Albany Transportation System Plan

Albany, Oregon

February 2010

Prepared for:

City of Albany, Oregon
333 Broadalbin St SW
Albany OR 97321-0144

Prepared by:

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Transportation System Plan

Albany 2030 Transportation System Plan

Albany, Oregon

Prepared For:
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Project No. 6497

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Table of Contents

List of Figures

List of Tables

Appendices, Volume 1

Appendix A TPR Requirements Memo

Appendix B Public Involvement Process for TSP Update

Appendix C Comprehensive Plan and Zoning Map Changes

Appendix D Open House Design Sketches

Appendix E Transportation Improvement Project Prospectus Sheets

Appendix F STA Application

Appendices, Volume 2

Technical Memorandum 1: Existing Plans and Policy Review (11/16/05)

Technical Memorandum 2: Review of Goals, Objectives, and Measures of Effectiveness (11/16/05)

Technical Memorandum 3: Existing Transportation Conditions and Deficiencies (12/7/05)

Technical Memorandum 4: Comprehensive Plan Committed Network Scenario (3/6/07)

Technical Memorandum 5: 2030 Land Use Alternatives Analysis (4/9/07)

Technical Memorandum 6A: Draft 2030 Model Alternatives Analysis (4/17/08)

Technical Memorandum 6B: Draft Multi-modal Plans (4/17/08)

Technical Memorandum 6C: Roadway Needs Analysis (2/11/08)

Technical Memorandum 6D: Comparison of Willamette River Bridge Crossing Options (3/27/08)

Technical Memorandum: Summary of Downtown Albany TSP Improvements (3/27/09)

Working Paper 1: 2030 External Traffic Growth (5/1/07)

Preface

The progress of this plan was guided by City of Albany staff with input from the City Council, Oregon Department of Transportation (ODOT), and the Department of Land Conservation and Development (DLCD. The involved staff is identified below, along with members of the consultant team. The City Council devoted a substantial amount of time and effort to the development of the Albany Transportation System Plan (TSP) Update, and their participation was instrumental in the development of this document. The City of Albany's future transportation system will be better because of their commitment.

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Section 1
Introduction

Introduction

OVERVIEW

The City of Albany initiated an update of the City's Transportation System Plan in 2006. This Transportation System Plan (TSP) will guide the management and development of appropriate transportation facilities within Albany, incorporating the community's vision, while remaining consistent with state and other local plans. This plan will be adopted as a supporting document to the Comprehensive Plan providing the majority of the required transportation elements of a comprehensive plan.

The Oregon Revised Statues require that the TSP be based on the current Comprehensive Plan land uses and must also provide a transportation system that accommodates the expected 20-year growth in population and employment that will result from implementation of the land use plan. The contents of this TSP are guided by Oregon Revised Statute (ORS) 197.712 and the Department of Land Conservation and Development (DLCD) administrative rule known as the Transportation Planning Rule (TPR, OAR 660-012). These laws and rules require that jurisdictions develop the following:

- a road plan for a network of arterial and collector streets;
- a bicycle, pedestrian, and transit plan;
- an air, rail, water, and pipeline plan;
- a transportation financing plan; and
- policies and ordinances for implementing the Transportation System Plan.

Plans for the road, bicycle and pedestrian networks are contained herein. The rail system has been assessed through the plans review and existing and future conditions. Known committed rail projects have been identified however, the City of Albany has not identified additional projects as the rail system is under private ownership and beyond the City's control. Existing transit condition and policy guidance is provided; however, a Transit Master Plan is being developed and when completed will become part of the TSP; therefore, this document only contains existing conditions information and policy guidance for the upcoming transit plan. An Airport Master Plan and Water and Wastewater Master Plans have already been completed and are already part of the City's Comprehensive Plan. A discussion of potential and existing funding sources is contained herein and a detailed financial plan for capital, operations and maintenance of the transportation system will be presented as a separate document.

The TPR requires that alternative travel modes be given consideration along with the automobile, and that reasonable effort be applied to the development and enhancement of the alternative modes in providing the future transportation system. In addition, the TPR requires that local jurisdictions

adopt land use and subdivision ordinance amendments to protect transportation facilities and to provide bicycle and pedestrian facilities between residential, commercial, and employment/institutional areas. It is further required that local communities coordinate their respective plans with the applicable county, regional, and state transportation plans. *A memo summarizing how the TSP and implementing ordinances are compliant with the TPR is provided in Appendix A.*

PUBLIC INVOLVEMENT

The TSP planning process included opportunities to obtain City Council input at each step of the process. The citizens of Albany were also provided with opportunities to identify their priorities for future transportation projects within the City through a variety of forums available throughout the planning process.

The planning process was guided by City staff with review and input from ODOT and DLCD on the technical aspects of the TSP. They reviewed a total of twelve memoranda and convened for meetings at nearly each step of the process. Additional meetings were held with the Albany Bike and Pedestrian Commission. One meeting discussing the regional need for Willamette River crossing capacity was held and included representatives from ODOT, DLCD, Linn County, Benton County, Corvallis Area Metropolitan Planning Organization (CAMPO), and the City of Millersburg.

In addition to these meetings, five sets of public meetings (total of nine meetings) were held at key junctures in the process to obtain public comment regarding transportation concerns and priorities. The City's website, as well as an e-mail list of interested citizens, businesses, City staff, boards/commissions, and agencies, was used to announce public meetings, disseminate information, and solicit input/feedback from the community. In addition, two neighborhood meetings were held to address neighborhood impacts of specific projects. All comments received through this process were addressed in the alternatives analysis and final plan development.

In addition, City staff met with the City Council to present each of the ten technical memorandum leading up to the TSP document (a total of over 15 meetings). *Details of the public involvement process are provided in Appendix B.*

PLAN AREA

The City of Albany is located in the mid-Willamette Valley of Oregon, along the Interstate 5 and Union Pacific Railroad mainline corridors, approximately 25 miles south of the City of Salem and about 12 miles northeast of Corvallis, Oregon. The City of Albany lies within two counties (Benton County and Linn County). The Willamette River runs through the City and serves as a boundary between the two counties. The area of the City northwest of the Willamette River (frequently referred to as North Albany) is located within Benton County. The rest of the City is located within Linn County. Three state highways traverse the City of Albany; US Highway 20 (US 20), Oregon Highway 99E (OR 99E), and Interstate 5 (I-5). Figure 1-1 shows the location of Albany in relation to the regional highways and Linn and Benton Counties.

Albany is both an employment and commercial center for neighboring cities such as Corvallis, Tangent, Lebanon, and Sweet Home and is also a bedroom community to cities such as Corvallis and Salem.

PLAN AREA GROWTH

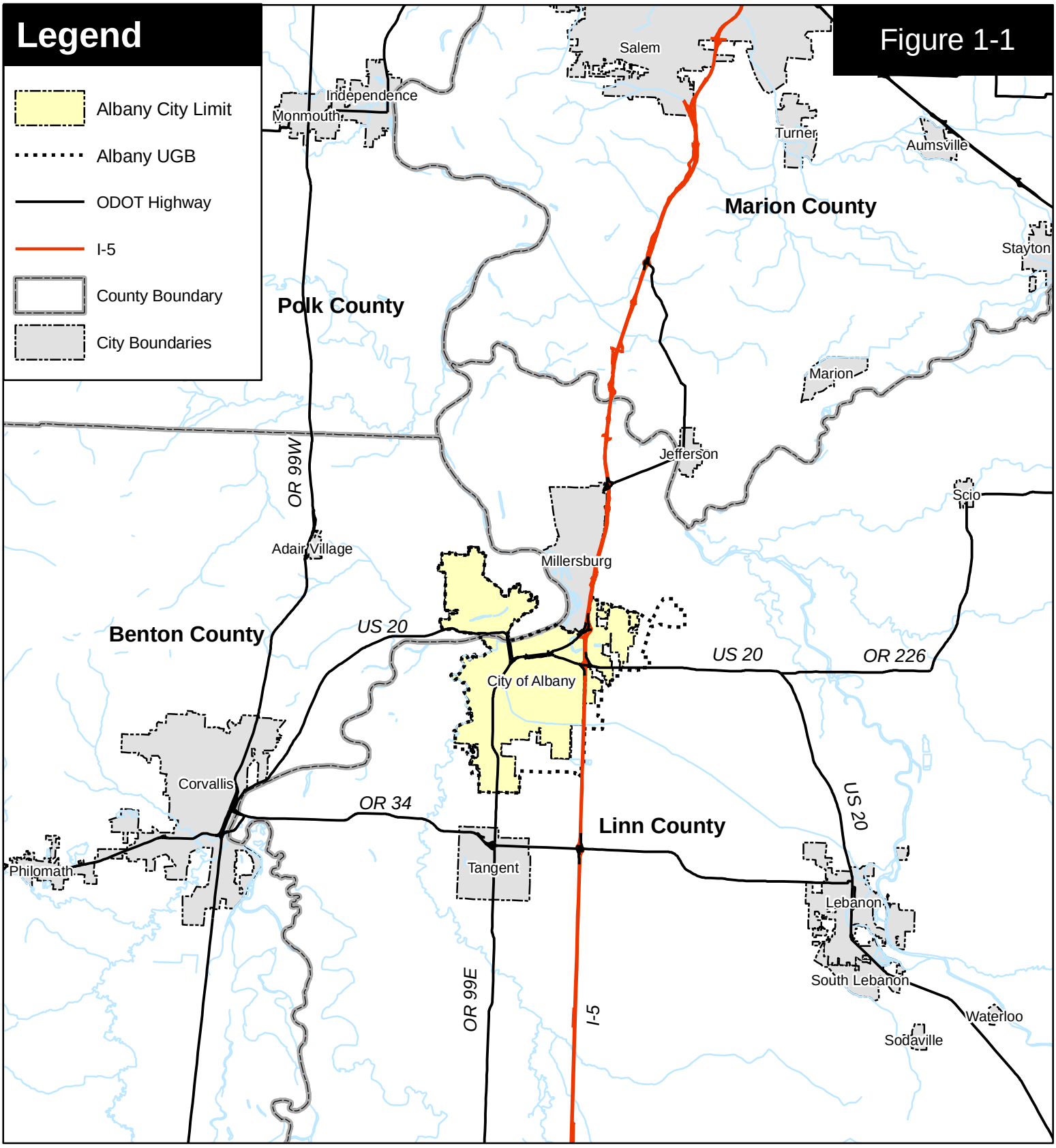
State, County, and City officials have worked to develop a coordinated growth forecast for Albany that estimates the City's 2030 population to be approximately 63,820, supported by an employment base of approximately 25,235 jobs. Table 1-1 provides some historical context for these numbers by showing census data from 1970 to present.

TABLE 1-1 CITY OF ALBANY GROWTH STATISTICS

	1970 Census	1980 Census	1990 Census	2000 Census	2006 Statewide Model	2030 Projection Model[1]
Population	18,181	26,546	29,462	40,852	47,630	63,820
Employment	N/A	N/A	N/A	N/A	19,060	25,235
Households	N/A	10,415	11,786	16,108	18,875	24,765

1 The 2030 projections were developed by creating a 'straight-line' growth assumption from the 2020 coordinated population projection to 2030 based on the average annual growth rate (AAGR) of 1.51% per year between 1997 (the base year) and 2020. A similar method was used for employment and households.

Albany's population more than doubled (22,671 new citizens) between 1970 and 2000, climbing at an annualized rate of approximately 4.2 percent. The coordinated forecast calls for the community to grow by a similar number of new citizens (22,968) between 2000 and 2030, but at a much slower annualized rate of approximately 1.9 percent. The Albany 2030 TSP was developed to accommodate this growth and the related travel demands of a community of nearly 65,000 people.



City of Albany, Oregon

Albany Transportation System Plan

Plan Area Map

Miles
0 1 2 4

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TSP ORGANIZATION AND METHODOLOGY

The development of the City of Albany's 2030 Transportation System Plan began with a review of the local and statewide plans and policies that guide land use and transportation planning in the City. Next, the project vision, goals, objectives, and measures were determined. These are presented in **Section 2** of this plan. Next, an inventory of the existing transportation system was performed. This inventory documented all major transportation-related facilities and services within the UGB. The system inventory and documentation of existing deficiencies of the non-roadway modes are presented in **Section 3** of this report.

The transportation system inventory allowed for an objective assessment of the current roadway system's operational performance, safety, and general function, which is summarized in **Section 4**. Development of long-term (year 2030) transportation system forecasts relied heavily on the City's population growth projections. Based on these projections, and with input from City community development and public works directors, reasonable assumptions were drawn as to the potential for and location of future development activities. **Section 5** of this report details the development of anticipated long-term future transportation needs within the urban growth boundary (UGB).

Section 6 documents the development of alternative measures to mitigate identified safety and capacity deficiencies, as well as projects that would enhance the multi-modal aspects of the City's transportation system. The impact of each of the identified alternatives was considered on the basis of its potential costs and benefits, as well as its conformance with and potential conflicts to the City's transportation system and land uses. Ultimately, based on comments received from the Albany City Council, agency advisors, and the community, a preferred plan was developed that reflected a consensus on which elements should be incorporated into the City's long-term transportation system.

Having identified a preferred set of alternatives, the next phase of the planning process involved presenting and refining the individual elements of the TSP through a series of decisions and recommendations. The recommendations identified in **Section 7** include a Roadway System Plan and a Pedestrian and Bicycle System Plan, as well as plans for other transportation modes serving Albany.

Section 8 provides summary of the potential and existing funding sources to finance the identified transportation system improvements. A detailed financial plan for capital, operations and maintenance of the transportation system will be presented as a separate document.

Sections 1 through 8, in combination with Appendices A through G, comprise **Volume 1** of the TSP and provide the main substance of the plan. These are supplemented by **Volume 2** which includes the technical memoranda documenting the existing conditions analysis, forecast needs, and alternatives analysis.

Section 2
Vision, Goals, Objectives, and Outcomes

Vision, Goals, Objectives

Albany's vision for the transportation system is *a safe, diversified, and efficient transportation system that serves the needs of anticipated growth while protecting and enhancing Albany's economy, neighborhood quality, and natural and built environment*.

The purpose of the Albany 2030 Transportation System Plan (2030 TSP) is to support this vision by logically providing for the systematic care and expansion of the multi-modal transportation system. Section 7 of this document contains the prioritized list of actions and improvement projects desired to meet the future travel needs within the community.

The City's vision is translated into the following four goals, each being supported by measurable objectives that are used to determine appropriate actions and preferred alternatives.

Goal 1. Provide an efficient transportation system that facilitates the local and regional movement of people and goods.

- Reduce miles of travel and travel time through improved connectivity where "barriers" exist (such as Interstate 5, railroads, waterways, or neighborhoods).
- Maintain acceptable roadway and intersection operations where feasible considering environmental, land use, and topographical factors.

Goal 2. Provide a safe transportation system.

- Improve safety at locations with known safety issues.
- Minimize conflicts along high volume and/or high speed corridors.

Goal 3. Provide a diversified transportation system that ensures mobility for all members of the community and provides alternatives to automobile travel.

- Improve the quality of available transit service as measured by coverage, hours of service and frequency.
- Develop bicycle and pedestrian facilities that encourage non-vehicular travel.
- Provide direct off-roadway pedestrian and bicycle routes and connections.
- Maintain and support the Albany airport as a regional facility.
- Maintain and support the Albany Station as a regional facility.

Goal 4. Provide a transportation system that balances financial resources with community livability and economic vitality.

- Preserve and protect corridors of local and regional significance that are identified for vehicular and non-vehicular routes.

- Establish priorities and define the incremental steps needed for investment of ODOT and Federal revenues to address safety and major capacity problems on the State and Interstate transportation system.

TRANSPORTATION SYSTEM PLAN OUTCOMES

Without a proactive Transportation System Plan, the community is left without a means to identify and plan for real needs within the system. Under a no-plan and no-build scenario out to the future year 2030, a steady degradation in the quality of service by the transportation system would be experienced. This would include longer trips due to increased congestion, longer waits at traffic signals, increased safety concerns due to increased traffic, and ultimately a gap in the transportation system between new development and the existing transportation system to service homes, businesses, and community facilities.

The Transportation System Plan is the instrument to analyze, identify, and appropriately prioritize improvements to the transportation network to facilitate the vision, goals, and objectives shown in the previous section. All this will contribute to a better quality of life for the system users within Albany.

The following key measures were used to evaluate the Albany Transportation System Plan:

- **System Efficiency**

    - *Ease of mobility*; through volume-to-capacity (v/c) ratios and delay (level-of-service, LOS) for corridors and intersections.

    - *Network connectivity*; through vehicle miles traveled (VMT), and number of river/interstate/and grade-separated rail crossings.

- **System Safety**

    - *Rate of crashes*; through comparing the number of crashes to the amount of travel on a facility.

    - *Sidewalk and bike lane gaps*; where a sidewalk or bike lane would likely address the safety concern, based on crash history or higher risk location.

- **System Diversity**

    - *Transit service*; through adequacy of coverage area, hours of service, and frequency of service.

- *Sidewalk and bike lane gaps*; measured by number of ped/bike generators not directly connected by sidewalks and bike lanes to transit and arterial/collector ped/bike network.

- *Off-roadway pedestrian and bike connections*; measured by miles of off-roadway multi-use paths.

By using these measures to evaluate the needs and variations within the Albany Transportation System, specific treatments and projects were developed that fit favorably with this evaluation criteria, addressing congestion, delay, safety, connectivity, and diversity concerns within the system. The types of treatments and projects identified within the TSP include:

- Intersection capacity improvements (new turn lanes, installing a new traffic signal or roundabout, etc.)

- Intersection safety improvements (flashing yellow arrow signal heads, installing a new traffic signal or roundabout, improving pavement markings and signage, etc.)

- Roadway link capacity and safety improvements (new roadways, new through or turn lanes, median installations, etc.)

- Pedestrian capacity and safety improvements (new sidewalks, pedestrian esplanades, pedestrian bridges, etc.)

- Bicycle capacity and safety improvements (new bike lanes, designating bike boulevards, bike "sharrows", etc.)

- Additional studies required to determine the appropriate transportation solutions in specific areas (refinement plans, interchange area management plans, speed studies, etc.)

Each of these planned improvements as a part of this TSP represent a significant improvement over a no-build option, which would occur without this plan. Section 7 of this document identifies the specific projects and locations as a result of this TSP effort within the City of Albany.

Section 3
Transportation System Inventory

Transportation System Inventory

This section summarizes the existing transportation system inventory within the Albany urban growth boundary (UGB) The inventory includes existing significant roadways (arterials or collectors) and other transportation facilities and services, including pedestrian, bicycle, public transportation, freight, air service, marine, pipelines and transmission services. Existing deficiencies are identified for each mode; however existing traffic operations are provided in Section 4.

ROADWAY JURISDICTION

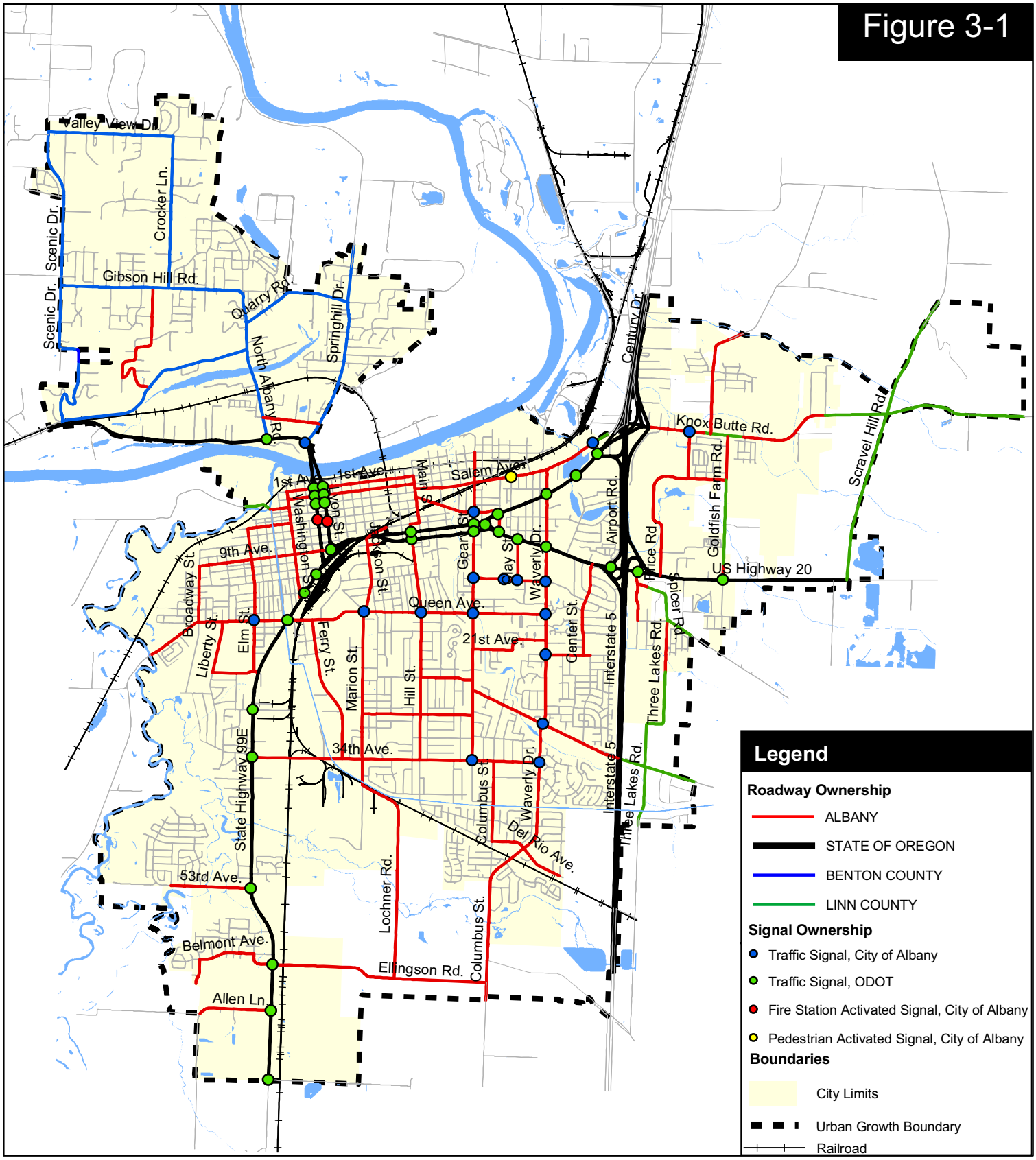
Public roads within the City of Albany are operated by four different jurisdictions: the City of Albany, Linn County, Benton County, and the Oregon Department of Transportation (ODOT). Each jurisdiction is responsible for the following:

- determining the road's functional classification;
- defining the roadway's major design and multi-modal features;
- maintenance; and,
- approving construction and access permits.

Coordination is required among the jurisdictions to ensure that the transportation system is planned, maintained, and expanded to safely meet the needs of travelers in the area.

The jurisdiction of each of the roadways and associated traffic signals within the study area is shown in Figure 3-1.

Figure 3-1



City of Albany, Oregon

Albany Transportation System Plan

Jurisdiction of Classified Roadways

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0 0.25 0.5 1 Miles

ROADWAY FUNCTIONAL CLASSIFICATION

A roadway's *functional classification* determines its role in the transportation system, as well as its width, right-of-way dedications, driveway (access) spacing requirements, types of pedestrian and bicycle facilities provided. The functional classification is based on the following hierarchy:

Arterials represent the highest class of city street. These roadways are intended to serve higher volumes of traffic, particularly through higher speeds. They also serve truck movements and should emphasize traffic movement over local land access.

Collectors represent the intermediate class. As their name suggests, these roadways collect traffic from the local street system and distribute it to the arterial street system. These roadways provide a balance between traffic movement and land access, and should provide continuous stretches of roadways to facilitate traffic circulation through the City.

Local streets are the lowest classification. Their primary purpose is to provide local land access and to carry locally generated traffic at relatively low speeds to the collector street system. Local streets provide connectivity through neighborhoods and are designed to not encourage cut-through vehicular traffic.

The City of Albany uses a roadway classification system that is fairly consistent with the classification system discussed above, with greater segregation for each classification. Five general classifications make up the system and include: Principal Arterial, Minor Arterial, Major Collector, Minor Collector, and Local Residential streets. The City's existing functional classification designations for existing roadways can be found in *Technical Memorandum #3: Existing Conditions and Deficiencies in Volume 2 Appendices*.

ODOT applies a similar classification system to its highways, particularly concerning roadway operating standards and access standards. ODOT's categories, from highest to lowest, are *Interstate*, *Statewide*, *Regional*, and *District* highways. OR 99E through Albany is classified as a *District* highway north of Albany and a *Regional* highway in and to the south of the City. US 20 is classified as a *Regional* highway.

PEDESTRIAN SYSTEM

Pedestrian facilities serve a variety of needs, including:

- Relatively short trips (under a mile) to major pedestrian attractors, such as schools, parks, and public facilities.
- Recreational trips—for example, jogging or hiking—and circulation within parklands.
- Access to transit (generally trips under 1/2-mile to bus stops).
- Commute trips, where mixed-use development is provided and people have chosen to live near where they work.

Pedestrian facilities should be integrated with transit stops and effectively separate pedestrians from vehicular traffic. Furthermore, pedestrian facilities should provide continuous connections among neighborhoods, employment areas, and nearby pedestrian attractors. Pedestrian facilities usually refer to sidewalks or paths, but also include pedestrian crossings for high volume roadways.

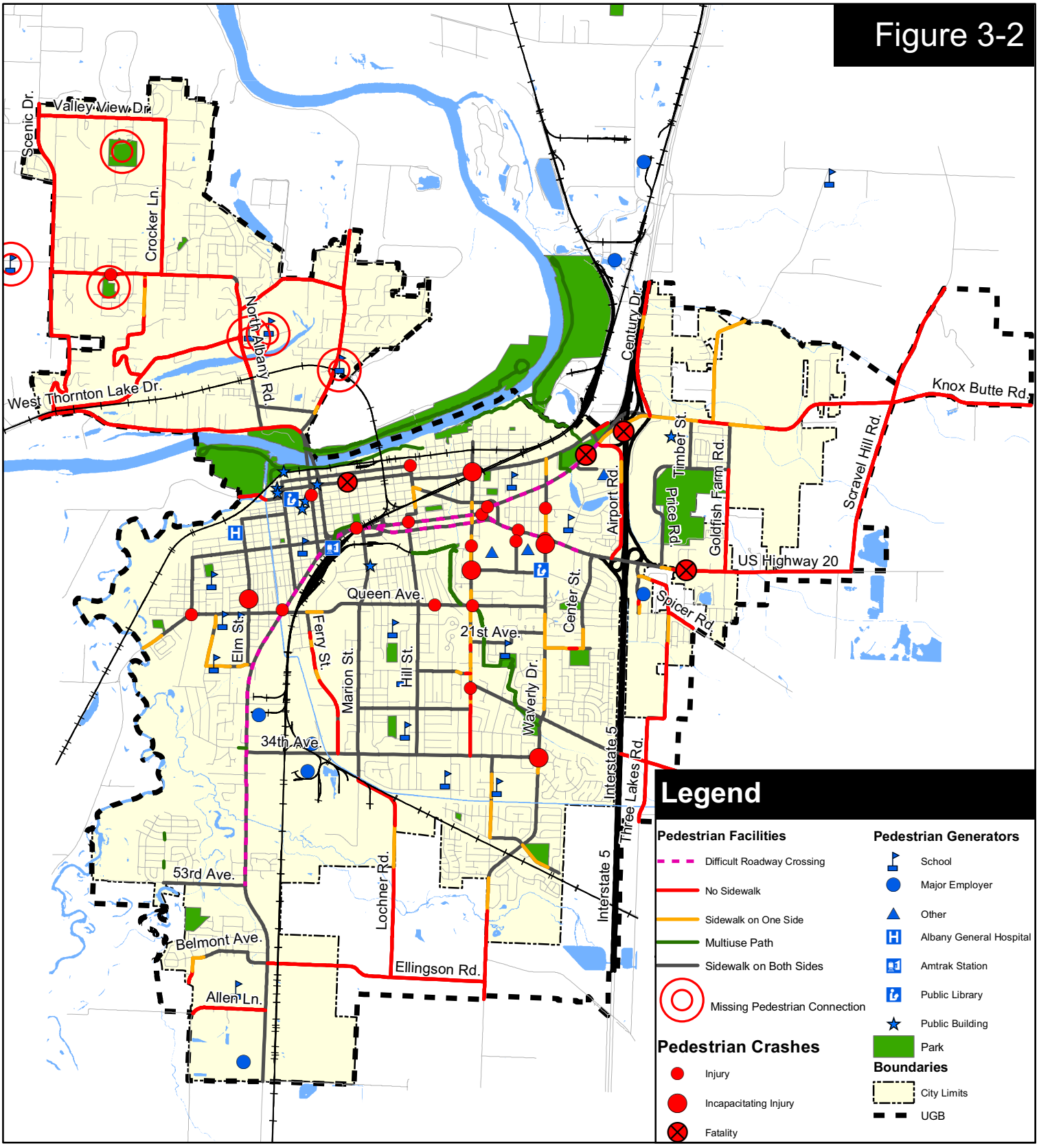
Pedestrian System Deficiencies

Figure 3-2 depicts study roadway sidewalk gaps and locations where pedestrian generators lack sidewalk connections. As shown in Figure 3-2, most pedestrian generators within the study area are located adjacent to roadways with pedestrian facilities. Several, however, lack pedestrian connections in North Albany, where there are several schools and two parks without sidewalk connections. Figure 3-2 also shows that most collectors and arterials have sidewalks. However, there are significant gaps in the sidewalk network, where no dedicated pedestrian facilities exist, or where sidewalks are only provided along one side of a street. The majority of these sidewalk gaps occur in North Albany, and on the southern and eastern edges of Albany.

Pedestrian crash locations are shown in Figure 3-2. Approximately forty percent of the pedestrian crashes occurred on roadways with sidewalk gaps. Seventy percent of these occurred in areas where a sidewalk on one side of the road starts or ends. This may indicate that within urban areas, providing sidewalk on only one side of the roadway may increase the potential for a pedestrian crash as compared to not providing sidewalks. Sidewalks on one side of the street attract pedestrians and encourage them to cross without crosswalks to their destinations on the opposite side.

Sixty percent of the pedestrian crashes occurred where sidewalks exist on both sides of the street. This is likely because many pedestrian crashes occur at intersections and pedestrian crossings, designated and undesignated. Improving pedestrian safety requires improving and providing safe pedestrian crossings in addition to providing sidewalks. Gaps near pedestrian generators are the greatest impediment to pedestrian trips because they occur where a high number of pedestrian trips are likely to occur. Future pedestrian facility improvements should be prioritized to reduce the gaps in the collector and arterial sidewalk network near pedestrian generators.

Additional details about existing pedestrian conditions and deficiencies can be found in Technical Memorandum #3: Existing Conditions and Deficiencies in Volume 2 Appendices.



City of Albany, Oregon

Albany Transportation System Plan

Existing Sidewalk Gaps and Pedestrian Crashes

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BICYCLE SYSTEM

Similar to pedestrian facilities, bicycle facilities serve a variety of trips. These include the following:

- Trips to major attractors, such as schools, parks and open spaces, retail centers, and public facilities.
- Commute trips.
- Recreational trips.
- Access to transit, where bicycle storage facilities are available at the stop, or where space is available on bus-mounted bicycle racks.

As this list suggests, supporting bicycling as a viable alternative to the automobile requires more than simply providing bicycle lanes. Support facilities, such as secure parking and worksite changing facilities, are also needed before many potential users will consider the bicycle trip as a practical alternative.

ODOT categorizes roadway bicycle facilities into the following four major classifications:

- Shared roadway - Bicycles and vehicles share the same roadway area under this classification. The shared roadway facility is best used where there is minimal vehicle traffic to conflict with bicycle traffic. Shared roadway areas can be identified for drivers and bicyclists with pavement markers referred to as "sharrows."

- Shoulder bikeways - This type of bicycle facility consists of roadways with paved shoulders to accommodate bicycle traffic.

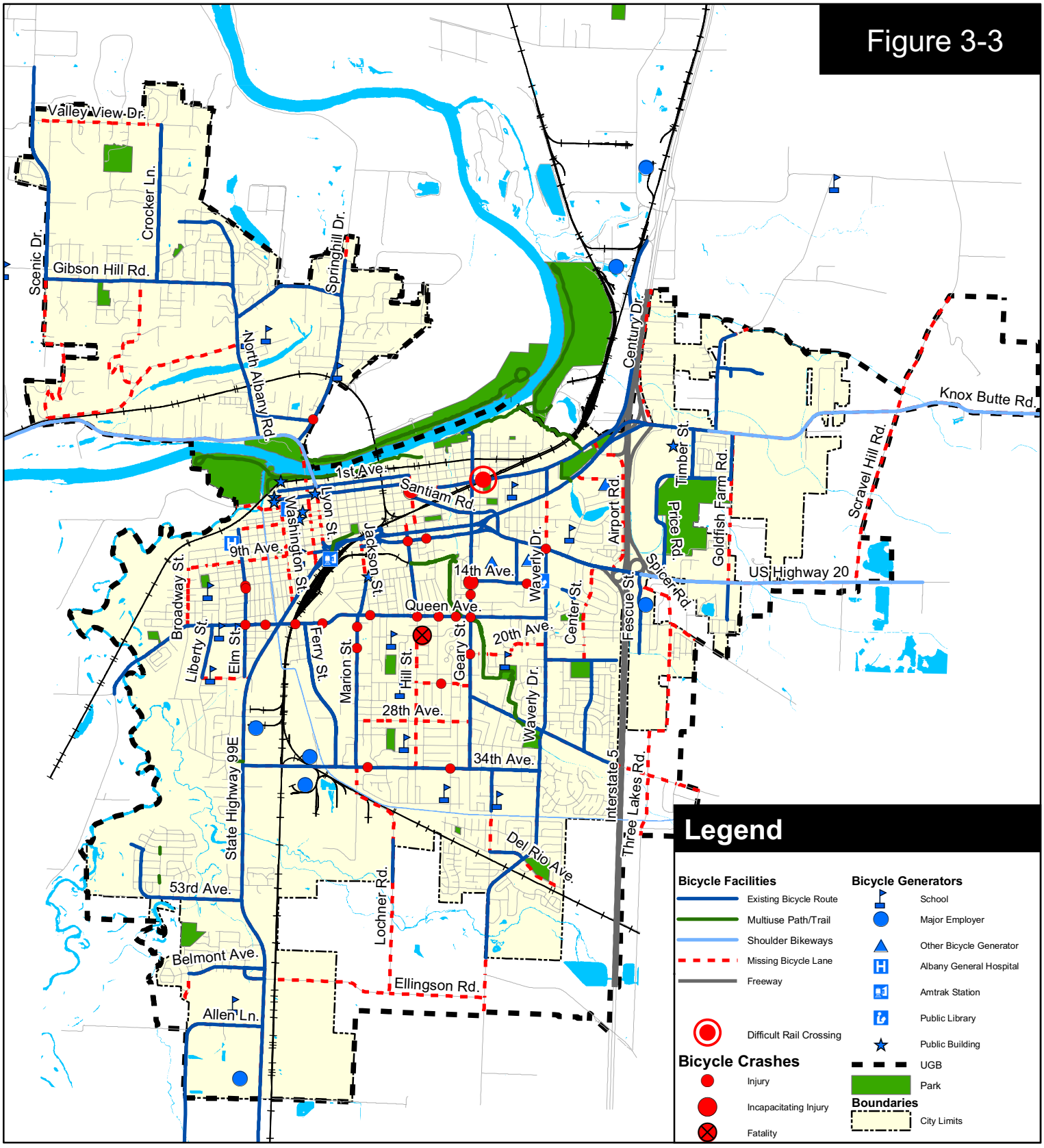
- Bike lanes - Separate lane adjacent to the vehicle travel lane for the exclusive use of bicyclists are considered bike lanes.

- Bike paths - These bicycle facilities are exclusive right-of-ways such as bicycle ways or multi-use paths, separated from the roadway.

Dedicated bicycle facilities should be provided along major streets where automobile traffic speeds are significantly higher than bicycle speeds. Bicycle facilities should connect residential neighborhoods to schools, retail centers, and employment areas. However, allowing bicycle traffic to mix with automobile traffic is acceptable where the average daily traffic (ADT) on a roadway is less than 3,000 vehicles per day, according to the *Oregon Bicycle and Pedestrian Plan* (Oregon Department of Transportation, 1995).

Lower volume roadways, such as local residential streets, should be considered for bike lanes or bike boulevards if anticipated to be used by children as a specified school route, if the volume of bicycles is high, if vehicle speeds are higher than 25 miles per hour, or if poor sight distance exists. In areas where no street connection currently exists or where substantial out-of-direction travel would otherwise be required, a multi-use path may be an appropriate facility for bicyclists.

Figure 3-3



Legend

Bicycle Facilities
- Existing Bicycle Route
- Multiuse Path/Trail
- Shoulder Bikeways
- Missing Bicycle Lane
- Freeway
- Difficult Rail Crossing

Bicycle Crashes
- Injury
- Incapacitating Injury
- Fatality

Bicycle Generators
- School
- Major Employer
- Other Bicycle Generator
- Albany General Hospital
- Amtrak Station
- Public Library
- Public Building

- UGB
- Park

Boundaries
- City Limits

0 0.25 0.5 1 Miles

City of Albany, Oregon

Albany Transportation System Plan

Existing Bicycle Network and Crashes

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Bicycle System Deficiencies

The existing bicycle network and bicycle crashes are shown in Figure 3-3. The great majority of crashes occurred on dedicated bikeways. The exception is the downtown US 20 Lyon/Ellsworth couplet, which does not have bicycle facilities and had four bicycle crashes during the study period.

The number of bicycle crashes occurring on bicycle routes indicates that future investment in the bicycle network should focus on improving the performance and safety of existing bicycle routes, in addition to creating new routes such as off-street paths and/or bicycle boulevards. The City should also seek methods to either accommodate bicyclists on Lyon and Ellsworth in the downtown area, or provide bicycles with an alternate route through downtown.

Where possible, planning for new bicycle routes and facilities should attempt to provide cyclists with alternatives to bicycle facilities with high crash rates. Opportunities should be sought to use Albany's existing grid street system to provide bicycle routes paralleling high-volume roadways in the form of bicycle boulevards. Additional multi-use paths may be considered as well, especially where natural drainage ways make construction of such paths feasible. In order to provide viable transportation alternatives rather than recreation, multi-use paths need to provide direct connection to common destinations.

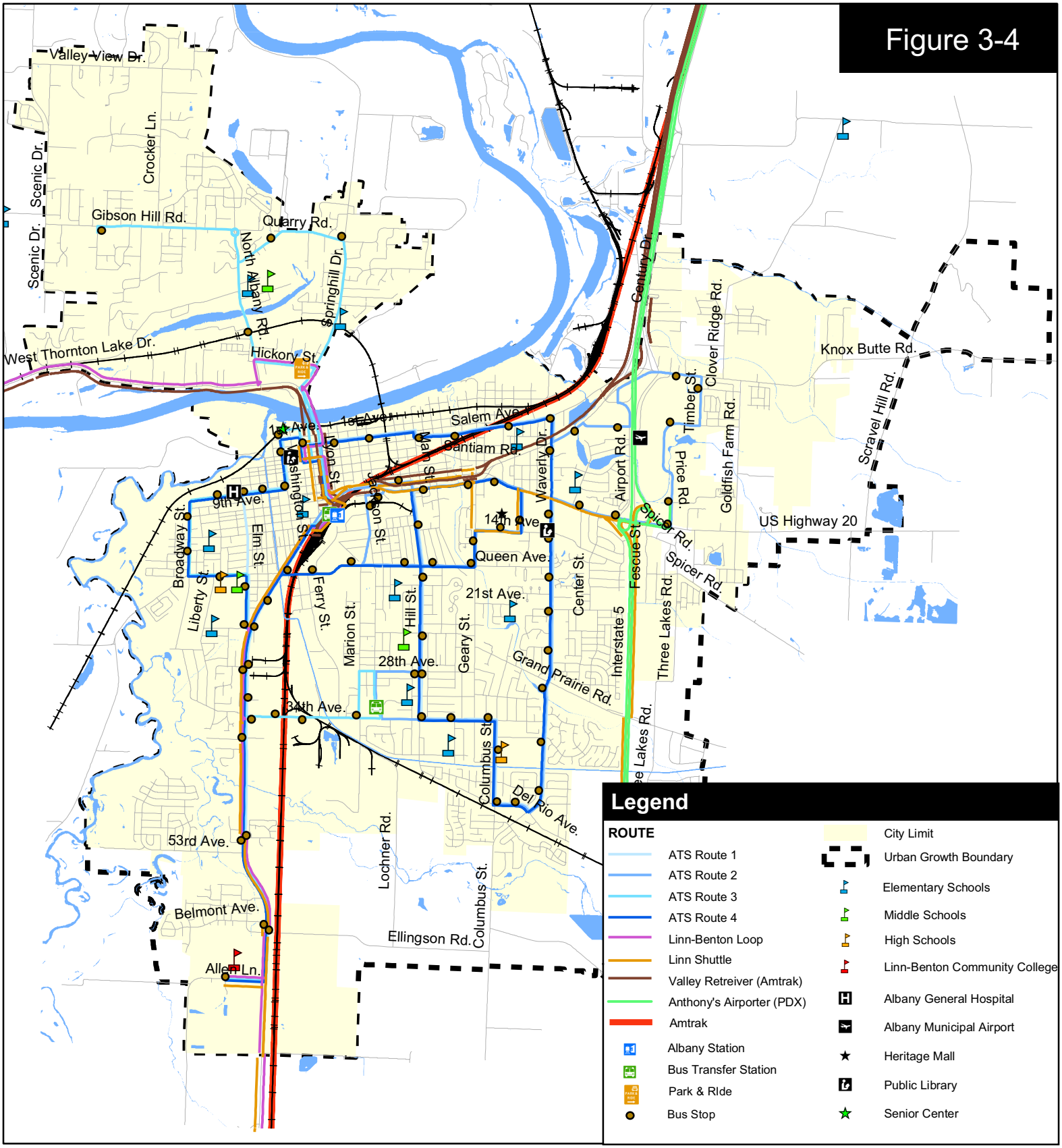
Additional investments in public education of motorists and bicyclists should be considered, as a means of addressing bicycle safety and improving bicycle operations.

Additional details about existing bicycle conditions and deficiencies can be found in Technical Memorandum #3: Existing Conditions and Deficiencies in Volume 2 Appendices.

PUBLIC TRANSPORTATION SYSTEM

Several public transportation services are provided within the City of Albany. Services include fixed route buses, shuttles, passenger rail, and paratransit. Fixed routes include those provided by the Albany Transit Service, Linn-Benton Loop, Linn Shuttle, Valley Retriever, Amtrak, and the HUT Airport Shuttle. Albany Call-A-Ride and Benton County Dial-A-Bus are the demand responsive services within the City of Albany. The service routes and stop locations are shown in Figure 3-4 and described in the following section.

Figure 3-4



Legend

ROUTE

- ATS Route 1
- ATS Route 2
- ATS Route 3
- ATS Route 4
- Linn-Benton Loop
- Linn Shuttle
- Valley Retreiver (Amtrak)
- Anthony's Airporter (PDX)
- Amtrak
- Albany Station
- Bus Transfer Station
- Park & Ride
- Bus Stop
- City Limit
- Urban Growth Boundary
- Elementary Schools
- Middle Schools
- High Schools
- Linn-Benton Community College
- Albany General Hospital
- Albany Municipal Airport
- Heritage Mall
- Public Library
- Senior Center

Miles
0 0.25 0.5 1

City of Albany, Oregon

Albany Transportation System Plan

Existing Transit Services and Stop Locations

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Transit System Deficiencies

Transit Quality of Service Evaluation (TQSE) measures, including transit service frequency, hours of service, and service coverage were used to evaluate the corresponding levels of service for the existing fixed route bus and shuttle services. Deficiencies within the City of Albany transit system are divided into four areas: service frequency, service hours, availability of information, and service availability.

Service Frequency: Currently, all fixed routes within the City of Albany operate at an undesirable transit service frequency LOS. 50% of the routes operate at a LOS of E and 50% operate at a LOS of F. When headways are larger than 20 minutes (LOS of C), the wait becomes too long for riders to want to wait for the next service. By decreasing the headways, service will become more appealing to users and usage should increase.

Service Hours: Hours of Service LOS for the City of Albany fixed routes are currently split at 63% and 37% with LOS of E and F, respectively. Services that do not operate a minimum of 16 hours throughout the day are described by the TQSE as undesirable to users. Few hours of service can cause unwanted time constraints on daily activities or trips because of the short time span of service availability.

Availability of Information: The current Albany Transit Services and Linn-Benton Loop schedules and general information about Albany Call-A-Ride are on the City's website and paper copies are available at 37 locations around town. Links or telephone numbers are provided on the City's website to other transit options in the greater Albany area. The availability of transit information for the Linn Shuttle, Amtrak, Valley Retriever, and the HUT Airport Shuttle to potential users is insufficient. Schedules are difficult to obtain and available telephone numbers do not provide adequate user service. Lack of availability of schedules and current fares to potential users has a negative effect on transit utilization.

Service Availability: Some of the transit supportive areas which are not currently served by transit and may require additional transit routes in order to be served include Marion Street, Columbus Street, Three Lakes Road, and portions of Geary Street.

Additional details about the transit service measures and deficiencies can be found in Technical Memorandum #3: Existing Conditions and Deficiencies in Volume 2 of the TSP Appendix.

FREIGHT TRANSPORTATION SYSTEM

Albany's freight transportation system consists of roadways for truck freight and railroad lines and yards for rail freight.

Truck Freight

I-5 is the only designated truck route in the study area. Based on traffic data taken from the ODOT automatic traffic recorder station # 22-005, approximately 17 percent of the daily traffic on I-5 is

from heavy vehicles (three or more axles). OR 99E and US 20, however, play significant roles in transporting of freight to/from the interstate system to its respective origin/destination in the local areas and rail yards.

Truck Freight Deficiencies

Roadway operation deficiencies for truck freight are similar to those for automobiles; however, the Strategic Visioning meetings held in 2004 and 2005 identified two additional deficiencies for truck freight. They include the need for a better connection for trucks from South Albany industries to I-5, as well as improvements to the rail/truck modal connection. While the safety evaluation for trucks did not indicate a trend of heavy vehicle crashes occurring on roadways besides OR 99E and US 20, a better connection for trucks from South Albany to I-5 could reduce the occurrence of heavy vehicle crashes through the commercial areas along OR 99E.

Rail Freight

The City of Albany is served by the Burlington Northern & Santa Fe (BNSF), Union Pacific (UP), Portland & Western (P&W), and Albany & Eastern (A&E) railroads. A map of the railroad lines and yards is shown in Figure 3-5. The BNSF Salem/Albany line carries just over one million gross tons a year with its operations centered at the Millersburg rail yard. Albany is also a railroad center of operations/maintenance for the P&W line that connects Albany to a large paper mill in Toledo, and the A&E line that transports a majority of wood products from Albany to Sweet Home and/or Mill City.

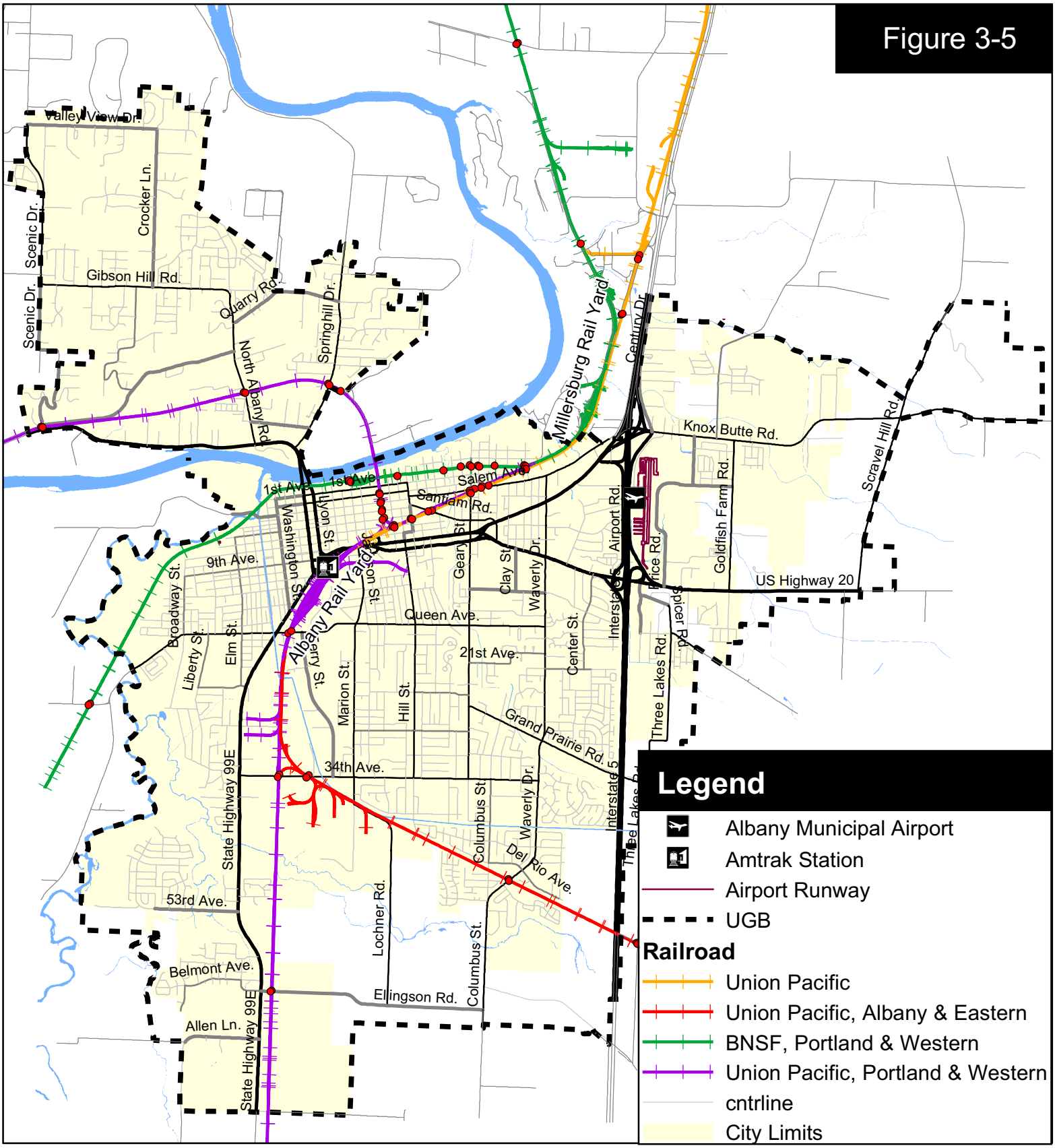
Rail Freight Deficiencies

The Albany Rail Yard, situated just north of Queen Avenue on the east side of OR 99E, is a crossing point for all of the UPRR rail lines in Albany. The distance between tracks where UPRR trains can meet and pass makes the mainline segment through Albany is one of the most capacity-constrained segments on the UPRR resulting in long delays while passing trains await permissions to cross.

Two of the three primary rail freight deficiencies identified in the Toledo-Sweet Home Rail Corridor Feasibility Study (2005) in Albany involve the Albany Rail Yard. This document identifies the need for improvements at the Queen Avenue crossing (mile post 690.0) and the need for additional intermodal facilities (south of the rail line within the vicinity of Marion Street and Lochner Road) to reduce congestion at the Albany Rail Yard and the Queen Avenue crossing.

The Albany Rail Yard has the physical limitation of requiring trains to cross Queen Avenue whenever switching cars. This creates significant delay to vehicles and pedestrians at this crossing and has a negative impact on the freight industry (fines from ODOT are incurred for blocking traffic for approximately ten minutes or more during daylight hours). Potential mitigations include grade separation for the Queen Avenue crossing and/or reducing congestion at the Albany Rail Yard by rationalizing traffic between the Albany and Millersburg rail yards or adding a new intermodal facility along the A&E line.

Figure 3-5



Legend

- Albany Municipal Airport
- Amtrak Station
- Airport Runway
- UGB

Railroad

- Union Pacific
- Union Pacific, Albany & Eastern
- BNSF, Portland & Western
- Union Pacific, Portland & Western
- cntrline
- City Limits

City of Albany, Oregon

Albany Transportation System Plan

Rail Lines and Airport Locations

Kittelson & Associates, Inc.
Transportation Engineering/Planning

0 0.25 0.5 1 Miles

The third deficiency identified in the Toledo-Sweet Home Rail Corridor Feasibility Study is for bridge structure repair on the Willamette River rail crossing bridge at milepost 691.65. Damage exists on the timber trestle and needed repairs include new pilings at each end.

AIR

The City of Albany has a general aviation airport (Albany Municipal Airport) located parallel to I-5 between Knox Butte Road and US 20. It is shown in Figure 3-5. The Airport Master Plan, completed in 2002, serves as the air portion of the Albany TSP. This plan defines the needs and direction of future development at the airport. *A summary of the existing airport facilities and deficiencies is located in Technical Memorandum #3 located in Volume 2 of the TSP Appendix.*

MARINE

The Willamette River is located in Albany between downtown and north Albany, but has no port facilities and has no role in the transportation of people or freight. Although the Willamette River is navigable, users would be restricted in height and width due to the stationary US 20 and railroad bridge crossings. There are no planned improvements to increase the navigability of the Willamette River in Albany or add any port terminals.

PIPELINE AND TRANSMISSION SYSTEM

Southern Pacific owns the only major pipeline positioned within the Urban Growth Boundary. It carries petroleum products, including jet fuel and gasoline on a north-south line that runs just east of I-5. Outside of the Urban Growth Boundary, Northwest Pipeline owns a high-pressure natural gas pipeline that runs in the north-south direction along the eastern edge of Albany. This pipeline provides service to Northwest Natural Gas, who in turn distributes their product within the City of Albany with a smaller pipe network. There are no identified constraints or planned improvements to the pipelines.

The City of Albany owns and maintains a water and wastewater system of treatment facilities and pipe networks that serve Albany customers. Existing facilities, constraints, and planned improvements for the water and wastewater systems, including those along arterials and collectors are included in the City of Albany Water Facility Plan and Wastewater Facility Plans, respectively.

Section 4
Existing Traffic Conditions

Existing Traffic Conditions

This section summarizes the analysis and findings related to existing traffic operations. Details are included in *Technical Memorandum 3: Existing Conditions and Deficiencies*, which is provided in Volume 2 of the Technical Appendix. Existing conditions for non-auto transportation modes were discussed in Section 3.

Intersection operations were analyzed in accordance with the procedures stated in the 2000 *Highway Capacity Manual (HCM)*. Traffic operations at intersections are generally described using a measure known as "level of service" (LOS). Level of service represents ranges in the average amount of delay that motorists experience when passing through the intersection. LOS is measured on an "A" (best) to "F" (worst) scale.

At signalized and all-way stop-controlled intersections, LOS is based on the average delay experienced by all vehicles entering the intersection.

At two-way stop-controlled intersections, LOS is based on the average delay experienced by the critical movement at the intersection, typically a left-turn from the stop-controlled street.

The City of Albany does not have adopted level-of-service standards for signalized and unsignalized intersections. For signalized and all-way stop controlled intersections, LOS "D" or better (representing no more than 55 seconds of average delay) is commonly considered acceptable operations. For two-way stop controlled intersections, a v/c of up to 0.85 is generally considered to be acceptable operations.

ODOT owned and maintained highways are subject to the mobility standards defined in the 1999 OHP. The OHP mobility standards are based on volume-to-capacity ratios and are based on the functional classification and posted speed of a highway. As stated previously, ODOT designates OR 99E and US 20 within Albany as *Regional Highways*. As such, to meet ODOT performance standards, the volume-to-capacity ratio for the signalized intersections along OR 99E and US 20 should not exceed 0.75 in areas where the posted speed limit is 45 miles per hour or greater, 0.80 for posted speed limits of 40 miles per hour, or 0.85 for posted speed limits of 35 miles per hour or less.

All intersection level-of-service evaluations were conducted for the reasonable worst-case, weekday p.m. peak hour.

TRAFFIC VOLUMES AND INTERSECTION OPERATIONS

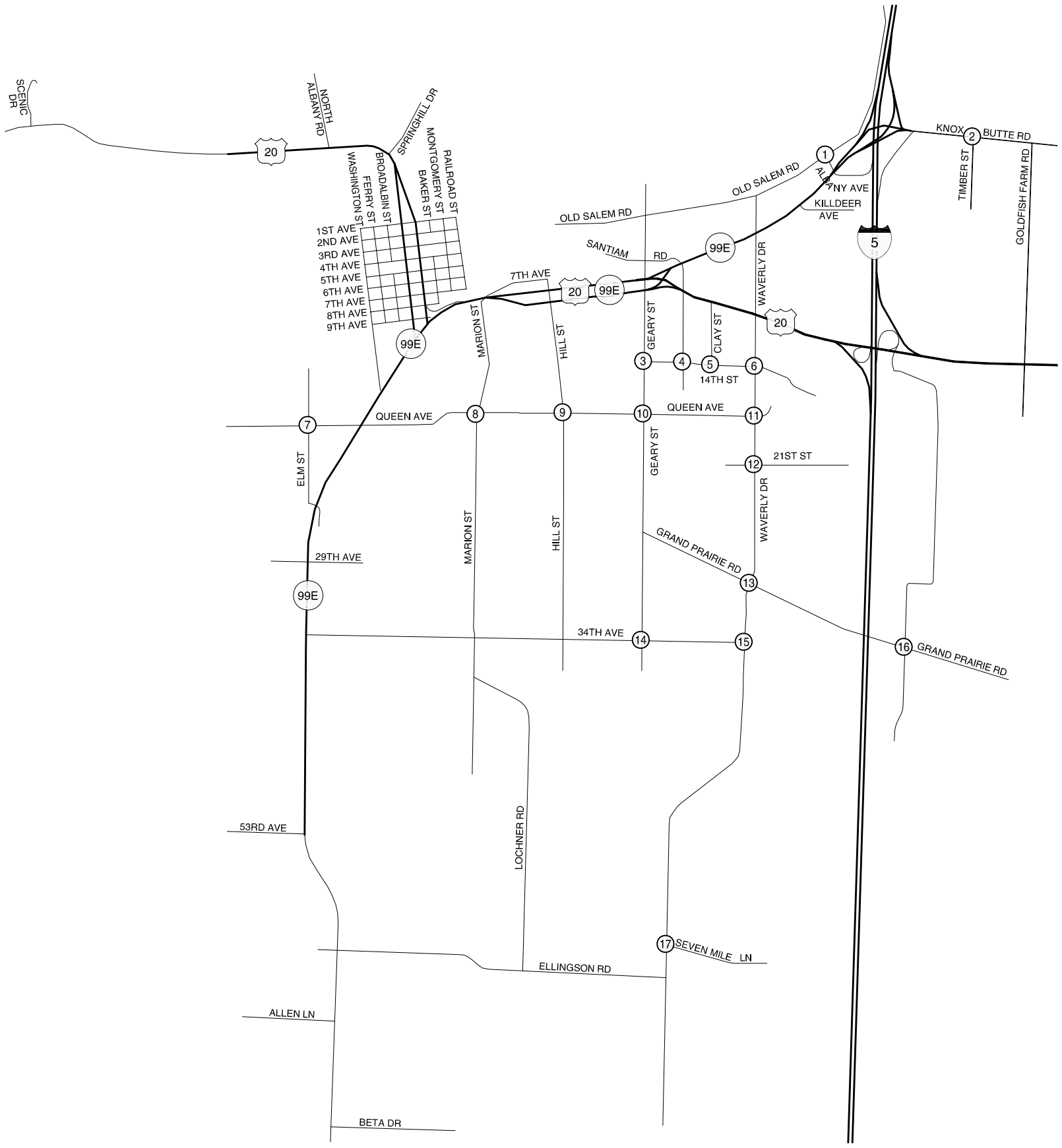
A total of 49 intersections were originally identified for analysis in the TSP. Traffic volumes for these intersections were collected in May and June of 2004. ODOT defines the design hour volumes for project and planning level analyses as the future year 30th highest hour volumes. These volumes are

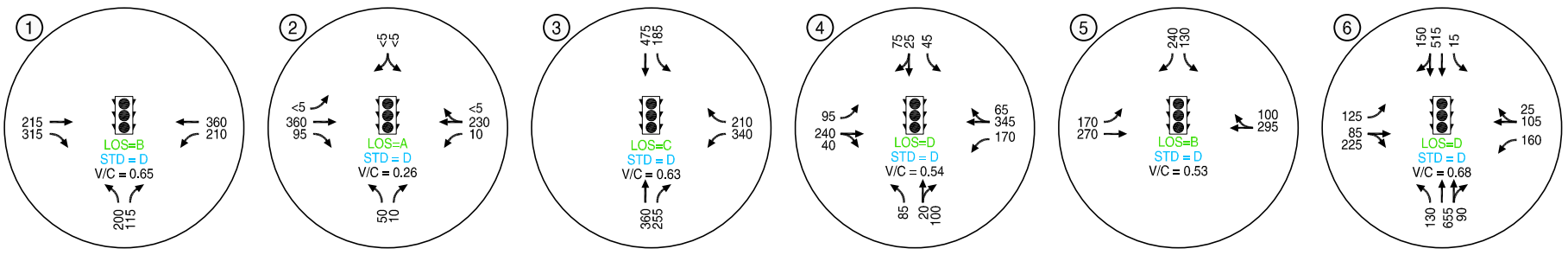
developed from existing count volumes, which are seasonally adjusted and then balanced so that the 30th highest hour (yearly) of traffic is represented in the analysis. Figure 4-1 shows the existing weekday p.m. peak hour traffic volumes and associated level-of-service for the study intersections under the City of Albany jurisdiction. Figure 4-2 shows the existing weekday p.m. peak hour traffic volumes and associated volume-to-capacity ratios for the study intersections under ODOT jurisdiction.

As shown in Figure 4-1, all signalized intersections under Albany's jurisdiction currently operate at a LOS "D" or better. As shown in Figure 4-2, the following intersections under ODOT jurisdiction currently exceed ODOT's performance standard for the intersection (varies from 0.75 to 0.85 as described above and shown in Figure 4-2.

- OR 99E/Queen Avenue (0.82 v/c ratio, LOS D – Standard = 0.75 v/c)
- US 20/Waverly Drive (0.87 v/c ratio, LOS C – Standard = 0.85 v/c)
- US 20/1st Avenue (0.92 v/c ratio, LOS C – Standard = 0.85 v/c)

(NO SCALE)





LEGEND

- (#) - INTERSECTION NUMBER
- - STOP SIGN
- - TRAFFIC SIGNAL

GREEN - MEETS OPERATIONAL STANDARD
RED - DOES NOT MEET OPERATIONAL STANDARD
LOS - LEVEL OF SERVICE
STD - LEVEL OF SERVICE STANDARD
V/C - VOLUME-TO-CAPACITY RATIO

ALBANY JURISDICTION INTERSECTION OPERATIONS
EXISTING WEEKDAY PM PEAK HOUR
ALBANY, OREGON

FIGURE 4-1

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING

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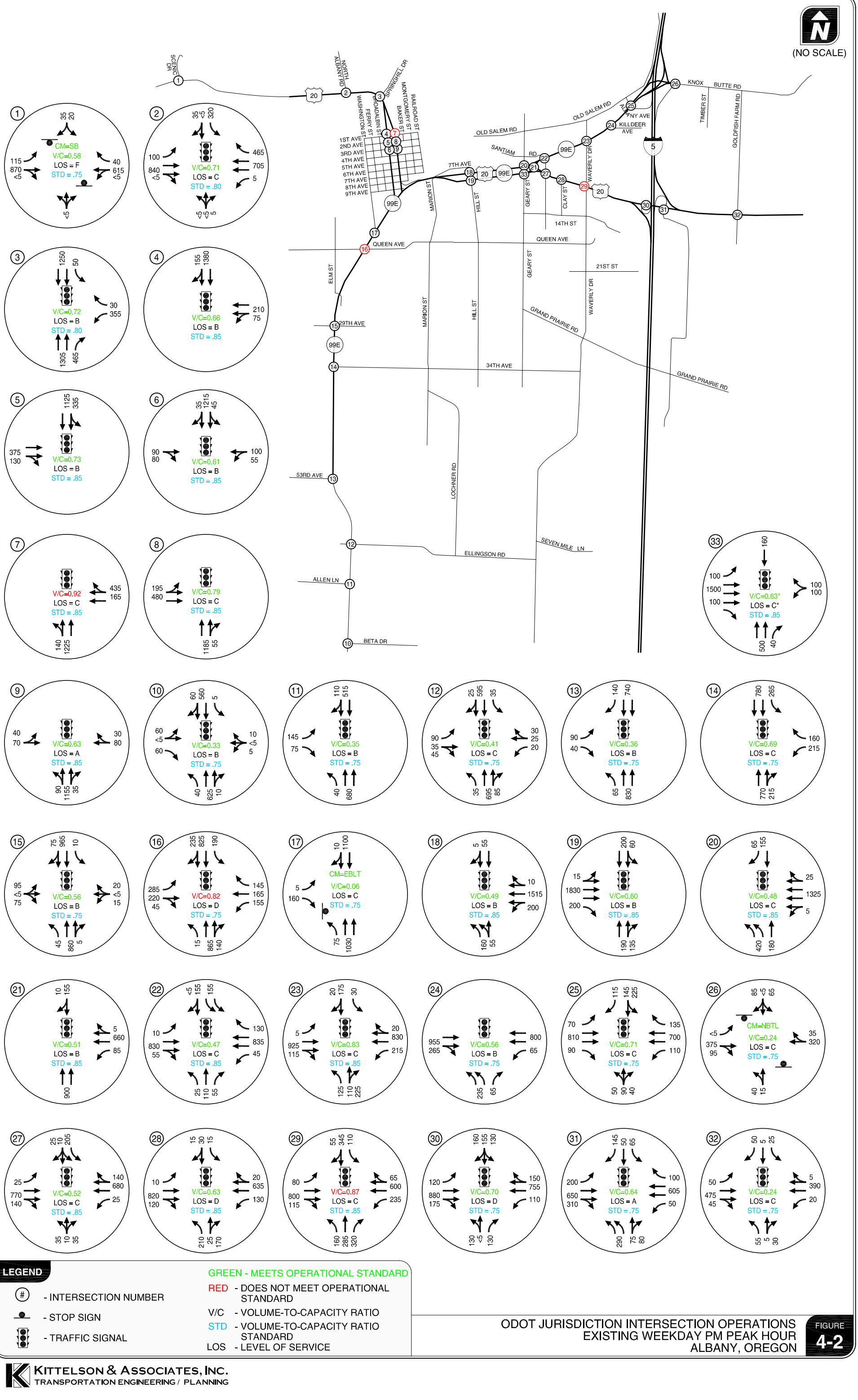

ODOT JURISDICTION INTERSECTION OPERATIONS
EXISTING WEEKDAY PM PEAK HOUR
ALBANY, OREGON

FIGURE 4-2

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING

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ROADWAY SAFETY

The relevance of transportation system safety is borne out by the fact that approximately 500 people a year are killed in motor vehicle crashes in Oregon. Comparing this to the 68 murders in Oregon in 2003 reveals that transportation mobility is associated with a significant public health risk.

Annual crashes are shown in Table 4-1, for both the City of Albany and the State of Oregon. Albany's portion of the total statewide crashes for each year is also shown. Table 4-1 shows that the number of annual crashes in Albany has remained relatively constant over the past five years. Albany's portion of the total statewide crashes has also remained approximately the same. This analysis implies that safety on Albany's transportation system has not significantly improved or deteriorated over the five year analysis period.

TABLE 4-1 TOTAL ANNUAL CRASHES

Year	Total Citywide Crashes	Total Statewide Crashes	Albany Portion of Statewide Crashes
1999	557	33,708	1.65%
2000	544	32,330	1.68%
2001	557	33,173	1.68%
2002	557	33,666	1.65%
2003	588	36,310	1.62%

Table 4-2 summarizes a comparison of ODOT facilities within the City of Albany to similar facilities throughout the State. The data show that crash rates for the sections of I-5 and OR 99E that are located in Albany are lower than for comparable facilities statewide. However, US 20 has a higher crash rate than other Urban Principal Arterials statewide. *A more detailed analysis of the safety of these corridors is provided in Technical Memorandum #3 in Volume 2 of the TSP Appendix.*

TABLE 4-2 CRASH RATE BY FACILITY TYPE

	Statewide	Within Albany		
		I-5	US 20	OR 99E
Urban Freeways*	0.64	0.53		
Suburban Freeway**	0.48	0.21		
Urban Principal Arterials	3.15		4.26	2.30
Suburban Principal Arterials	1.34		NA	0.59

NOTE: Crash rates are per million vehicle miles traveled.
* Facilities inside city limits are considered urban.
**Suburban facilities are outside the city limits but inside the Urban Growth Boundary.
NA – not applicable

Statewide Priority Index System

The Statewide Priority Index System (SPIS) is a method developed by ODOT for identifying hazardous locations on state highways with consideration of crash frequency, crash rate, and crash severity. As described in ODOT's SPIS description, a roadway segment becomes a SPIS site if a location has three or more crashes or one or more fatal crashes over the three-year period. Under this method, all state highways are analyzed in 0.10 mile segments to determine SPIS sites. Statewide, there are approximately 6,000 SPIS sites. SPIS sites are typically intersections, but can also be roadway segments.

SPIS scores from all sites are ranked and nine SPIS sites in the City of Albany rank in the 90th percentile or higher of all statewide SPIS sites. These intersections are shown below in Table 4-3, along with their ranking among statewide.

Intersections with high SPIS scores are generally considered candidates for safety improvements. Two of these intersections, OR 99E/Hill Street and OR 99E/Geary Street, have SPIS scores that rank among the 30 worst intersections in the state, and four are among the worst 100. SPIS scores are not available for City of Albany intersections on non-ODOT highways. Thus, comparisons between ODOT and non-ODOT facilities are not possible using SPIS ratings.

TABLE 4-3 CITY OF ALBANY SPIS INTERSECTIONS

Route	Intersection	Total Crashes	Fatalities	2004 ADT	SPIS Score	Statewide Ranking*
OR 99E	Hill Street	50	0	18,700	84.13	23
OR 99E	Geary Street/US20	43	0	16,500	83.49	28
US20	Waverly Drive	28	0	21,500	76.19	86
OR 99E	Queen Avenue	26	0	28,900	74.92	99
OR 99E	34th Avenue	16	0	23,700	69.72	156
OR 99E	I-5 Frontage Road	24	0	23,000	61.08	239
OR 99E	Waverly Drive	20	0	21,700	57.34	296
US20	Burkhart Street	16	1	18,900	55.16	328
US20	Price Road	4	0	10,000	46.92	527

*Statewide Ranking is based on SPIS scores. The *2008 SPIS Map is provided as an attachment to the Technical Memorandum #3 Appendix B in the TSP Volume 2 Appendix*.

Roadway Safety Deficiencies

A detailed safety analysis was completed for the roadway system that evaluated crashes involving vehicles, pedestrians, bicyclists, trucks, and trains. Crash data was provided by ODOT and the City of Albany and includes all reported crashes that occurred in the City of Albany for the four-year period from January 1, 2000 to December 31, 2003. A summary of the most significant intersection, roadway, and railroad crossing safety deficiencies (as compared to other locations within the City of Albany) is provided in Figure 4-3. *Additional details about the safety analysis are provided in Technical Memorandum #3 in Volume 2 of the TSP Appendix.*

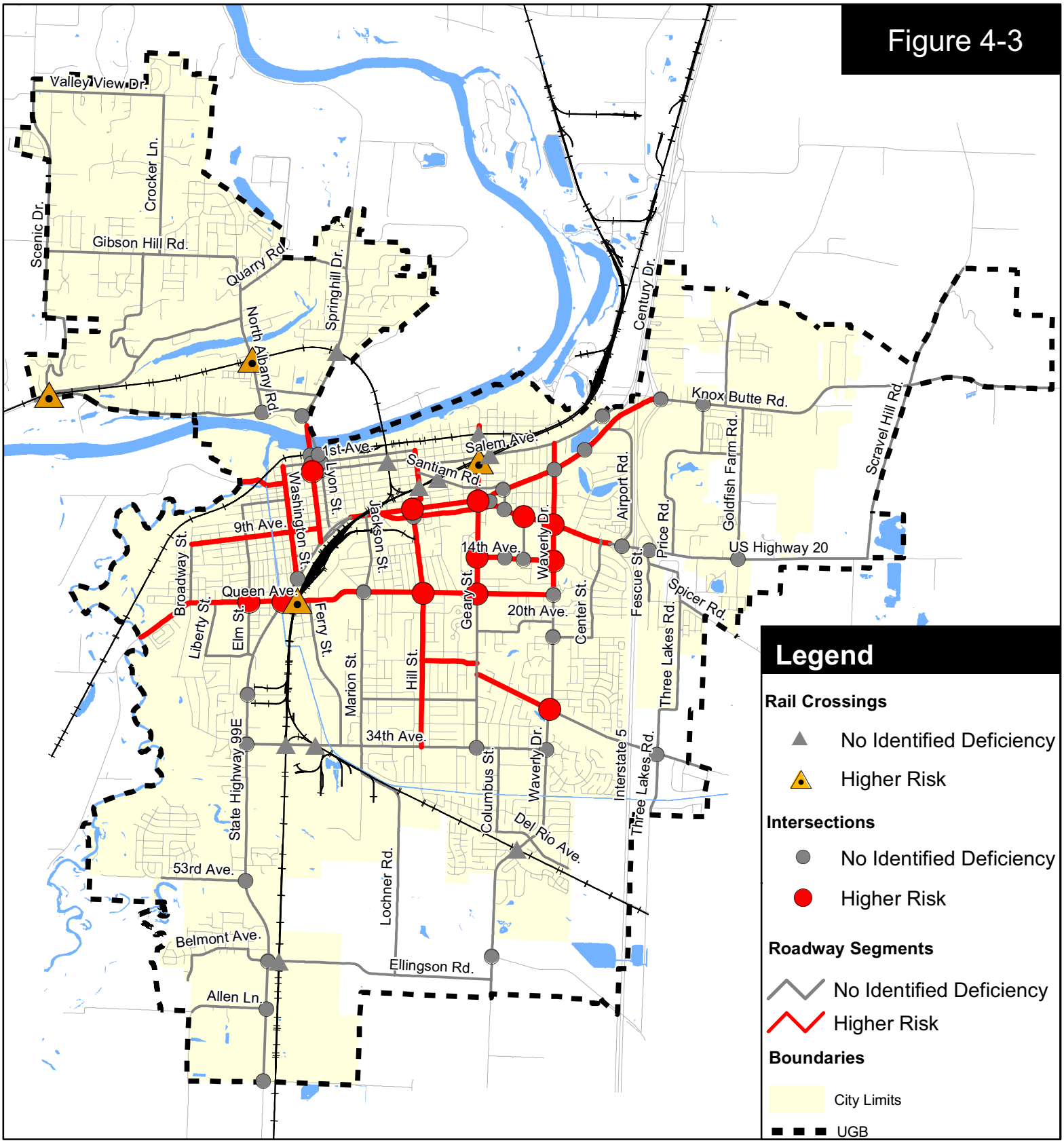
Figure 4-3
Valley View Dr.
Crocker Ln.
Scenic Dr.
Gibson Hill Rd.
Quarry Rd.
North Albany Rd.
Springhill Dr.
Century Dr.
Knox Butte Rd.
Scravel Hill Rd.
Goldfish Farm Rd.
Airport Rd.
Price Rd.
US Highway 20
Spicer Rd.
Three Lakes Rd.
Fescue St.
Salem Ave.
1st Ave.
Santiam Rd.
Lyon St.
Washington St.
Jackson St.
Waverly Dr.
9th Ave.
14th Ave.
Queen Ave.
20th Ave.
Broadway St.
Liberty St.
Elm St.
Ferry St.
Marion St.
Hill St.
Geary St.
Center St.
34th Ave.
State Highway 99E
Columbus St.
Interstate 5
Del Rio Ave.
53rd Ave.
Lochner Rd.
Belmont Ave.
Ellingson Rd.
Allen Ln.
Legend
Rail Crossings
No Identified Deficiency
Higher Risk
Intersections
No Identified Deficiency
Higher Risk
Roadway Segments
No Identified Deficiency
Higher Risk
Boundaries
City Limits
UGB
0 0.25 0.5 1 Miles
City of Albany, Oregon
Albany Transportation System Plan
Existing Facilities with Higher Safety Risk
Kittelson & Associates, Inc.
Transportation Engineering/Planning

Section 5
Forecast Traffic Conditions

Forecast Traffic Conditions

This section describes already planned and funded changes in the transportation system and the anticipated future growth in travel demand and how the system is anticipated to operate with the additional traffic. The forecast transportation conditions assume City growth to its estimated year 2030 population and employment, but that no improvements other than those currently funded have been made. The result reveals the major weaknesses in the transportation system, for which long-term improvements should be planned and funded.

COMMITTED TRANSPORTATION IMPROVEMENTS

In order to assess future conditions, the existing transportation network was modified to reflect improvements that are "committed." Committed projects are not built, but funding for their construction is already secured. Therefore, these projects are assumed to be completed under all 2030 analysis. Table 5-1 shows the committed transportation projects within the Albany UGB.

TABLE 5-1 CITY OF ALBANY 2030 COMMITTED PROJECTS

Mode	Project Name	Description	Year
Roadway	North Albany Road and West Thornton Lake Road	New traffic signal on North Albany Road at the entrance to North Albany Middle School.	2006[1]
Roadway/ Pedestrian/ Bicycle	Second Street Crossing of Periwinkle Creek	Replace the failing culvert at 2nd Street and Periwinkle Creek and construct a new bridge allowing 2nd Street to be reopened. Improvement will result in increased connectivity.	2006[1]
Roadway	North Albany Road and Hickory Road	Install traffic signal	2006[1]
Roadway	I-5 Albany Interchange	Repair bridges	2006
Roadway/ Pedestrian/ Bicycle	Grand Prairie Road Street Improvements	Construct road to city standards, including sidewalks.	2007[1]
Roadway	I-5 MP 234 in north Albany	Install variable message sign for I-5 at north Albany (MP 234)	2007
Roadway	OR 99E, from Chicago Street to SPRR	Signing, changes to travel lanes, and access management components	2008
Pedestrian/ Bicycle	Multimodal Phase III – Swanson Park Path	Construct pathway from Rail Depot Building to Swanson Park	2007[1]
Transit	Bus Barn Relocation	Design and construct a new bus barn to replace the existing structure.	2006
Transit	Multimodal Phase II – REA Building/Site Work	Rehabilitate the existing REA building located at the Multimodal Transportation Center.	2008
Transit	North Albany Park and Ride	Replace the existing Albany Park and Ride with a paved and lighted lot at North Albany Road/Hickory Road.	2008

[1] This project has already been constructed but is identified because it was not included in the existing conditions analysis.

FORECAST MODEL

Because population and employment are forecast to appreciably increase by 2030, it is anticipated that travel demand, by many modes, will also increase. Forecasts of future travel demand are influenced by the anticipated location, type, and intensity of growth. The complexity of travel demand forecasting substantially increases with the size of the planning area and the features of the transportation system that serves the demand.

The City of Albany is a large enough urban area, equipped with a multimodal transportation system, and expected to grow at a rate such that the use of a travel demand forecasting model is warranted. This tool is used to represent the effects of growth (by location, type, and intensity) on travel demand and the transportation system provided to accommodate it.

Future transportation demand within the City of Albany UGB was estimated based on a traffic forecasting model developed by the Oregon Department of Transportation (ODOT), Transportation Planning and Analysis Unit (TPAU). TPAU built and calibrated the model specifically for use in the Albany TSP. This model is only capable of estimating travel demand that results in vehicle trips (auto and freight truck) on the roadway network. Non-auto trips (transit, pedestrian, and bicycle) are not forecast and are assumed to remain consistent with existing conditions as a percentage of overall trips. *Details on the model structure, model process, and data post-processing methodology are provided in Technical Memorandum #4 in Volume 2 of the TSP Appendix.*

FORECAST GROWTH

The travel demand model for Albany was constructed using 2006 household and employment data and 2006 traffic counts as its base. Future year analysis uses year 2030 household and employment forecasts approved by the state and counties for each TAZ within the model area, based on the Comprehensive Plan. Table 5-2 summarizes the 2006 and 2030 model socioeconomic data.

TABLE 5-2 HOUSEHOLD, POPULATION AND EMPLOYMENT FORECASTS

	Households			Population			Employment		
	2006	2030[1]	Annual Growth	2006	2030[1]	Annual Growth	2006	2030[1]	Annual Growth
Within UGB	18,875	24,765	1.3%	47,630	63,820	1.4%	19,060	25,235	1.3%
Outside UGB	2,050	2,980	1.9%	5,350	7,870	1.9%	3,645	4,670	1.2%
Total	20,925	27,745	1.4%	52,980	71,695	1.5%	22,700	29,905	1.3%

1 The 2030 projections were developed by creating a 'straight-line' growth assumption from the 2020 coordinated population projection to 2030 based on the average annual growth rate (AAGR) of 1.51% per year between 1997 (the base year) and 2020. A similar method was used for employment and households.

To develop the 2030 Forecast Transportation Conditions, a series of four land use alternatives were tested within the regional transportation model to test the impacts of a variety of potential growth scenarios that could occur. The goal of this sensitivity testing of land use was to determine if there is a desired growth pattern that will facilitate shorter trips, reducing vehicle miles traveled, as well as avoid existing or projected congestion problems on the transportation system. The land use

alternative testing considered pre-existing regional plans such as the East I-5 Plan and the Oak Creek Refinement Plan.

None of the land use alternatives resolve future problems on the existing street system. On the state system in particular, this is primarily due to the influence of trips that pass through Albany without an origin or destination in Albany (such as traffic traveling on Highway 20 from the Corvallis area to I-5). Generalized summaries of the four land use alternatives tested are presented below:

Land Use Alternative #1: Analyzed the possibility that Millersburg will grow at a rate faster than reflected in their comprehensive plan, given the number of recent proposed developments which would significantly increase Millersburg's size. Although the City of Albany does not have control over land use policies or growth rates in Millersburg, its close proximity means increased growth will impact both Cities' transportation systems.

Land Use Alternatives #2 and 3: Assume higher growth in East I-5 and Oak Creek areas because there are less capacity constraints, particularly in the Oak Creek area, than other areas of the City. Growth in East I-5 will place additional demand at the two I-5 interchanges at Santiam Highway and Knox Butte. Replacing growth in North Albany with growth in the East I-5 and Oak Creek Areas would reduce congestion on critical roadways in North Albany, especially Willamette River bridges.

Most Likely Land Use Concept (Alternative #4): Alternative #4 was deemed the "Most Likely Land Use Alternative." It is based on the combined lessons learned from Land Use Alternative #1, 2, and 3, as well as practical consideration of likely Comprehensive Plan amendments in order to comply with DLCD standards. The requirement to be consistent with the population forecast agreed upon by the counties and the state also contributed to the assumptions and selection of Alternative #4. Overall, the Most Likely Land Use Alternative is similar to Alternative #3 in that it shifts additional growth to the East I-5 and Oak Creek Areas, while recognizing that some of the projected growth in North Albany may shift to less congested areas of the City.

Most of the scenarios including the *Most Likely Land Use Scenario* shift the location of where growth will occur by 2030. There are three of these locations in the *Most Likely Land Use Scenario*. Some of the employment related assumptions for these three areas require Comprehensive Plan and Zoning map amendments. They are described in Table 5-3. *Maps specifying the specific parcels included in these area are shown in Appendix C.*

TABLE 5-3 COMPREHENSIVE PLAN AND ZONING MAP CHANGE ASSUMPTIONS

Area	Type	General Location	TAZ	Site Info	Inside City?	Existing Zoning	Future Zoning
1	Expansion of Regional Commercial Site	North of Knox Butte Road & West of Expo Parkway	165	Approximately 4 acres	Yes	Residential Medium Density	Regional Commercial
2	Hospital Property	East of I-5 & North of US 20	457 458	Map 11S-3W-10 Tax lot 200	Yes	Residential Single Family	Office Professional
Area	**Type**	**General Location**	**TAZ**	**Site Info**	**Inside City?**	**Existing Plan Designation**	**Future Plan Designation / Zoning**
3	Oak Creek Refinement Plan Area	South Albany	326	Approx. 50 acres south of planned 53rd/Ellingson alignment	No	Urban Residential Reserve	Light Industrial Designation/ Industrial Park Zoning
			322 333 325	30-40 acres at Ellingson and Lochner	No		Village Center Designation/ Mixed Use Commercial Zoning

The *Most Likely Land Use Scenario* assumes an additional 233 households above the 2030 base case model in the South Albany area (TAZs 332, 333, 334, 335, 337, 339). The households are assumed to be developed as a mix of medium density residential along Ellingson Road and Lochner Road, and low density residential elsewhere. Others properties, that are currently outside the city limits, will be zoned at the time they are annexed into the City. The zoning will be consistent with the current Comp Plan designations.

Additional details about the land use alternatives analysis, including comparisons of network performance measures under each Land Use Alternative, is provided in Technical Memorandum #5 in Volume 2 of the TSP Appendix.

FORECAST TRAFFIC CONDITIONS

All travel demand forecasts were based on the *Most Likely Land Use Scenario* summarized above using year 2030 population and employment projections approved by the state and the counties, and a modeling methodology approved by ODOT. Figure 5-1 shows two-way weekday p.m. peak-hour traffic demands on segments of arterials and collectors within the Albany UGB for the 2030 Most Likely Land Use Alternative. A comparison of the traffic demand versus the capacity of a roadway to serve the demand is a frequent tool used to evaluate future roadway needs. This comparison is the demand-to-capacity ratio (D/C). Figure 5-2 shows the 2030 D/C ratio for each segment. *Demand* indicates a motorist's desire to travel along a particular roadway, rather than actual *volumes.* This is an important distinction, because a roadway can only serve a traffic volume corresponding to its capacity.

Roadway capacity is estimated based on a variety of factors. Such factors include the number of travel lanes, the frequency and spacing of traffic signals, the characteristics of adjacent land uses (frequency and use of driveways), the mix of traffic (particularly trucks), and the presence of other modes (pedestrians, bicyclists, and transit). A capacity has been estimated for every roadway segment represented in the Albany Committed Roadway Network.

Where traffic demands exceed a roadway's capacity, only a volume equal to that roadway's capacity would actually travel along that roadway; the remaining vehicles would accumulate as a queue extending back from the point where demand first exceeded capacity, or more likely, the motorists would deviate to a less congested roadway to continue their travel.

If only the committed improvements are built, as previously described, and if growth occurs as assumed in the 2030 *Most Likely Land Use Scenario*, then the following sections of roadways may have demand that exceeds their capacity by the year 2030:

- North Albany Road (Gibson Hill Road to US 20)
- Springhill Drive (Quarry Road to US 20)
- US 20 (west City limits to Willamette River)
- US 20 - Ellsworth Street (Willamette River bridge to OR 99E)
- US 20 - Lyons Street (Willamette River bridge)
- 2nd Street (Lyons Street to Washington Street)
- Main Street (Salem Avenue to 1st Avenue)
- Knox Butte Road (Timber Street to Goldfish Farm Road)
- OR 99E (I-5 Knox Butte interchange)
- Airport Road (I-5 Southbound off-ramp to OR 99E)
- OR 99E (Burkhart Street to Geary Street)
- US 20 (Burkhart Street to Geary Street)
- US 20/OR 99E (Madison Street to US 20/OR 99E interchange)
- US 20/OR 99E interchange ramp - NB OR 99E to/from US 20 and Downtown Albany
- Geary Street (Pacific Boulevard to Queen Avenue)
- Queen Avenue (Geary Street to Hill Street)
- 14th Avenue (Geary Street to Clay Street)
- Waverly Drive (Queen Avenue to Grand Prairie Road)

The capacity of a roadway is ultimately limited by the capacity of the intersections. Intersection demand-capacity analysis was conducted on the above corridors during the Alternatives Analysis (presented in Section 6, page 48) to determine if the corridor would in fact operate over capacity in the future. Mitigations were identified, where feasible, to mitigate the study intersections to the existing standards. The City of Albany does not have adopted level-of-service standards for

signalized and unsignalized intersections. For signalized and all-way stop controlled intersections under the City's jurisdiction LOS "D" or better (representing no more than 55 seconds of average delay) was considered acceptable operations. For two-way stop controlled intersections, a v/c of up to 0.85 was considered to be acceptable operations.

Intersections under ODOT jurisdiction on OR 99E and US 20 were considered to have acceptable operations if they met the existing ODOT performance standards of 0.75 in areas where the posted speed limit is 45 miles per hour or greater, 0.80 for posted speed limits of 40 miles per hour, or 0.85 for posted speed limits of 35 miles per hour or less. Mitigations were identified, where feasible, to meet these standards. The applicable performance standard on the highway system in Albany may change in the event Albany is designated or included in an MPO. If designated as or included in a MPO, the standard at all intersections along OR 99E and US 20 would be 0.85, regardless of the posted speed. Mitigations at intersections where the standard changes may be unnecessary under the potential future standards and should be reevaluated at that time.

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Figure 5-1

Legend

Two-way Volume

- < 500
- 500 - 1,000
- 1,000 - 1,500
- 1,500 - 2,500
- > 2,500
- Denotes One-way Link

Other Roadways

- Local Road
- Interstate - 5

Boundaries

- UGB
- City Limit

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CITY OF Albany OREGON

0 0.25 0.5 1 Miles

City of Albany, Oregon

Albany Transportation System Plan

PM Peak Hour
2030 Two-way Volumes
(Most Likely Land Use Scenario)

Figure 5-2

Legend

Demand to Capacity Ratio

- < 0.40
- 0.40 - 0.70
- 0.70 - 0.90
- 0.90 - 1.00
- 1.00 - 1.20
- >1.20
- Denotes One-way Link

Other Roadways

- Local Road
- Interstate - 5

Boundaries

- UGB
- City Limit

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

CITY OF Albany OREGON

0 0.25 0.5 1 Miles

City of Albany, Oregon

Albany Transportation System Plan

PM Peak Hour
2030 Demand to Capacity Ratios
(Most Likely Land Use Scenario)

Section 6
Transportation
Alternatives Analysis

Transportation Alternatives Analysis

Substantial effort was devoted to developing and evaluating alternative approaches to address the near- and long-term transportation deficiencies within the UGB. This section provides a description of the land use and transportation alternatives that were considered, the manner in which each alternative was evaluated, the "lessons learned" from each alternative, and the findings that led to the preferred alternative. The content is organized as follows:

- Several major transportation improvement scenarios were evaluated to determine the significant transportation infrastructure projects that would support the rest of the plan;
- Intersection and roadway segment improvements necessary to address all of the system deficiencies were identified;
- Pedestrian system improvements were identified and prioritized; and,
- Bicycle system improvement were identified and prioritized.

This section provides a summary of the alternatives analysis and recommendations. Because of the large number and range of alternatives included in the evaluation, this section begins with a focused discussion of the major transportation improvement scenarios that were evaluated and then provides some details on the intersection and roadway alternatives considered. Details of the evaluations are provided in *Technical Memorandum #6A, #6B, #6C, and #6D, and the Technical Memorandum: Summary of Downtown Albany TSP Improvement* in Volume 2 of the Technical Appendix.

MAJOR TRANSPORTATION IMPROVEMENT ALTERNATIVES

A number of improvement alternatives were tested with the regional travel demand model. Table 6-1 briefly summarizes each of the tested model alternatives, including the Draft Preferred TSP Alternative. Major projects, such as bridges or interchanges, were tested as separate alternatives in order to understand the influence these investments might have on overall travel patterns. A variety of minor roadway improvements were tested in packages (i.e. local roadways only, ODOT facility improvements only, etc.).

All travel demand forecasts were based on the *Most Likely Land Use Scenario*, summarized in Section 5, using year 2030 population and employment projections approved by the State and the Counties, and a modeling methodology approved by ODOT.

TABLE 6-1 MODELED TRANSPORTATION SCENARIOS

Name	Description
Major Transportation Improvement Scenarios	
Alternative #1: New Willamette River Crossing (North of UGB)	Tests the effect of a new Willamette River bridge located North of the Albany UGB, aligning with Conser Road and connecting to I-5 at a new Conser Road interchange.
Alternative #2: New I-5 Overcrossing (21st Avenue)	Tests the effect of a new overcrossing of I-5 that would extend 21st Avenue east of I-5 and connect with Three Lakes Road.
Alternative #3: 7-Mile Lane Improvements, with new I-5 Interchange	Tests the effect of realigning 7-Mile Lane to connect to Ellingson Road/Columbus Street and construction of a new interchange where 7-Mile Lane crosses I-5.
Alternative #4: New Willamette River Crossing (Downtown)	Tests the effect of a new Willamette River bridge located in downtown Albany, connecting North Albany Road to Elm Street.
Packaged Improvement Scenarios	
Alternative #5: Local Improvements	Tests the effect of a package of improvements to existing City of Albany facilities and new roadways to improve the capacity and connectivity of the Albany street network.
Alternative #6: ODOT Facilities Improvements	Tests the effect of the capacity enhancements needed to mitigate congestion on ODOT facilities in Albany in the absence of a new Willamette River crossing.
Alternative #7: Draft Preferred Alternative	Tests the effect of Alternatives #4 and #5 combined to create a package of improvements to comprehensively address Albany's capacity deficiencies.
Refined Improvement Scenarios	
Alternative #8: Refined Draft Preferred Alternative	Refines Alternative #7 to update the allowable turning movements at several intersections to be consistent with existing plans.
Alternative #9: Dual Crossing	The Final Draft Preferred Alternative used to compare the impacts of two Willamette River Crossings with Alternative #10 (one Willamette River crossing) with all of the other proposed system improvements included.
Alternative #10: Single Crossing	Becomes the Final Preferred Alternative used to compare the impacts of Alternative #9 (two Willamette River Crossings) with one Willamette River crossing with all of the other proposed system improvements included.

Alternative #2 and # 3 were reviewed and removed from consideration for the Draft Preferred Alternative early in the alternatives analysis due to the limited improvement they provided to deficient facilities. Alternative #5 and #6 were also removed from consideration as stand-alone

packages of improvements; however, Alternative #5 and pieces of Alternative #6 did continue to be considered as elements of the Draft Preferred Alternative (Alternative #7). Alternative #1 and #4 had additional evaluation and discussion to determine which would be included as part of the Draft Preferred Alternative (Alternative #7). The findings of these analyses are described below.

Early Screened Alternatives

Alternative #2 (New I-5 Overcrossing) was found to have limited value as it failed to serve significant traffic and therefore was not included in the Preferred Alternative. However, should significant future development occur in Albany east of I-5 and south of 18th Avenue, the concept of an additional I-5 crossing at 21st Avenue should be revisited during future TSP updates.

Alternative #3 (7-Mile Lane Interchange) provided significant benefits on Ellingson Road, Columbus Street, Waverly Drive, 21st Avenue, and Center Street. However, these roadways (with the exception of Waverly Drive) were not projected to have capacity deficiencies in the 2030 horizon. This alternative provided no benefit to the most significant network deficiencies in North Albany and Central Albany; therefore, this alternative was not included in the Preferred Alternative. However, refinements should be made in the travel demand model (i.e. how the model distributes external trips to new roadways) in advance of the next TSP update to further test the attractiveness of this improvement concept.

Alternative #5 (Local Improvements) modeled a package of roadway projects on local facilities, including improvements to existing roadways as well as construction of new roadways in areas with high projected growth. The local improvements do not mitigate the capacity deficiencies on the ODOT system but in combination have the potential to significantly effect change. The local improvements considered in this alternative were carried forward into the preferred alternative.

Alternative #6 (ODOT Facilities Improvements) included expansion of existing ODOT facilities and did not consider the possibility of building entirely new facilities, such as a new Willamette River crossing. Modeling these widening projects served to establish the added capacity that would be required for the ODOT facilities in Albany to meet ODOT operating standards in year 2030. The improvements required to existing facilities if a new Willamette River crossing is not provided include the following:

- Widen US 20 in North Albany to two lanes in each direction from North Albany Road west to the UGB boundary;
- Widen US 20 in North Albany to three lanes in each direction from North Albany Road to Willamette River Bridges;
- Widen both the Lyon Street and Ellsworth Street Willamette River bridges to three lanes;
- Widen Lyon Street in downtown Albany to three lanes between the Willamette River and Oregon 99E;
- Widen Ellsworth Street in downtown Albany to three lanes between the Willamette River and Oregon 99E;

- Widen the on-ramp from southbound Ellsworth Street to eastbound Oregon 99E from one lane to two lanes;
- Widen US 20/99E to three lanes in each direction from the US 20/99E interchange to Madison Street; and
- Widen eastbound US 20 from Geary Street to Burkhart Street to three lanes.

This package of improvements would have significant impacts on many of the community's physical, economic, social, and environmental assets and was not included in the preferred alternative.

Alternatives for Additional Consideration

Alternative #1 (New Willamette River Crossing North of the UGB) and Alternative #4 (New Willamette River Crossing in Downtown) are alternatives of interest to the City as compared to widening of the existing Willamette River bridges (Alternative #6) because of the impact of Alternative #6 to the downtown and the ability of a new bridge to eliminate the need for capacity enhancements to the existing bridges and bridge approaches. In addition, a new crossing in either location would provide an additional route for emergency services, improvement to homeland security, an alternative route for construction detours, and increased capacity for vehicular access to the downtown and central business district to support denser development and additional commercial use in the downtown.

Due to the regional impacts and multiple agencies that would be involved with the approval and construction of a new bridge, the City of Albany hosted a regional discussion on June 5, 2007 to discuss the need for an additional river crossing and the benefits and tradeoffs associated with each of the two new bridge location alternatives. There was general interest at the meeting in both alternatives; however, it was determined that a bridge alternative outside of the City's UGB would require an exception to the State's land use planning goals protecting rural lands as well as an update to the County's TSP to include the new bridge and that likely corridors should be preserved while the regional discussion continued. It was agreed upon with City Council and ODOT that a refinement plan involving Albany's regional partners is necessary to determine the best location for additional bridge capacity. For all subsequent analysis, the benefits of additional bridge capacity were modeled within the City's UGB in order to comply with the State's land use planning goals.

Draft Preferred Alternative

Based on the above discussion, the Draft Preferred Alternative (Alternative #7) included a combination of improvements from Alternative #4 (New Willamette River Crossing) and Alternative #5 (Local Improvements). Alternative #7 was refined during the intersection analysis to become Alternative #8: Refined Draft Preferred Alternative. The refinements include modification to the allowable turning movements at the I−5/Knox Butte interchange per the 1997 TSP and the Albany I−5 Corridor Refinement Plan and the removal of the Lochner Road−Hill Street Connector (a l*ocal improvement project in Technical Memorandum #6A in Volume 2 of the Appendix*). Alternative #8 provides a package of improvements that serves to mitigate most of the capacity-related

deficiencies projected for Albany's roadway system. However, for a variety of reasons described herein, a new Willamette River crossing was not included in the final Preferred Alternative.

Additional Evaluation

Discussions with ODOT, DLCD, and City staff determined that a new bridge should not be included as part of the TSP Preferred Alternative for the following reasons:

(1) the need for a refinement plan to more thoroughly consider bridge locations, system impacts, and costs;

(2) the need to identify a legitimate, reasonable funding source for a new bridge or bridge crossing improvements; and,

(3) the ability to delay the need for additional bridge capacity through Special Transportation Area (STA) designations for downtown Albany and Oregon Highway Plan Policy 1.F.5 treatments such as removing on-street parking and adjusting signal timing to improve progression along US 20 from North Albany Road to the Highway 99E interchange.

Additional analysis of Alternative #8 (Refined Draft Preferred Alternative) was conducted to evaluate the proposed transportation system with and without an additional Willamette River crossing assuming no widening of the existing bridges. These were modeled as Alternative #9 (Dual Crossing) and Alternative #10 (Single Crossing). Additional review of these alternatives confirmed that regardless of additional surrounding transportation improvements, a single crossing (Alternative #10) of the Willamette River, without additional capacity at that crossing, will not provide adequate capacity to meet ODOT operating standards in year 2030.

Additional details on the modeled transportation improvement scenarios are provided in Technical Memorandum #6A and #6D in Volume 2 of the TSP Appendix.

Preferred Alternative

Operating under direct guidance provided by ODOT staff, Alternative #10 was selected as the Final Preferred Alternative, despite the fact that some highway corridors would not meet ODOT mobility standards in 2030. ODOT and the City agreed to include a US 20 Corridor Refinement Plan to more thoroughly consider bridge locations, system impacts, and costs and identify a legitimate means of funding a Refinement Plan within three years of adopting the 2030 TSP. In the meantime, both agencies will collaboratively work to secure a Special Transportation Area (STA) designation for downtown Albany and pursue other appropriate policy actions within the Oregon Highway Plan.

The Final Preferred Alternative (Alternative #10), which is described in Section 7 of the TSP, includes a combination of feasible, effective projects gleaned from several improvement alternatives. Alternative #5 (Local Improvements) provided most of the local roadway segment and corridor improvements, while many of the intersection improvements and low-cost improvements along the state system were determined from Alternatives #7 through #10. Many of the US20 improvements are identified to help sustain acceptable operations along the corridor until the US 20

Corridor Refinement Plan can be completed and the ultimate solution for the corridor is determined. It should be noted that these improvements to the state system will delay the need for major system improvements such as a new Willamette River bridge(s), but will not last until the TSP horizon year of 2030. These short-term improvements will not allow the system to operate sufficiently during the critical weekday p.m. peak hour of 2030, if forecast travel demands are realized. *Details of the short-term improvements to the state system are provided in Technical Memorandum: Summary of Downtown Albany TSP Improvements in Volume 2 of the TSP Appendix.*

INTERSECTION ANALYSIS

Intersection improvements were evaluated for three of the roadway network alternatives above. This additional level of analysis was completed in order to identify low-cost, incremental improvements that would reasonable extend the functional life of roadway facilities.

- Alternative #8 (Refined Draft Preferred Alternative) - The intersection improvements necessary under Alternative #8 are presented in *Technical Memorandum #6C in Volume 2 of the TSP Appendix*.
- Alternative #9 and 10 (Dual and Single Crossings) - The intersection improvements necessary under Alternatives #9 and #10 are presented and compared in *Technical Memorandum #6D in Volume 2 of the TSP Appendix*.
- Final Preferred Alternative - The intersection improvements necessary under the Final Preferred Alternative (Local Improvements plus Low Cost State System Improvements) are documented in the *Summary of Downtown Albany TSP Improvements memo in Volume 2 of the TSP Appendix*.

The improvements presented in the Transportation System Plan (Section 7) are based on a combination of the findings from these three technical memoranda. Not all study intersections were included in all three memoranda. The analysis was conducted in chronological order as identified above. In general, the last (most current) analysis documents the selected improvement for each intersection. For example, most city jurisdiction intersections are only presented in Technical Memorandum #6C and the improvements presented became part of the Transportation System Plan. Many of the ODOT jurisdiction intersections were documented in two or three of the memoranda and the last (most current) analysis for each intersection is presented in the Transportation System Plan (Section 7).

Several of the intersection (and associated roadway segment) improvements were developed into sketches for the purpose of depicting the proposed improvements at Public Open Houses and neighborhood meetings, as described in Appendix B. Those included improvements along Knox Butte Road, US 20 in downtown, Waverly Drive, Timber Street, and an Oak Street northern extension, and improvements at the intersections of OR 99E/Waverly Drive, OR 99E/Queen Avenue, US 20/Waverly Drive, Main Street/Santiam Road/Salem Road, and Queen Avenue/Geary Street. *Sketches of these alternatives are provided in Appendix D.* These are consistent with the Transportation System Plan presented in Section 7 with the exception of the Waverly Drive alternatives for which a new alternative became the preferred alternative. The sketches provided in Appendix D are conceptual in nature and subject to modification during design.

PEDESTRIAN NETWORK ALTERNATIVES

Pedestrian facilities that are ***safe***, ***comfortable***, and ***convenient*** are important to encourage walking as a viable mode in Albany's transportation system. The primary goal of the pedestrian plan is to develop projects that improve these three aspects of the pedestrian environment.

Albany's pedestrian system is comprised of sidewalks, multi-use paths, crosswalks, and also roadway shoulders where sidewalks are not available. Multi-use path projects are discussed in a subsequent section because of their utility for both pedestrians and bicyclists. The pedestrian projects considered for inclusion in the TSP were based on the Albany pedestrian network needs identified in Section 3, existing community planning documents [1], the Albany Parks Master Plan (2006) and community input. Existing community plans brought about the inclusion of pedestrian esplanades on Vine Street and Thurston Street. In addition to technical analysis, community input was also used to determine appropriate locations for pedestrian crossing improvements.

The pedestrian projects considered for inclusion in the TSP included sidewalk, safety, esplanade, and crossing improvements. Many of the pedestrian needs were determined to be accommodated through urban upgrade projects, new roadways, or frontage improvements associated with future development. Other projects were determined to be "stand-alone" projects that would be pursued for the primary purpose of providing the pedestrian connection. Descriptions of each type of "stand-alone" pedestrian project considered are provided below with additional details and photos available in *Technical Memorandum #6B in Volume 2 of the Appendix*.

Sidewalk Improvements

The need for sidewalks was identified for all roadways with rural cross-sections. These locations will eventually have sidewalks when the roadway is upgraded to an urban standard; however, locations were identified where a temporary sidewalk (such as an asphalt path set back from the roadway) is needed, based on the amount of existing pedestrian activity, housing density, and proximity to schools, and considered for inclusion in the TSP as near-term projects.

Crossing Improvements

The existing pedestrian conditions and safety analysis identified the need for increased frequency of pedestrian crossings on high-volume roadways and crossing enhancements where the multi-use paths cross high-volume roadways. Crossing improvement types considered for the pedestrian and multi-use path plans included the following.

Unmarked Crosswalk – The vast majority of pedestrian crossings in Albany are unmarked crosswalks. Unmarked crosswalks frequently occur on local streets and in residential areas.

[1] The Vine Street Canal Esplanade and the Albany Square Design Plans were developed by the City of Albany's Community Development Department.

Marked Crosswalk – Marked crosswalks are painted roadway markings that indicate the location of a crosswalk to motorists. Marked crosswalks are often accompanied by signs, curb extensions and/or median refuge islands, and may occur at intersections or at mid-block locations. Recent research indicates that on multi-lane roadways (more than 2 lanes), marked crosswalks should not be installed without accompanying treatments (e.g., signalization).

Signalized Crossing – Signalized pedestrian crossings use traffic signals or beacons to alert motorists to the presence of pedestrians and indicate to motorists when they are required to yield. In general, signals and beacons are considerably more expensive to install and maintain than marked crosswalks and should, therefore, only be installed where pedestrian demand and need for crossing improvements are both high.

There are several options for pedestrian signals and beacons. Continuous flashing yellow beacons are often used to augment marked crosswalks. However, these may have limited effectiveness, as motorists become accustomed to the beacon flashing when no pedestrians are present. Therefore, flashing beacons are most effective when they are pedestrian activated and only flash for a period of time after being activated.

Traffic signals may also be installed for pedestrians. Traffic signals have a very high motorist yield rate to pedestrians, as the vast majority of drivers will stop for a red light (over 95 percent). However, in order to meet Manual on Uniform Traffic Control Devices (MUTCD) standards, pedestrian volumes must meet a minimum threshold in order to install a signal. Due to the high pedestrian volume thresholds, very few locations in Albany are likely to meet the warrant for a traffic signal based on pedestrian volume.

A third option for a signalized pedestrian crossing is the pedestrian hybrid signal (or HAWK signal), approved for inclusion in the upcoming 2009 MUTCD. A pedestrian hybrid signal has three signal heads, each of which is dark when no pedestrians are present. When activated, the signal displays a double-red signal to motorists and a walk-hand to pedestrians. Pedestrian hybrid signals are associated with motorist yield rates of over 95 percent, even on high-volume multi-lane roadways.

Pedestrian Hybrid Signal (HAWK Signal)

Esplanades

The Vine Street Canal Esplanade and the Albany Square Design Plans were developed by the City of Albany's Community Development Department. The pedestrian esplanades on Vine Street and Thurston Street in these community plans were reviewed for inclusion as stand-alone pedestrian projects.

Additional information on the pedestrian system alternative analysis is presented in *Technical Memorandum #6B in Volume 2 of the TSP Appendix*.

BICYCLE NETWORK ALTERNATIVES

Bicycling is the most energy efficient form of transportation ever devised, according to the Oregon Bicycle and Pedestrian Plan. Bicycling is an efficient method of accomplishing most short urban trips. Because of Albany's relatively small size, most destinations are within easy (20-30 minutes) biking distance of one another. Currently, the City of Albany has over 50 miles of striped bicycle lanes, covering the majority of the arterial and collector network. Additionally, all roadways within the City are legal routes for bicyclists[2].

Like pedestrians, bicyclists are vulnerable to both the elements and automobiles. Direct connections between origins and destinations are important for bicyclists, although many cyclists will tolerate some out-of-direction travel if it allows them to avoid roads that are uncomfortable to cycle along. Bicycle facilities that are ***safe***, ***comfortable***, and ***convenient*** are important to encourage bicycling as a viable mode in Albany's transportation system. The primary goal of the bicycle plan is to develop projects that improve these three aspects of the bicycle environment for all cyclists.

The bicycle projects considered for inclusion in the TSP included bicycle lanes, bicycle boulevards, and shared-lane pavement marking (sharrows) improvements. Many of the bicycle needs were determined to be accommodated through urban upgrade projects, new roadways, or frontage improvements associated with future development. Other projects were determined to be "stand-alone" projects that would be pursued for the primary purpose of providing the bicycle connection. Descriptions of each of the types of "stand-alone" bicycle projects considered are provided below with additional details and photos available in *Technical Memorandum #6B in Volume 2 of the Appendix*.

Bicycle Facility Improvements

Many different bicycle facility types are needed to create a complete bicycle network that connects people to their destinations and where all citizens feel safe riding. Currently, Albany's bicycle network primarily comprises bicycle lanes, shared roadways and multi-use paths. Multi-use path improvements are discussed in a subsequent section of the memorandum because of their utility for both pedestrians and bicyclists.

[2] Bicycling on the shoulders of I-5 through Albany, though not advisable, is legal.

A brief description of the various facility types is provided below.

Bicycle lane – Bicycle lanes are striped lanes on the roadway dedicated for the exclusive use of bicycles. Typically, bicycle lanes are placed at the outer edge of pavement (but to the inside of right-turn lanes and/or on-street parking). Bicycle lanes improve bicycle safety, improve cyclist security, and typically ensure a direct connection between origins and destinations. However, inexperienced cyclists often feel uncomfortable riding on busy streets, even when they include bicycle lanes.

Bicycle Boulevard– Bicycle Boulevards are also referred to as low-traffic bikeways. They provide high-quality bicycle facilities on continuous street corridors with low vehicular traffic volumes. Typically, bicycle boulevards are made from existing local streets, which are reconfigured to prioritize bicycle trips and reduce through automobile trips. Local automobile access is retained. Bicycling conditions are improved by reducing stop signs to a minimum along the route and providing wayfinding information specific to bicyclists. Traffic calming is often used to slow automobile speeds and eliminate the cut-through automobile traffic that the removal of stop signs would otherwise attract.

Bicycle Boulevard Examples

Bicycle Boulevards are best used when they parallel major roadways and can provide cyclists with a low-volume alternative route. Bicycle Boulevards are used extensively in Portland where recent rider surveys indicate that cyclists overwhelmingly prefer them compared to major streets with bicycle lanes.

Shared-lane Pavement Marking – Shared-lane pavement markings (often called "***sharrows***") are a tool designed to help accommodate bicyclists on roadways where bicycle lanes are desirable but infeasible to construct. The sharrow marking indicates a shared roadway space, and are typically centered approximately 4 feet from the edge of the travelway to encourage cyclists to ride further away from parking cars and/or the curb. Shared-lane pavement markings have been extensively applied in many cities, including San Francisco, Portland, and Corvallis. Shared-lane pavement markings have been recommended for inclusion in the upcoming edition of the MUTCD and are expected to be approved for all roads with speed limits of 35 mph or less. Final approval of new MUTCD is not likely until late 2009 or 2010; until then use of shared-lane pavement markings are subject to the experimental process set forth in Section 1A.10 of the current MUTCD.

Shared-lane pavement markings improve bicyclist roadway position relative to no roadway markings, making bicyclists more visible to motorists and less likely to be struck by parked motorists opening their car doors into the roadway (i.e., "doored"). Motorists also give bicycles more clearance while passing when shared-lane pavement markings are present. Additionally, shared-lane pavement markings may make motorists more aware of bicyclists' right to use the roadway.

Shared-lane Pavement Marking

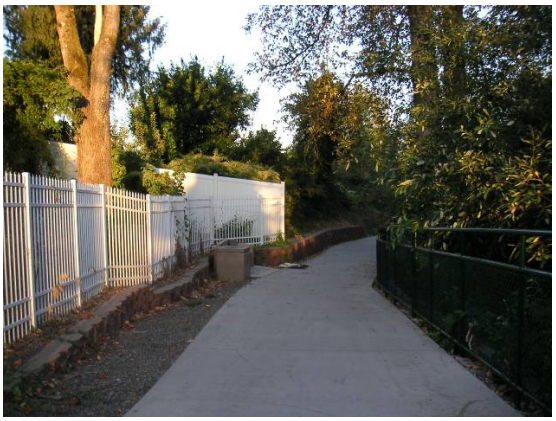
Other Bicycle Considerations

Wayfinding - Wayfinding signs are a key element in supporting bicycle use for intra-city trips and should be included throughout the Albany bicycle network. Wayfinding for cyclists provide information similar to the information that signs provide to motorists, guiding cyclists to their destinations along the most direct and appropriate routes. Bicycle signing should not only indicate which roads are cycle routes, but also provide information on distance and direction to key destinations.

Bicycle Actuated Pavement Markings - Many traffic signals in Albany are actuated signals, meaning that green indications are only given to a movement when the signal detects the presence of a vehicle. However, actuating a signal as a cyclist is difficult if no indication is given of the location of detection equipment. Pavement markings should be used to show cyclists where to stand to actuate a signal. Additionally, the sensitivity of all loop detectors should be set to allow for bicycle activation.

Support facilities - Support facilities, such as secure parking and worksite changing facilities and bicycle racks at key destinations, are also needed before most potential users will consider the bicycle mode as a practical alternative. The City currently requires bicycle parking included in new development as a condition of approval and Albany Transit System buses are outfitted with bicycle racks that allow cyclists to bring their bikes with them on transit. Allowing bicycles on transit vehicles increases the range of trips possible by both transit and bicycling, and reduces cyclists' fears of being stranded in the event of a mechanical or physical breakdown.

MULTI-USE PATH ALTERNATIVES



The pedestrian and bicycle alternatives were developed as their own unique plans; however, the two are tied together by the multi-use, off-roadway trail system that completes both networks. Multi-use paths are off-street facilities that serve a transportation role for both pedestrians and bicyclists, and where non-emergency motorized vehicles are prohibited.

Multi-use paths often serve destinations that are otherwise difficult for cyclists to reach and may provide cyclists with alternative routes to high-volume roadways. They also provide facilities that are comfortable for children and all members of society to walk and bike along. Paths are frequently desired along natural areas as a means of providing visual access and a buffer to development.

Provision of paths is considered in locations where they are most fiscally feasible to build, primarily in undeveloped areas and along waterways or rail lines, as right-of-way is often easiest to acquire in these locations. Short path connections through built-out areas are also considered where a key connection is missing. Grade-separated crossing improvements are recommended where multi-use paths intersect with major roadways, and are required where paths cross waterways.

All of the paths considered are in concert with those developed in the Albany Parks & Recreation Master Plan (2006), the Benton County Rails with Trails Plan (2004), the Linn County Plan, Build Lebanon Trails Plan, and community input.

Additional information on the multi-use path alternatives analysis is available in *Technical Memorandum #6B in Volume 2 of the Appendix.*

Multi-Use Path Improvements

A brief description of the various facility types is provided below.

At Grade Crossing – At grade crossings improvements are identified where new multi-use paths cross an at-grade facility or where existing crossings are unsafe.

Grade-Separated Crossing – Grade-separated crossings are either underpasses or overpasses that allow pedestrians and bicyclists to entirely avoid conflicts with automobiles when crossing a busy roadway. Grade-separated crossings are considered when crossing busy highways and freeways, railroads, and rivers. However, because they are associated with large construction costs, grade-separated crossings should be used sparingly and carefully designed for safety (especially under-crossings),

Example Under-crossing

Wayfinding – As with the on-street bike network, wayfinding on multi-use paths is important in allowing users to comfortably and easily use the system. Wayfinding for multi-use paths should include direction to key destinations, as well as information on how to use the on-street system to connect to and between multi-use paths.

PUBLIC TRANSPORTATION SYSTEM ALTERNATIVES

The existing conditions analysis found deficiencies within the City of Albany transit system in service frequency, service hours, availability of information, and service availability. The alternatives analysis for the public transportation system includes general transit strategies, identifies transit priority areas based on transit supportive areas and Census Bureau work-flow data, and provides suggestions for improving pedestrian access to transit. The Transportation System Plan does not propose new transit routes, schedule modifications, or new bus stop locations. These activities will occur as part of the Albany Transit Master Plan; however, the strategies and information provided herein were developed to be used for this planning activity.[3]

Transit Strategies

By nature of its operating characteristics, public transportation is most effective in larger and higher-density communities. The growth rates forecast for Albany allow transit to take on a larger role in Albany's transportation system. However, growth in and of itself does not bring a comfortable, convenient and well-patronized transit system. Opportunities to improve Albany's transit system must be actively sought. This section briefly describes several strategies that support the growth of Albany's transit system. The Albany Transit Master Plan should explore these strategies in more detail.

[3] Council accepted grant funding from ODOT Public Transit Division (resolution #5524) at their November 14, 2007 meeting. The Albany Transit System planning began in the summer of 2009 and is anticipated to be completed in the fall of 2010.

Currently, Albany Transit primarily serves "captive" transit riders (i.e., travelers with no other available transportation options). Providing mobility to these citizens is one of the key functions of public transit and Albany Transit should continue to serve this role in the future. However, in order to increase ridership over the long-term; Albany's transit system must also attract "choice" riders. Choice riders are those that have other transportation options available, but choose transit because it best meets their needs.

Attracting choice riders to transit requires service that is competitive with the automobile on a variety of different factors. Typically, the most influential factors in mode choice are cost, travel time, reliability, and comfort. Public transit is typically less expensive than driving, but real or perceived long travel times, unreliable service, and/or uncomfortable or unsafe vehicles or stations often prevent higher ridership. The most effective transit system changes will focus on improving these aspects of transit service.

Results from the rider and non-rider surveys conducted by Albany Transit System in July 2007 indicate several possible long-term improvements to increase the attractiveness of Albany's transit. Excessive travel time on buses does not appear often as a concern in the surveys. This is most likely because of Albany's relatively small size, which serves to reduce in-vehicle travel time.

However, both riders and non-riders frequently cite concerns with transit frequency and long wait times. Albany Transit System currently runs buses every 60 minutes on most routes. Headways of this length make transit difficult to use without a schedule. Even when consulting a schedule, arranging travel around hourly service is difficult. Expanded hours of service per day and expanded weekend service are also recurrent requests in the surveys. Longer service spans allow for a greater range of trips to be taken via transit, and also reduce the chance of being stranded if you miss a particular bus.

Analysis described in Section 3 showed that all Albany Transit System routes and the Linn-Benton Loop Bus operate with either LOS E or LOS F for both frequency and hours of service. This is consistent with customer surveys, and indicates that increases in frequency and/or hours of service may be needed to improve customer satisfaction and increase ridership.

Increasing either service frequency or service span means additional personnel and/or transit vehicles and, therefore, requires an increased operating budget. Such service increases may be needed in order to realize ridership gains. Potential funding sources for public transportation in Albany are discussed below.

In addition to simply increasing the amount of transit service available, it is important to provide amenities that make transit convenient and easy to ride. Information about bus service is critical to attracting new riders. One third of non-riding respondents cited lack of information as a reason why they don't ride. Just as road signs provide drivers with route and destination information, bus stops should provide schedules telling passengers what bus stop there, where the bus goes, and when the bus arrives. In addition to schedule information, shelters should be included at as many bus stops as possible to protect patrons from the elements.

Finally, employer-based Travel Demand Management (TDM) programs are effective tools to increase transit use. TDM programs use a variety of methods to reduce single-occupancy vehicle travel and do not necessarily have a transit focus. However, most successful TDM programs extensively incorporate transit. The most straight-forward, and often most effective, TDM programs used in other locations simply provide free transit to employees. Requiring all large employers to develop effective TDM programs not only increases transit ridership, but also significantly reduce automobile travel. In many cases, TDM programs are welcomed by employers as well, as they can help reduce employee parking needs, freeing more land for development and/or customer parking.

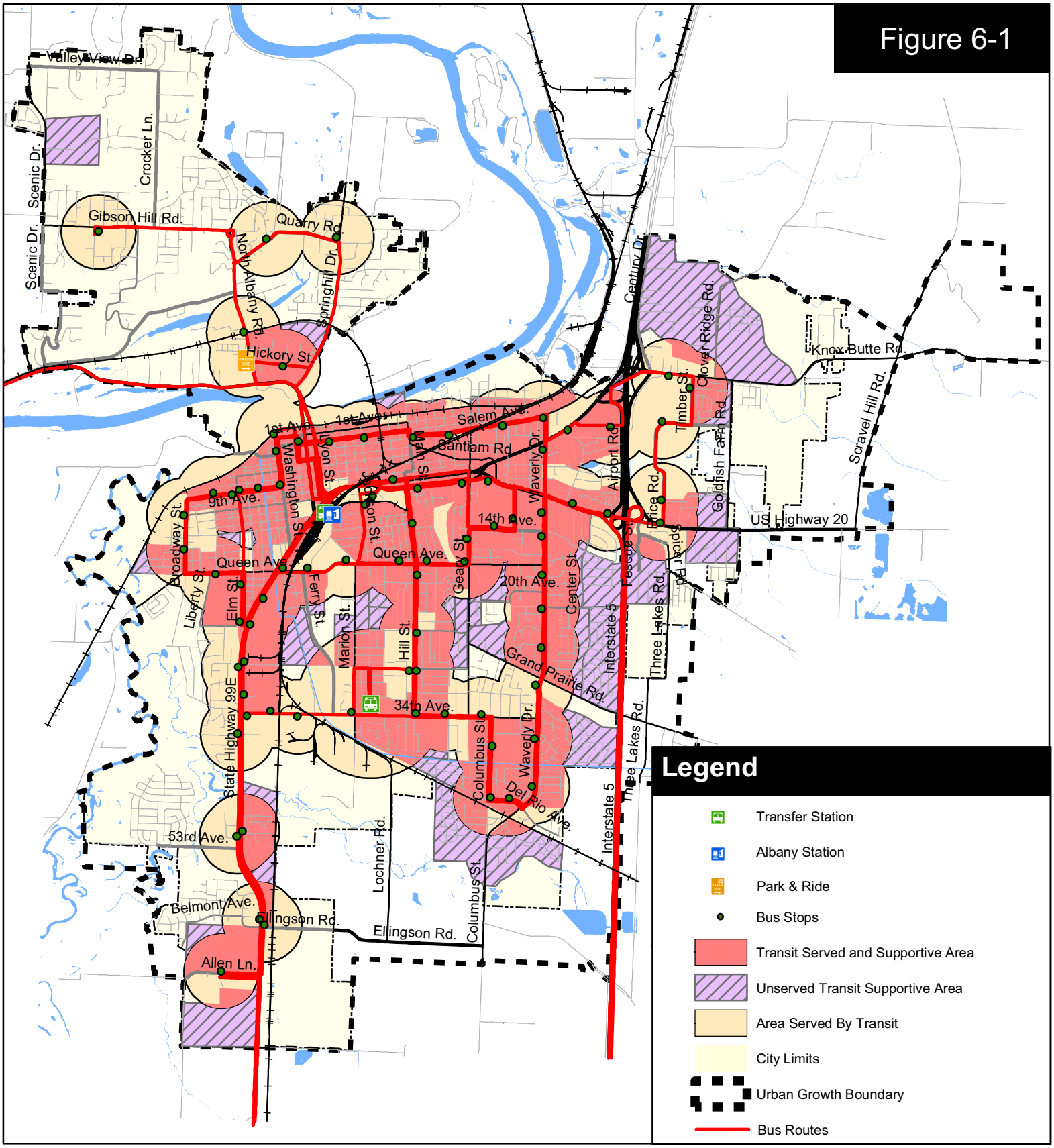
Priority Areas for Improved Transit

Analysis conducted in *Technical Memorandum #5 (provided in Volume 2 of the TSP Appendix)* shows those areas of the City that are both transit-supportive and unserved by current transit service. These areas are located primarily in south and east Albany and are shown in Figure 6-1. Provision of transit service to these areas should be given particular attention in the Albany Transit Master Plan.

Transit Commute Trips

Data from the United States Census Bureau were used to identify locations outside of the Albany UGB with high potential for transit use. Specifically, data from the 2004 Longitudinal Employer-Household Dynamics (LEHD) were used to evaluate major commuting patterns within and near Albany.

Table 6-2 shows the major commute flows for both employed Albany residents and for people employed in Albany. These data show that commuting in Albany is inter-related with the surrounding communities, as fewer than 40% of Albany residents work in Albany, and fewer than 40% of Albany workers live in Albany. Despite a jobs-to-housing ratio of close to 1; several other communities in the Willamette Valley are within typical commuting range, making it relatively easy to live in Albany and work elsewhere.



City of Albany, Oregon

Albany Transportation System Plan

Future Transit Deficient Areas

Kittelson & Associates, Inc.
Transportation Engineering/Planning

TABLE 6-2 PREDOMINANT COMMUTE FLOWS FOR ALBANY RESIDENTS AND WORKERS

	Total	Percent		Total	Percent
Albany Residents (Employed)	18,676	N/A	**Total Albany Workers**	19,238	N/A
Work in:			***Live in:***		
Albany	7,193	38.5%	Albany	7,193	37.4%
Corvallis	3,002	16.1%	Corvallis	1,406	7.3%
Salem	1,220	6.5%	Lebanon	924	4.8%
Portland	874	4.7%	Salem	693	3.6%
Millersburg	852	4.6%	Eugene	435	2.3%
Lebanon	399	2.1%	Portland	363	1.9%
Eugene	379	2.0%	Sweet Home	307	1.6%
Springfield	173	0.9%	Springfield	187	1.0%
Hillsboro	152	0.8%	Tangent	162	0.8%
Beaverton	134	0.7%	Keizer	150	0.8%
All Other Locations	4,298	23.0%	All Other Locations	7,418	38.6%

Source: US Census Bureau - 2004 Longitudinal Employer-Household Dynamics (LEHD)

Table 6-2 shows that the most common city in which to work for Albany residents (other than Albany) is Corvallis, with over 16% of Albany residents working there. This is more than twice that of the next closest city. This high percentage indicates that additional transit service for commuters between Albany and Corvallis may be justified, in addition to the existing Linn-Benton Loop Bus. Moreover, employment in Corvallis is concentrated amongst three major employers. Hewlett-Packard (804 employees), Good Samaritan Regional Medical Center (439 employees), and Oregon State University (363 employees) are the destinations for over half of the Albany residents commuting to Corvallis. This concentration increases the viability of transit.

Less than half as many people live in Corvallis and work in Albany compared to the reverse, with only 7% of Albany workers living in Corvallis compared to 16% of Albany residents working in Corvallis. This means that transit serving Corvallis to Albany commuters is less likely to be practical. Additionally, workplaces in Albany are more dispersed than in Corvallis, with only one single Albany location (LBCC) employing more than 200 Corvallis residents. This condition may cause the need for a transfer from the Corvallis to Albany commuter route to a local service route to deliver employees to their final destinations.

Table 6-2 also shows that approximately 17% of Albany residents commute north to Salem, Millersburg, and the Portland Metro area to work. While this represents a large number of commuters, the destinations are so dispersed and commute distances so high, that frequent fixed-route transit service is unlikely to be viable. However, limited fixed-route service may be viable, and the City should explore the possibility of providing such service through Cherriots or CARTS. More practically, ride-matching services, such as that currently provided through the Cascades

West COG rideshare program, that allow commuters to find potential car-pooling partners may be able to reduce the number of single-occupant commute trips.

Commuter transit to the other cities listed in Table 6-2 is unlikely to be viable, as destinations are too dispersed and distances too far to make transit feasible for most commuters. The exception is Millersburg, which has several large employers of Albany residents, and is discussed along with intra-Albany commute trips below.

Over 7,000 Albany residents both live and work in Albany, and an additional 850 Albany residents work in Millersburg. Because of the short length of these commutes, these commuters are a logical target market for transit. Figure 6-2 shows the employment density of Albany residents within both Albany and Millersburg. Major employers of Albany residents are depicted by stars, and labeled with the number of employees. Major employers are defined as those that employ more than 100 Albany residents. Figure 6-2 shows 11 major employers within Albany and 3 in Millersburg. Planning for new and expanded transit service within Albany should focus on connecting residents to these destinations.

Pedestrian Access to Transit

Most transit riders are pedestrians at both the beginning and end of their trips. Therefore, providing safe and convenient pedestrian access to transit stops is important to improving transit service. Thus, all Albany Transit System bus stops were evaluated with respect to pedestrian access to identify needed improvements, as described below.

Two key aspects of pedestrian access were assessed: the presence of sidewalks along streets with transit stops and the proximity of appropriate pedestrian crossings to transit stops. The proximity and quality of pedestrian crossings near transit stops were also evaluated. Transit riders' origins and destinations are often located on opposite sides of the street from transit stops, meaning that pedestrian crossing demand is frequently high near transit stops. All bus stops within the City of Albany were examined with respect to traffic volumes and available crossings to identify locations where pedestrian crossing improvements or stop relocations should be considered.

All bus stops located less than 200 feet from a marked crosswalk or signal were considered to provide adequate pedestrian crossings. Those transit stops located on roadways with year 2030 projected Average Daily Traffic (ADT) less than 6,000 vehicles were not considered for crossing improvements. At volumes under approximately 6,000 ADT, pedestrians can typically cross streets without the aid of a marked crosswalk. For high-volume, multilane roadways, raised median islands should be evaluated as part of the pedestrian crossing enhancement.

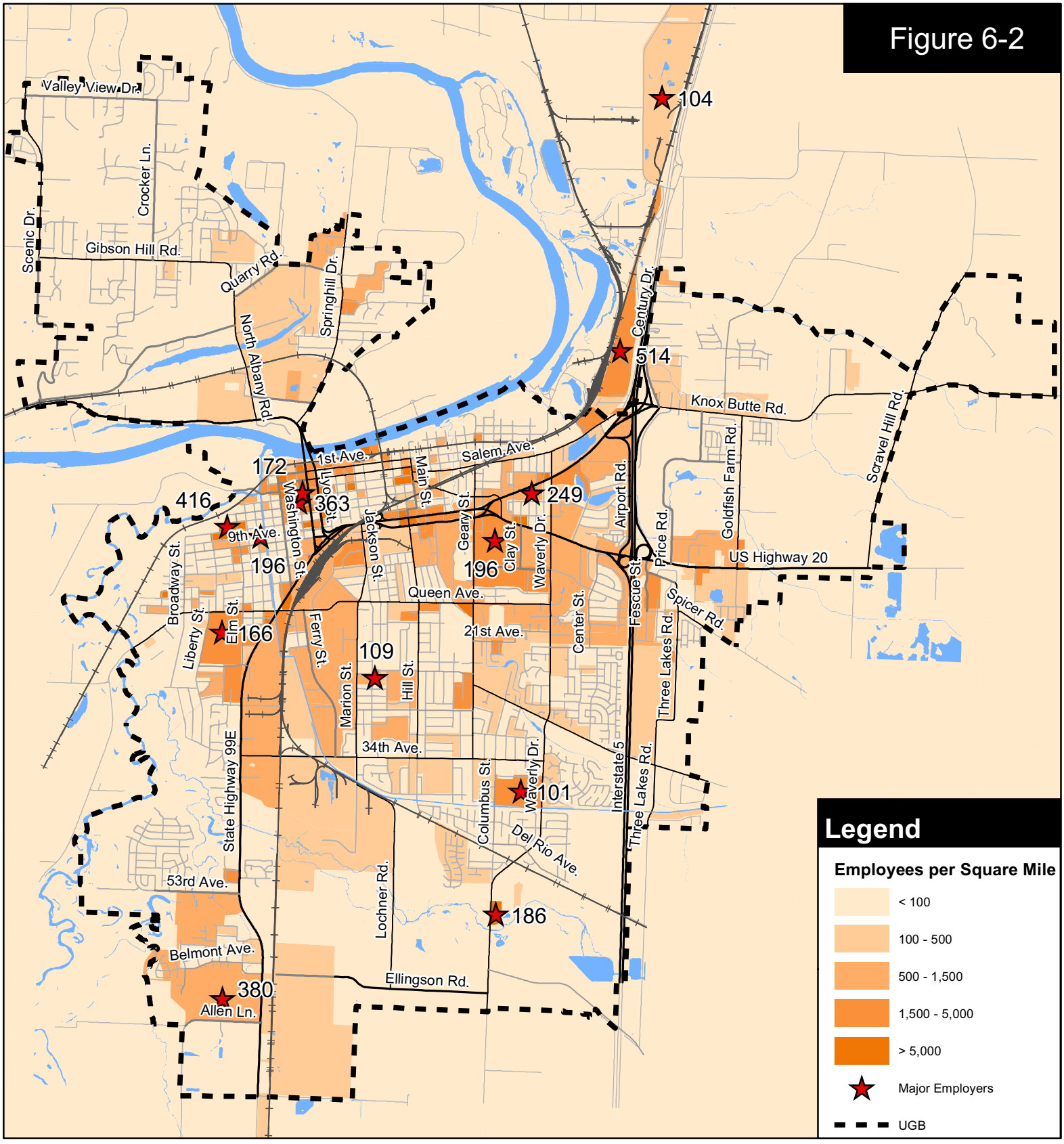


Figure 6-2
Valley View Dr.
Crocker Ln.
Scenic Dr.
Gibson Hill Rd.
Quarry Rd.
North Albany Rd.
Springhill Dr.
104
Century Dr.
514
Knox Butte Rd.
Scravel Hill Rd.
Goldfish Farm Rd.
Airport Rd.
Price Rd.
US Highway 20
Salem Ave.
1st Ave.
172
Lyon St.
Main St.
Jackson St.
Geary St.
249
Clay St.
Waverly Dr.
363
416
9th Ave.
196
196
Broadway St.
Liberty St.
Elm St.
166
Washington St.
Queen Ave.
21st Ave.
Ferry St.
109
Marion St.
Hill St.
Center St.
Fescue St.
Spicer Rd.
Three Lakes Rd.
34th Ave.
Columbus St.
101
Interstate 5
Del Rio Ave.
State Highway 99E
53rd Ave.
Lochner Rd.
186
Belmont Ave.
Ellingson Rd.
380
Allen Ln.
Legend
Employees per Square Mile
< 100
100 - 500
500 - 1,500
1,500 - 5,000
> 5,000
Major Employers
UGB
City of Albany, Oregon
Albany Transportation System Plan
Workplace Density for Albany Residents
Kittelson & Associates, Inc.
Transportation Engineering/Planning
Miles
0 0.25 0.5 1

RAIL SYSTEM ALTERNATIVES

Alternatives to improve operations of the rail system within the City of Albany are in the planning stage and are being worked on by the City, ODOT Rail, the Union Pacific Railroad and Portland &Western Railroad. The Portland & Western Railroad has received a $7,000,000 Connect Oregon II grant to rehabilitate the Millersburg Yard and add/extend several tracks within the facility. This will allow trains direct access to the Millersburg yard and allow switching movements that currently occur in the Albany Yard to occur in Millersburg and reduce the vehicle delays at the OR 99E/Queen Avenue rail crossing.

The Union Pacific is considering closing the southern leg of the Portland & Western Railroad and Union Pacific Railroad intersection located near the SE 6th Street/SE Madison Street intersection. The Portland & Western Railroad is also considering improving this railroad intersection and then vacating part of their line running along Water Avenue. These improvements would significantly reduce vehicle delays at the railroad crossings in North Albany located on Spring Hill Drive and North Albany Road.

The City of Albany is supportive of these improvements; however, the City does not support closing local street crossings, particularly located at Main Street and Madison Street as either of these closures would have a significant impact on operations at the intersections of the OR 99E couplet at Hill Street.

AIRPORT ALTERNATIVES

The Airport Master Plan, completed in 2002, serves as the air portion of the Albany TSP. This plan defines the alternatives evaluated to determine the needs and direction of future development at the airport.

MARINE ALTERNATIVES

The Willamette River has no port facilities and has no role in the transportation of people or freight and therefore had no alternatives considered.

PIPELINE AND TRANSMISSION SYSTEM ALTERNATIVES

No alternatives were evaluated for the pipeline and transmission systems.

The City of Albany owns and maintains a water and wastewater system of treatment facilities and pipe networks that serve Albany customers. The alternatives considered for the water and wastewater systems, including those along arterials and collectors, are included in the City of Albany Water Facility Plan and Wastewater Facility Plans, respectively.

Section 7
Transportation System Plan

Transportation System Plan

This section presents the individual elements of the City of Albany Transportation System Plan. The TSP addresses those components necessary for the development of the future transportation network including:

- Roadway System Plan
  - Functional Classification Plan
  - Intersection Operations Standards
  - Street Design Standards
  - Access Management Standards
- Pedestrian Plan
- Bicycle Plan
- Transit Plan
- Air
- Water and Wastewater Transmission Line Plan
- Implementation Plan

The transportation components presented in this section were developed in accordance with the requirements of Oregon's Transportation Planning Rule (TPR). These plan elements were also developed in accordance with the findings presented in the existing and future forecast conditions analysis, the alternatives analysis, and the interests of the citizens, business owners, governmental agencies, and City Council as contributed during the plan's development.

The purpose of the Albany 2030 Transportation System Plan (2030 TSP) is to support the vision and goals presented in Section 1 by logically providing for the systematic care and expansion of the multi-modal transportation system. This Transportation System Plan presented below contains the prioritized list of actions and improvement projects desired to meet the future travel needs within the community.

TIMELINE FOR RECOMMENDED PROJECTS

For each modal system, the evaluation of transportation improvements resulted in a preferred set transportation improvement projects. The timeline for implementation of the projects is color-coded on the project maps and described according to the following terms:

- Near-term: These improvements are warranted under existing conditions or are expected to be warranted with a relatively short (i.e., approximately five-year) time frame. These improvements should be constructed as opportunities and resources allow.
- Mid-term: These improvements are planned for implementation in the six-to-ten-year time frame.

- Long-term or Development Driven: These projects will be needed to accommodate anticipated growth. They should be planned for likely implementation within the 20-year planning horizon. The timeline for development driven projects is unknown and the improvements will not be necessary prior to development within the area surrounding the project. Projects may move up in priority order if development occurs in the near or mid-term and may not be needed once Albany becomes part of a Metropolitan Planning Organization (MPO).

ROADWAY SYSTEM PLAN

The City of Albany's roadway system plan provides guidance on how to best facilitate roadway travel over the next 20 years, as well as identifying key elements of a future vision of transportation facilities serving the City. This plan is based on the identified existing and anticipated future operational and circulation needs. A map of the roadway plan including both roadway link projects as well as intersection projects is provided in Figure 7-1. The roadway alignments in Figure 7-1 are conceptual in nature and subject to modification during design. A table including all of the roadway project names and types is provided in Table 7-1. *Additional details about these projects can be found on the project prospectus sheet in Appendix E.* Figure 7-2 and Figure 7-3 provide the 2030 weekday p.m. peak hour two-way roadway link volumes and demand-to-capacity ratios for the Preferred Plan, respectively.

TABLE 7-1 LINK AND INTERSECTION IMPROVEMENT PROJECTS

ID	Project Name	Project Type
I1	Main Street/Salem Avenue/3rd Avenue	Intersection Control Change
I2	Main Street/Santiam Avenue/4th Avenue	Intersection Control Change
I3	14th Avenue/Heritage Mall Access	Intersection Control Change
I4	14th Avenue/Clay Street	Intersection Control Change
I5	Waverly Avenue/14th Avenue	Intersection Control Change
I6	Waverly Avenue/Queen Avenue	Intersection Add Lane(s)
I7	Waverly Avenue/Grand Prairie	Intersection Add Lane(s)
I8	US 20/North Albany Road	Intersection Add Lane(s)
I9	US 20/Springhill Drive	Intersection Add Lane(s)
I10	Knox Butte/Century Drive	Intersection Control Change
I11	34th Avenue/Marion Street	Intersection Control Change
I12	US 20 (Lyon Street)/2nd Avenue	Intersection Add Lane(s)
I13	US 20/Clay Street	Safety
I14	OR 99E/34th Avenue	Intersection Add Lane(s)
I15	34th Avenue/Hill Street	Intersection Control Change
I16	Ellingson Road/Columbus Street	Intersection Control Change
I17	Waverly Avenue/14th Avenue	Intersection Add Lane(s)
I18	Queen Avenue/Geary Street	Intersection Add Lane(s)
I19	Waverly Avenue/34th Avenue	Intersection Add Lane(s)

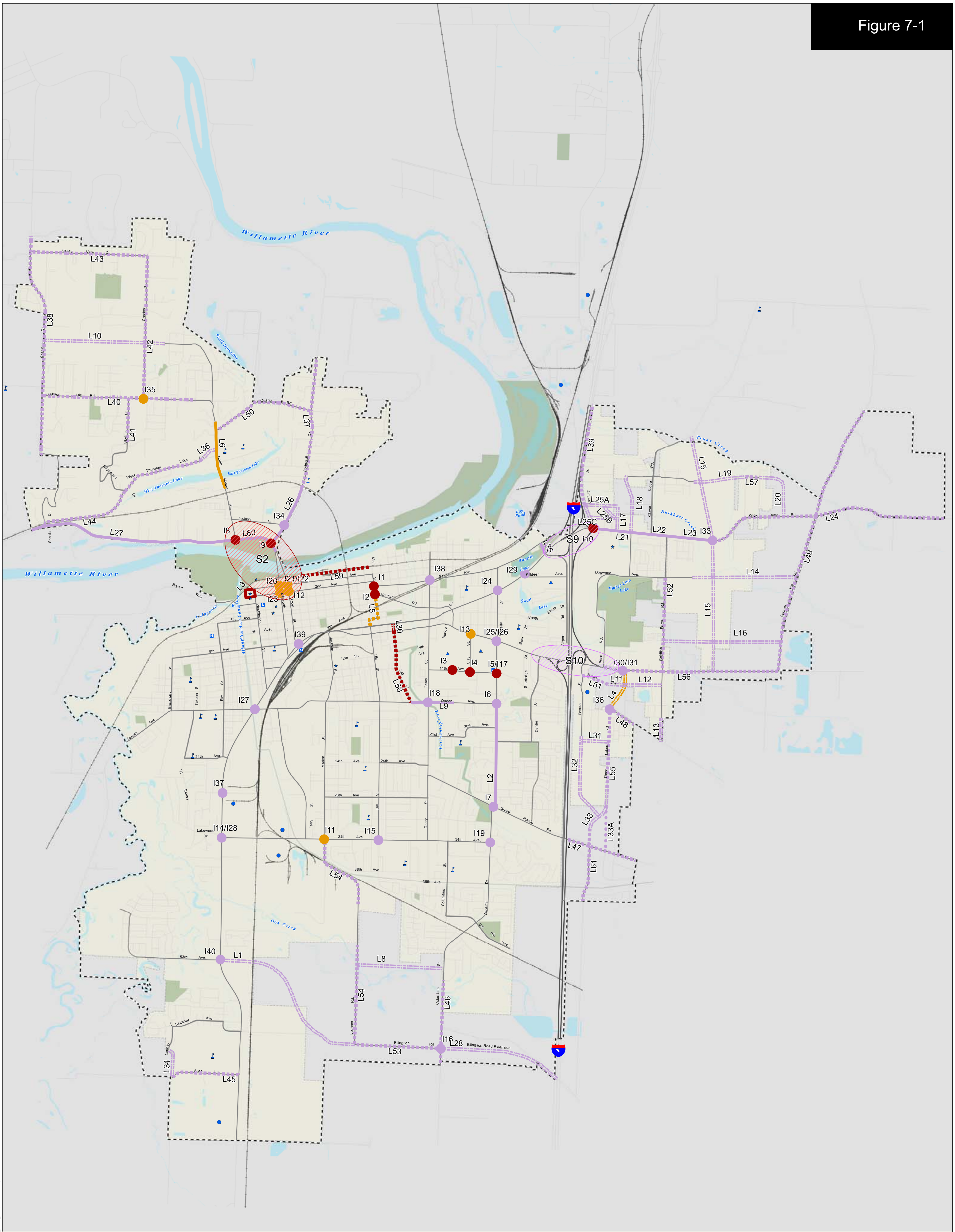
I20	US 20 (Ellsworth Street)/1st Avenue	Intersection Add Lane(s)
I21	US 20 (Lyon Street)/1st Avenue	Intersection Add Lane(s)
I22	US 20 (Lyon Street)/1st Avenue	Intersection Add Lane(s)
I23	US 20 (Ellsworth Street)/2nd Avenue	Intersection Add Lane(s)
I24	OR 99E/Waverly Avenue	Intersection Add Lane(s)
I25	US 20/Waverly Drive	Intersection Add Lane(s)
I26	US 20/Waverly Drive	Intersection Add Lane(s)
I27	OR 99E/Queen Avenue	Intersection Add Lane(s)
I28	OR 99E/34th Avenue	Intersection Add Lane(s)
I29	OR 99E/Killdeer Avenue	Intersection Add Lane(s)
I30	US 20/Timber Street	Intersection Add Lane(s)
I31	US 20/Timber Street	Intersection Add Lane(s)
I32	Deleted Project	NA
I33	Knox Butte/New North/South Collector	Intersection Control Change
I34	Springhill Dr./Hickory St.	Intersection Control Change
I35	Gibson Hill Rd/Crocker Ln	Intersection Control Change
I36	Timber Street Extension/18th Avenue/Spicer Drive	Intersection Control Change
I37	OR 99E / 29th Ave	Intersection Add Lane(s)
I38	Salem Avenue/Geary Street	Intersection Control Change
I39	OR 99E/Lyon Street	Intersection Add Lane(s)
I40	OR 99E/53rd Avenue	Intersection Add Lane(s)
L1	53rd Avenue Extension	New Road or Alignment
L2	Waverly Drive	Add Lane(s)
L3	Washington/Calapooia/1st/2nd	Safety
L4	Timber Street Extension	Link New Road or Alignment
L5	Main Street - 7th Avenue - Hill Street	Urban Upgrade
L6	North Albany Road	Add Lane(s) / Urban Upgrade
L7	Deleted Project	NA
L8	Lochner-Columbus Connector	New Road or Alignment
L9	Queen Avenue	Add Lane(s)
L10	New North Albany Connector	New Road or Alignment
L11	Spicer Drive Extension (West of Timber St.)	New Road or Alignment
L12	Spicer Drive Extension (East of Timber St.)	New Road or Alignment
L13	Goldfish Farm Road Extension	New Road or Alignment
L14	Dogwood Avenue Extension	New Road or Alignment
L15	New North/South Collector	New Road or Alignment
L16	New East/West Collector	New Road or Alignment
L17	Expo Parkway Extension (south of Dunlap)	New Road or Alignment

L18	Timber Street Extension to Somerset Avenue	New Road or Alignment
L19	Somerset Avenue Extension	New Road or Alignment
L20	Santa Maria Avenue Extension	New Road or Alignment
L21	Knox Butte Road Widening	Add Lane(s) / Urban Upgrade
L22	Knox Butte Road Widening	Add Lane(s) / Urban Upgrade
L23	Knox Butte Road Widening	Add Lane(s) / Urban Upgrade
L24	Knox Butte Road Widening	Add Lane(s) / Urban Upgrade
L25	Dunlap Avenue Extension	New Road or Alignment
L26	Springhill Road Widening	Add Lane(s)
L27	US 20 Widening	Add Lane(s) / Urban Upgrade
L28	Ellingson Road Extension	New Road or Alignment
L29	Deleted Project	NA
L30	Oak Street	New Road or Alignment
L31	Fescue Street to Three Lakes Road Connector	New Road or Alignment
L32	Fescue Street Extension	New Road or Alignment
L33	Three Lakes Road Realignment	New Road or Alignment
L34	Looney Lane Extension	New Road or Alignment
L35	Albany Avenue Widening	Add Lane(s)
L36	West Thornton Lake Drive, North Albany Road & North Albany Middle School	New Road or Alignment
L37	Springhill Drive	Urban Upgrade
L38	Scenic Drive	Urban Upgrade
L39	Century Drive	Urban Upgrade
L40	Gibson Hill Road	Urban Upgrade
L41	Skyline Drive	Urban Upgrade
L42	Crocker Lane	Urban Upgrade
L43	Valley View Drive	Urban Upgrade
L44	West Thornton Lake Drive	Urban Upgrade
L45	Allen Lane	Urban Upgrade
L46	Columbus Street	Urban Upgrade
L47	Grand Prairie Road	Urban Upgrade
L48	Spicer Drive	Urban Upgrade
L49	Scravel Hill Road	Urban Upgrade
L50	Quarry Road	Urban Upgrade
L51	Spicer Road	Urban Upgrade
L52	Goldfish Farm Road	Urban Upgrade
L53	Ellingson Road	Urban Upgrade
L54	Lochner Road	Urban Upgrade

L55	Three Lakes Road	Urban Upgrade
L56	US 20 - East of I-5	Urban Upgrade
L57	Santa Maria Avenue	Urban Upgrade
L58	Oak Street	Urban Upgrade
L59	Water Avenue	Urban Upgrade
L60	US 20 Superelevation and Widening	Add Lane(s)
L61	Three Lakes Road	Urban Upgrade

L - Roadway Segment ("Link") Project
I – Intersection Improvement Project
NA – Not Applicable

Figure 7-1


Willamette River
L43
Valley View Dr.
L38
Scenic Dr.
L10
L42
Crocker Ln.
I35
Gibson Hill Rd.
L40
L41
Skyline Dr.
L36
L6
North Albany Rd.
L50
Quarry Rd.
L37
Springhill Dr.
South Horseshoe
East Thornton Lake
West Thornton Lake
West Thornton Lake Dr.
Edgewood
L26
I34
Hickory St.
L44
L27
I8
L60
I9
S2
L59
I1
I2
L5
L3
I20
I21/I22
I23
I12
Bryant Way
Calapooia River
Albany Santiam Canal
Washington St.
Ellsworth St.
Lyon St.
Main St.
2nd Ave.
5th Ave.
7th Ave.
9th Ave.
12th St.
I39
I38
Salem Ave.
Santiam Rd.
L30
L58
Oak St.
Jackson St.
Hill St.
I24
I29
Waverly Lake
Killdeer Ave.
Swan Lake
South Shore Dr.
I13
I25/I26
I3
I4
I5/I17
14th Ave.
Clay St.
I18
Queen Ave.
L9
I6
Periwinkle Creek
20th Ave.
21st Ave.
24th Ave.
28th Ave.
L2
I7
Grand Prairie Rd.
I27
Broadway St.
Takena St.
Elm St.
Queen Ave.
Liberty St.
Marion St.
Geary St.
I37
I14/I28
Lakewood Dr.
I11
34th Ave.
I15
I19
38th Ave.
39th Ave.
L54
Ferry St.
Columbus St.
Waverly Dr.
Del Rio Ave.
Oak Creek
I40
53rd Ave.
L1
L8
L46
Lochner Rd.
Ellingson Rd.
L53
I16
L28
Ellingson Road Extension
Belmont Ave.
Looney Ln.
L34
Allen Ln.
L45
L39
Century Dr.
L25A
L25B
L25C
L17
L18
Clover Ridge Rd.
Log Pond
S9
I10
L35
L21
L22
L23
I33
Burkhart Creek
Truax Creek
L15
L19
L57
L20
Knox Butte Rd.
L24
L49
Scravel Hill Rd.
L14
Dogwood Ave.
Timber-Linn Lake
L52
Goldfish Farm Rd.
L16
Airport Rd.
Price Rd.
Bain St.
Shortridge St.
Center St.
S10
I30/I31
Spicer Rd.
L51
L11
L12
L56
L4
I36
L48
L13
Fescue St.
L31
L32
Three Lakes Rd.
L55
L33
L33A
L47
L61

Improvement Timeframe

- Short-term
- Medium-term
- Long-term/ Project-driven

Improvements

- Intersection Improvement
- Capacity Improvement
- Urban Upgrade
- New Roadway
- Alternative Alignment
- Study Refinement Area

Destinations

- School
- Major Employer
- Other
- Albany General Hospital
- Amtrak Station
- Public Library
- Public Building

Boundaries

- Parks
- Urban Growth Boundary
- City Limitis

Other Roads

- Study Roads
- Local Roads

0 0.25 0.5 0.75 1 Miles

City of Albany, Oregon

Albany Transportation System Plan

Planned Auto Improvements

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

City of Albany Oregon

Figure 7-2

Legend

Two-Way Volumes

- < 500
- 501 - 1,000
- 1,001 - 1,500
- 1,501 - 2,500
- > 2,500
- Denotes One-way Link
- Local Road
- Interstate - 5

Boundaries

- UGB
- City Limit

City of Albany, Oregon

Albany Transportation System Plan

PM Peak Hour
2030 Two-way Volumes
(Preferred Transportation Network)

0 0.25 0.5 1 Miles

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Figure 7-3

Legend

Demand to Capacity Ratio*

- < 0.40
- 0.40 - 0.70
- 0.70 - 0.90
- 0.90 - 1.00
- 1.00 - 1.20
- > 1.20
- Denotes One-way Link
- Local Road
- Interstate - 5

Boundaries

- UGB
- City Limit

* Link D/C ratios reflect planning-level capacity assumptions. Where link analysis showed D/C ratios exceeding 1.0, detailed intersection-level operations analysis was performed to identify any necessary mitigations.

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0 0.25 0.5 1 Miles

City of Albany, Oregon

Albany Transportation System Plan

PM Peak Hour
2030 Demand to Capacity Ratios
(Preferred Transportation Network)

State Highways

Three ODOT highways cross through the City of Albany: Interstate-5 (I-5), OR 99E (Pacific Highway), and US 20 (Santiam Highway). ODOT also has jurisdiction over Century Drive and Airport Road. The TSP identifies several projects on state facilities. All projects on state facilities are subject to ODOT procedures and standards and will require approval and permitting by ODOT.

Several areas of the State Highway System have undergone additional refinement since the 1999 TSP, are undergoing additional refinement, or are in need of additional refinement. The 2004 US-20/ORE 99 Interchange Area Management Plan (IAMP) (see Technical Memorandum #1 in the Volume 2 Appendix) was adopted by the City of Albany and remains part of the TSP. The ongoing and needed refinement studies are identified in the "Planned Studies" section of this plan and are described in more detail below.

US 20 (Willamette River to OR 99E)

The current cross-section of US 20 across the Willamette River and through the downtown to the interchange with OR 99E is two lanes in each direction. This corridor is projected to operate over capacity during the critical weekday p.m. peak hour by the year 2030. The City of Albany and its' regional partners have acknowledged the need for additional capacity across the Willamette River. The City's preferred plan is to have additional capacity provided at a new river crossing location (as opposed to widening the existing structures) due to the severe impacts to the downtown that would result from widening Highway 20 and the costs of replacing and widening two bridge structures (one in each direction) as well as reconstructing the US 20/OR 99E Interchange (see discussion on these improvement needs in Section 6).

Discussions with ODOT, DLCD, and City staff determined a new bridge should not be included as part of the TSP at this time. Rather, the TSP includes the identification of a US 20 Corridor and Downtown Refinement Plan (Project #S2) to more thoroughly consider bridge locations, system impacts, and costs.

The Transportation System Plan also includes low-cost improvements along the state system that will help sustain acceptable operations along the corridor until a corridor study can be completed and the ultimate solution for the corridor is determined. These projects include #I8, #I9, #I12, #I20-23, #L7, #L27, #L60. It should be noted that these improvements to the state system will delay the need for major system improvements such as a new Willamette River bridge(s), but will not last until the TSP horizon year of 2030. These short-term improvements will not allow the system to operate sufficiently during the critical weekday p.m. peak hour of 2030 if all the anticipated growth is realized. *Additional details about these projects can be found on the project prospectus sheet in Appendix E.*

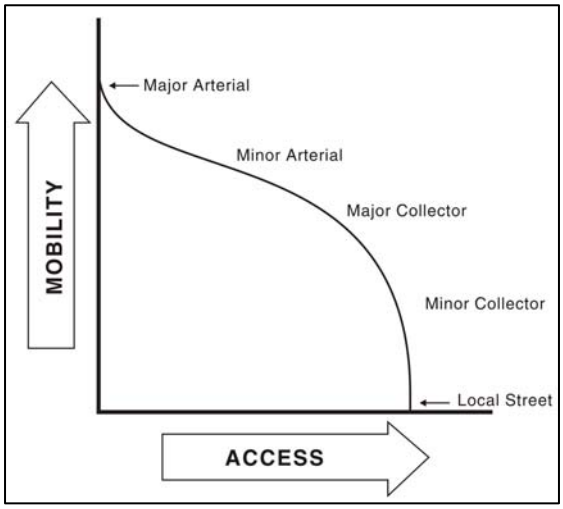
The ability to delay the need for additional bridge capacity is supported through Special Transportation Area (STA) designations for downtown Albany (Project #S5) and Oregon Highway Plan Policy 1.F.5 treatments such as removing on-street parking and adjusting signal timing to improve progression along US 20 from North Albany Road to the OR 99E interchange (including projects #I12, #I20—23).

I-5 at US 20 and OR 99E

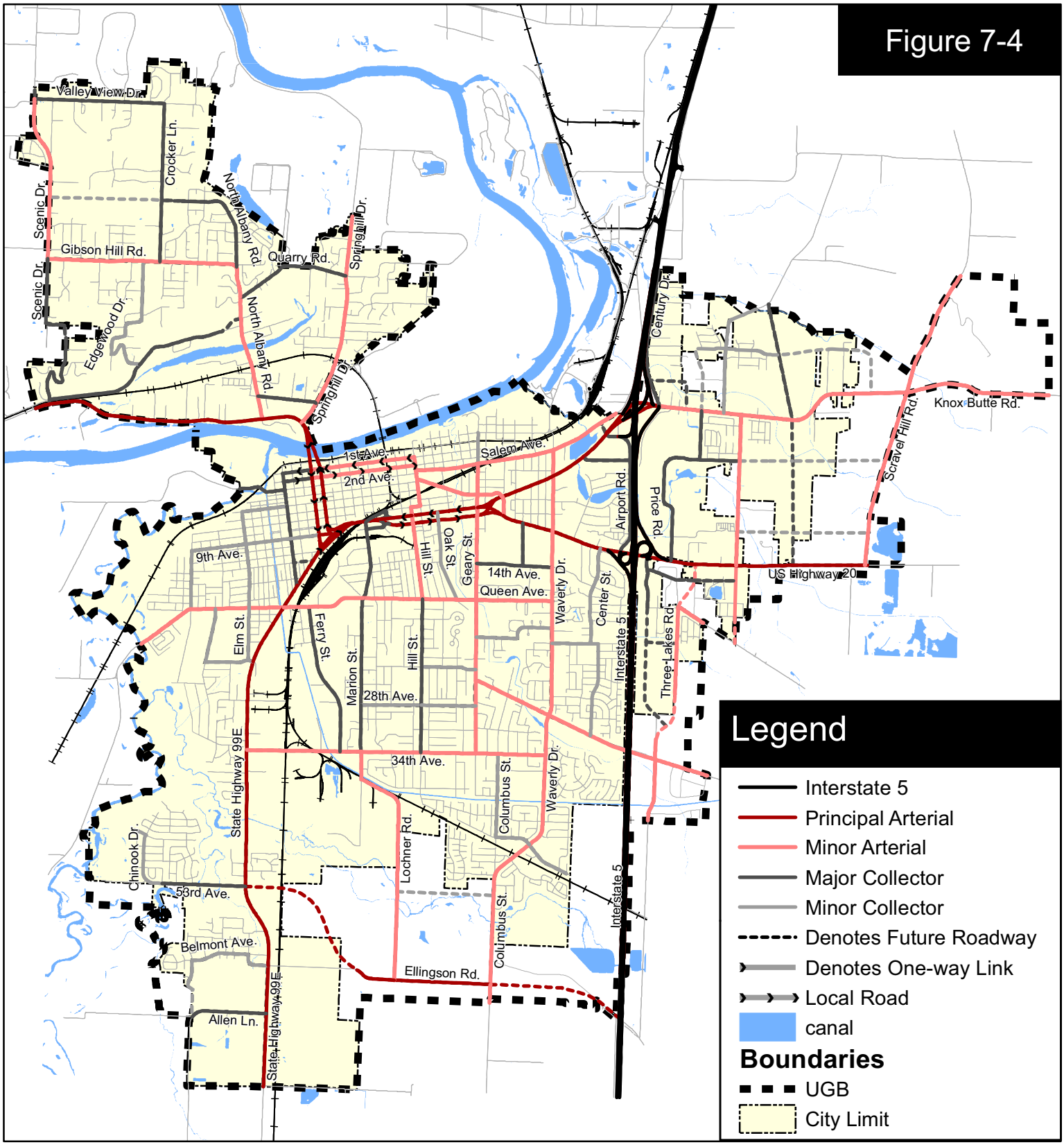
The I-5 interchanges with US-20 and OR-99E are undergoing refinement planning as part of the I-5: South Jefferson Interchange to Santiam Interchange Environmental Assessment. This is an ODOT project to meet state and federal requirements. The City of Albany is participating in the project, a portion of which includes development of Interchange Area Management Plans (IAMPs) for the two interchanges. Oregon Administrative Rule 734-051-0155 calls for preparation of IAMPs for new interchanges and for significant modifications to existing interchanges, and OAR 731-015-0075 requires that changes to comprehensive plans needed to construct a highway project must be adopted by affected local governments before any phase of a project can be constructed. The IAMPs will be developed between the draft and final environmental documents. ODOT will ultimately ask Albany to review and adopt the portions of the IAMPs into its Comprehensive Plan and Development Code that are identified as needed to protect the development and operation of the interchanges. The City Council will go through a public process to review and consider adoption of the IAMP. It is the recommendation of this City Council that the IAMP not incorporate interchange designs that would redirect highway and commercial traffic through existing residential neighborhoods (e.g. the South Shore Drive neighborhood). Controlling traffic on residential streets is within the jurisdiction of the City of Albany. Figures 5.1-2 and 5.2-2 in ODOT's February 2008 "Albany I-5 Corridor Refinement Plan and Existing Environmental/Cultural Features" are part of the TSP until the Albany I-5 Corridor Refinement Plan is completed and adopted by the City of Albany. These two figures do not show specific locations where existing roads will be terminated or the specific location of road extensions. Albany's future contribution to the local implementation of these plans is acknowledged in the TSP and identified in the project map and prospectus sheets as Projects #S9 and #S10.

FUNCTIONAL CLASSIFICATION PLAN

The purpose of classifying roadways is to create a mechanism through which a balanced transportation system can be developed that facilitates mobility for all modes of transportation as well as access to adjacent land uses. A roadway's functional classification determines its intended purpose, the amount and character of traffic it is expected to carry, the degree to which non-auto travel is emphasized, and the roadway's design standards and overall management approach. It is imperative that a roadway's classification considers the adjacent land uses and the transportation modes that should be accommodated.



The functional classification plan for the City of Albany is shown in Figure 7-4. The functional classification plan incorporates four functional categories: interstate, arterials (principal and minor), collectors (major and minor), and local streets. The design of arterial and collector streets with the same functional classification should vary based on a several factors including: adjoining land uses, volume, access, and speed.



CITY OF Albany OREGON

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0 0.25 0.5 1 Miles

City of Albany, Oregon

Albany Transportation System Plan

Roadway Functional Classification Map

It should be noted that two of the principal arterials in Albany are state highways (OR 99E and US 20). As such, they are subject to ODOT plans, policies, and standards, and improvements are to be undertaken according to ODOT approval and permitting processes.

The downtown section of US 20 has special characteristics resulting in a modified designation. The OHP provides for the designation of Special Transportation Areas (STAs) to accommodate central business districts and other activity centers oriented to non-auto travel. In such areas, growth management considerations justify flexibility in mobility, access spacing and design policies. All policy and design elements in this TSP that pertain specifically to the STA are subject to the approval of the STA designation by the Oregon Transportation Commission *(See Appendix F for the application for the special highway designation)*.

INTERSECTION OPERATIONS STANDARDS

The City of Albany does not currently have adopted level-of-service standards for signalized and unsignalized intersections. For signalized intersections and all-way stops under the City's jurisdiction a standard of LOS "D" or better (representing no more than 55 seconds of average delay) was used to evaluate intersection performance in the Transportation System Plan and is recommended to be adopted into the Development Code. For two-way stop unsignalized intersections under the City's jurisdiction a volume-to-capacity ratio of 0.85 for the critical movement was used to evaluate intersection performance in the TSP and is recommended to be adopted into the Development Code. Because intersections are the controlling factor of a roadway link's capacity, no roadway link operational standard is recommended.

Mobility standards for intersections under ODOT jurisdiction are contained in the Oregon Highway Plan.

STREET DESIGN STANDARDS

Street design standards support the functional and operational needs of streets such as travel volume, capacity, operating speed, and safety. The standards also are established to accommodate pedestrian and bicycle travel modes. They are necessary to ensure that the system of streets, as it develops, will be capable of safely and efficiently serving the traveling public while also accommodating the orderly development of adjacent lands.

City of Albany typical roadway sections including right-of-way, streetscape width, number of travel lanes, bicycle lanes, sidewalks, on-street parking, and tree wells or landscape strips are provided in Article 12 of the Albany Development Code. Sidewalks are required on all public streets within the city limits (local level and above). Bicycle lanes are required on all minor collector level streets and above.

The street design standards in Article 12 of the Albany Development Code were reviewed as part of the TSP update process. No specific changes, other than those noted on page 81, were identified as being necessary.

ACCESS MANAGEMENT STANDARDS

As the City of Albany continues to grow, its street system will become more heavily traveled. Consequently, it will become increasingly important to manage access on the arterial and collector street system as new development occurs, in order to preserve street function for carrying through traffic. ODOT has legal authority to regulate access points along OR 99E, US 20, Century Drive, and Airport Road.

The City of Albany independently manages access on all other arterial, collector and local streets under its jurisdiction. The City coordinates with Linn and Benton Counties on access decisions on County roads within the City's UGB.

The Oregon Transportation Planning Rule (TPR) defines access management as a set of measures regulating access to streets, roads, and highways, from public roads and private driveways. The TPR requires that new connections to arterials and state highways be consistent with designated access management categories. The City of Albany access management policies that maintain and enhance the integrity (capacity, safety, and level of service) of the city's streets can be found in Article 12 of the Albany Development Code. The Access Spacing Standards identify the minimum public street intersection and private access spacing standards for the City of Albany roadway network as they relate to new development and redevelopment. County facilities within the City's UGB are planned and constructed in accordance with these street design standards.

Access management standards vary depending on the functional classification and purpose of a given roadway. Roadways on the higher end of the functional classification system (i.e., arterials and major collectors) tend to have higher spacing standards, while facilities such as minor collectors and local streets allow more closely spaced access points. These standards apply to new development or redevelopment; existing accesses are allowed to remain as long as the land use does not change. As a result, access management is a long-term process in which the desired access spacing to an existing street slowly evolves over time as redevelopment occurs.

In implementing access management standards, parcels cannot be land-locked but must have some way of accessing the public street system. This may mean allowing shorter access spacing than would otherwise be allowed, but the possibility of providing shared access with a neighboring parcel should also be explored. Where a property has frontage on two roadways, access on the roadway of lower classification is preferred, all other things being equal.

ODOT Access Management Standards

The OHP specifies an access management classification system for state facilities based on a highway classification system. The OHP classifies OR 99E and US 20 as Regional Highways. Century Drive and Airport Road are designated as District Highways. Future developments along OR 99E, US 20, Century Drive, and Airport Road (new development, redevelopment, zone changes, and/or comprehensive plan amendments) will be required to meet the OHP Access Management policies and standards.

PEDESTRIAN, BICYCLE & MULTI-USE TRAIL SYSTEM PLAN

The City of Albany's pedestrian, bicycle, and multi-use trail system plan provides guidance on how to best facilitate pedestrian and bicycle travel over the next 20 years. A map of the pedestrian, bicycle, and multi-use trail system plan is provided in Figure 7-5. The multi-use trail alignments in Figure 7-5 are conceptual in nature and subject to modification during design. A table including all of the project names and types is provided in Table 7-2.

Figure 7-5 also identifies one transit project, T1, in a map inset which has been included separate from the Transit Master Plan as it relates to pedestrian access to transit stops. T1 includes pedestrian crossing improvements at 28 bus stop locations to improve pedestrian facilities for transit riders at bus stop locations located on higher volume roadways and further than 200 feet from the nearest marked pedestrian crossing. Pedestrian crossing improvements and/or stop relocations to place bus stops closer to pedestrian crossings are recommended at these stops. Pedestrian crossing improvements are also recommended near the bus stop on Clay Street north of 14th Street based on comments from ATS bus drivers to enable transit customers to cross Clay Street between Heritage Mall and Fred Meyer. A sidewalk connection approximately 200 feet connecting to the hospital and a paved bus-stop pad on which passengers may wait is also recommended at the transit stop located on the north side of 7th Street at Takena Street.

Prioritization of bike, pedestrian and multi-use path projects was based on a number of factors:

- the proximity of the proposed connection to trip attractors that create high demand;
- whether a given street serves as a transit route, since transit routes typically attract pedestrians walking to or from bus stops and since buses have bike racks; and,
- whether there are safety issues such as high vehicular traffic volumes, crash history or poor sight distances.

It should be noted that the design standard for all roads within the City of Albany Urban Growth Boundary includes sidewalks and bicycle lanes on both sides of public streets. Many roadways within the Urban Growth Boundary that do not currently have sidewalks have not been upgraded to an urban standard. When these roads are upgraded to an urban standard (either by the City, County or private development), sidewalks will be included. All new roadways built within the Urban Growth Boundary will include sidewalks and all new collectors and arterials will include bicycle lanes, unless an exception to design standards is granted. Therefore, failure of the Pedestrian, Bicycle, and Multi-Use Trail System Plan to identify a facility without sidewalks or bicycle lanes on the project list, does not indicate that sidewalks and bicycle lanes are not required on this facility. *Additional details about these pedestrian, bicycle, and multi-use path projects can be found on the project prospectus sheets in Appendix E.*

TABLE 7-2 PEDESTRIAN, BICYCLE, AND MULTI-USE TRAIL PROJECT TABLE

ID	Project Name	Project Type
P1	Springhill Drive	Sidewalk
P2	99E/24th Avenue	Crossing Improvement
P3	Oregon 99E: Burkhart to Waverly	Crossing Improvement
P4	Ferry Street	Sidewalk
P5	Columbus Street	Sidewalk
P6	Geary Street	Sidewalk
P7	Airport Road	Sidewalk
P8	Killdeer Street	Sidewalk
P9	Waverly Drive	Sidewalk
P10	Albany-Santiam Canal Pedestrian Esplanade	Pedestrian Esplanade
P11	Thurston Street Canal Pedestrian Esplanade	Pedestrian Esplanade
P12	Gibson Hill Road	Sidewalk
B1	14th Avenue	Sharrows
B2	Waverly Drive	Bike Sharrows
B3	Hill Street	Bike Lanes
B4	24th Avenue	Bike Sharrows
B5	Jackson Street	Bike Lanes
B6	Center Street	Bike Sharrows
B7	US 20, North Albany	Shoulder to Bike Lanes
B8	1st Avenue	Bike Boulevard
B9	2nd Avenue	Bike Boulevard
B10	Madison Street/7th Avenue	Bike Boulevard
B11	7th Avenue	Bike Boulevard
B12	Takena	Bike Boulevard
B13	Liberty/Lakewood	Bike Boulevard
B14	12th Avenue (West)	Bike Boulevard
B15	Bain Street	Bike Boulevard
B16	South Shore Drive	Bike Boulevard
B17	Shortridge Street	Bike Boulevard
B18	24th Avenue	Bike Boulevard
B19	38th Avenue and 39th Avenue	Bike Boulevard
B20	Lyon Street	Sharrows
B21	Ellsworth Street	Sharrows
M1	Queen/Geary Periwinkle Path	Crossing Improvement
M2	Oak Creek Trail	Multiuse Path

M3	West Timber-Linn Trail	Multiuse Path
M4	South Waterfront Trail	Multiuse Path
M5	Albany-Corvallis Multiuse Path	Multiuse Path
M6	Albany-Corvallis Multiuse Path	Multiuse Path
M7	East Timber-Linn Trail	Multiuse Path
M8	Bain Street/Waverly Lake Trail	Multiuse Path
M9	Lebanon Trail	Multiuse Path
M10	Periwinkle Trail Extension	Multiuse Path
M11	East Albany Willamette River Bridge	Multiuse Path
M12	99E/Oak Creek	Crossing Improvement
M13	US 20/99E Undercrossing	Crossing Improvement
T1	Improved Pedestrian Crossings at Transit Stops	Transit Stop Improvements

P – Pedestrian Project
B – Bike Project
M – Multi-Use Path Project
T – Transit Project

Figure 7-5

Willamette River

P12 P1 P10 P11 P2 P3 P4 P5 P6 P7 P8 P9

M1 M2 M3 M4 M5 M6 M7 M8 M9 M10 M11 M12 M13

B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 B20

Project T1: Proposed Transit Stop Improvements

Improvement Timeframe

- Short-term
- Medium-term
- Long-term/ Project-Driven

Improvement Type

- Crossing Improvement
- Bike Project
- Pedestrian Project
- Multi-Use Path Project

Destinations

- School
- Major Employer
- Other
- Albany General Hospital
- Amtrak Station
- Public Library
- Public Building

Boundaries

- Parks
- Urban Growth Boundary
- City Limitis

Other Roads

- Study Roads
- Local Roads

0 0.25 0.5 0.75 1 Miles

City of Albany, Oregon

Albany Transportation System Plan

Planned Bicycle and Pedestrian Improvements

Note: This map shows stand-alone projects only. All new roadway and urban upgrade projects will include bike and ped facilities

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PLANNED STUDIES

A number of transportation planning and engineering studies have been included on the TSP project list as future needs. Each of the study locations are described in Table 7-3. Several of the study locations are shown on Figure 7-1. *Additional details about these projects can be found on the project prospectus sheets in Appendix E.*

TABLE 7-3 STUDY PROJECT TABLE

ID	Project Name	Project Type
S1	ADA Accessibility Audit	Pedestrian ADA Audit Plan
S2	Hwy 20 Corridor and Downtown Refinement Plan	Refinement Plan
S3	Safety Audit	Safety Analysis
S4	OR 99E Speed Study	Speed Study
S5	Downtown STA	STA Policy Designation
S6	Albany TSP MPO Update	Plan
S7	Major Corridors	ROW Preservation
S8	Wayfinding	Bike Wayfinding Plan
S9	Interstate 5 / OR 99E / Knox Butte	Refinement Plan
S10	Interstate 5 / US 20 (Santiam)	Refinement Plan

S- Study Project

S1

To be compliant with ADA standards, new sidewalks identified in the TSP will be constructed to ADA standards, including adequate width, grade and cross‐slope. However, many existing sidewalks should also be retrofitted with ADA-compliant facilities as funding allows with priority given to retrofits which will address areas of greatest impact for people with disabilities. Study Project #S1, identified above, will conduct an ADA audit of the existing sidewalk system and recommend projects and funding strategies to alleviate existing deficiencies. A public process to define the priorities will be decided by the City Council.

S9 and S10

The 1997 Albany TSP anticipated improvements to the I-5 interchange areas and to the US 20 corridor. These improvements have been shown, once again, to achieve ODOT mobility standards and have thus been included in this update of the TSP. Table 7-3 includes three refinement plans that are focused on the same ODOT facilities (two I-5 interchange areas and the US 20 corridor). These refinement plans are anticipated to address issues such as timing of need, function, feasibility, alignment, cross-section, phasing, environmental impact, and funding. Upon their conclusion, the City will take appropriate actions, which may include amendments to the TSP. Please refer to the City of Albany's TSP Financial Plan for additional detail on project funding and processes.

TRANSIT PLAN

See the Albany Transit Master Plan anticipated to be adopted in 2010.

AIRPORT PLAN

See the Albany Airport Master Plan.

PIPELINE AND TRANSMISSION SYSTEMS PLAN

See the Albany Water Facility Plan and Albany Wastewater Facility Plan.

IMPLEMENTATION PLAN

The Department of Land Conservation and Development (DLCD) administrative rule known as the Transportation Planning Rule (TPR, OAR 660-012) outlines the requirements for developing and implementing Transportation System Plans. The following items should occur in order to implement the TSP in compliance with OAR 660-012.

- The TSP should be adopted through a process for legislative actions with public notice and opportunity for testimony. The proposed legislation shall be heard by the Planning Commission and City Council.
- A staff report shall be prepared prior to adoption of the TSP to reflect the actual efforts completed to address compliance with applicable statewide planning goals and comprehensive plan policies.

In addition, City Council has identified the following updates to the Albany Development Code or Engineering Design Standards that they intend to address:

- Update signal spacing standards and roadway spacing standards for collectors and arterials
- Include roadway operations standards
- Encourage infill growth
- Pursue a system-wide wetland mitigation bank
- Update arterial and collector street design standards
- Consider requirements for meandering streets.
- Update access standards to arterial and collector streets
- Update parking standards on residential streets.

Additional details on how the TSP conforms with OAR660-012 is provided in Appendix A.

Section 8
Transportation Finance Element

Transportation Finance Element

Funding for transportation projects is increasingly in short supply even as existing infrastructure ages and transportation demands increase. The TPR requires that the Albany TSP address transportation funding, including the following elements:

- a list of planned transportation facilities and major improvements;
- a general estimate of the timing for planned transportation facilities and major improvements;
- determination of rough cost estimates for the transportation facilities and major investments identified in the TSP; and,
- a discussion of existing and potential financing sources to fund the development of each transportation facility and major improvement (which can be described in terms of guidelines or local policies).

The finance element provides a means for evaluating the likelihood that projects can be funded within the timelines identified in the TSP. Frequently, the costs for improvement projects exceed available funding. The financing element provides a context for evaluating projects and defining priorities in order to build on available opportunities and preserve existing infrastructure. A detailed financial plan for capital, operations and maintenance of the transportation system will be presented as a separate document. A summary of the total transportation improvements costs identified in Section 7 is provided in Table 8-1. As shown in Table 8-1, the total cost of the improvements included in the TSP is approximately $241,000,000.

TABLE 8-1 TSP IMPROVEMENT TOTAL COSTS

	Short-Term (0-5 years)	Mid-Term (6-10 years)	Long-Term (11-20 years)	Total (0-20 years)
Roadway Link & Intersection Projects	$10,279,000	$8,112,000	$196,901,000	$215,292,000
Ped, Bike, Multi-Use & Transit Projects	$964,000	$1,782,000	$22,401,000	$25,147,000
Study Projects	$305,000	$350,000	$225,000	$880,000
Total Costs	**$11,548,000**	**$10,244,000**	**$219,527,000**	**$241,319,000**

Additional details about these projects can be found in Section 7 and on the project prospectus sheets in Appendix E.

HISTORIC ALBANY TRANSPORTATION FUNDING REVENUES

Transportation capital improvements are typically funded through a combination of state, city, and private funds. This section documents Albany's historic revenue trends for transportation. These funds are used primarily for operations, maintenance, services and materials. In typical years, only a small portion is available for capital improvements.

During the past five years (FY '03-04 through FY '08-09), average annual revenues for Albany's transportation system have totaled approximately $4,150,000 (2009 dollars). These revenues have come from five primary sources. Table 8-2 shows a breakdown of the amounts and percentages of the total received from each of these sources.

TABLE 8-2 HISTORIC FUNDING SOURCES: TRANSPORTATION SYSTEM OPERATIONS, MAINTENANCE, & IMPROVEMENTS (2009 DOLLARS)

Source of Funds	Average Annual Revenues FY '03-04 through FY '08-09	Percentage of Total Average Annual Revenues	Typical Use of Funds (Operating or Capital)
State Motor Vehicle Fund	$2,095,000	47%	Operating
In Lieu of Franchise Fees	$808,000	18%	Operating
G.O. Bond Proceeds[1]	$0	0%	Capital
State and Federal Grants	$387,000	9%	Capital
Transportation SDCs	$861,000	19%	Capital
Interest on Investments	$302,000	7%	Capital
Total (All Major Sources)	**$4,453,000**	**100%**	

[1] The last GO bonds for street construction were in 1999.

- The **State Motor Vehicle fund** has provided and will likely continue to provide a significant portion of the funding for Albany's transportation system. A major component of the State Motor Vehicle fund is a fuel tax (per gallon).
- **In Lieu of Franchise Fees** are transferred from the water and sewer fund as compensation for the use of City-owned rights-of-way. Effective July 1, 1999, the amount has been five percent of the water and sewer user receipts.
- **State and federal grants** are normally targeted for specific types of projects and their availability is inconsistent. Grant opportunities should continue to be pursued when appropriate for projects needed by the City.
- **Transportation Systems Development Charges (SDCs)** are an excellent source of revenues for growth-required needs, but SDCs are only collected on development activity, so the revenues stream from SDCs may be volatile depending on market conditions. A new SDC methodology and fee should be developed based on the project list in Section 7.
- **Interest on investments** is entirely dependent on the amount of funds that are available for investment and market rates.
- **General Obligation (G.O.) Bonds** require voter approval, but they are a good source of funding for transportation improvements and major renovation projects. G.O. Bonds have not been used for the past ten years but should be considered for these types of projects in the future.

POTENTIAL FUNDING SOURCES

Some additional potential local transportation system funding sources the City may wish to consider include: 1) local vehicle fuel taxes, 2) transportation utility fees, and/or 3) local improvement districts (LIDs). Each of these alternative funding sources is described below.

Local Vehicle Fuel Tax

Previously, local governments in Oregon could adopt local vehicle fuel taxes, just like the state vehicle fuel taxes. Funds from these taxes could be used for the City's improvements, operations and maintenance of transportation facilities used by motor vehicles. House Bill 2001 prohibits cities from enacting or raising fuel taxes between now and 2014. Unless additional legislation is passed regarding local vehicle fuel taxes, local governments will be able to enact a local fuel taxes again in 2014 but it will require a vote of the citizens.

Transportation Utility Fee

A growing number of cities in Oregon are adopting transportation utility fees. These fees are based on consideration of transportation systems as utilities just like public water, wastewater, or stormwater systems. Fees are typically assessed by usage (e.g., average vehicle trips per development type), with revenues used for the City's transportation system improvements, operations and maintenance.

Local Improvement Districts (LIDs)

LIDs are used to construct or improve streets and other transportation facilities, with benefiting properties assessed a fee to pay the costs. LIDs are frequently used to fund local and collector streets, sidewalks, and other transportation facilities.