I-5 Rogue Valley Corridor Plan

Technical Memorandum #2:
Data Collection Review of Existing Plans

Prepared by:

DAVID EVANS AND ASSOCIATES INC.

Prepared for:

Oregon Department of Transportation

I-5 Rogue Valley Corridor Plan

Technical Memorandum #2:
Data Collection and Review of Existing Plans

Prepared for

Oregon Department of Transportation, Region 3
3500 NW Stewart Parkway
Roseburg, Oregon 97470

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon

August 2009

List of Acronyms

AQMA	Air Quality Maintenance Area	OHP	Oregon Highway Plan
ATR	Automatic Traffic Recorders	ONHIC	Oregon Natural Heritage Information Center
Caltrans	California Department of Transportation	OR 99	Oregon Highway 99
CCTV	Closed-Circuit Television	ORS	Oregon Revised Statute
CO	Carbon Monoxide	OTC	Oregon Transportation Commission
COATS	California-Oregon Advanced Transportation Systems	OTP	Oregon Transportation Plan
CORP	Central Oregon & Pacific Railroad	PM	Particulate Matter
DEIS	Draft Environmental Impact Statement	PRC	Planning Research Corporation
DEQ	Department of Environmental Quality	RPS	Regional Problem Solving
DHV	Design Hour Volume	RTP	Regional Transportation Plan
DMS	Dynamic Message Sign	RVITS	Rogue Valley ITS
DMU	Diesel Multiple Unit	RVMPO	Rogue Valley Metropolitan Planning Organization
EA	Environmental Assessment	RWIS	Roadway Weather Information System
EIS	Environmental Impact Statement	SIP	Safety Investment Program
EPA	Environmental Protection Agency	SOV	Single-Occupancy Vehicle
ESA	Endangered Species Act	SP	Southern Pacific Railroad
FEMA	Federal Emergency Management Agency	SPIS	Safety Priority Index System
FRA	Federal Railroad Administration	SPUI	Single Point Urban Interchange
FTA	Federal Transportation Administration	T & E	Threatened and Endangered
HAR	Highway Advisory Radio	TDM	Transportation Demand Management
HCM	Highway Capacity Manual	TOC	Traffic Operations Center
HCS	Highway Capacity Software	TPR	Transportation Planning Rule
HDM	Highway Design Manual	TSM	Transportation System Management
HV	Heavy Vehicle	TSM	Transportation System Management
I-5	Interstate 5	TSP	Transportation System Plan
IAMP	Interchange Area Management Plan	UGB	Urban Growth Boundary
ITS	Intelligent Transportation Systems	UP	Union Pacific Railroad
LCV	Longer Combination Vehicle	USC	United States Code
LOS	Level of Service	USFWS	U.S. Fish and Wildlife Service
MP	Mile Point	v/c	volume-to-capacity
MTIP	Metropolitan Transportation Improvement Plan	VMS	Variable Message Signs
NAAQS	National Ambient Air Quality Standards	VMT	Vehicle Miles Traveled
NHS	National Highway System	vpd	Vehicles Per Day
NOAA	National Oceanic and Atmospheric Administration	vph	Vehicles Per Hour
OAR	Oregon Administrative Rule	WCTU	White City Terminal & Utility
ODFW	Oregon Department of Fish and Wildlife	WIM	Weigh-in-Motion
ODOT	Oregon Department of Transportation	WTI	Western Transportation Institute

This page intentionally left blank

Table of Contents

1. INTRODUCTION 1

2. EXISTING PLANS 3

State Plans and Reports 3
Regional Plans 8
Regional Intelligent Transportation System (ITS) Plans and Projects 11
Commuter Rail Studies 13
Transportation System Plans 16
Interchange Area Management Plans (IAMPs) and Environmental Technical Reports 23

3. ENVIRONMENTAL RECONNAISSANCE 29

Goal 5 Resources 29
FEMA Floodplain/Floodway 36
Wetlands 36
Historic and Archaeological Resources 37
I-5 Right-of-Way 38
Air Quality 38
Noise Quality 40
Visual Resources 41
Socioeconomic and Environmental Justice 41
Threatened and Endangered Species 48
Hazardous Materials 53

4. LAND USE RECONNAISSANCE (SUMMARY OF BUILT ENVIRONMENT) 55

5. SUMMARY OF EXISTING FACILITIES 67

Interchanges 67
Weigh Stations 69
Rest Area 69
Roadway Inventory 69
Bicycle and Pedestrian Facilities 69
Emergency Vehicle Turnouts 70
Siskiyou Pass Closure Impacts 75
Longer Combination Vehicles (LCV) 75

6. EXISTING TRAFFIC OPERATIONS 71

Existing Condition Traffic Analysis 71
Freeway Operations 72
Traffic Performance Thresholds 74
Freeway Operational Findings 74

7. CRASH HISTORY 77

Analysis Procedure 77
Crash Reports 77
Corridor Crash Findings 78

8. RAIL SERVICE 83

Central Oregon and Pacific Railroad (CORP) 83
White City Terminal & Utility Company (WCTU) 83

9. INTELLIGENT TRANSPORTATION SYSTEM PROGRAMS AND OPERATIONS 85

Existing ITS Programs 85
ITS Deployment Plan 88
Incident Management in the Freeway Corridor 88

List of Tables

Table 3-1. Ambient Air Quality Standards and Data Summaries for the Rogue Valley Region 40

Table 3-2. Components of Population Change 2000 to 2008 for Medford MSA and Oregon 42

Table 3-3. Population by Age Groups for Medford MSA and Oregon 42

Table 3-4. Non-Farm Payroll Employment in Medford MSA, 2001-2008 44

Table 3-5. ONHIC-Identified Listed Threatened or Endangered Species within I-5/OR-99 Rogue Valley Corridor Area 52

Table 3-6. Summary of State Listed Hazardous Waste Sites 54

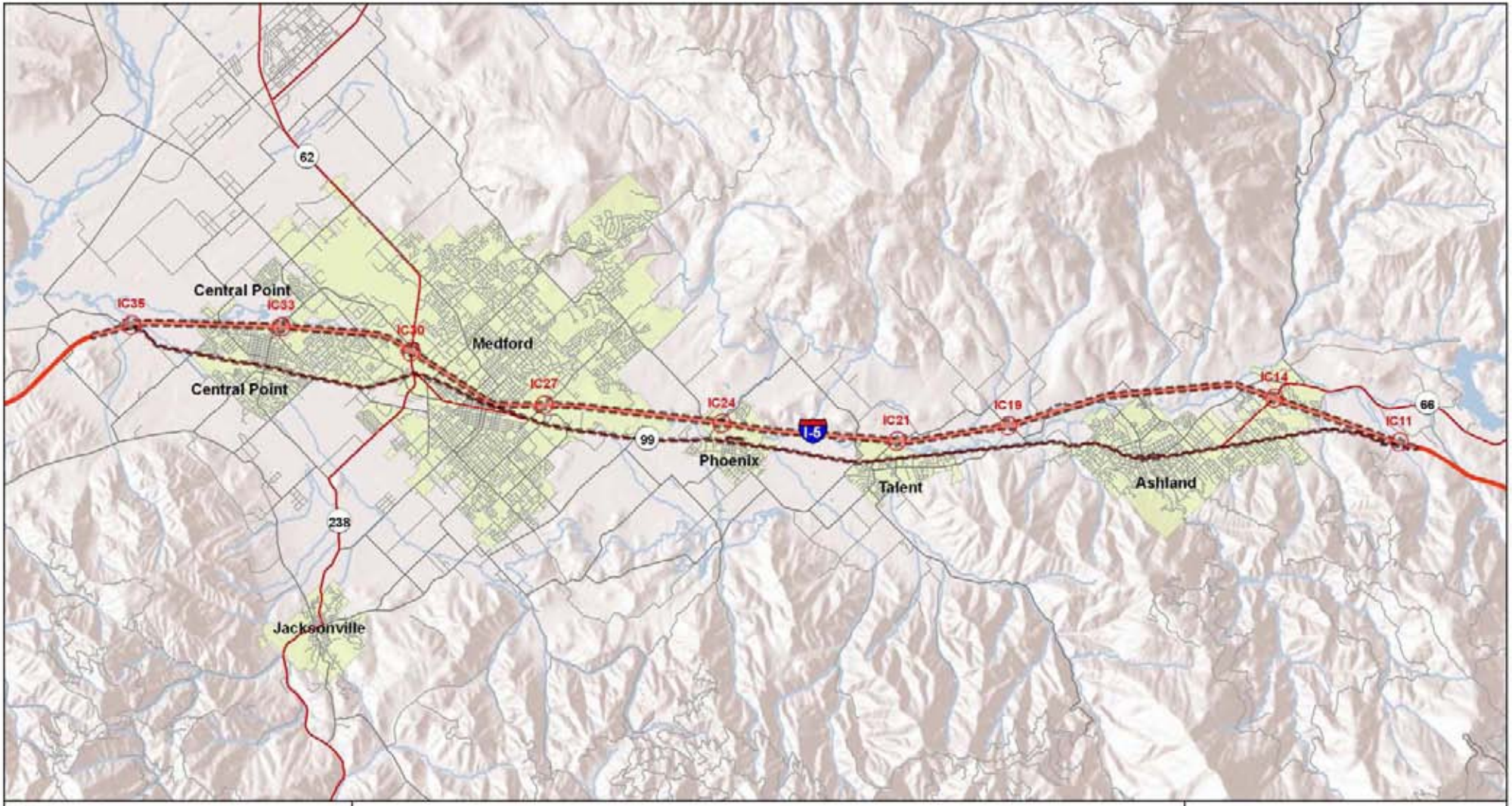
Table 6-1. Level of Service Criteria for Freeway Segments 72

List of Figures

Figure 1-1. Project Vicinity 2
Figure 3-1. Critical Habitats, Floodplains, and Wetlands 30
Figure 3-2. Cultural Resources and Nation al Historic Sites and Districts 33
Figure 3-3. Ethnic Diversity Index 45
Figure 3-4. Percent of Population in Poverty by Census Block Group 49
Figure 4-1. County and City Zoning 56
Figure 6-1. PM Peak ADT 73
Figure 7-1. Vehicle Crashes by Type 80
Figure 9-1 Intelligent Transportation Systems 86
Figure 9-2. Emergency Detour Routes for I-5 90

1. INTRODUCTION

This technical memorandum is the second in a series of memorandums that will be prepared for the *I-5 Rogue Valley Corridor Plan* (Corridor Plan). As discussed in Technical Memorandum #1, the Corridor Plan was initiated by the Oregon Department of Transportation (ODOT) to assess existing and future transportation conditions along the Interstate 5 (I-5) and Oregon Highway 99 (OR-99) corridors from Interchange 11 south of Ashland to Interchange 35 north of Central Point, as displayed in **Figure 1-1**. This Technical Memorandum #2 documents existing plans and policies, identifies environmental and land use constraints, assesses existing traffic operations and crash history, discusses rail service, and inventories the existing Intelligent Transportation Systems (ITS) infrastructure along the Corridor Plan area. For analysis purposes, the corridor plan area is defined as 200 feet beyond both sides of the I-5 right-of-way boundary and 100 feet beyond both sides of the OR-99 right-of-way boundary between interchanges 11 and 35.



2 1 0 2 Miles

Source Data: Jackson County, ESRI, Oregon GEO

Legend

Planning Area

Interchange

I-5: Rogue Valley Corridor Study

Figure 1-1

Vicinity Map

June 2009

2. EXISTING PLANS

The review of existing plans and policies included state documents, regional documents, ITS plans, commuter rail studies, transportation system plans, interchange area management plans, and environmental studies and reports.

State Plans and Reports

Six state plans and reports were reviewed.

Oregon Transportation Plan (2006)

The Oregon Transportation Plan (OTP) is the state's long-range multimodal transportation plan. The OTP is the overarching policy document among a series of plans that together form the state transportation system plan (TSP). The OTP considers all modes of Oregon's transportation system as a single system and addresses the future needs of Oregon's airports, bicycle and pedestrian facilities, highways and roadways, pipelines, ports and waterway facilities, public transportation, and railroads. The current OTP assesses state, regional, and local public and private transportation facilities through 2030. The OTP establishes goals, policies, strategies, and initiatives that address the core challenges and opportunities facing Oregon. It also provides the framework for prioritizing transportation improvements based on varied future revenue conditions.

This OTP supersedes the 1992 OTP, which established a vision of a balanced, multimodal transportation system and called for an expansion of ODOT's role in funding non-highway investments. The current OTP furthers these policy objectives with emphasis on maintaining the assets in place, optimizing the existing system performance, creating sustainable funding, and investing in strategic capacity enhancements. Development of corridor studies is integral to maintaining assets and optimizing system performance.

The Corridor Plan must be consistent with the applicable OTP goals and policies, and, therefore, findings of compatibility will be part of the basis for adoption of the Corridor Plan. The most pertinent OTP goals and policies for corridor planning are as follows:

Goal 1 – Mobility and Accessibility

<u>Policy 1.1 – Development of an Integrated Multimodal System</u>: It is the policy of the State of Oregon to plan and develop a balanced, integrated transportation system with modal choices for the movement of people and goods.

<u>Policy 1.3 – Relationship of Interurban and Urban Mobility</u>: It is the policy of the State of Oregon to provide intercity mobility through and near urban areas in a manner that minimizes adverse effects on urban land use and travel patterns and provides for efficient long distance travel.

Goal 2 – Management of the System

Policy 2.1 - Capacity and Operational Efficiency: It is the policy of the State of Oregon to manage the transportation system to improve its capacity and operational efficiency for the long-term benefit of people and goods movement.

Policy 2.2 - Management of Assets: It is the policy of the State of Oregon to manage transportation assets to extend their life and reduce maintenance costs.

Goal 3 – Economic Vitality

Policy 3.1 – An Integrated and Efficient Freight System: It is the policy of the State of Oregon to promote an integrated, efficient, and reliable freight system involving air, barges, pipelines, rail, ships, and trucks to provide Oregon a competitive advantage by moving goods faster and more reliably to regional, national, and international markets.

Policy 3.2 – Moving People to Support Economic Vitality: It is the policy of the State of Oregon to develop an integrated system of transportation facilities, services, and information so that intrastate, interstate, and international travelers can travel easily for business and recreation.

Goal 4 – Sustainability

Policy 4.1 – Environmentally Responsible Transportation System: It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources.

Policy 4.3 – Creating Communities: It is the policy of the State of Oregon to increase access to goods and services and promote health by encouraging the development of compact communities and neighborhoods that integrate residential, commercial, and employment land uses to help make shorter trips, transit, walking, and bicycling feasible, and that integrate features that support the use of transportation choices.

Goal 5 – Safety and Security

Policy 5.1 – Safety and Security: It is the policy of the State of Oregon to continually improve the safety and security of all modes and transportation facilities for system users including operators, passengers, pedestrians, recipients of goods and services, and property owners.

Policy 5.2 – Security: It is the policy of the State of Oregon to provide transportation security consistent with the leadership of federal, state, and local homeland security entities.

Goal 7 – Coordination, Communication and Cooperation

Policy 7.1 - A Coordinated Transportation System: It is the policy of the State of Oregon to work collaboratively with other jurisdictions and agencies with the objective of removing barriers so the transportation system can function as one system.

Policy 7.3 – Public Involvement and Consultation: It is the policy of the State of Oregon to involve Oregonians to the fullest practical extent in transportation planning and

implementation in order to deliver a transportation system that meets the diverse needs of the state.

Policy 7.4 – Environmental Justice: It is the policy of the State of Oregon to provide all Oregonians, regardless of race, culture or income, equal access to transportation decision-making so all Oregonians may fairly share in benefits and burdens and enjoy the same degree of protection from disproportionate adverse impacts.

Oregon Highway Plan (1999, with amendments)

The Oregon Highway Plan (OHP) notes that I-5 is a part of the National Highway System and a designated Freight Route. OR-99, which run parallel to the interstate, is a designated District Highway in portions of Medford and Ashland. The OHP further defines specific performance standards for state highways, including priorities for connections to and from freeways and access control standards. The performance and mobility standards in the OHP vary by location and adjacent land use type, establishing a higher level of service expectation in the more rural areas and a lower level of service in urbanized areas.

The OHP establishes policies and investment strategies for Oregon's state highway system over a 20-year period and refines the goals and policies found in the OTP. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and local road, bicycle, pedestrian, transit, rail, and air systems. The policies applicable to planning for interchange and corridor improvements are described below.

Goal 1 – System Definition

Policy 1A – State Highway Classification System: Establishes that the management objective of Interstate Highways is to provide for safe and efficient, high-speed, continuous-flow operation in urban and rural areas; and for District Highways, to provide for safe and efficient, moderate to high-speed continuous-flow operation in rural areas and moderate to low-speed operation in urban and urbanizing areas.

Policy 1B – Land Use and Transportation: Recognizes the need for coordination between state and local jurisdictions.

Policy 1C – State Highway Freight System: States the need to balance the movement of goods and services with other uses of the highway system, and to recognize the importance of maintaining efficient through movement on major truck freight routes.

Police 1E – Lifeline Routes: Recognizes the need for a secure lifeline network of streets, highways, and bridges to facilitate emergency services response and to support rapid economic recovery after a disaster.

Policy 1F – Highway Mobility Standards: Sets mobility standards for ensuring a reliable and acceptable level of mobility on the highway system based on highway classification and location by providing the appropriate standards that would allow the corridor area and associated interchanges to function in a manner consistent with OHP mobility standards.

Policy 1G – Major Improvements: Requires maintaining performance and improving safety by improving efficiency and management before adding capacity.

Goal 2 – System Management

Policy 2A – Partnerships: Establishes cooperative partnerships to make more efficient and effective use of limited resources to develop, operate, and maintain the highway and road system.

Policy 2B – Off-System Improvements: Helps local jurisdictions identify and evaluate off-system improvements that would be cost-effective in improving performance of the state highway.

Policy 2E – Intelligent Transportation Systems: Considers services to improve system efficiency and safety through effective incident management, en-route driver information, and traffic control.

Policy 2F – Traffic Safety: Improves the safety of the highway system.

Policy 2G – Rail and Highway Compatibility: States the need to increase safety and transportation efficiency through the reduction and prevention of conflicts between railroad and highway users.

Goal 4 – Travel Alternatives

Policy 4A – Efficiency of Freight Movement: Seeks to balance the needs of long distance and through freight movements with local transportation needs on highway facilities in both urban and rural areas.

Policy 4D – Transportation Demand Management: Supports the efficient use of the state transportation system through investment in efforts that reduce peak period congestion.

Highway Design Manual (2003)

The 2003 Highway Design Manual (HDM) provides uniform standards and procedures for ODOT. The manual is required to be used by ODOT personnel for all planning, development, and construction projects located on state highways. Design specifications, including roadway design, bicycle and pedestrian facility designs, and public transportation facilities, are covered in the HDM and must be used to guide any planning, development, and construction projects recommended for I-5 and those portions of OR-99 that remain as part of the state highway system.

Transportation Planning Rule (TPR): Statewide Planning Goal 12 (Transportation) and Oregon Administrative Rule (OAR), Division 12

The purpose of the Transportation Planning Rule (TPR) is "to implement Statewide Planning Goal 12 (Transportation) and promote the development of safe, convenient and economic transportation systems that are designed to reduce reliance on the automobile so that the air pollution, traffic and other livability problems faced by urban areas in other parts of the country might be avoided." A major purpose of the TPR is to promote more careful coordination of land use and transportation planning, to ensure that planned land uses are supported by and consistent with planned transportation facilities and improvements.

This rule identifies transportation facilities, services, and improvements that may be permitted on rural lands consistent with Goals 3, 4, 11, and 14 without a goal exception. These include replacement of an intersection with an interchange, channelization, and medians. The local government must identify reasonable build design alternatives, assess their impacts, and select the alternative with the least impact.

The Land Conservation and Development Commission adopted amendments to the TPR in March 2005 that clarify how the impacts of plan amendments and zoning changes to transportation facilities are assessed. The amendments stipulate that a significant effect occurs only if a plan amendment or zone change affects the facility by the end of the planning period, not if the effect occurs at any point during the planning period. The primary focus of this rule is to keep land use and transportation in balance. The current amendments include new provisions that pay particular attention to proposed plan or land use regulation amendments within one-half mile of interstate interchanges. The concern here is to protect the state's significant investments in interchanges and in the interstate system.

Oregon Rail Plan (2001)

The Oregon Rail Plan is a comprehensive assessment of the state's rail planning, freight rail, and passenger rail systems. The Oregon Rail Plan identifies specific policies and planning processes concerning rail in the state, including minimum level of service standards for statewide freight and passenger rail systems.

The primary railroad serving southwestern Oregon is the Central Oregon & Pacific Railroad (CORP), whose main line (Siskiyou Line) runs south from Eugene through Medford. Based on a conversation between the project team and John Bullion, CORP Assistant General Manager, no rail traffic currently occurs south of the City of Ashland. Therefore, all railroad traffic along the CORP line from Ashland and points north that are destined for California must currently go through Eugene, then divert east across the Cascade summit and south through Klamath Falls, Oregon. The White City Terminal and Utility (WCTU) Railway Company, a short line that interchanges with CORP, operates in a large industrial park in White City, Oregon.

Interstate 5 State of the Interstate Report (2000)

ODOT completed the I-5 State of the Interstate Report in June 2000. The report provides an assessment of the existing and forecasted safety, geometric, and operating conditions along the entire length of I-5 from California to Washington. The document covers a wide range of issues, including:

- Overview of related plans, policies, and studies
- Trends in population, employment, land use, and transportation
- Existing and forecasted conditions for each I-5 interchange and mainline freeway segment
- Environmental conditions and potential development impact areas
- Opportunities for short-term improvements

The report states that, within ODOT's Region 3 (which encompasses southern Oregon, including Medford), travelers will experience significant congestion on I-5 by 2020. Many interchanges in this region are expected to have one or more components (e.g., ramp terminal intersection or ramp junction) operating at an unacceptable level of congestion, if no improvements are made. The problems associated with interchanges are expected to occur more often in the populated portions of the corridor. The Barnett Road Interchange, referred to specifically as a potential problem area, will close entirely once the new South Medford Interchange is complete.

Regional Plans

Three regional plans for the Rogue Valley metropolitan area were reviewed.

Rogue Valley Metropolitan Planning Organization 2009-2034 Regional Transportation Plan (Adopted 2009)

The Rogue Valley Metropolitan Planning Organization (RVMPO) encompasses the urbanized area of Jackson County, including the cities of Ashland, Central Point, Eagle Point, Jacksonville, Medford, Phoenix, and Talent, and the unincorporated area of White City and surrounding Jackson County. As part of its transportation planning responsibilities, the RVMPO prepares and revises its Regional Transportation Plan (RTP). The RTP is a multimodal transportation plan designed to meet the anticipated 25-year transportation needs within the RVMPO planning area boundary. The RTP serves as a guide for the management of existing transportation facilities and for the design and implementation of future transportation facilities through a future model year. The current revision of the RTP for 2009-2034, adopted by the RVMPO on March 24, 2009, provides a summary of the regional transportation actions anticipated to occur in the planning area through 2034. The actions presented are in the context of the respective modes and planning issues and include: multimodal safety and security, transportation system management, transportation demand management, street system, bicycle and pedestrian facilities, transit system, parking, future conditions, and plan consistency. The RTP goals and policies applicable to the Corridor Plan are:

Goal 1 – A Balanced Multimodal System

Plan for, develop, and maintain a balanced multimodal transportation system that will address existing and future needs.

Goal 2 – Safety and Security

Optimize safety and security of the transportation system.

Goal 5 – System Efficiencies

Maximize the efficient use of transportation infrastructure for all users and modes.

Policy 5-1: Add or remove traffic signals and signal networks, including interstate access ramp signals, to improve system efficiency.

Goal 6 – Reducing Reliance on Single-Occupant Vehicles

Use incentives and other strategies to reduce reliance on single-occupant vehicles.

Policy 6-1: Support Transportation Demand Management strategies.

Goal 8 – Cost-Effective Emerging Technologies

Encourage use of cost-effective emerging technologies to achieve regional transportation goals.

Policy 8-1: Implement a comprehensive Intelligent Transportation Systems (ITS) program.

Policy 8-2: Plan a transportation system for the future utilizing the latest technologies.

Goal 9 – Foster Economic Opportunities

Use transportation investments to foster economic opportunities.

Policy 9-1: Accommodate travel demand to create a regional transportation system that supports the local economy

Policy 9-2: Examine options for designated freight routes.

Greater Bear Creek Valley Regional Problem Solving

The State of Oregon, Jackson County, and the cities of Ashland, Central Point, Eagle Point, Jacksonville, Medford, Phoenix, and Talent began a collaborative effort in April 2000 to launch the Greater Bear Creek Valley Regional Problem Solving (RPS) project. Under the authority of Oregon's Regional Problem Solving (RPS) Statute (Oregon Revised Statute (ORS) 197.652-658), multiple jurisdictions working in a collaborative effort may depart from state administrative rules where needed to implement creative solutions to mutually agreed-upon regional land use problems. The process must offer an opportunity to participate with appropriate state agencies and all local governments within the region affected by the problems that are the subject of the problem-solving process.

The RPS process has created a coordinated expansion plan for Jackson County and the cities of Ashland, Central Point, Eagle Point, Jacksonville, Medford, Phoenix, and Talent known as the *Greater Bear Creek Valley Regional Plan* (Regional Plan). Currently in the draft stage, the plan is the only effort of such complexity and scope under RPS to reach this final stage of adoption and acknowledgement. The Regional Plan, when implemented, will establish coordinated urban reserves between the seven participating cities and Jackson County, and will establish regional policies and mechanisms to balance rural and urban land needs to prepare for a future doubling of the regional population.

The purpose of the Greater Bear Creek Valley RPS process is to identify additional lands needed for urban development to accommodate a doubling of the region's population. The jurisdictions involved in the RPS project have agreed upon and adopted a set of goals and policies to guide the development of the Regional Plan .

Goal 1 – Manage Future Regional Growth for the Greater Public Good

Goal 1 includes policies calling for the use of intergovernmental agreements and amendments to comprehensive plans to implement the Regional Plan, increased residential densities across the region, identification of major infrastructure corridors, a more efficient network of public streets, and a balance of jobs and housing on the local and regional levels.

Goal 2 – Conserve Resource and Open Space Lands for their Important Economic, Cultural, and Livability Benefits

Goal 2 includes policies calling for a shared vision of maintaining a commercially viable agricultural land base, uniform standards of agricultural buffering, and the long-term preservation of regionally significant open space.

Goal 3 – Recognize and Emphasize the Individual Identity, Unique Features, and Relative Competitive Advantages and Disadvantages of Each Community within the Region

Goal 3 includes policies calling for mechanisms to enhance individual community identity, increase flexibility in the event of future boundary expansions, and permit an unequal distribution of certain land uses among jurisdictions, and the development of individual definitions of each community based on its unique identity and vision of future urban form.

North-South Travel Demand Study

The RVMPO is preparing to conduct a study intended to develop a long-term multimodal concept plan for the OR-99 Corridor Area as an alternative to I-5 north-south travel from Crowson Road in Ashland to Interchange 35 north of Central Point. The plan will include strategies that reduce vehicular traffic congestion, greenhouse gases, and support economic development along the north-south corridor and beyond the study area. In recognition of the strong influence of land use and multimodal transportation on peak-hour travel, the study will determine the appropriate population density and land use patterns necessary to support transit alternatives such as enhanced commuter transit, bus rapid transit, and commuter rail. The study will also identify transportation options and ITS strategies to reduce vehicle trips and improvements needed to improve bicycle and pedestrian connectivity. The study will develop

and evaluate various alternatives to improve mobility of all modes within the study area. Because this project is expected to be under way concurrently with the developing Corridor Plan, close coordination among the two project teams will be established.

Regional Intelligent Transportation System (ITS) Plans and Projects

Two existing ITS projects have a direct impact on the Rogue Valley region.

Regional Intelligent Transportation System (ITS) Operations & Implementation Plan for the Rogue Valley Metropolitan Area – Final Report (July 2004)

In 2004 the RVMPO completed a comprehensive Rogue Valley Intelligent Transportation Systems plan (RVITS). This 20-year plan identifies advanced technologies and management techniques that can relieve traffic congestion, enhance safety, provide services to travelers, and assist transportation system operators in implementing suitable traffic management strategies. The project is part of a federal initiative to use ITS to increase the efficiency of existing transportation infrastructure, improving overall system performance and reducing the need to add capacity. Efficiency is achieved by providing services and information to travelers so that they can make better travel decisions and to transportation system managers so they can better manage the system. To ensure the development of a relevant plan, RVITS was produced with guidance from RVMPO member jurisdictions and key stakeholders from emergency services and communications agencies.

The RVITS plan provides a framework of policies, procedures, and strategies for integration of ITS with the region's existing resources to meet future regional transportation needs and expectations. The plan includes the continuation and expansion of Transportation System Management (TSM) projects and programs that have been under way for some time, such as coordination of traffic signals.

RVITS projects address the following categories:

- Travel and Traffic Management
- Communications
- Public Transportation Management
- Emergency Management
- Information Management
- Maintenance and Construction Management

California-Oregon Advanced Transportation Systems (COATS) Bi-State Rural Integration Project

The southern Oregon - northern California bi-state area contains transportation links vital to the region's economy and commercial industry. Numerous primary and secondary routes serve commercial vehicles destined for urban centers throughout the Pacific Northwest. Unpredictable weather patterns and mountainous topography add to the transportation

challenges. Travelers throughout this region must contend with diverse and rapidly changing weather conditions including snow, high winds, fog, and heavy rain. The combination of varied driving conditions and abundant off-road, commercial, and recreational traffic has produced an immediate and expanding need for increased traffic safety measures and information dissemination techniques.

The California-Oregon Advanced Transportation Systems (COATS) project was developed as a joint effort between California Department of Transportation (Caltrans), ODOT, and the Western Transportation Institute (WTI) of Montana State University-Bozeman to facilitate the deployment and use of Intelligent Transportation Systems (ITS). As described earlier, ITS are implemented to enhance safety, improve the movement of people, goods and services, and subsequently promote the economic development of the region. The COATS study area crosses 13 counties in northern California and the southern half of Oregon, and is defined by roadway segments rather by than by county lines that altogether cover over 80,000 square miles. The project was concluded in June 2001 with development of an ITS Strategic Deployment Plan for the COATS region.

At the conclusion of the COATS project, Caltrans and ODOT decided to continue their partnership and their intent to utilize ITS in the region. This decision led to Phase 2 COATS Showcase, a $2.5 million project with the purpose of providing a significant demonstration and evaluation of rural ITS projects that exist to support the goals, objectives, and benefits of the COATS project as stated in the ITS Strategic Deployment Plan. The demonstrations and evaluations are intended to highlight the success stories of ITS in rural areas, but also to identify where problems and deficiencies may be corrected in future deployments.

Among the COATS Showcase projects was a Siskiyou Pass evaluation conducted in an effort to gauge the effectiveness of COATS at improving incident management, improving traveler information, and enhancing traveler mobility. Surveys conducted to assess traveler awareness of the ITS technologies in use in the Siskiyou Pass area and traveler perception of the accuracy and usefulness of these technologies concluded the following:

- Road conditions and weather conditions were the most important factors travelers would use to alter their travel plans. In all four surveys, respondents indicated average travel speed and construction were the least important factors in determining a change in travel plans.
- An overall ranking, based on the average of the rankings from each survey, indicated that “leave later” was the most likely option for Siskiyou Pass travelers faced with a road closure or significant delay. Second, travelers would “take an alternate route” or third, “stop at a nearby town.” Respondents are least likely to “cancel their trip” or “seek an alternate mode of travel.”

The goal of COATS Phase 3 is to provide research and support activities to help California and Oregon achieve the COATS vision. These activities include: fostering bi-state cooperation and communication, promoting technology transfer, assisting in ITS planning and architecture

development efforts, evaluating ITS projects and systems, and providing assistance to mainstream deployment of field-tested ITS technologies.

The COATS project is focused on the following three main strategies:

- Address operational efficiency and public safety: Activities include monitoring road weather conditions with road weather information, wind-monitoring stations, automated flood warning systems, automated visibility systems, etc. and monitoring roadway rights-of-way for potential animal-vehicle conflicts or for detecting landslides.
- Advise unfamiliar travelers of unsafe driving conditions: These activities include notification through advance warning systems, variable message signs (VMS), and highway advisory radio (speed/travel conditions, wide loads on narrow lanes, etc.).
- Develop coordination/communication centers among bi-state participants: These activities provide for the development of centers to coordinate, communicate, and cooperate with each other, nearby communities, local organizations, state agencies, and other regions (Redding and Eureka, California, and Salem, Bend, and Medford, Oregon).

Commuter Rail Studies

The RVMPO has commissioned a number of studies over the past several years exploring the potential for commuter rail service between Central Point and Ashland, a distance of approximately 16 miles. Three studies were reviewed.

Southern Oregon Commuter Rail Study (2001)

In 2001, local governments in the Rogue Valley area, along with ODOT's Rail Division, issued a report entitled *Southern Oregon Commuter Rail Study.* At a conceptual level, the study analyzed the technical elements and costs associated with the introduction of commuter rail service between Grants Pass and Ashland along with a shorter segment between Central Point and Ashland. The study presumed the commuter trains would operate over the existing CORP tracks, which parallel OR-99 through most of the area.

The project considered that extensive upgrading of the track structure would be required. The upgrades would include the placement of heavy rail and insertion of thousands of ties, along with installation of a new train control system and upgrades to all grade crossings along CORP's Siskiyou Branch Main between Grants Pass and Ashland. In addition, a 1.5-mile-long bypass track to CORP's Medford yards would need to be constructed to separate the commuter train's operations from CORP's freight activities in the Medford area.

New self-propelled diesel rail cars known as Diesel-Multiple Units (DMUs) were contemplated to carry the passengers, and the construction of numerous park-and-ride facilities was considered. Meanwhile, extensive changes would be made to the existing transit service operated by the Rogue Valley Transit District (RVTD) that would convert its operation to act as a feeder system to the commuter rail operations.

Costs were estimated at three different levels of service:

1. Full service would consist of six roundtrips in the morning and six in the evening between Ashland and Central Point.
2. The second level of service would include the full service trips discussed in Item #1, along with two roundtrips in the AM and two in PM between Grants Pass and Central Point.
3. The third level of service provided six full roundtrips in both the AM and PM peak hours along the full length of the corridor between Grants Pass and Ashland.

Capital costs associated with the three levels of service ranged from $38 million to $90 million annually, with operating costs ranging between $3.6 million and $7.6 million. Projected annual ridership was between 124,000 and 221,000 passengers.

The 2001 study listed 11 items that greatly influence the success of any commuter rail system:

1. Direct Rail Link. Does the corridor have an existing rail line with a reasonably direct route connecting the communities to be served and with sufficient unused capacity to accommodate frequent rush hour passenger service?
2. Support Regional Goals. Have the communities involved adopted land use and transportation goals seeking to:
   A. Concentrate commercial and residential development in and near urbanized areas in the corridor?
   B. Promote higher-density residential development within the corridor?
3. Growing Population/High Density Close to Stations. Is there moderate to rapid growth in population within and along the corridor, with a high concentration of residences and/or business/commercial activity close to proposed station sites?
4. Limited Funding for Highway Projects. Is it difficult to raise funds for new highway projects that would increase traffic capacity in the corridor?
5. High Level of Daily Commuting Within the Corridor. Does the rail line to be used for commuter rail parallel a route used by many corridor residents commuting to and from work?
6. Traffic Congestion. Is traffic congestion on highways paralleling the rail line worsening and becoming severe? Are paralleling highways reaching or exceeding their design carrying capacity?
7. Limited, High Cost Parking. Is parking at commuter destination points limited and expensive?
8. Competitive Transit Times. Can the rail commuter system provide service on a schedule that is competitive to auto commute times?
9. Competitive Transit Costs. Will the cost of using the rail commuter system be competitive with the cost of commuting by automobile?
10. Willingness to Use Transit. Do daily commuters in the corridor have a relatively high propensity to use mass transit?

11. Compelling Circumstances. Does the region need to take drastic action because of some overriding economic, environmental, and/or safety concerns that make it imperative that more people switch from auto commuting to mass transit?

Rogue Valley Commuter Rail Demonstration Project – June 2006 DRAFT Report

The June 2006 Draft Report of the *Rogue Valley Commuter Rail Project* discussed efforts to conduct a demonstration project between Central Point and Ashland utilizing three self-propelled rail diesel cars owned by the ODOT's Rail Division. The cars were purchased in 2002 by ODOT for three years of seasonal excursion service between Portland and Astoria as part of the activities surrounding the bicentennial of the Lewis and Clark Expedition.

RVMPO intended the initial operation to be of limited duration and in a single direction only in order to assess operating costs and prospective ridership levels before substantial financial investments were undertaken. It was assumed that there would be a number of decision points along the way where the service would either continue operating or be terminated. It was presumed that a successful operation would lead to track, signal, and equipment improvements along with increases in the frequency of service.

The purpose of the study was to develop a proposed commuter rail service as a "demonstration" project by developing generalized assessments that involved:

- Infrastructure and operational requirements
- Level of travel market demand – ridership projections
- Financing alternatives
- System-wide costs and benefits
- A preliminary business plan

The effort ended after ODOT sold the rail diesel cars to the Wallawa-Union Railroad before the Rogue Valley region was able to act.

Rogue Valley Commuter Rail Project – Final Report (2007)

The most recent commuter rail study was launched by RVMPO to reflect the unavailability of the ODOT cars. In addition, RVMPO sought information that it could possibly use to approach the Federal Transit Administration (FTA) for potential funding under the agency's "Small Starts" Program.

The most recent study updated the 2006 Draft Report, listing the equipment options to replace the ODOT rail diesel cars that were sold, prepare an update to the capital program to permit bi-directional operations, and revisit earlier ridership projections resulting from increased frequencies permitted by bi-directional operations. Some of the conclusions from the report are:

Equipment: Four train sets of at least 180 seats would be needed in order to provide the contemplated 30-minute service levels, while two sets would be needed for hourly interval service. Estimated capital cost, depending upon the type of cars chosen, could range from $8 million to over $20 million.

Operating Intervals: The study developed two operating scenarios, one for hourly interval service and the other based on 30-minute interval service.

Track Upgrades: The existing CORP's Siskiyou Branch track conditions and maintenance levels limit freight trains to a maximum 25 miles per hour (mph). In order to meet proposed schedules, it would be necessary to operate commuter trains at speeds of approximately 59 mph. To achieve this speed, track upgrades of $16 million to $18 million would be necessary.

Stations: The project envisions seven passenger stations—two each in Central Point and Medford and one each in Phoenix, Talent, and Ashland.

Yearly Operating Costs: Operating costs would vary depending upon the equipment chosen, but a general estimate places yearly operating cost at around $3.8 million.

Transportation System Plans

County and city transportation system plans were reviewed, as well as one trail plan.

Jackson County Transportation System Plan (2005)

Jackson County and ODOT began updating the transportation element of the comprehensive plan in 2001 and completed the adopted Jackson County TSP in March of 2005. The primary study area for the TSP consists of all areas of Jackson County located outside the Urban Growth Boundaries (UGBs) of incorporated cities, although it does include issues identified in local TSPs or the RTP that affect state and county facilities inside UGBs. The proposed improvements are required to be compatible with Jackson County TSP goals and policies.

The TSP has three primary goals: livability, modal components, and integration. The TSP includes associated policies that provide direction for accomplishment of the goals and that "have the force of law." The goals and policies applicable to the Corridor Plan are described below.

Goal 4.1 – Livability

The Livability Goal is to "develop and maintain a safe and multi-modal transportation system capable of meeting the diverse transportation needs of Jackson County while minimizing adverse impacts to the environment and to the County's quality of life." Policies applicable to the Corridor Plan are as follows:

Policy 4.1.2-A – Connectivity: Jackson County will promote a well-connected street and road system to minimize travel distances. This policy, in turn, could potentially spur alternative routes for I-5 and OR 99.

Policy 4.1.4-A – Safety: Jackson County will provide a transportation system that supports access for emergency vehicles and provides for evaluation in the event of a wildfire hazard or other emergency.

Goal 4.2 – Modal Components

The Modal Components Goal is to plan an integrated transportation system that maintains existing facilities and responds to the changing needs of Jackson County by providing effective multimodal transportation options.

Policy 4.2.1-A – Vehicular System: Jackson County will prioritize preservation and maintenance of the existing road system rather than increasing vehicular capacity.

Policies 4.2.1-G through J – Truck Freight: Jackson County will: Balance the need for movement of goods with other uses of county arterials and state highways by maintaining efficient through movement on major truck routes (G). Work with ODOT to identify roadway obstacles and barriers to efficient truck movements on state highways and coordinate highway projects with other freight movement projects and infrastructure (H). Support employment of technology to improve freight mobility (I). Jackson County is committed to maintaining and improving roadway facilities serving inter-modal freight facilities (J).

Policy 4.2.1-P – Coordination: Jackson County will coordinate with ODOT to ensure that highway designations and management policies are appropriate and meet the Goals and Policies of the OHP and the Jackson County TSP. Jackson County will work with ODOT for effective management of highway capacity.

Policies 4.2.1-S and T – MPO Area Traffic Engineering and Performance Standard: Jackson County is committed to maintaining a volume-to-capacity ratio of 0.95 for weekday peak hour vehicular traffic in the MPO area (S). Jackson County will engineer traffic flow to provide efficient transportation system management (T).

Policies 4.2.6-A and B – Bulk Transport and Mass Freight System: Jackson County will continue to plan for rail service as a viable long-term transportation option for the Rogue Valley (A). Jackson County will encourage bulk transportation facilities to provide efficient transport of bulk goods (B).

City of Medford Transportation System Plan (2003)

The Medford TSP establishes the city's short-term and long-term goals and objectives for meeting its existing transportation needs, but also addresses planning for future growth and improvements necessary for providing an effective multimodal transportation system. One of the fundamental strategies is to reduce reliance on the automobile by promoting changes in land use patterns and transportation systems that make it more convenient for people to walk, bicycle, use transit, and drive less to meet their daily needs.

Among the issues addressed in the Medford TSP that have an impact upon the I-5 corridor are the lack of higher order streets (arterial and collectors) on the east side of the freeway that

would provide connections for longer distance, north-south through trips from one part of the city to another. Current north-south connections are limited to Foothills Road/N. Phoenix Road on the eastern edge of the UGB and a partial arterial connection provided by Crater Lake Avenue. Medford's two primary I-5 interchanges—South Medford (Exit 27) and North Medford (Highway 62, Exit 30)—are also summarized in the TSP. These two interchanges are discussed below under "Interchange Area Management Plan (IAMPs) and Environmental Technical Reports."

The Medford TSP has eight goals with accompanying policies and implementation strategies. Goals, policies, and implementation strategies relevant to the Corridor Plan are as follows:

Goal 1 – Overall Transportation System

Provide a multimodal transportation system that supports the safe, efficient, and accessible movement of all people and goods, and recognizes the area's role as the financial, medical, tourism, and business hub of Southern Oregon and Northern California.

Policy 1-A: The City of Medford shall manage projected travel demand consistent with community, land use, environmental, economic, and livability goals.

> *Implementation 1-A(1):* Utilize the projections in the Regional Transportation Plan (RTP) regarding projected travel demand over the 20-year planning period in managing transportation system.

Policy 1-B: The City of Medford shall use the Transportation System Plan as the legal basis and policy foundation for decisions involving transportation issues.

> *Implementation 1-B(7):* Include projects and programs adopted in the Medford Transportation System Plan that are of regional or statewide significance, or that require the use of state or federal funding, within the Regional Transportation Improvement Program and State Transportation Improvement Program.

Policy 1-D: The City of Medford's second priority for the use of transportation funds shall be to maximize efficient use of the existing transportation system through use of Transportation System Management (TSM) and Transportation Demand Management (TDM) measures prior to expending transportation funds on capacity improvements.

> *Implementation 1-D(1):* Utilize Transportation Demand Management measures as the first choice for accommodating travel demand and relieving congestion in a travel corridor, before street widening projects are undertaken.

Policy 1-E: The City of Medford's third priority for the use of transportation funds shall be to fund capital improvements that add capacity to the transportation system. These improvements shall be prioritized based on availability of funds, reducing reliance on the automobile, improving safety, relieving congestion, responding to growth, and system-wide benefits.

Implementation 1-E(1): Give priority to funding projects that most increase capacity and relieve congestion, such as intersection improvements as opposed to general street widening, consistent with the adopted level of service (LOS) standards.

Goal 2 – Street System

Provide a comprehensive street system that serves the mobility and multimodal transportation needs of the Medford planning area.

Policy 2-A: The City of Medford shall classify streets so as to provide an optimal balance between mobility and accessibility for all transportation modes consistent with street function.

Implementation 2-A(2): Provide a grid network of higher order (i.e., Arterial, Collector) streets that link the central core and major industrial areas with major highways and that connect with each other and the lower order street system.

Policy 2-G: The City of Medford shall undertake efforts to reduce per capita vehicle miles traveled (VMT) and single-occupancy vehicle (SOV) demand through TDM strategies.

Implementation 2-G(3): Support and assist the efforts of the Rogue Valley Transportation District in maintaining a regional Transportation Demand Management program, which includes such components as a rideshare matching program, carpool/vanpool matching, park-and-ride lots, and information regarding transit service, bicycle routes, telecommuting, etc.

Policy 2-H: The City of Medford shall manage and maintain the transportation system in an efficient, clean, and safe manner.

Implementation 2-H(3): Continue to modernize the traffic signal system and improve its efficiency by ultimately connecting all signals to the centralized traffic control center. Employ traffic signal timing plans that maximize efficiency during different time periods. Provide a program to identify locations for new/modified signals.

Implementation 2-H(4): Utilize Intelligent Transportation Systems (ITS), such as real-time traffic monitoring cameras and management projects, that provide motorist information and incident response/clearance programs to alleviate traffic congestion.

Goal 7 – Freight Movement

Facilitate the provision of a multimodal transport system for the efficient, safe, and competitive movement of goods and services to, from, and within the Medford planning area.

Policy 7-A: The City of Medford shall promote accessibility to transport modes that fulfill the needs of freight shippers.

Implementation 7-A(1): Develop and adequately sign a street system that provides direct and efficient access to and between industrial and commercial centers, regional intermodal freight facilities, and statewide transport corridors.

Implementation 7-A(3): Encourage the development of railroad freight services to industrial and commercial areas.

Implementation 7-A(5): Encourage the development of intermodal freight transfer facilities.

Policy 7-B: The City of Medford shall strive to balance the needs of moving freight with community livability.

Implementation 7-B(2): Work with public agencies and private freight service providers to reduce the number and severity of commercial transport-related accidents.

Implementation 7-B(5): Work with railroads and appropriate state agencies to minimize the blockage of public streets at railroad crossings to facilitate traffic movement, especially emergency service vehicles.

Implementation 7-B(6): Consistent with the Oregon Rail Plan, establish city policy that seeks to avoid or minimize the number of future railroad at-grade crossings when new streets are planned; avoids creating intersections of major streets and railroads where possible, locates new parallel streets at least 500 feet from railroads to allow for industrial development between the tracks and the roadway, and plans community development with sensitivity to rail noise and other potential conflicts.

City of Ashland Transportation System Plan (1998)

The City of Ashland adopted its current TSP in 1998. The City of Ashland TSP addresses Oregon Statewide Planning Goal 12 and the Oregon TPR, which directs cities and counties to develop balanced transportation systems addressing all modes of travel including motor vehicles, transit, bicycles, and pedestrians. The purpose of the Ashland TSP is to define the modal system, and outline and prioritize specific modal improvements which embody the city's vision for "modal equity."

The TSP is intended to summarize the results of the public involvement process, the analysis of existing policies and conditions, the impact of future growth on the transportation system, and the identification of alternatives that can address the local transportation system needs in the City of Ashland. In addition to providing information on the existing conditions and constraints of Ashland's transportation system, the TSP focuses on recommended design standards, identification of system problems, pedestrian and bicycle amenities, recommended access management plan, needed transportation improvements, a financial plan, and an alternatives evaluation and project prioritization.

The City of Ashland TSP provides a list of TPR recommendations and requirements that the City of Ashland expects to be in compliance with. The most applicable sections are:

- Existing Conditions and Constraints: Chapter 4 of the TSP includes an inventory of the existing street network, traffic volumes, traffic control devices, accident history, level of service, a summary of the existing bicycle route system, a summary of existing sidewalks on boulevards, and a summary of the existing transportation system.

- Identification of System Problems: Chapter 6 of the TSP includes a summary of forecast population and employment, a determination of transportation capacity needs, and an ongoing assessment of other roadway needs (safety, bridges, reconstruction, operation/maintenance) by City of Ashland staff through the maintenance program.
- Needed Transportation Improvements: Chapter 9 of the TSP identifies the Interchange 14 (Ashland Street/Green Springs Highway) bridge over I-5 as currently substandard for vehicle, bicycle, and pedestrian travel. The TSP states that the interstate interchange and bridge will need to be upgraded and signalized within the next 20 years.

City of Phoenix Transportation System Plan (1999)

The City of Phoenix TSP was acknowledged by the City Council on October 4, 1999, and acknowledged by the Department of Land Conservation and Development on December 2, 2003. The purpose of this plan is "to meet the existing and future mobility needs of the City of Phoenix." The following goals are taken from Chapter 9, "Modal Plans and Policies."

Goal 2: The City shall coordinate its transportation decision-making with other land use planning decisions and with public agencies providing transportation services or facilities.

Goal 3: Utilize the volume-to-capacity (v/c) standards specified in Table 4-3 to determine transportation facility adequacy (0.80 v/c for I-5; 0.90 v/c for arterials, collectors, and local streets; 0.95 v/c for designated Special Transportation Areas).

Goal 4: Support the use and deployment of transportation demand strategies.

Goal 5: Preserve the function and value of transportation facilities consistent with their classification. More restrictive access policies shall apply to higher-level streets.

Goal 10: Ensure streets are designed, developed, reconstructed, and maintained consistent with their classification.

City of Talent Transportation System Plan (2000)

The City of Talent TSP was initially adopted in April 2000 with update to the TSP adopted in March 2007. The overall goal of the Talent TSP is to provide a safe and efficient transportation system that reduces energy requirements, regional air contaminants, and public costs and provides for the needs of those not able or wishing to drive automobiles. Specific goals applicable the Corridor Plan are listed as follows:

Transportation Demand Management: Reduce the demands placed on the current and future transportation system by the single-occupant automobile.

Streets: Provide a comprehensive system of streets and highways that serves the mobility and multimodal travel needs of the Talent urban area.

City of Central Point Transportation System Plan (2008)

Adopted on December 18, 2008, the City of Central Point TSP is among most recently approved transportation documents within the Corridor Plan area to date. In acknowledgement of its relationship between the TPR and the RTP, the organization of the Central Point TSP closely follows the format described in the TPR – Elements of Transportation System Plans. The goals and policies described below are pertinent to the Corridor Plan and represent the city's vision for maintaining and advancing its transportation system in coordination with its land use program through the year 2030. The ultimate objective of the Central Point TSP is to efficiently and effectively provide for the transportation needs of the community while improving the quality of life of its citizens.

Goal 5.2 – Access Management

The City of Central Point will employ access management strategies to ensure safe and efficient roadways consistent with their designated function.

Policy 5.2.2: The city shall implement the access management strategies presented in the Access Management Plan for Front Street (Highway 99)/Pine Street and the Central Point Highway 99 Corridor Plan.

Goal 5.5 – Transportation Demand Management

The City of Central Point will maintain consistency between transportation demand management (TDM) measures promoted by the city with the regional transportation plan strategies aimed at reducing reliance on the single occupant vehicle (SOV) and reducing vehicle miles traveled (VMT) per capita.

Policy 5.5.1: The city shall coordinate and maintain a consistency in the implementation of transportation demand management strategies with similar regional strategies as presented in the Regional Transportation Plan.

Goal 7.1 – Street System

Provide a comprehensive street system that serves the present and future mobility and travel needs of the Central Point urban area, including provisions for bicycle and pedestrian facilities.

Policy 7.1.2: The city's street system shall contain a network of arterial and collector streets and highways that link the central core area and major industry with regional and statewide highways.

Policy 7.1.5: The city shall actively pursue construction of I-5 interchange improvements at Pine Street.

Goal 10.1 – Rail Freight

The City of Central Point will provide efficient, safe, and effective movement of goods, services, and passengers by rail while maintaining the quality of life for the citizens of the Central Point urban area.

Policy 10.1.1: The city shall encourage both freight and passenger service as part of statewide rail transportation planning efforts.

Goal 11.1 – Truck Freight

The City of Central Point will identify and maintain a truck freight system within the city that serves the city's and region's freight needs in an efficient and safe manner, with minimal adverse impacts on adjacent land uses.

Policy 11.1.1: The city shall cooperate with the RVMPO, Jackson County, ODOT, and the City of Medford in the coordination of design, funding, and improvement of the freight system within the city that enhances freight movement, while improving the overall capacity of the city's street system.

Policy 11.1.2: The Freight System Map presented in Figure 11.2 of the TSP shall be considered by the city as the official freight route system for the City of Central Point. The design and improvement of the street system designated on the Freight System Map shall accommodate large vehicles typical of freight movement.

Policy 11.1.3: The city shall ensure access to truck freight via the local street system, with emphasis on maintaining an efficient and safe designated truck route system.

Bear Creek Greenway Plan

The Bear Creek Greenway is a narrow corridor of publicly owned land that follows the Bear Creek streambed from Ashland (Nevada Street) to Central Point (Pine Street). Development of the Bear Creek Greenway bicycle and pedestrian path began in 1973 when ODOT built the first 3.4-mile section of the pedestrian/bicycle path through Medford. The Bear Creek Greenway currently includes two primary sections:

- Pine Street in Central Point to Barnett Road in Medford; and
- Blue Heron Park in Phoenix to Nevada Street in Ashland.

When complete, the Bear Creek Greenway will provide a 20-mile, multi-use path from the I-5/Seven Oaks Interchange in Central Point to Nevada Street in Ashland. It will serve as an important facility for intercity travel in the I-5/OR-99 corridor. Additionally, a Rogue River Greenway is currently in the planning stages. This greenway will connect the communities of Grants Pass, Rogue River, and Gold Hill and would eventually be linked to the Bear Creek Greenway at the Seven Oaks Interchange.

Interchange Area Management Plans (IAMPs) and Environmental Technical Reports

Interchange Area Management Plans (IAMPs) are developed by ODOT and local governmental agencies to protect the function of interchanges by maximizing the capacity of the interchanges for safe movement from the mainline (I-5) facility, to provide safe and efficient operations between connecting roadways, and to minimize the need for major improvements of existing

interchanges. IAMPs are required for new interchanges and should be developed for significant modifications to existing interchanges.

Interchange 14 (Green Springs)

The interchange provides the main link between the I-5 corridor and the southern end of Ashland via Ashland Street, also known as the Green Springs Highway and OR 66. This crossroad also provides one of the few interstate crossings in the vicinity and carries significant local vehicle, bicycle, and pedestrian traffic volumes that do not enter or exit the interstate. The existing interchange is a standard diamond configuration, comprising a two-lane bridge with unsignalized ramp terminals at both ends. A draft IAMP for this interchange is under review by ODOT and the local jurisdictions before eventual adoption by the Oregon Transportation Commission (OTC). The draft document provides a summary of existing conditions, provides future year traffic analysis of interchange design alternatives, explores potential management actions and land use policies, and concludes with an access management plan. The Interchange 14 bridge repair project is grouped under Bundle 314 of the Oregon Bridge Delivery Partners, a consortium of two primary engineering firms tasked with completing the repair and replacement of multiple bridges across the state listed under the Oregon Transportation Investment Act (OTIA) III State Bridge Delivery Program. The existing Interchange 14 bridge will be widened to accommodate two through lanes and one center left-turn lane, with shoulders and sidewalks. Enough width will be provided to accommodate two additional through lanes.

Interchange 19 (North Ashland)

The interchange provides the main link between the I-5 corridor and the northern end of Ashland via OR-99, which intersects South Valley View Road approximately 2,500 feet south of the interchange. Currently a two-lane facility, South Valley View Road has high lane volume due to significant volumes of intraregional trips between Ashland and Medford. In addition to the heavy movement of intraregional trips, the interchange also serves local residents and businesses in the interchange vicinity. South Valley View Road is planned for expansion into a five-lane facility between the interchange and the OR-99 intersection. A draft IAMP is under review by ODOT and the local jurisdictions before eventual adoption by the OTC. The draft document provides a summary of existing conditions, provides future year traffic analysis of interchange design alternatives, explores potential management actions and land use policies, and concludes with an access management plan. Part of the Oregon Bridge Delivery Groups listed under Bundle 314, the Interchange 19 bridge will be a new bridge with two through lanes and one center left-turn lane, with shoulders. Enough width will be provided to accommodate two additional through lanes and sidewalks.

Interchange 24 (Fern Valley) IAMP and Environmental Technical Reports

Development of an IAMP and a Draft Environmental Assessment (EA) are occurring simultaneously for Interchange 24. The purpose of these efforts, as stated on ODOT's website has been to "reduce congestion and improve operational conditions at the Interstate (I-5)

interchange with Fern Valley Road, on Fern Valley Road within the City of Phoenix Urban Growth Boundary, and on OR-99 near its intersection with Fern Valley Road." An interim project (stage one) was completed to improve existing conditions in the short term. However, lacking further improvements, the interchange is projected to degrade to unacceptable levels of congestion within 5 to 10 years.

The EA has been assessing two interchange design alternatives, both of which would incorporate a Diverging Diamond (a.k.a. a Crossing Diamond) configuration, where approaching motorists are directed to the left side of the bridge to cross the interstate, enabling interstate-bound drivers to approach the on-ramp without stopping.

Interchange 27 (South Medford) IAMP/Environmental Technical Reports

The South Medford Interchange is a new urban interchange that serves the entire southern part of the city and connects I-5 with the city's commercial core and OR-99. Once fully operational, the new interchange will replace the interchange at Barnett Road, which will become an east-west arterial with no ramp terminal access to I-5. Construction of the interchange was a concept developed several years ago with considerable planning undertaken prior to the start of construction project in 2006. The project was included in the Rogue Valley Metropolitan Planning Organization (RVMPO) RTP and the City of Medford's TSP. An Environmental Impact Statement (EIS) was prepared assessing the impacts of the project on the surrounding area. The Draft EIS was completed in September 2001, and the Final EIS was completed in February 2004.

The previous configuration of the interchange utilized ramps that connect I-5 to Barnett Road. The new interchange, partially operating as this report is being written, replaces the existing interchange at Barnett Road with one connecting to a new arterial, the Garfield-Highland Connector. The new interchange is designed as a Single Point Urban Interchange (SPUI) that brings the I-5 northbound and southbound ramps to a single intersection with the cross street. Interchange 30 (North Medford) Environmental Technical Reports

The OR 62/I-5 interchange area is a critical modal connection for the OR 62 corridor, which extends from Medford to White City in Jackson County, Oregon. The OTC considers this section of highway to be vital for the economic well-being of the Rogue Valley and, therefore, has designated the segment between I-5 and OR 140 a Statewide National Highway System (NHS) route in the 1999 OHP.

A bypass alternative was chosen by the project team and oversight committee as the best option to significantly improve connectivity in the North Medford Interchange area, The alternative, along with its various design options, is currently undergoing analysis in the Draft Environmental Impact Statement (DEIS). The proposed I-5 on- and off-ramp relocation would connect motorists directly between I-5 and OR 62 instead of requiring intermediate access to Biddle Road. A folded-diamond interchange would be provided to connect OR 62 and Biddle Road. The reduction of traffic volume resulting from the northbound I-5 ramp relocation and improved access control would result in improved mobility along Biddle Road.

Several mitigation measures are recommended for the Build Alternative design, including:

- Change the northbound I-5 off-ramp geometry to include a left-turn lane, a shared right-turn lane, and a right-turn lane on the off-ramp
- Carry only two lanes westbound on OR 62 from Poplar Drive to the folded-diamond ramp
- Add additional turning lanes at the intersection of Poplar Drive and OR 62
- Provide a right-in/right-out access to Fred Meyer from OR 62
- Provide a connection between Bullock Road and the existing Bear Creek Greenway I-5 underpass
- Include a signalized at-grade pedestrian crossing at the northern folded diamond interchange terminal at Biddle Road

Interchange 35 (Seven Oaks) IAMP and Technical Reports

Interchange 35 is principally a rural interchange that connects I-5 with OR-99 to the south and Blackwell Road to the north. OR-99 is a district-level highway that serves the nearby community of Central Point to the south. Blackwell Road serves some industrial lands northeast of the interchange and provides a connection with White City to the southeast.

Interchange 35, including the Blackwell Road overpass on I-5, was found to be functionally obsolete and structurally deficient. The interchange is currently under construction to improve the safety and function of both the overpass and the connections with OR 99 and Blackwell Road. In addition to building a new Blackwell Road overpass, the southbound off-ramp will be reconfigured as a loop ramp connecting to OR-99 from the east. The other ramps will also be constructed to meet highway design standards and improve spacing between ramps.

In the future, Interchange 35 will also function as the western terminus of the OR 140 Freight Route Extension that will connect OR 62 in White City and I-5. As the phased elements of the Freight Route are implemented, more traffic will be accessing the interchange from the north via Blackwell Road. Not only will the freight route increase demand at the interchange, but the potential for conflicts with access to adjacent industrial land will become a greater concern.

OR 62 Environmental Impact Statement

Underway since 2004, the EIS for the OR 62 Corridor encompasses the corridor from Poplar Drive in Medford east to White City and complements improvements completed at the North Medford Interchange. The purpose for the project has been to increase capacity and safety for the highway corridor connecting I-5 with OR 140 and OR 62. The corridor serves as a critical connection for freight, tourism, and commuter traffic in both the local and regional area. The corridor is currently exceeding capacity standards, and future growth in the area is expected to significantly increase traffic volumes throughout the corridor.

The Draft Environmental Impact Statement (DEIS), scheduled for release in the spring of 2009, will disclose such items as right-of-way, social, and environmental effects, and property displacements. The OR 62 Citizens Advisory Committee and Project Development Team

unanimously voted to forward a bypass separating local and through traffic as the preferred alternative out of a total of four alternatives that were considered. Through traffic would travel on a parallel limited access highway, with access points at the North Medford Interchange (I-5 exit 30), Vilas Road, near Corey Road in White City, and Dutton Road north of the VA Domiciliary.

¢Kλă LJI·∃Ŝ λyűŜyűλ2yl·ffè fŜŦű ōfI·y˥

3. ENVIRONMENTAL RECONNAISSANCE

The project team conducted research and mapped known environmental constraints in an effort to identify "red flag" areas judged to have considerable potential for conflict. The information gathered was taken primarily from published documents and maps, Geographic Information System (GIS) data, and conversations with appropriate professional contacts.

Goal 5 Resources

Statewide Planning Goal 5 requires local jurisdictions to inventory riparian corridors, wetlands, wildlife habitat, scenic waterways and other natural resources.

Bear Creek, which is indicated in **Figure 3-1**, is a key riparian corridor traversing the project area for much of its length. Further discussion of Bear Creek is provided in the "Wetlands" subsection. The Bear Creek Greenway, shown in **Figure 3-2**, is a linear park that also provides valuable habitat for wildlife. Ultimately, the Bear Creek Greenway Foundation intends to complete the Greenway from Ashland to Central Point, and eventually to the confluence with the Rogue River near Gold Hill. The multi-use path, which follows the creek within the Bear Creek Greenway, was designated as a National Scenic Trail in 1975, and is part of the Oregon Recreational Trail system.

Jackson County's Comprehensive Plan, adopted in 2004, established Forestry/Open Space Land designations to protect and provide for fish and wildlife habitat, as well as watershed and aquifer recharge areas. These designations protect lands including and adjacent to inventoried Goal 5 resources. The areas designated Forestry/Open Space Land can be found in **Figure 4-1** under Section 4: Land Use Reconnaissance.

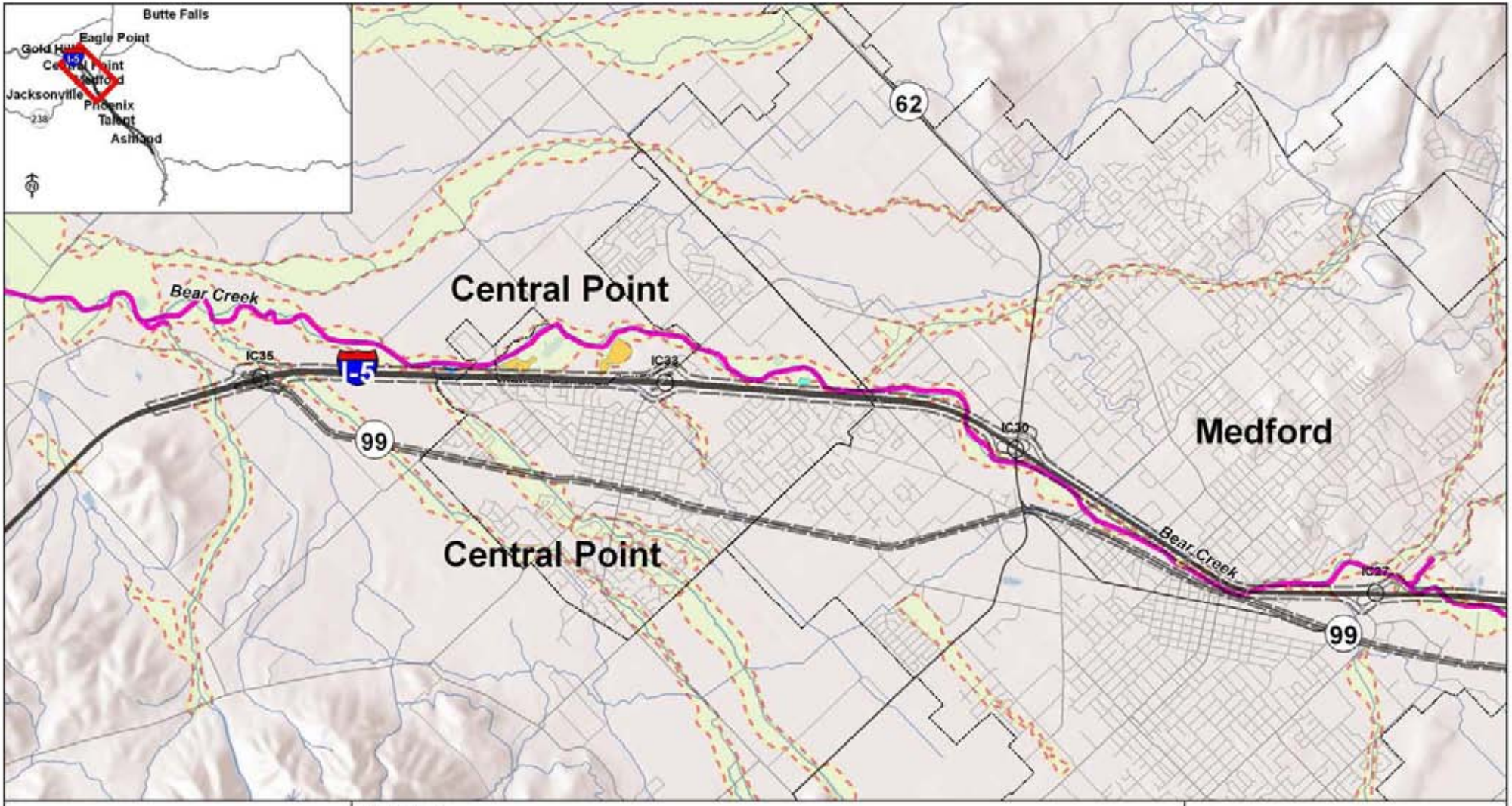
The City of Medford adopted the Bear Creek (B-C) Overlay Zoning District in 1989 to protect the wildlife habitat within the greenway. The City of Ashland Comprehensive Plan, adopted in 1991, has a identified Bear Creek as a water resource and the wetlands within the Bear Creek Greenway as a riparian resource. The Comprehensive Plan has stated goals to:

> *"Reduce the impact of urbanization and other land uses on the quality of water in and around Ashland…"*

and

> *"Protect the quality of riparian resource lands, and preserve their wildlife habitats."*

To comply with Goal 5 requirements for riparian corridors, the City of Medford has proposed a Riparian Corridor Ordinance for adoption into the Medford Land Development Code. The ordinance provides for a riparian corridor boundary of 50 feet, measured from the top-of-bank along both sides of waterways with an average annual flow of less than 1,000 cubic feet per second (cfs) and identified as being fish-bearing streams, or other waterways having riparian areas determined to be significant, which includes Bear Creek(City of Medford, City of Medford Comprehensive Plan, 2000).



0.5 0.25 0 0.5 Miles

Source Data: Jackson County, ESRI, Oregon GEO, ODFW, RVCOG

Legend

- Area of Project Impact (API)
- Urban Growth Boundary (UGB)
- River/Stream
- 100-Year Floodplain
- Coho Salmon (Existing Habitat)
- Chinook Salmon (Existing Habitat)

Wetland Classification

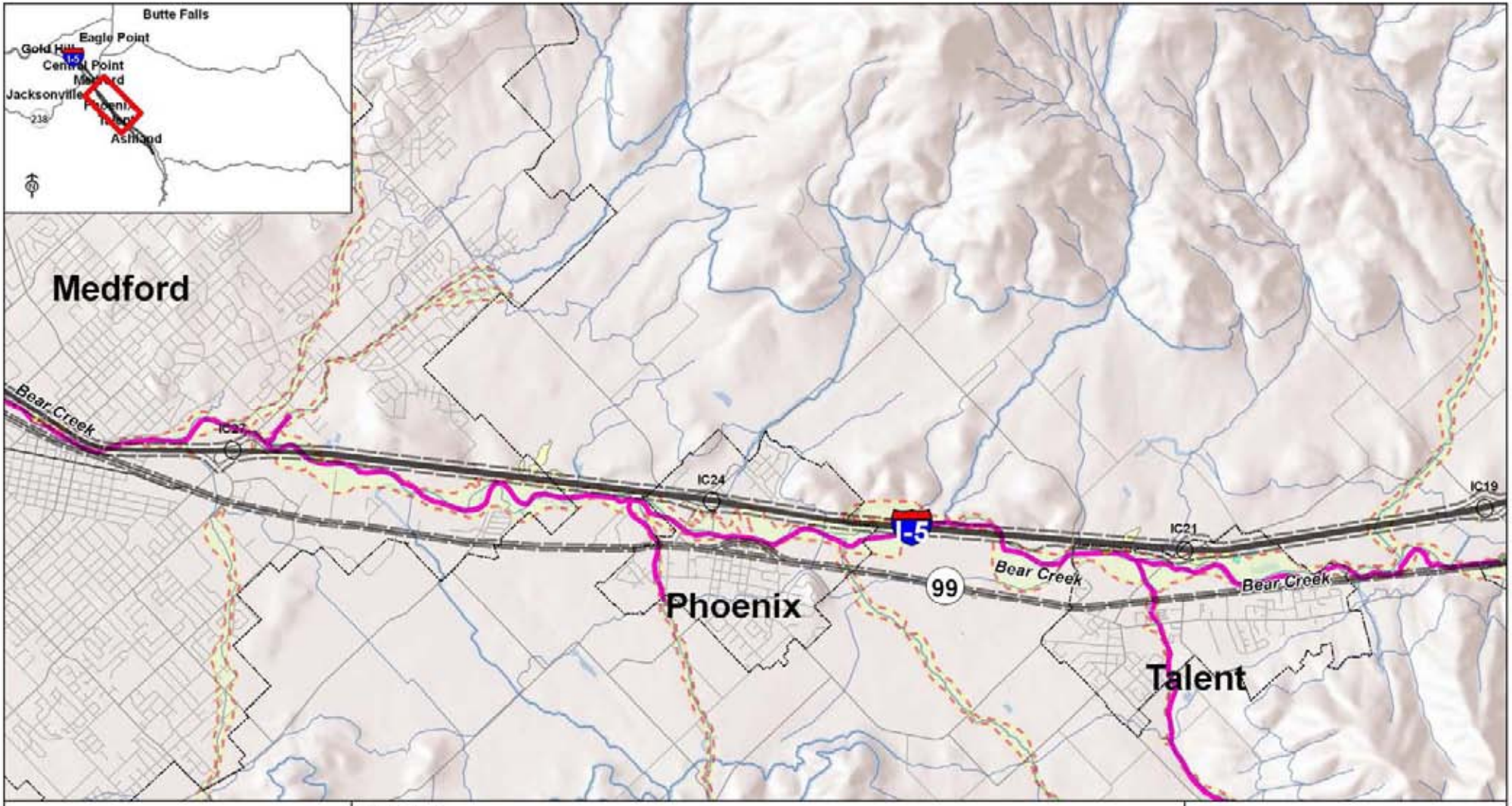
- Palustrine Aquatic
- Palustrine Emergent
- Palustrine Forested
- Palustrine Scrub-Shrub
- Palustrine - Other
- Riverine Upper Perrenial

I-5: Rogue Valley Corridor Study

Figure 3-1 (1 of 3)

Critical Habitats, Floodplains and Wetlands

June 2009



0.5 0.25 0 0.5 Miles

Source Data: Jackson County, ESRI, Oregon GEO, ODFW, RVCOG

Legend

- Area of Project Impact (API)
- Urban Growth Boundary (UGB)
- River/Stream
- 100-Year Floodplain
- Coho Salmon (Existing Habitat)
- Chinook Salmon (Existing Habitat)

Wetland Classification

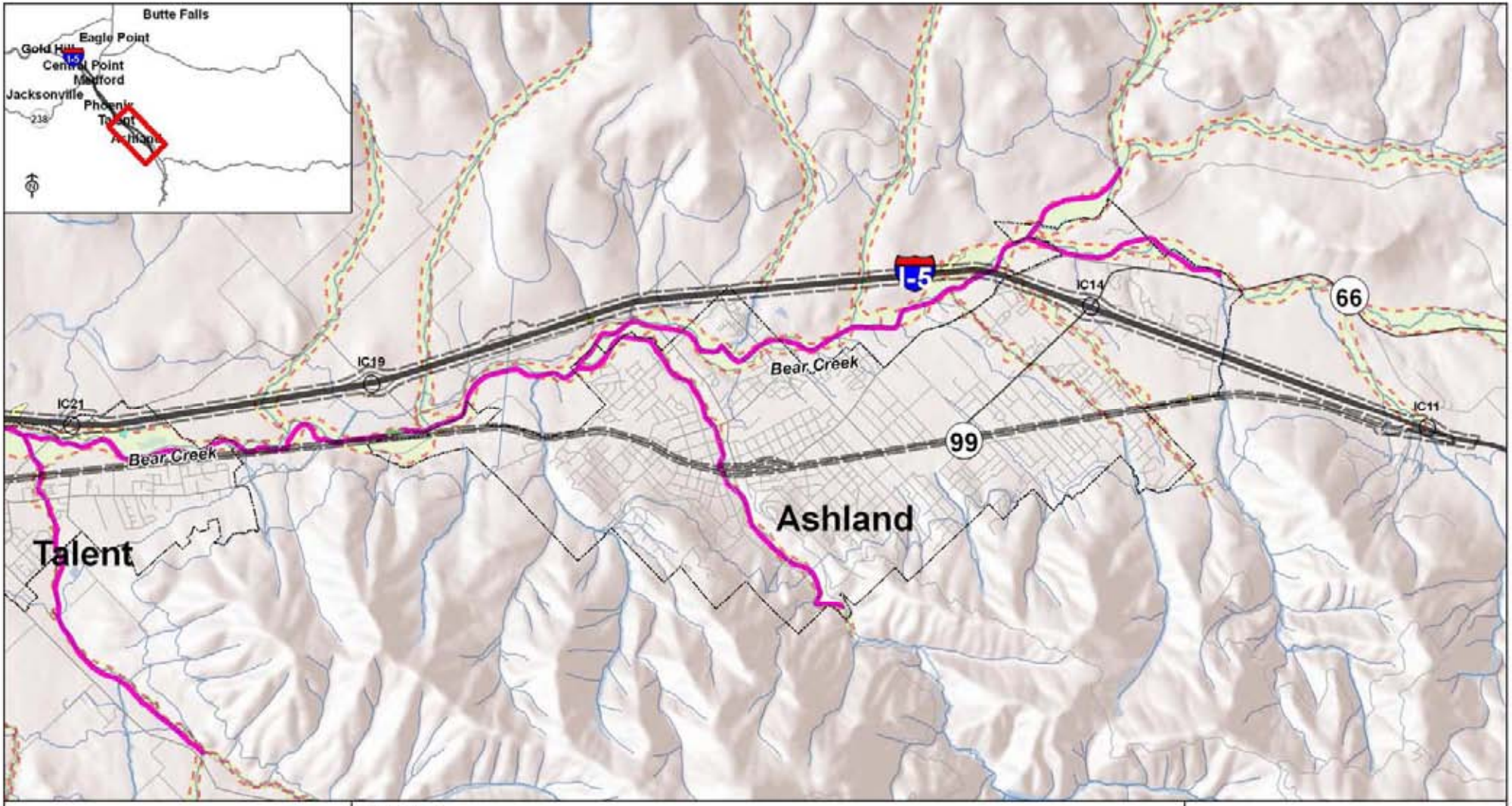
- Palustrine Aquatic
- Palustrine Emergent
- Palustrine Forested
- Palustrine Scrub-Shrub
- Palustrine - Other
- Riverine Upper Perrenial

I-5: Rogue Valley Corridor Study

Figure 3-1 (2 of 3)

Critical Habitats, Floodplains and Wetlands

June 2009



0.5 0.25 0 0.5 Miles

Source Data: Jackson County, ESRI, Oregon GEO, ODFW, RVCOG

Legend

- Area of Project Impact (API)
- Urban Growth Boundary (UGB)
- River/Stream
- 100-Year Floodplain
- Coho Salmon (Existing Habitat)
- Chinook Salmon (Existing Habitat)

Wetland Classification

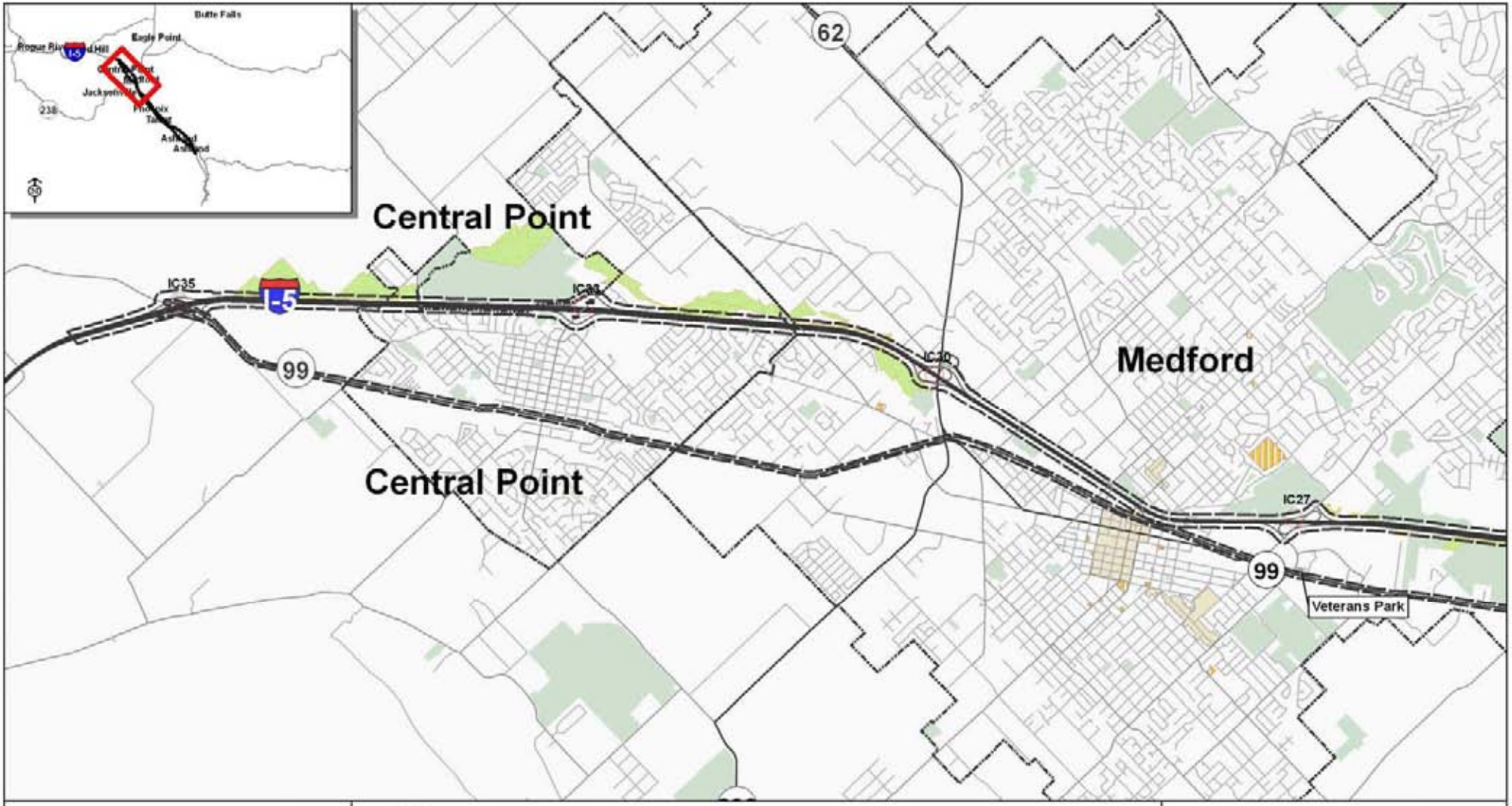
- Palustrine Aquatic
- Palustrine Emergent
- Palustrine Forested
- Palustrine Scrub-Shrub
- Palustrine - Other
- Riverine Upper Perrenial

I-5: Rogue Valley Corridor Study

Figure 3-1 (3 of 3)

Critical Habitats, Floodplains and Wetlands

June 2009



0.5 0.25 0 0.5 Miles

Source Data: City of Medford, Jackson County, ESRI, Oregon GEO, RVCOG

Legend

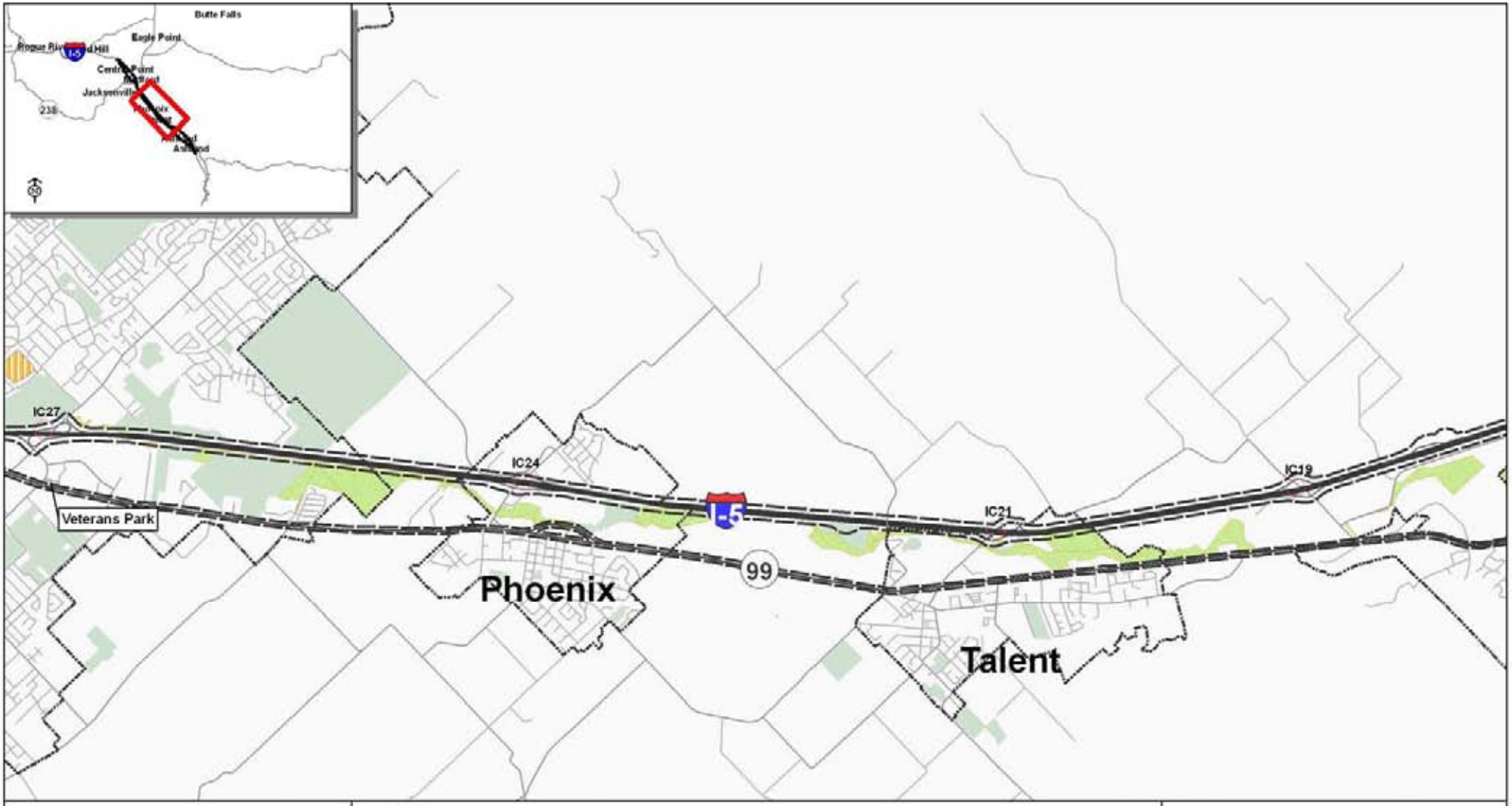
- Project Area
- Interchange
- Urban Growth Boundary (UGB)
- City of Medford - Historic District
- City of Medford - Historic Resource
- Bear Creek Greenway
- Park/Open Space
- City of Ashland Historic District
  - Downtown
  - Siskiyou-Hargadine
  - Railroad
  - Skidmore

I-5: Rogue Valley Corridor Study

Figure 3-2 (1 of 3)

Cultural Resources and National Historic Sites and Districts

June 2009



0.5 0.25 0 0.5 Miles

Source Data: City of Medford, Jackson County, ESRI, Oregon GEO, RVCOG

Legend

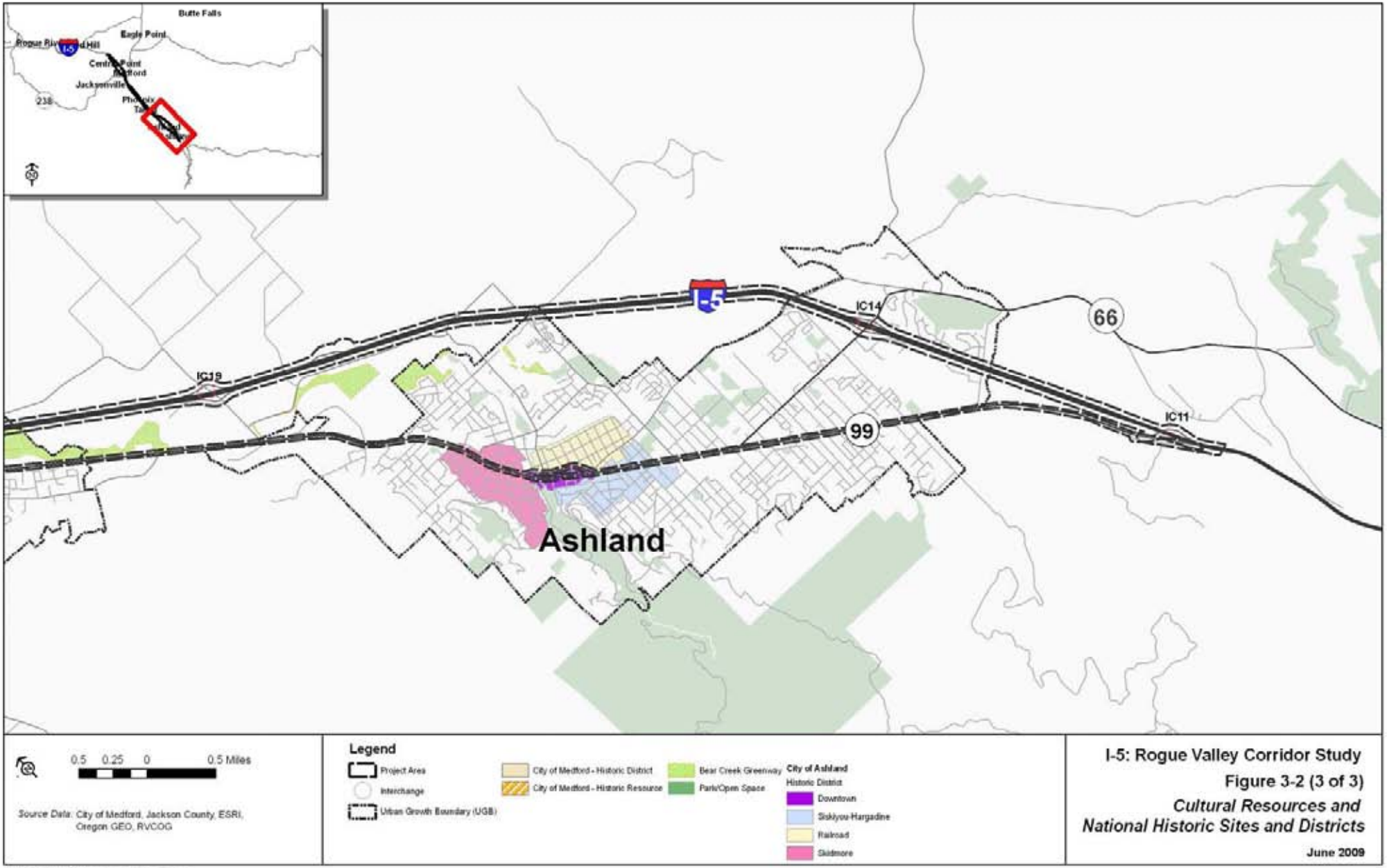
- Project Area
- Interchange
- Urban Growth Boundary (UGB)
- City of Medford - Historic District
- City of Medford - Historic Resource
- Bear Creek Greenway
- Park/Open Space
- City of Ashland Historic District
  - Downtown
  - Siskiyou-Hargadine
  - Railroad
  - Skidmore

I-5: Rogue Valley Corridor Study

Figure 3-2 (2 of 3)

Cultural Resources and National Historic Sites and Districts

June 2009



I-5: Rogue Valley Corridor Study

Figure 3-2 (3 of 3)

Cultural Resources and National Historic Sites and Districts

June 2009

The City of Ashland has recently proposed an amendment to the Ashland Land Use Ordinance adding Water Resource Protection Zones to the Comprehensive Plan. This amendment is proposed for consistency with the Ashland Comprehensive Plan concerning the goals and policies related to the preservation and protection of Ashland's wetlands and riparian areas, which includes Bear Creek and the Bear Creek Greenway. The amendment is also intended to comply with Goal 5.

Further discussion of locally identified wetlands is provided in the "Wetlands" subsection.

FEMA Floodplain/Floodway

Acting through the local planning agencies, the Federal Emergency Management Agency (FEMA) regulates development within floodplains. FEMA-designated flood areas in the vicinity of the Corridor Plan area, also displayed in **Figure 3-1**, generally trace Bear Creek and its tributaries. I-5 roughly parallels the Bear Creek 100-year and 500-year floodplain between Central Point and Ashland. The freeway crosses the stream and floodplain at six locations: three in Medford (north of downtown, downtown, and again south of downtown), once in Phoenix, again north of Talent, and a sixth time outside Ashland north of Interchange 14, where I-5 veers south toward the Siskiyou Pass and away from Bear Creek. In addition, I-5 crosses floodplains of Bear Creek tributaries at various locations, including Jackson Creek and Griffin Creek north of Central Point; Myer Creek south of Talent; and Kirchen Creek, Gaerky Creek, and Hamilton Creek in the Ashland vicinity.

The OR-99 corridor is impacted by 100-year and 500-year floodplain crossings at Jackson Creek and Griffin Creek (Central Point); Coleman Creek and Anderson Creek (Phoenix); Wagner Creek (Talent); and Ashland Creek, Clay Creek, and Hamilton Creek (Ashland).

Wetlands

For this memorandum, wetland data recorded by the US Fish and Wildlife Service, dated 2002, was provided by Jackson County in GIS shapefile format. This shapefile data was overlayed with the Project Area and is shown on **Figure 3-1**.

Bear Creek, which traverses the Area of Potential Impact (API) for most of its entire length, is designated as Essential Salmonid Habitat (ESH) by the Oregon Department of State Lands (DSL). Bear creek supports runs of coho and chinook salmon (please refer to **Figure 3-1**), steelhead trout, and resident cutthroat trout. The U.S. Environmental Protection Agency lists Bear Creek as a "303(d)" stream due to flow modification, habitat modification, summer temperatures, and fecal coliform levels.

One riverine, upper perennial (R3UBH) area is within the API. The riverine area is located approximately 1.3 miles northwest of I-5 Interchange 33 and totaling 1.3 acres in size.

The riparian wetlands are classified as:

- Palustrine, emergent, seasonally flooded (PEMC),
- Palustrine, scrub-shrub, seasonally flooded (PSSA) and saturated (PSSB),
- Palustrine, forested, seasonally flooded (PFOC),
- Palustrine, aquatic bed, semi-permanently flooded, excavated (PABFx) and permanently flooded, excavated (PABHx), and
- Palustrine, unconsolidated bottom (PUBFh)

Riparian and wetland vegetation identified within the Project Area includes Douglas Fir, Siskiyou mixed evergreen forest, Pacific madrone forest/woodland, annual grasslands, and agricultural grassland.

Historic and Archaeological Resources

Under Section 106 of the National Historic Preservation Act of 1966 (Public Law 89-665), 16 United States Code (USC) 470-470m, and under federal regulations governing the protection of historic and cultural resources (36 Code of Federal Regulations [CFR] 800), federal agencies, and the state and local agencies to which the federal agency has delegated responsibility, are directed to avoid undertakings that adversely affect properties that are included in or are eligible for inclusion in the National Register of Historic Places (NRHP). The NRHP identifies and documents (in partnership with state, federal, and tribal preservation programs) districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

The project team contacted Jessica Bochart, ODOT's Rogue Valley Office Archaeologist, to identify recorded archeological locations within the Project Area. Six sites were identified within 200 feet of I-5. They are located at the following points, with the direction of I-5 corresponding to which side of the highway the sites are located:

- MP 33.8 – Southbound
- MP 27.2 – Northbound
- MP 26.8 – Southbound (three sites)
- MP 26.5 – Southbound (two sites)
- MP 26.55 – Southbound
- MP 17.28-17.45 – Northbound and Southbound

Figure 3-2 shows Historic Districts and Historic Resources, as identified by the City of Medford and The City of Ashland, within the Project Area. The City of Medford adopted the Historic Preservation Ordinance in 1986, with the purpose of maintaining, preserving and rehabilitating properties of Oregon Historical Significance. The Medford Historic Preservation Overlay district complements the National Historic Preservation Act and NHRP designations. The Project Area is located within the northern part of the Medford Downtown Historic District Area, which is bounded by Riverside Avenue. The district is predominantly commercial, but also contains

numerous residential structures. The district also falls within Medford's "City Center" Comprehensive Plan designation and Central Business (CB) overlay zoning district. The Medford Downtown City Center Vision Plan, prepared in 1994, states that:

> *…(t)his emphasis on preservation is critical in the downtown central district... As new infill development and redevelopment is completed in each of the (downtown) districts, the new construction should be undertaken with a sensitivity and respect for the existing historic fabric of the downtown city center."*

The Historic Resources within Medford's Urban Growth Boundary (UGB) are categorized as inventoried historic resources with a significant designation and not having been designated, but potentially significant.

The Project Area traverses part of each of Ashland's four Historic Districts: the Downtown District, the Siskiyou-Hargadine District, the Railroad District, and the Skidmore Academy District. The Railroad District and Downtown District, in addition to their local designation, are on the National Register. These districts feature many historic homes, churches, commercial and civic buildings. The Oregon State Historic Preservation Office (SHPO) lists properties listed in the NHRP, including a listing by county. The property list can be found on the following website: http://www.oregon.gov/OPRD/HCD/NATREG/index.shtml

I-5 Right-of-Way

The project team contacted Debbie Timms, Senior Right-of-Way Agent for ODOT Region 3, for information regarding the I-5 and OR 99 corridors through the Rogue Valley region. She did not identify right-of-way constraints along I-5, other than Section 6(f) properties adjacent to the Medford Viaduct and its approaches that would perhaps make widening prohibitively expensive. For example, the Valley of the Rogue State Park, located at the northern approach of the viaduct, would be impacted should any proposed I-5 roadway widening occur.

Impacts associated with OR-99 would be more complicated. Much of the roadway width currently does not meet acceptable state standards. Along some roadway sections, exact right-of-way dimensions are unknown. Furthermore, the roadway provides multiple accesses to adjacent business and residential properties. Hence, potential right-of-way impacts could be increased because of these various constraints.

Air Quality

Surrounded by mountains, the Rogue Valley tends to hold pollutants produced by industrial plants, woodstoves, motor vehicles, and other sources. In order to address air quality concerns, the federal Environment Protection Agency (EPA) designated two air quality boundaries within the Rogue Valley. Medford's UGB was established as the boundary for carbon monoxide (CO) in 1978, and the Medford-Ashland Air Quality Maintenance Area (AQMA), corresponding to the RVMPO boundary, was designated for particulate matter in 1987.

CO emissions from transportation sources are tied exclusively to tailpipe emissions and are generated from the combustion of fuel. Vehicle tailpipes emit the highest concentrations of CO

when idling or traveling at low speeds. Emission rates decrease as speeds increase, reaching a minimum rate between 45 mph and 50 mph, and gradually increase again as the vehicle speed surpasses 50 mph.

Particulate matter (PM) is a complex mixture of extremely small particles and liquid droplets that is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. The EPA monitors particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. The EPA divides particle pollution into two categories differentiated by size, assigning them a notation of PM_{10} or $PM_{2.5}$.

1. PM_{10} (larger than 2.5 micrometers and smaller than 10 micrometers in diameter) are course particles, generally found near roadways and dusty industries.

2. $PM_{2.5}$ (smaller than 2.5 micrometers in diameter) are fine particles that can form when gases that are emitted from power plants, industries, and automobiles react in the air. They are also directly emitted from sources such as forest fires. Essentially, the smaller and lighter the particle is, the longer it will stay in the air.

In the past, the Rogue Valley region exceeded National Ambient Air Quality Standards (NAAQS) for both CO and PM and, subsequently, became a designated non-attainment area for these pollutants. Non-attainment means that a geographic area has not consistently met the clean air levels set by the EPA through the NAAQS. Recent air quality monitoring results have demonstrated consistent compliance with NAAQS, as displayed in **Table 3-1**.

With improved air quality, the Medford metropolitan area is today an EPA-designated maintenance area, meaning that it has had a history of non-attainment, but now consistently meets EPA standards set by NAAQS. The area encompassed by the Medford UGB was redesignated from non-attainment to attainment by the EPA in 2002, while the area within the AQMA was redesignated from non-attainment to attainment in 2005. Analysis by the RVMPO has found that through the horizon of the 2009-2034 RTP and the 2010 Metropolitan Transportation Improvement Plan (MTIP), and in intervening years, emissions from transportation will not exceed current federal and state air quality standards.

Table 3-1. Ambient Air Quality Standards and Data Summaries for the Rogue Valley Region

Pollutant	Medford[4] (2007)	Standard Exceedance Level[4]	
		Federal NAAQS	Oregon
Carbon Monoxide (CO) – Maximum 1-hour average not to be exceeded more than once per year[1]	4.7 ppm	35 ppm	35 ppm
Carbon Monoxide (CO) – Maximum 8-hour average not to be exceeded more than once per year[1]	3.1 ppm	9 ppm	9 ppm
PM_{10} Particulate Matter – Maximum 24-hour average[2]	94 µg/m^3	150 µg/m^3	150 µg/m^3
$PM_{2.5}$ Particulate Matter – 3-year average of annual arithmetic mean[3]	9.7 µg/m^3	15 µg/m^3	Not Specified
$PM_{2.5}$ Particulate Matter – 98th percentile of the 24-hour values determined for each year[3]	30 µg/m^3	35 µg/m^3	Not Specified

Notes:
1. Recorded at Rogue Valley Mall
2. Recorded at Welch Street and Jackson Drive
3. Recorded at Grant Avenue and Belmont Street
4. ppm (parts per million); µg/m3 (micrograms of pollutant per cubic meter of air)

Source: 2007 Oregon Air Quality Annual Report, DEQ

Noise Quality

In addition to the pollutants described above, noise is also a pollutant that is transmitted through the air. Noise comprises three factors as perceived by the human ear: level of sound, frequency, and period of exposure to sound and fluctuations in sound levels. Levels of noise are measured in units called decibels (dB). However, in order to account for sensitivity of the human ear to frequencies, an adjustment is made to the dB measurement scale. The adjusted scale, referred to as the A-weighted decibel (dBA) scale, provides a more accurate measure of what the human ear can actually hear and is used in most environmental noise studies.

The Federal Highway Administration (FHWA) stipulates procedures and criteria for noise assessment studies taken from Title 23 of the Code of Federal Regulations (CFR) Part 772, Procedures for Abatement of Highway Noise and Construction Noise. Applicable to both traffic noise and construction noise, the FHWA Roadway Noise Abatement Criteria (NAC) are assigned to both exterior and interior activities differentiated by land use. Land uses along the corridor include residences, park/recreation areas, commercial, and undeveloped lands. A summary of the FHWA noise regulations are as follows:

- Category B (67 dBA) – Residences, parks, churches
- Category C (72 dBA) – Commercial uses
- Category D (Not Applicable) – Undeveloped lands
- Category E (52 dBA) – Interior of buildings such as residences, motels, and churches

ODOT considers a traffic noise impact to occur when the criteria sound levels predicted to be approached or exceeded are 2 dBA less than the FHWA criteria during the noisiest one-hour

period. Therefore, residential properties (Type B property) occur at 65 dBA, and commercial impacts (Type C property) occur at 70 dBA, the noise impact threshold for Category B land uses, such as residential, is 65 dBA.

Although no detailed noise impact study has been performed for the I-5 Rogue Valley Corridor Plan, a noise assessment was conducted for the South Medford (Exit 27) Interchange Project Draft Environmental Impact Statement. Existing noise levels at the sites measured a range from 50 to 69 dBA. At peak noise levels, slightly more than a third of the areas studied approached or exceeded the 67 dBA FHWA criteria for residences and other sensitive land uses. Likewise, noise assessments conducted as part of the Fern Valley Interchange (Exit 24) Environmental Assessment identified multiple locations that exceeded the FHWA criteria.

Visual Resources

Motorists traveling I-5 through the Rogue Valley region are provided opportunities to glimpse some of southern Oregon's many scenic landmarks. Descending into the Rogue Valley from the north, 9,500-foot high Mount McLoughlin, one of the many Cascade volcanoes is viewable on a clear day and serves as a natural gateway entrance into the Rogue Valley. The Upper and Lower Table Rocks also come into view to the north along this approach. Traveling northbound along I-5, motorist descending the Siskiyou Pass into the Ashland vicinity are greeted with a sweeping view of the lower Rogue Valley and the foothills of the Cascade Range. The terrain is relatively flat through the northern portion of the I-5 corridor plan area between Central Point and Talent. South of Interchange 19 (North Ashland), I-5 passes through rolling terrain that provides vantage points for viewing the city of Ashland in the distance and the Siskiyou foothills and range beyond.

The parallel route of OR-99 passes through the downtowns of Central Point, Medford, Phoenix, Talent, and Ashland, providing direct access to the Ashland Shakespearean amenities and Southern Oregon University.

Socioeconomic and Environmental Justice

Population and Community

The U.S. Census Bureau documented a 23.8% population increase within the Medford Metropolitan Statistical Area (MSA) between 1990 and 2000 compared with 20.4% for the state as a whole. The Medford MSA shares the same boundaries with Jackson County. Hence, information pertaining to the MSA and county are the same. So far this decade, the Medford MSA population has increased from 181,269 in 2000 to 205,305 in 2008 – a 13.3 percent increase compared with 10.8 percent for the state during the same time period. As **Table 3-2** suggests, the Medford region has consistently grown at a faster rate than the rest of Oregon. Closer examination, however, reveals that the region's growth rate is more dependent upon net migration into the area and less on natural increase (deaths subtracted from births). Compared with the rest of the state, less than 10 percent of the Medford areas population growth was attributed to natural increase, compared with 35 percent for Oregon. As Table 3-2 demonstrates, over 90 percent of the areas growth is a direct result of new arrivals from outside the region.

Table 3-2. Components of Population Change 2000 to 2008 for Medford MSA and Oregon

Table Style + bold	**Medford MSA[1]**	**Oregon**
Population		
April 1, 2000 Census	181,269	3,421,399
July 1, 2008 PSU[2] Estimate	205,305	3,791,075
Population (Percent) Change 2000 -08	24,036 (13.3%)	369,676 (10.8%)
Components of Population Change		
Natural Increase (Percent of Pop. Change)	2,289 (9.5%)	132,180 (35.7%)
Births	*18,326*	*384,725*
Deaths	*16,037)*	*252,545*
Net Migration (Percent Change 2000-08)	21,747 (90.5%)	237,496 (64.2%)

Notes:
5. Medford Metropolitan Statistical Area (Jackson County)
6. Portland State University

SOURCE: U.S. Census Bureau; Oregon Employment Department (OED); Portland State University (PSU)

The natural increase data suggests that long term residents are older than the state average and, based on **Table 3-3**, so are new residents who move the area from somewhere else. Although the proportion of school age residents (ages 0-17) are roughly equal between the Medford MSA and the state, the gap starts to widen when comparing the working age populations (ages 18-64) and widens even further between the region and the state when comparing the retirement age population (ages 65 and over).

These conclusions parallel those found by the project team involved with the Bear Creek Valley Regional Problem Solving (RPS) Project – citing, for example, that residents over 50 represent a greater share of the total population than the rest of Oregon. It also concludes that the Bear Creek Valley has comparatively fewer residents between 20 and 49 while the smallest population increase came from residents under 5 years old. The RPS also concludes that the region has become a destination of choice for retirees, primarily from western states, and especially from California.

Table 3-3. Population by Age Groups for Medford MSA and Oregon

	Ages 0-17		**Ages 18-64**		**Ages 65 and Over**	
	Population	Percentage	Population	Percentage	Population	Percentage
Medford MSA	46,232	22.5%	126,235	61.5%	32,838	16.0%
Oregon	884,364	23.3%	2,418,169	63.8%	488,542	12.9%

SOURCE: Portland State University (PSU)

Income and Employment

Based on the *Economic Opportunities Analysis* drafted by ECONorthwest for the Bear Creek RPS Project, nearly 60 percent of Jackson County households recorded less than $50,000 annual income, compared with 54 percent of the state as a whole. Annual per capita income in Jackson County was $33,516 in 2007 compared with $35,143 for all of Oregon. Oregon's per capita personal income is consistently lower than the U.S. personal income and Jackson County, in turn, consistently ranks lower than Oregon.

As displayed in **Table 3-4**, the sectors with the most employment in Jackson County were Retail Trade, Educational and Health Services, and Government. Sectors recording the greatest amount of growth since 2001 included Construction, Financial Activities, and Educational and Health Services. Sectors displaying decline were Information, Manufacturing, and State Government.

Between 2000 and 2008, Medford MSA unemployment rates have ranged from 6.0 percent to 7.5 percent, trending slightly lower than the state average. The 2009 global recession has impacted the region and state with double digit unemployment rates. As of April 2009, Jackson County recorded 13.9 percent of its workforce as unemployed compared to 11.9 percent for the state.

Minorities

The U.S. Bureau of Census identifies minorities as individuals who are members of the population groups including Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, other race, two or more races, and of Hispanic origin.

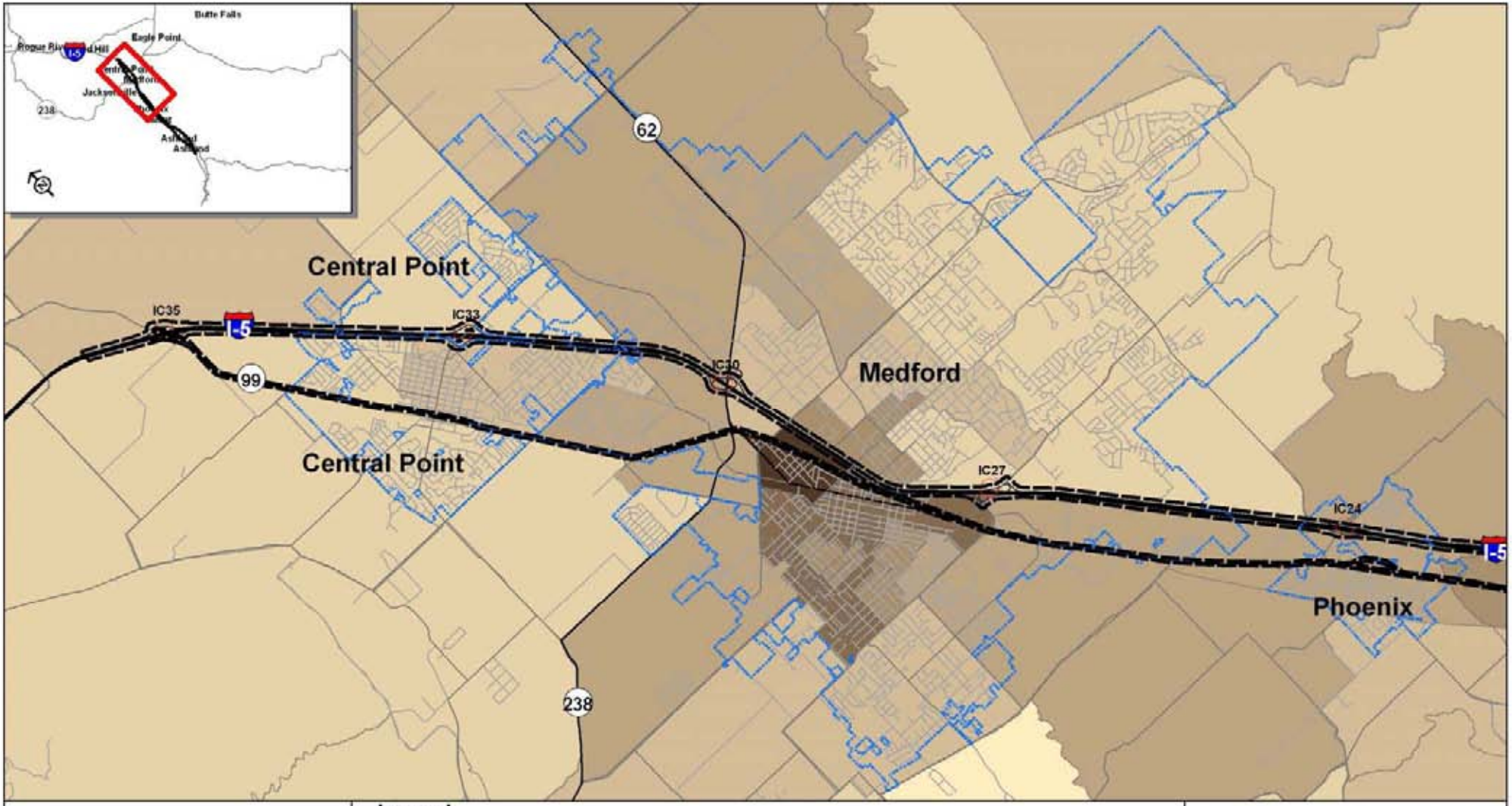
Table 3-4. Non-Farm Payroll Employment in Medford MSA, 2001-2008

Industry	2001	2008	Pct. Change
Total Non-Farm Employment	**74,660**	**81,930**	**9.7%**
Total Private	62,390	69,840	11.9%
Mining and Logging	500	620	24.0%
Construction	3,550	4,680	31.8%
Manufacturing	7,660	7,300	-4.7%
Trade, Transportation, and Utilities	17,630	19,230	9.1%
Wholesale Trade	2,120	2,500	17.9%
Retail Trade	13,150	13,910	5.8%
Transportation, Warehousing, and Utilities	2,360	2,820	19.5%
Information	1,830	1,580	-13.7%
Financial Activities	3,520	4,270	21.3%
Professional and Business Services	6,350	7,530	18.6%
Educational and Health Services	10,260	12,300	19.9%
Leisure and Hospitality	8,610	9,600	11.5%
Other Services	2,660	2,740	3.0%
Government	12,080	12,090	0.1%
Federal Government	1,730	1,730	0.0%
State Government	3,010	2,850	-5.3%
Local Government	7,330	7,510	2.5%

SOURCE: Oregon Employment Department (OED)

Figure 3-3 utilizes the Diversity Index to summarize racial and ethnic diversity in the project area. The index shows the likelihood that two persons chosen at random from the same area, belong to different race or ethnic groups. The index ranges from 0 (no diversity) to 100 (complete diversity). For example, the diversity score for the U.S. is 60, indicating that there is a 60 percent probability that two people randomly chosen from the U.S. population would belong to different race or ethnic groups. Jackson County has a composite Diversity Index of 32.7. Generally, Medford features the highest Diversity Index score, with Ashland having the lowest score.

The minority population in all of the categories, including all minority races combined, is not above 50 percent in the surrounding project area.



0.5 0.25 0 0.5 Miles

Source Data: Jackson County, RVCOG, ESRI, Oregon GEO

Legend

- Project Area
- Interchange
- City Boundary

*Diversity Index**

0.0 - 10.0	40.1 - 50.0	80.1 - 90.0
10.1 - 20.0	50.1 - 60.0	90.1 - 100.0
20.1 - 30.0	60.1 - 70.0	
30.1 - 40.0	70.1 - 80.0	

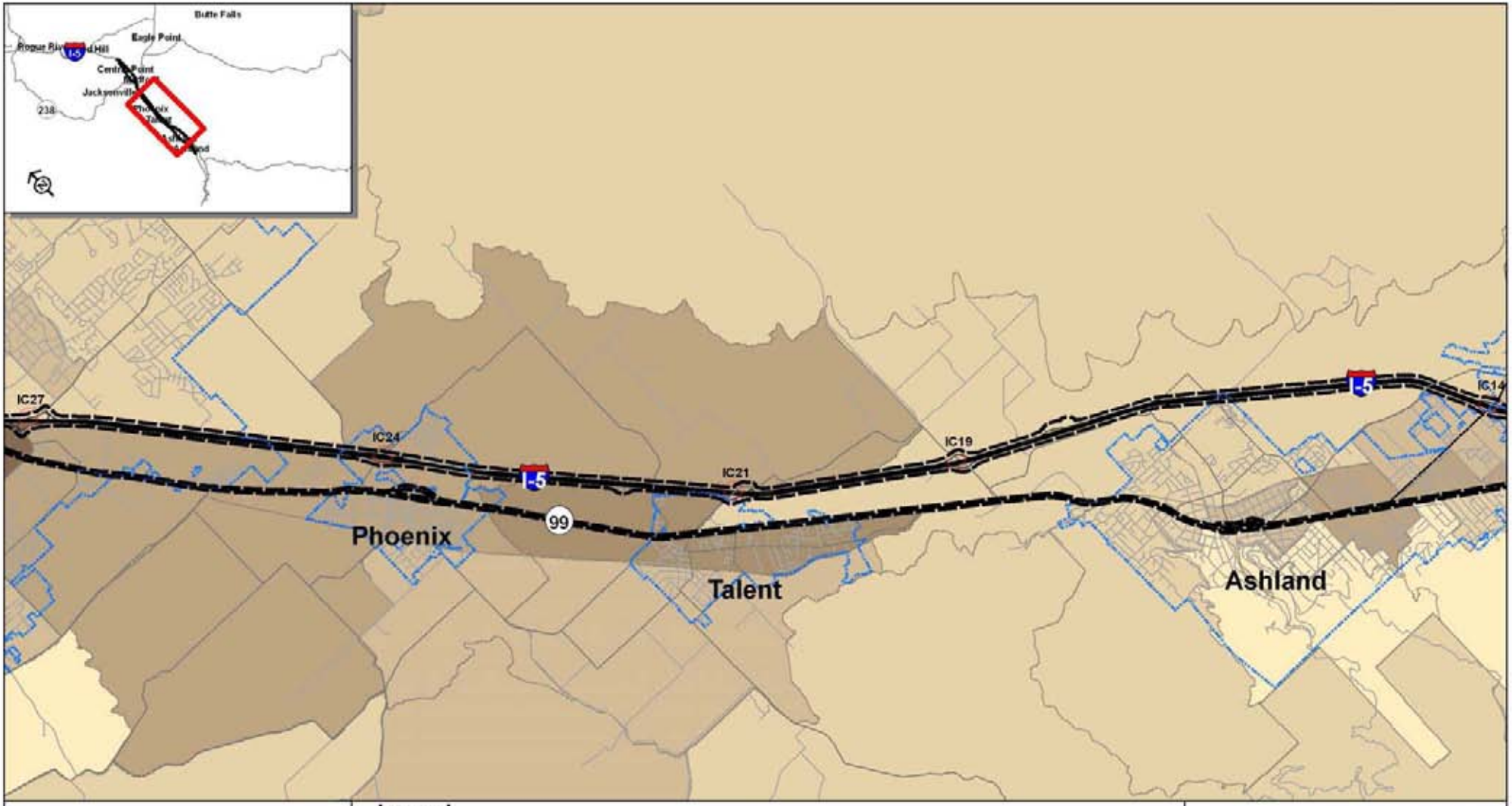
* The 2008 Diversity Index summarizes racial and ethnic diversity. The index shows the likelihood that two persons chosen at random from the same area, belong to different race or ethnic groups. The index ranges from 0 (no diversity) to 100 (complete diversity). For example, the diversity score for the U.S. is 60 which means there is a 60 percent probability that two people randomly chosen from the U.S. population would belong to different race or ethnic groups.

I-5: Rogue Valley Corridor Study

Figure 3-3 (1 of 3)

Ethnic Diversity Index

June 2009



0.5 0.25 0 0.5 Miles

Source Data: Jackson County, RVCOG, ESRI, Oregon GEO

Legend

- Project Area
- Interchange
- City Boundary

*Diversity Index**

0.0 - 10.0	40.1 - 50.0	80.1 - 90.0
10.1 - 20.0	50.1 - 60.0	90.1 - 100.0
20.1 - 30.0	60.1 - 70.0	
30.1 - 40.0	70.1 - 80.0	

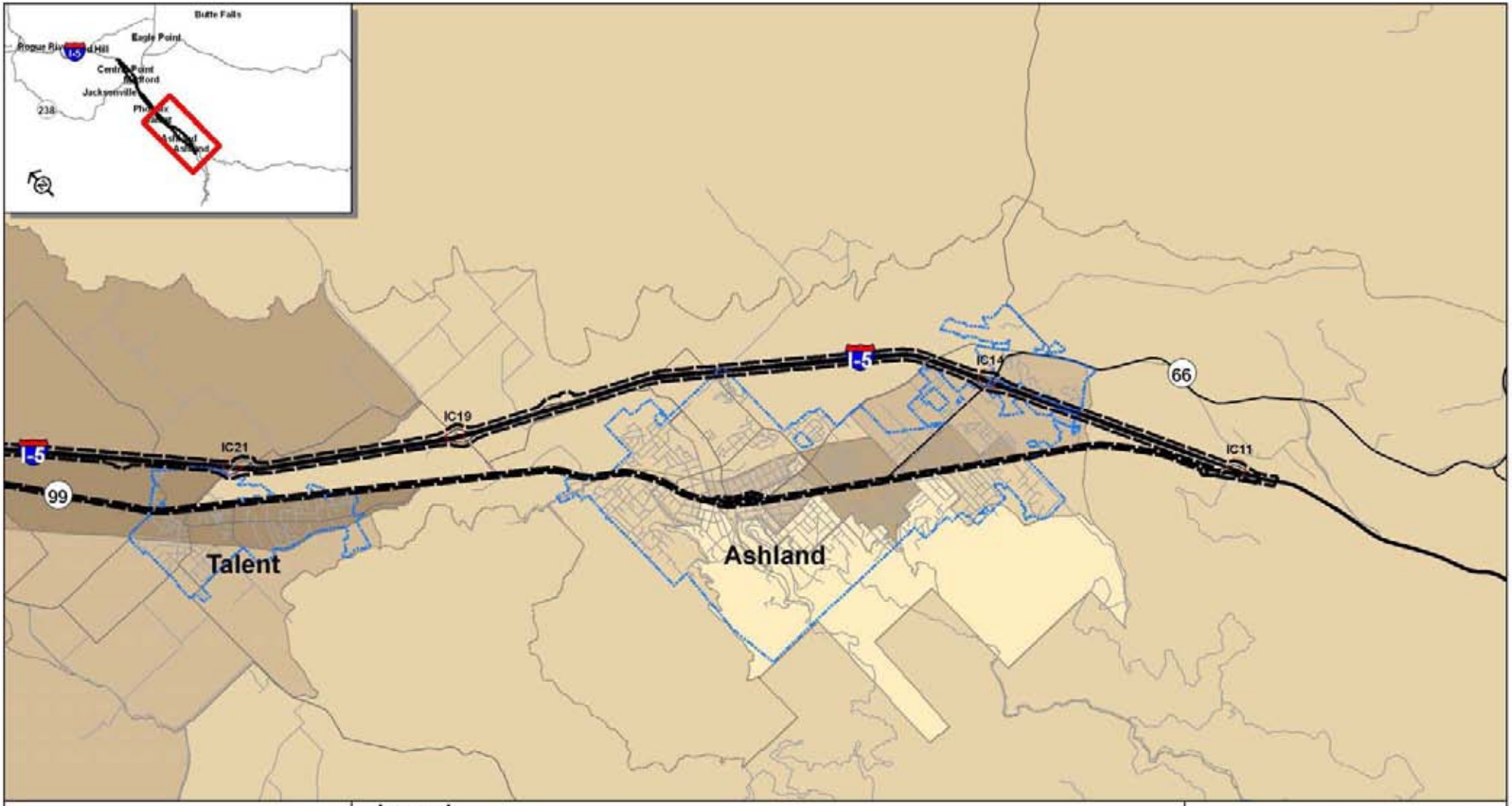
* The 2008 Diversity Index summarizes racial and ethnic diversity. The index shows the likelihood that two persons chosen at random from the same area, belong to different race or ethnic groups. The index ranges from 0 (no diversity) to 100 (complete diversity). For example, the diversity score for the U.S. is 60 which means there is a 60 percent probability that two people randomly chosen from the U.S. population would belong to different race or ethnic groups.

I-5: Rogue Valley Corridor Study

Figure 3-3 (2 of 3)

Ethnic Diversity Index

June 2009



0.5 0.25 0 0.5 Miles

Source Data: Jackson County, RVCOG, ESRI, Oregon GEO

Legend

- Project Area
- Interchange
- City Boundary

*Diversity Index**

0.0 - 10.0	40.1 - 50.0	80.1 - 90.0
10.1 - 20.0	50.1 - 60.0	90.1 - 100.0
20.1 - 30.0	60.1 - 70.0	
30.1 - 40.0	70.1 - 80.0	

* The 2008 Diversity Index summarizes racial and ethnic diversity. The index shows the likelihood that two persons chosen at random from the same area, belong to different race or ethnic groups. The index ranges from 0 (no diversity) to 100 (complete diversity). For example, the diversity score for the U.S. is 60 which means there is a 60 percent probability that two people randomly chosen from the U.S. population would belong to different race or ethnic groups.

I-5: Rogue Valley Corridor Study

Figure 3-3 (3 of 3)

Ethnic Diversity Index

June 2009

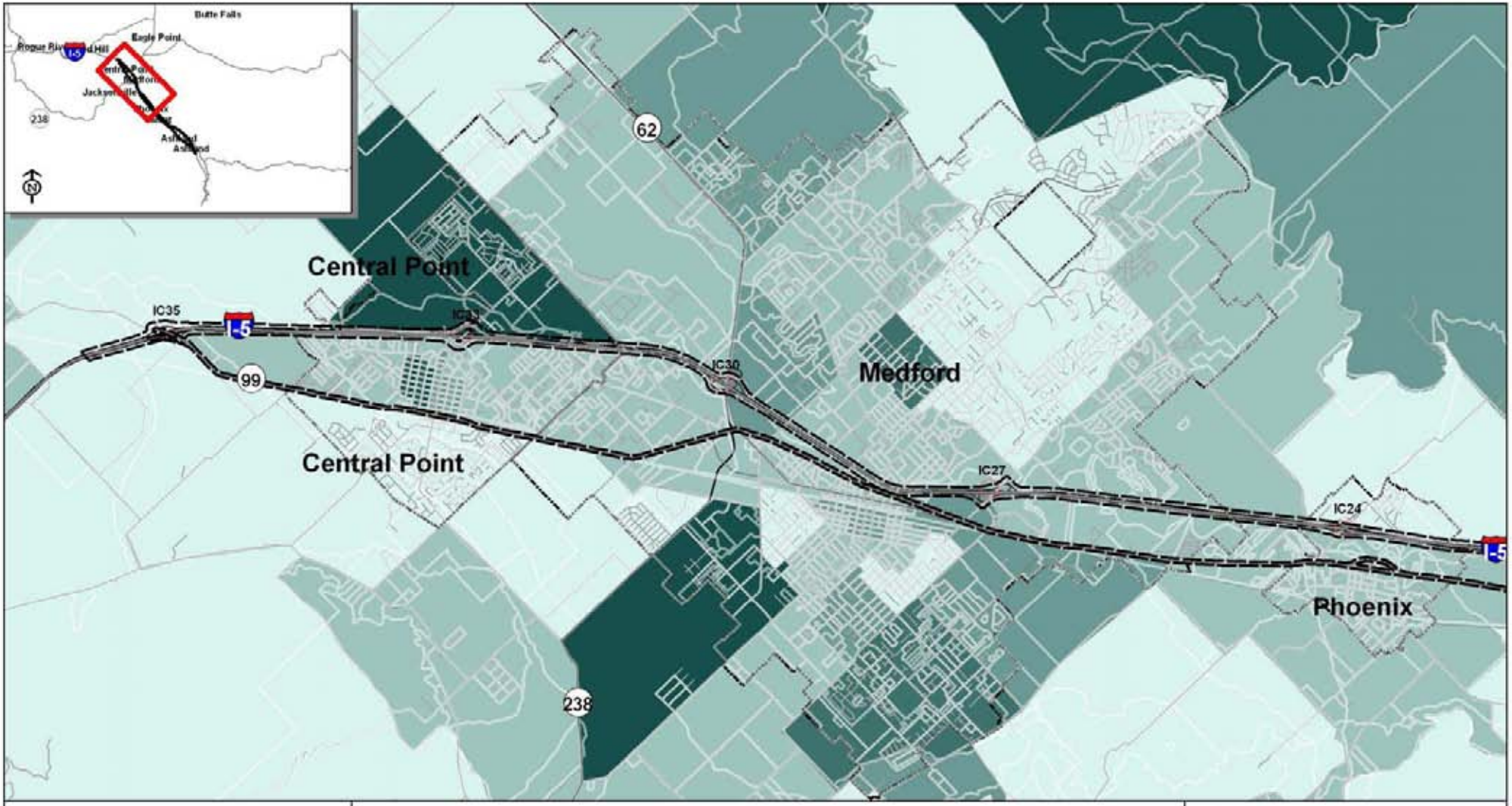
Poverty

In determining the poverty status of families and unrelated individuals, the Census Bureau used income earned in the previous 12 months (1999) and based income threshold on family size, presence and number of children, and age. Persons are in poverty status when income earned is less than the income threshold. The percent of population in poverty for the project area is shown in **Figure 3-4**. In the general project area, parts of Central Point east along I-5 show a poverty rate of 40-50%.

Threatened and Endangered Species

The Oregon Natural Heritage Information Center (ONHIC) database documents the federally listed and state listed, threatened, or endangered species. The State of Oregon and the federal government maintain separate lists of Threatened and Endangered (T & E) species. These are species whose status is such that they are at some degree of risk of becoming extinct. The ONHIC information, based on reported historic sightings in the vicinity of the I-5/OR-99 corridor through the Rogue Valley, is summarized in **Table 3-5**. Only one species, the Coho Salmon, is listed as a threatened species within the region.

Under state law (ORS 496.171-496.192) the Fish and Wildlife Commission, through the Oregon Department of Fish and Wildlife (ODFW), maintains the list of native wildlife species in Oregon that have been determined to be either “threatened” or “endangered” according to criteria set forth by rule (OAR 635-100-0105). Plant listings are handled through the Oregon Department of Agriculture, while most invertebrate listings are conducted through the Oregon Natural Heritage Program.



0.5 0.25 0 0.5 Miles

Source Data: Jackson County, ESRI, Oregon GEO

Legend

- Project Area
- Interchange
- Urban Growth Boundary (UGB)

Persons in Poverty

- Less than 10%
- 10% - 20%
- 20% - 30%
- 30% - 40%
- 40% - 50%

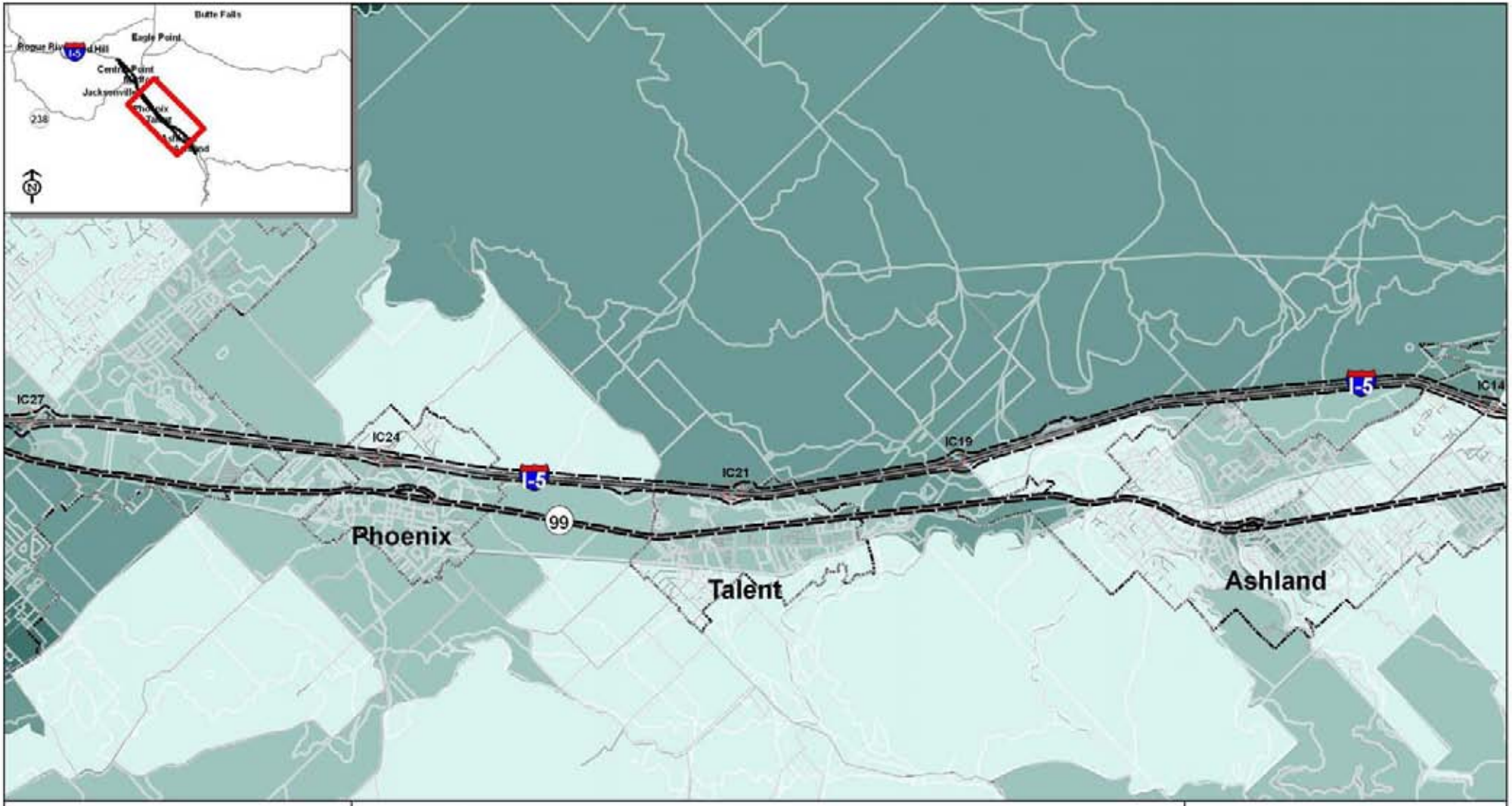
* Census Block Groups Outlined in White

I-5: Rogue Valley Corridor Study

Figure 3-4 (1 of 3)

Percent of Population in Poverty by Census Block Group

June 2009



0.5 0.25 0 0.5 Miles

Source Data: Jackson County, ESRI, Oregon GEO

Legend

- Project Area
- Interchange
- Urban Growth Boundary (UGB)

Persons in Poverty

- Less than 10%
- 10% - 20%
- 20% - 30%
- 30% - 40%
- 40% - 50%

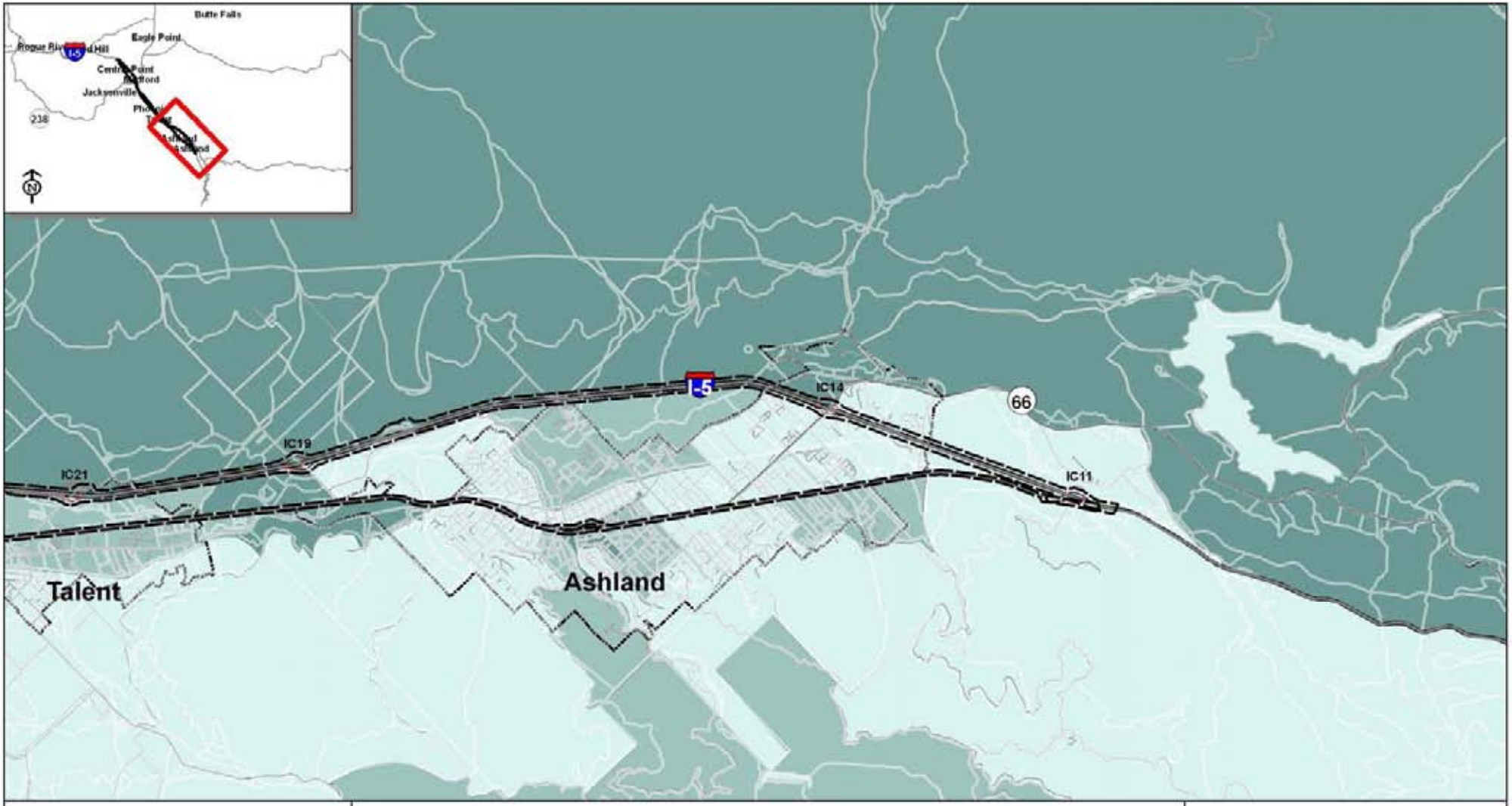
* Census Block Groups Outlined in White

I-5: Rogue Valley Corridor Study

Figure 3-4 (2 of 3)

Percent of Population in Poverty by Census Block Group

June 2009



0.5 0.25 0 0.5 Miles

Source Data: Jackson County, ESRI, Oregon GEO

Legend

- Project Area
- Interchange
- Urban Growth Boundary (UGB)

Persons in Poverty

- Less than 10%
- 10% - 20%
- 20% - 30%
- 30% - 40%
- 40% - 50%

* Census Block Groups Outlined in White

I-5: Rogue Valley Corridor Study

Figure 3-4 (3 of 3)

Percent of Population in Poverty by Census Block Group

June 2009

Table 3-5. ONHIC-Identified Listed Threatened or Endangered Species within I-5/OR-99 Rogue Valley Corridor Area

Common Name	Scientific Name	Status	
		Federal[1]	State[2]
Mammals			
Pallid Bat	*Antrozous Pallidus*	SOC	SV
Townsend's Big-Eared Bat	*Corynorhinus Townsendii*	SOC	SC
Birds			
Tricolored Blackbird	*Agelaius Tricolor*	SOC	No Status
Grasshopper Sparrow	*Ammodramus Savannarum*	No Status	SV
Reptiles/Amphibians			
Northern Pacific Pond Turtle	*Actinemys Marmorata Marmorata*	SOC	SC
Foothill Yellow-Legged Frog	*Rana Boylii*	SOC	SV
Fish			
Coho Salmon	*Oncorhynshus Kisutch*	LT	SC
Steelhead	*Oncorhynchus Mykiss*	No Status	SV
Chinook Salmon	*Oncorhnchus Tshawytscha*	No Status	SC
Insect			
Franklin's Bumblebee	*Bombus Franklini*	SOC	No Status
Plant			
Southern Oregon Buttercup	*Ranunculus Austrooreganus*	No Status	C

Notes:
1. SOC (Species of Concern); LT (Listed Threatened)
2. SV (Sensitive-Vulnerable); SC (Sensitive-Critical); SP (Sensitive-Peripheral); C (Critical)

Under federal law, the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) share responsibility for implementing the federal Endangered Species Act (ESA) of 1973 (Public Law 93-205, 16 USC § 1531), as amended. In general, USFWS has oversight for land and freshwater species and NOAA for marine and anadromous species. In addition to information about species already listed, the USFWS Oregon Field Office maintains a list of Species of Concern.

Once listed as threatened or endangered, a species is afforded the full range of protections available under the ESA, including prohibitions on killing, harming or otherwise "taking" a species. In some instances, species listing can be avoided by the development of Candidate Conservation Agreements that may remove threats facing the candidate species.

A species is listed under one of two categories, endangered or threatened, depending on its status and the degree of threat it faces. An "endangered species" is one that is in danger of extinction throughout all or a significant portion of its range. A "threatened species" is one that is likely to become endangered in the foreseeable future throughout all or a significant portion of its range. "Species of Concern" is an informal term under the federal listing that is not specifically defined in the federal ESA. The term commonly refers to species that are declining or appear to be in need of conservation.

Under Oregon's Sensitive Species Rule (OAR 635-100-040), a "sensitive" species classification was created that focuses fish and wildlife management and research activities on species that need conservation attention. "Sensitive" refers to naturally reproducing fish and wildlife species, subspecies, or populations that are facing one or more threats to their populations and/or habitats. Implementation of appropriate conservation measures to address the threats may prevent them from declining to the point of qualifying for threatened or endangered status.

Sensitive species are assigned one of two subcategories. "Critical" sensitive species are imperiled with extirpation from a specific geographical area of the state because of small population sizes, habitat loss or degradation, and/or immediate threats. Critical sensitive species may decline to the point of qualifying for threatened or endangered status if conservation actions are not taken. "Vulnerable" sensitive species are facing one or more threats to their populations and/or habitats. Although not currently imperiled with extirpation from a specific geographical area of the state, vulnerable species could, however, become so with continued or increased threats to populations and/or habitats.

Hazardous Materials

In July 2009 ODOT Region 3 Hazardous Materials Group performed an assessment of the I-5 corridor through the Rogue Valley region titled *I-5: Rogue Valley Corridor Study Known HazMat Sites,* to identify known sources of contamination within the project area. Sources of hazardous substances which were identified at the project site include heating oil tanks, Aboveground Storage Tanks (ASTs), Underground Storage Tanks (USTs), Hazardous Waste Generators, Oil Water separators, septic systems, solid waste, and suspect building materials (structures build prior to 1974 that may contain asbestos, lead based paint, PCB and fluorescent or High Intensity Discharge Lamps).

ODOT searched through web-based databases to review the available federal and state records for identified hazardous waste sites. The federal databases include the National Priority List (NPL), Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), Resource Conservation and Recovery Act (RCRA) Generators, and Emergency Response Notification System (ERNS).

The state databases include the Environmental Cleanup Site Information System (ECSIS), the Oregon State Fire Marshal's (OSFM) Hazardous Materials Incidents, Solid Waste Landfills, Leaking Underground Storage Tanks (LUSTs) and Underground Storage Tanks (USTs). Table 3-6 summarizes the databases searched and the search radii used for the project area. The complete report detailing identified hazardous waste sites categorized by site type is provided in **Appendix A**.

Table 3-6. Summary of State Listed Hazardous Waste Sites

Database Record	Search Radius	Total Sites Found
Federal NPL	Plan Area & Adjacent Properties	0
Federal CERCLIS	Plan Area & Adjacent Properties	0
Federal RCRA Generators	Plan Area & Adjacent Properties	37
Federal ERNS	Plan Area & Adjacent Properties	2
State ECSI	Plan Area & Adjacent Properties	21
State Fire Marshall's Spills	Plan Area & Adjacent Properties	54
Oregon Permitted Landfills	Plan Area & Adjacent Properties	1
State LUSTs	Plan Area & Adjacent Properties	85
State Listed USTs	Plan Area & Adjacent Properties	21

Source: ODOT, 2009.

4. LAND USE RECONNAISSANCE (SUMMARY OF BUILT ENVIRONMENT)

This section summarizes existing land use conditions and potential constraints found within the Corridor Plan Area. The information is primarily taken from published documents, maps, GIS data, and from Internet websites, including Jackson County, Rogue Valley Council of Governments (RVCOG), and the cities of Ashland, Talent, Phoenix, Central Point and Medford.

Existing Land Uses

The Corridor Plan Area passes linearly through the cities of Central Point, Medford, Phoenix, Talent and Ashland with largely agricultural areas between each city. OR-99 is a main street through the cities. Zoned land uses in the Corridor Plan Area range from agricultural to industrial as displayed in **Figure 4-1** and described in further detail by jurisdiction below.

Central Point

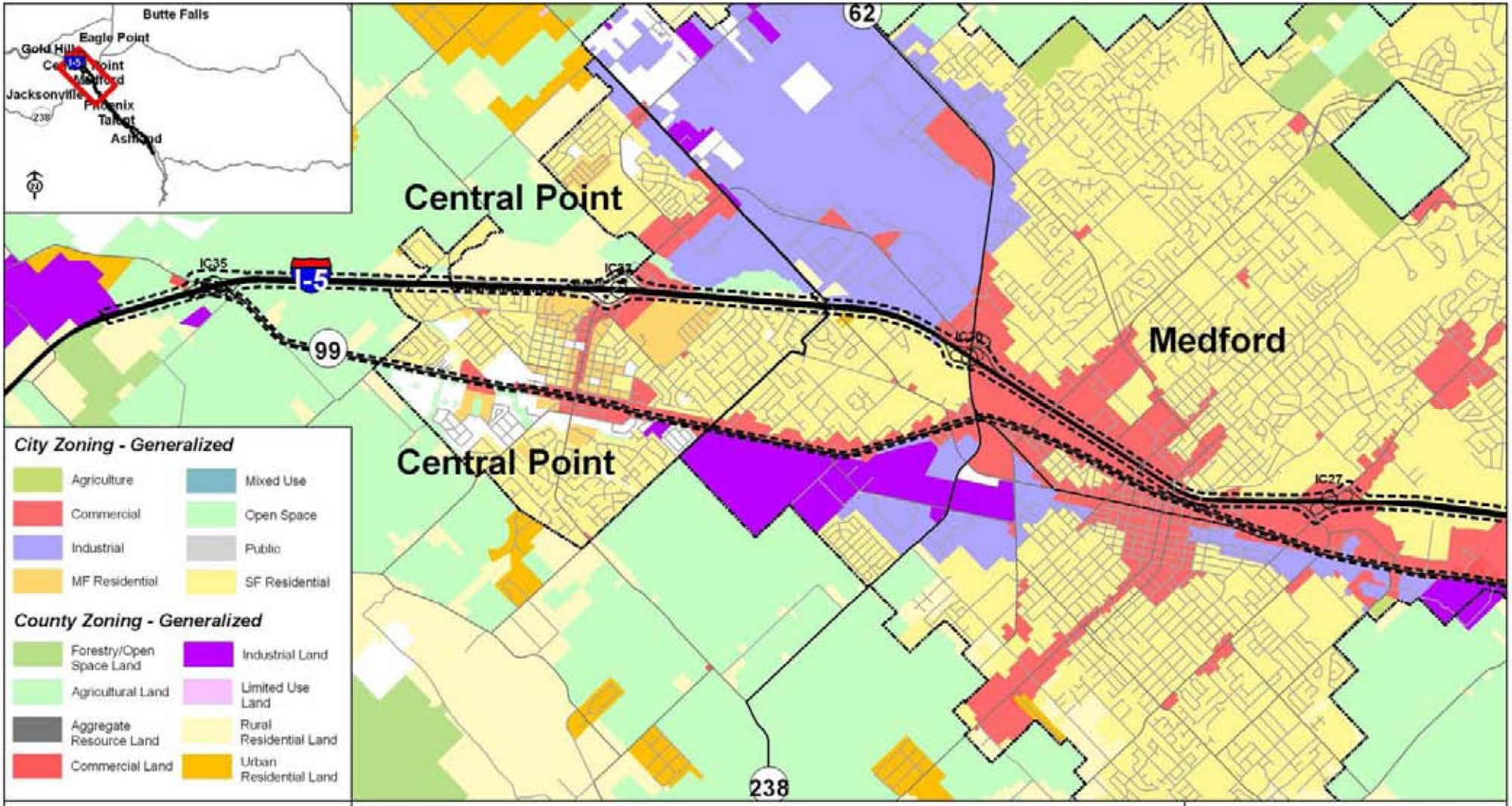
I-5 Corridor

Designated land uses along the west side of I-5 consist primarily of three residential compositions: Multiple Family Residential (R-3), Two-Family Residential (R-2), and Single Family Residential (R-1-6, R-1-8). Portions east of the I-5 corridor under Central Point jurisdiction are zoned for the Bear Creek Greenway. Jackson County Exposition Park (fairgrounds), located adjacent east of and adjacent to the I-5 right-of-way between Interchange 33 and the Upton Road overpass, is outside of Central Point city limits and, thus, under Jackson County jurisdiction. The Central Point Tourist and Office (C-4) zone is designated on the southwest and southeast quadrants of Interchange 33, with a smaller area designated at the northwest quadrant.

The Bear Creek Greenway district is intended to provide for environmental preservation and limited development within the district. The C-4 district purpose is to provide tourist and entertainment facilities to serve residents and tourists passing through the area. Transportation improvements in this zone may require a Conditional Use permit

OR-99 Corridor

The zoned land uses along the corridor are primarily commercial in nature though there are some open space, residential and mixed-uses as well. Much of this area is designated a TOD District or TOD Corridor. The intent of the TOD district and corridor is to “promote efficient and sustainable land development and the increased use of transit as required by the Oregon Transportation Planning Rule.” Transportation improvements in this zone may require a Conditional Use permit and specific design standards. There is a Historic Preservation Overlay Zone along the corridor to protect the significant historical resources. Land uses affecting these resources may be subject to a Type 2 to Type 4 process or other form of land use review (see Section Historical and Archaeological Section above).

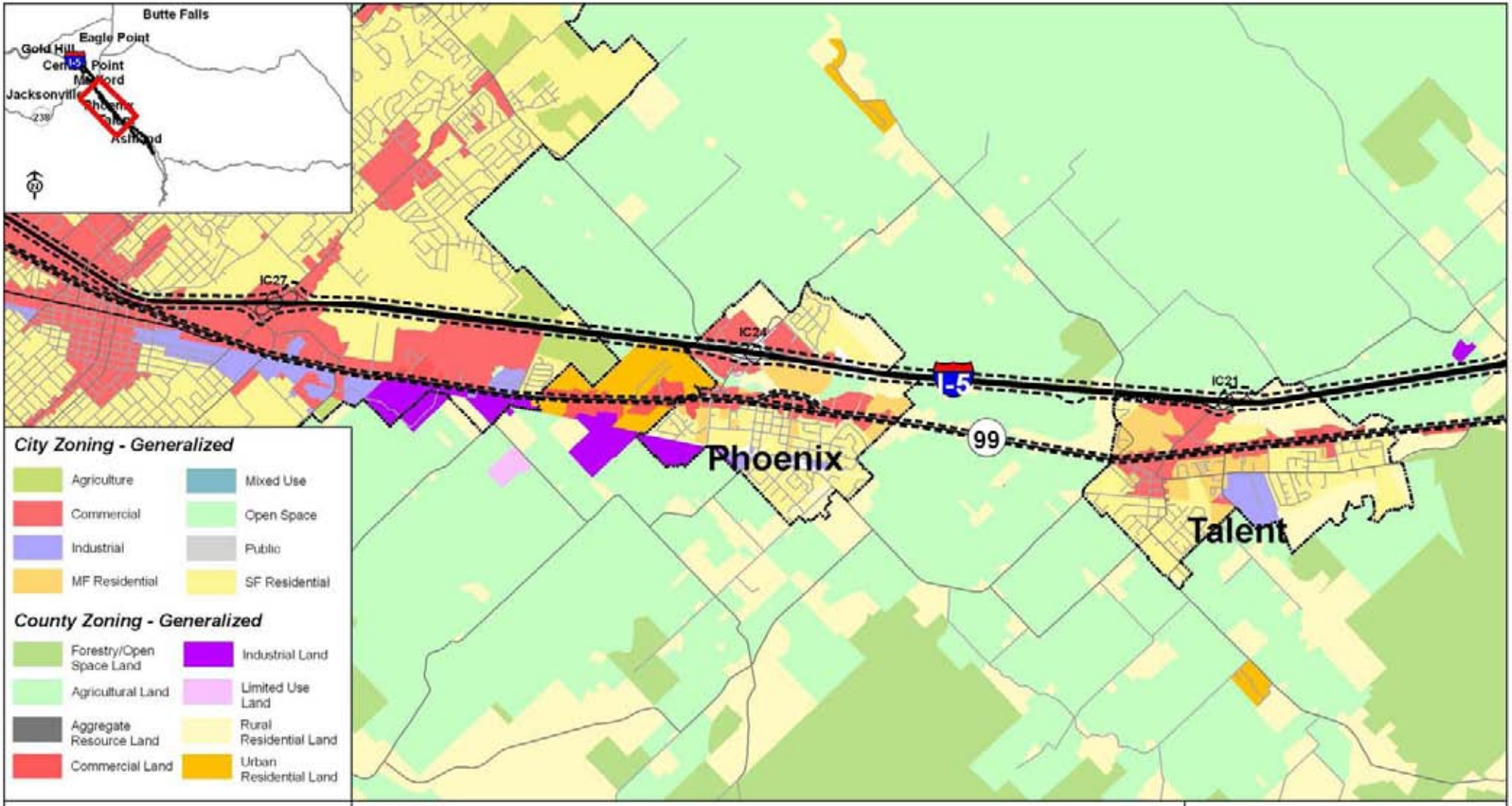


I-5: Rogue Valley Corridor Study

Figure 4-1 (1 of 3)

County and City Zoning

June 2009

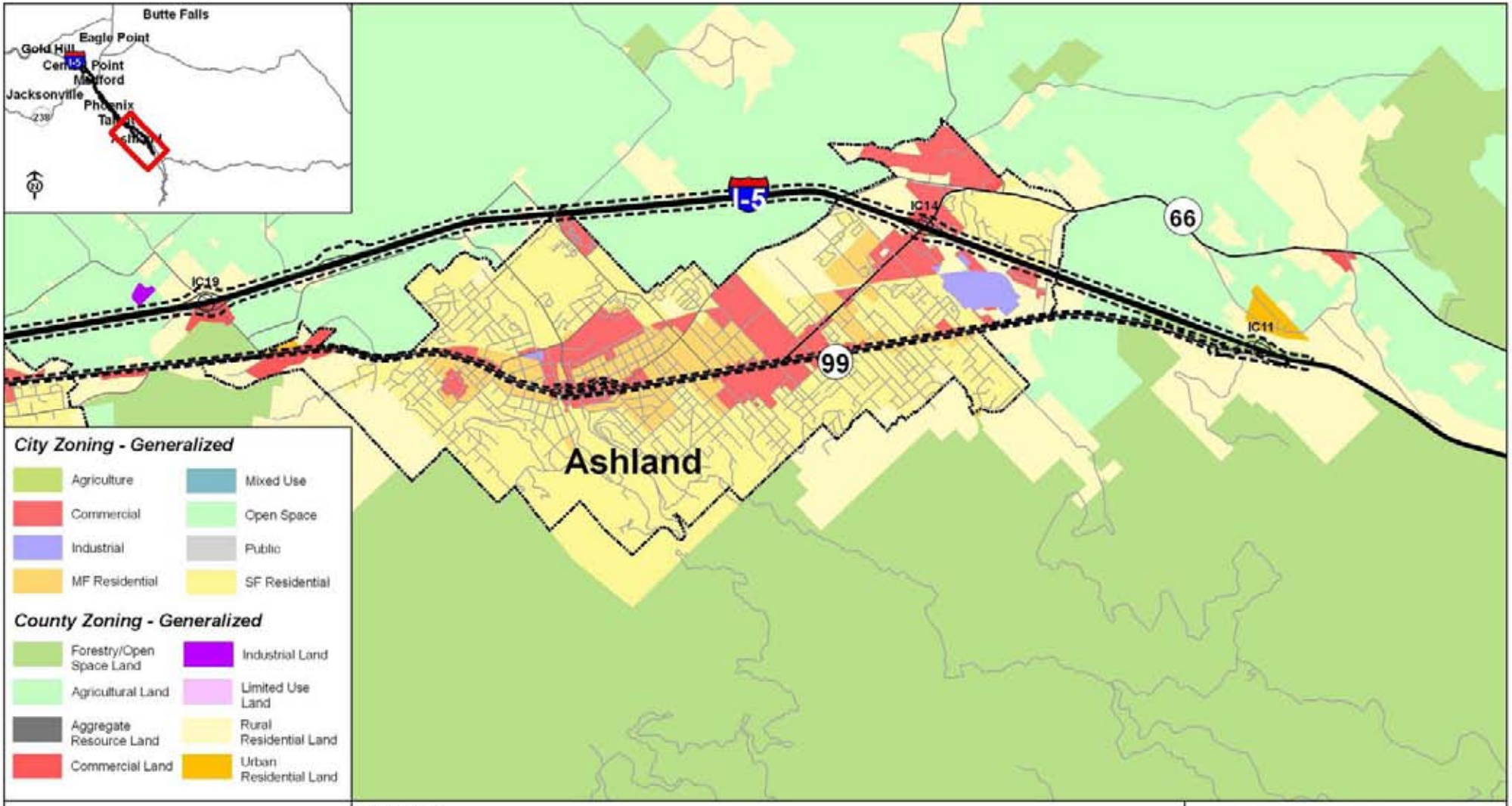


I-5: Rogue Valley Corridor Study

Figure 4-1 (2 of 3)

County and City Zoning

June 2009



0.5 0.25 0 0.5 Miles

Source Data: Jackson County, ESRI, Oregon GEO

Legend

- Planning Area
- Interchange
- Urban Growth Boundary

I-5: Rogue Valley Corridor Study

Figure 4-1 (3 of 3)

County and City Zoning

June 2009

Medford

I-5 Corridor

Properties surrounding the portion of the I-5 corridor through Medford are zoned similar to those occurring along OR-99 as the two corridors align within close proximity of each other. The land uses are commercial near Medford's downtown (Regional C-R, Community C-C, Heavy C-H) residential uses (Single Family – 6 Units/Acre: SFR-6, Single Family – 1 Units/Acre: SFR-00, Single Family – 10 Units/Acre: SFR-10, Multi-Family – 30 Units/Acre: MFR-30) along the northern and southern edges, and an area of industrial along the northeastern edge of the corridor. There is also a freeway overlay to regulate the use of freeway oriented signage. The Historic Preservation Overlay and the Central Business District overlay also apply to portions of the I-5 corridor.

OR-99 Corridor

Designated land uses near the OR-99 corridor are mostly commercial (Regional C-R, Community C-C, Heavy C-H) with some residential uses in the north eastern portion of the corridor (Single Family – 6 Units/Acre: SFR-6, Single Family – 1 Units/Acre: SFR-00, Single Family – 10 Units/Acre: SFR-10, Multi-Family – 30 Units/Acre: MFR-30). There is a Historic Preservation Overlay intended to "protect, enhance, perpetuate, and improve those buildings, structures, objects, sites, and districts that are of local, regional, statewide, or national historic significance." There is also a Central Business district overlay to recognize the unique and historic character of the downtown area as an asset to the community and to provide standards and criteria necessary for its continued development and redevelopment.

Phoenix

I-5 Corridor

The land use designations along the I-5 corridor are Commercial Highway (C-H), High Density Residential (R-3), and Bear Creek Greenway and Farm Residential. There is an I-5 overlay District intended to permit signs visible to travelers on the freeway recognizing the importance of freeway-oriented businesses to the area.

OR-99 Corridor

Land uses through the corridor are zoned Commercial Highway (C-H), High Density Residential (R-3), and Bear Creek Greenway and City Center (C-C). A city goal is to strengthen the City Center as the nucleus of the community. Thus, the City Center District is intended to support this goal through design and appropriate mixed-use standards. The goal of the area designated as Bear Creek Greenway is to maintain, as much as possible, the natural condition of the greenway via limited development standards. The Bear Creek Greenway standards state: *No person, firm, or corporation, whether public or private, shall cause or permit any excavation, fill, stream diversion, removal of vegetation, or other alteration of the natural environment of the Greenway, nor encroach upon any part thereof with buildings, footings, retaining walls, bridges, piers, abutments, dams, diversion weirs, rip-rap, or any other physical feature without first securing the express written consent of the Phoenix Planning Commission.* There is also a

Historic Overlay along OR-99 where historic resources are to be preserved and may not be altered or demolished without approval by the Historic Review Board.

Talent

Land use designations adjacent to the OR-99 corridor through Talent are commercial in nature, specifically Highway Commercial (CH), Interchange Commercial (CI), and Highway Central Business District (CBH). Past the commercial areas, the designated land uses change to residential, mainly Mobile Homes (RS-MH) and High Density Residential (RM-22). The only portion of property under City of Talent jurisdiction that abuts I-5 is zoned CH.

There are several districts, area plans and overlays in the corridor area:

- The Old Town District Design Standards purpose is "to respect and enhance the character of Talent's original core areas while maintaining the city's traditional, rural, vernacular architectural heritage."

- The Floodway, Parks, Greenway Overlay zone is intended to protect significant resources located within its boundaries that contribute to the unique character of the community. This zone sets minimum standards applicable to new development in or adjacent to areas designated as floodplains, greenways, wetlands, and riparian areas.

- The Historical Overlay is intended to protect historical resources because they contribute to the unique character of the community. Therefore, any projects that may affect these resources must go through design review.

- A supplement to the City of Talents Comprehensive Plan, the West Valley View Vision Master Plan aims to, among other things, create an accessible, multi-modal community The foundation of the Plan is reconfiguring and aligning some of the major streets that provide an entry into Talent such as OR-99.

- The Wagner Creek Greenway Connector Plan a key means to connect the downtown to the existing Bear Creek Trail for pedestrians and bicyclists. A portion of the Wagner Creek Greenway Trail has been constructed. The entire completed trail will be approximately 1.5 miles long. This trail will pass OR-99.

Ashland

I-5 Corridor

The only portion of the I-5 corridor that crosses through the City of Ashland occurs in the vicinity of Interchange 14 and the southeastern end of the UGB. There is a small area zoned commercial (C-1) and an area zoned health center (H-C). The H-C district is designed to "provide the type of environment suitable for the development of health related services and residential uses, and related activities, while reducing the conflicts between uses through appropriate design". The Detail Site Review Zone is also applicable to a portion of the Corridor Plan Area.

OR-99 Corridor

Land uses adjacent to the corridor through Ashland are varied, passing through Ashland's retail commercial district (C-1 – D overlay) with varying densities of residential areas (R-2, R-3) north and south surrounding the downtown core. Past downtown, the corridor passes through the Southern Oregon University campus. At the southern edge of the corridor, the former Croman Mill Site, an industrially zoned area is currently undergoing review for potential redevelopment as a mixed use employment center.

The C-1 district is designed to "stabilize, improve and protect the characteristics of those areas providing commercial commodities and services. "

The intent of the Detail Site Review Zone is to: *regulate the manner in which land in the City is used and developed, to reduce adverse effects on surrounding property owners and the general public, to create a business environment that is safe and comfortable, to further energy conservation efforts within the City, to enhance the environment for walking, cycling, and mass transit use, and ensure that high quality development is maintained throughout the City.*

Jackson County

I-5 Corridor

Land use designations along the I-5 corridor within Jackson County jurisdiction are primarily agricultural Exclusive Farm Use (EFU) with a small area of industrial north of Central Point and a small area of rural residential in the southern end of the corridor.

OR-99 Corridor

The OR-99 corridor within Jackson County is largely designated agricultural (EFU) with intermittent commercial and industrial uses. The majority of industrially zoned lands is situated between Central Point and Medford and the commercial properties are primarily between Medford and Phoenix with high density residential to the east that stretches to the I-5 corridor.

The purpose of the Agricultural Land designation is to implement Statewide Planning Goal 3 by preserving agricultural lands for farm use and preventing uses and activities incompatible with farm-related activities. Commercial Land is established to provide markets in appropriate locations for the efficient and economic exchange of goods and services. The Industrial Land designation is intended to provide a supply of sites of suitable sizes, types, locations, and service levels to meet the economic objectives of the region. Urban Residential Lands are areas that have been allowed through the Statewide Goal exception process or are within urban growth, urban containment, or urban unincorporated community boundaries.

Section 4(f) Resources

Section 4(f) refers to a part of federal law that protects public parks, recreation lands, wildlife and waterfowl refuges, and public or private historic sites. Section 4(f) applies only to Departments of Transportation (DOT) and their agencies. Highway projects that use public

parks must fulfill the requirements of Title 23, USC., Section 138, Section 4(f) of the Department of Transportation Act of 1966, as amended.

A "use" that is subject to the provisions of Section 4(f) occurs:

- When land is permanently incorporated into a transportation facility;
- When there is a temporary occupancy of land that is adverse in terms of the statute's preservationist purpose; or
- When there is constructive use of the land.

DOTs must demonstrate that a proposed project will not "use" the publicly-owned parks and recreation land where "use" can mean both actual conversion of recreation lands into a transportation use, or a "constructive use" where off-site impacts of the transportation project substantially impair the site's vital functions. Findings of "no feasible and prudent alternatives" and "all possible planning to minimize harm" must be well-documented and supported. A feasible alternative is an alternative that is possible to engineer, design and build. To find that an alternative that avoids a 4(f) resource is not "prudent," one must find that there are unique problems or unusual factors involved with the use of such an alternative. This means that the cost, social, economic and environmental impacts, and/or community disruption resulting from such alternatives reach extraordinary magnitudes.

Section 4(f) resource lands within the project area consist of the parks described in the following subsection plus historic structures discussed previously in *Section 3: Historic and Archaeological Resources* and all bicycle paths. In addition, structures eligible or potentially eligible for inclusion on the NRHP within the Corridor Plan Area but not yet identified are potential candidates for Section 4(f) status. A Section 4(f) evaluation will require ODOT to assess all reasonable alternatives that adversely affect protected lands. If every potential alternative that can meet the purpose and need for the project would impact some 4(f) property, then the alternative with the least impact must be selected unless it is not feasible and prudent.

Parks and Recreation Areas

The Bear Creek Greenway (also discussed in *Section 3: Historic and Archaeological Resources*) is a narrow corridor of public-owned land that follows the lush Bear Creek streambed from Ashland to Central Point. The Greenway is spread out over 600 acres of pristine southern Oregon landscape and will one day include a continuous 21-mile path from Oak Street in Ashland to the Seven Oaks Interchange in Central Point.

Parks located within or near the corridors include:

Central Point

<u>I-5 Corridor</u>

- Summerfield Park (2 acres, undeveloped), runs along Upton Road to Scenic Avenue
- Glen Grove Wayside Park (.25 acres), 1138 Glengrove Avenue

OR-99 Corridor

- Griffin Oaks Park (.56 acres), Silver Creek Road
- Civic Park, Silver Creek Road

Medford

I-5 Corridor

- Hawthorne Park and Pool (20 acres), Jackson Street
- Table Rock Park (undeveloped), Table Rock Road
- Railroad Park (49 acres), Central Lake Highway
- Bear Creek Park (100 acre), Highland Drive and Barnett Road, near I-5 Exit 27.
- Larson Creek Multi-Use Path is being developed to link the Bear Creek Greenway to neighborhoods along Larson Creek.

OR-99 Corridor

- US Cellular Community Park, south of Barnett Road between OR-99 and I-5
- Veteran's Memorial Park, corner of Stewart Avenue and OR-99

Phoenix

I-5 Corridor

- Blue Heron Community Park (24 acres)
- City Hall Park Facilities, 112 W 2nd

Talent

I-5 Corridor

- Whacker's Hollow/De Young (19.49 acres) located along I-5
- Lynn Newbry Park (2.46 acre) located along I-5

Ashland

OR-99 Corridor

- Lithia Park (93 acres), downtown, off Main Street
- Triangle Park (.5 acre), between Siskiyou Boulevard, Iowa and Morton Streets.
- Bluebird Park (.25 acre) along Ashland Creek on the corner of E. Main and Water Streets.
- Scenic Park (1.5 acres) north of downtown Ashland, near the intersection of Maple Street and Scenic Drive.

Jackson County

There are no parks along the I-5 and OR-99 corridors within Jackson County jurisdiction.

Community Features

Community features located within or near the I-5 and OR-99 corridors include:

Central Point

I-5 Corridor

- Jewett Elementary, 1001 Manzanita
- Rogue Valley Family Fun Center, Penninger Rd., Central Point, OR 97502

OR-99 Corridor

- Central Point City Hall, 140 South Third Street, Central Point, 97502
- Crater High School, 655 N. 3rd, Central Point, 97502
- Mae Richardson Elementary, 200 West Pine Street, Central Point, 97502
- Central Point Elementary, 450 S 4th St., Central Point, 97502
- Oregon State Police, 4500 Rogue Valley Hwy, Central Point, 97502
- Central Point Senior Center 123 N. 2nd Street, Central Point, 97502
- RVCOG, 155 N. 1st Street in Central Point, Oregon
- Jehovah's Witnesses Central, 434 Oak St, Central Point, OR 97502
- Fire Marshall, 4500 Rogue Valley Hwy, Central Point, OR 97502

Medford

I-5 Corridor

- Providence Medford Medical Center: Occupational Medicine, 1390 Biddle Rd, Medford, OR

OR-99 Corridor

- Crossroads School, 400 Earhart St, Medford, OR 97501
- Table Rock Fellowship, 3610 N Pacific Hwy, Medford, OR 97501
- Jerusalem Center Church, 6 Mace Rd, Medford, OR 97501
- Rogue Valley Fellowship, 2373 S Pacific Hwy Medford, OR 97501

Phoenix

OR-99 Corridor

- Rogue Valley South, 4624 S Pacific Hwy Phoenix, OR 97535
- First Baptist Church, 4655 S Pacific Hwy, Phoenix, OR 9753
- Southern Oregon Esd, 5465 S Pacific Hwy, Phoenix, OR 97535
- Jackson County Fire District No 5, 5811 S Pacific Hwy, Phoenix, OR 97535

Talent

OR-99 Corridor

- Valley Bible Fellowship, 616 S Pacific Hwy, Talent, OR 97540

Ashland

I-5 Corridor

- Ashland Community Hospital: Memory Care Center, 905 Skylark Place, Ashland, OR 97520

OR-99 Corridor

- Ashland Community Hospital, 727 N Main St, Ashland, OR 9752
- Jehovah's Witnesses Ashland Kingdom Hall, 700 N Main St, Ashland, OR 97520
- Methodist First United Methodist Church Ashland, 175 N Main St, Ashland, OR 97520
- Ashland Fire & Rescue, 455 Siskiyou Blvd, Ashland, OR 97520
- Christian Missionary Alliance Bible Chapel, 748 Siskiyou Blvd, Ashland, OR 97520
- Southern Oregon University, 1250 Siskiyou Blvd, Ashland, OR 97520
- Chabad Jewish Center-S Oregon, 804 Hillview Dr, Ashland, OR 97520
- First Baptist Church of Ashland, 2004 Siskiyou Blvd Ashland, OR 97520
- Bellview Elementary School, 1070 Tolman Creek Rd Ashland, OR 97520
- Unity In Ashland, 1050 Tolman Creek Rd, Ashland, OR 9752
- La Mare Reservoir
- Ashland Superintendent's Office, 885 Siskiyou Blvd Ashland, OR 97520
- Trinity Episcopal Church, 44 N 2nd St, Ashland, OR 97520
- Meyer Memorial Lake, OR-99
- First Presbyterian Church of Ashland: Calvin Hall, 1615 Clark Ave, Ashland, OR 97520
- County of Jackson Library Services: Ashland Branch Library, 410 Siskiyou Blvd Ashland, OR 97520

Jackson County

I-5 Corridor

- Jackson County Fairgrounds

OR-99 Corridor

- Billings Reservoir

5. SUMMARY OF EXISTING FACILITIES

The Corridor Plan covers an area approximately 24 miles in length, with roadways crossing over flat to rolling terrain. There are nine interchanges, two ports of entry locations (one northbound and one southbound), and one rest area, serving southbound traveling motorists only, located at Exit 22. This section provides a short description of the interchanges, ports of entry, roadway inventory, bicycle and pedestrian facilities, emergency vehicle turnouts, Siskiyou Pass closure impacts, and longer combination vehicle operations.

Interchanges

The Corridor Plan Area includes nine interchanges. Features of each interchange are described below.

Interchange 11 (South Ashland)

Interchange 11 provides access to Ashland via OR-99. The interchange was constructed in 1964 as a Y-interchange with directional service to and from the south via a northbound off-ramp and a southbound on-ramp.

Interchange 14 (Green Springs)

The interchange provides the main link between the I-5 corridor and the southern end of Ashland via Ashland Street, also known as the Green Springs Highway and OR 66. This crossroad also provides one of the few interstate crossings in the vicinity and carries significant local vehicle, bicycle, and pedestrian traffic volumes that do not enter or exit the interstate. The existing interchange is a standard diamond configuration, comprising a two-lane bridge with unsignalized ramp terminals at both ends. A draft IAMP is under review by ODOT and the local jurisdictions.

Interchange 19 (North Ashland)

The interchange provides the main link between the I-5 corridor and the northern end of Ashland via OR-99, which intersects South Valley View Road approximately 2,500 feet south of the interchange. Currently a two-lane facility, South Valley View Road has high lane volume because of significant volumes of intraregional trips between Ashland and Medford. In addition to the heavy movement of intraregional trips, the interchange also serves local residents and businesses in the interchange vicinity. South Valley View Road is planned for expansion into a five-lane facility between the interchange and the OR-99 intersection. A draft IAMP is under review by ODOT and the local jurisdictions.

Interchange 21 (West Valley View)

Interchange 21 provides access to the City of Talent via stop-controlled intersections on Valley View Road. The interchange has a gull wing configuration for the northbound freeway ramp terminals and a half-diamond configuration for the southbound terminals.

Interchange 24 (Fern Valley)

Interchange 24 provides access to the City of Phoenix via signalized intersections on Fern Valley Road. The interchange is a standard diamond interchange with frontage roads on both sides of the freeway. Development of an IAMP and a Draft EA are occurring simultaneously at the interchange. The purpose of both projects has been to "reduce congestion and improve operational conditions at the interchange."

Interchange 27 (South Medford)

Interchange 27 is an urban interchange that serves the entire southern part of Medford and connects I-5 with the city's commercial core and OR-99. The existing partial cloverleaf configuration of the interchange utilizes ramps that connect I-5 to Barnett Road. A proposed new interchange will replace the existing interchange at Barnett Road with one connecting to a new arterial, the Garfield-Highland Connector. The new interchange is designed as a Single Point Urban Interchange that brings the I-5 northbound and southbound ramps to a single intersection with the cross street. Once its ramps to I-5 are severed, Barnett Road will fly over I-5 and serve as the main east-west arterial for the South Medford area.

Interchange 30 (North Medford)

Interchange 30 connects with OR 62 (Crater Lake Highway) and serves the north end of the Medford area. The OR 62/I-5 interchange area is a critical modal connection for the OR 62 corridor, which extends from Medford to White City in Jackson County, Oregon. The interchange is a modified diamond with loop on-ramps to eliminate the need for left-turn traffic signal phases on OR 62.

Interchange 33 (Central Point)

Interchange 33 serves the northern end of the Medford area and the City of Central Point via Pine Street, a five-lane signalized arterial that is the primary east-west link between OR-99 and I-5 in the area. The interchange is a standard diamond interchange with signalized intersections on Pine Street.

Interchange 35 (Seven Oaks)

Interchange 35 is principally a rural interchange that connects I-5 with OR-99 to the south and Blackwell Road to the north. OR-99 is a district-level highway that serves the nearby community of Central Point to the south. Blackwell Road serves some industrial lands northeast of the interchange and provides a connection with White City to the southeast.

The interchange is currently under construction to improve the safety and function of both the overpass and the connections with OR-99 and Blackwell Road. In addition to building a new Blackwell Road overpass, the southbound off-ramp will be reconfigured as a loop ramp connecting to OR-99 from the east. The other ramps will also be constructed to meet highway design standards and improve spacing between ramps.

Weigh Stations

There are two weigh station facilities within the Corridor Plan area, one northbound and one southbound. The northbound weigh station, located south of Interchange 19 at mile point (MP) 18, is significantly larger than the one positioned southbound, and has parking available for approximately 30 trucks. The approximate 2,500-foot distance between the weigh station on-ramp and the off-ramp to Interchange 19 is well below recommended interchange spacing standards, which—combined with the inadequate acceleration length on the weigh station on-ramp—results in poor weaving and merging operations at this location. The northbound facility is tentatively scheduled for renovations that include adding a restroom facility for drivers.

The southbound weigh station, located directly across from the northbound facility, is a smaller facility limited to a truck scale, with no space available for truck parking. Expansion of this facility, including an extended off-ramp and provision of parking spaces, is becoming a high priority for ODOT's Motor Carrier Division.

Rest Area

Only one rest area is located along I-5 within the Corridor Plan area. Situated at MP 22, the Suncrest Rest Area serves southbound I-5 motorists only and has restrooms, picnic tables, drinking water, telephones, accessible facilities, and vending machines. In tandem with efforts to expand the southbound Port of Entry facility, which would provide a more accommodating rest stop for trucks, efforts are also under way to construct a new rest area welcome center in the vicinity of MP 12 that would be exclusively for private motorists.

Roadway Inventory

I-5 through the Rogue Valley region comprises a four-lane cross-section with two 12-foot lanes in each direction. The posted speed in the corridor is 65 mph, except in the Medford area between Interchange 27 and Interchange 30, where the posted speed drops to 55 mph. The roadway is generally non-barrier-separated with a 76-foot-wide vegetated median. A 16-foot-wide barrier median is used on the viaduct from MP 27 to MP 30.6 and from MP 12.99 south into the Siskiyou Pass. Shoulders through the Corridor Plan area are paved and vary in width from 4 feet to 24 feet, with the left (inside) shoulder generally 4 feet wide and the right (outside) shoulder generally 10 feet wide. More detailed lane geometry is provided in **Appendix A**.

Bicycle and Pedestrian Facilities

Although bicyclists do on occasion ride along the I-5 shoulder, the high speed limited access function of the freeway is not conducive for non-motorized modes of travel. Nonetheless, bicyclists are not restricted from riding along the shoulder of I-5 except on the viaduct. The interchanges and overpasses of I-5 have varying levels of bicycle and pedestrian facilities. The Bear Creek Greenway and multi-use trail is a regional bicycle and pedestrian facility that generally parallels I-5 between Ashland and Central Point. The greenway crosses I-5 at multiple locations between Interchange 21 and Interchange 30. With recent completion of a segment of the greenway in the vicinity of Interchange 27 as part of the South Medford Interchange

project, the multi-use trail is now a continuous 21-mile path between Interchange 35 north of Central Point to Oak Street in Ashland.

Emergency Vehicle Turnouts

Field review of I-5 found one designated emergency vehicle turnout in the corridor at mile point 16.7 near the North Mountain Avenue overpass.

6. EXISTING TRAFFIC OPERATIONS

Existing traffic counts were collected by ODOT along I-5 and at all interchange ramps. In February and March of 2008, 24-hour counts were collected on ramps. Between 2007 and 2008, 16-hour counts were collected on mainline I-5 south of Exit 11, north of Exit 19, and north of Exit 33. The counts were adjusted and balanced using the ODOT Analysis Procedures Manual to a year 2008 Design Hour Volume (DHV) for each ramp and mainline segment between ramps within the Corridor Plan area.

Traffic volumes vary across the Corridor Plan area, with the lowest volumes at the southern end of the area and the highest volumes in the Medford area. Traffic south of Interchange 14 (Green Springs) is composed primarily of long-distance travelers crossing the Siskiyou Mountains. Approximately 14,700 vehicles per day pass through this southern vicinity of the corridor with a relatively high proportion (35 percent) of that volume comprised of Heavy Vehicle (HV) operation – HV being generally defined as semi-trucks with one trailer or more. The calculated DHV is 1,725 vehicles per hour (vph), with an HV percentage of approximately 25 percent, which is representative of actual traffic flow during the PM peak hour during the summer months.

North of Interchange 14, traffic volumes increase to approximately 39,600 vpd around the Talent area and Interchange 21 (West Valley View), but the HV percentage drops to around 15 percent, because the traffic composition is influenced more by the surrounding urban and rural land uses of the Talent and Ashland areas. The mainline DHV is approximately 4,475 vph, with an HV percentage of 8 percent.

Traffic volumes peak in Medford between Interchange 27 (South Medford) and Interchange 30 (North Medford), with approximately 48,200 vpd and a HV percentage of 13 percent. The mainline DHV is approximately 5,315 vph, with an HV percentage of 8 percent.

At the north end in the Central Point area north of Interchange 35 (Seven Oaks), traffic volumes drop to approximately 38,800 vpd and the HV percentage increases to around 16 percent. The mainline DHV is approximately 3,365 vph, with an HV percentage of approximately 8 percent.

More detailed traffic volumes by direction on the mainline and ramps, are shown in **Figure 6-1**. Detailed traffic calculations and traffic counts are in **Appendix B**.

Existing Condition Traffic Analysis

Transportation professionals have established various operating standards for measuring traffic capacity of roadways. Each standard is associated with a particular level of service (LOS). The LOS concept requires consideration of factors such as travel speed, delay, frequency of traffic flow interruptions, relative freedom for traffic maneuvers, driving comfort, convenience, and operating cost. Six standards have been established, ranging from LOS A (where traffic is relatively free flowing) to LOS F (where the street system is totally saturated with traffic and movement is very difficult).

A comparison of traffic volume demand to capacity is another method of evaluating how well a roadway segment is operating. This comparison is presented as a volume-to-capacity (v/c) ratio. A v/c ratio between 0.0 and 1.0 indicates that recorded volume is less than maximum volume capacity of the roadway. When the v/c ratio is low, traffic conditions are generally free flowing, with minimal congestion and low delays for most roadway segments. As the v/c ratio approaches 1.0, traffic becomes more congested and unstable, with longer delays. Should an incident occur, such as a stall or crash, very long delays and queues would result. If the v/c ratio is over 1.0, the traffic volume demand is greater than capacity, and almost all vehicles would experience queuing and congestion on the roadway. The resulting congestion would also likely affect roadway segments operations in subsequent hours.

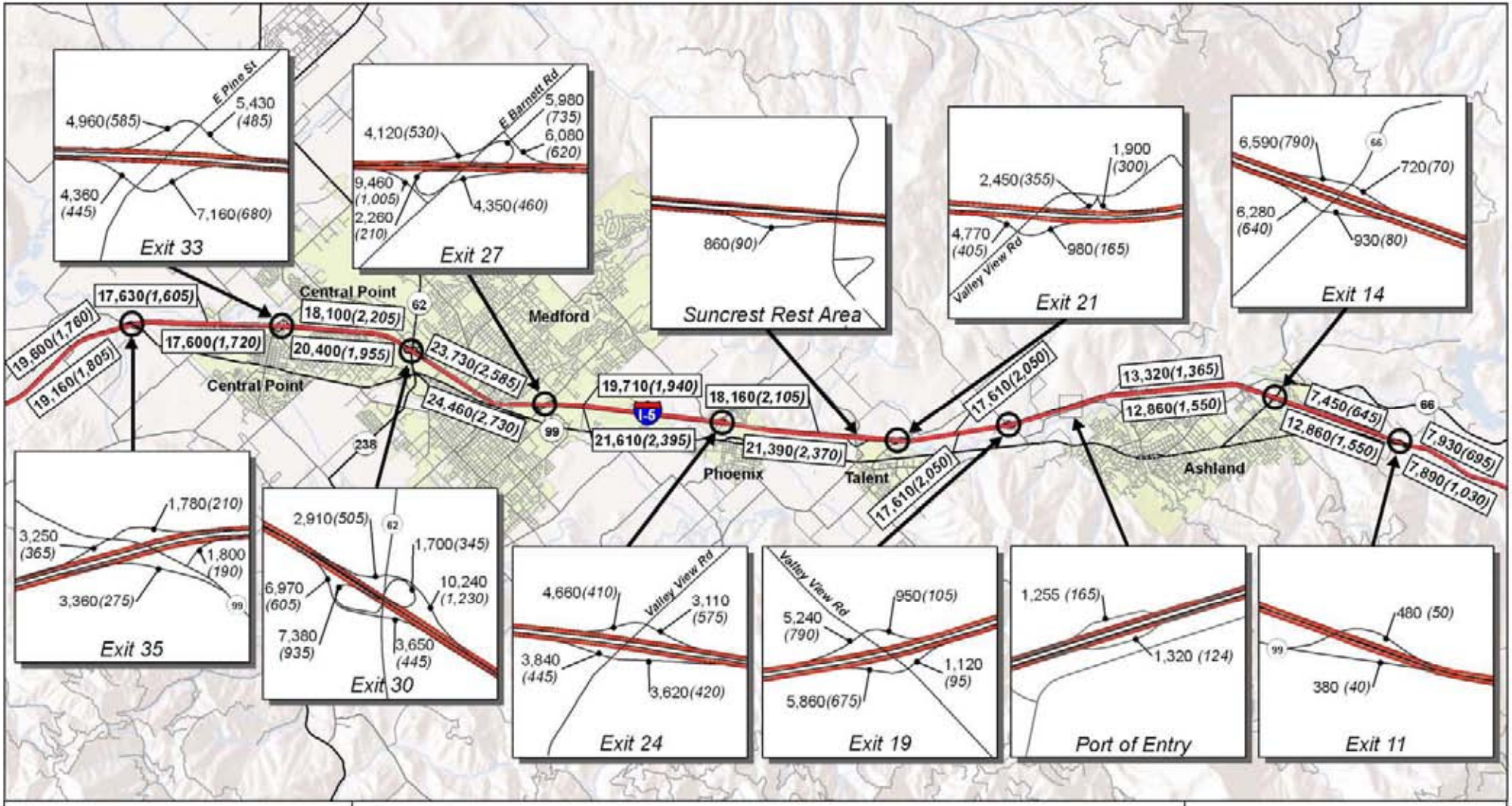
Freeway Operations

Freeway LOS is typically analyzed using the 2000 Highway Capacity Manual (HCM) procedures, which use vehicle density as the basis for determining LOS. **Table 6-1** summarizes the LOS criteria for freeway operations based on the manual's criteria.

Table 6-1. Level of Service Criteria for Freeway Segments

	Density (passenger cars per mile per lane- pc/mi/ln)		
Level of Service	**Basic Freeway Segment**	**Weaving Segment**	**Ramp Merge and Diverge Areas**
A	≤ 11	≤ 10	≤ 10
B	> 11 and ≤ 18	> 10 and ≤ 20	> 10 and ≤ 20
C	> 18 and ≤ 26	> 20 and ≤ 28	> 20 and ≤ 28
D	> 26 and ≤ 35	> 28 and ≤ 35	> 28 and ≤ 35
E	> 35 and ≤ 45	> 35 and ≤ 43	> 35
F	> 45	> 43	Demand exceeds capacity

Source: Transportation Research Board, Highway Capacity Manual, 2000, p. 23-3 for basic freeway segments, p. 24-3 for weaving segments, and p. 25-5 for ramp merge and diverge areas.



2 1 0 2 Miles

Source Data: Jackson County, ESRI, ODOT, Oregon GEO

Legend

- Interchange
- Port of Entry

10,000(*1,000*) Average Daily Traffic(*Design Hour Volume*)

Note: Design Hour Volume is a theoretical volume generally represented by the PM peak hour volume

I-5: Rogue Valley Corridor Study

Figure 6-1

Existing Average Daily Traffic and Design Hour Volume

June 2009

With the existing traffic observations indicating little to no congestion on I-5, the HCM Freeway Facilities Methodology was used to analyze freeway operations using the Highway Capacity Software (HCS). The procedure isolates a freeway system into a succession of freeway sections (i.e., basic, weaving, and ramp). Operations in each freeway section are compared to the adjacent sections, and adjustments are made to account for the interaction between freeway sections. This methodology is not as robust as microsimulation, but it does produce reasonable results for uncongested conditions, as were observed on I-5 under existing conditions within the Corridor Plan area.

Traffic Performance Thresholds

Traffic operational standards are used by agencies to ensure satisfactory traffic mobility within their respective jurisdictions. The ODOT 1999 OHP contains several policies for maintaining highway mobility. The OHP's Highway Mobility Standards (Policy 1F) establish maximum v/c ratio standards for peak hour operating conditions for all highways in Oregon. The 2006 amendment to the OHP provides v/c ratios that are to be used for existing conditions and no-build planning purposes. I-5 is designated as a state and federal freight route on the national highway system. As listed in Table 4.5 of the OHP, the operational standard for existing and no-build conditions on I-5 is a maximum v/c ratio of 0.80.

OHP amendment 00-04 allows the northbound and southbound off-ramps of the South Medford Interchange to have a v/c ratio greater than 1.0 for four hours daily until the new South Medford Interchange is constructed.

Freeway Operational Findings

Analysis of existing DHV, which is generally representative of PM peak hour operations in the summer, using the HCS freeway facilities model, shows I-5 operations at LOS C or better in the northbound direction with a peak v/c ratio of 0.61 in the Medford area between Interchange 27 and Interchange 30. In the southbound direction, I-5 also operates at LOS C or better, except between Interchange 30 and the off-ramp to Interchange 27, which operates at LOS D with a v/c ratio of 0.65. These findings indicate that the freeway system is operating with relatively free flow operations, except southbound approaching Interchange 27, which currently is nearing congested conditions during typical PM peak hour operations. These results also indicate that the system has available capacity to accommodate some future growth in traffic demand before capacity is reached. Detailed operational results are in **Appendix B**.

Operational Issues

Operations along the Corridor Plan area are also impacted by other attributes in addition to traffic volumes and roadway capacity. Two of the issues repeatedly heard during interviews and meetings with local citizens are delays associated with closure or restricted access across the Siskiyou Pass due to inclement weather, and changeover of longer combination vehicles (e.g. triple trailer trucks).

Siskiyou Pass Closure Impacts

At 4,310 feet elevation, the Siskiyou Summit marks the highest point along the entire I-5 corridor from Mexico to Canada. The pass features some of the steepest grades in the Interstate Highway System, dropping 2,300 feet into the Rogue Valley region within a distance of seven miles. In addition, the pass includes several hazardous curves and is frequently hit with bad weather (including snow, ice, and fog) during the winter season. Consequently, it is common for the highway to be closed one to four times during the winter months by transportation authorities due to hazardous conditions. The speed limit is 55 mph (90 km/h), but lower limits are set for larger vehicles.

Based on information received by the project team, closure of the Siskiyou Summit during these inclement winter weather events causes substantial turmoil along the interstate corridor as far north as Grants Pass, with truck stops and rest areas becoming staging areas until the summit once again reopens. However, the most severe impacts associated with closure of the summit occur in the vicinity of Interchange 14 in Ashland. Even limited restrictions caused by chaining requirements, which do not necessarily close the corridor, disrupt interstate operations as trucks and vehicles queue along the interstate in the vicinity of Interchange 14. Passenger cars tend to pose a minimal impact, since local motorists tend to stay home during these events or, if from outside the area and passing through, they check into area hotels. The high impacts in the vicinity of Interchange 14 involve the high volume of trucks waiting to cross the summit and finding a place for them to wait. At the interchange, approximately 90 percent of the total roadway freight truck volume lines up along the interstate shoulder and southbound on-ramp. The remaining spillover truck volume tends to queue up on Ashland's local streets, such as Washington Street and Mistletoe Road, and in parking lots, primarily at the Bi-Mart located off of Tolman Creek Road south of Ashland Street.

Longer Combination Vehicles (LCV)

Longer combination vehicles (LCVs) are among the largest vehicles on our nation's highways. Typically a large truck with tractor-trailer configurations of two or more trailers, LCVs may exceed 80,000 pounds in gross vehicle weight and approach 120 feet in overall length. LCVs are generally classified under three vehicle types: Rocky Mountain double, turnpike double, and triple trailer.

Rocky Mountain doubles consist of one long trailer ranging from 45 to 48 feet in length followed by a shorter trailer of 26 to 28 feet in length. Turnpike doubles tow two long trailers each 45 to 48 feet in length. Finally, the triple trailer configuration consists of three shorter trailers, each ranging from 26 to 28 feet in length.

LCVs are permitted in some states and prohibited or limited to certain types in others. For example, California restricts all three LCV categories on their interstates and state routes, while Washington only allows for the Rocky Mountain doubles. Oregon restricts Rocky Mountain doubles and turnpike doubles, but it permits the short double and triple trailers—except south of Interchange 14 in Ashland, where triple trailers are not permitted.

The various limitation measures imposed on these vehicles among the three "I-5 States" require truck freight delivery operators to manage changeover locations in order to maximize the cargo-carrying capacity per driver to the extent allowed within the prospective states. Therefore, changeover locations are staged in the least restrictive state along the corridor, which, in the case of I-5, is Oregon. The Rogue Valley region is the logical location for this changeover to occur in the southern end of the Oregon I-5 corridor where, for example, freight delivered south via triple trailers must unhook to a single trailer configuration before continuing into California and, likewise, freight destined north into Oregon from California can add trailers into either the Rocky Mountain double or triple trailer configuration. The process is repeated in the Portland region at the northern end of the Oregon I-5 corridor before entering, or after leaving, Washington.

Individual companies that use LCVs through Oregon typically have their changeover sites situated in the Medford-Central Point area east of I-5 in the vicinity of the Rogue Valley-Medford International Airport. Although not concentrated within a specific location, nonetheless these sites enable ready access to I-5 via either Interchange 30 or Interchange 33. These large vehicles still must traverse local city streets through commercial districts and skirt some existing residential areas.

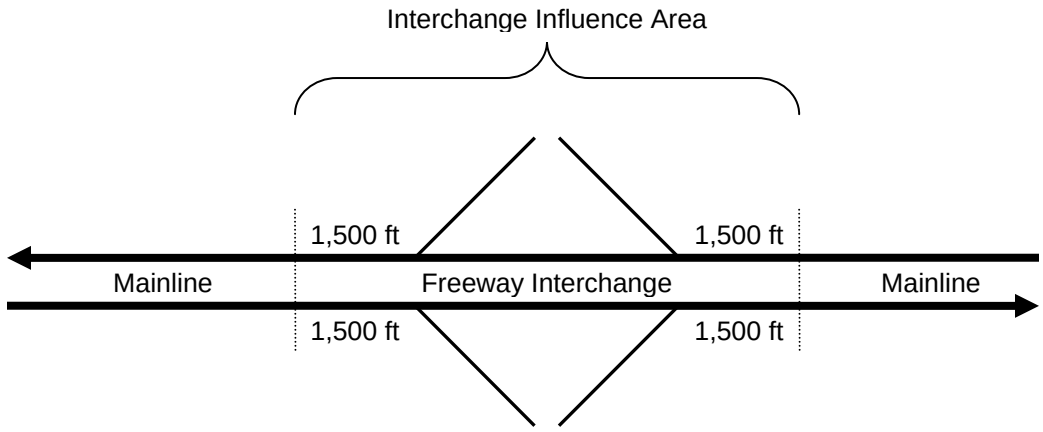
7. CRASH HISTORY

A crash analysis was performed for the mainline of I-5 for the full length of the corridor from one mile north of Interchange 35 to one mile south of Interchange 11. The crash analysis was conducted to identify existing high crash locations or consistent crash patterns.

Analysis Procedure

The analysis included a review of the last five years of ODOT-provided Planning Research Corporation (PRC) crash listings (2003 to 2007), ODOT Safety Priority Index System (SPIS) data, and calculated crash rates. The procedures used to analyze the data are described in the following paragraphs.

Crash data contained in the PRC reports was summarized by operational segment. The operational segments were divided, using HCM as a guide, into mainline segments and interchange influence area segments. The mainline segments are the basic freeway segments on I-5 between freeway interchanges. The interchange influence area segments include interchange ramps, freeway lanes between an interchange on-ramp and off-ramp and freeway lanes within 1,500 feet of the given interchange ramps, as illustrated below**.** Data were summarized by type and severity for each operational segment of the freeway. After being summarized and attributed to the appropriate segment, crash rates were calculated along the mainline. Ramps were not included in the crash rate calculations.



Crash Reports

PRC reports are generated by ODOT personnel in the Crash Analysis and Reporting Unit from statewide crash databases. The PRC crash listings were obtained from ODOT for the most recent five complete years of reported crashes. It should be noted that the crashes listed are only the crashes reported. From this listing, the type, year, location, and severity of each accident were analyzed.

Crash Rates

The crash rates were calculated from the PRC crash reports. Crash information collected represents crashes that were reported. In Oregon, legally reportable crashes are those

involving death, bodily injury, or damage to any one person's property in excess of $1,000 from August 31, 1997, through December 31, 2003, or $1,500 after January 1, 2004.

The segment crash rates were calculated using the following equation:

$$rate_{segment} = \frac{(Crashes \cdot 1{,}000{,}000)}{(365 \cdot Years \cdot Length \cdot ADT)}$$, where

rate segment	= Crash rate per Million Vehicle Miles Traveled (MVMT)
Crashes	= Number of crashes during the time segment
Years	= Number of years being studied
ADT	= Average Daily Traffic (ADT) volumes
Length	= Length of roadway segment being studied (for segment rates)

The number of crashes was determined from the PRC reports. The ADT for corridor crash rates was obtained for each year by averaging the ADT volumes within the corridor presented in the ODOT Transportation Volume Tables (if multiple ADTs are presented). Crash rates were then calculated for the entire five-year (2003 - 2007) study period, using the average of each year's ADT.

Corridor Crash Findings

The results of the I-5 crash analysis are summarized below and displayed in **Figure 7-1.** For each of the segments, the data is summarized by crash type, crash severity, crash rate, and comparable crash rate for the five-year period between 2003 and 2007.

Overall Summary

This section provides a summary of all the analyzed crash data, including mainline I-5 in both directions and the interchange ramps. These are reported crashes that were recorded as occurring on mainline I-5 or on the on-ramps and off-ramps to I-5. Crashes recorded on the connecting roadways, intersections, and overpasses were not included in this analysis. For the full length of the corridor from one mile north of Interchange 35 to one mile south of Interchange 11 there were a total of 396 reported crashes between 2003 and 2007. Approximately 20 percent of the total crashes involved heavy trucks. There were 221 crashes in the northbound direction (56 percent of the total) and 175 crashes in the southbound direction (44 percent of the total). The crashes are spread along the full length of the corridor, with approximately 60 percent of the crashes between Interchange 30 in Medford and Interchange 21 in Talent. About half of the crashes were crashes with only property damage, and the other half resulted in at least one injury. There were a total of seven fatalities, with six of those occurring on mainline I-5.

On mainline I-5, the majority of crashes occurred during the day and under clear and dry conditions. The most common causes of crashes were driving improperly or driving too fast, with almost 50 percent of the crashes resulting in property damage only. Friday was the most common day of the week for crashes, and 2006 had the most crashes in a year. Rear-end

crashes were the most common type of crash recorded, followed by fixed-object crashes, side-swipe crashes, and non-collision crashes.

Northbound

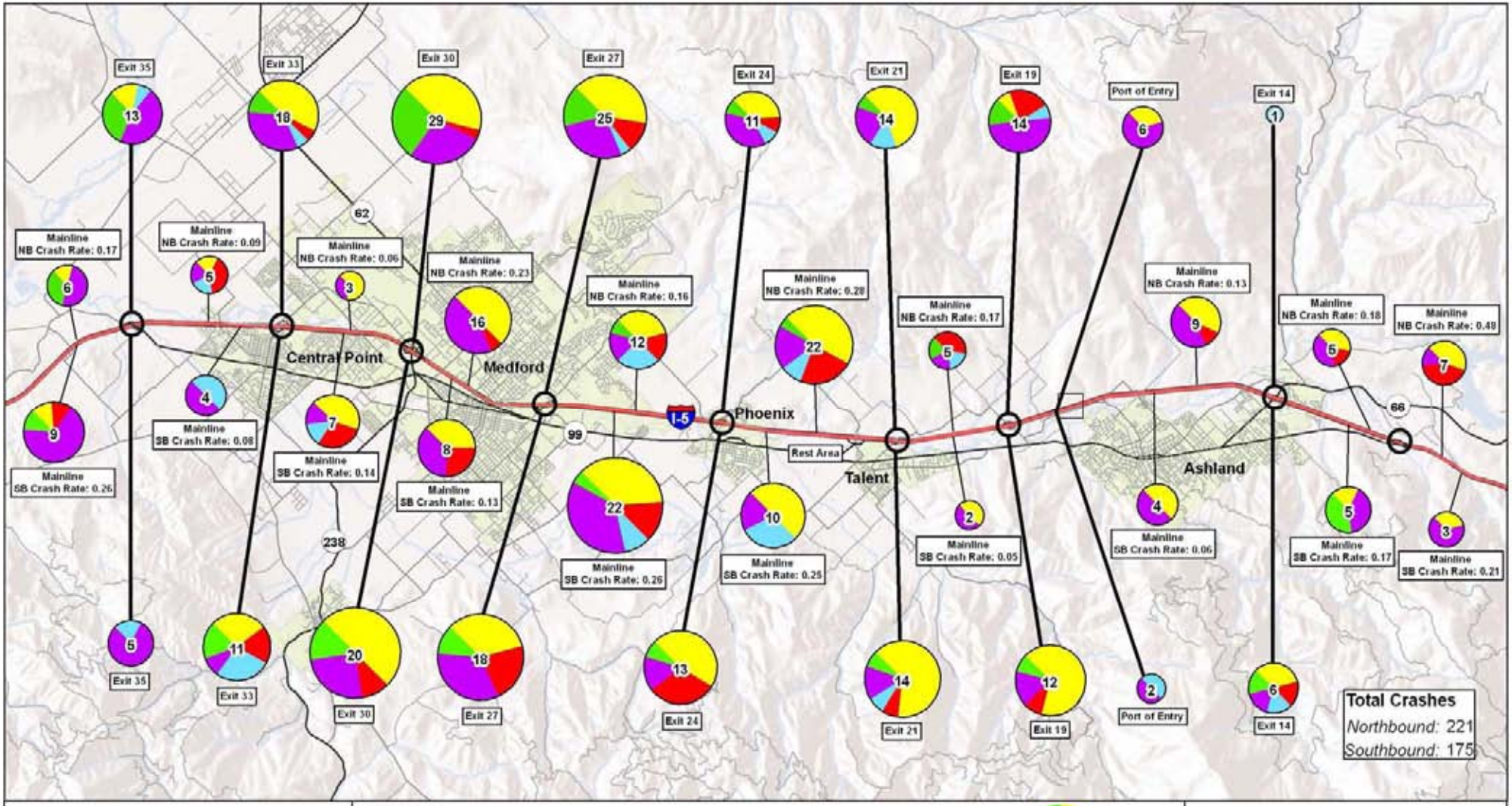
As shown in **Figure 7-1**, there were a total of 221 crashes in the northbound direction on mainline I-5 and the northbound ramps. Interchange 30 had the highest number of crashes with 29, followed closely by Interchange 27 with 25 crashes. At Interchange 30, the most common crash was a rear-end crash in the vicinity of the northbound off-ramp, indicating that there may be insufficient storage distance and/or stopping sight distance on the existing off-ramp. The highest number of crashes on mainline I-5 occurred between Interchange 21 and Interchange 24, with 22 crashes in that area. On mainline I-5 and the ramps, rear-end crashes were the most common (total of 82), followed closely by fixed-object crashes (total of 71). Approximately half the crashes resulted in property damage only and half in an injury. There were a total of four fatalities, with three occurring along mainline I-5 and one occurring on the Interchange 27 off-ramp.

Northbound crash rates on mainline I-5 are relatively low, ranging from a segment low of 0.09 (per MVMT) between Interchange 33 and Interchange 35 to high of 0.48 (per MVMT) south of Interchange 11. Only the crash rate at the southern end of the Corridor Plan area (0.48) is higher than the year 2007 average crash rate for interstate freeways of 0.38 (per MVMT).

Southbound

As shown in **Figure 7-1**, there were a total of 175 crashes in the southbound direction on mainline I-5 and the southbound ramps. Mainline I-5 between Interchange 27 and Interchange 24 had the highest number of crashes with 22, followed closely by Interchange 30 with 20 crashes. At Interchange 30, the most common crash was a rear-end crash in the vicinity of the southbound off-ramp, indicating that there may be insufficient storage distance and/or stopping sight distance on the existing off-ramp. On mainline I-5, fixed-object crashes (total of 29) were the most common, followed closely by rear-end crashes (total of 25). On the ramps, rear-end crashes (total of 44) were the most common crash type. Approximately half the crashes resulted in property damage only and half in an injury. In the southbound direction, there were a total of three fatalities, with all three occurring along mainline I-5.

Southbound crash rates on mainline I-5 are relatively low, ranging from a segment low of 0 between Interchange 21 and the Suncrest Rest Area to a high of 0.26 (per MVMT) north of Interchange 35 and between Interchange 24 and Interchange 27. None of the segment crash rates are higher than the year 2007 average crash rate for interstate freeways of 0.38 (per MVMT).


Exit 35
Exit 33
Exit 30
Exit 27
Exit 24
Exit 21
Exit 19
Port of Entry
Exit 14
Mainline NB Crash Rate: 0.17
Mainline SB Crash Rate: 0.26
Mainline NB Crash Rate: 0.09
Mainline SB Crash Rate: 0.08
Mainline NB Crash Rate: 0.06
Mainline SB Crash Rate: 0.14
Mainline NB Crash Rate: 0.23
Mainline SB Crash Rate: 0.13
Mainline NB Crash Rate: 0.16
Mainline SB Crash Rate: 0.26
Mainline NB Crash Rate: 0.28
Mainline SB Crash Rate: 0.25
Mainline NB Crash Rate: 0.17
Mainline SB Crash Rate: 0.05
Mainline NB Crash Rate: 0.13
Mainline SB Crash Rate: 0.06
Mainline NB Crash Rate: 0.18
Mainline SB Crash Rate: 0.17
Mainline NB Crash Rate: 0.49
Mainline SB Crash Rate: 0.21
Central Point
Medford
Phoenix
Talent
Ashland
Rest Area
I-5
62
99
238
66
Total Crashes
Northbound: 221
Southbound: 175
2 1 0 2 Miles
Source Data: Jackson County, ESRI, ODOT, Oregon GEO
Legend
Interchange
Port of Entry
Crash Type
Rear end
Sideswipe
Non-Collision
Fixed Object
Other
Chart Size Indicates Total Number of Crashes per Direction
I-5: Rogue Valley Corridor Study
Figure 7-1
Vehicle Crashes By Type
June 2009

SPIS Data

The Safety Priority Index System is a method developed by ODOT for prioritizing locations where funding for safety improvements can be spent most efficiently and effectively. Based on crash data, the SPIS score is influenced by three components: crash frequency, crash rate, and crash severity. Three years of crash data are analyzed for the SPIS score. SPIS locations meet one of two criteria during the previous three years: (1) three or more crashes at the same location, or (2) one or more fatal crashes at the same location. A list of the top 10 percent of SPIS locations is produced each year. For the year 2008, the Corridor Plan area along I-5 had one location on the top 10 percent SPIS list.

The one SPIS location had a total of 10 crashes, with one fatality, and is located in the Phoenix area between MP 23.91 and MP 24.09.

SIP Data

Oregon Statewide Transportation Improvement Program (STIP) and the Safety Investment Program (SIP) tools have been developed to assist designers in identifying segments of state highways where the largest number of people are being killed or seriously injured in vehicle crashes. The goal of ODOT is to use the STIP and the SIP to reduce the crash fatality rate in Oregon from the 1998 rate of 1.68 to the rate of 1.3 by the year 2010.

Five-mile sections, called SIP segments, of the state highway system are categorized by the number of fatal and severe crashes during a three-year period. The following is the stratification for SIP categories:

- Category 1: 0 fatal or injury A (serious) crashes;
- Category 2: 1 to 2 fatal or injury A crashes;
- Category 3: 3 to 5 fatal or injury A crashes;
- Category 4: 6 to 9 fatal or injury A crashes;
- Category 5: 10 or more fatal or injury A crashes.

When selecting safety projects to be included in the STIP, the SIP category of the section is considered. For roadways with little or no crash history of fatal and serious injury crashes (Categories 1 and 2), minimal safety upgrades are included in the project. Highways with greater crash frequency (Categories 3, 4, and 5) receive more investment in safety improvements, often in stand-alone safety projects. The goal of the STIP-SIP is to create a balance that meets the competing needs of two important transportation facility elements—safety and pavement preservation.

For 2008, I-5 through the Rogue Valley region has two Category 3 (3 to 5 crashes) segments and one Category 4 (6 to 9 crashes) segment. The Category 3 segments are between Ashland and Talent (MP 15 to MP 20) and between Phoenix and Medford (MP 25 to MP 30). The Category 4 segment is located between Talent and Phoenix (MP 20 to MP 25) and includes the one SPIS location.

¢Kλă LJI·∃Ŝ λyűŜyűλ2yl·ffè fŜŦű ōfI·y˥

8. RAIL SERVICE

The Rogue Valley region is served by two railroad lines. The Central Oregon and Pacific Railroad (reporting mark "CORP") is a short line railroad owned by RailAmerica, Inc., which is based in Jacksonville, Florida. The WCTU Railway Company, a short line railroad on 14 miles of track accessing an industrial area in White City, Oregon, is part of RailService, Inc., which is based in Atlanta, Georgia. Currently, both railroad lines are exclusively freight lines with 90 percent of their delivery consisting of forest products.

The nearest passenger rail service available is AMTRAK located in Eugene, Oregon. The Federal Railroad Administration (FRA) establishes nine classes of track and safety standards that prescribe the maximum speed of operation for both freight and passenger trains. CORP trackage is maintained to FRA Class 1 and 2 conditions, which limits maximum speeds to 10 mph for Class 1 or 25 mph for Class 2. Hence, improvements necessary to provide a competitive passenger rail service south to Medford and beyond would require substantial reconstruction.

Central Oregon and Pacific Railroad (CORP)

The CORP, headquartered in Roseburg, Oregon, is a Class II railroad operating between Black Butte (Weed) in Northern California and Eugene, Oregon. From Eugene, the line continues west to Coos Bay, Oregon. A Class II railroad is defined as a mid-sized freight-hauling railroad with operating revenues greater than $20.5 million but less than $277.7 million for at least three consecutive years.

Traffic on the CORP consists of about 38,000 cars that primarily haul forest commodities such as lumber, logs, and plywood. Remaining shipments consist of liquid petroleum gas, corn, and grain. A large wood products operation in the Roseburg vicinity contributes the bulk of the traffic on the northern end, while shippers south of Grants Pass are the major source of business on the southern end of the line.

Previously a mainline owned by the Southern Pacific Railroad (SP), the railroad was sold in December 1994 in favor of using its route to Eugene via Klamath Falls, Oregon, and the Cascade Summit. In 1996, SP merged with the Union Pacific Railroad (UP) and subsequently adopted the "UP" reporting mark. An operating subsidiary of Union Pacific Corporation, UP is the largest railroad in North America.

Although the CORP operates trackage into northern California, based on a phone conversation with John Bullion, CORP Assistant General Manager, no rail traffic currently occurs south of the City of Ashland. Therefore, all railroad traffic north of Ashland must currently go through Eugene. As a result, Oregon freight shipments destined to go south into California via rail must go north through Eugene and then divert onto the UP line.

White City Terminal & Utility (WCTU) Railway Company

Although not a part of the CORP, this railroad serves as an important connection for CORP in White City, Oregon, because it operates freight switching service on 14 miles of track from a

connection with CORP at White City, Oregon. Based on a phone conversation with Norm St. Arnold, Manager for WCTU Railway Company, traffic along the rail line includes lumber, plywood, other forest products, cement, sand and fertilizers, and MEK (methyl ethyl ketone peroxide).

9. INTELLIGENT TRANSPORTATION SYSTEM PROGRAMS AND OPERATIONS

Intelligent Transportation Systems (ITS) refers to a group of information-based technologies that assist in monitoring traffic flow, providing warning and advisory messages to motor vehicle drivers, regulating traffic flow via metering and routing control, and providing rapid emergency incident response capabilities for law enforcement personnel. In 2004 the RVMPO completed a comprehensive ITS for the region. The *Regional ITS Operations & Implementation Plan for the Rogue Valley Metropolitan Area* (RVITS), discussed earlier in *Section 2: Existing Plans* of this report, was part of a federal initiative to use ITS to increase the efficiency of existing transportation infrastructure, improve overall system performance and reduce the need to add capacity. Efficiency is achieved by providing services and information to travelers so that they can make better travel decisions and to transportation system managers so they can better manage the system. A brief summary of existing and proposed ITS programs are provided below. Refer to the RVITS for more detailed information.

Existing ITS Programs

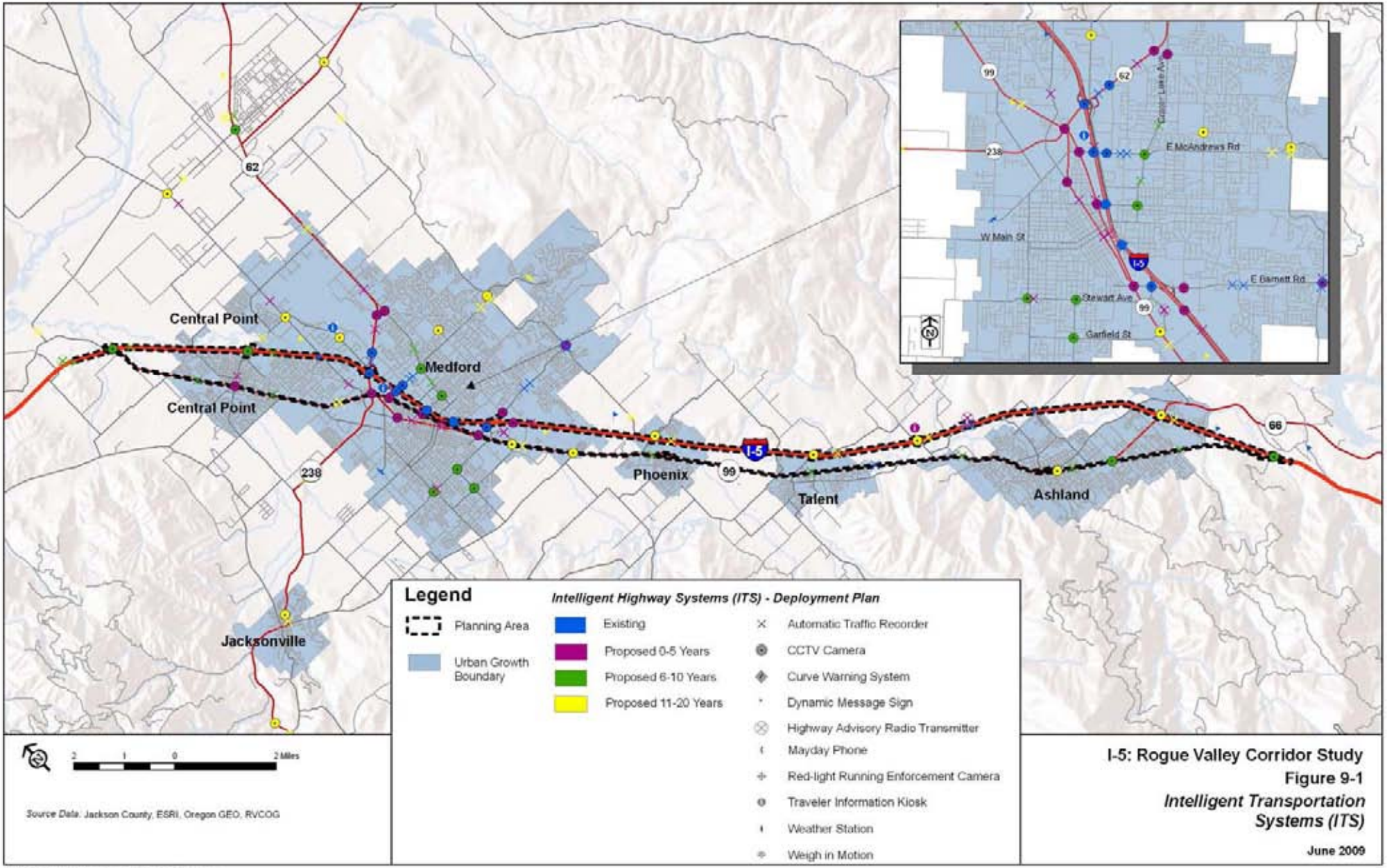
The Rogue Valley region has a sizeable amount of ITS infrastructure currently in place (see **Figure 9-1**). Many of the ITS field devices in the Medford metropolitan area have been deployed to address incidents on the I-5 viaduct through Medford. Because the viaduct is an elevated facility, it has a greater potential for icy conditions. Furthermore, the absence of shoulders on the viaduct to enable disabled vehicles to leave the travel lanes adds a level of complexity for emergency response personnel assessing an incident. Therefore, ODOT has deployed an advanced "ICE" warning sign, cameras, a weather station, and mayday phones. Below is a summary of the overall Rogue Valley ITS infrastructure.

Traffic Operations Center (TOC)

Currently located within a shared facility with the Oregon Police Dispatch in Central Point, the TOC is utilized to manage and coordinate response to incidents and to dispatch ODOT personnel throughout south central Oregon. Dispatchers in the center are responsible for posting messages on the dynamic message signs located throughout the Rogue Valley region.

Closed-Circuit Television (CCTV) Cameras

ODOT currently controls six CCTV cameras to monitor traffic on I-5 within the Corridor Plan area, concentrated primarily along the viaduct through Medford. Video signals from the cameras are transmitted to ODOT TOC. Three cameras on the viaduct communicate via wireless to the weather station site located at Jackson Street (MP 28.94). From the weather station, the video is transmitted to the TOC. The City of Medford operates two cameras that are transmitted via copper twisted-pair cable to Medford City Hall for monitoring. However, the information is not currently posted to a website. Additional cameras are planned in conjunction with the South Medford Interchange project.



I-5: Rogue Valley Corridor Study

Figure 9-1

Intelligent Transportation Systems (ITS)

June 2009

Dynamic Message Sign (DMS)

Typically used to apprise motorists of changes in the local road conditions, a DMS is an electronic sign used to post messages that are variable (any message) or changeable (one of several fixed messages). ODOT currently operates four DMSs within the Corridor Plan area—two signs along I-5 southbound at Table Rock Road in Central Point and Mountain Avenue in Ashland, on I-5 northbound before Exit 11 near Ashland, and past North Phoenix Road near Phoenix. All signs are accessed remotely via a dial-up telephone link.

Automatic Traffic Recorders (ATRs)

Used to collect traffic volume, speed, and occupancy data at a given location, ATRs are typically located upstream from a signalized intersection but are occasionally placed on freeway mainlines as well. Within the Corridor Plan area, ODOT operates three ATRs—one on OR 62 (MP 1.09), one on OR-99 in Talent (MP 15.82), and one on the I-5 Medford viaduct at MP 28.33. The City of Medford, meanwhile, controls six ATRs—two are positioned on East McAndrews Road east and west of the Royal Avenue intersection, two are on Barnett Road east and west of Black Oak Drive, and two are on North Phoenix Road north and south of the Barnett Road intersection.

Roadway Weather Information System (RWIS)

Weather stations, also called roadway weather information systems (RWISs), are used to collect and monitor weather and road conditions that are pertinent to motorists and to maintenance personnel responsible for the roadway operations. Typical weather stations collect temperature, wind speed, wind direction, humidity, and road surface temperature. ODOT currently operates one RWIS within the Corridor Plan area. Positioned on the I-5 Medford viaduct, information from this station is posted on the ODOT website via TripCheck.

Highway Advisory Radio (HAR)

Using low power roadside transmitters that operate in AM or PM frequencies, HAR systems are intended to provide supplemental information to motorists about traffic advisories, construction and maintenance operations, adverse weather or environmental conditions, route diversions, and special events. Only one HAR system is currently in operation within the Corridor Plan area. Positioned on I-5 near Ashland with an approximate two-mile range, the system is used to provide advanced traveler information, especially pass condition information for southbound traffic prior to climbing the Siskiyou Pass. The existing system is near the end of its life cycle and has not been considered reliable during recent harsh weather conditions. Consequently, it is scheduled for eventual replacement.

Weigh-in-Motion (WIM) Systems

Weigh-in-motion (WIM) systems allow large trucks to bypass traditional weigh stations by reporting their weight electronically at highway speeds. Loop detectors embedded in the pavement activate a computer that accepts weight data from scales, space measurements from axle sensors, and height reading from an over-height detector. An electronic reader activates a transponder placed in the truck's windshield and sends a unique acquisition signal to a

computer deployed at the roadside weigh station. The roadside computer receives the data and checks the state records for registration, weight declaration, tax status, and safety inspections. In less than a second, the driver is signaled to stop or go. There are currently two WIM systems in place north of Ashland.

Communications Equipment

Communications is a critical component of the ITS infrastructure because local agencies must be able to monitor, control, and operate traffic management devices from remote locations to effectively manage the movement of passengers and goods. The communications network within the Corridor Plan area comprises fiber optic cable, twisted-pair copper, radio, cellular telephone, and, eventually, a wireless mesh Ethernet network.

ITS Deployment Plan

The ITS deployment plan (see **Figure 9-1**) for the Rogue Valley details how and when ITS projects will be deployed. The highest priority projects are scheduled for deployment in a five-year timeframe and are summarized as follows:

Network Surveillance

To improve traveler information and enhance monitoring capabilities for traffic management, maintenance, and emergency management personnel, additional CCTV cameras will be deployed at key intersections of the Rogue Valley region. The cameras will monitor the roadway for congestion, trouble spots, incidents, equipment failures, and traffic signal operations.

Traffic Data Collection System

Currently, annual traffic counts are conducted manually for transportation planning purposes. By deploying system detectors to automate the collection and storage of traffic volume, speed, and occupancy data, this project will enable better management of the regional roadway network. Traffic counts collected on a daily basis throughout the year will provide real-time traffic congestion information to the public and will improve travel times. Finally, system detectors that automatically detect incidents can reduce incident response times.

I-5 Siskiyou Pass Traveler Information

ODOT intends to provide a graphical display of real-time and forecasted weather conditions on I-5 over the Siskiyou Pass. The project will install additional weather information stations, road temperature sensors, CCTV cameras, HAR, and DMS, and will provide access to this information, including highway advisory messages, via a web page.

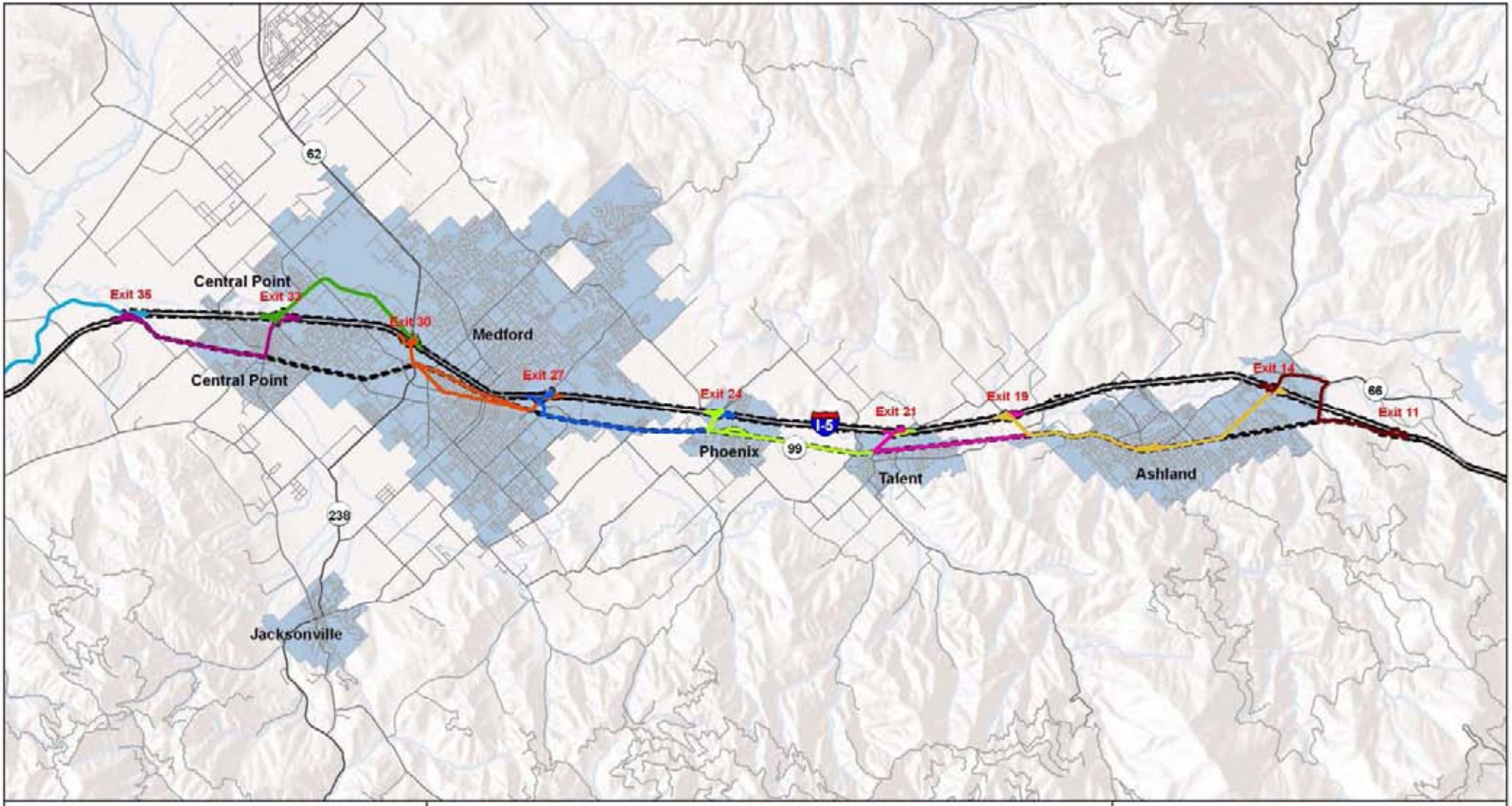
Incident Management in the Freeway Corridor

No formal incident management program is currently in place within the Rogue Valley region. Although ODOT District 8 has no immediate plans to implement such a program, it may be reconsidered if regional growth continues as projected. However, many of the local agencies, such as ODOT District 8, Jackson County, and the City of Medford, do have portable DMS and

other incident management equipment on hand that can be deployed in the event of an incident or major emergency in order to support local emergency agency operations.

In cooperation with local Rogue Valley agencies, ODOT Region 3 developed a regional Emergency Detour Contingency Manual to address protocol for incident response for major incidents along the I-5 corridor. In the event of a major incident on I-5, vehicles would be directed to emergency detour routes, as displayed in **Figure 9-2**, depending upon the location of the incident. The manual depicts detour information, sign placement, and locations of traffic control. Furthermore, the manual includes additional details for a complete closure of the I-5 viaduct through Medford between Exits 27 and 30. These details include traffic control deployment, procedures, and responsibilities for ODOT, City of Medford Public Works Department, City of Central Point Maintenance Department, Medford Police Department, and Rogue Valley Central Communications.

Currently this plan is implemented manually and includes placement of portable variable message signs. In the future, ODOT plans to deploy fixed trailblazer (right/left arrow) signs or changeable fixed message signs to display one of several preset fixed messages on detour routes, DMS, CCTV cameras to monitor roadway performance, and alternative traffic signal timing plans to accommodate changes in traffic patterns.



2 1 0 2 Miles

Source Data: Jackson County, ESRI, Oregon GEO, RVCOG

Legend

Planning Area

Urban Growth Boundary

I-5 Detours

Exits 11-14
Exits 14-19
Exits 19-21
Exits 21-24
Exits 24-27
Exits 27-30
Exits 30-33
Exits 33-35
Exits 35-40

I-5: Rogue Valley Corridor Study

Figure 9-2

Major Emergency Detour Routes for I-5

June 2009