the future.

Extending South Stage Road from OR99 to North Phoenix Road would create a new crossing of I-5, closing a critical gap in the regional street system. This new crossing would open up numerous opportunities for economic development, help relieve congestion on city streets, enhance safety for all transportation system users, and improve quality of life for area residents.

Environmental Considerations

Minimizing environmental impacts is essential to the project's success. Area residents have expressed concern that extending South Stage Road and building a new interchange could bring noise, air, and light pollution, which could affect health and livability.

Because a portion of proposed funding is assumed to come from federal sources and the potential alternatives may affect the Interstate Highway System, the project will require environmental approval by the Federal Highway Administration (FHWA) under the National Environmental Policy Act (NEPA). With careful planning

and development, the City and ODOT can minimize this project's environmental impacts, prioritize safety, reduce congestion, improve connectivity and emergency response times, and protect the area's residential character.

ODOT and the City developed this plan through a [Planning and Environmental Linkages \(PEL\)](#) study process. A PEL process considers environmental, community, and economic goals early in the transportation planning process and uses the resulting information, analysis, and products to inform the future environmental review process under NEPA.

This planning document may be adopted in a subsequent environmental review process in accordance with [23 USC 168, Integration of Planning and Environmental Review](#), and [23 CFR 450, Planning Assistance and Standards](#).

The study area is bounded by Barnett Road, North Phoenix Road, and OR99. The termini of the South Stage Extension Plan are between OR99 and North Phoenix Road.



Source: ODOT– I-5/South Medford Interchange

2. Purpose and Need

A project’s purpose and need statement is developed to explain the problems that need to be solved and help focus the effort to find solutions. Together, the purpose and need form the basis for the goals and evaluation criteria that enable the range of possible alternatives to be assessed and refined.

PURPOSE

The purpose of the South Stage Road Extension project is to: (1) reduce out-of-direction travel by improving east-west multimodal connectivity across I-5; (2) reduce existing and projected congestion and related traffic safety issues in the vicinity of the South Medford and Phoenix Interchanges with Garfield Street and North Phoenix Road and the adjacent local street network; and (3) support local system improvements and improved emergency response associated with current and planned land uses in the rapidly urbanizing area of South Medford and North Phoenix.

NEED

The following transportation needs (problems) have been identified:

I-5 creates a barrier to local east-west travel that limits local road connectivity, resulting in out-of-direction travel and poor east-west travel times. No transportation facilities cross I-5 and the parallel Bear Creek Greenway between Exits 24 and 27, a distance of approximately 3 miles. Because of this lack of local arterial road connectivity across I-5, east-west travelers including transit users must traverse to either the Phoenix

Interchange or the South Medford Interchange (via Barnett Road and Garfield Street). This travel pattern results in inefficient out-of-direction travel and excessive travel times, which increase economic costs for businesses and travelers. For people walking and biking, travel times are even longer. The limited connectivity and intersection-related congestion can be particularly serious for medical emergency response times with Asante Rogue Regional Medical Center located along Barnett Road east of I-5.

The limited east-west connectivity across I-5 creates congestion and traffic safety issues at the existing interchanges and the local roads accessing the interchanges. Within the study area, the east-west arterial network concentrates traffic at the arterial streets that cross I-5: North Phoenix Road, Garfield Street, and Barnett Road. The South Medford and Phoenix Interchanges, and connecting local street networks, are currently or projected to be over capacity and include intersections identified in the Safety Priority Index System (OR99/Stewart Avenue, OR99/Garfield Street, and I-5/South Medford Interchange). At the South Medford Interchange,

one of the most congested areas in Medford, congestion creates a bottleneck with southbound off-ramp queues spilling back onto the I-5 mainline, which also slows freight egress from I-5 and causes safety concerns for potential high-speed, rear-end collisions.

Improved east-west arterial connectivity is needed to support planned growth in the Medford and Phoenix urban growth reserves.

South Stage Road has long been planned as a primary east-west route across the Rogue Valley and is the only arterial between the South Medford and Phoenix Interchanges that provides east-west connectivity from Jacksonville and other areas within Jackson County to OR99. Local adopted land use and transportation system plans identify an extension of South Stage Road as needed to support future residential and regional employment land development in the South Medford and North Phoenix areas east of I-5. Providing additional east-west connectivity could also improve emergency response times and opportunities for egress during an emergency event (e.g., wildfire flooding, or earthquake).

Goals, Objectives, and Criteria

There are many possible ways to extend South Stage Road across I-5 and Bear Creek. In addition to addressing the purpose and need, the recommended alternatives should account for the identified project goals, objectives, and evaluation criteria.

Project Goals

The project goals reflect the purpose and need statement described in Section 2 and relevant goals and objectives from the 2018 Medford Transportation System Plan (TSP).

GOAL 1 SAFETY AND PUBLIC HEALTH	Improve safety for users of all modes of transportation and be a public resource that supports public health in the community.
GOAL 2 ECONOMIC DEVELOPMENT	Enhance economic development and vitality within the City and through the region.
GOAL 3 LIVABILITY	Design and construct transportation facilities to enhance the livability of the City’s neighborhoods and business centers.
GOAL 4 CONNECTIVITY	Achieve connectivity appropriate for planned land uses in the area for all modes that are well connected to the regional system.
GOAL 5 FINANCING	Optimize funding resources so that transportation investments are fiscally sound and economically sustainable.
GOAL 6 ENVIRONMENT	Reduce environmental impacts from transportation.

Objectives and Evaluation Criteria

Objectives are the “how”—what needs to happen to achieve a given goal. Evaluation criteria are objective measures that help you know if you’ve achieved your goal. A complete list of objectives and evaluation criteria related to the project goals is available in the Goals, Objectives, and Evaluation Criteria Appendix.

Narrowing Down the Alternatives

Step 1

The project team identified 16 preliminary alternatives that fell into three overarching solution scenarios: those that enhanced the existing system without adding a new crossing, South Stage overpass/underpass alternatives, and I-5/ South Stage interchange alternatives.

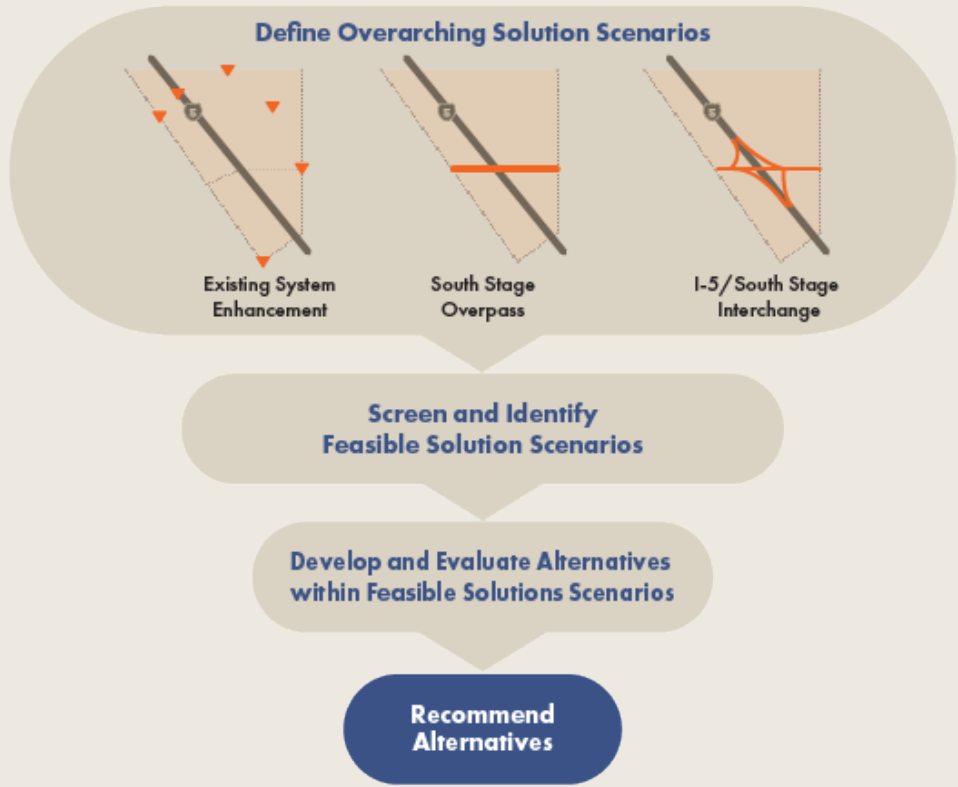
Step 2

Concept sketches of potential alternatives in each feasible overarching solution scenario were weighed against the goals, objectives, evaluation criteria, and performance measures and against each other. The most promising alternatives were advanced to the next step.

Step 3

The project team refined the most promising alternatives, evaluated them for constructibility, environmental impact, and cost feasibility, and recommended alternatives to advance to the future environmental review and design phase.

ALTERNATIVES DEVELOPMENT AND SCREENING PROCESS



For more information on this evaluation process, see the Goals, Objectives, and Evaluation Criteria Appendix.



Community Presentation with San George Estates

3. Community Input

Engaging the community to understand the needs and trade-offs associated with the range of alternatives is essential to the project’s success. The community was engaged in a variety of ways to provide input on the purpose and need, identify alternatives, and gain consensus on recommended alternatives.



Open Houses

The City and ODOT hosted online open houses for transportation underserved and overburdened populations, environmental justice organizations, pedestrian and bicycle enthusiasts, neighborhood associations, interested businesses, schools, and the general public. An in-person open house engaged the same groups as well as potentially affected property owners.

Participants in both the in-person and online open houses had the opportunity to learn about the project, share their priorities, review conceptual designs, and narrow the options down to the recommended alternatives.

There was an in-person open house on May 8, 2024, and two online forums on January 31 and September 11. In addition, parallel online open houses were held January

22 to February 5, May 6 to 20, and September 3 to 16. All these events were advertised through local social media, emails, postcards and newspapers in Spanish in English.

Equity Outreach SPANISH LANGUAGE MEETINGS

The team’s community engagement liaison formed two focus groups to gather feedback from diverse demographic and historically excluded community members that informed project decisions. These meetings were primarily geared toward Spanish-speaking residents of the Medford area. The sessions, occurring between January 22 and February 5, and May 6 and 20, were facilitated in Spanish.

UNITE OREGON, ROGUE VALLEY CHAPTER VIRTUAL MEETING

Unite Oregon is an intercultural movement for justice made up of Black; Indigenous, People of Color; immigrants; refugees; rural communities; and those experiencing poverty. The community engagement liaison held a virtual meeting with the Rogue Valley Chapter of Unite Oregon on January 9, 2024. The community engagement liaison met with several staff members and outreach coordinators to collect feedback and encourage participation in the online open house on January 19.

COMMUNITY PRESENTATIONS WITH SAN GEORGE ESTATES

The project team presented project information to the San George Estates community to provide project information on January 22, 2024. San George Estates is a manufactured home community adjacent to South Stage Road. Approximately 60 residents attended the presentation. The project team presented the initial alternatives and screening results at a presentation briefing to the community on May 8. The project team also provided information and resources for Spanish-speaking community members at each meeting.

City of Medford Briefings

Key city policy and decision-making groups, the Transportation Commission (TC), Planning Commission (PC), and City Council (CC) were engaged to obtain feedback throughout the development and alternative screening process as part of Project Advisory Committee (PAC) meetings and in TC, PC, and CC meetings. The latter meetings occurred on February 12, 2024 (CC), February 15 (TC/PC), May 9, May 13 (TC/PC), August 12 (CC), August 15 (TC/PC), September 23 (TC/PC), and September 26 (CC).

Project Advisory Committee (PAC)

The Project Advisory Committee (PAC) was composed of many local property and business owners, area policy makers, Native American Tribes, and cooperating agency staff. The PAC reviewed and provided input on the development of the plan, which then influenced the technical analysis and recommendations made by the Project Development Team (PDT). The PAC had four meetings: October 11, 2023, and January 31, May 8, and September 11, 2024. A full list of members is included on the Acknowledgments page.

Project Development Team (PDT)

The PDT was composed of staff from the City of Medford, City of Phoenix, Jackson County, ODOT, FHWA, and the Rogue Valley Metropolitan Planning Organization (RVMPO). The PDT provided technical and policy reviews and made recommendations to the Project Management Team. They had meetings on October 3, 2023, and January 24, May 1, August 22, and September 18, 2024. A full list of the members is included on the Acknowledgments page.

Project Website

ODOT launched a project website in September 2023 to serve as a hub for information on the developing project. This website was updated with all key documents and decisions throughout the project. All content was translated into Spanish and linked as a PDF.

Title VI Compliance

All public, community, and stakeholder engagement efforts have been developed in accordance with Title VI of the Civil Rights Act. The public involvement plan included information and resources on how to request Title VI accommodations and translation or interpretation services.

What the Community Had to Say

In surveys, emails, and open houses, residents and business and property owners expressed their support for the growth and development in southeast Medford and northeast Phoenix and prioritizing access to the area via an extension of South Stage Road to North Phoenix Road. Residents’ opinions varied on the best way to facilitate this access, though generally they agreed that an overpass/underpass with a compatible freeway interchange represent the best options.

This project has been needed for years.

I think this [project] would be great. So odd that a city with 91,000+ residents only has two I-5 freeway exits.

There should be on and off ramps both north and south, not just an overpass.

Exit 24 traffic ... is maxed out.

There would ... be the issue of sound and poor-quality air from exhaust and equipment.

We desperately need less speed.

Without a downtown I-5 access, Medford can never ... regenerate itself into a vibrant city.

Access to I-5 from South Stage Road ... may generate more problems than provide benefits.

I fear a road larger than three lanes may put the homes along [South Stage Road] at risk of city encroachment.

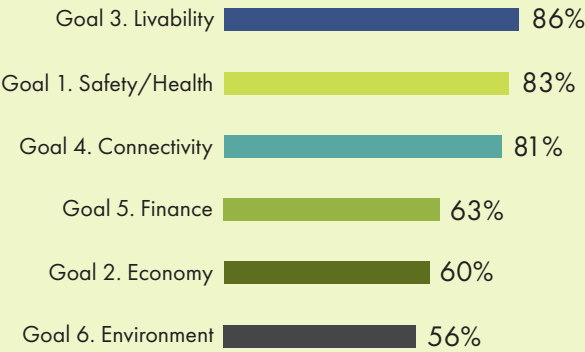
Who pays for that?

Do it now and save money in the future.

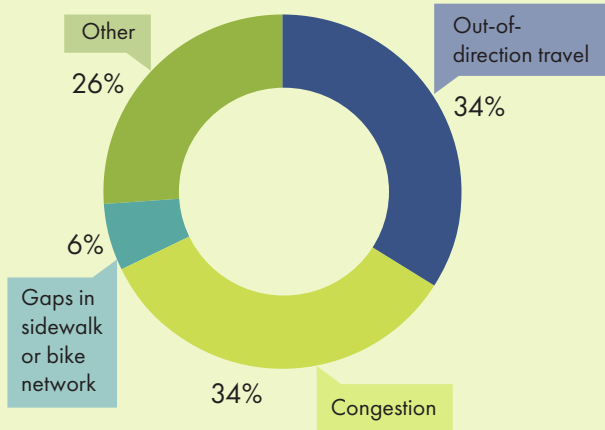
... does not solve the problem of traffic along North Phoenix Road.

KEY SURVEY RESULTS

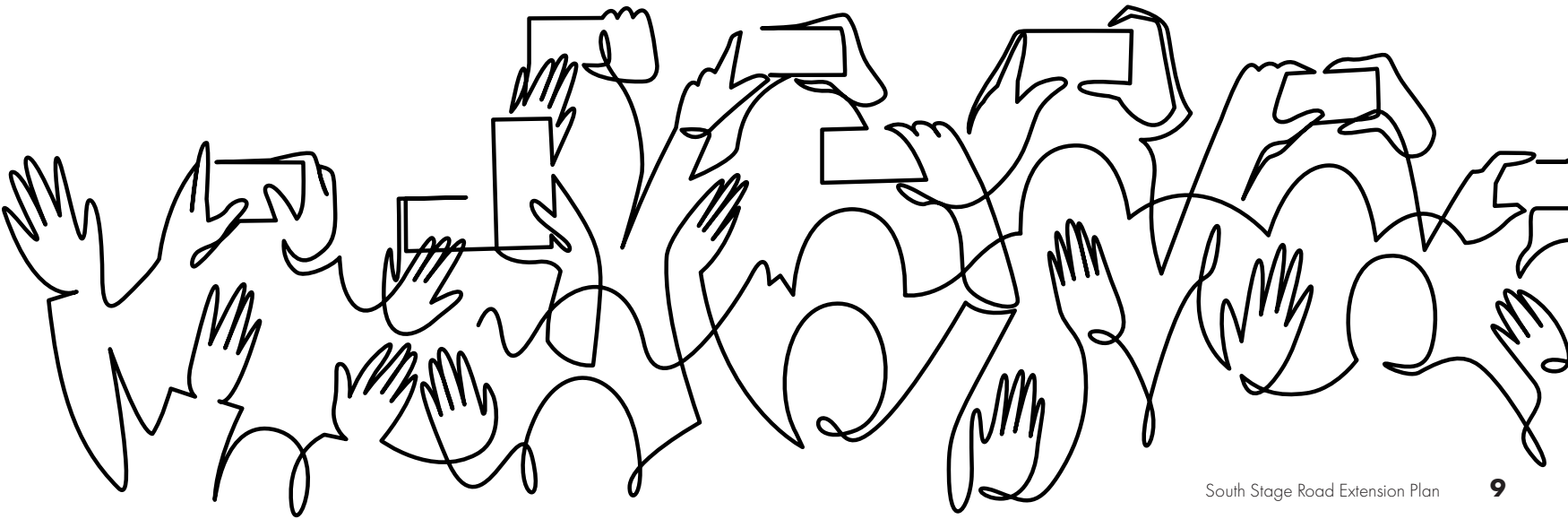
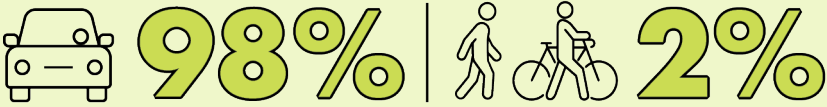
Most important project goals



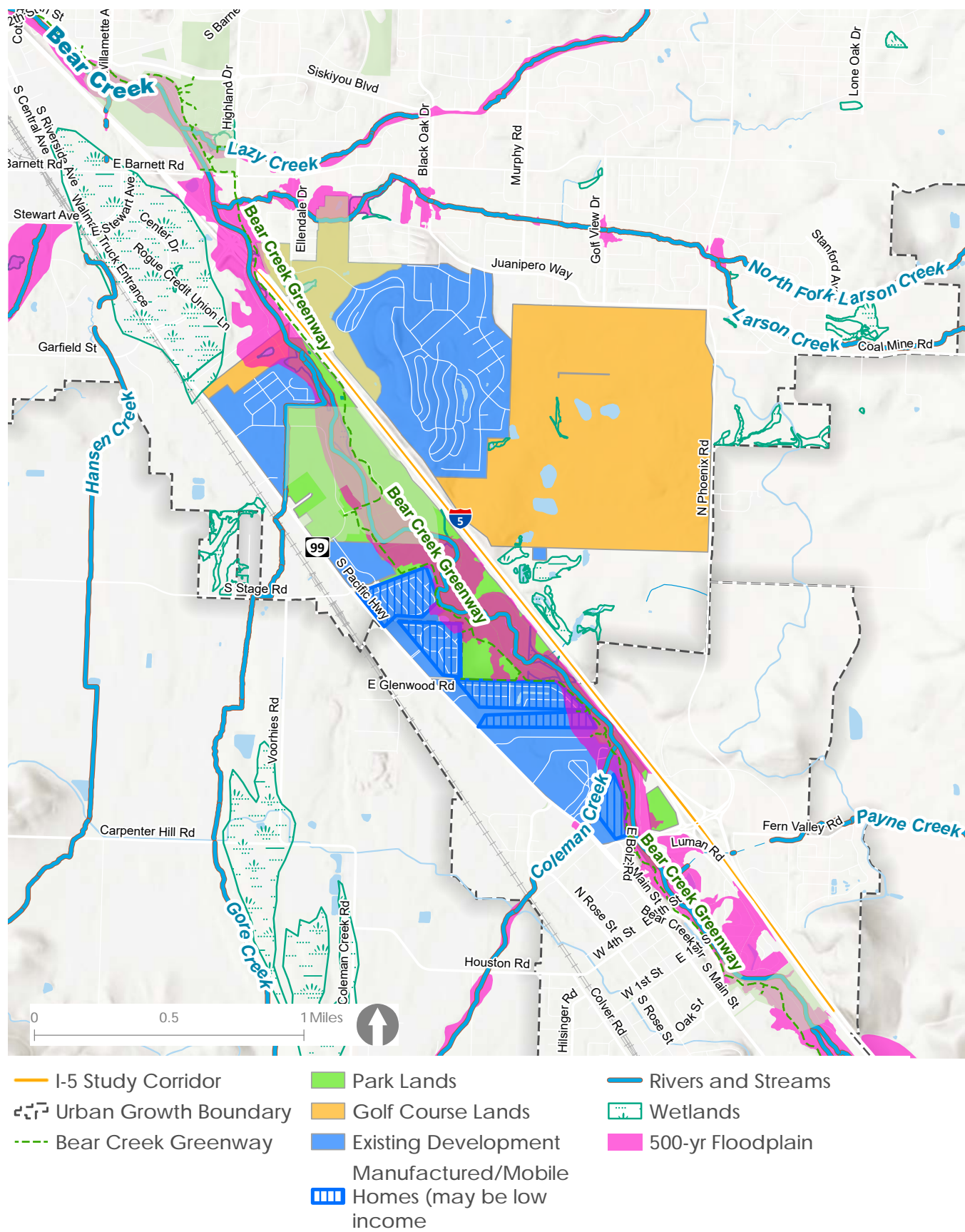
Most common challenges crossing I-5 between Medford and Phoenix



How people get around



EXISTING ENVIRONMENTAL CONDITIONS AND CONSTRAINTS



4. Environmental Setting

Bear Creek and the Bear Creek Greenway, a floodplain, topographical challenges, parks, schools, wetlands, other environmental features and residential, commercial, and industrial areas constrain the space available to either extend South Stage Road or provide a new crossing of I-5 between the South Medford and North Phoenix Interchanges. The surrounding environment, both natural and developed, presents numerous features that require careful consideration.



Bear Creek. Source: Wikimedia Commons/[ZabMilenko](#)

Current Conditions

Currently, Bear Creek and I-5 limit east-west connectivity in South Medford and North Phoenix. Access to I-5 is provided by the South Medford and Phoenix Interchanges. Although many community members may perceive these interchanges as inconveniently far apart, they are actually slightly closer together than current ODOT requirements for an interstate freeway in an urban area.¹ The congestion, circulation, emergency response, and related safety issues present today will continue to worsen with the growth and urbanization of South Medford and North Phoenix. Based on these issues, an additional crossing or third interchange could benefit the area's existing and future residents, workers, and businesses.

¹ ODOT Highway Design Manual Table 600-2



I-5 Fern Valley Interchange (Exit 24) , Phoenix, OR. Source: ODOT

Environmental Conditions

Because federal money is assumed to be one of the primary funding sources for the South Stage Road Extension project and the potential alternatives will affect the Interstate Highway System, the project will require environmental approval by FHWA under NEPA.

For that reason, this plan went through a PEL study process. A PEL process considers environmental, community, and economic goals early in the transportation planning process, and it uses the resulting information, analysis, and products to inform the environmental review process under NEPA.²

Preliminary assessments revealed environmental resources in the area that could be impacted by roadway development. These are identified below.

Water Resources

There are several named water bodies within the study area, including Coleman Creek, Larson Creek, Lazy Creek, Payne Creek, Crooked Creek, and Bear Creek; all of these flow year-round. The area also includes several streams that flow seasonally, such as Gore Creek. The Medford Irrigation Canal is also in the study area.

Wetlands

There are several wetlands within and adjacent to the study area. Adding a new South Stage Road overpass/underpass or I-5 interchange may create unavoidable wetland impacts that will need to be mitigated.

Floodplain

The study area is within the Federal Emergency Management Administration (FEMA)-regulated floodway and the 100-year floodplain of Bear Creek. A 100-year designation means the area has a 1 percent chance of being covered by flood water in any given year. To construct a new overpass/underpass, or interchange in this area, federal certification must be received stating that the new construction will not cause the projected flood level to rise.

Archaeological Sites

There are several recorded archaeological sites in the study area, and the presence of undisturbed lands makes it highly likely there are others that have not yet been discovered. An archaeological survey would be needed to know if and how these sites may be impacted by construction.

Parks

The parks and recreational facilities in the study area include the Bear Creek Greenway, Bear Creek Park, Blue Heron Park, Medford Sports Park, and Lithia and Driveway Fields. Under NEPA, these park facilities are classified as "Section 4(f) resources."³ This designation requires that the project team attempt to avoid and/or to minimize impacts to these areas if there are no other feasible and prudent alternatives.

Noise

Residential and active sports areas, hotels, trails, offices, and restaurants on both sides of I-5 could be impacted by noise during and after construction of a new undercrossing/overcrossing and/or new interchange. Measures may need to be taken to reduce noise pollution and minimize noise impacts during construction and once the new facility is opened to traffic.

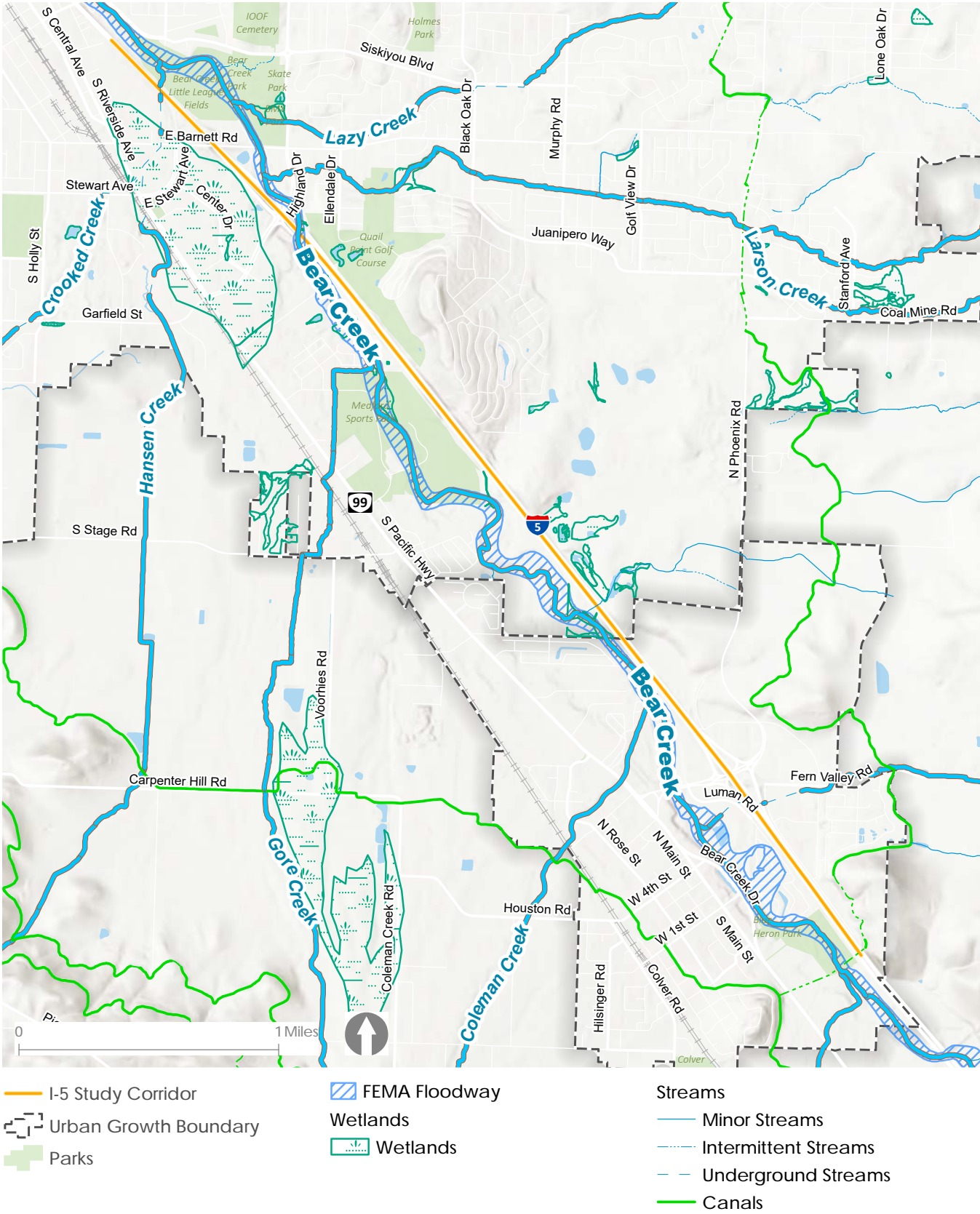
Hazardous Materials

Hazardous materials are present in the study area. As part of a future NEPA process, a Phase I Hazardous Materials Corridor Study would be conducted to identify hazardous materials in the study area.

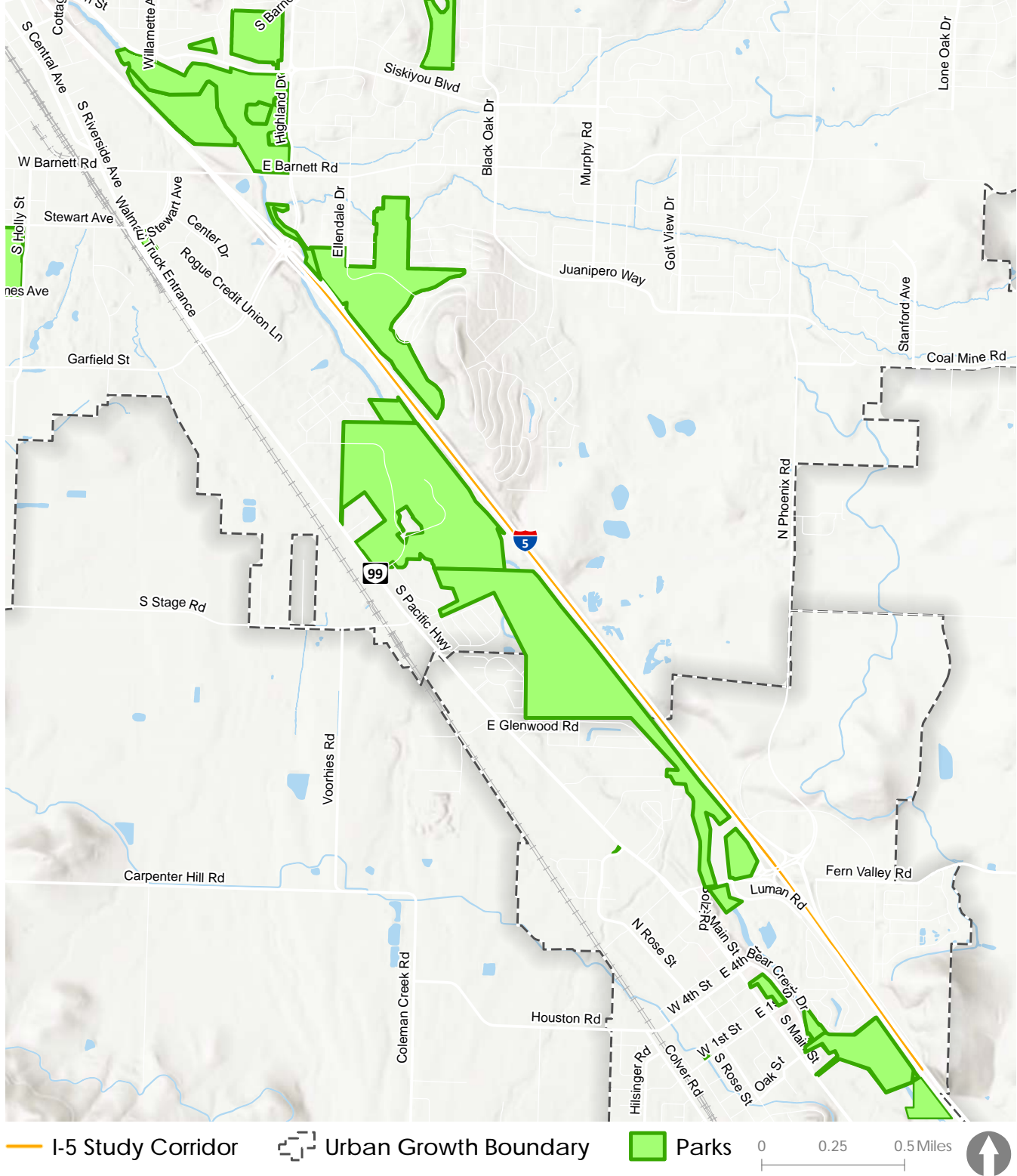
The Environmental Setting Report Appendix provides a complete summary of the existing environmental conditions.

² Planning and Environment Linkages | Environmental Initiatives | Environmental Review Toolkit | FHWA. https://www.environment.fhwa.dot.gov/env_initiatives/initiatives_home.aspx

WATERWAYS, WETLANDS, AND FLOODPLAINS



SECTION 4 (F) RESOURCES



Underserved and Overburdened Populations and Land Use

Underserved and Overburdened Populations Data

The Federal Climate & Economic Justice Screening Tool (CEJST) was used to determine if any census tracts in the study area include populations identified as being underserved and overburdened. Communities are considered underserved and overburdened if they are located in census tracts that meet the thresholds for at least one of the tool’s categories of burden, or if they are on land within the boundaries of federally recognized tribes. The categories of burden include climate change, energy, health, housing, legacy pollution, transportation,

water and wastewater, and workforce development.

The proposed alignment of South Stage Road is located in census tracts with populations that are experiencing:

- Low income
- Risk of flooding (climate change)
- Risk of wildfire (climate change)
- Exposure to fine particulates (PM 2.5) (energy)
- High levels of heart disease (health)
- High unemployment and low levels of high school graduation (workforce)

The noise, visual, air quality, and other environmental impacts of an overpass, underpass, or interchange would need to be evaluated in relation to nearby underserved and overburdened populations and land uses.

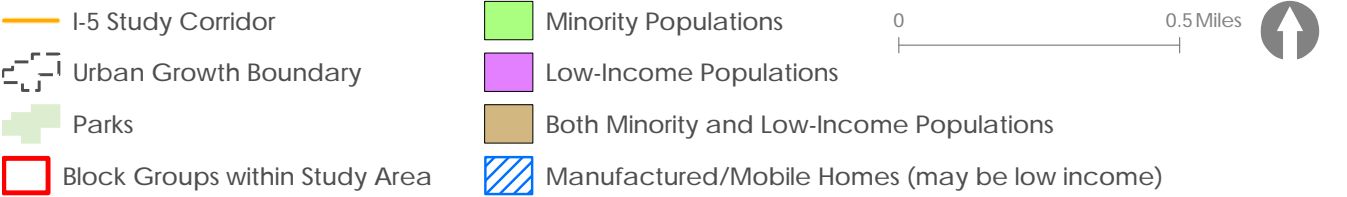
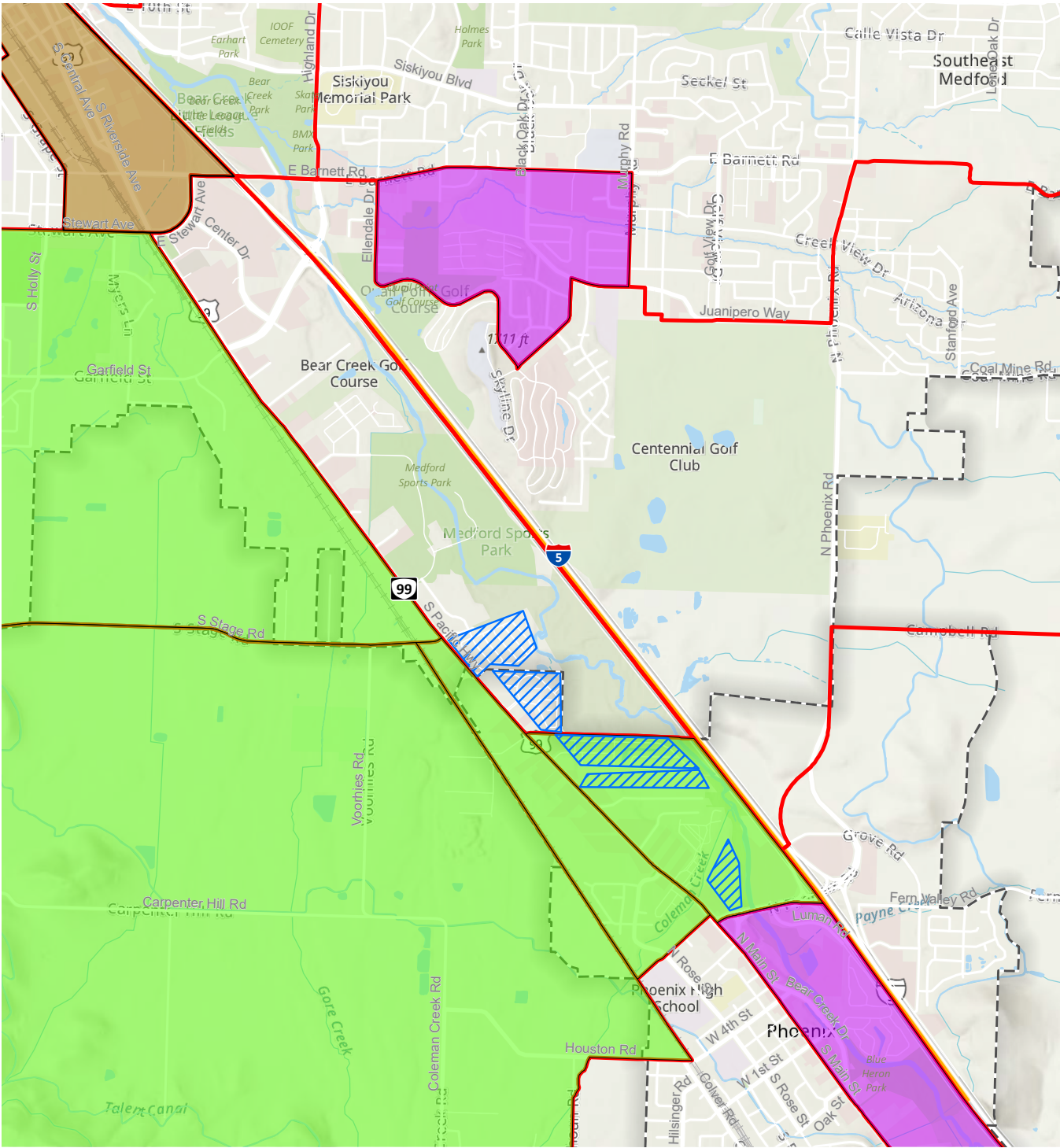
Land Use Zoning

The study area includes properties that are zoned for industrial, residential, and commercial uses and public parks. The Land Use Appendix provides existing zoning maps for reference.



Bear Creek Greenway. Source: Wikimedia Commons/[Robert Ashworth](#)

MINORITY AND LOW-INCOME POPULATIONS





I-5 Exit 27 to Medford. Source: ODOT

5. Transportation Conditions

The few east-west connections limit local road connectivity, drive congestion, require people to travel out of their way to reach their destinations, and make it challenging for pedestrians and bicyclists to travel comfortably in this area.

Current Conditions

Motor Vehicle System

The study area's roadway system plays important roles in moving people and goods within the region as well as throughout the state. It includes I-5, one of the state's two primary north-south freight corridors, and several important local freight corridors. The regional streets that move people and goods within the area are Barnett Road, North Phoenix Road, and Highway 99 (OR99).

The South Medford Interchange (I-5/Garfield Street) is congested during the weekday morning rush hour, with traffic backing up at times onto I-5 on both the southbound and northbound ramps and is identified as an existing operational deficiency. The Phoenix interchange and other study intersections and freeway segments operate in a manner that is consistent with performance metrics established by the region and ODOT today.

Although many locations within the study area meet established safety performance metrics, two intersections exceed "average" crash rates and are identified as safety deficiencies. These include:

- Golf View Drive/Barnett Road—exceeds average crash rate and exceeds critical crash rate relative to the study area.
- Garfield Street/Center Drive—exceeds critical crash rate relative to the study area.

The ODOT Safety Priority Index System (SPIS) identifies locations throughout the state where reported crashes may warrant further investigation. The SPIS list considers crash frequency, crash rate, and crash severity. The following intersections were identified in the top 15 percent of SPIS scores in the SPIS 2021 list and are identified as safety deficiencies:

- OR99/Stewart Avenue
- OR99/Garfield Street
- I-5/Garfield Street (South Medford) Interchange

The Existing Conditions Summary Appendix provides a complete summary of the existing transportation conditions.

Pedestrian, Bicycle, and Public Transportation System

Today, the study area lacks a continuous sidewalk system, has a small number of bicycle facilities, and provides limited transit service, particularly east of I-5. There are only four east-west pedestrian and bicycle crossing opportunities, with a 2.65-mile gap between the Bear Creek Greenway undercrossing and the Phoenix Interchange. This distance is six times greater than the maximum block length typically allowed by the City's Development Code and three times greater than the average spacing for pedestrian and bicycle crossings on I-5 between Central Point and Phoenix.

There are mid-term (10- to 20-year) plans for transit service along North Phoenix Road. The only two existing east-west routes across I-5 in the study area are Barnett Road and Garfield Street–Highland Road. A route that crosses the Phoenix Interchange is planned in the future. Transit users face a 2.75-mile gap in east-west crossings of I-5 and Bear Creek.



Exit 27 to Medford from I-5. Source: ODOT

Future Conditions

This section provides information about how the number of jobs and houses in the area is anticipated to grow and what new transportation facilities are planned to be added in the study area by 2045. This represents the project's No-Build Scenario.

Job And Housing Growth

The Southern Oregon Activity Based Model (SOABM) is a tool that uses information about future jobs and housing growth to estimate how traffic will change in the future. Activities that are anticipated to produce higher growth in the area by 2045 include:

- Development of the Centennial Golf Course property bounded by Juanipero Way (north), North Phoenix Road (east), South Stage Road (south) and I-5 and Rogue
- Future growth is anticipated on the properties within the North Phoenix UGB (i.e., the lands bounded by the Medford/Phoenix UGB [north and east],

Valley Manor (west). Per the Centennial Golf Course Properties Master Plan, this property have a general land use plan designation that plans for a mix of residential and commercial uses.

- New employment on the remaining undeveloped properties in the South Medford Urban Growth Boundary (UGB) (i.e., the area bounded by South Stage Road [north], North Phoenix Road [east], Medford/Phoenix UGB [south], and I-5 [west]). Per the City of Medford, these properties have a general land use plan designation that plans for a mix of general industrial and service commercial uses.

Phoenix city limits [south], and I-5 [west]). Per the City of Phoenix, these properties have general land use plan designations that plan for a mix of residential, general commercial, general industrial, and open space.

The comparison shows that the SOABM assumes approximately 77 percent of potential households and 26 percent of potential jobs in South Medford and assumes approximately 55 percent of potential households and 60 percent of potential jobs in North Phoenix in the 2045 model. A sensitivity analysis confirmed that increasing the potential jobs to 100 percent within the 2045 horizon year would not have a significant effect on the development and evaluation of alternatives for the South Stage Road Extension project. The Sensitivity Analysis Appendix provides more details for these calculations and analyses.

The population along the North Phoenix Road corridor in the study area is projected to be 5,000 by 2045. The City of Medford is expected to grow by 30,000 people and the City of Phoenix by 700 people.

Motor Vehicle

Planned changes to the motor vehicle system were identified based on the City of Medford TSP. No planned changes were identified in the City of Phoenix or Jackson County TSPs that are expected to affect travel patterns in the study area. The table below summarizes the planned improvements from the TSP that are accounted for in the Year 2045 No-Build Conditions analysis. It should be noted that several projects outside of the study area were included as they have the potential to affect travel assignments within the study area.

MOTOR VEHICLE SYSTEM PLANNED IMPROVEMENTS

Project #	Location	Project Type	Description
469	Foothill Road, Hillcrest Road to McAndrews Road	Urban upgrade	Upgrade to regional arterial standard (includes two lanes in each direction, center-turn lane, bike facilities, and sidewalks) – project is under construction.
481	Coal Mine Road (realigned), North Phoenix Road to Santa Barbara Drive	Urban upgrade	Realign and upgrade to major collector standard (includes one lane in each direction, a center-turn lane, bike facilities, and sidewalks).
484	Stanford Avenue, Barnett Road to Coal Mine Road	New roadway	Construct new major collector roadway (includes a center turn-lane, bike facilities, and sidewalks).
535	Barnett Road, North Phoenix Road to Lone Oak Drive	New roadway	Realign and construct new minor arterial roadway (includes a center turn-lane, bike facilities, and sidewalks).
611	North Phoenix Road from Barnett Road to Juanipero Way	Widening	Widen to regional arterial standard (includes two lanes in each direction, a center turn-lane, bike facilities, and sidewalks). Part of the North Phoenix/Foothill and South Stage corridor.
677	Golf View Drive, Juanipero Way to southern expansion boundary	New roadway	Construct new major collector (minor collector south of the South Stage Road Extension) roadway (includes a center turn-lane, bike facilities, and sidewalks).
678	East-west collector along the southern Urban Growth Boundary (UGB), Golf View Drive to North Phoenix Road	New roadway	Upgrade to minor collector standard (includes one lane in each direction, bike facilities, and sidewalks).
705	Lone Oak Drive Extension	New roadway	Construct new major collector standard (includes a center turn-lane, bike facilities, and sidewalks).
721	North Phoenix Road, Juanipero Way to southern UGB	Urban upgrade	Upgrade to regional arterial standard (includes two lanes in each direction, a center-turn lane, bike facilities, and sidewalks). Part of the North Phoenix/Foothill and South Stage corridor.
I-13	Creek View Drive and North Phoenix Road	Intersection	Install traffic signal when warranted. Remove traffic signal at Albertson’s access and convert to right-in/right-out only (part of the North Phoenix/Foothill and South Stage corridor). Also, see SE Plan.

Project #	Location	Project Type	Description
I-16	South Pacific Highway and South Stage Road	Intersection	Update signal timing and phasing to add clearance intervals and protected left-turn phases in the east-west direction and to monitor the continued pattern of turning and angle collisions in the east-west direction (see OR99 Rogue Valley Corridor Plan).
I-17	South Pacific Highway and Stewart Avenue	Intersection	Intersection improvements such as a second southbound left lane and second eastbound left-turn lane.
I-22	McAndrews Road at Foothill Road Ramps	Intersection	Install traffic signals.
I-24	North Phoenix Road and Barnett Road	Intersection	Intersection improvements such as second southbound through lane, westbound through lane, and phasing all lefts as protected/permitted (part of the North Phoenix / Foothill and South Stage Corridor).
I-54	Juanipero Way and North Phoenix Road	Intersection	Install traffic signal or roundabout when warranted.
I-78	Highland Drive and Barnett Road	Intersection	Intersection improvements such as a second northbound right-turn lane (protected) – project is in the current Statewide Transportation Improvement Program (STIP).



OR99 between Medford and Phoenix. Source: ODOT

In addition to the TSP projects, the *South Medford (Exit 27) Interchange Area Management Plan (IAMP)* identifies improvements to the South Medford Interchange and several intersections and roadway segments within the Interchange Management Study Area. The following improvements are intended to address both vehicle capacity and pedestrian and bicycle safety needs.¹

- Barnett Road/Highland Drive Intersection – add dual northbound right-turn lanes
- South Medford (Exit 27) Single Point Urban Interchange (SPUI) – lengthen/widen southbound off-ramp (lengthened to 3,000 feet) and widen northbound off-ramp
- North Medford (Exit 30 southbound on-ramp) and Phoenix (Exit 24 northbound on-ramp) Ramp Metering
- OR99/Garfield Street Intersection – restripe east leg (westbound) left, left, though, through/right
- Develop a multimodal path along OR99
- Add buffered bike lanes along the Garfield Street-Highland Drive segment between OR99 and Barnett Road
- Connect Highland Drive using the undercrossing to Larsen Creek/Bear Creek
- Move transit stop on eastbound Barnett Road between Highland Drive and Ellendale Drive

These projects are part of the 2045 No-Build conditions; however, a sensitivity analysis was conducted to determine whether the southbound and/or northbound off-ramp lengthening would be necessary under a I-5/South Stage Road interchange scenario.

¹ These projects are identified in the IAMP, and would be constructed regardless of the South Stage Extension Plan.
² There is an existing intersection with a commercial driveway at this location.

MOTOR VEHICLE OPERATIONS

Under the 2045 No-Build conditions, the congestion, travel time, and emergency response times continue to worsen within the study area. The following intersections are forecasted to exceed adopted performance targets related to vehicle mobility and are identified as operational deficiencies:

- A. I-5/South Medford Interchange
- B. OR99/Garfield Street
- C. OR99/North Phoenix-Boltz Road
- D. Barnett Road/Black Oak Drive
- E. Juanipero Way/Golf View Drive
- F. North Phoenix Road/Future South Stage Road²

In addition, the South Medford Interchange is forecast to experience queuing and congestion, particularly on the southbound and northbound ramps, which may contribute to potential crashes.

Public Transit

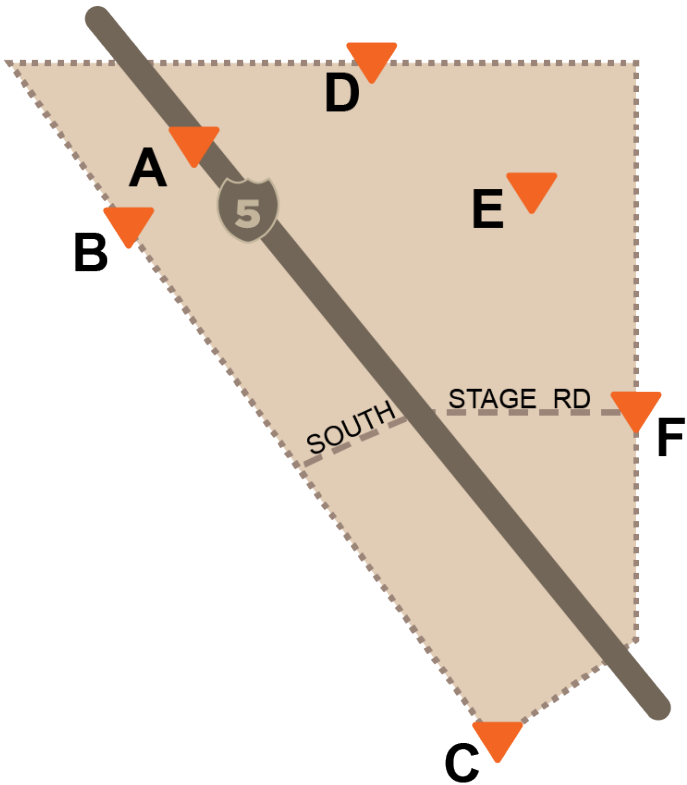
A transit route that crosses the Phoenix Interchange is planned.

Pedestrian and Bicycle

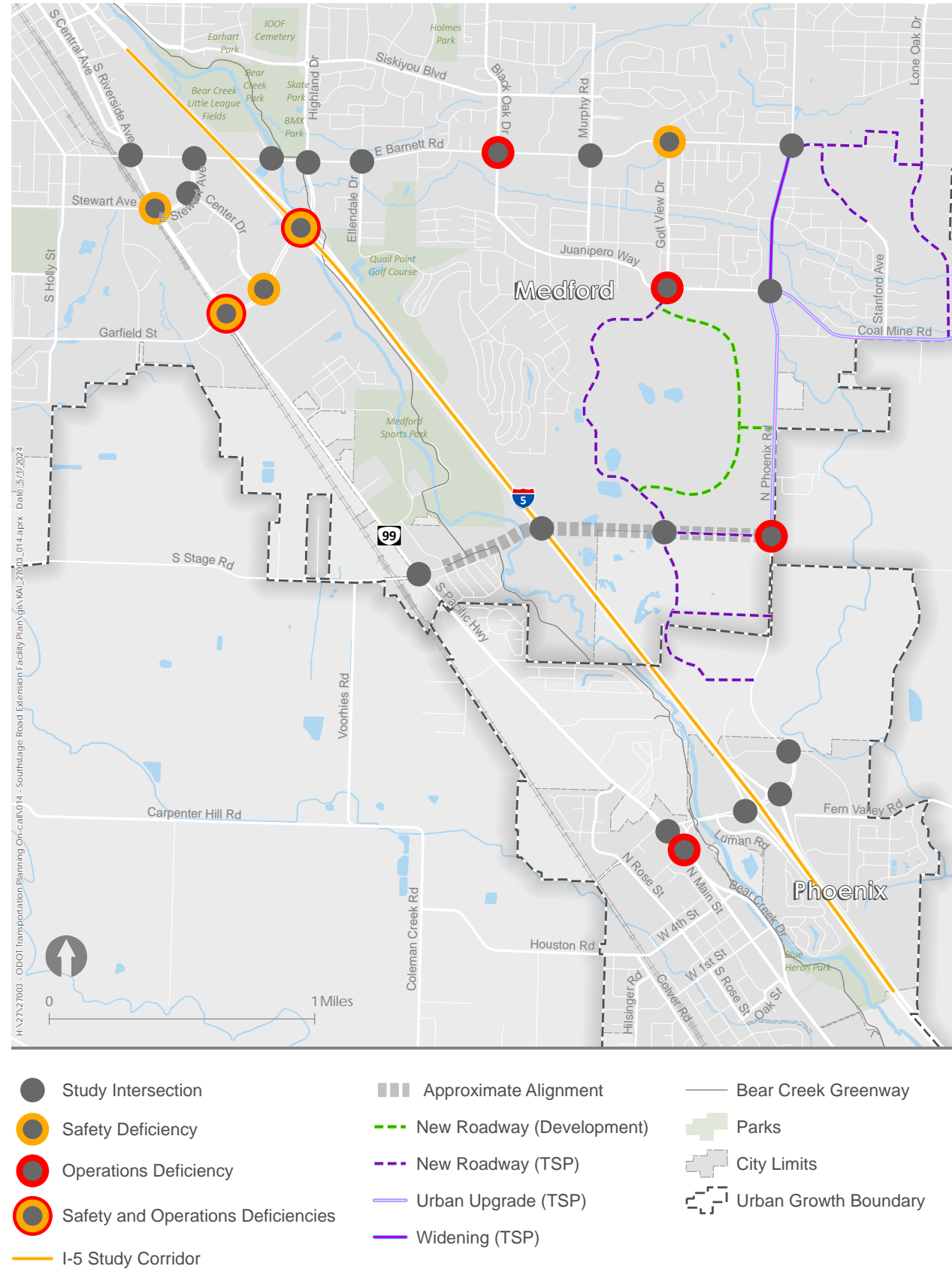
The need for changes to the sidewalks, trails, and bicycle facilities in the South Stage Extension Plan study area is described in the *City of Medford TSP, Jackson County TSP, and the Rogue Valley Active Transportation Plan*. Based on these plans, the South Stage Road extension is envisioned to provide high-quality pedestrian and bicycle facilities, including separated bicycle lanes and sidewalks with a planter strip.

The Future Year Traffic Analysis Summary Appendix provides a complete summary the future 2045 No-Build transportation conditions.

YEAR 2045 NO-BUILD OPERATIONAL DEFICIENCIES



EXISTING AND FUTURE OPERATION AND SAFETY FOCUS AREAS



6. Alternatives Analysis

Overview

Three overarching solution scenarios were initially defined to address the purpose and need: Existing System Enhancement, South Stage Overpass/Underpass, and I-5/South Stage Interchange. Based on a screening of these scenarios, it was concluded that only changes to the existing transportation system without any new roadway connections (i.e., Existing System Enhancement) could not address the project’s purpose and need.

The project team developed and evaluated 16 alternatives within the two feasible overarching solution scenarios to address the project’s purpose and need, goals, and objectives. This included eight overpass/underpass alternatives and eight interchange alternatives. The alternatives were reviewed using conceptual horizontal and vertical alignments based on pre-established design criteria. This technical and economic feasibility assessment included a high-level assessment of constructability and economic effectiveness. It also included an environmental screening that overlaid the horizontal and vertical alignments on maps of potential environmental resources.

The results of the initial evaluation showed that of the 16 defined alternatives, three were not technically feasible and another five were not economically feasible. The team also discovered that the interchange alternatives have a bigger environmental impact than the overpass/underpass alternatives.

The 16 alternatives, evaluation results, and recommendations were presented to the PMT, PDT, PAC, and community at a series of meetings and other engagement activities. A key outcome of the engagement activities was that no other reasonable alternatives beyond the 16 evaluated were identified through public and agency outreach. There was also consensus on the recommendation to remove eight alternatives from further consideration based on technical and economic feasibility screening. The remaining eight alternatives were advanced for further analysis and refinement. The Range of Alternatives Appendix includes exhibits of all the initial alternatives.

Further details on the three overarching scenarios and 16 alternatives are provided in the following pages.

ALTERNATIVES DEVELOPMENT AND RECOMMENDATION PROCESS

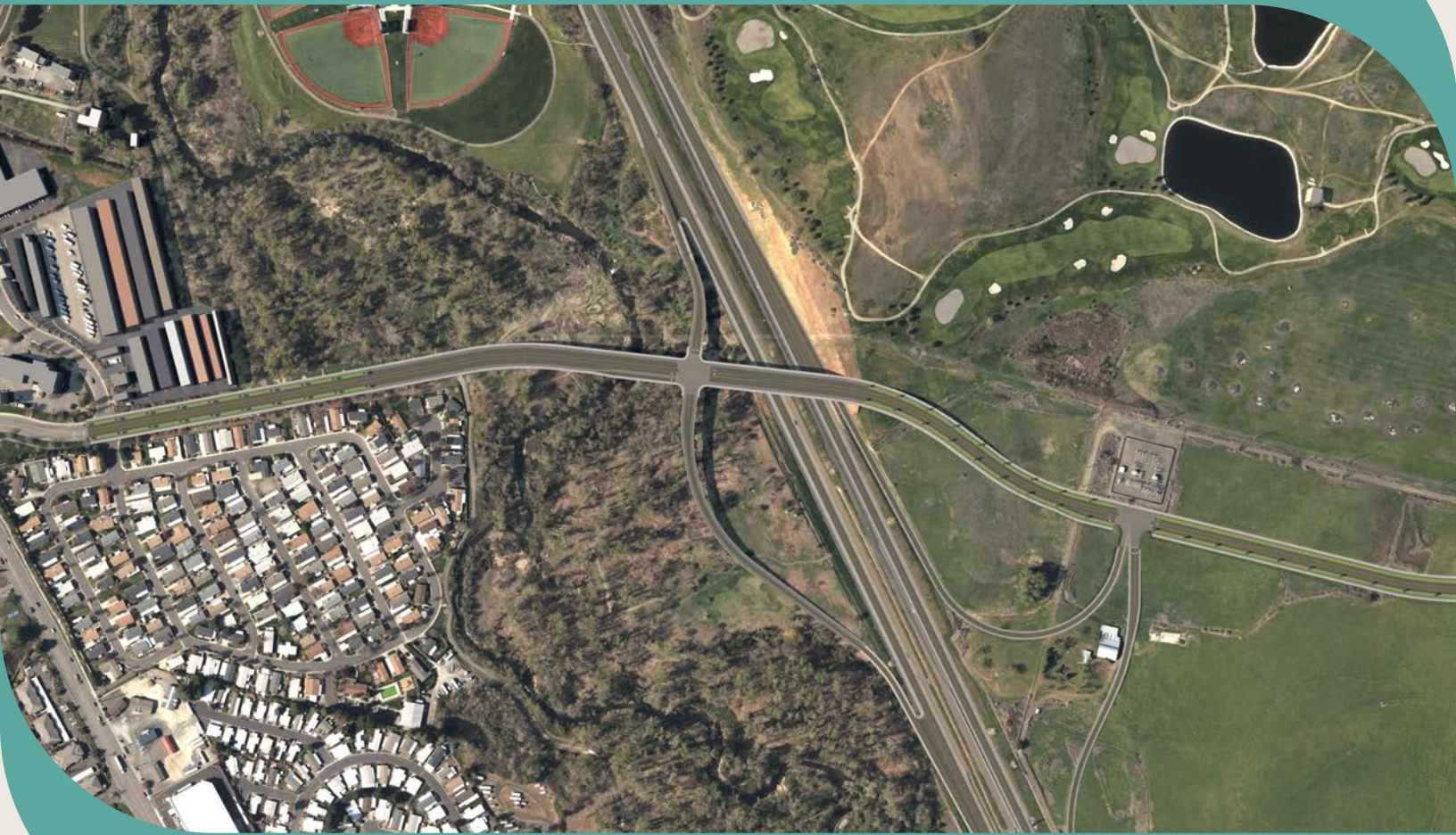
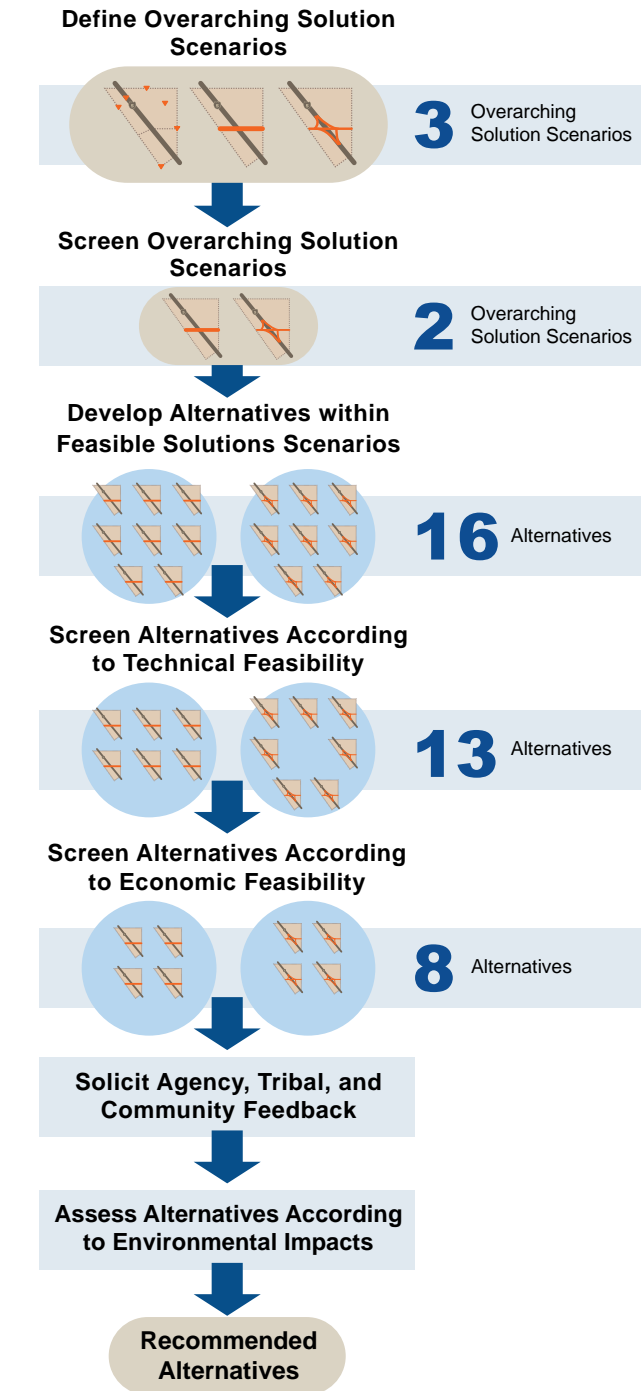


Image of Interchange Alternative I-2

Overarching Scenarios

After the project’s purpose and need, goals, objectives, and evaluation criteria were set, the project team developed three overarching solution scenarios.

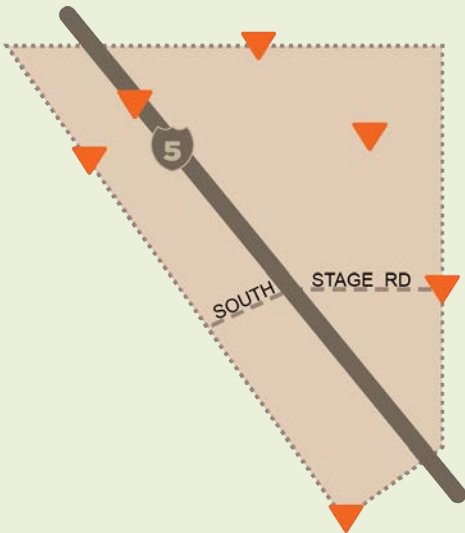
Existing System Enhancement

The purpose of this scenario was to clarify whether the purpose and need, goals, and objectives of this study could be met without constructing facilities that cross I-5.

Under this scenario, the team developed alternatives that improve existing transportation facilities to address gaps or deficiencies. These alternatives generally do not add new transportation system connections.

The following intersection projects were included in the Existing System Enhancement scenario, beyond those assumed in the No-Build:

- **OR99/North Phoenix-Bolz Road:** Construct separated right- and left-turn lanes on the west leg of the intersection and a secondary right-turn lane on the south leg of the intersection.
- **Barnett Road/Black Oak Drive:** Construct a separate right-turn lane on the north leg of the intersection.
- **Juanipero Way/Golf View Drive:** Convert the intersection from two-way to all-way stop control.
- **North Phoenix Road/Future South Stage Road:** Convert the intersection to a roundabout or traffic signal.



South Stage Overpass/Underpass

This scenario includes alternatives that create a connection across (over or under) I-5 and Bear Creek between the South Medford and North Phoenix Interchanges. This scenario included the following intersection projects, beyond those assumed in the No-Build:

- **OR99/North Phoenix-Bolz Road:** Construct separated right- and left-turn lanes on the west leg of the intersection and a secondary right-turn lane on the south leg of the intersection.¹
- **Juanipero Way/Golf View Drive:** Convert the intersection from two-way to all-way stop control.¹

- **North Phoenix Road/Future South Stage Road:** Convert the intersection to a roundabout or traffic signal.
- **Samike Drive-Devonshire Lane/South Stage Road:** Convert the intersection to a traffic signal.
- **Golf View Drive/Future South Stage Road:** Convert the intersection from two-way stop control to a roundabout.
- **OR99/South Stage Road:** Construct a separate right-turn lane on the east leg of the intersection.



I-5/South Stage Interchange

This scenario includes alternatives that create a connection across I-5 and Bear Creek and add a new I-5 interchange between the South Medford and North Phoenix Interchanges. The following intersection projects were included under this scenario, beyond those assumed in the No-Build:

- **OR99/North Phoenix-Bolz Road:** Construct separated right- and left-turn lanes on the west leg of the intersection.¹
- **Juanipero Way/Golf View Drive:** Convert the intersection from two-way to all-way stop control.¹

- **North Phoenix Road/Future South Stage Road:** Convert the intersection to a roundabout or traffic signal.
- **Samike Drive-Devonshire Lane/South Stage Road:** Convert the intersection to a traffic signal.
- **Golf View Drive/Future South Stage Road:** Convert the intersection from two-way stop control to a roundabout.
- **OR99/South Stage Road:** Construct a separate right-turn lane on the east leg of the intersection.



¹ This intersection project has independent utility from the South Stage Road Extension and is needed to address 2045 No-Build safety and/or operations deficiencies.

Summary of the Overarching Scenario Development and Screening Process

The results of this overarching scenario screening, summarized in the table below, indicated that only the South Stage overpass/underpass and I-5/South Stage interchange scenarios could meet the project’s purpose and need. The analysis also found that a three-lane cross-section along South Stage Road with an overpass/underpass or a simple diamond interchange with signals at the ramp terminals would both be sufficient to accommodate projected future traffic.

	Scenario 1: Existing System Enhancement	Scenario 2: South Stage Overpass/ Underpass	Scenario 3: I-5/ South Stage Interchange
Provides pedestrian, bicycle, and transit access	●	●	●
Intersections meet 2045 mobility targets	●	●	●
Interchange ramps have sufficient room for waiting cars	●	●	●
Freeway meet 2045 mobility targets	●	●	●
Limits out-of-direction travel	●	●	●
Supports reasonable travel time	●	●	●
Provides emergency response access	●	●	●
Improves safety	●	●	●

● Does not meet the need ● Marginally moves in the direction of meeting the need ● Moves in the direction of meeting the need
● Meets the need ● Substantially meets the need



Image looking east toward North Phoenix Road along planned South Stage Road alignment

Key Travel Pattern Changes and Differences Between Overpass/Underpass and Interchange Scenarios

CHANGED YEAR 2045 TRAVEL PATTERNS UNDER EITHER SCENARIO

Future changes to land use and growth in SE Medford and NE Phoenix are likely to result in the following shifts in travel patterns:

- Reduces the need for residents east of I-5 to cross the freeway due to new commercial and industrial/office development along the North Phoenix Road corridor.
- Leverages the OR99 corridor and allows both the South Stage overpass/underpass and

I-5/South Stage interchange scenarios to meet mobility targets with an alternative standard at OR99/Garfield Street.

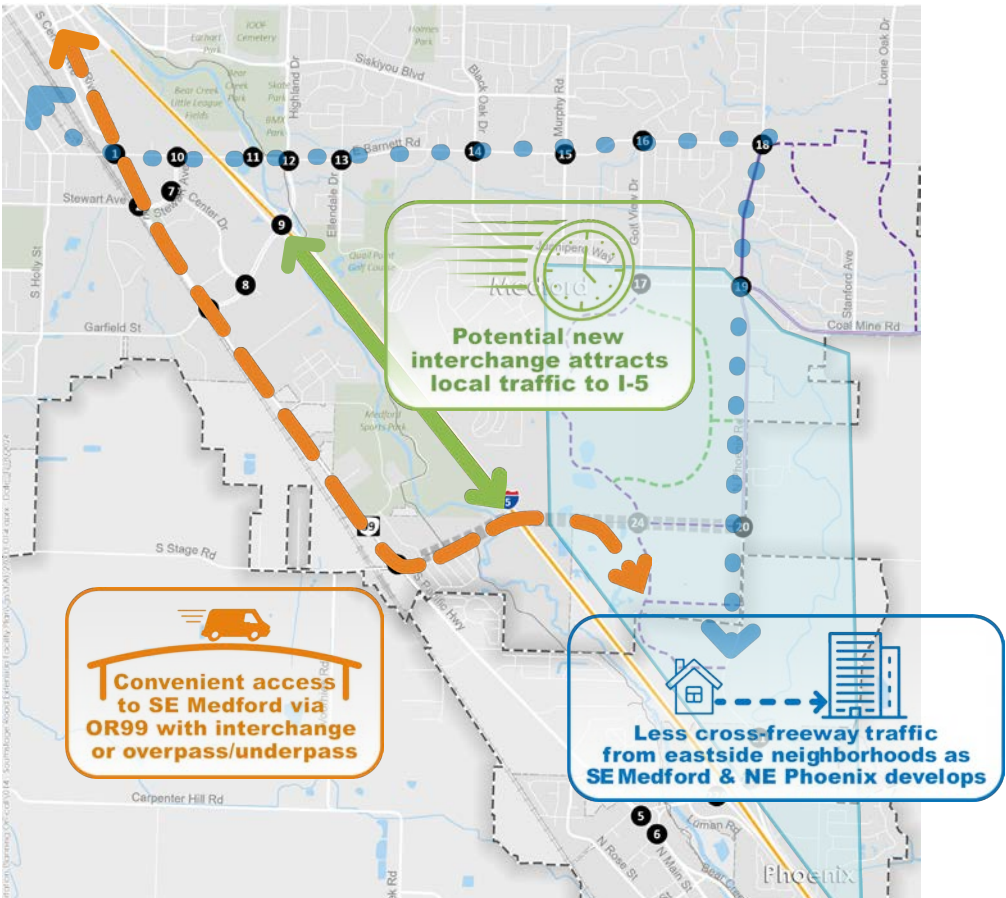
SOUTH STAGE OVERPASS/ UNDERPASS SCENARIO

- Reroutes Barnett Road traffic to/ from areas south of Juanipero Way to South Stage Road and OR99.
- Minimizes park impacts along Bear Creek and localized traffic on I-5.
- Provides feasible and prudent alternatives to meet the project purpose and need.

I-5/ SOUTH STAGE INTERCHANGE SCENARIO

- Provides direct regional access to the new commercial and industrial/office development along the North Phoenix Road corridor.
- Attracts local traffic to I-5 between the South Medford and North Phoenix Interchanges.
- Creates more park impacts along Bear Creek and requires interchange spacing deviation from FHWA and ODOT.

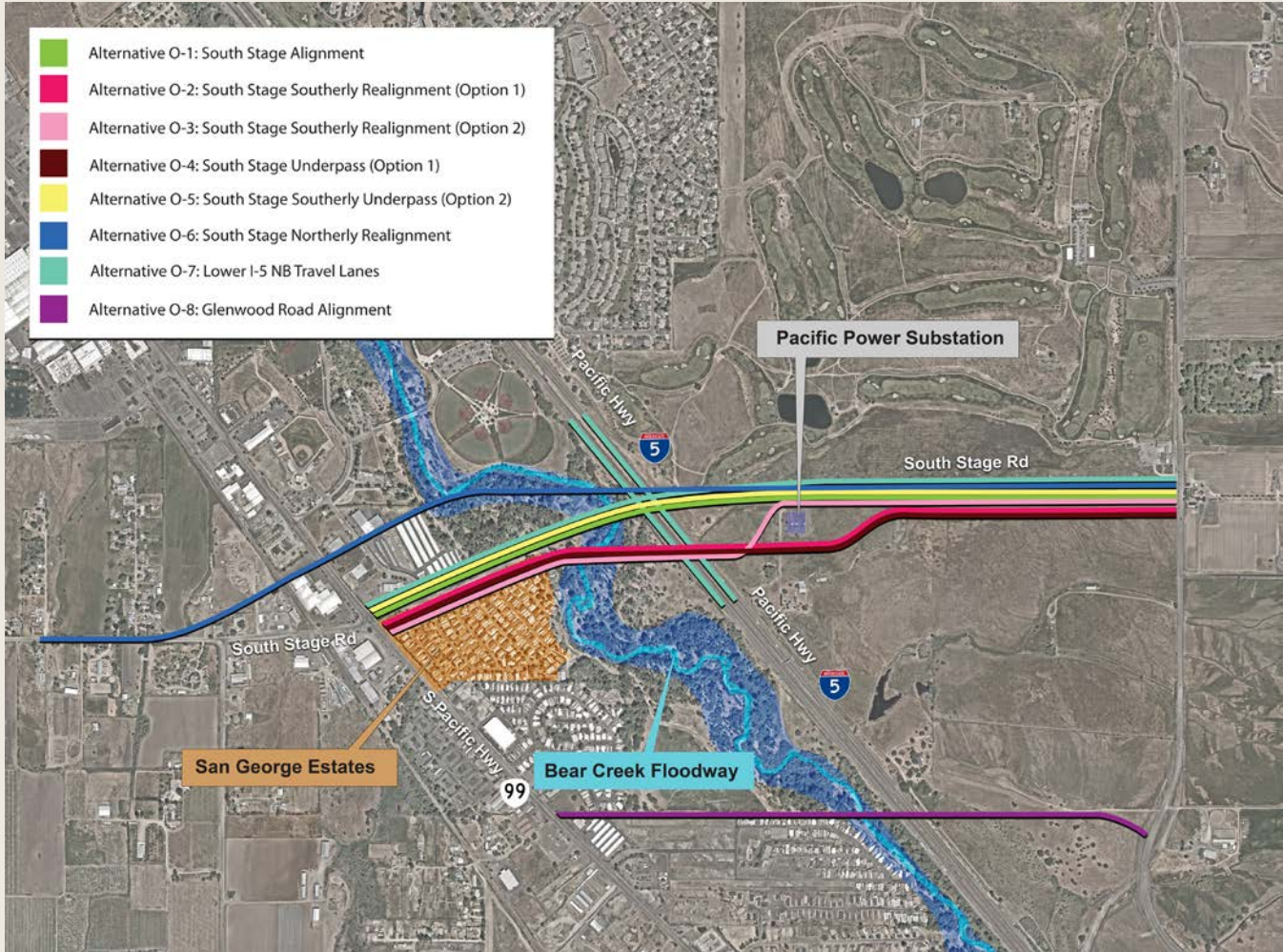
CIRCULATION CONSIDERATIONS



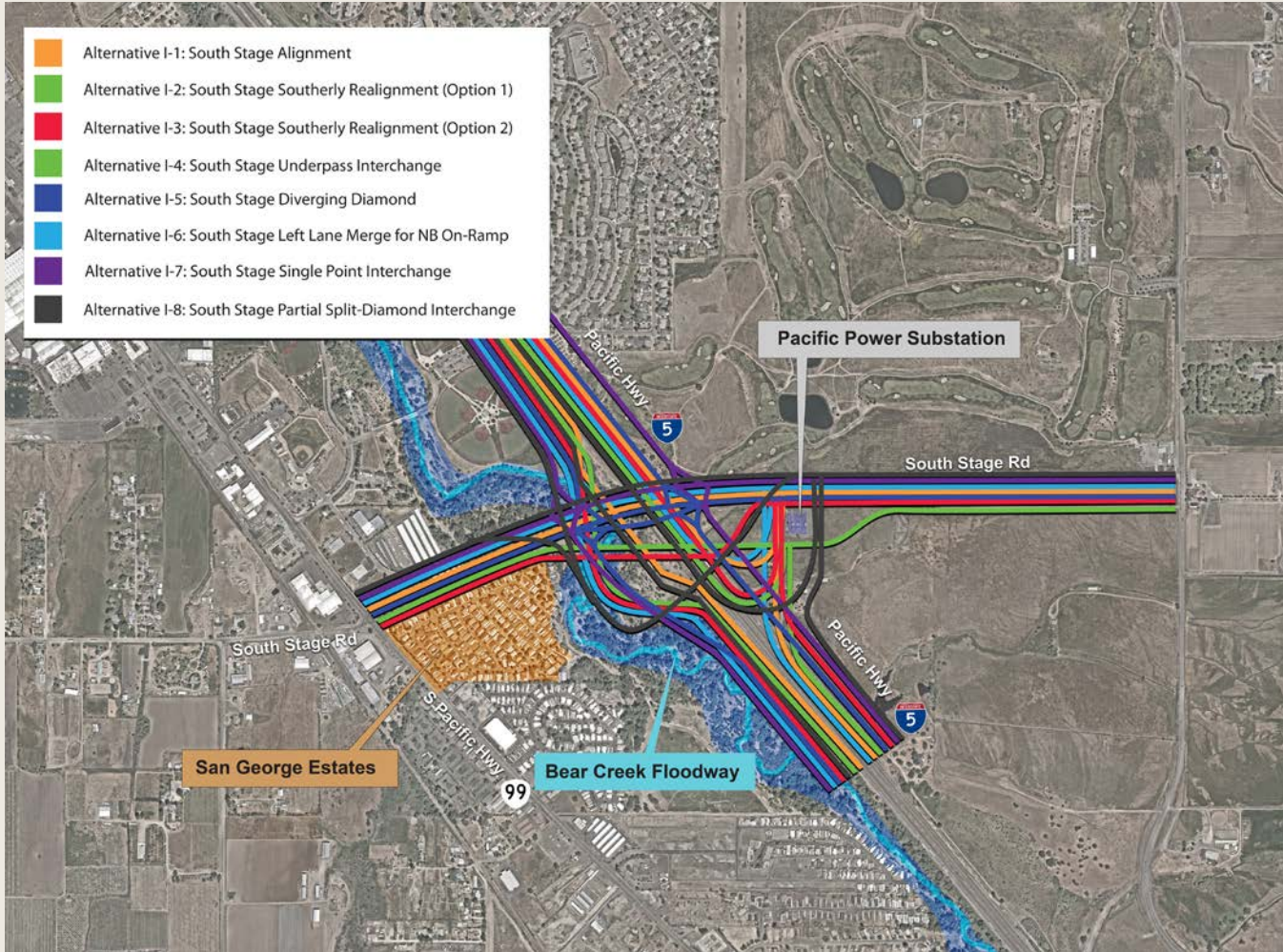
Alternatives Development and Screening

Alternative concept designs were solicited and developed by the PAC, PDT, PMT, public, and project team under the two feasible overarching solution scenarios: South Stage overpass/underpass and I-5/South Stage interchange. Each of these groups were provided context for the location of the Pacific Power Substation, the San George Estates, and the Bear Creek Floodway to help inform their concept designs. This resulted in the following eight overpass/underpass and eight interchange alternatives.

SOUTH STAGE OVERPASS/UNDERPASS ALTERNATIVES



I-5/SOUTH STAGE INTERCHANGE ALTERNATIVES



Technical Feasibility

All the initial alternatives’ conceptual horizontal and vertical alignments were reviewed based on the design criteria and usefulness of the alignment. The following alternative were found to be **Not Technically Feasible:**

- **Alt O-5:** South Stage southerly Underpass (Option 2)
- **Alt O-8:** Glenwood Road Alignment
- **Alt I-6:** I-5 South Stage Left Lane Merge for Northbound On-Ramp

Economic Feasibility

The remaining 13 alternatives were assessed for operational effectiveness; magnitude of construction cost; and right-of-way, existing building, and other infrastructure impacts. Based on this assessment the following alternatives were found to be **Not Economically Feasible:**

- **Alt O-6:** South Stage Northerly Realignment
- **Alt O-7:** Lower I-5 Northbound Travel Lanes
- **Alt I-5:** South Stage Diverging Diamond
- **Alt I-7:** I-5 South Stage Single Point Interchange
- **Alt I-8:** South Stage Partial Split-Diamond Interchange

Based on this feasibility assessment, the project team recommended eight alternatives to be advanced for further consideration, including in-depth transportation, environmental, and constructibility analyses. The Concept Analysis Appendix includes further background on this initial screening effort. The project team noted the following key considerations during the technical and economic feasibility assessments:

- **I-5/South Stage Interchange alternatives impact versus benefit:** Given the area that is needed to construct a new interchange, these alternatives have greater potential Park (4) f resource, wetland and water, floodplain, and total right-of-way acreage impacts compared to the overpass/underpass alternatives. These potential impacts and the associated process to seek an exception to the federal and ODOT requirements for interchange spacing on I-5 need to be weighed against the potential purpose and need benefits identified of the interchange versus the overpass/underpass alternatives.

One potential benefit of the interchange alternatives is that the South Medford Interchange is forecast to have sufficient storage capacity to meet 2045 queues without the planned ramp extension.
- **Overpass versus underpass alternative impacts and benefits:** A new undercrossing of I-5 can be constructed in a manner that allows a future interchange to be added and also helps to reduce the overall height of the roadways. The

impacts of an overpass versus an underpass need to be evaluated in relation to nearby underserved and overburdened populations and land uses, and the potential reductions in noise, visual, air quality, and other environmental impacts.

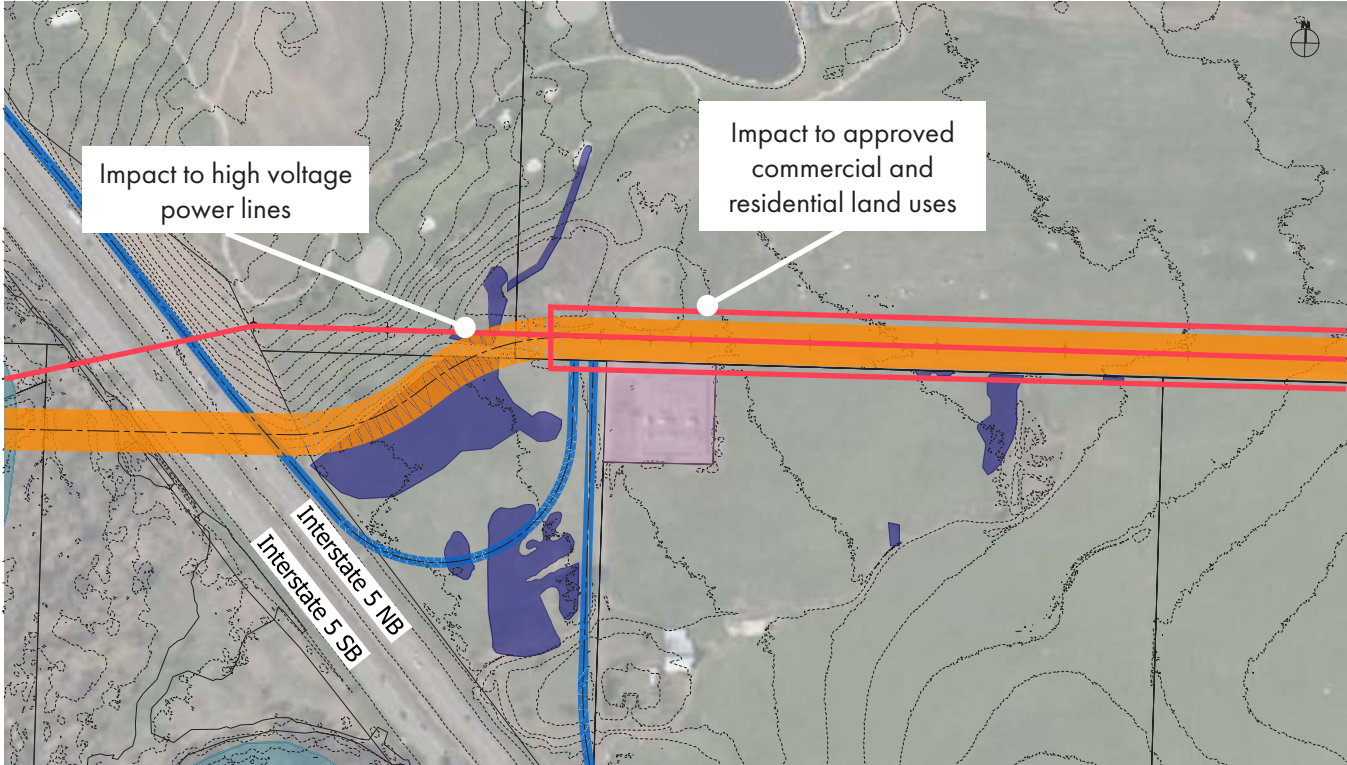
- **Future interchange compatibility of South Stage Overpass/Underpass alternatives:** Given the identified benefits of the interchange scenario according to the purpose and need performance measures and anticipated growth in the study area beyond year 2045 in the cities of Medford and Phoenix, the compatibility of the overpass/underpass alternatives to accommodate potential future interchange ramps has been identified as an important criterion.

In examining the remaining eight alternatives, the project team found that the general horizontal (location north to south) alignments of the South Stage Road alternatives were very similar west of I-5 and only differed in three fundamental ways:

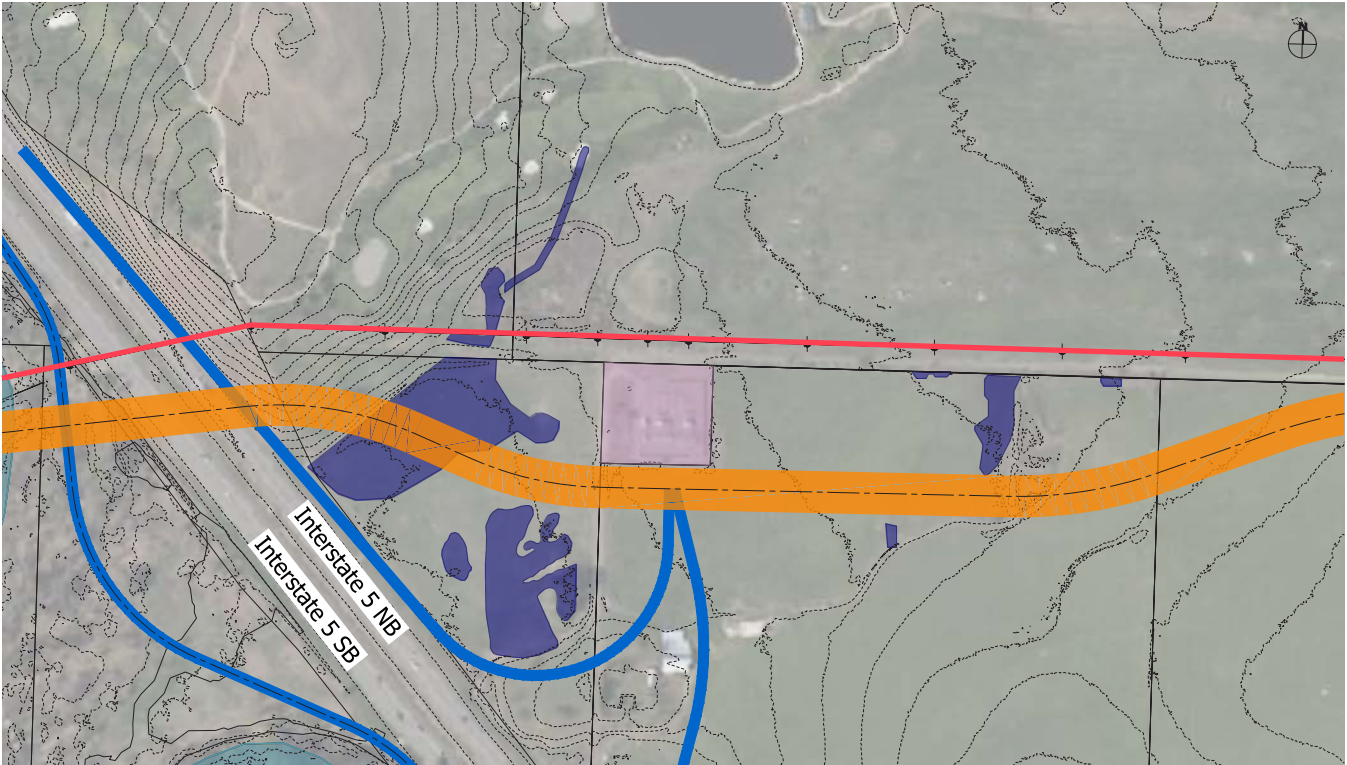
- Crossing below or above I-5
- Traversing northerly or southerly between I-5 and North Phoenix Road to avoid the existing substation
- Creating an interchange with I-5

The alternatives traversing north of the substation (O-1, O-3, I-1, I-3) were found to impact approved land uses (commercial and residential) and the existing power lines and had similar impacts to other resources.

NORTHERLY ALIGNMENTS (O-1, O-3, I-1, AND I-3)



SOUTHERLY ALIGNMENTS (O-2, O-4, I-2, AND I-4)



Based on land use and utility constraints, the project goals to enhance economic development and community input, the following alternatives were advanced for further consideration in this plan:

- **Alt O-2:** South Stage Southerly Realignment Overpass
- **Alt O-4:** South Stage Underpass
- **Alt I-2:** South Stage Southerly Realignment Overpass Interchange
- **Alt I-4:** South Stage Underpass Interchange

These four alternatives were further evaluated through the following analyses.

Transportation Analysis

The overpass/underpass alternatives are sufficient to meet the project’s purpose and need. The I-5/South Stage Interchange alternatives are not needed within the 2045 planning horizon given that other feasible and prudent alternatives with less impacts to 4(f) resource properties are available. However, the overpass/underpass alternatives should be able to accommodate an interchange to address potential needs beyond the year 2045 horizon.

Nine other system improvements, shown on the opposite page, are needed in the study area. Of these improvements, the following have independent utility and do not need to be developed in conjunction with the South Stage Extension project:

- OR99/Garfield Street
- Golf View Drive/Barnett Road
- OR99/North Phoenix-Bolz Road
- Juanipero Way/Golf View Drive
- I-5/South Medford Interchange

The following intersection projects are needed primarily to support the South Stage Extension Project:

- OR99/South Stage Road
- Samike Drive-Devonshire Lane/South Stage Road
- Golf View Drive/Future South Stage Road
- Future South Stage Road/North Phoenix Road.

Environmental Analysis

Given that all the remaining alternatives have similar South Stage horizontal alignments, the primary difference between them relates to the additional Section 4(f) park resources and wetland impacts attributed to the on- and off-ramps of the interchange alternatives. Per Section 4(f) of the U.S. Department of Transportation Act of 1966, if a Section 4(f) evaluation identifies a feasible and prudent alternative that completely avoids Section 4(f) properties, FHWA must select that alternative. If there is no feasible and prudent alternative that avoids Section 4(f) properties, then FHWA may only approve the alternative that causes the least overall harm to the Section 4(f) property.

Structural and Constructibility Analysis

The overpass (O-2) and the forward compatible interchange (I-2) appear feasible from a structural and constructibility perspective. The underpass (O-4) and the forward-compatible interchange (I-4) are likely to be feasible, but further study of the tall cut retaining walls (i.e., greater than 40 feet in height) and staging during the I-5 bridge construction would be needed in a future phase to confirm this finding.

Interchange Compatibility Analysis

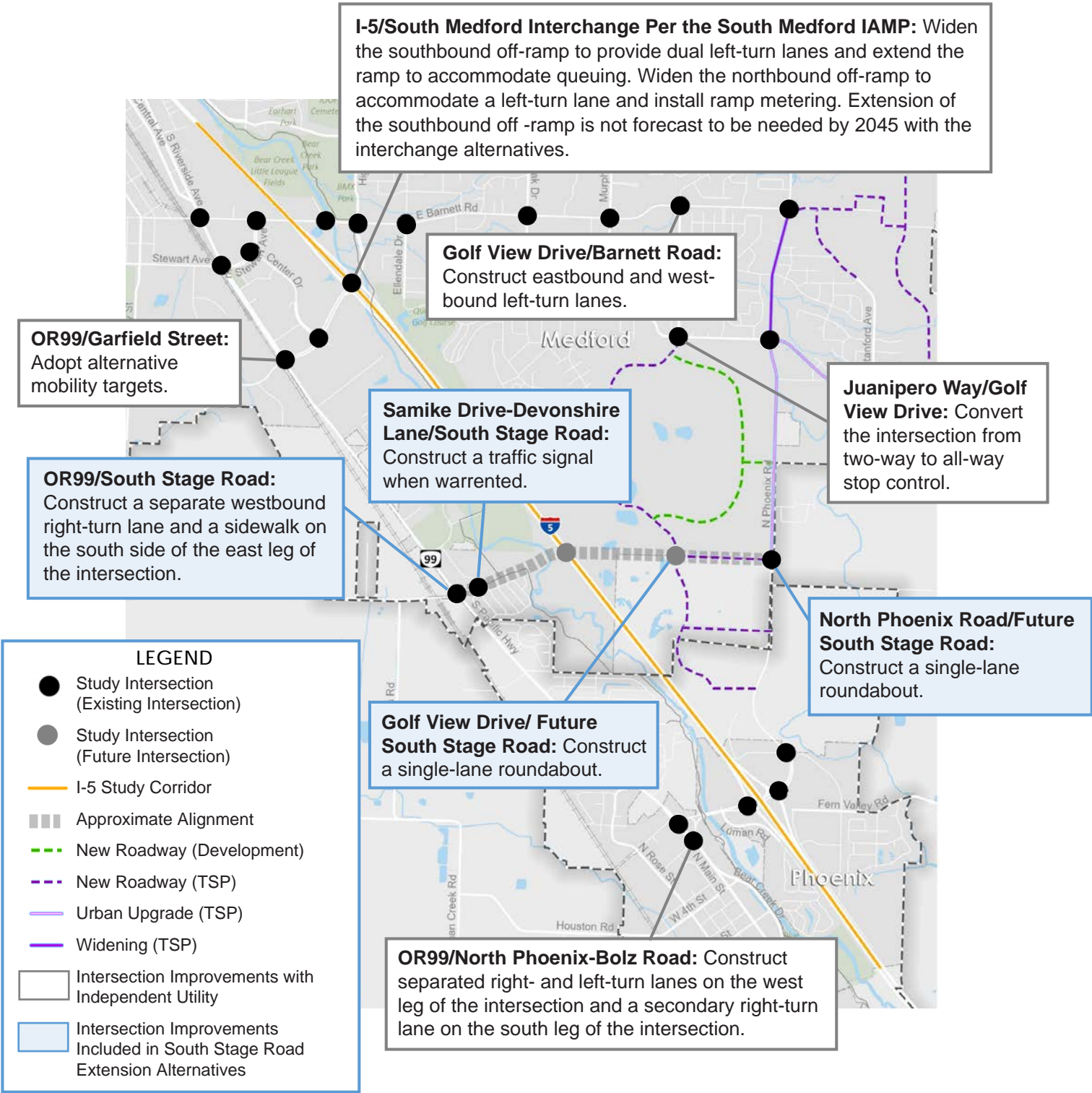
The traffic projections indicate compatible interchange alternatives (I-2 and I-4) would not be needed in 2045. At a future point, when the overpass/underpass alternatives are not feasible to support demand by themselves, the interchange alternatives may be developed.

Key Takeaways

Based on the information provided by these analyses; feedback provided by the PAC, PDT, and public; and discussions with the City, ODOT environmental staff, and FHWA, the four remaining alternatives are in the plan and should be considered further during the future environmental analysis and design phases of the project.

The Refined (Most Promising) Alternative Summary Appendix includes background on this refined screening effort.

SYSTEM IMPROVEMENTS





7. Recommended Alternatives

This section summarizes the four recommended alternatives for the South Stage Road Extension Plan: an overpass alternative and underpass alternative, each with compatible interchange alternatives.

The exhibits on the following pages illustrate the recommended South Stage Road Extension alternatives, which include the following four South Stage Road intersection improvements between OR99 and North Phoenix Road.

Intersection	Improvements and Cost Opinion
OR99/South Stage Road	Construct a separate westbound right-turn lane and a sidewalk on the south side of the east leg of the intersection Cost opinion: \$684,000
Samike Drive-Devonshire Lane/ South Stage Road	Construct a traffic signal when warranted Cost opinion: \$1,510,000
Golf View Drive/ Future South Stage Road	Construct a single-lane roundabout Cost opinion: \$5,038,000
North Phoenix Road/Future South Stage Road	Construct a single-lane roundabout Cost opinion: \$6,593,000

Additional intersection improvements that have independent utility from the South Stage Road Extension and are needed to address 2045 No-Build safety and/or operations deficiencies are documented on page 47.

Image of Recommended Overpass Alternative O-2 looking north along I-5
Source: Kittelson & Associates, Inc.

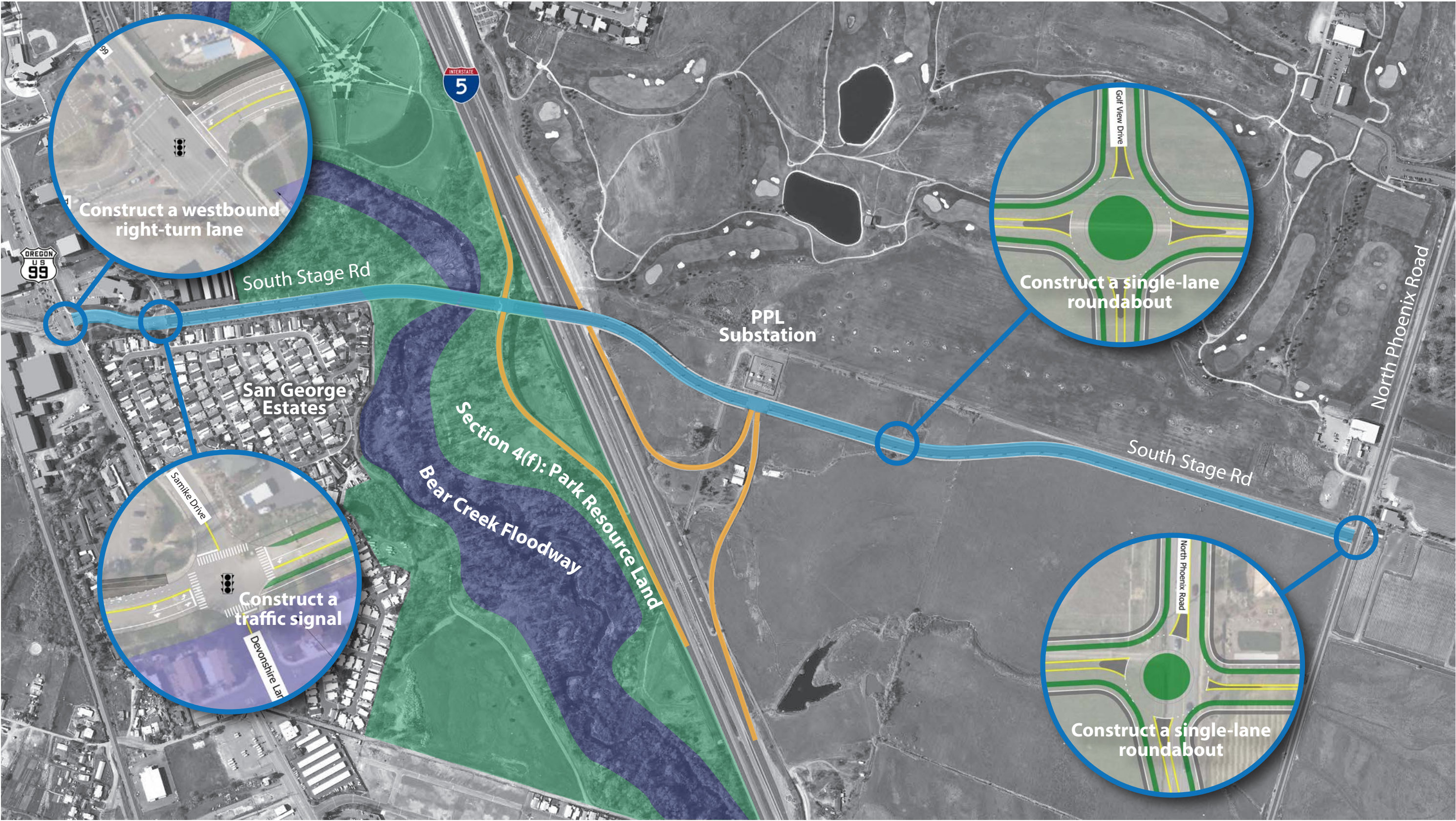
OVERPASS AND COMPATIBLE INTERCHANGE ALTERNATIVES



UNDERPASS AND COMPATIBLE INTERCHANGE ALTERNATIVES



SOUTH STAGE ROAD INTERSECTION IMPROVEMENTS



Cost Opinions and Additional Considerations

The following table summarizes cost opinions for the South Stage Road Extension Alternatives and related South Stage Road intersection improvements. A range of total cost opinions are provided for comparison.

RECOMMENDED ALTERNATIVE COST OPINIONS

	O-2	O-4	I-2	I-4
Description	South Stage Overpass	South Stage Underpass	South Stage Overpass Interchange	South Stage Underpass Interchange
Overpass/Underpass/Interchange Cost	\$148M	\$199M	\$189M	\$242M
South Stage Road Intersection Improvements ¹	\$14M	\$14M	\$14M	\$14M
Total Cost Opinion – Low	\$162M	\$213M	\$203M	\$256M
Total Cost Opinion – High (+30%)	\$211M	\$277M	\$264M	\$333M

¹ See intersection projects in the table on page 39.

Additional Considerations

As the alternatives are advanced through the environmental review and design process, the following should also be considered:

- Additional engineering for forward compatibility:**
As indicated in the Structure and Constructibility Analysis Appendix, additional engineering of the overpass/underpass alternatives is needed to ensure forward compatibility with the Interchange alternatives.
 - Underpass feasibility:**
As indicated in the Structure and Constructibility Analysis Appendix, additional engineering of the Underpass alternatives is needed to determine the feasibility of the retaining walls east of I-5 and the staging of construction for raising I-5 travel lanes in both directions.
- Horizontal alignment:** As indicated in the Environmental Screening Analysis Appendix, it is not possible at this concept level of planning to decide on the final horizontal alignment (north or south of the substation) of the ultimate overpass/underpass alternatives. As additional environmental and engineering are conducted, the alignment may need to shift to avoid or minimize environmental impacts.
 - I-5 widening:** Mainline, merge, and diverge locations in the vicinity of the South Medford Interchange should continue to be monitored for the potential need to widen I-5 to accommodate auxiliary lanes.
- Visual, air, and noise impacts:**
As indicated in the Refined Alternatives and Cost Opinions Appendix, potential future visual, air, and noise impacts with the overpass alternatives may necessitate further mitigation (e.g., sound walls) bringing the costs between the overpass and underpass alternatives more closely together in the future environmental phase.
 - Additional right-of-way needs:**
As indicated in the Transportation Analysis Screening Evaluation Appendix, right-of-way along South Stage Road between I-5 and North Phoenix Road should accommodate the potential need for 5-lanes in the future.

Intersection Improvements with Independent Utility

Beyond the recommended South Stage Road Extension, South Stage Road intersection improvements, and the motor vehicle system planned improvements documented on pages 22, 23, and 24, the plan identifies the following improvements that have independent utility from the South Stage Road Extension and are needed to address 2045 No-Build safety and/or operations deficiencies. These improvements should be incorporated into the City of Medford and City of Phoenix TSPs. As these projects have independent utility, they are not included in the overall cost opinions for the South Stage Road Extension.

Intersection	Project Description
OR99/Garfield Street CITY OF MEDFORD/ODOT	Adopt alternative mobility targets. A lower alternative mobility target is needed with the interchange alternatives.
OR99/North Phoenix-Bolz Road CITY OF PHOENIX	Construct separated right- and left-turn lanes on the west leg of the intersection and a secondary right-turn lane on the south leg of the intersection. The secondary northbound right-turn lane on the south leg of the intersection is not forecast to be needed by 2045 with the interchange alternatives.
Juanipero Way/Golf View Drive CITY OF MEDFORD	Convert the intersection from two-way to all-way stop control.
Golf View Drive/Barnett Road CITY OF MEDFORD	Construct separate eastbound and westbound left-turn lanes.
I-5/South Medford Interchange ODOT	Widen the southbound off-ramp to provide dual left-turn lanes and extend the ramp to accommodate queuing. Widen the northbound off-ramp to accommodate a left-turn lane and install ramp metering. Extension of the southbound off-ramp is not forecast to be needed by 2045 with the interchange alternatives.



I-5 Phoenix interchange southbound off-ramp. Source: Kittelson & Associates, Inc.



ODOT Southern Oregon Americans with Disabilities Act (ADA) Projects. Source: ODOT

8. Implementation

This section outlines the necessary steps for implementing the South Stage Road Extension plan and defines the roles that the City of Medford, ODOT, and FHWA will likely play in this process. This section also establishes responsibilities for ownership, funding, and maintenance.

The plan recommends an Overpass (O-2), Underpass (O-4), Overpass Interchange (I-2) and Underpass Interchange (I-4) alternative for consideration during the future environmental analysis and design phases of the project. These recommended alternatives are in the early stages of development, and they will set the framework for preliminary design, environmental review, design, and construction efforts.

Once this plan has been adopted into the City's TSP—and eventually into the Oregon Highway Plan—the City of Medford and ODOT will seek funding to conduct further formal environmental review with FHWA, design, and then ultimately construct the South Stage Road Extension project.

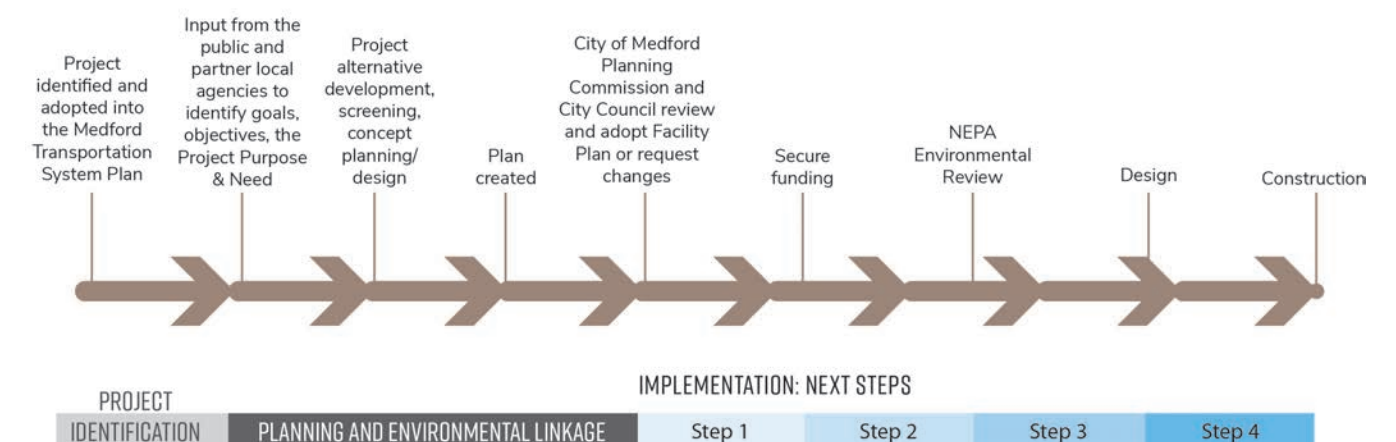
Implementation is a collaborative effort, and the City will continue to seek community input and partner feedback so that implementation efforts respect the area's cultural and historic significance.

The implementation plan for the South Stage Road Extension has four main steps:

1. Adopt plan
2. Secure funding
3. NEPA environmental review
4. Design and construction

PROJECT DEVELOPMENT PROCESS

What happens before a project gets built?



Permit applications may require additional design information, so portions Steps 3 and 4 may occur concurrently.

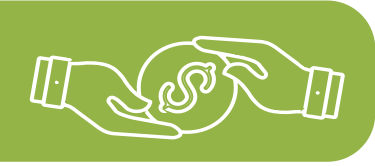
Next Steps



Step 1: Adopt Plan

The City of Medford Planning Commission and City Council will hold public hearings to adopt the plan into the City’s TSP. Adopting the plan will:

- Confirm that the recommended overpass/underpass and compatible interchange alternatives for the South Stage Road Extension project and other transportation system improvements are needed to address existing needs and accommodate regional growth;
- Allow the ability to preserve the right-of-way needed to construct proposed future improvements; and
- Demonstrate public support to seek funding for environmental review, design, and construction.



Step 2: Secure Funding

The City of Medford and ODOT will seek funding for the environmental review, design, and construction of the recommended South Stage Road Extension project. Estimated costs for these processes, in 2024 dollars, are \$162 million to \$333 million. The table below summarizes the potential funding opportunities by level and intended use.

FUNDING OPPORTUNITIES

Source	Level	Intended Use
RAISE	Federal	Projects that achieve national objectives and have significant local and regional impact
Mega	Federal	Large, complex projects with national or regional safety, economic, or mobility benefits
INFRA	Federal	Projects of national and regional significance that improve safety, efficiency, and reliability of the movement of freight and people
NHPP	Federal	Projects that improve conditions along National Highway System routes
STBG	Federal	Projects that preserve and improve surface transportation investments
PROTECT	Federal	Projects that make highways, transit, and ports more resilient to natural disasters
ATIIP	Federal	Projects that provide safe and connected active transportation facilities
Enhance	State	Projects that make operational enhancements to state highways
SDC	Other	System development charges through private development



Step 3: NEPA Environmental Review

Once project funding has been secured, the City and ODOT will complete the following environmental review steps:

1. Review and update traffic analysis to determine if traffic forecasts justify the interchange alternatives.
2. Determine the appropriate NEPA class of action with FHWA.
3. Initiate environmental review under NEPA; coordinate with agencies, tribes, and the public; support FHWA review and decision on a selected alternative. Selection of an interchange alternative would require an Interchange Justification Report (IJR), an Interchange Area Management Plan (IAMP), and FHWA approval for new interstate access.
4. Obtain all federal and state permits and land use approvals from the City of Medford.



Step 4: Design and Construction

The City and ODOT will develop the South Stage Road Extension as part of the City’s Capital Improvement Program or Statewide Transportation Improvement Program (STIP), and they will prepare plans, specifications, and cost estimates for competitive construction bids. Once the City and ODOT determine the contracting mechanism—whether a traditional design, bid, and build or an alternative delivery method—the project will be advertised for construction bidding and be built.

FACILITY OWNERSHIP, OPERATIONS, AND MAINTENANCE

Based on historical practices, agency capabilities and resources, and federal requirements, the City and ODOT will likely share ownership, operations, and maintenance of South Stage Road.

The City will likely be responsible for the segments of South Stage Road located outside the ODOT right-of-way and beyond the identified interchange terminal locations. ODOT will likely be responsible for the segment of South Stage Road between the identified interchange terminal locations and on structures.

As the project progresses, the City and ODOT will form an intergovernmental agreement or other legal mechanism to share in the segment’s long-term operations and maintenance costs.



ABOVE: Phoenix Road. BELOW: existing terminus of South Stage Road at San George Estates. Source: Kittelson & Associates, Inc.



9. Supporting Documents

The following documents provide supporting information for the findings in this plan. The information in this plan supersedes any information in these supporting documents.

Appendix	Tech Memo	Description	Reference TM Number
A	PEL Framework	Identifies a framework for implementing a PEL study process for the South Stage Road Extension Plan. It identifies the purpose and need, PEL planning information, decisions, and analyses that will be adopted during the PEL study process and incorporated into the future NEPA process, and it demonstrates how it will be used or incorporated in the NEPA process.	TM 2.1.1
B	Purpose and Need	Identifies the purpose and need statement for the project and includes supporting documentation summarized from other memos.	TM 2.1.2
C	Goals, Objectives, and Evaluation Criteria	Outlines the goals, objectives, evaluation criteria, and performance measures that informed the planning process, including the evaluation and selection of preferred alternatives. The evaluation criteria reflect the purpose and need statement as well as the goals and objectives from the 2018 Medford TSP that are relevant to the planning process.	TM 2.1.3
D	Alternatives Report	Provides an overview of the alternatives screening process and a summary overview of the technical reports developed during the alternative development, analysis, and refinement process.	TM 2.1.5
E		Row left blank.	
F	Plans and Policies Review	Provides a review of existing plans and policies that affect transportation planning in the study area. The review explains the relationship between the documents and the ongoing planning process, identifying key issues that will factor into the development and evaluation of alternatives. A summary of the documents and their application is provided along with detailed descriptions later in the memorandum.	TM 3.1.1

Appendix	Tech Memo	Description	Reference TM Number
G	Environmental Setting Report	Summarizes the existing environmental resources that could be affected by potential overpass/underpass and/or interchange alternatives, and potential auxiliary lanes/noise walls along I-5 between the South Medford and North Phoenix Interchanges. The most recent publicly available information, databases, aerial images, and maps were reviewed to document existing conditions that may have a bearing on possible impacts, mitigation measures, and recommended alternatives.	TM 3.1.2
H	Methodology and Assumptions	Documents the transportation methodology and key assumptions to be used in generating the existing conditions, future conditions, and alternatives analyses. The methodology and assumptions included in this memorandum are based on guidance provided in the <i>ODOT Analysis Procedures Manual</i> as well as the <i>Oregon Highway Plan</i> , <i>Highway Design Manual</i> , and other guiding documents.	TM 3.1.3
I	Structural and Constructibility Methodology and Assumptions	Outlines the design standards, roadway design assumptions, structural assumptions for the bridge and retaining walls, and overall constructibility assumptions to be used in developing and evaluating concepts. Due to the nature of this project, the information and analyses are preliminary, concept, planning-level information that will require additional engineering analysis and confirmation through more detailed data collection and design prior to implementation.	TM 3.1.4
J	Existing Conditions Summary	Summarizes existing transportation system conditions in the study area. It provides an assessment of the motor vehicle system, including intersection operations; queuing at interchange ramps; and freeway mainline, merge, and diverge operations. It also provides an assessment of the public transportation, pedestrian, bicycle, and other transportation systems.	TM 4.1.1.3
K	Future Year Traffic Analysis Summary	Overviews the future year 2045 No-Build traffic conditions in the study area. It includes many of the same analyses as the Existing Conditions Summary analysis, while accounting for planned transportation improvements in the study area. It also assumes South Stage Road maintains its existing terminus just east of OR99, along with an additional section of South Stage Road between the future extension of Golf View Drive and North Phoenix Road.	TM 4.1.2

Appendix	Tech Memo	Description	Reference TM Number
L	Sensitivity Analysis	Supplements the future year 2045 analysis of traffic conditions by assessing conditions with increased job growth in the South Medford and North Phoenix Expansion areas.	TM C5.3C
M	Land Use	Reviews the existing and planned land uses within the study area. Existing and planned land uses were determined by a review of the <i>Medford General Land Use Plan and Zoning Map</i> , the <i>Phoenix Community and Economic Development Land Use Districts and Comprehensive Plan</i> designations maps, and the Jackson County zoning map.	TM 4.4
N	Range of Alternatives	Presents the range of alternatives developed to address the purpose and need and goals and objectives for the South Stage Extension Plan. The range of alternatives were developed based on input from the PMT, PDT, PAC, and community.	TM 5.1.1
O	Concept Analysis	Documents the high-level technical and economic feasibility assessment and preliminary environmental screening of the 16 initial alternatives. From this assessment, eight alternatives were deemed not to be technically or environmentally feasible.	TM 5.1.3
P	Transportation Analysis Screening Evaluation	Summarizes the transportation system performance under potential Year 2045 Build overarching solution scenarios in the study area. This analysis assesses if the three scenarios meet the purpose and need statement for the project and compares their performance against the Year 2045 No-Build scenario.	TM 5.1.3.1
Q	Environmental Screening Evaluation	Provides an initial environmental analysis of the concept-level alternatives to identify potential environmental constraints (i.e., environmental factors that prevent the alternatives from being permitted or otherwise selected and thereby infeasible or unreasonable). This analysis identifies resources that may present fatal flaws of technically and economically feasible conceptual alternatives.	TM 5.1.3.2
R	Land Use Screening Evaluation	Identifies potential property, existing structure, park, wetland, and floodway impacts; reductions in buildable land; and changes to zoning or comprehensive planning potentially required for each alternative.	TM 5.1.3.3

Appendix	Tech Memo	Description	Reference TM Number
S	Refined Alternatives and Cost Opinions	Identifies refinement modifications to the four remaining alternatives (two overpass/underpass and two interchange) that were advanced beyond the environmental screening analysis and ultimately identified as the recommended alternatives. This memorandum also provides further evaluation of the technical and economic feasibility of the alternatives and provides construction cost opinions.	TM 5.2.1
T	Refined (Most Promising) Alternative Summary	Summarizes the most promising alternatives developed to address the purpose and need and the goals and objectives and presents the preliminary recommended alternatives for the subsequent future environmental and design phase of the project.	TM 5.2.2
U	Transportation Analysis	Identifies the transportation system performance under 2045 traffic conditions with development of the overpass/underpass and interchange alternatives. This memorandum also identifies other transportation system improvements needed to support the overpass/underpass and interchange alternatives as well as pedestrian and bicycle-related improvements.	TM 5.2.2.1
V	Environmental Screening Analysis	Identifies the environmental impacts of the eight remaining alternatives (four overpass/underpass and four interchange). This memorandum shows that of the eight remaining alternatives, those that traverse north of the Pacific Power substation (O-1, O-3, I-1, and I-3) have more impacts on existing infrastructure and adjacent land uses than those that traverse to the south.	TM 5.2.2.2
W	Structural and Constructibility Analysis	Highlights considerations for the construction of the four preliminary recommended alternatives (two overpass/underpass and two interchange).	TM 5.2.2.3
X	Preliminary Recommended Alternatives	Summarizes the recommended alternatives; conceptual construction staging needs; estimated environmental, design, and construction cost opinions; and anticipated operations and maintenance costs. The memorandum also provides conceptual 10 percent horizontal and vertical plans for the recommended alternatives.	TM 6.1.1
Y	Implementation Plan	Outlines next steps toward implementing the South Stage Road Extension project. This document defines the anticipated roles of the City of Medford, ODOT, and FHWA representatives who will likely participate in this process and the ultimate ownership, funding, and describes maintenance responsibilities of those agencies	TM 6.1.2

Appendix	Tech Memo	Description	Reference TM Number
Z	Public Involvement and Communications Plan	Documents the purpose, goals, and level of engagement for public involvement and outreach for the South Stage Extension Plan. Identifies key interested parties for the plan and overviews public involvement and outreach tasks.	TM 7.1
AA	Project Public Involvement Summary Report	Summarizes the public involvement and outreach activities. This includes how and how many people were engaged or informed, themes of feedback received, and how that feedback was considered when developing the South Stage Extension Plan.	TM 7.4



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