Corvallis Area Metropolitan Transportation Plan: Destination 2035

Adopted by the
Corvallis Area Metropolitan Planning Organization
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I. Introduction

A. Purpose

The purpose of this transportation plan is to devise strategies and outline a path to help the Corvallis Metropolitan Area achieve its vision and goals for a future transportation system. The plan is intended to direct future infrastructure developments in a manner that is closely aligned with the lifestyle and the values of the community, particularly those related to the conservation of energy, natural resources and the reduction of Greenhouse Gases (GHG). It outlines the area's transportation priority projects and policies and provides a blueprint for the orderly allocation of scarce resources. Additionally, it serves as the requisite document for the flow of much needed federal transportation funds to the area. This plan is an update to the Corvallis Area Metropolitan Transportation Plan: Destination 2030, which was adopted in 2006.

B. Leading Agency

The Corvallis Area Metropolitan Planning Organization (CAMPO) is an association of local governments made up of representatives of Benton County, the cities of Corvallis, Philomath and Adair Village and the Oregon Department of Transportation (ODOT). CAMPO was designated a Metropolitan Planning Organization (MPO) by the Oregon Governor in December 2002 to carry out the federal requirements of the Metropolitan Transportation Planning Process in the Corvallis Urbanized Area.

According to the US Census, the population of the City of Corvallis and its densely developed surrounding areas had reached 54,229 in April 2000. Per a federal requirement (US Code, Title 23) urban areas with a population of 50,000 (called Urbanized Area) are required to form an MPO such as CAMPO (Fig. I-1). Among the responsibilities of CAMPO is the development and updating of the regional transportation plan for the Corvallis Urbanized Area.

C. Development Process

In mid 2000's, the *Corvallis Area Metropolitan Transportation Plan: Destination 2030* was developed through a collaboration of local governments, the Oregon Department of Transportation (ODOT), citizens, stakeholders and special interest groups in the Corvallis Urbanized Area. The Plan was adopted in September 2006. The *Corvallis Area Metropolitan Transportation Plan: Destination 2035* is an update to the 2006 Plan.

The first step in the plan update process was establishing a vision and goals for the future transportation system of the Planning Area. Next, the existing conditions of the Corvallis area transportation system were inventoried. The five transportation system alternatives from the previous plan were retained, as was the preferred alternative. The lists or projects and policies recommended in this Plan are within the framework of the Preferred Alternative and have been updated.

The development of the Plan involved three cohesive and integrated tracks: a public participation and input process, technical analyses, and directives from the CAMPO Policy Board. The role of

the public and the agency's efforts to engage the public in the development of the Plan are described in Section IV-Public Involvement.

The technical track involved the work of CAMPO's Technical Advisory Committee, comprised of the public works and transportation staff of the member jurisdictions, staff of CAMPO, Oregon Cascades West Council of Governments, and ODOT. The resulting technical work was prepared for review by the public and the elected officials. Additionally, the technical track also retained applicable data analyses and modeling forecasts completed by transportation planning and engineering consultants and the ODOT modeling section (respectively) during the development of the 2006 Plan. While no new modeling was completed as part of this update, if more recent data was available, it was also incorporated into the plan to the degree possible.

Finally, the CAMPO Policy Board steered the development of the plan at the policy level. According to federal rules, the adoption of the plan by the MPO Policy Board constitutes the approval of a transportation plan for the Corvallis Urbanized Area.

D. Planning Area

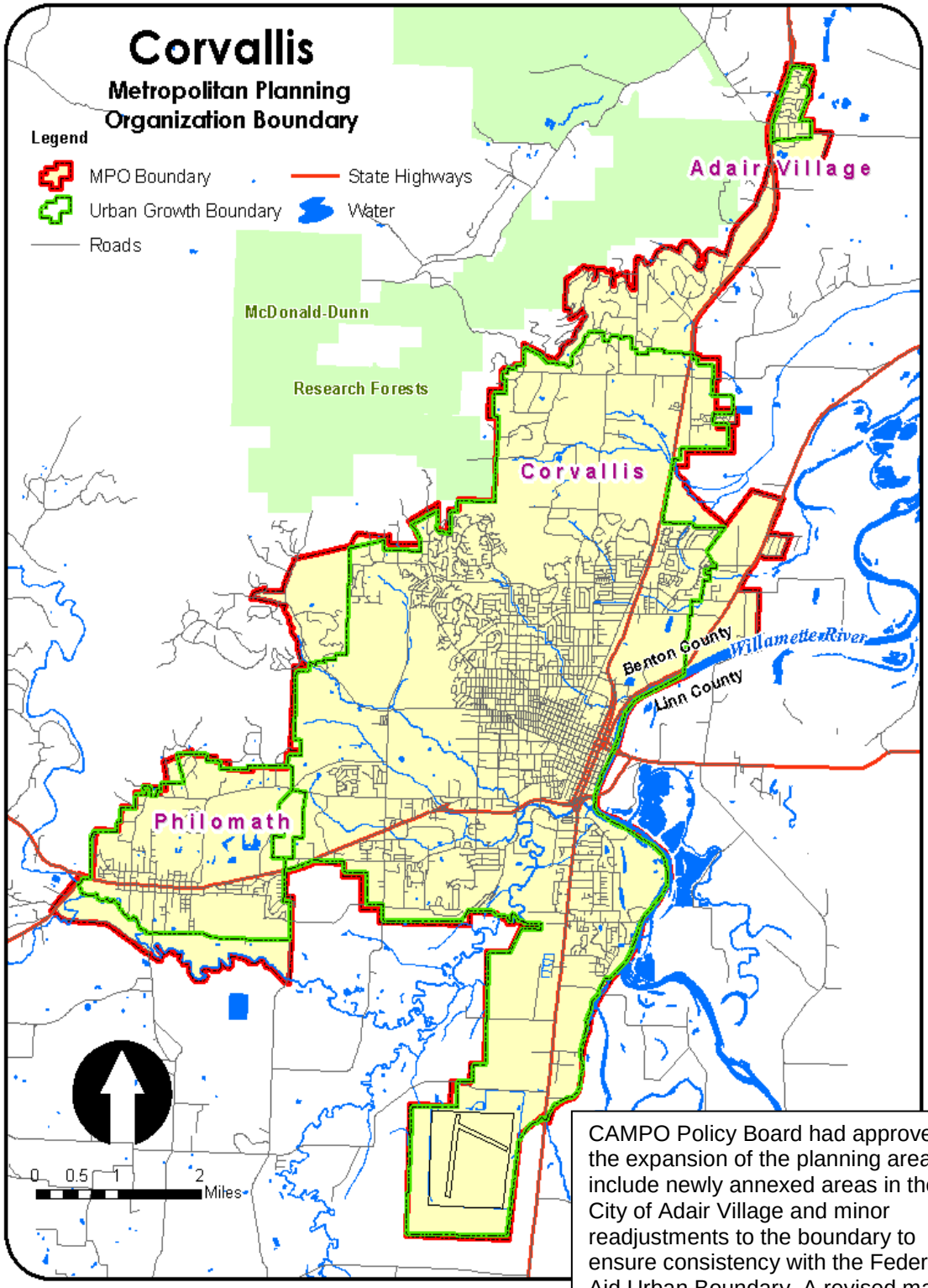
CAMPO's Planning Area expands slightly beyond the Corvallis Urbanized Area boundary as defined by the 2000 US Census (Figure I-1). It stretches along Pacific Highway West (OR 99W), from the Corvallis Municipal Airport in the south to Adair Village in the north. The Willamette River forms the eastern boundary of the Planning Area. The east-west expanse of the area extends along the Newport-Corvallis Highway (US 20/OR 34) to the west of City of Philomath, where US 20 and OR 34 decouple.

The Planning area includes the entire cities of Corvallis, Philomath and Adair Village and their Urban Growth Boundaries, as well as the parts of Benton County that are in between these cities. *At the time of this update, the CAMPO Policy Board had approved the expansion of the planning area to include newly annexed areas in the City of Adair Village and minor readjustments to the boundary to ensure consistency with the Federal Aid Urban Boundary; however, these updates to the map are pending results of the 2010 US Census. A revised map will be adopted following the 2010 Census release for Urbanized Areas.*

E. Document Structure

This introduction forms Section I of the document. Section II describes the federal and state regulatory framework within which the plan was developed and Section III states the Plan's Vision and Goals. Section IV provides detail on the public involvement process. Sections V and VI describe the Planning Area and the elements of the existing transportation system in the area. Section VII presents the alternatives considered for meeting the goals of the plan. Section VIII considers sustainability within the transportation sector, and Section IX includes the recommendations of the plan. A glossary of acronyms and the appendices of the Plan follow the main body of the document. The maps have been collated at the end of the document.

Figure I-1: CAMPO Area Map



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II. Regulatory Framework

This Transportation Plan is intended to meet both federal and state requirements for regional transportation plans as described in the Safe, Accountable, Flexible, Efficient, Transportation Equity Act – a Legacy for Users (SAFETEA-LU), the applicable Transportation Act during the development of the document. This section describes the federal and state rules, regulations and policies that influence the content of this document.

A. Federal Regulation

According to the 23 CFR, §450.322:

"(a) The metropolitan transportation planning process shall include the development of a transportation plan addressing no less than a 20-year planning horizon as of the effective date. …. In attainment areas, the effective date of the transportation plan shall be its date of adoption by the MPO.

(b) The transportation plan shall include both long-range and short-range strategies/actions that lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand.

(c) The MPO shall review and update the transportation plan at least every four years in air quality nonattainment and maintenance areas and at least every five years in attainment areas to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to at least a 20-year planning horizon. In addition, the MPO may revise the transportation plan at any time using the procedures in this section without a requirement to extend the horizon year. The transportation plan (and any revisions) shall be approved by the MPO and submitted for information purposes to the Governor. Copies of any updated or revised transportation plans must be provided to the FHWA and the FTA.

(d) In metropolitan areas that are in nonattainment for ozone or carbon monoxide, the MPO shall coordinate the development of the metropolitan transportation plan with the process for developing transportation control measures (TCMs) in a State Implementation Plan (SIP).
[Not Applicable to this Area];

(e) The MPO, the State(s), and the public transportation operator(s) shall validate data utilized in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update.

(f) The metropolitan transportation plan shall, at a minimum, include:

(1) The projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan;

(2) Existing and proposed transportation facilities (including major roadways, transit, multimodal and intermodal facilities, pedestrian walkways and bicycle facilities, and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that

serve important national and regional transportation functions over the period of the transportation plan. In addition, the locally preferred alternative selected from an Alternatives Analysis under the FTA's Capital Investment Grant program (49 U.S.C. 5309 and 49 CFR part 611) needs to be adopted as part of the metropolitan transportation plan as a condition for funding under 49 U.S.C. 5309;

(3) Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods;

(4) Consideration of the results of the congestion management process in TMAs that meet the requirements of this subpart, including the identification of SOV projects that result from a congestion management process in TMAs that are nonattainment for ozone or carbon monoxide;
[Not Applicable to this Area];

(5) Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure and provide for multimodal capacity increases based on regional priorities and needs. The metropolitan transportation plan may consider projects and strategies that address areas or corridors where current or projected congestion threatens the efficient functioning of key elements of the metropolitan area's transportation system;

(6) …In all areas (regardless of air quality designation), all proposed improvements shall be described in sufficient detail to develop cost estimates;

(7) A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The discussion shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation;

(8) Pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g);

(9) Transportation and transit enhancement activities, as appropriate; and

(10) A financial plan that demonstrates how the adopted transportation plan can be implemented.

(i) For purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).

(ii) For the purpose of developing the metropolitan transportation plan, the MPO, public transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under §450.314(a). All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan shall be identified.

(iii) The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified.

(iv) In developing the financial plan, the MPO shall take into account all projects and strategies proposed for funding under title 23 U.S.C., title 49 U.S.C. Chapter 53 or with other Federal funds; State assistance; local sources; and private participation. Starting December 11, 2007, revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect "year of expenditure dollars," based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).

(v) For the outer years of the metropolitan transportation plan (i.e. , beyond the first 10 years), the financial plan may reflect aggregate cost ranges/cost bands, as long as the future funding source(s) is reasonably expected to be available to support the projected cost ranges/cost bands.

(vi) For nonattainment and maintenance areas, the financial plan shall address the specific financial strategies required to ensure the implementation of TCMs in the applicable SIP.
[Not Applicable to this Area].

(vii) For illustrative purposes, the financial plan may (but is not required to) include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available.

(viii) In cases that the FHWA and the FTA find a metropolitan transportation plan to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (i.e. , by legislative or administrative actions), the FHWA and the FTA will not withdraw the original determination of fiscal constraint; however, in such cases, the FHWA and the FTA will not act on an updated or amended metropolitan transportation plan that does not reflect the changed revenue situation.

(g) The MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve, as appropriate:

(1) Comparison of transportation plans with State conservation plans or maps, if available; or

(2) Comparison of transportation plans to inventories of natural or historic resources, if available.

(h) The metropolitan transportation plan should include a safety element that incorporates or summarizes the priorities, goals, countermeasures, or projects for the MPA contained in the Strategic Highway Safety Plan required under 23 U.S.C. 148, as well as (as appropriate) emergency relief and disaster preparedness plans and strategies and policies that support homeland security (as appropriate) and safeguard the personal security of all motorized and non-motorized users.

(i) The MPO shall provide citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan using the participation plan developed under §450.316(a).

(j) The metropolitan transportation plan shall be published or otherwise made readily available by the MPO for public review, including (to the maximum extent practicable) in electronically accessible formats and means, such as the World Wide Web.

(k) A State or MPO shall not be required to select any project from the illustrative list of additional projects included in the financial plan under paragraph (f)(10) of this section.

(1) In nonattainment and maintenance areas for transportation-related pollutants, the MPO, as well as the FHWA and the FTA, must make a conformity determination on any updated or amended transportation plan in accordance with the Clean Air Act and the EPA transportation conformity regulations (40 CFR part 93). During a conformity lapse, MPOs can prepare an interim metropolitan transportation plan as a basis for advancing projects that are eligible to proceed under a conformity lapse. An interim metropolitan transportation plan consisting of eligible projects from, or consistent with, the most recent conforming transportation plan and TIP may proceed immediately without revisiting the requirements of this section, subject to interagency consultation defined in 40 CFR part 93. An interim metropolitan transportation plan containing eligible projects that are not from, or consistent with, the most recent conforming transportation plan and TIP must meet all the requirements of this section. [Not Applicable to this Area]"

B. Oregon's Transportation Planning Rule (TPR)

The Transportation Planning Rule (TPR) (OAR660-012) requires MPOs to develop a Transportation System Plan (TSP) for a coordinated network of transportation facilities and services of regional significance. The TSP is to provide for a safe, convenient and economic transportation system that reduces reliance on the automobile so that air pollution, traffic and other livability problems typically faced by urban areas might be avoided.

As a TSP, this document must address:

(1) A TSP shall establish a coordinated network of transportation facilities adequate to serve state, regional and local transportation needs.

(2) The TSP shall include the following elements:

(a) A determination of transportation needs as provided in OAR 660-012-0030;

(b) A road plan for a system of arterials and collectors and standards for the layout of local streets and other important non-collector street connections. Functional classifications of roads in regional and local TSP's shall be consistent with functional classifications of roads in state and regional TSP's and shall provide for continuity between adjacent jurisdictions. The standards for the layout of local streets shall provide for safe and convenient bike and pedestrian circulation necessary to carry out OAR 660-012-0045(3)(b). New connections to arterials and state highways shall be consistent with designated access management categories. The intent of this requirement is to provide guidance on the spacing of future extensions and connections along existing and future streets which are needed to provide reasonably direct routes for bicycle and pedestrian travel. The standards for the layout of local streets shall address:

(A) Extensions of existing streets;

(B) Connections to existing or planned streets, including arterials and collectors; and

(C) Connections to neighborhood destinations.

(c) A public transportation plan which:

(A) Describes public transportation services for the transportation disadvantaged and identifies service inadequacies;

(B) Describes intercity bus and passenger rail service and identifies the location of terminals;

(C) For areas within an urban growth boundary which have public transit service, identifies existing and planned transit trunk routes, exclusive transit ways, terminals and major transfer stations, major transit stops, and park-and-ride stations. Designation of stop or station locations may allow for minor adjustments in the location of stops to provide for efficient transit or traffic operation or to provide convenient pedestrian access to adjacent or nearby uses.

(D) For areas within an urban area containing a population greater than 25,000 persons, not currently served by transit, evaluates the feasibility of developing a public transit system at buildout. Where a transit system is determined to be feasible, the plan shall meet the requirements of paragraph (2)(c)(C) of this rule.

(d) A bicycle and pedestrian plan for a network of bicycle and pedestrian routes throughout the planning area. The network and list of facility improvements shall be consistent with the requirements of ORS 366.514;

(e) An air, rail, water and pipeline transportation plan which identifies where public use airports, mainline and branch line railroads and railroad facilities, port facilities, and major regional pipelines and terminals are located or planned within the planning area. For airports, the planning area shall include all areas within airport imaginary surfaces and other areas covered by state or federal regulations;

(f) For areas within an urban area containing a population greater than 25,000 persons a plan for transportation system management and demand management;

(g) A parking plan in MPO areas as provided in OAR 660-012-0045(5) (c);

(h) Policies and land use regulations for implementing the TSP as provided in OAR 660-012-0045;

(i) For areas within an urban growth boundary containing a population greater than 2500 persons, a transportation financing program as provided in OAR 660-012-0040.

(3) Each element identified in subsections (2)(b)-(d) of this rule shall contain:

(a) An inventory and general assessment of existing and committed transportation facilities and services by function, type, capacity and condition:

(A) The transportation capacity analysis shall include information on:

(i) The capacities of existing and committed facilities;

(ii) The degree to which those capacities have been reached or surpassed on existing facilities; and

(iii) The assumptions upon which these capacities are based.

(B) For state and regional facilities, the transportation capacity analysis shall be consistent with standards of facility performance considered acceptable by the affected state or regional transportation agency;

(C) The transportation facility condition analysis shall describe the general physical and operational condition of each transportation facility (e.g., very good, good, fair, poor, very poor).

(3)(b) A system of planned transportation facilities, services and major improvements. The system shall include a description of the type or functional classification of planned facilities and services and their planned capacities and performance standards;

The planning process must consider alternatives for meeting current and future needs and evaluate improvements in the existing system, new facilities and services for a variety of modes, transportation system management measures, demand management measures, and a "no build" alternative. The TPR also specifies the standards to be used in evaluating and selecting system alternatives. The TPR also requires Transportation Plans include specific measures for increasing the modal share of non-auto trips, increasing average auto occupancy and other criteria.

The TSP's financing program must list planned projects, provide an estimate of timing and cost, and discuss the potential of existing and new funding mechanisms to meet transportation needs.

The MPO must coordinate with affected state and federal agencies, special districts and transportation providers in the development of the plan. The Transportation Planning Rule requires cities and counties within the MPO to adopt the TSP as part of their Comprehensive Plans.

The Regional Transportation Plan is required to include interim benchmarks to assure satisfactory progress towards meeting the plan's objectives at five-year intervals over the planning period.

The plan is to include policies to guide selection of transportation facility and service improvements for funding. These policies must consider the priority to be given to facilities and improvements that support mixed-use, pedestrian friendly development and increased use of alternative modes.

The TPR also requires regional TSPs to provide for coordinated project development among affected local governments and specifies necessary components of that coordinated process.

The regional transportation plan must also be consistent with the Oregon Transportation Plan and the State's modal plans, such as the Oregon Highway Plan. See Appendix A for information on these plans.

III. Vision and Goals

A. Vision

The Vision of the Transportation Plan was developed based on the most common elements of the visions described in the area's transportation and land use plans. The draft vision was reviewed and modified by the general public, the Ad hoc Committee and the Technical Advisory Committee. Through these processes the Policy Board adopted the following Vision for the Transportation Plan.

> *"By 2035 the Corvallis Metropolitan Area's transportation system provides for safe, efficient and convenient movement of people and goods to support a robust and burgeoning local and regional economy.*
>
> *The transportation system offers a variety of mode choices to all people for intra and inter-regional travels in a manner which helps in reducing greenhouse gas and other pollutant emissions and conserving energy and natural resources. The multimodal system provides adequate accessibility while it preserves the integrity of the built and natural environments.*
>
> *Coordination of transportation and land use decisions has lowered the rate of growth in vehicle miles of travel. Partnership between the public and private sectors has secured the needed capital by utilizing all available financial resources."*

B. Goals

The Goals of the Transportation Plan were developed based on a review of the goals found in the area's transportation plans and in conformance with the above vision and the regulations set out in the Corvallis Area MPO's adopted Title VI Plan. The Ad hoc Committee and the Technical Advisory Committee reviewed and commented on the Goals. In accordance with the recommendations of these groups, the Policy Board adopted the following Goals for the Transportation Plan:

1. **To provide for safe, convenient and efficient movement of people and goods throughout the planning area consistent with the community's livability goals**

2. **To provide for and promote alternative modes of transportation (transit, biking, walking, etc.)**

3. **To provide for economic vitality of the planning area and the region**

4. **To preserve integrity of neighborhoods and the natural environment**

5. **To provide accessibility and connectivity to destinations within and outside of the planning area**

6. **To maximize the life of existing transportation facilities**

7. **To develop an energy efficient transportation system**
8. **To coordinate land use and transportation decisions**
9. **To promote use of renewable energy and reduce reliance on fossil fuel**
10. **To provide for the reduction of Greenhouse Gases generated by transportation**

IV. Public Involvement

The residents of the Corvallis area and its public officials highly value citizen participation in public decision-making processes. In 2004, CAMPO adopted the *Public Involvement Framework* document, which was revisited in 2010 as part of this process (Appendix B). The document outlines the public outreach efforts required for CAMPO's transportation planning and programming activities.

The *Framework* calls for development of a specially tailored public involvement plan for each of CAMPO's major planning activities. In compliance with this directive, a special *Public Involvement Plan* was adopted by the Policy Board for the development of the *Corvallis Metropolitan Area Transportation Plan for 2035* (Appendix C). Figure IV-1 shows the public involvement process used in the development of the Transportation Plan.

Implementation of the *Public Involvement Plan* involved two types of outreach activities: Continuous and Episodic.

A. Continuous Outreach

Throughout the development of the Plan, members of the public were provided opportunities to comment at all meetings of the Policy Board. Dates, time and location of the meetings were announced in the newspaper. All material (agendas, minutes of the meetings, draft documents, etc.) were made available on the CAMPO website.

B. Episodic Outreach

In addition to the continuous outreach effort, special outreach and public involvement opportunities were structured into the process. These included initial, midcourse and final public meetings.

1. Public Meetings

Three public meetings were held to gather public input on the Plan update. The initial meeting was held to discuss the purpose and scope of the Plan, findings of the existing conditions inventory, and to gather input on issues currently existing in the transportation system. Notices for each meeting were posted on the MPO website and were published twice in the *Corvallis Gazette-Times*. Interested citizens and members of Corvallis-area transportation related committees in the Urbanized Area were emailed regarding the event.

Public input from this first meeting helped to further refine the Plan's Vision and Goals and identify transportation issues to be addressed by the Plan. Subsequent to the public meeting, the Ad hoc Committee, comprised of the chairs of various city and county transportation committees, reviewed the input gathered from the public and provided comment on the draft vision and goals.

The second and third public meetings focused on proposed updates to the lists of recommended and illustrative transportation system improvements through 2035, the list of proposed policies, and the list of recommended studies.

All meetings were advertised in the media and copies of the draft Transportation Plan were made available to the public. The public was informed of the anticipated adoption schedule and additional opportunities for providing comments.

2. Public Hearing

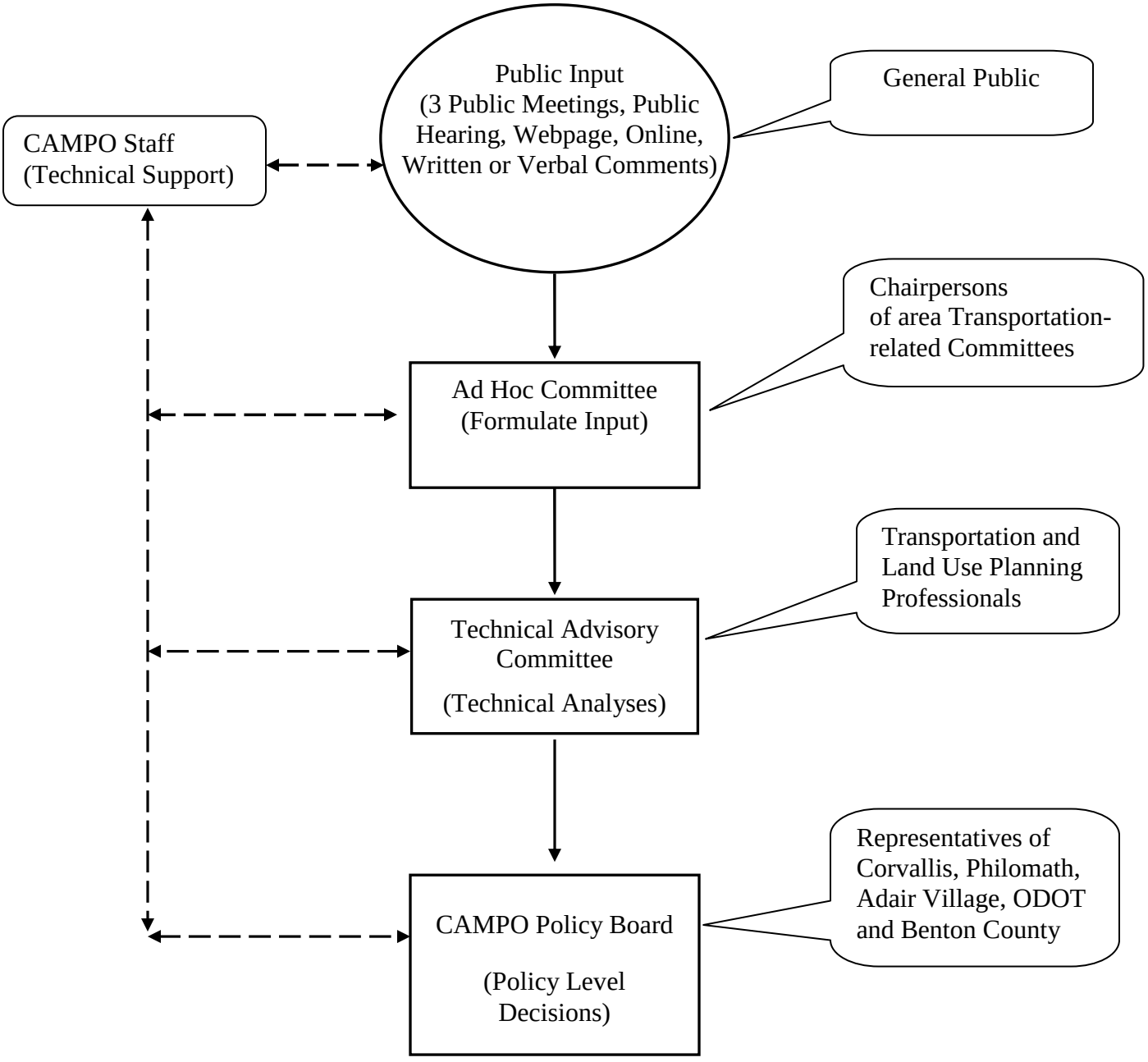
A voluntary Public Hearing was held by the CAMPO Policy Board on March 15th, 2012 to receive public testimonies prior to deliberations on the Transportation Plan Update. A summary of written comments was provided to the Policy Board. The public was also informed about the adoption schedule of the Transportation Plan.

Figure IV-1

Public Involvement Process

for the development of the

Corvallis Area MetropolitanTransportation Plan: Destination 2035



V. Planning Area Characteristics

This section provides a review of the existing transportation facilities and their conditions in the Planning Area.

A. Political and Physical Characteristics

The Corvallis Metropolitan Planning Area is located in the Willamette Valley of western Oregon, approximately 75 miles south of Portland, 45 miles north of Eugene, and 14 miles southwest of the city of Albany. The Planning Area covers approximately 39.47 square miles (25,260 acres) extending from Adair Village southward to the Corvallis Municipal Airport. The Planning Area was recently expanded with the annexation of 127.5 acres into the Adair Village urban growth boundary. The Willamette River forms the eastern boundary and the City of Philomath is on the western edge of the Planning Area. The cities of Corvallis, Philomath, and Adair Village are wholly within the Planning Area, as well the parts of Benton County adjacent to those cities. The arterial and collector roadways subject to this plan are under the jurisdiction of Benton County, the three cities, the Oregon Department of Transportation or Oregon State University. Major state highway facilities located within the Planning Area include the Corvallis to Lebanon Highway (US 20), the Alsea Highway (OR 34), the Albany-Corvallis Highway (US 20), the Newport-Corvallis Highway (US 20 / OR 34), and Pacific Highway West (OR 99W). In Chapter 1, Figure I-1 depicts the Planning Area.

The topography is a mix of flat land in the eastern portion with rolling hills and steeper terrain primarily located in the north and western portions. The Willamette River and Mary's River are the most prominent water features in the area. Floodplains and numerous wetlands and are located near the rivers and creeks that run through the Area.

1. Land Use and Zoning

The understanding of interactions between land use and transportation is critical to transportation and land use planning. Location of human activities and lay of land determine travel patterns, traffic volumes and the need for transportation facilities, while transportation infrastructure influences land use patterns. Map V-1 shows land use designations within the Planning Area.

The central areas of Corvallis and Philomath are characterized by compact grid street patterns, while much of the remainder of the Planning Area is less dense and features a more circuitous street pattern. Land designated for industrial use in Corvallis tends to be in the southern part of town near the Corvallis Airport, along the railroad corridor, in southwest, around Technology Loop, and east of Pacific Highway West (OR 99W) along Circle and Walnut Boulevards. Land in Philomath designated for industrial use is primarily north of the Newport-Corvallis Highway (US 20/OR 34). Commercial zones in the area are concentrated along major roadway corridors and in downtown Corvallis and Philomath. Public land includes parks and extensive Oregon State University land. Much of the Planning Area is zoned as residential.

City of Corvallis

The City of Corvallis is the primary commercial center of the Planning Area. The most notable commercial areas of the city include the downtown central business district (CBD), 9th Street, Pacific Highway West (OR 99W) in the southern part of the city, Philomath Boulevard and Kings Boulevard. Development in the Corvallis CBD is relatively compact and includes a mixture of uses, such as restaurants, retail shops, gas stations, and banks. Many government and cultural uses are also located in the CBD. The roadway system in the downtown area is characterized by a series of one-way streets with pedestrian and bicycle facilities. The City of Corvallis transit center is located in the CBD. The Corvallis Comprehensive Plan identifies several major and minor neighborhood centers, which are located throughout the city, primarily along major arterials.

Much of the industrial land in Corvallis is located in the southern portion of the city, just north of the Corvallis Municipal Airport, along the railroad corridor, and along Circle and Walnut Boulevards east of Pacific Highway West (OR 99W). Corvallis also has a unique Research Technology designation, which is primarily located in the Sunset Research Park and near the Hewlett-Packard campus.

Higher-density residential areas are generally located near major roadways, including the southern portion of Pacific Highway West (OR 99W), around the Oregon State University campus and near other employment centers. Lower-density residential areas are in the northern and southwestern parts of the city.

Most of the agricultural land in the Planning Area is west of Corvallis. Public Institutional land is another zoning designation that includes Oregon State University and the Corvallis Municipal Airport property. Most of the land designated as Open Space within the city is located near the Willamette and Mary's Rivers and on the western edge of the city.

City of Philomath

The City of Philomath is located in the western part of the Planning Area. The newly constructed couplet on Main and Applegate Streets (Corvallis-Newport Highway / US 20/OR 34) forms the central business district in the city of Philomath. All of the designated public land (including schools and parks) is located south of Main Street. The Philomath Rodeo Grounds are also located south of Main Street. Industrial uses are located primarily in the northern area of the city. A significant industrial site is the mill property at the intersection of the Newport-Corvallis Highway (US 20/OR 34) and Alsea Highway (OR 34), just west of the Philomath city limits. Most residential uses are located in the northwest and southeast areas of town.

City of Adair Village

Adair Village is located north or Corvallis along Pacific Highway West (OR 99W). Philomath was built on the site of a World War II military base and its settlement pattern reflects that history. Development in Adair Village is primarily residential, with exceptions including the Santiam Christian School, a convenience store, a restaurant, a drive-through coffee stand and the

Oregon Department of Fish and Wildlife office. The 123-acre Adair County Park is located to the east of the city. The northern city limit borders the E.E. Wilson Wildlife Area. The City recently expanded its urban growth boundary to include 127.5 acres of land south of the city limits.

Unincorporated Benton County

The unincorporated portions of Benton County between Corvallis and Philomath and between Corvallis and Adair Village are characterized by low-density residential development, including working and hobby farms. Most of these areas are zoned by Benton County as 2-acre, 5-acre or 10-acre residential land. The Benton County Fairgrounds are located west of Corvallis with access from NW 53rd Street.

2. Schools and Parks

Community focal points, such as schools and parks, are important to understanding travel patterns. These facilities attract pedestrians, bicyclists, transit users, and drivers and have specific transportation needs (e.g., pedestrian safety around schools). Awareness of the location of these facilities is important to planning for an effective regional transportation system.

Schools

Trips to and from school by students and teachers – via bus, walking, bicycling, or driving – affects transportation patterns as well as transportation infrastructure planning and design. Schools also attract people outside of school hours for sports, extracurricular events, and community events held at school facilities. There are 17 public schools located within the Planning Area. Eleven of the schools are inside the Corvallis city limits, including eight elementary schools, two middle schools and the Corvallis High School. Two elementary schools, a middle school and a high school are within the Philomath city limits, and one elementary school and Crescent Valley High School are in unincorporated Benton County.

There are also several private schools within the study area, including Santiam Christian School in Adair Village, Ashbrook Independent School, Corvallis Montessori School, Corvallis Waldorf School, Good Samaritan School, and Zion Lutheran School in Corvallis. Corvallis is also home to an extension of Linn-Benton Community College – The Benton Center.

Oregon State University (OSU)

OSU is located just west of downtown Corvallis, less than one mile from the Willamette River. The main campus is bound by 9th Street to the east, Monroe Street to the north, Western Boulevard to the south, and 35th Street to the west.

The main OSU campus encompasses approximately 570 acres, including 215 campus buildings with over six million square feet of building space. The campus also has several athletic facilities, such as Reser Stadium, which has a capacity of approximately 46,200 people. The campus has 72 acres of parking, which provides space for approximately 7,717 vehicles. The campus also has approximately 5,800 bicycle parking spaces, and is planning to add 300-350

additional spaces. Approximately one half of the bicycle parking spaces are covered. In 2005, a multistory parking garage was constructed across the street from Reser Stadium.

OSU students and faculty make up a large portion of transportation users in Corvallis, and therefore affect regional transportation patterns and planning. OSU is the largest employer in the Planning Area with over 4,600 faculty and staff. Students are a significant portion of the Corvallis population. Enrollment for Fall 2010 reached a record of 23,761, which was an 8.2% increase over 2009 enrollment (21,969). Approximately half of Corvallis Transit System (CTS) transit rides are by OSU students or faculty/staff.

Parks and Recreational Areas

Parks are important to the transportation system because they are popular destinations for residents and visitors. Parks sometimes need special transportation attention to serve particular park users, such as children. There are 42 parks and open space areas in the Planning Area, covering more than 2,000 acres. Most of these parks are managed by the City of Corvallis; however seven parks are located in Philomath and one is in Adair Village. Other recreational facilities in Corvallis are the Osborn Aquatic Center and the Corvallis Senior Center.

B. Demographics

The population of the Corvallis urbanized area surpassed 50,000 in the 2000 US Census, and has continued to grow. Between 2000 and 2010, Benton County as a whole experienced nearly 10% increase in population. As shown in Table V-1, results of the 2010 US Census demonstrate a continued rise in population within the MPO Planning Area.

Table V-1: Population

Jurisdiction	2000 U.S. Census	2010 U.S. Census
Benton County	78,153	85,579
MPO Planning Area	58,229	n/a
Corvallis	49,322	54,462
Philomath	3,838	4,584
Adair Village	536	840
Portion of Benton County within the MPO Planning Area [1]	4,533	n/a
Nearby Jurisdictions		
Albany	40,852	50,158
Tangent	933	1,164
Millersburg	651	1,329

[1] *Calculated by subtracting population estimates for the cities of Corvallis, Adair Village and Philomath from the estimate for the Corvallis Urbanized Area. 2000 U.S. Census data. 2010 data was not yet available to the Corvallis Urbanized Area*

Source: U.S. Census Bureau, QT-PL Table, 2000 U.S. Census and QT-PL Table, 2010 U.S. Census.

Map V-2 shows population density in the Planning Area, according to 2000 Census data. 2010 data was not available at the time of this analysis. Not surprisingly, the highest population densities (measured in people per acre calculated at the census block group level) are located in central Corvallis and central Philomath. This is attributable to the traditional grid street and housing patterns in those areas and the influence of OSU in the settlement patterns of central Corvallis.

Table V-2 shows the number of households for each jurisdiction, based on numbers from the 2005-2009 American Community Survey. Beginning with the 2010 Census, the Census will only provide estimates for population and housing units. All other data, including household estimates, will come from the American Community Survey.

Table V-2: Households – For the Purpose of Modeling

Jurisdiction	Number of Households 2005-2009 ACS
City of Corvallis	20,895
City of Philomath	1,771
City of Adair Village	246
Unincorporated Benton County (within Planning Area)[1]	1,517
MPO Planning Area Total (Corvallis Urbanized Area)	**24,429**

[1]*Benton County households within the Planning Area are estimated based on household number of Planning Area minus households of Adair Village, Corvallis, and Philomath.*

Source: U.S. Census Bureau. "Selected Social Characteristics." 2005-2009 American Community Survey.

Below are general demographic characteristics for the Planning Area, including the most recent data from the U.S. Census Bureau. This includes 2005-2009 American Community Survey data for all jurisdictions, apart from population and housing counts which are not a part of the American Community Survey. Where appropriate, the characteristics are compared to statewide or countywide data. Because estimates are based on a sample of the population over a five year period, rather than the full population at one point in time, a margin of error is included with each estimate. Although there may appear to be high margins of error, all Census numbers are within a 90 percent confidence level.

- The **average household size** in Adair Village is 2.65 and 2.5 for Philomath, which are higher than the 2.49 for the State of Oregon. This statistic is 2.21 for the Planning Area and 2.16 for Corvallis.

- The Planning Area has a relatively low percentage of **elderly residents** compared to the statewide average of 23.4%. In Adair Village 10.6% of households had a member aged 65 years or older compared with 17.8% in Philomath, 16.3% in Corvallis, and 16.9% in the Planning Area.

- The **median age** of residents in the Planning Area is lower than the statewide median of 37.7 years. The Planning Area median age is 24.9, while Adair Village is 31, Corvallis is 24.3 and Philomath is 33.4 years. This likely reflects the impacts of the Oregon State University students in the Planning Area.

- In the Planning Area 85.8% of residents identified themselves as **"White",** including 89% in Philomath, 91.6% of Adair Village residents, and 84.4% of Corvallis residents. This compares with a statewide figure of 86.2%.

- Fourteen percent of Adair Village residents and 11.2% of Philomath residents were living below the **poverty level** in 1999, which is lower than current estimates for the Planning Area (24.3%) but similar to statewide (13.6%) poverty levels. The City of Corvallis has the highest percent of residents living below the poverty level (26.9%), which is strongly influenced by the university population.

- As much as 53.5% of Corvallis residents aged 25 years or older hold a **bachelor's degree or higher**, while 43.3% of Adair Village residents and 36.6% of Philomath residents 25 years or older do. In the Planning Area as a whole, 50.6% hold bachelor's degrees or higher, which is significantly higher than the statewide figure of 28.3%.

- Adair Village had the highest percentage (39.8%) of **households with a child less than 18 years old**. In Philomath, 36.1% of the households had a child younger than 18, compared to 19.6 % of Corvallis households, and 21.7% of all Planning Area households. The statewide percentage was 28.3%.

- **Housing vacancy** in the area is generally lower than the state vacancy level of 8.9%. The vacancy rates were: Adair Village, 5.7%; Philomath, 8.6%; Corvallis 6.6%; and, Planning Area, 6.3%. The increase in student population attending OSU has increased notably since the release of these 2005-2009 ACS numbers, and the vacancy rate is much lower for the City of Corvallis. In January 2011, the Corvallis Gazette Times reported a 1% vacancy rate for Corvallis rental units.

- In the state of Oregon, **owner-occupied housing units** outnumber **renter-occupied housing units** 64.35% - 35.7%. This trend is reflected in Philomath, where 65.8% of units are owner-occupied and 34.2% are renter-occupied, but not in the rest of the Planning Area. Across the Planning Area 46.2% of housing units are owner occupied; in Corvallis 41.2% are owner-occupied and in Adair Village 53.7% of housing units are owner-occupied. Figures in Corvallis reflect the influence of **Oregon State University** students on the demand for rental residences.

- **Age of the housing stock** varies throughout the Planning Area. 44% of houses in Adair Village were built between 1940 and 1959; however a recent housing boom equated to 31% of homes in Adair Village now having been built between 2000 and 2004. Much of the housing stock in Philomath (25.4%) and Corvallis (21.6 %) was built between 1970 and 1979.

- In 2010, some 23,761 students were enrolled at OSU. According to OSU officials, approximately 20% of students live on-campus, housed in the 14 University dormitories and 4 cooperative houses during the school year. College dormitories and fraternity and sorority houses are considered **"group quarters"** by the Census Bureau. Group quarters are not included in any housing, household, household income, family income, or non-family income statistics. Group quarters are included in per capita income and estimated earning statistics.

C. Employment Characteristics

Employment characteristics are important to the understanding of travel patterns and particularly work trips. Peak hour periods are used for travel forecasting and determination of needed transportation improvements, facilities, programs and strategies, so employment numbers and employer locations have a significant effect on transportation planning outcomes. The following 2005-2009 ACS Census data represents the most current data available for each of the jurisdictions.

Because the 2005-2009 ACS data is aggregated over a five-year time period, it does not necessarily reflect current economic conditions or dramatic shifts in trends. The effects of the recent economic downturn are more clearly reflected in annual data from the Oregon Employment Department, which reported a seasonally-adjusted unemployment rate of 7.7% in the Corvallis Metropolitan Statistical Area (consisting of Benton County) during 2009, which was a jump from 4.9% in 2005. Table V-3 illustrates estimated employment levels by jurisdictions between 2005 and 2009.

Table V-3: Employment by Jurisdictions, 2005-2009

Jurisdiction	Employed	Employed – Percentage [1]	Unemployed	Unemployed – Percentage [1]
Corvallis	24,437	56.2%	1,505	3.5%
Philomath	2,226	68.9%	110	3.4%
Adair Village	297	64.7%	13	2.8%
Benton County [2] (Unincorporated within Planning Area)	1,647 [2]	N/A	88	N/A
Planning Area (Corvallis Urbanized Area)	**28,607**	**57.2%**	**1,716**	**3.4%**
Oregon	1,765,814	59.6%	150,076	5.1%

[1] *Percent of population 16 years and older.*
[2] *Benton County's employment within the Planning Area is estimated (based on Urbanized Area employment minus employment of Adair Village, Corvallis, and Philomath).*

Source: U.S. Census Bureau, 2005-2009 American Community Survey, Selected Economic Characteristics: 2005-2009.

Median household incomes within Planning Area jurisdictions were generally comparable to or higher than the statewide median household income, with the exception of Corvallis, which was

significantly lower. The 2005-2009 ACS data estimates statewide median household income to be $49,033 during that period. During that same period, median household income was $38,283 in the Corvallis Urbanized Area and $35,350 within the City of Corvallis. The median household income was $55,000 in Adair Village and $53,424 in the City of Philomath.

Oregon Employment Department data from November 2010 indicates that major employment sectors throughout Benton County included government (12,550); private educational and health services[1] (5,440); trade, transportation and utilities (4,210); and manufacturing (3,570). The professional and business and education and health services sectors both saw the significant overall growth in recent years, both increasing 25% between 1998 and 2009. The financial activities sector grew by 12% and the leisure and hospitality sector grew 11%. The greatest decline was seen in the manufacturing sector, which saw a 45% decline in overall employment between 1998 and 2009. Manufacture of durable goods saw the biggest fall within the manufacturing sector, dropping by 47%. The majority of this decline likely occurred at the Hewlett Packard facility in Corvallis.

In recent decades, the Planning Area has seen an increase in service-related and education jobs and a decrease in resource-related jobs. Employment projections developed by the Oregon Employment Department predict an increase in education, health care and social assistance, service, retail and government jobs, with a continued decline in resource-related jobs. Education is one of the most significant employment sectors for the Planning Area, due to the presence of OSU. These projections are also reflected in the comprehensive plans of Benton County, Philomath and Corvallis.

D. Commute Patterns

Commute characteristics and patterns help determine where transportation system needs exist. A considerable portion of the Planning Area workforce and OSU students reside in Albany, Lebanon and Salem. Conversely, many of the Planning Area residents commute to Albany, Salem, Eugene, Lebanon, or other locations for employment. Interstate 5, (approximately 14 miles east of the Planning Area) the Albany-Corvallis Highway (US 20) and Pacific Highway West (OR 99W) are important north-south commuter routes. The Newport-Corvallis Highway (US 20/OR 34) and Corvallis to Lebanon Highway (OR 34) are principal east-west commuter routes. Residents in the Planning Area also travel to Albany for shopping and services.

According to the 2005-2009 American Community Survey, 83% of residents over the age of 16 in the Corvallis Urbanized Area (UA) worked in Benton County. The mean commute time for residents of the Corvallis Urbanized Area was 15.7 minutes, compared with a mean travel time of 22 minutes at the statewide level. Within the City of Corvallis, the mean travel time dropped to 15 minutes with 83% of workers staying within Benton County. Because of small sample size, this data was not available for Philomath or Adair Village.

[1] The Oregon Employment Department records employment first as either public or private sector employment, and then according to industry. Therefore, educators working in the private sector fall under Education and Health Services (private) while educators in the public school system fall under Local Government – Education and Health Services or State Government –Education and Health Services. Therefore, the government number above can be assumed to include some in the Education and Health Services sector.

Table V-4 illustrates when commuters in the Planning Area leave home to get to work according to 2005-2009 ACS data. 15.2% of Corvallis commuters leave for work between 7:30 a.m. and 7:59 a.m., along with 17.2% in Philomath, 28.6% in Adair Village and 16.4% in the Urbanized Area overall. The Census does not report the time which people leave work to return home.

Table V-4: Times Commuters Leave Home to Work

Time Leaving	Corvallis	Philomath	Adair Village	Corvallis UA
12:00 - 4:59 a.m.	1.6%	3.8%	1.1%	1.7%
5:00 - 5:29 a.m.	1.9%	3.3%	1.1%	2.0%
5:30 - 5:59 a.m.	3.9%	7.6%	5.1%	4.3%
6:00 - 6:29 a.m.	3.2%	12.6%	4.0%	4.0%
6:30 - 6:59 a.m.	6.4%	6.5%	6.5%	6.7%
7:00 - 7:29 a.m.	9.4%	11.9%	17.4%	9.9%
7:30 - 7:59 a.m.	15.2%	17.2%	28.6%	16.4%
8:00 - 8:29 a.m.	14.4%	10.6%	19.2%	13.8%
8:30 - 8:59 a.m.	9.7%	7.9%	2.9%	9.4%
9:00 - 11:59 p.m.	34.2%	18.5%	14.1%	31.9%

Source: U.S. Census Bureau, 2005-2009 American Community Survey, Table S0802: Means of Transportation to Work by Selected Characteristics.

According to 2005-2009 ACS data, 3.1% of households throughout Oregon did not have a motorized vehicle available. In the Corvallis Urbanized Area, 4.2% did not have a vehicle available, while 4.6% of households in Corvallis, 2.2% in Philomath and 4.4% of households in Adair Village did not have a vehicle available.

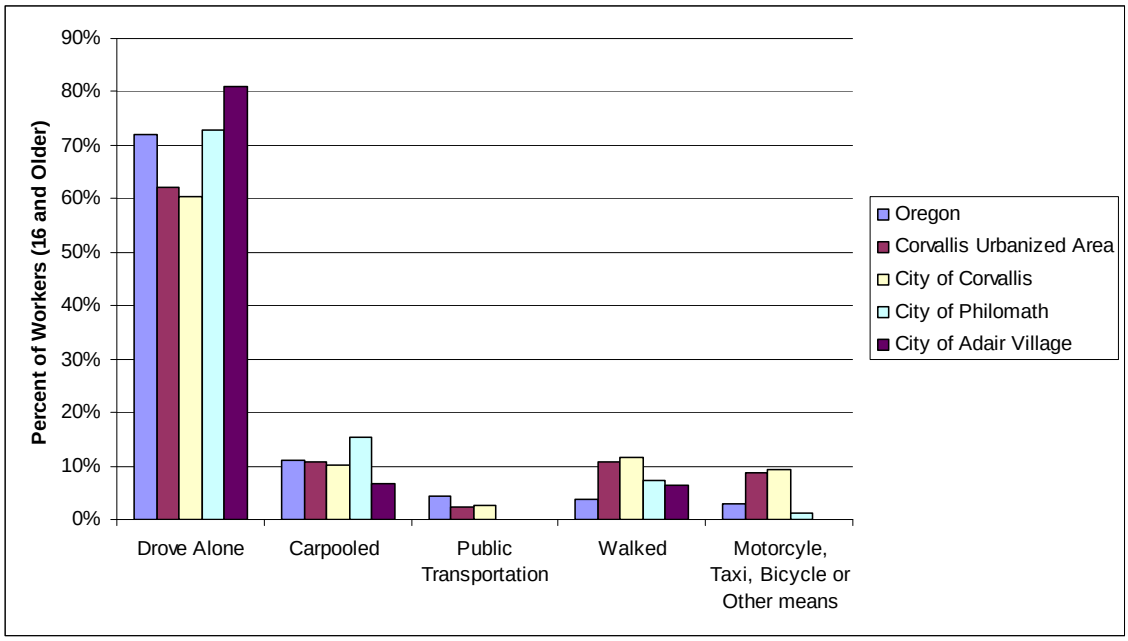
An estimated 72.1% of workers 16 years and older throughout Oregon drove alone while commuting to work, according to 2005-2009 ACS data. This compared with 60.5% in Corvallis, 80.9% in Adair Village, 72.8% in Philomath, and 62.2% throughout the Corvallis Urbanized Area. Of those in the Urbanized Area who did not drive to work alone, an estimated 10.8% carpooled, 2.3% used public transit, 10.8% walked and 8.6% used a motorcycle, taxi, bicycle or other means of transportation to get to work. An estimated 5.4% worked at home.

An independent and statistically valid survey of resident opinions completed by the City of Corvallis in 2009[2] reported higher numbers for each of the alternative modes. The survey reported that 18% of residents 'typically' travel to work by bicycle, 13% traveled by foot and 3% used transit.

The relatively low number of single-occupancy vehicles commuting to work in Corvallis may reflect the presence and high quality of bicycle and pedestrian facilities, transit service, and the OSU support of transit program. Other factors may include demographics and the large student population. Figure V-1 illustrates the percentage of commuters by mode for jurisdictions over a five-year period from 2005-2009.

[2] 2009 Citizen Attitude Survey. 2009. National Research Center.
http://www.ci.corvallis.or.us/index.php?option=com_content&task=view&id=3886&Itemid=4438

Figure V-1: Commute Modes by Jurisdiction, 2005-2009 ACS



Source: U.S. Census Bureau, 2005-2009 American Community Survey, Selected Economic Characteristics

The location of major employers helps to identify commuter travel patterns, including heavily used corridors and peak-hour transportation needs. According to the Corvallis-Benton Chamber Coalition, major employers within the Planning Area included the following in 2010[3]:

- Oregon State University (estimated 4,600 faculty and staff)
- Samaritan Health Services (2,624 employees)
- Hewlett-Packard (estimated 1,200 employees)
- Corvallis Clinic (699 employees)
- Georgia Pacific Corporation – Halsey Mill (525 employees)
- Corvallis School District (793 employees)
- City of Corvallis (435 employees)
- Benton County (403 employees)
- CH2M HILL (359 employees)
- Trillium Family Services (306 employees)
- FiServe (289 employees)
- Environmental Protection Agency (205 federal and contract employees)
- Safeway (148 employees)
- Trimble Navigation (103 employees)
- ATS Systems (97 employees)

[3] These numbers may not directly correlate with OED estimates listed previously due to differences in reporting period and methodologies. The Oregon Employment Department records employment first as either public or private sector employment, and then according to industry. Therefore, educators working in the private sector fall under Education and Health Services (private) while educators in the public school system fall under Local Government – Education and Health Services or State Government – Education and Health Services. Therefore, the government number above can be assumed to include some in the Education and Health Services sector.

Oregon State University

Because of its number of students and employees, OSU has a heavy influence on commuter patterns in the Planning Area. Students, faculty and staff comprised 44% of Corvallis Transit System (CTS) ridership in 2009. Table V-5 lists the number of parking permits issued at OSU for the period from 2005 to 2009.

Table V-5: OSU Yearly Parking Permits, 2005-2009

Year	Student Permits	Faculty/Staff Permits	Motorcycle Permits	Total Permits
2005	4,161	3,112	not available	7,273
2006	3,998	2,696	108	6,802
2007	3,513	2,845	254	6,612
2008	2,995	2,644	286	5,925
2009	3,461	2,713	246	6,420

Source: Oregon State University Campus Planning and Development, 2010

Approximately 16 percent of students had student-parking permits (not including motorcycle permits) in 2009. This indicates that approximately 84% of students commute to school by some way other than single-occupant vehicle (bicycle, walking, carpooling, transit, etc.) or park without a permit in the neighborhoods adjacent to the university. According to the City of Corvallis, OSU has a heavy influence on traffic operations on Kings Boulevard, Harrison Boulevard, Monroe Avenue and other roadways.

Table V-6 shows the mode shares for OSU campus travel (year 2003). The largest mode share for trips from/to campus is vehicle (driving alone), followed by walking and bicycling. It is noteworthy that 44% of total trips take place by means other than driving alone.

Table V-6: Mode Shares for Travel From/To OSU Campus (2003)

Mode	Number of Trips			Percentage		
	A.M.	P.M.	Total	A.M.	P.M.	Total
Car Drive Alone	7,064	4,534	11,598	61%	50%	56%
Walk	2,491	2,718	5,209	21%	30%	25%
Bicycle	1,071	1,057	2,128	9%	12%	10%
Carpool	414	567	981	4%	6%	5%
Bus	380	174	554	3%	2%	3%
OSU Shuttle	240	88	328	2%	1%	2%
TOTAL	11,660	9,138	20,798	100%	100%	100%

Source: Oregon State University Campus Master Plan 2004-2015 (December 2004)

VI. Existing Transportation System

This section describes the capacity and functioning of the existing transportation system and describes weaknesses or deficiencies where they may exist.

A. Roadways

This section summarizes the roadway characteristics for the federally classified and regionally adopted roadways within the Planning Area.

1. Jurisdictional Responsibility and Functional Classification

The public entities that have jurisdictional responsibility for roadways in the Planning Area include: ODOT, Benton County, OSU, and the cities of Corvallis, Philomath and Adair Village. Map VI-1 depicts jurisdictional responsibility for classified roadways in the Planning Area.

Functional Classification is a grouping of roadways based on the levels of mobility and accessibility that they provide. Principal Arterials provide the highest mobility for through traffic and the least accessibility to the adjacent land. Conversely, local streets are designed for the lowest mobility and the highest accessibility. The classification defines the desirable roadway width, right-of-way needs, access spacing and pedestrian and bicycle facilities. CAMPO has adopted its Functional Classifications of roadways, as depicted in Map VI-2. Functional Classification of roadways in the Planning Area includes the following designations: Urban Principal Arterials, Urban Minor Arterials, Urban Collectors, and Local Roads.

Urban Principal Arterial – US 20/OR 34 at Technology Loop intersection

Urban Principal Arterials

Urban Principal Arterials are the highest roadway classification and serve larger volumes of regional traffic at higher speeds than roads in the lower classifications. Arterials generally emphasize regional mobility over access to the adjacent land uses. The Urban Principal Arterials in the Planning Area include: Pacific Highway West (OR 99W), the Newport-Corvallis Highway (US 20/OR 34), the Alsea Highway (OR 34), the Corvallis to Lebanon Highway (OR 34) and the Albany-Corvallis Highway (US 20). ODOT has responsibility for the design, maintenance, repair and construction of these facilities.

The Oregon Highway Plan includes a classification or ranking system for the state highways intended to guide investment and management decisions.

Statewide Highways (part of the National Highway System) primarily provide inter-urban and inter-regional mobility and connections to larger urban areas, ports and major recreation areas that are not served by Interstate Highways. ODOT's management objective for highways of statewide significance is high-speed, continuous flow operation. **Regional Highways** provide

connections to regional centers and the Statewide or Interstate Highways or economic and activity centers of regional importance. The management objective for Regional Highways is high-speed, continuous flow in rural areas and moderate to high speed in urban areas. Secondarily, they serve local land uses near the highways. **District Highways** are of countywide significance and are largely county or city arterials or collectors. They link smaller population centers and serve more local travel needs. They are intended to provide moderate to high-speed continuous flow in rural areas and moderate to low speed operation in populated areas. They also serve pedestrians and bicycles. Along any of these highways, ODOT may designate a **Special Transportation Area.** These are highway segments where a downtown, business district or community center straddles the highway. Local auto, pedestrian, bike and transit movements are generally as important as through traffic in these areas and slower speeds are allowed.

- Pacific Highway West (OR 99W) runs north-south through downtown Corvallis and central Adair Village. It provides access to the Corvallis Municipal Airport and it links to Circle Boulevard and Walnut Street - two minor arterials in Corvallis. Beyond the Planning Area, Pacific Highway West connects to Monmouth to the north and Monroe to the south. This highway is classified in the Oregon Highway Plan (OHP) as a Regional Highway and is also a freight route. There is a designated STA on this highway where it forms a couplet in Corvallis. The STA extends from Polk Street south to Western, on both 3rd and 4th Streets.

- Newport to Corvallis Highway (US 20/OR 34) is an expressway between Western Boulevard and the Willamette River, and is a principal east-west linkage in the Planning Area. This roadway runs through central Corvallis and central Philomath and provides access to OSU and downtown Corvallis. It is classified by ODOT in the OHP as a Statewide Highway and it is part of the National Highway System (NHS). The route is also classified as a statewide freight route.

- Corvallis to Lebanon Highway (OR 34) is a key east-west route, connecting the planning area with Interstate 5 and the City of Lebanon to the east. The highway is a one-way couplet within the Planning Area, and includes and STA on Van Buren between 4th Street and the Van Buren Bridge. The Corvallis-Lebanon Highway is classified in the OHP as Regional Highway and is a freight route within the Planning Area.

- Albany-Corvallis Highway (US 20) begins at Van Buren Boulevard in downtown Corvallis on 2nd Street, extending northward on 2nd Street and following the eastern boundary of Corvallis. It is a southwest to northeast route links to Albany northeast of the Planning Area.

- Alsea Highway (OR 34) begins at the west end of Philomath, at an intersection with the Corvallis-Newport Highway. The Alsea Highway links the CAMPO area westward to Waldport and the Central Coast and eastward to Interstate 5, via the Corvallis-Lebanon Highway. It is classified by ODOT in the OHP as a District Highway within the MPO Planning Area.

Urban Minor Arterials

Urban Minor Arterials also are intended to favor mobility over access. These roadways provide a higher level of accessibility to adjacent land uses, but a lesser degree of mobility than the Urban Principal Arterials. Urban Minor Arterials in the Planning Area are:

Urban Minor Arterial 19th Street in Philomath

Located primarily in unincorporated Benton County:

- Reservoir Avenue (West Hills Road to 53rd Street)
- 53rd Street (SW Nash Avenue to Harrison Boulevard)
- Highland Drive (Circle Boulevard to Lewisburg Avenue)
- Crescent Valley Drive (Lewisburg Avenue to Johnson Creek Road)
- Lewisburg Avenue (Crescent Valley Drive to Granger Avenue)
- Airport Avenue (Pacific Highway West / OR 99W to MPO boundary)

Urban Collector Bellfountain Road

Located primarily in Philomath:

- 13th Street (Chapel Drive to Main Street)
- Chapel Drive (13th Street to Bellfountain Road)
- 19th Street (Chapel Drive to West Hills Road)

Located primarily in Corvallis:

- Western Boulevard (Philomath Boulevard to 3rd Street)
- Van Buren Avenue (Kings Boulevard to Newport-Corvallis Highway / US20/OR34)
- 35th Street (Harrison Boulevard to Newport-Corvallis Highway / US20/OR34)
- 53rd Street (Harrison Boulevard to Circle Boulevard)
- Kings Boulevard (Monroe Avenue to Walnut Boulevard)
- 9th Street (Pacific Highway West / OR 99W to Van Buren Avenue)
- Circle Boulevard (Albany-Corvallis Highway to Kings Boulevard)
- Harrison Boulevard (53rd Street/Walnut Boulevard to Newport-Corvallis Highway/ US20/OR34)
- Conifer Boulevard (Pacific Highway West / OR 99W to Albany-Corvallis Highway / US 20)
- Walnut Boulevard (Circle to 53rd Street)
- Buchanan Avenue (5th Street to Kings Boulevard)
- 5th Street (Van Buren Avenue to Buchanan Avenue)

Urban Collectors

Urban Collectors are intermediate roadways that typically serve as a direct link between local streets and the arterial street system. Mobility and access functions are important for urban collectors. Urban collectors in the Planning Area include the following:

Located primarily in unincorporated Benton County:

- Arboretum Road (Pacific Highway West/ OR 99W to Pacific Highway West/ OR 99W)
- Mountain View Drive (Pacific Highway West / OR 99W to Lewisburg Avenue)
- Kiger Island Drive (Pacific Highway West to MPO boundary)
- Bellfountain Road (Plymouth Boulevard to south MPO area)
- West Hills Road (9th Street to 19th Street)
- Oak Creek Drive (53rd Street to MPO boundary)
- Sulphur Springs Road (Lewisburg Avenue to MPO boundary)
- Plymouth Road (53rd Street to MPO boundary)
- Hout Street (adjoining Airport Avenue)

Located primarily in Adair Village:

- Arnold Avenue (OR 99W to east MPO boundary)

Located primarily in Corvallis:

- Satinwood Street (Walnut Boulevard to Washington Way)
- Conser Street (Conifer Boulevard to Walnut Boulevard)
- 15th Street (Research Way to Monroe Avenue)
- 9th Street (Van Buren Avenue – Washington Way)
- Highland Drive (Circle Boulevard – Buchanan Avenue)
- Washington Way (9th Street to Satinwood Street)
- Jefferson Way (15th Street to 3rd Street)
- Grant Avenue (Kings Boulevard to 9th Street)
- Garfield Avenue (Kings Boulevard to 9th Street)
- Crystal Lake Drive (Park Avenue to 3rd Street)
- Park Avenue (3rd Street to Crystal Lake Drive)
- Midvale Drive (Park Avenue to Goodnight Avenue)
- 5th Street (Western Boulevard to VanBuren Boulevard)
- Technology Loop (53rd Street to Western Boulevard)
- Brooklane Drive (45th Street to Philomath Boulevard)
- Research Way (Technology Loop to County Club Drive)
- 45th Street (Brooklane Drive to Country Club Drive)
- 49th Street (Country Club Drive to Nash Avenue)
- Thompson Street (Alexander Avenue to Park Avenue)
- Goodnight Avenue (Pacific Highway West / OR 99W to Midvale Drive)
- Alexander Avenue (Pacific Highway West / OR 99W to Crystal Lake Drive)
- Country Club Drive (Philomath Boulevard to 35th Street)
- 36th Street (Witham Hill Drive to Harrison Boulevard and Country Club Drive to Newport-Corvallis Highway / US 20/OR 34)
- Witham Hill Drive (Walnut Boulevard to Grant Avenue)
- Ponderosa Avenue (Witham Hill Drive to MPO boundary)
- Circle Boulevard (Kings Boulevard to Witham Hill Drive)
- 29th Street (Walnut Boulevard to Harrison Boulevard)

- 30th Street (Harrison Boulevard to Western Boulevard)
- SW Birdsong Drive (49th Street to 45th Street)
- Monroe Avenue (Harrison Boulevard to 3rd Street)
- Conifer (Walnut Boulevard to Conser)
- Elks Drive (Pacific Highway West / 99W to Satinwood)
- Ingalls Street (Airport Road to Convill)

Located primarily in Philomath

- North 9th Street (West Hills Road to Main Street)
- West Hills Road (9th Street to 19th Street)

Local Roads

Other roadways in the Planning Area are classified as local roads. Local roads or residential streets provide maximum accessibility to adjacent land uses and minimum mobility.

2. Number of Lanes and Roadway Width

The number of lanes helps define the capacity and streetscape of a roadway. Map VI-3 shows the number of lanes for arterials and collectors in the Planning Area. Most of the arterials and collectors in the Planning Area are two lanes, although some of the Urban Minor Arterials have more. This includes portions of Circle Boulevard (29th Street to Conser Street), 9th Street (Walnut Boulevard to Harrison Boulevard), and Walnut Boulevard (Witham Hill Drive to Conser Street), which all have four lanes. Portions of Harrison Boulevard and Van Buren Boulevard have three lanes (Kings Boulevard to NW 3rd Street). The Urban Principal Arterials range from two to five lanes.

Roadway widths for urban collectors generally range from 30 to 40 feet. Widths of urban minor arterials and urban principal arterials may exceed 60 feet. On-street parking is provided on many of the arterials and collectors within central Corvallis and central Philomath.

3. Posted Speed Limits

Posted speed limits affect the capacity and characterize the function of a roadway. Posted speed limits are generally 25 mph through central Corvallis and Philomath, and range from 30 to 45 mph on other arterials and collectors within Corvallis and Philomath. Toward the outer edges of the Planning Area, speed limits are generally 45 to 50 mph. Pacific Highway West (OR 99W) has numerous posted speed changes, resulting in highway sections with speeds between 35 and 55 mph. Much of Philomath Boulevard is posted at 45 mph.

4. Signalized Intersections

There are 61 signalized intersections in Corvallis, four signalized intersections in Philomath, and none in Adair Village. There are three signalized intersections located in unincorporated Benton County within the Planning Area.

5. Pavement Condition

Pavement condition is an important element of roadway functionality. All of the functionally classified arterials and collectors in the Planning Area are paved. Pavement conditions of roadways in the Planning Area are periodically monitored for needed improvements. As such, most of the arterials and collectors are in fairly good condition. Asphalt concrete is the primary paving material; however, a few segments (Reservoir Avenue, 9th Street in Philomath, 19th Street, Crescent Valley Drive) are oil mat, and some are Portland cement concrete (including a segment of Conser Street). Map VI-4 shows pavement condition based on pavement condition index (PCI) ratings from Benton County. Most of the state routes are rated "good or better."

Roadway segments rated "poor" or "very poor" in the most recent review (2008) include:

- 9th Street (Jefferson Avenue SW – Madison Avenue SW)
- 9th Street (Madison Avenue – Monroe Avenue)
- 35th Street (Jefferson Avenue SW – Campus Way SW)
- 53rd Street (Newport-Corvallis Highway / US 20/OR 34 – Technology Loop)
- 30th Street (Jackson Avenue NW - VanBuren Avenue NW)
- 30th (Van Buren Avenue NW – Harrison Boulevard NW)
- 30th (Orchard Avenue – Johnson Avenue NW)
- 15th Street (Western Boulevard SW – A Avenue SW)
- Country Club Place (Squaw Creek Place – Martin Street SW)
- Grant (15th Street NW – 17th Street)
- Witham Hill (Sylvan Drive NW – Fernwood Circle NW)
- Glenridge (Walnut Boulevard NW – Ponderosa Avenue NW)
- Circle (Janssen Street NW – Highland Drive NW)
- Kings (Grant Avenue NW – Kings Place)

Roadway segments rated "poor" or "very poor" that were resurfaced following the 2008 assessment include:

- Jefferson (8th Street SW – 9th Street SW)
- Monroe (15th Street NW – 16th Street NW)

6. Bridges

There are many bridges in the Planning Area, including city, county and state bridges. Map VI-5 shows bridge locations and jurisdiction.

The ODOT 2010 Oregon State Highway Bridge Condition report and the most current bridge inspection data identifies several bridges within the Planning Area as deficient or in need of urgent or regular maintenance. The bridges were evaluated using a sufficiency rating established by the American Association of State Highway and Transportation Officials (AASHTO) which looks at the structural condition of bridges. Bridges rated from 100-80 are considered non-deficient; 80-50 generally require rehabilitation; below 50 need to be replaced or rehabilitated. The lowest sufficiency rating indicates the highest need for improvement. Functionally obsolete bridges are rated for deck geometry, low clearance, approach roadway alignment, structural

condition and waterway adequacy. If a bridge is both structurally deficient and functionally obsolete, it is classified only as structurally deficient. Table VI-1 lists bridges in the CAMPO area receiving sufficiency ratings lower than 80. While no bridges were listed as critical concerns, many were listed as urgent concerns. Concerns on major bridges include vertical clearance, low service life, paint condition, and load capacity.

Improvements that are currently being planned or implemented for:

- Bridge 00419A: Locke Creek, Hwy 99W
- Bridge 00706 - Mary's River, Hwy 99W NB

Table VI-1: CAMPO Area Bridges Requiring Attention

Bridge ID	Highway and Features Crossed	Mile Post	Sufficiency Rating	Last Inspection Date
Sufficiency Rating Less than 50				
16233A	Sign truss bridge / OR 99W	84.17	0	5/29/2007
17230	Bike path crossing / OR 99W	84.09	0	5/5/2009
03C25	SW Morris Ave / Oak Creek	0	19.9	7/28/2010
00419A	OR 99W / Locke Creek	78.83	38.1	5/4/2009
03C16	NW 8th St / Dixon Creek	0	45	10/1/1993
02728	OR 34 / Willamette River	0.13	48.9	6/16/2010
07321	OR 99W / WPRR	82.61	49.6	5/4/2009
Sufficiency Rating 50-80				
5216A	SE 15th St / Mary's River	0.1	58.5	9/15/2009
00771	Alsea Hwy / Mary's River	58.42	59.5	1/4/2010
03C27	SE Bridgeway Ave / Mill Race	0.05	62.9	7/28/2010
07019	OR 99W / Mary's River	84.21	63.1	6/8/2010
14521	NE Elliot Circle / Small Creek	1.09	65.1	10/27/2008
00706	OR 99W / Mary's River	84.14	67.3	5/26/2009
14462	NW Oak Creek Drive / Oak Creek	2.54	69.1	10/29/2008
08616	US 20, OR 34 / OR 99W SB	55.86	70.3	5/5/2009
07T24	SW Western Blvd / Oak Creek	0.86	70.6	10/30/2008
14516	NW Crescent Valley Dr / Jackson Creek	0.54	73.7	10/27/2008
14444	SE Kiger Island Dr/ Willamette River Arm	0.5	75.2	10/30/2008
16874	US 20, OR 34 / 3rd & 4th Streets	55.96	75.7	5/5/2009
03C155	NW Oak Creek Drive / Oak Creek	0.4	76	10/29/2008
08975	Squaw Creek, Hwy 20/34 frontage road to ODOT maintenance facility	54.44	76.5	09/2008
09179	OR 34 / Willamette River	0.13	76.8	9/28/2010
17053	US 20, OR 34 / SW 3rd Street	55.96	76.8	5/5/2009
16873	US 20, OR 34 / Willamette River	56.15	78	5/5/2009
00420A	OR 99W / Jackson Creek	79.97	78.1	5/4/2009
003C32	NW Oak Creek Drive / Oak Creek	1.95	79	10/30/2008
20749	Washington Way crossing Oak Creek	0.00	79.0	06/2008
08815	Fern Road / Mary's River	0.7	79.2	9/12/2009
03C08	Dixon Creek over NW Garfield Ave	0.80	79.4	06/2008

Source: ODOT PONTIS Bridge Inspection Reports, 2010

7. Freight Routes

Freight movement on highways is critical to the economic health of a region. A major element of traffic in the Planning Area is freight movement via truck on the two designated statewide freight routes that extend through the Planning Area. The Newport-Corvallis Highway (US 20/OR 34) and Corvallis to Lebanon Highway (OR 34) stretching from Interstate 5 through Corvallis and Philomath to the City of Newport is a freight route and also part of the National Highway System (NHS). The second freight route is Pacific Highway West (OR 99W), which was designated in 2005.

Newport-Corvallis Overpass

According to ODOT automatic traffic recorder readings from 2009, truck traffic composes between 9% - 14% of daily traffic on the two major truck routes. On Pacific Highway West (OR 99W) just south of the CAMPO boundary (milepost 94.90) trucks composed 13.7% of traffic, or an average of 680 trucks per day. On the Corvallis-Lebanon Highway (OR 34) east of the CAMPO boundary, trucks compose 8.8% of daily traffic, for an average of 2,300 trucks per day. North of the CAMPO area, on Pacific Highway West (OR99W), trucks composed 11% of traffic or an average of 785 trucks per day. While these counts were not taken within the CAMPO boundary, they can help in understanding freight traffic flowing through the Planning Area.[4]

ODOT data from 2009 shows that there were over 5 ton miles[5] on most sections of Pacific Highway West (OR 99W) within the CAMPO area with the most ton miles between north and south of downtown Corvallis. There were between 3 and 5 ton miles on the Corvallis-Lebanon Highway (OR 34) and between 3 and 5 ton miles on Newport-Corvallis Highway (US20/OR34), with small portions surpassing 5 ton miles. Overall, OR99W south of downtown Corvallis saw most freight ton mileage in 2009.

Philomath has a series of city-designated truck routes, including the Newport-Corvallis Highway (US20/OR34), Plymouth Drive, Chapel Drive, Fern Road/13th Street, Grange Hall Road (in Benton County), the Alsea Highway (OR 34), Industrial Road, Bellfountain Road, and 19th Street/West Hills Road.

The Corvallis Transportation System Plan (1996) does not list any city-identified truck routes. The Van Buren Bridge and northbound Mary's River Bridge can present limitations to truck traffic due to their nature as through-truss bridges. The Van Buren Bridge vertical clearance is 15 feet, 11 inches and the Mary's River Bridge currently has a clearance of 14 feet, 6 inches. A 2011 construction project will increase the clearance on the Mary's River Bridge to greater than 16 feet. Both bridges accommodate standard truck / trailer configurations and bridge clearance is not a limitation to these loads. Over-height loads, however, are affected by these bridges. Over-height loads headed east from Corvallis are detoured through the ODOT office facility located on Philomath Boulevard, and then across the river via the Corvallis Bypass. The official route for

4 Oregon Department of Transportation website. Permanent Automatic Traffic Recorder Stations (ATR´s) - Trend Summaries (http://www.oregon.gov/ODOT/TD/TDATA/tsm/tvt.shtml#Traffic_Volume_Tables) Accessed August 18, 2010.

5 According to the Oregon Freight Plan, a ton mile is a measure of output for freight transportation; it reflects weight of shipment and the distance it is hauled; a multiplication of tons hauled by the distance traveled.

eastbound trucks weighing more than 80,000 pounds is via a detour route at the ODOT office facility and the Corvallis Bypass.

Although much of the freight traffic originates outside the Planning Area and travels through the Area, there are numerous business locations in or near the Planning Area that generate significant amounts of freight traffic, including timber agricultural industries, garbage loads to Coffin Butte and freight delivery to stores within the Planning Area.

Maps VI-6a and VI-6b illustrate the typical flow of truck freight traffic in the Planning Area, showing the annual average daily traffic on freight routes and the ton miles of freight, respectively.

8. Roadway Congestion

Maps VI-7a and VI-7b show the performance of intersections at the peak hour of traffic. Intersections marked green meet OHP, Benton County, City of Philomath and City of Corvallis Mobility Standards; intersections marked red do not meet mobility standards. Volume to capacity (V/C) ratios that exceed mobility standards indicate that intersection movement(s) experience congested operations during the peak period. Intersections with V/C ratios lower than mobility standards are operating at acceptable levels of mobility. These traffic counts were taken during the fall and spring, while OSU was in session; however they do not account for event traffic such as OSU football game traffic.

Several major intersections currently fail to meet applicable operational standards, and are listed below. Four of these are along the Newport-Corvallis Highway corridor (US 20/OR 34), one is on the Albany-Corvallis Highway (US 20) heading northeast of Corvallis, and two are on the Pacific Highway West (OR 99W) corridor. The remaining sites are at heavily trafficked intersections within Corvallis city limits. Before the highway's redesign as couplet, the intersection of the Newport-Corvallis Highway (Main Street and Applegate Street) and 15th Street in Philomath also failed to meet operational standards.

Major intersections currently failing to meet applicable operational standards include:

- Pacific Highway West (OR 99W) and Circle Boulevard
- Pacific Highway West (OR 99W) and Elks Drive
- Albany-Corvallis Highway (US 20) and Circle Boulevard
- Newport-Corvallis Highway (US20/OR34) and SW Technology Loop
- Newport-Corvallis Highway (US20/OR34) and 15th Street
- Newport-Corvallis Highway (US20/OR34) and 35th Street
- Newport-Corvallis Highway (US20/OR34) and 53rd
- Walnut Boulevard and Highland Drive
- 9th Street and Circle Boulevard

Table VI-2 lists major intersections currently failing or close to failing to meet applicable operational standards. Intersections that are close to exceeding Mobility Standards will need to be monitored to determine when they exceed the thresholds. The table represents the most recent

data available, collected between 2005 and 2008 during recent planning processes. Sources include: *The Corvallis Area Metropolitan Transportation Plan, Destination 2030: Operations Analysis of Selected Intersections, The Bridge and Roadway Alternatives Concepts Report: Willamette River (Van Buren Street) Bridge,* and the *Memorandum on 9th Street Improvement Project – Alternative Analysis Results, 2010.*

Table VI-2: Low Performance Intersections [1]

Intersection Description	Mobility Standard	Operating Condition (V/C Ratio)[2]	
Signalized Intersection			
US20 / OR34 & 15th Street	0.80	0.95 (2005)	
US20 / OR34 & 35th Street	0.80	0.86 (2005)	
US20 / OR34 & SW Technology Loop	0.80	0.99 (2005)	
US20 / OR34 & 53rd	0.80	0.94 (2005)	
US 20 & NE Circle Blvd.	0.85	0.88 (2005)	
99W & Circle Boulevard	0.85	0.86 (2008)	
99W & Conifer	0.85	0.81 (2008)	
Van Buren & 2nd Street	LOS F (0.95)	1.08 (2007)	
Walnut Boulevard & Highland Drive	LOS D (0.80)	0.94 (2005)	
9th Street & Circle Boulevard	LOS D (0.80)	0.89 (2008)	
Unsignalized Intersection		**Major**	**Minor**
OR 99W SB & NW Buchanan Avenue	0.85	0.25	0.99 (2007)
US 20 / OR 34 & SW Western	0.80	0.74 (2005)	
99W & Elks Drive	0.85	1.01 (2008)	

[1] The metrics used by the City of Corvallis for measuring the performance of an intersection under the City's jurisdiction is different from the one used by ODOT for the State facilities. The City of Corvallis uses LOS while ODOT uses volume over capacity (v/c) ratios. Also, the City of Corvallis allows an LOS of D for the City's arterials while ODOT's Mobility Standards require improvement of such facilities.
[2] Operating Condition for signalized intersections reports the entire intersection; for unsignalized intersections, the individual movement(s) not meeting the standard.

Sources: PTV America, Corvallis Area Metropolitan Transportation Plan, Destination 2030: Operations Analysis of Selected Intersections; PTV America, Memorandum on 9th Street Improvement Project – Alternative Analysis Results (2010); David Evans and Associates for the Oregon Department of Transportation, the Corvallis Willamette River Crossing / Van Buren Bridge Proposed Solutions (OR-34: NW Fourth Street to Corvallis Bypass) 2009 Traffic Analysis (2009); David Evans and Associates for the Oregon Department of Transportation, The Bridge and Roadway Alternatives Concepts Report: Willamette River (Van Buren Street) Bridge(2005)

A major congested area is at the east end of Corvallis, where three highways (US20, OR34, and OR 99W) converge and cross over the Willamette River on three bridges. One of these bridges (the Van Buren Bridge, eastbound out of Corvallis) has only one lane. Congestion at these crossings is particularly heavy during peak commute times and on days when the OSU football team has a home game (approximately 5-10 days per year) when commuters, visitors and freight traffic are all funneled onto outbound bridges. During peak commute times, intersections east and west of the single-lane Van Buren Bridge exceed highway capacity and Oregon Highway Plan's Mobility Standards.

9. Safety

Between 2004 and 2008, 2,748 crashes were reported in the Corvallis Urbanized Area, according to the ODOT Crash Analysis & Reporting Unit. The majority of these crashes occurred on arterial streets, with approximately 43% occurring on urban minor arterials and 34% occurring on urban primary arterials. Approximately 12% of crashes during this period occurred on urban collectors, 11% on urban local roads, and less than 1% occurred on rural roads. The majority of these crashes (87%) occurred in Corvallis, while 4% occurred in Philomath and less than 1% occurred in Adair Village. Of these reported crashes, 56% sustained property damage only, 44% involved injuries and nine of the crashes involved fatalities. Crashes occurring during 2007 and 2008 are shown on Map VI-8.[6]

Crash Data – Principal Arterials

From 2004 through 2008, 936 crashes were reported along the U.S. and State highway segments within the Planning Area, including 464 injury crashes and 472 property damage only crashes. There were a total of six crashes involving a fatality from 2004 through 2008 along these routes. Three of the fatal crashes occurred on Pacific Highway West (OR 99W). Two fatal accidents occurred on the Newport-Corvallis Highway (US 20/OR 34) going towards Newport, and one occurred on the Albany-Corvallis Highway (US 20) heading north. One of the crashes involved a pedestrian fatality. Causes included speed, improper lane usage, fatigue, or other impairments; the pedestrian fatality occurred when a pedestrian was crossing the roadway. Intersections with high numbers of crashes are shown in Table VI-3.

The number of traffic incidents on state routes within the Planning Area ranged from 175 to 204 crashes per year, with a low of 175 crashes in 2007 and a high of 204 crashes in 2006. The most common type of crash was rear-end, which comprised 43% (404 crashes) of all crashes over the 5-year period. Turning crashes made up 19% (178 crashes) of the crash total. The majority of crashes on state routes (76% or 711 crashes) occurred on dry surface and during the day (78% or 720 crashes).

ODOT has developed a safety priority index system (SPIS) to identify hazardous locations along state highways. This rating system considers not only the number of crashes at a particular intersection, but the rate of crashes based on the overall volume of traffic going through that intersection. Crash rates help paint a more complete picture of the safety conditions of a segment than the number of crashes. Rates account for the traffic volumes traveling along a specific segment of roadway, whereas crash numbers do not account for traffic levels.

The ODOT SPIS is considered when making decisions regarding expenditure of state funds for highway improvements. The highway locations with SPIS scores that are in the highest 10 percent of all SPIS scores are evaluated for potential safety improvements. The following locations in the Planning Area were among the top 10% of SPIS groups in the 2009 SPIS report, covering years 2006-2008. (See map VI-9 for mileposts.):

- Corvallis - Newport Highway (US 20 or ODOT Highway 33): MP 50.95 to 51.13

[6] Geocoded crash data from the Oregon Department of Transportationis available for 2007 and subsequent years.

- Corvallis - Newport Highway (US 20 or Highway 33): MP 54.56 to 54.74
- Pacific Highway West (OR 99W or ODOT Highway 91): MP 81.16 to 81.26
- Pacific Highway West (OR 99W or ODOT Highway 91): MP 81.68 to 81.86
- Pacific Highway West northbound (OR 99W or ODOT Highway 91): MP 83.26 to 83.44
- Pacific Highway West northbound (OR 99W or ODOT Highway 91): MP 83.33 to 83.44
- Pacific Highway West southbound (OR 99W or ODOT Highway 91): MP 84.26 to 84.39
- Pacific Highway West (OR 99W or ODOT Highway 91): MP 84.41 to 84.56
- Pacific Highway West (OR 99W or ODOT Highway 91): MP 87.02 to 87.12

Crash Data - City and County Intersections

During the 2004-2008 period, the majority of the crashes occurred within the City of Corvallis (87%); 8% occurred in unincorporated areas of Benton County and 4% occurred within Philomath. Intersections with high numbers of crashes are shown in Table VI-3.

Table VI-3: Crash Data for Planning Area Roadways, 2004-2008

Intersection Location	2004-2008 Total Crashes	Jurisdiction
Circle Boulevard / 9th Street	101	City of Corvallis
NW 3rd Street (NB OR99W) and Harrison Boulevard	56	State
Buchanan Avenue/ 9th Street	38	City of Corvallis
Spruce Street/ 9th Street	38	City of Corvallis
Kings Boulevard / Harrison Boulevard	38	City of Corvallis
35th and US20/OR34	37	State
53rd Street and US20/OR34	32	State
Western Boulevard / 26th	32	City of Corvallis
Harrison Boulevard / 5th Street	30	City of Corvallis
OR 99W and Circle Boulevard	29	State
NW 4th Street (SB OR99W) and Harrison Boulevard	29	State
Main Street (US 20/OR 34) and 15th Street (Philomath)	33	State
Kings Boulevard / Buchanan Avenue	27	City of Corvallis
Harrison Boulevard / 9th Street	25	City of Corvallis
Walnut Boulevard / Highland Drive	25	City of Corvallis

Note: In the couplet section of OR 99W, the individual one-way segments are identified as NW 3rd Street (NB) and NW 4th Street (SB).

Of crashes occurring within the urbanized areas of Corvallis, Philomath and Adair Village, 59% were property damage only and 41% incurred injury. There were three fatal accidents, two involving pedestrians. The majority of crashes within urbanized areas were the result of rear-end collisions (27%) or turning movements (26%). The majority of crashes (76%) occurred during daylight hours and in dry conditions (73%).

In unincorporated areas within the Planning Area (Benton County), the majority of crashes were also the result of rear-end collisions (31%), followed by collisions with a fixed object (28%). There were no fatal accidents in rural areas between 2004 and 2008; however the majority of crashes did involve injuries (52%). The majority of crashes occurred during daylight hours (69%) and in dry conditions (69%).

The location with the greatest number of crashes along state highways in the Planning Area is the intersection of Circle Boulevard and Pacific Highway West (OR 99W) at milepost 81.77 in Corvallis. Many of the crashes were attributed to following too close, driving too fast for the conditions or disregarding the traffic signal. The intersection of 3rd Street / Pacific Highway West northbound and Harrison Boulevard also saw a high number of crashes, the majority of which were caused by turning movements, lane changes or cross-movement and rear-end collision.

Pedestrian and Bicyclist Crashes – U.S. and State Routes

From 2004 through 2008, crashes involving pedestrians or cyclists were most prevalent on Pacific Highway West (OR 99W), and Newport-Corvallis Highway (US 20/OR 34). While nearly all of the pedestrian crashes occurred in the vicinity of the Pacific Highway West (OR 99W) couplet section in downtown Corvallis, many of the bicycle crashes occurred south of the couplet, near Avery, Crystal Lake or Alexander Avenues. The primary cause of these crashes was the failure of vehicles to yield to pedestrians and/or cyclists. The majority of crashes along Newport-Corvallis Highway (US 20/OR 34) were also concentrated in the City of Corvallis, with many occurring downtown on VanBuren, or at the western edge of Corvallis, near 53rd and Technology Loop (MP 53 to 54), where the primary cause was failure of vehicles to yield to pedestrians and/or cyclists. It should be noted that the above statistics include only crashes with motor vehicles and do not include bicycle and pedestrian, bicycle and bicycle or other forms of crashes.

B. Transit System

The transit system is composed of a mix of public and private fixed-route and demand-response providers. Map VI-10 shows the Corvallis Transit System, Philomath Connection, and Greyhound Intra-city service within the Planning Area.

1. Fixed-Route Transit

Corvallis Transit System

The Corvallis Transit System (CTS) is the primary fixed-route transit service inside the Planning Area, providing service within the City of Corvallis and the surrounding area. Connections are

currently available to Albany and Philomath via the Linn-Benton Loop and Philomath Connection. Service to the City of Adair Village began in 2010. The City of Corvallis administers the CTS and has a contract with First Student for the operation of the services. The CTS is the primary recipient of Federal Transit Administration (FTA) Sections 5307 and 5309 funds in the Planning Area.

On February 1, 2011, per a decision of the city of Corvallis City Council, CTS became a fareless system. In place of fare box revenue, the City Council has established a monthly fee that is collected from the residential and commercial building accounts in the city of Corvallis. The system has experienced notable increases in ridership since the dropping of fare, which may differ from those included in this section. Currently, fare for the Philomath Connection is $0.75 and $1.50 for the Linn-Benton Loop service. In 2009, Oregon State University's students, staff, and faculty accounted for 44% of total CTS ridership.

With some variation among the specific routes, CTS buses generally run between 6:30 a.m. and 7:00 p.m. during the week, with reduced hours on Saturdays and no service on Sundays or major holidays. All CTS buses are equipped with wheelchair facilities and bicycle racks.

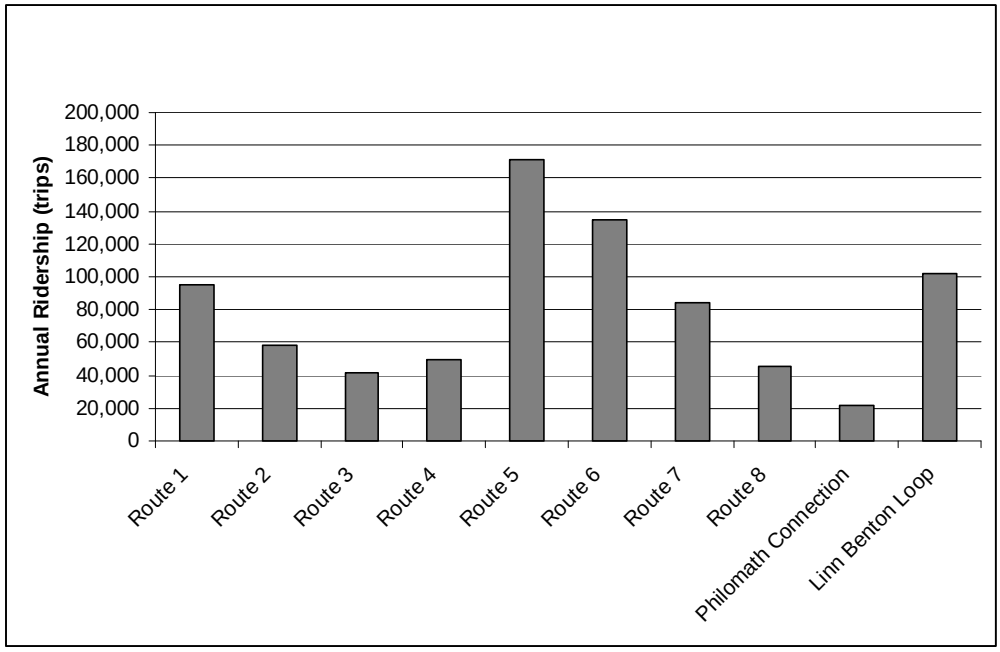
There are eight primary bus routes and four limited-service bus routes that originate at the Downtown Intermodal Mall at 5th Street and Monroe Avenue. The Timberhill Shopping Center on Walnut Boulevard and the Corvallis Clinic also serve as transfer points. The limited-service routes operate during peak hours and provide additional service to primary places of employment and Crescent Valley High School. The primary routes are:

- *Route 1 – OSU/Witham Hill/Timberhill/HP* – Route 1 is an hourly service that primarily runs on Walnut Boulevard, Witham Hills Drive, 36th Street, and Monroe Avenue. This route provides connections to Hewlett Packard, Wilson School, OSU, Woodland Meadows Park, Hoover School, Timberhill Park and Timberhill Shopping Center.
- *Route 2 – 9th Street/Highland/Hospital* – Route 2 is an hourly service that primarily runs on 9th Street, Highland Drive and Satinwood Street. This route provides connections to businesses along 9th Street, Good Samaritan Hospital, Corvallis Clinic and Wilson School.
- *Route 3 – Philomath Boulevard./OSU/Sunset Center/49th* - Route 3 is an hourly service that primarily runs on Monroe Avenue, Western Boulevard, and 53rd Street. This route provides connections to OSU, Reser Stadium, Sunset Shopping Center, Technology Loop and Sunset Park.
- *Route 4 – 5th Street/Highland/Hospital/11th* – Route 4 is an hourly service that primarily runs on 5th Street, 11th Street, Highland Drive, 9th Street, and Satinwood Street. It provides connections to Corvallis High School, Lane-Benton Community College, Washington Park, Fire Station 1, Library, DHS Child Welfare, Osborn Aquatic Center, Garfield Park, Garfield School, Wilson School, Corvallis Clinic and Good Samaritan Hospital.
- *Route 5 – OSU/Kings/Timberhill* – Route 5 is a 30-minute service that primarily runs on Monroe Avenue and Kings Boulevard. This route provides connections to OSU and Timberhill Shopping Center.

- *Route 6 – South Corvallis/Western/OSU* – Route 6 is a 30-minute service that primarily runs on Jefferson Way, Western Boulevard, 3rd Street, Ryan Street and Midvale Drive. This route provides connections to downtown Corvallis, Lily Park, southern Corvallis, Lincoln School, Tunison Park and Willamette Park.
- *Route 7 – OSU/29th/Circle/HP/Conifer/Hospital* - Route 7 is an hourly service that primarily runs on Monroe Avenue, 29th Street, Circle Boulevard, 9th Street, Conser Street, Conifer Boulevard, and Elks Drive. This route provides connections to OSU, Cloverland Park, Jefferson School, Fire Station 3, Boys & Girls Club, Osborn Aquatic Center, Hewlett-Packard, Cheldelin School, Good Samaritan Hospital and Corvallis Clinic.
- *Route 8 – Philomath Boulevard/49th/Country Club/35th/OSU* – Route 8 is an hourly service that primarily runs on Monroe Avenue, Jefferson Avenue, 35th Street, Technology Loop, Western Boulevard and Philomath Boulevard. This route provides connections to OSU, Reser Stadium, Sunset Shopping Center and businesses and housing near Technology Loop.

As shown in Figure VI-1, Route 5 (OSU/Kings/Timberhill) had the highest annual ridership of all the routes during the previous year (July 2009- June 2010). This route also shows the highest variability in volume of ridership during the year. Students comprise a significant portion of the ridership on Route 5, and during the summer, ridership can decrease by as much as 7,000 riders per month. Students also comprise a large percentage of riders on Route 1 and Route 6. Total ridership over all CTS routes, including the primary, limited-service and Philomath Connection routes was 700,791.

Figure VI-1: Corvallis Area Transit Ridership, July 2009-June 2010



Source: City of Corvallis, Department of Public Works

For all routes, the morning peak commute generally extends from 7:00 a.m. until 9:00 a.m. The morning peak commute is more pronounced than the afternoon peak commute, which lasts from about 3:00 p.m. to 5:00 p.m. Considering that most routes serve the OSU, this pattern likely reflects the varying schedules of students. During the summer, morning and afternoon peak-hour ridership is similar to the rest of the day, indicating that a significant portion of morning and afternoon commute riders are students and faculty.

CTS operates shuttles during special events, such as Fall Festival and DaVinci Days. In 2006, CTS began operating the Beaver Bus Late Night Service, which runs from 9:00 p.m. to 3:00 a.m. while school is in session. CTS also operates an OSU game day shuttle through downtown Corvallis. The game day shuttles run with 15-minute headways before and after the football games. CTS also operates a holiday trolley, a free express shopper route sponsored by participating merchants during the holiday season.

The 2005 Corvallis Area Transit Master Plan outlines transit improvements in detail for the future Transit System in the area. This plan adopts the recommendations of the Corvallis Area Transit Master Plan.

Philomath Connection

The Philomath Connection is a sub-recipient of FTA Section 5307 funds administered by the City of Corvallis and provides fixed-route transit service between Philomath, Corvallis Transit Center, and Oregon State University. Buses are equipped with wheelchair lifts and bicycle racks. There is a park-and-ride lot located at the Philomath City Library on Applegate Street. This service provides two routes, Corvallis/Philomath Route 1 and Philomath/Corvallis Route 2. Main Street/Philomath Boulevard (US 20/OR 34) is the primary roadway of travel on the route. One-way fare is $0.75. Days of service are Monday through Saturday, from approximately 7:00 a.m. to 7:00 p.m. As shown in Figure VI-1, total ridership is less than 20,000 trips per year.

Linn-Benton Loop

The Linn-Benton Loop is managed by the City of Albany Transit and funded by a variety of sources, including the City of Corvallis, the City of Albany, and FTA Section 5311 funds. The Loop operates Monday through Saturday and connects with the Corvallis Transit System, Philomath Connection and the Albany Transit System. There are three loop routes:

- Albany/Hwy 20/Corvallis Loop, (runs from 6:25 a.m. to 10:00 a.m.)
- Albany/Hwy 34/Corvallis Express Loop, (runs from 10:00 a.m. to 2:30 p.m.)
- Albany/Hwy 99/34/Corvallis Reverse Loop, (runs from 2:45 p.m. to 7:00 p.m.)

Base adult fare is $0.75, and discount coupon books are available. In addition to the designated stops, the Loop buses will make stops on an on-call basis at several locations.

2. Additional Transit Services

CTS Paratransit Service

CTS Paratransit is a demand-response (curb to curb) service that serves people who are unable to use fixed route service and meet federal eligibility requirements. CTS Paratransit offers the same service hours as regular CTS.

HUT Airport Shuttle

The HUT Airport Shuttle provides service from the Portland International Airport and the cities to the south of Portland, including Corvallis and Albany. Base fare for one-way travel is $48 and for round trip travel is $85. The route runs from the Corvallis Hilton Garden Inn (2500 SW Western Boulevard) to Oregon State University (2301 SW Jefferson Street) and to the Albany Phoenix Inn Suites before terminating at the Portland International Airport. There are also stops in Salem and Woodburn. The Shuttle runs every two hours, seven days a week.

OmniShuttle

OmniShuttle is a shared door-to-door service serving the Eugene/Springfield area, and also provides service to Albany, Corvallis, Roseburg, and Oregon Coast destinations. This shuttle provides a connection from the Corvallis area to the Eugene Airport.

Greyhound and Valley Retriever Bus Lines

Greyhound operates a passenger service on a regular schedule to and from the cities north and south of Corvallis.

The Valley Retriever is a charter/rental bus service based in Newport, Oregon. It operates three times each day Monday through Friday with stops in Corvallis, and it connects with the Amtrak Station in Albany. It is operated under a contract with Greyhound.

Special Transportation Fund (STF)

The State of Oregon provides funding for the transportation of senior citizens aged 60 or older and people with disabilities who are unable to access the fixed-route transit service. Benton County is the recipient of Special Transportation Funds and contracts with Dial-A-Bus for the provision of demand-response services throughout Benton County. Users typically request rides one to seven days in advance, and are served on a first-come, first-served basis. Service hours are Monday through Friday, 8:00 a.m. to 9:00 p.m.; Saturdays 8:30 a.m. to 7:00 p.m., and Sundays 8:30 a.m. to 3:00 p.m. Some extended hours are available within the Corvallis city limits for ADA-certified riders. In 2007, a Coordinated Public Transit-Human Services Transportation Plan was developed for Lincoln and Benton Counties, which covers the Planning Area, as per SAFETEA-LU requirement.

Coast to Valley Express

The Coast to Valley Express is funded through the Benton County Special Transportation Fund and provides public transportation between Corvallis and Newport. This service is coordinated by Lincoln County Transit and Benton County Dial-A-Bus, with each provider traveling to a halfway point between the two cities, where they exchange riders and then transport them to their destinations. The Coast to Valley Express operates on Monday, Wednesday, and Friday, with one morning shuttle and one afternoon shuttle.

New Rural Transit Routes

STF began two new public transportation routes in the fall of 2010 along the Pacific Highway West (OR 99W) corridor. Called the 99 Express, the two separate services link Adair Village to Corvallis and Monroe to Corvallis.

The Adair Village-Corvallis route operates five days a week with four round trips each day. The route provides morning and evening commuter service, in addition to two mid-day routes and service to the Corvallis Transit Mall. There is a flag stop at Highway 99 and Lewisburg Road and other route deviations with 24-hour advanced notice.

The Monroe-Corvallis route operated five days a week (Monday-Friday) with four round trips each day; however, service was discontinued during the preparation of this plan update due to a decrease in available funding.

Senior Companion Program

The Senior Companion Program operates in Benton, Linn and Lincoln Counties, linking trained "senior companions" with seniors or people with disabilities to provide, among other services, transportation to medical appointments, grocery store, social events, or other personal errands. The Senior Companion Program is a volunteer program sponsored in part by Samaritan Pacific Communities Hospital, Samaritan Health Services, Samaritan Lifeline Program, and other city and county agencies.

Cascades West RideLine

Cascades West Ride Line is a non-emergency medical transportation brokerage operated by the Oregon Cascades West Council of Governments. Ride Line coordinates transportation needs of Medicaid clients in Linn, Benton and Lincoln Counties with transit services of Para-transit providers.

There are approximately 31,000 eligible clients in the three counties which use transit services of 23 providers with 65 vehicles.

Public School Districts

The Corvallis School District contracts with First Student to provide bus transportation for students living farther than one mile from the schools. There are 38 standard buses and 10 special needs buses. For the elementary schools, there are 20 morning and afternoon bus routes; for the middle schools there are 20 morning and afternoon; and, for the high schools there are 8 morning bus routes and 9 afternoon bus routes. First Student also provides service to two alternative schools and a childcare facility on the OSU campus (Bates Hall). The Corvallis Transit System also provides morning and evening connections with Crescent Valley High School.

The Mid Columbia Bus Company provides bus service for the Philomath School District. There are nine standard buses and two special needs buses.

Taxi and Limousine Services

There are several private companies that provide taxi and limousine services in the Corvallis area. Services are upon demand and door-to-door. Reservations are accepted and rides could be arranged to the Portland or Eugene airports.

Private Retirement Facility Vehicle Services

Various retirement communities or centers provide transportation services to residents for shopping, medical, leisure, or other activities.

C. Pedestrian System

Pedestrian facilities that are accessible, convenient, and safe to use are essential components of the transportation system. As the *Oregon Bicycle and Pedestrian Plan* (OBPP) explains, virtually everyone is a pedestrian at some point during the day and therefore benefits from accessible facilities. Pedestrians include children walking to and from school, people using wheelchairs or other forms of mobility assistance, people walking to lunch, and people walking to and from their vehicles. In addition, walking meets the commuting, recreational, and social transportation needs for a significant portion of the population that cannot or chooses not to drive. The community's pedestrian system also offers recreational opportunities for both local and out-of-town users, potentially stimulating economic growth and tourism.

According to the OBPP, pedestrian facilities are defined as any facilities used by a pedestrian, including walkways, traffic signals, crosswalks, curb ramps, and other amenities such as illumination or benches. The Planning Area has several different types of walkways, which are defined in the OBPP as "transportation facilities built for use by pedestrians and persons in wheelchairs," including the following:

- **Sidewalks:** Sidewalks are separated from the roadway with a curb and/or planting strip. ODOT's minimum standard sidewalk width is 6 feet. The City of Corvallis requires 6-foot minimum sidewalks and a 12-foot minimum planted buffer on arterials and collectors. Adair Village has adopted these standards as well. Philomath requires 6-foot to 12-foot sidewalks

with a 6-foot to 9.5-foot planted buffer on all arterials and collectors. The Main Street arterials are to have 12-foot sidewalks with no planted buffer.

- **Multi-Use Paths:** Multi-use paths are used by a variety of non-motorized users, including walkers, bicyclists, skaters, and runners. Multi-use paths may be paved or unpaved, and are often 10 or 12 feet wide – significantly wider than the average sidewalk. Multi-use paths are discussed in detail in the bicycle section.
- **Roadway shoulders**: Roadway shoulders often serve as pedestrian routes in rural areas. On roadways with low traffic volumes (i.e. less than 3,000 vehicles per day), roadway shoulders are often adequate for pedestrian travel. These roadways should have shoulders wide enough so that both pedestrians and bicyclists can use them, usually 6 feet or greater. There are several roadways like this in the Planning Area. In cases where the shoulder is not adequate, signage is often posted to alert vehicle drivers of pedestrians on the roadway.
- **Pedestrian Activated Crosswalks:** A midblock designated crossing for pedestrians that includes a push button for activating a blinking yield light, a marked crosswalk, and a raised median for pedestrian refuge. Upon the activation of the yield light by a pedestrian the yield light starts blinking and signals to the motorists the presence of a pedestrian who intends to cross the street. Vehicles stop before the crosswalk and allow the pedestrian to safely cross the street. A few of these facilities are on South 3rd Street in Corvallis.

Pedestrian-activated crosswalk on South 3rd Street in Corvallis

1. Existing Sidewalks

The pedestrian system in the Planning Area is comprehensive in certain areas, such as in downtown Corvallis, around Oregon State University, and along most arterial and collector roadways within city limits. Sidewalks are lacking in other areas, such as on the outskirts of the Planning Area and on roadways in unincorporated areas. Map VI-11 shows gaps in the region's sidewalk system on roadways with collector status and higher. Sidewalk obstructions and encroachments, typically mailboxes, overgrown vegetation, and utility poles, impede safe and accessible pedestrian travel in some areas.

Philomath and Corvallis have development codes requiring sidewalks on both sides of roadways.

2. Existing Sidewalk Conditions

Existing sidewalk widths along arterials and collectors vary from 5 feet with no separation from the roadway to 10 feet with planted buffers. Multi-use paths provide alternatives to sidewalks on some roadways, like 53rd Street, the Newport-Corvallis Highway (US 20/OR 34) and Walnut Boulevard. Most of these facilities are in good or fair condition.

Some sidewalks and multi-use paths along arterials and collectors have old curb ramps that are not in compliance with new Americans with Disabilities Act (ADA) standards and guidelines due to the lack of truncated domes or other detectable warning. Some curbs lack ramps entirely. Other deficiencies include ramps of insufficient width (less than 36 inches), ramps that are not

aligned with the pedestrian flow, excessive slope (maximum of 1:12), excessive cross-slope (maximum of 1:50), inadequate landings and obstacles in the pedestrian path.

Table VI-4 shows sample sidewalk conditions and their corresponding rating.

Table VI-4: Sidewalk Condition Examples

Good	Smooth surface without cracks; ADA compliant width and grades.	
Fair	Fairly smooth surface, with some cracks and uneven settling of sidewalk panels. ADA compliant width and grades.	
Poor	Rough surface, with numerous cracks and severe settlement. Non-ADA compliant due to surface condition or obstructions.	
Extruded Curb Pathway	Portion of the roadway separated by an extruded curb. Variable pathway conditions.	

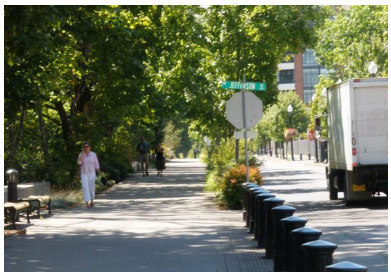
Corvallis

The downtown core of Corvallis is pedestrian friendly. First Street is a "slow street" that provides through access and parking for motor vehicles, as well as wide sidewalks and a multi-use path for pedestrians and bicyclists. The area between Harrison Boulevard and Western Boulevard from the Willamette River to 5th Street has employed the use of wide sidewalks, generous planted buffers, street furniture (benches, planted trash receptacles, pedestrian-scale lighting, etc.), textured corner treatments, and art that fosters a dynamic pedestrian environment. The downtown area also has land uses that are conducive to pedestrian travel, with attractive shops and cafes that front the street and have outdoor seating. The 3rd and 4th Street couplet serves as Pacific Highway West (OR 99W) through town and has significantly more traffic than 1st Street and 2nd Street. Pedestrian access from the university to the Willamette River is good.

Arterials and collectors outside of the downtown and university areas of Corvallis have 5-foot to 6-foot sidewalks in variable condition. Some have no separation from the roadway, others have narrow planted buffers, and the newest sidewalks and roadways have wide planted buffers. The newer sidewalks are in good condition and meet ADA guidelines, particularly in the newest

developments. Some sidewalks in older neighborhoods are experiencing minor cracking and heaving from tree roots and water damage.

In part due to the phasing of development, sections of sidewalk may be missing in the Corvallis sidewalk system. These and other 'gaps' have been identified by the City as key areas to fill in order to safely connect neighborhoods and provide access to schools, transit, multi-use paths, and employment or shopping areas. Major roadways with identified sidewalk gaps include:



1st Street in Downtown Corvallis

- Highland Drive (west side between Conifer Boulevard and Meadow Ridge Place)
- Glenridge Drive (800 feet on west side between Ponderosa Avenue and Walnut Boulevard)
- Technology Loop (400 feet on south side)
- Research Way (400 feet on north side)
- 35th Street/Whiteside Drive (300 feet on east side from Knollbrook to Long Avenues)
- Conser Street (150 feet on west side from Village Green Creek to Lorvik Place)
- Harrison Boulevard (635 feet on north side from LDS Church to multi-use path)
- Rivergreen Avenue (1,125 feet on south side from west sidewalk end and Riverbend Park)

Sidewalks or multi-use paths are largely absent in the areas outside of Corvallis and Philomath city limits, particularly in the older residential areas north of Corvallis along Highland Drive, Crescent Valley Drive, Lewisburg Avenue, and Mountain View Drive. Pedestrians walk on the shoulder or in the bicycle lane on these roadways.

Philomath

Sidewalks along Philomath's arterial and collector roadways are present but are often narrow and are in need of repair. The City and ODOT have been working to improve ADA-compliance and many curb ramps along Main Street meet current ADA standards.

In the downtown area of Philomath, sidewalks exist on both sides of Main Street, (Corvallis-Newport Highway / US 20/OR 34). These sidewalks were enhanced when Main Street and Applegate Street in Philomath were converted into a one-way couplet. As part of this conversion, 6.5-foot sidewalks built on Main Street and Applegate Street from 14th Street to Green Street, and an additional pedestrian-activated crosswalk was located at the intersection of 7th Street and Main Street.

The pre-existing sidewalks on Main Street and Applegate Street extend from 7th Street to 19th Street. On the north side, from the east side of town to 15th Street, the sidewalk is approximately 5 feet wide with a 10-foot-wide planting strip. New street trees have been planted, and many corners have curb ramps.

On the north side from 15th Street to 12th Street, there are 6-foot sidewalks with a 6-foot buffer. There is also on-street parking and decorative street lighting in this area. From 12th Street west to 8th Street on the north side, the sidewalk is 4 feet wide with a 10-foot planting strip and no on-street parking. From 8th Street west, the sidewalk is 6 feet wide with poles obstructing pedestrian passage and no buffer. On the south side, the 4-foot sidewalk is largely continuous with a 10-foot planting strip.

On arterial and collector roadways outside of the downtown area, sidewalks are in variable condition and may lack curb ramps. Sidewalks are intermittent on 9th Street, 13th Street, 19th Street, and Bellfountain Road.

Downtown Philomath sidewalk

Analysis completed as part of the Philomath Safe Routes to School Plan has identified the following areas as key routes to school which would benefit from sidewalks, crosswalks, multi-use paths, or other pedestrian enhancements:

Philomath pedestrian crossing

- Pioneer Street (Adelaide Drive – 9th Street)
- Pioneer (9th Street – 13th Street)
- 11th Street (Quail Glen Drive – Pioneer Street)
- College Street (Pioneer Street & 13th – Main & 17th Street)
- Main Street & 17th (intersection)
- Philomath Rodeo Grounds
- Cedar Street (13th Street – Willow Lane & 15th Street)
- Area between Willow Lane and Cedar Street
- 17th Street (Applegate Street – 19th Street & Cedar Street)
- Applegate Street (16th Street – 21st Street)
- Philomath High School and Middle School Campus
- Applegate & 21st Street (intersection)
- Applegate Street (21st Street – 29th Street)

Adair Village sidewalk

Adair Village

Sidewalks are intermittent in Adair Village, and older parts of the city, such as Arnold Avenue, lack curb ramps. The sidewalk on the south side of Arnold Avenue has a wide planted buffer, but sidewalks on the north side of Arnold Avenue are adjacent to the curb. Sidewalks and shoulders end at the entrance to Adair County Park. Sidewalks in newer developments are in good condition and ADA accessible

3. Existing Sidewalk Replacement / Construction Programs

The City of Philomath has a sidewalk construction/replacement program that has been successful by working with residents to repair or construct sidewalks along improved streets with curbs and gutters. The targeted areas during the first three years of the program included all of Applegate Street and adjacent side streets, and the second phase will focus on Newton and Green Streets between 24th and 26th, as well as along 26th Street.

The City of Corvallis has a Sidewalk Safety Program to systematically replace, repair, and construct sidewalks and ADA ramps over time. Each year, one of eleven sidewalk districts is surveyed for sidewalks in need of repairs. The City then works with property owners to improve the safety and condition of the sidewalk by making the necessary repairs. The cost of the sidewalk repairs is funded by the Sidewalk Maintenance Fee paid by all Corvallis utility accounts and the cost for the ADA ramps is funded through a New Freedom grant and matched with current revenues from the Street Fund (State Highway Fund allocation to Corvallis).

There is no comparable program for Adair Village.

Benton County currently is upgrading a portion of 53rd Street near the Benton County Fairgrounds to include sidewalks, curbs and gutters.

4. Pedestrian Destinations

Major pedestrian destinations are located in the following areas of the region:

- **Downtown** – Corvallis and Philomath have downtown cores that are destinations for pedestrians.
- **Schools (including OSU and Reser Stadium)** – Most of the arterial and collector streets around schools in the Planning Area have sidewalks on at least one side of the street and are generally in good or fair condition. The exceptions are Crescent Valley High School and Mountain View Elementary School.
- **Parks/Recreation Centers** – Most of the parks in the Corvallis Planning Area are accessible by sidewalk or multi-use path. Other parks are accessible by bicycle or by walking on a wide shoulder or bicycle lane.
- **Shopping / retail centers** – Shopping/retail centers are located throughout the region, clustered in downtown Philomath and Corvallis, along the Newport-Corvallis Highway, 9th Street, Circle Boulevard, and Walnut Boulevard. Most of these shopping and retail centers are accessible on sidewalks. However, the high traffic volumes and curb-tight sidewalks can make the walking experience uncomfortable. Additionally, many retail and shopping areas have limited pedestrian access from the sidewalk to the business itself, forcing pedestrians to walk through a large parking lot without a clear walkway.
- **Employment centers** – Employment centers in the Planning Area include County and City offices in the Corvallis downtown core, retail services mentioned above, OSU, Hewlett Packard, CH2M HILL, Good Samaritan Regional Health Center, Samaritan Health Services, the Corvallis Clinic, Linn-Benton Community College (satellite campus), Corvallis School District, Georgia Pacific, United States Environmental Protection Agency Research Laboratory, Evanite Fiber, the Technology/Research business park, and smaller businesses and industry throughout the region. Major employment centers have good sidewalk connectivity and access, and some have internal pathway systems that improve pedestrian access.

5. Pedestrian System Deficiencies

Although many of the arterials and collectors in the Planning Area have adequate pedestrian facilities and a complementary multi-use path system, there are still several barriers pedestrians must overcome:

Auto-Oriented Land Uses

Auto-oriented land uses clustered outside of the downtown cores force many pedestrians to walk along and cross high-volume arterial roadways to access destinations. Many of these roadways have sidewalks but they are only 5 feet wide and adjacent to the curb (no planter strips). The lack of a buffer next to high-speed traffic can make walking uncomfortable and potentially dangerous.

Limited Crossings

Crossing larger arterials like 9th Street, Circle Boulevard, Walnut Boulevard, Philomath Boulevard, and portions of US 20, OR 34, and OR 99W is challenging due to long distances between signalized intersections and marked crossings. Gaps, or opportunities to cross the roadway, are decreasing due to increasing traffic volumes and signal timing that has not been adjusted to reflect the changing roadway conditions. These conditions discourage pedestrians from walking to services along the roadway and may endanger those who choose to dart across the roadway to reach their desired destinations.

Lack of Handicapped Accessibility

Portions of the arterial and collector street systems lack ADA-compliant curb ramps and driveway cuts. This can make traveling by wheelchair or motorized mobility device challenging, if not impossible.

Poor Sidewalk Connectivity

Though sidewalk connectivity and condition are generally good in the urbanized areas of Philomath and Corvallis, older residential areas in unincorporated Benton County north of Corvallis and Philomath lack sidewalks and, in many cases, a shoulder or bicycle lane that would provide pedestrians with a place to walk beside the roadway. Areas of particular concern are along Highland Drive, Mountain View Drive, and Granger Avenue, where pedestrians have been observed walking along the shoulder or in the roadway to access schools in the vicinity.

D. Bicycle System

Jurisdictions in the Planning Area have championed good bicycle facilities since the early 1970s, and their efforts have paid off. The League of American Bicyclists has named Corvallis a Bicycle-Friendly Community and has awarded Corvallis the prestigious "Gold Award." Approximately 97 percent of the collector and arterial roadways in Corvallis have bike lanes (45 miles) and there are 16 miles of multi-use paths.

According to 2005-2009 U.S. Census data, 8% of the residents in the Corvallis Urbanized Area commute to work by bicycle.[7] This number was 9% for Corvallis residents, and 1% or less for Adair Village and Philomath. These percentages do not include the large university student population or the people who ride their bicycle to school, stores, libraries, parks, and on

[7] U.S. Census Bureau, 2005-2009 American Community Survey 5-Year Estimates. (Table B08301 Means of Transportation to Work). http:///www.census.gov/ (December 22, 2010).

recreational rides. These groups make up a much larger number of people riding bicycles in the community.

The City of Philomath prides itself on being a "gateway to the getaway" and providing access to numerous outdoor activities, including bicycling. The Philomath Boulevard multi-use path runs along the Newport-Corvallis Highway (US 20/OR 34), providing an integral link between Philomath and the downtown Corvallis riverfront, as well as other rural bicycle touring roads. It is a very popular destination for recreationalists. Adair Village has integrated bicycle lanes into its community, providing access to schools, parks, and residential areas.

Touring and recreational bicycling are popular due to the area's proximity to scenic rural roads. The area is often targeted for bicycle races and charity rides, which bring hundreds of visitors to the area for bike-specific events.

Regional bicycle connectivity is good throughout the Planning Area, although some highways are more conducive to bicycles than others. Pacific Highway West (OR 99W), the Corvallis to Lebanon Highway (OR 34) and the Newport-Corvallis Highway (US 20/OR 34) link the three communities and have good shoulders for bicycling within the Planning Area. The Albany-Corvallis Highway (US 20), on the other hand, is generally seen as unsafe for bicyclists. A long-term planning effort is seeking to address this deficit through the development of a multi-use path along the same corridor.

While facilities on these highways are limited through downtown Corvallis and Philomath, there are good parallel routes on local roadways. For bicyclists who prefer routes with lower traffic volumes and speeds, there are many alternative routes to and from each city in the Planning Area. Many of the alternate routes have dedicated bicycle facilities, low traffic volumes, or, in many cases, a parallel multi-use path. Map VI-11 shows the different types of bicycle facilities in the Planning Area.

1. Types of Bicycle Facilities

According to AASHTO's *Guide for the Development of Bicycle Facilities* (1999) and the *Oregon Bicycle and Pedestrian Plan* (1995)[8], there are several different types of bicycle facilities. Bicycles are allowed on all of roadways in Corvallis and the surrounding areas. Bikeways are distinguished as preferential roadways that have facilities to accommodate bicycles. Accommodation can be a bicycle route designation or bicycle lane striping. Multi-use paths are facilities separated from a roadway for use by cyclists, pedestrians, skaters, runners, or others.

The following types of bikeways, recognized by AASHTO and the *Oregon Bicycle and Pedestrian Plan,* are found in the Planning Area:

- **Shared Roadway**: Shared roadways include roadways on which bicyclists and motorists share the same travel lane. This is the most common type of bikeway. The most suitable roadways for shared bicycle use are those with low speeds (25 mph or less) or low traffic

[8] The Oregon Bicycle and Pedestrian Plan was being updated at the time of this writing, and the final plan was not yet available.

volumes (3,000 ADT or less). In the Corvallis area, some shared roadways have 'sharrow' pavement markings indicating shared travel lanes.

- **Shoulder Bikeway**: These are paved roadways that have striped shoulders wide enough for bicycle travel. ODOT recommends a 6-foot paved shoulder to adequately provide for bicyclists, or 4-foot minimum in constrained areas. Roadways with shoulders less than 4 feet are considered shared roadways. Sometimes shoulder bikeways are signed to alert motorists to expect bicycle travel along the roadway.
- **Bike Lane:** Bike lanes are portions of the roadway designated specifically for bicycle travel via a striped lane and pavement stencils. The standard width for a bicycle lane is 6 feet. The minimum width of a bicycle lane against a curb or adjacent to a parking lane is 5 feet. A bicycle lane may be as narrow as 4 feet, but only in very constrained situations. Bike lanes are most appropriate on arterials and major collectors, where high traffic volumes and speeds warrant greater separation.
- **Multi-Use Path**: Multi-use paths are paved pathways that are physically separated from the roadway and shared by all non-motorized users, including walkers, joggers, skaters, and bicyclists. In general, multi-use paths are desirable for recreational uses, particularly by families and children. They are also preferred for corridors where there are few intersections or crossings, to reduce the potential for conflicts with motor vehicles.

Shared roadway, shoulder bikeway, bike lane and multi-use path

2. Existing Bikeway Locations

Existing bicycle lanes, shoulder bikeways, and multi-use paths are shown on Map VI-11. There are approximately 80 miles of dedicated bicycle facilities in the Planning Area, and 96% of arterial and collector roadways within the Corvallis city limits have established bike lanes. Adair Village has one striped bicycle lane on Arnold Avenue and Philomath has striped bicycle lanes on 19th Street, Applegate Street and Main Street.

A traditional grid pattern and good street connectivity in Philomath, Corvallis, and Adair Village present many options for bicyclists to travel throughout the area on shared roadways. In addition to having an extensive network of on-street facilities, the Planning Area also contains a complimentary network of multi-use paths. These include the Campus Way path, Philomath Boulevard path, the Riverfront path, and the Walnut Boulevard path. All of the multi-use paths in the Planning Area are presented on Map VI-11.

3. Existing Bikeway Conditions

Bicycle lane on 9th Street

Bicycle Lanes

Most of the existing on-street bicycle facilities are of standard width and in good condition. There are, however, areas with sub-optimal designs for some of the existing bicycle facilities. One example is a narrower than standard bicycle lane. This treatment has been used throughout the region to include a striped facility on the roadway, particularly in downtown Corvallis.

Pathway Design, Country Club Road

Benton County and the City of Corvallis have planned and constructed two interconnected but separate bikeway systems over the past 30 years – an on-street bicycle system and a multi-use path system. At times these systems are redundant, but they do provide distinct choices for commuters and recreational users.

Multi-Use Paths

Connector Pathway

Most of the multi-use paths in the Planning Area are in good condition and sometimes provide connectivity that cannot be achieved on street. Examples are the multi-use path from Witham Hill Drive to Harrison Boulevard, the Campus Way path, and the railroad path from Buchanan Avenue to Pacific Highway West (OR 99W) and Circle Boulevard, as well as numerous short paths that connect cul-de-sacs, link schools and neighborhoods, and circulate through parks. These paths provide excellent recreational opportunities and good places for young or inexperienced bicyclists to develop riding skills. Most of the paths are 8 to 10 feet wide and constructed of asphalt. The exception is the riverfront path in Corvallis, which is generally 12 feet wide and constructed of concrete. A 12-foot path also exists along the Willamette River from Rivergreen Avenue through Willamette Park.

Some multi-use paths in the Planning Area were built many years ago when the standard facility for bicyclists was a separated path. Some multi-use paths were built along rural roads in anticipation of reconstruction of these roadways to urban standards (including bicycle lanes). The multi-use paths are likely to remain as pedestrian ways after bicycle lanes are added to these roadways. Practices have since evolved to provide on-street facilities for bicyclists and to augment the bicycle network with multi-use paths as appropriate. Some of the original paths have not been reconstructed since they were built and are showing the effects of time. Many are too narrow for the number of people using them. Others are experiencing buckling, heaving, and cracking, which can be both uncomfortable and hazardous for users. Additionally, some of the older paths, like 53rd Street, have numerous conflicts for bicyclists and other path users as they cross multiple driveways and roadways. The Philomath Boulevard Multi-use Path (Willamette River to City of Philomath) and Campus Way Multi-use Path (35th to 53rd) were reconstructed in 2009-2010 with ARRA funding.

A new trend in multi-use path design and implementation is to connect cul-de-sacs and parks in new developments with an internal pathway system. Many of these paths in the Planning Area are 6 feet wide and constructed of concrete or asphalt. While these paths are narrower than a standard multi-use path, the intention is to provide a short connection that cannot be achieved on-street and accommodate fewer users. The width of the multi-use path restricts access by maintenance and emergency vehicles and should only be used for short connections.

Shoulder Bikeways

Most of the shoulder bikeways in the area are in very good condition and have adequate width. Some roadways have narrow shoulders but low traffic volumes, like Bellfountain Road and Plymouth Drive. Other sections have areas where the shoulder narrows to accommodate a turn lane and creates a conflict point for bicyclists and turning motor vehicles.

4. Destinations for Bicyclists

Major destinations for bicyclists are primarily the same as those for pedestrians: downtowns, schools, employment centers, shopping centers, neighborhood commercial areas, and parks and recreation. In addition, Pacific Highway West (OR 99W), Alsea Highway (OR 34), Corvallis to Lebanon Highway (OR 34) and the Albany-Corvallis Highway (US 20) provide regional connections to other highways and county roads to nearby cities such as Albany, Lebanon, Independence, Monmouth, and Salem, as well as to destinations along the Oregon Coast.

5. Bicycle System Challenges

Bicycling through the Planning Area is generally easy and accessible, and the area highlights some of the best practices for bicycle facility planning and implementation in the country. Recognizing and addressing the following deficiencies will improve the quality, connectivity, and rate of bicycling in the region by eliminating hazards and completing regional connections:

Railroad track crossings

A number of Portland & Western mainline tracks and spurs cross the region, many of which cross roadways at some point. Angled crossings of railroad tracks are extremely difficult for bicyclists to cross, particularly when the rails and roadway are wet. Asphalt surrounding the flange of the rail has a tendency to crumble and buckle over time. It is important to address railroad crossings where a bicycle facility crosses the rail line. Specific locations of concern are Avery Avenue and Allen Street, 6th Street and Washington Way, and 35th Street and Washington Way.

Substandard facilities

Some facilities in the region do not adhere to current design standards and best practices, for example, where a bicycle lane is provided on only one side of a roadway. Identifying these facilities and planning a systematic modification and modernization program is a good next step. Many of these discrepancies will be eliminated as streets are brought up to standard.

Gaps in the bikeway system

Although the bicycle facility network is quite comprehensive in the Planning Area, there are still gaps that are challenging for bicyclists. These gaps exist because of financial or political constraints. To close the gaps would require adding vehicle restrictions, removing on-street parking or street trees, or necessitate bringing the entire street up to current standard, which can be financially challenging.

Future development

As the area continues to grow, it is increasingly important to recognize the benefits of good connectivity for bicyclists and pedestrians. Past efforts to provide connectivity between cul-de-sacs and to major roadways have been good and these practices should continue to be required for all new development. Developers should be encouraged to improve access and connectivity by implementing pedestrian and bicycle-friendly designs, like clear pathways from on-street facilities, covered bicycle parking, internal trail systems, and orienting storefronts to the roadway.

E. Parking

Parking policies and practices strongly influence people's choice of transportation modes. Policies that result in readily available parking spaces encourage the use of Single Occupancy Vehicles (SOVs) and compete with the promotion of alternative modes of transportation. Zoning regulations that require a certain number of parking spaces to be provided as a condition of development approval are an example of policies that increase the supply of parking. Public and private employers contribute to the use of SOVs by offering free or discounted parking to their employees.

Within the Planning Area there is a combination of public and private parking spaces. Public parking includes on-street and off-street facilities while the private parking is located off-street. There is one publicly owned parking structure on the OSU campus. On-street parking is allowed in most areas of the central business district. The City of Corvallis completed a Downtown Parking Study in 2002, and staffs a committee that focuses on downtown parking issues.

Corvallis has established three residential parking districts near the OSU campus to ensure adequate parking for residents in those neighborhoods. Vehicles without permits are limited to parking for two hours in the districts between 8 a.m. and 5 p.m. on weekdays.

The TPR requires that Transportation Plans include policies that would reduce reliance on SOVs. The vitality of many retail businesses relies on the availability of free short-term (four hours or less) parking, therefore, most parking policies focus on the availability of free long-term (more than four hours) parking. Recommended parking policies which focus on reducing reliance on the SOV without compromising the short-term needs of the business community are described in Chapter IX.

F. Transportation Demand Management

In the past decades, auto trips and vehicle miles traveled have grown at a faster rate than population. Transportation demand management strategies (also referred to as Transportation Options or TDM Programs) are designed to curb this trend. The Planning Area cannot build its way out of congestion; there are neither the financial resources nor the willingness to bear the adverse environmental impacts of such a trend. TDM strategies address the demand side of transportation to make more efficient use of the transportation infrastructure.

Specifically, demand management strategies attempt to increase transit ridership, vehicle occupancy (from single-occupancy to multiple-occupancy), telecommuting or working from home, walking and bicycling, or to reduce the lengths and volumes of trips. Implementation of demand management strategies reduces dependence on the single-occupant vehicle, thereby reducing traffic congestion, vehicle emissions, and fuel consumption. Additionally, many transportation options for both commute and non-commute trips increase physical activity, in turn promoting healthier more active lifestyles. To accomplish these objectives, TDM programs use incentives and disincentives to effect changes in travel behavior. Most travel change behaviors have a positive economic impact in personal spending through savings realized by sharing commute costs.

TDM involves providing quality transit, rideshare, bicycle and pedestrian systems. The details of these facilities are discussed in the sections above. This section discusses other services and programs that are aimed at encouraging the use of transportation options and reducing single-occupant vehicles (SOV).

1. Existing Program

The City of Corvallis and Oregon Cascades West Council of Governments provide TDM services and programs to residents within and commuters to the Planning Area. Both agencies use grants administered by ODOT as a funding source for their programs.

The City of Corvallis supports a full-time TDM position that coordinates a multi-pronged program including:

- The Corvallis Employment Transportation Coordinators (ETC) are government and private industry employers who are committed to the idea of improved transportation alternatives for their employees. The ETC group is coordinated by the City of Corvallis and meets periodically to discuss and coordinate TDM activities.
- Production of public information materials, including an information kiosk available for use at events and promotion of transit and non-motorized modes
- Sponsorship of and participation in public information and promotional events, such as *Get There Another Way Week* and *World Car-free Day*
- Assistance to local employers interested in reducing SOV trips and/or implementing employer incentives

Benton County is a participant in the Corvallis ETC and has implemented strategies to reduce SOVs internally, including participation in the CTS group pass program which provided employees a free or reduced cost transit pass as incentive to leave their cars at home. Over 400

County employees participated in this program prior to Corvallis Transit becoming a fare-free system.

Oregon Cascades West Council of Governments operates a regional TDM program that serves Benton County as a part of the three-county region (Linn, Benton and Lincoln). Components of this program are online ride matching, support to the Valley Vanpool www.valleyvanpool.info that serves the Planning Area, employee trip reduction program, and other advocacy and information and advocacy services for reducing single occupancy vehicle trips.

Park and ride lots are a popular and effective strategy to reduce the number of people driving alone, and can provide layover stops for car/vanpools and in some cases, fixed route transit. There are at least twelve sites that serve as park & ride lots within the Planning Area, including three formal lots and nine informal lots. There may be additional sites, including church parking lots, fringe parking on large retail lots, or parking at another commuter's home which are not accounted for.

Although most of these sites are not within the Planning Area, they serve those traveling to and from the Area. For example, Corvallis and Philomath residents drive to the I-5/OR 34 lot to catch a ride to Salem or Portland. A resident of Wren may use the site at the intersection of US 20 and OR 223 to commute to Corvallis for employment or to attend school.

Formal lots are located at:
- I-5/ Corvallis-to-Lebanon Highway (OR 99W)
- Hickory Street (North Albany Road)--this lot will soon be replaced with a new lot on the west side of North Albany Road
- Fescue Street/I-5 (Albany)

Informal lots are located at:
- Applegate and 11th (Philomath Public Library)
- 1st and Harrison Street (behind Super 8 Motel in Corvallis)
- 7th and Oak (Lebanon)
- Arboretum Road/OR 99W (Adair Village)
- Newport-Corvallis Highway (US20/OR34) /OR228 (Wren)
- Newport-Corvallis Highway (US20/OR34) /OR180 (near Blodgett)
- I-5/Ankeny Hill Road (Jefferson)
- I-5/Exit 238 (between Millersburg and Jefferson)

2. TDM Program Gaps

Enhancements and expansions to the existing programs are essential for the TDM strategies to be effective and attract additional users.

Ensuring that land use and development patterns support alternative modes is a critical component of an overall approach to reducing SOV and increasing the efficiency of use of the public transportation infrastructure.

Techniques include:

- Parking standards that are adequate but do not promote SOV uses,
- Increasing densities in general and especially along transit routes,
- Encouraging transit-oriented development,
- Mixing uses to shorten trips and make biking and walking more viable,
- Ensuring developments are designed to invite pedestrian, transit and bicycle access; and
- Establishing bike boulevards which provide a safe and comfortable experience for less skilled bicyclists.

Other "Smart Growth" techniques should continue to be expanded and refined by the jurisdictions in the Planning Area.

Additional investment in the TDM program itself is also necessary to expand assistance to employers, expand transit and vanpool subsidies, assist commuters in the formation of vanpools and carpools and effectively communicate with the traveling public and employers about transportation options. It may prove beneficial to augment the current TDM program with additional techniques. Research into alternative commuting options consistently points to financial incentives and disincentives as one of, if not the most, useful and cost-effective TDM options. Financial incentives/disincentives that may prove effective within the Planning Area include modifications to parking pricing by employers (currently employers within the Planning Area do not charge employees for parking) and increasing on-street parking meter fees.

ODOT recently allocated $2.1M of transportation fund to the Flexible Fund Program to develop and enhance TDM efforts on a statewide basis. There are four core work areas included in the initial effort; the areas are: enhancement of Drive Less Save More efforts statewide, development of vanpooling as a core strategy, planning at the state level to guide TDM program development and an internal ODOT TDM program geared to employees and which may be replicated by other state agencies.

TDM strategies are not a final solution to traffic congestion and its resulting problems (lost time, wasted fuel, etc.). When considered individually, the impacts of most TDM strategies appear modest, affecting just a few percent of total vehicle travel. However, their effects are cumulative and synergistic. A comprehensive TDM program that includes an appropriate combination of complementary strategies can have significant impacts and is often the most cost effective solution to common transportation problems when all costs and benefits are considered. If TDM strategies are implemented in just one small location, the effects to overall regional travel may be fairly negligible, but if TDM strategies are incorporated into a broader region, significant reductions in single-occupant automobiles can happen.

G. Air Facilities

1. Public Air Facilities

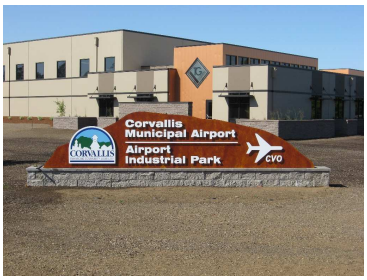
The Corvallis Municipal Airport is a Federal Aviation Administration (FAA) designated Group C General Aviation Airport that is located approximately four miles south of downtown Corvallis in the southern portion of the Planning Area. Roadway access to the Corvallis

Municipal Airport from the north and south is provided via OR 99W and Airport Avenue. Access from the west is via Airport Avenue.

Access to Corvallis Municipal Airport on Airport Road

The airport is open to the public and currently handles all types of aviation services except commercial passenger air service. Currently, commercial airline passengers are served by Mahlon-Sweet Field in Eugene, (approximately 30 miles south), and Portland International Airport in Portland (approximately 80 miles north).

The Corvallis Municipal Airport currently has one fixed-base operator. Corvallis Aero Service, Inc., which has been in business since 1982 and provides fuel, maintenance services, overnight hangar parking, auto rental arrangements and flight training services (ground school, pilot supplies, testing center, aircraft rental, and flight instruction including helicopter training). The airport has five Special Aviation Service Operations: Helicopter Transport Services, Inc. is based at the Corvallis Municipal Airport and provides heavy-lift Skycrane and fire-fighting services; Frontier Flight Service is a flight training facility specializing in training of Japanese students; REACH Air Medical Service which is an air ambulance helicopter service; and two private T-hangar groups.



New development at the Corvallis Airport Industrial Park

The airport averages 100,000 operations per year, with 145 aircraft based at the field. Approximately 77 percent of the operations are local general aviation, 21 percent are transient general aviation, and 2 percent are military. Of the 145 aircraft based on the field, 111 are single-engine airplanes, 11 are multi-engine airplanes, 2 are jet airplanes, and 21 are helicopters.

There are two asphalt runways, and both are in good condition. Runway 17/35 is 5,900 feet long by 150 feet wide and has the following weight limits: 60,000 lbs for single-wheel, 100,000 lbs for double-wheel, and 150,000 lbs for double-tandem aircraft. Runway 9/27 is 3,335 feet long by 75 feet wide and has the following weight limits: 51,000 lbs for single-wheel, 65,000 lbs for double-wheel, and 100,000 lbs for double-tandem aircraft. The airport provides 102 T-hangar spaces and 46 tie-downs.

The City of Corvallis Public Works Department manages the airport. The facility's operations are fully self-funded, with revenue sources that include land and building rents, tie-down and T-hangar rents, a fuel sales fee, and sales of grass seed from airport-owned acreage. Improvements made by the City include utility systems, aircraft T-hangar storage, lighting, navigational aids, and runway and taxiway improvements.

The *Corvallis Municipal Airport Master Plan* (2003) calls for greater development of the commercial services at the airport. The plan also states that the airport will continue to provide for private and corporate aircraft and will maintain facilities for air-freight carrier service. Air-freight providers in the Planning Area, such as Federal Express, and United Parcel Service use the Corvallis Municipal Airport.

Recent developments at the Corvallis Airport Industrial Park show progress toward the goal of greater development. Nearly twenty high technology, light manufacturing and services businesses have located at the 220 acre park, which is zoned for airport and industrial activities. Reflecting this growth, Hout Road was recently reclassified and improved to the standards of an Urban Collector.

Benton County has adopted an airport overlay zone to protect the airport's viability. The plan seeks a higher level of development, which would increase air and roadway traffic in the future. The Corvallis Municipal Airport Master Plan includes recommendations for extending runway 17/35 to north and south by 1050 ft. and replacing the existing hangar area with a new terminal building. The Metropolitan Transportation Plan includes the recommendations of the Corvallis Municipal Airport Master Plan, as revised in 2003.

Many residents in the Planning Area choose to fly out of the Portland International Airport or the Eugene Airport. Public transportation options linking Planning Area residents to these airports include the HUT Shuttle (Portland) and Omni Shuttle (Eugene).

2. Private Air Facilities

There are two private air facilities located within the Planning Area:

Table VI-5: Private Air Facilities in the Planning Area

Airport Name	Use	Location
Dunning Vineyards	Private; permission required prior to landing. One aircraft based at the facility.	3 miles north of downtown Corvallis
Good Samaritan Hospital Heliport	Private; medical and air ambulance use. Heliport usage only.	South of Elks Drive in Corvallis

Additionally, there are several air facilities located just outside of the Planning Area. The Flying Tom Airport, which has two aircrafts based at the field, is located just outside Planning Area boundaries to the east of OR 99W and just south of Adair Village. The Joyner Airport, which has one aircraft based at the field, is located on Granger Avenue, just east of the Planning Area. The Winn Airport has three aircraft based at the field, and is located just east of the Planning Area and north of Garden Avenue.

H. Rail System

1. Freight Rail

Portland & Western Railroad (P&WR) is the primary provider of rail service within the Planning Area. This short-line railroad is one of the wholly owned subsidiaries of Genessee & Wyoming, Inc., a leading operator of regional railroads, switching services and rail car leasing based in Greenwich, Connecticut. The rail lines connect with the P&WR line in Newberg, which then heads to Portland.

A portion of rail along the Corvallis-Monroe line, known as Bailey Branch, connects to the Planning Area from the south. Shut down since 2007 due to safety concerns, one portion was recently sold to Venell Farms of Corvallis (VFRC), which is operating under an agreement with Albany & Eastern Railroad of Lebanon. The remaining portion, which is owned by Union Pacific Railroad and leased to shortline operator Willamette & Pacific, is currently facing permanent closure.

Freight rail in the Planning Area

Short-line rail tracks within the Planning Area include:

Westside Branch in Corvallis

Westside Branch

This route runs south from Yamhill County through Corvallis to Monroe, parallel with Pacific Highway West. This branch includes the section known as the Bailey Branch, which is facing permanent closure south of a 5.35 mile stretch that was purchased by Venell Farms. The 5.35 miles stretch owned by Venell Farms runs from milepost 687.6 near Corvallis to milepost 682.25 near Greenberry, and is operated under a contract with Albany & Eastern Railroad. The remainder of the track, south of the area owned by Venell Farms, is facing permanent closure and abandonment.

Toledo Branch terminus in Toledo

Currently, the line turns east just south of Adair Village, so that in that area the rail line is located just east of the Planning Area boundary. The line runs through downtown Corvallis. Within the Planning Area the line is classified as Class 2 track and Excepted Track south of Corvallis. The classifications relate to the maximum operating speed allowed on the track. Freight trains operating on Class 2 track are limited to a maximum of 25 mph and passenger trains may not exceed 30 mph. Operations on Excepted Track are limited to a maximum of 10 mph and no passengers or hazardous materials can be carried on this type of track.

Toledo Branch

This route runs 75.4 miles between Albany and Toledo, and through central Corvallis and central Philomath. The track is owned by the Union Pacific Railroad, but P&WR leases the rights to the track. This branch serves the Georgia Pacific paper mill in Toledo, which is P&WR's largest single customer. P&WR has a road-switcher in Corvallis.

The portion of the line from Albany to Corvallis (12 miles) is Class 3 track (maximum 40 mph for freight and 60 mph for passengers) that consists primarily of heavy rail, and carries the heaviest rail traffic on the P&WR system. At Albany, the line crosses the Willamette River on a 140-foot through-truss span. The timber trestle portion is in need of repair. Between Corvallis and Toledo (63.4 miles) the line is generally Class 2. Issues along this segment of the line include poor drainage in some areas, steep grades, and a tunnel with limited clearance. Another

issue is the interaction between trains and vehicles at the numerous at-grade crossings in the Planning Area.

Corvallis rail crossings

The line carries approximately one million gross tons of freight per year. According to ODOT, the primary commodities trafficked through the Planning Area include: wood chips, scrap paper, brown rolled paper (pulp board), logs, dimensioned lumber, feed pellets, feed grains, fertilizer, dairy feed (cottonseed meal), wheat, oats, grass seed, newsprint, scrap iron and steel, finished steel, and treated utility poles.

The recent *Toledo Sweet Home Rail Corridor Feasibility Study* (2005) examined the potential of the railway corridor to support future economic development. That study found that the rail system in the Planning Area is generally underused for freight purposes.

2. Passenger Rail

There is no passenger rail service within the Planning Area. The nearest Amtrak train station is located in Albany, approximately 11 miles from Corvallis. Amtrak (Amtrak Cascades and Coast Starlight services) stops in Albany, and travels both north to Vancouver, British Columbia, and south to San Diego, California (Coast Starlight train only). Local Amtrak officials classify the level of passenger demand at the Albany station as moderate (not at full capacity). Current track conditions in the Planning Area limit maximum passenger train speed to 30 to 60 mph north and east of Corvallis and preclude service in Corvallis. No section of rail within the Planning Area is capable of accommodating train speeds over 60 mph. Special excursion trains, on rare occasion, travel roundtrip to the Oregon coast or from the north or south through the Planning Area.

The *Benton County Comprehensive Plan* (2001) recommends that the region consider tying into a Willamette Valley commuter line at some point in the future. Passenger rail service to Corvallis is discussed as an option in the *Oregon State Rail Plan* (2001).

3. At-Grade Rail Crossings

Most of the rail crossings in the Planning Area are at-grade. These crossings can cause conflicts between trains and vehicles, pedestrians, and bicyclists, as well as delays for roadway users, especially during peak traffic periods. These conflicts are most noticeable where both north-south and east-west rail lines are located. At-grade rail crossings on arterial and collector roads are shown on Map VI-11.

I. Waterways and Pipelines

1. Waterways

The Willamette River and Mary's River are the only navigable waterways within Planning Area boundaries. The Willamette River is located at the eastern edge of the Planning Area. Within the Planning Area, both rivers are used for active and passive recreation, but most recreation occurs on the Willamette. Neither river is currently used for commercial navigation. According to the

2001 *Benton County Transportation System Plan*, stationary bridge crossings in Corvallis and Albany cap the height and width of vessels able to utilize the river, and the viability of the Willamette River as a transportation link is limited. This section of the Willamette River is maintained by the Army Corps of Engineers.

The Mary's River is located in the southern portion of the Planning Area. The Mary's is not seen as a viable option for transportation services, particularly given the depth constraints near the confluence with the Willamette River in the southeastern portion of the Planning Area.

2. Pipelines

No significant through-transmission, oil or gas pipelines exist within Planning Area boundaries. Transmission lines for electricity, telephone, cable, and internet service exist throughout the Planning Area. Electric transmission lines are located in the northern portion of the Planning Area. Water pipelines convey water from the City of Corvallis' watershed on Mary's Peak to the City's water system. There are no known capacity constraints for pipeline or transmission line service within Planning Area boundaries.

J. Existing Transportation and Related Plans

Consistent with Oregon's Statewide Planning Goals and the State's Transportation Planning Rule, local jurisdictions have developed a number of land use and transportation-related plans. The regional transportation planning process included review of these documents. The *Regional Transportation Plan* drew from these plans elements relevant to the regional transportation system. Table VI-6 compares three of the most relevant plans, the local transportation system plans. More detail on all of the plans can be found in Appendix A.

Table VI-6
Comparative Analysis of Corvallis Urbanized Area's Existing TSPs

	Benton County Transportation System Plan	**Corvallis Transportation Plan**	**Philomath Transportation System Plan**
Status	Adopted in 2001	Adopted in 1996	Adopted in 1999
1. Vision	Preserve, protect and promote sustainability, livability and economic vitality by: a. Providing choices of alternative modes b. Maximizing efficiency of existing system c. Intertwining quality of life, and use and transportation decision-making.	▪ Preserve the natural environment ▪ Access and connectivity to all ▪ Promote economic vitality ▪ Enhance neighborhood livability	The Plan was developed primarily to address the issue of Hwy 20/34
2. Transportation Policies/Goals	▪ Provide for mobility, circulation, and safety ▪ Maximize cost effectiveness and funding mechanisms ▪ Preserve natural resources/rural characteristics and neighborhoods ▪ Provide for economic development through improvement of rail and air transportation and through affordable ground transportation to regional terminals ▪ Develop plans and projects in compliance with OHA and in coordination with ODOT ▪ Consider circulation, safety and mobility in land use decisions.	1. Contribute to community livability, respect natural features, minimize negative effects 2. Reduce congestion, facilitate safe and efficient movement of people & goods 3. Develop and promote alternative systems of transportation 4. Give considerations to needs of people with limited choice 5. Give considerations to energy efficient transportation modes 6. Adopt/update periodically a long range transportation plan 7. Establish a capital improvement program for the transportation system 8. Consider the gateway role of the state highways to Corvallis 9. Give special consideration to beautification of gateways 10. Review development proposals to ensure continuity of sidewalks, trails, bike paths and ped ways. 11. Establish trails in addition to roads 12. Insure consistency of transportation with land use plan 13. Maintain a uniform construction standards to accommodate all modes 14. Coordinate and collaborate with ODOT in highway planning and construction	1. Relieve traffic congestion of Hwy 20/34 2. Improve traffic circulation and safety 3. Promote use of alternative modes 4. Develop a master plan for street layout 5. Remove through traffic from downtown and neighborhoods 6. Integrate transportation system with other land use decisions

	Benton County Transportation System Plan	Corvallis Transportation Plan	Philomath Transportation System Plan
3. Land Use/ Transportation Coordination	Inform transportation agencies of: ▪ Land use applications requiring public hearing ▪ Applications for private access ▪ Applications within the airport noise corridor or affecting air port operation	1. Provide bike parking in new developments 2. Provide bike & ped access to new developments 3. Ensure transit friendly designs	▪ Advocates narrower streets ▪ Calls for amendment of Comp Plan and Zoning code to insure consistency with the TSP
4. Roadways Recommended	Improve: ▪ US 20, Conifer-N. Albany Rd. ▪ US 20/Hwy34, 99W-US 20, Junction ▪ US 20, Junction – Woods Creek ▪ 99W, Walnut- WPRR ▪ 99W, Rivergreen Av.– Airport Av. ▪ Van Buren Bridge (Replace) ▪ Airport Road ▪ Various intersection improvements (geometrics and signals)	▪ Improve Hwy 99W ▪ Improve Hwy 20 ▪ Improve Hwy 20/34 ▪ Widen US 20/OR 34 in Corvallis ▪ Provide ramps between OR 99W and US 20/OR 34 ▪ Improve bypass/OR 34 interchange ▪ Construct two lanes of the northern leg of the bypass ▪ Widen US 20 ▪ Widen south leg of the Bypass ▪ Replace Van Buren Bridge ▪ Extend Circle Dr. to connect to Harrison Blvd. ▪ Extend Kings Blvd. to Lewisburg Road ▪ Widen Highland Drive ▪ Widen Lewisburg Road ▪ New east-west and north-south collector road ▪ Widen OR 99W to four lanes ▪ Extend Satinwood Dr ▪ Widen 53rd Street	▪ Install traffic lights ▪ Improve Grange Hall Rd. Bridge ▪ Improve truck route ▪ Manage access ▪ Extend Newton St. to 26th St. ▪ Overlay streets ▪ Improve street signing ▪ Widen intersections along College Street and Applegate ▪ Consider one way traffic on Hwy20/34 ▪ Extend Applegate Street over Newton Creek.
5. Alternative Modes	▪ Provide satellite park & ride lots ▪ Provide shuttle service between Monroe, Lewisburg and Adair Village ▪ Run express Bus, Philomath–Albany ▪ Expand Corvallis Transit System ▪ Expand County Cruiser Service ▪ Continue Valley Retriever Service ▪ Continue Rural Rounds Service ▪ Continue Linn-Benton Loop	Includes extensive; ▪ Bikeway improvement plan ▪ Transit development plan ▪ Sidewalk/walkway improvement plan	Includes: ▪ Pedestrian System Plan ▪ Bicycle System Plan ▪ Travel Demand Management Plan ▪ Public Transportation Plan
6. Air, Rail and Pipes	▪ Minimize rail- auto conflict ▪ Provide for safe RR crossing ▪ Discourage development around RR tracks ▪ Plan for a Albany-Philomath commuter rail	▪ Adopts the Corvallis Airport Master Plan, Airport Land Disposition Policy and the Airport Industrial Park Development Plan ▪ Advocates rail services for freight and passengers & intermodal connections	Extend a spur from W&P RR to Georgia Pacific

VII. Transportation System Alternatives

The intent of every transportation plan is to sketch a route from where the community is currently (existing conditions) to its desired conditions in the future (vision and goals). Previous sections of this document defined the vision and goals of the Corvallis Metropolitan Planning Area for its future transportation system, provided a description of the existing transportation system and identified its possible shortcomings. This section includes a description of the plausible alternative approaches for achieving the vision and goals, a description of the Travel Demand Forecasting Model that was used to analyze the alternative approaches, and the results of that analysis. Throughout this section the alternative approaches are referred to as "transportation system alternatives."

A. Overview of Alternatives

The two major components of a transportation system are travel demand and the supply of transportation services and facilities. The intent of each plan is to respond to the existing and anticipated demand in a manner and to the degree defined by the Plan's Vision and Goals. Traditional transportation system plans often focus on the supply side of the transportation system by expanding transportation facilities and services to achieve their desired transportation system. Successful transportation system plans, in recent years, have increasingly realized and addressed the role that land use decisions play in affecting travel behavior and the interconnectivity of land use and transportation systems.

Five alternatives were considered as logical approaches to achieve the Plan's Vision and Goals. The alternatives are:

1. No-Build (sometimes referred to as Status Quo)
2. Transportation Demand Management Emphasis
3. Transportation Capacity Enhancement Emphasis
4. Land Use Management Emphasis
5. Multi-Prong Approach

Following the broad description of alternatives, there is a description of the specific assumptions that were entered into the Corvallis Area Travel Demand Model for quantitative analyses.

1. No-Build Alternative

The No-Build Alternative is sometimes referred to as the status quo alternative. In this scenario the Planning Area will experience its projected growth in population and employment and the demand for transportation facilities and services will increase accordingly. The cities and the county public works departments will continue the annual routine repair and maintenances that they currently provide. However, no new major roadway or transit improvement projects will be implemented. The existing roadway network will be expected to handle the increased traffic. The transit system will maintain its current service level and will not extend its service to the newly developed areas. This approach will also be applied to the improvement of traffic operations, or

development of a state-of-the-art traffic control center. Therefore, the capital improvement cost of this scenario is assumed to be zero and it is used as the comparison basis for other scenarios.

2. Transportation Demand Management Alternative

Transportation Demand Management (TDM) is based on the concept that the supply side of transportation cannot continue expanding to meet the demand, especially when resources are scarce. Therefore, strategies to reduce the need for trips, particularly single occupancy vehicular trips, are preferred to those that expand transportation capacity. This alternative relies heavily on more efficient use of existing transportation resources and avoids implementation of major capacity expansion projects, such as construction of new arterials. Strategies within this framework may include a combination of measures described below:

Transportation System Management (TSM)

The premise of Transportation System Management is that the existing transportation system capacity is adequate to accommodate future transportation demands, provided that the system is maintained and preserved carefully and its efficiency is maximized. Some of the most widely used TSM strategies are:

- ***Operation Improvements***
  Synchronization of consecutive traffic lights, reconfiguration and geometric modification of intersections and facilitating the movement of buses are examples of changes that improve flow of traffic and reduce travel time.

- ***Intelligent Transportation System (ITS)***
  ITS is the application of modern technologies to improve traffic flow, safety and communication. Examples of ITS are deployment of traffic monitoring cameras and remote management of green time at intersections, advanced roadway information on roadway conditions, delays and guidance to alternative route, and incident management.

- ***Congestion Management***
  Includes improvements to reduce traffic congestion, mostly during peak hours, such as working with major employers to allow flex time, staggered working hours and/or, telecommuting. Congestion management generally includes other techniques such as traffic operation improvements described above and preferential treatment of buses or other pooling vehicles.

- ***Access Management***
  Access management is an effective way of enhancing roadway capacity. This requires adoption of policies that limit the number of accesses for each class of roadway coupled with combining several adjacent accesses into a single driveway, purchasing property access rights and the construction of access roads and fringe roads.

- ***Parking Policies***

Parking policies that charge the true cost of parking, reduce the availability of long term parking lots in the core urban area, and favor the use of alternative modes of transportation can be an effective disincentive to driving.

- ***Travel Demand Reduction (TDR)***

  TDR includes restrictive techniques aimed at reducing travel demands in urban areas. Successful implementation of these techniques generally requires the adoption and enforcement of stringent municipal policies, such as:

  Employer Trip Reduction Programs: Encourages major employers, possibly by providing incentives and disincentives, to reduce the number of auto trips to and from the place of employment. The employer, in return, provides incentives for the use of alternative modes of transportation and may provide disincentives for the use of single occupancy vehicles by its employees. A similar measure could curb student driving to schools.

  *Adoption of Travel Reduction Ordinances (TROs):*The city or the county adopts an ordinance requiring all major employers to reduce the number of single occupancy vehicles generated. The ordinance generally requires trip reduction by a certain percentage over a period of time.

  Implementation of Exaction Fees/User Fees: Requires paying per mile or a fixed usage fee for driving a personal vehicle. The most common form of this levy is the federal and state gasoline tax paid at gas stations.

Travel Demand Management

Strategies to manage travel demand in more efficient ways include:

- ***Transit Improvements***

  The most common form of TSM is investment in the transit system in an effort to reduce travel demand by shifting trips from single occupancy vehicles to public transit. It requires expansion of the transit system by adding new routes and increasing frequency and the overall quality of transit service. A vital transit service requires high-density land use and a steady source of local funding, in addition to the federal and state funds.

- ***Incentives for Use of Alternative Modes of Transportation***

  This includes enhancing transit service, enhancing pedestrian and bikeway facilities, improving carpooling and vanpooling, free downtown shuttles and encouraging telecommuting.

- ***Provision of Bike and Pedestrian Facilities***

  A rich and well-connected network of bikeways and walkways can reduce the number of vehicular trips and vehicle miles of travel. Studies have found a direct relationship between the construction of bikeway facilities and the increase in bicycle use. Other studies support that increase in bicycle use reduces the number of auto trips. Rietveld and Daniel (2004) found that the use of bicycle transportation increases in cities where cycling is relatively easier (fewer hindrances along cycling routes) and safer.

- ***Disincentives for Use of Single Occupancy Vehicles***

  Policies to restrict the use of parking, particularly, long term parking; preferential treatment of carpooling and vanpooling vehicles, levying exaction and usage fees and higher levels of traffic congestion act as disincentives to SOV use.

- ***Park and Ride Facilities***

  An effective way of managing travel demand is the development of park and ride facilities in the fringe of the urban area. Park and Ride lots provide opportunities for commuters to park their vehicle and share the ride for the main portion of their trip either in public transit or by carpooling and vanpooling.

3. Transportation Capacity Enhancement Alternative

In this scenario investments are directed to enhance the supply of transportation facilities and services, mainly through increasing the capacity of roadways. Additional transportation infrastructure will be provided to address the growing transportation needs of the area. The 2000 US Census indicates that more than 85 percent of all trips in the nation are by a single occupancy vehicle. Similarly, today in the Planning Area, the automobile is the predominant mode for a great majority of trips. No drastic reduction in the use of the automobile can be reasonably anticipated in the near future. Increasing the supply of transportation facilities also includes the enhancement of the transit system as well as the rail system. Included in this alternative are:

Roadway Expansion

Roadway expansion includes construction of new roadways or the widening of the existing roadways. In either form it provides additional capacity for almost all modes of transportation, as roads are used not only by the automobile but also by transit, bikes, pedestrians and freight. Roadway expansion is a direct response to mitigate roadway congestion. Increasing capacity reduces the ratio of vehicles to the capacity on a roadway (V/C Ratio) and thus improves the Level of Service (LOS).

Roadway Extension

Roadway extension is extending an existing roadway to a logical terminus point. It disperses traffic and in some cases provides additional connectivity resulting in reduced VMT.

Intersection Capacity Improvements

Intersection capacity improvement is generally adding another lane to the existing configuration of the intersection. In most cases, adding an exclusive left turn or right turn lane significantly reduces congestion. Intersection capacity improvement is an efficient way of reducing travel time.

Transit Expansion

Transit expansion includes operating new bus routes, increasing frequency of bus service and extending bus routes. Although the results of transit expansion are drastically different from the results of roadway expansion, both are investments on the supply side of transportation.

Rail Expansion

The railroad plays a significant role in the movement of freight through the Planning Area. Any improvements to the railroad system would help reduce demand for additional roadway capacity.

4. Land Use Management Alternative

In recent years the effectiveness of coordinating land use and transportation decisions as a means of reducing travel demand has been increasingly realized. In this scenario a substantial amount of transportation need will be addressed through better management of land use patterns and urban design. This concept is referred to by a variety of names such as *Neo Traditionalism*, *New Urbanism*, *Smart Growth Design*, *Livable Community*, or *Sustainable Community* In the core of this concept is an urban design that hearkens back to more-traditional neighborhoods before the automobile dominated the American urban landscape. The design aims at preventing urban sprawl and reducing travel demands. The most effective form of this alternative is the one that is supplemented by Transportation Demand Management techniques. Generally, land use management techniques are applied to future developments in urban area as they occur, and as such, the realization of its benefits is gradual.

While there is a broad array of strategies that could be part of a land use management alternative, the following were selected as most appropriate, given the characteristics of the Planning Area:

Increase Residential Density

Higher residential densities reduce demand for infrastructures and particularly transportation facilities. Studies show that a vital transit system requires urban density of 8-10 residential units per acre.

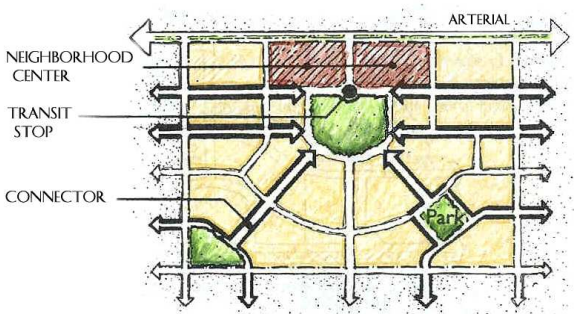
Grid Street System

An interconnected grid street system provides many routes to a single destination. Therefore, it provides a higher level of intra urban connectivity and disperses traffic. It also facilitates walking and bicycling. In contrast, a suburban pattern of winding streets with cul-de-sacs increases VMT and travel time.

Mixed Use Developments

Prevailing land use practice segregates residential areas and employment centers, which increases the need for vehicular trips and travel time. A higher level of accessibility is provided in mixed use

developments whereby the jobs, shops and residences are within walking or biking distance of each other, or even within the same building or building complex.



Transit-Oriented Development (TOD)

A TOD is a land use development around a transit center designed to increase the use of alternative modes of transportation, particularly the use of public transportation. The development generally includes a regional node containing a mixture of uses in close proximity to residences. It is a compact urban development with a network of sidewalks and bikeways that reduces the need for the use of single occupancy vehicles. Transit Oriented Development generally requires at least six residential units per acre in residential areas and 25 employees per acre in commercial centers.

Neighborhood Centers

Neighborhood centers are compact developments with relatively high density that include commercial, retail, restaurant and possibly office uses in the core and a mixture of housing around the core. The development features a rich network of walkway and bikeway facilities.

5. Multi-Prong Alternative

This approach was developed subsequent to the evaluation of the other alternatives. It is based on the assumption that none of the above alternatives can singularly address the multifaceted transportation needs of the Planning Area. The diverse life styles and land use pattern of the area require diverse solutions to its transportation needs. As such, a multi-prong approach employing an appropriate share of each alternative was formulated to be closely aligned with this plan's goals. The Multi-prong Approach includes a combination of:

- Transportation Demand Management strategies.
- Land Use Management and policies to coordinate transportation and land use decisions
- Capacity Expansion projects on arterials and collectors to respond to the demand.

B. Transportation System Alternatives Assumptions and Projects

This section describes transportation improvement projects, activities, policies and techniques that were assumed under each Transportation System Alternative for the purpose of evaluation. These projects and assumptions are only to form a hypothetical transportation system scenario and are not recommendations of the Plan. Each Transportation System Alternative includes short term (2010 Network), intermediate term (2020 Network) and long-term (2030 Network) improvement projects and activities. Tables VII-1 and VII-2 show the projects and activities in a matrix format for each alternative. It also indicates whether the assumption is related to the short-term, intermediate, or long-term network.

1. No-Build Alternative

Although the No-Build Alternative does not include any new improvement project, there are a few projects in the FY2006-2009 Corvallis Area MPO Transportation Improvement Program and the Statewide Transportation Improvement Program for which funding has been secured. These projects will be implemented over the next 3-4 years. Also, the No-Build Alternative assumes that additional streets and roads will be extended with funds from developments as developments occur.

2. Transportation Demand Management (TDM) Alternative

Assumptions for the TDM alternative includes mainly transit improvement projects; park and ride lots and program enhancements aimed at reducing reliance on single occupancy vehicles.

3. Transportation Capacity Expansion Alternative

The Capacity Expansion Alternative network includes mainly roadway projects, as well as some transit projects. The roadway projects for this alternative were derived from the local Transportation System Plans (TSPs).

4. Land Use Management Alternative

The assumptions for the Land Use Management Alternative include several policies and municipal requirements that could reasonably be adopted and implemented by the local governments from now until 2030. To quantify the impacts of land use management alternative, the following assumptions were made:

- The built area will not be retrofitted. New land use policies will be applied only to the future residential developments.
- Current zoning designations will mainly be maintained. Current zoning was used to determine the amount of vacant land available for residential development.
- The land use management policies will be applied to new residential areas that are of adequate size and are conducive to the implementation of all aspects of land use management techniques.
- Only 50 percent or 3,187 of the projected 6,374 new residential units will be part of a mixed use and/or high-density development with access to alternative modes of transportation.
- Transportation Demand Management measures will be vigorously pursued.
- The combination of all land use policies (mixed use, high density, access to transit, etc.) and TDM measures will reduce travel demand by 15 percent in the newly developed residential areas.

5. Multi-prong Alternative

The assumed projects and activities for the Multi-prong Alternative are a combination of projects and activities from all of the other alternatives.

Table VII-1: Roadway Projects Assumed to Occur Under Each Alternative

	No-build (Committed projects)	TDM	Capacity Expansion	Land Use Mgmt	Multi-prong
Roadway System Projects					
US 20: Philomath Couplet - Convert Applegate and Main Streets to one way east bound and west bound, respectively, with a westbound connection between the existing highway and College Street, expand Main Street to five lanes from Newton Creek to 15th Street	2010	2010	2010	2010	2010
Reservoir Road - 53rd Street to one third of a mile west – Improve with sidewalk and bikeway.	2010	2010	2010	2010	2010
19th Street - OR 34 to Chapel Street – Adding bike lanes and turn lanes.	2010	2010	2010	2010	2010
53rd Street - Railroad Overpass – Eliminate the railroad overpass, realign intercepting roadways.	2010	2010	2010	2010	2010
53rd Street - US 20/OR 34 to Country Club Road – Adding bike lanes and turn lanes at intersections	2010	2010	2010	2010	2010
Circle Blvd. at 9th Street – add right-turn lane eastbound to 9th Street			2010		
35th Street, US 20/OR 34 to Orchard – widen, realign and add bike lanes (partially completed)			2010		2010
53rd Street and Philomath Blvd. (US 20/OR 34) intersection – add turning lane					2010
College Street, 20th Street to 12th Street - widen with intersection curb extensions, bike paths and sidewalks (Done)			2010		
Applegate Street, 20th Street to 15th Street – widen with intersection curb extensions, bike paths and sidewalks			2010		
Applegate Street, between 23rd Street and 24th Street – extend over Newton Creek (Done)			2010		
South 19th Street, College Street to Chapel Drive – add bike lanes 'signed and striped'			2010		
Circle Boulevard – Extend Circle Boulevard to Harrison Boulevard		2020	2020		2020
Kings Boulevard – Extend to NW James Avenue		2020	2020		
Kings Boulevard – Extend to Lester Avenue	2010				2010
NW James Avenue – Extend from new Kings Boulevard extension to OR 99W		2020	2020		
Van Buren Avenue Bridge – replace Van Buren Bridge (preliminary engineering)					2010
Van Buren Avenue Bridge – replace Van Buren Bridge			2020		2020
OR 99W, Rivergreen Avenue to Airport – widen Hwy 99 from 2 lanes to 4 with left turn lanes at major intersections to 500 ft. south of Airport			2020		
Country Club Dr, Barley Hill Dr. to Hwy 20/34 - widen to provide 6-foot multi-use paths in each direction.			2020		
Country Club Dr, Barley Hill Dr. to Hwy 20/34 – widen to add bike lanes, sidewalks, improve alignment					2020
Crystal Lake Dr. - widen and reconstruct street to standard with bike lane			2020		2020
Reservoir Road/ SW 53rd St. – install traffic signal, construct at-grade rail crossing - same number of lanes; same as existing speed limits			2020		
Airport Ave. Improvement – improve to urban standard			2020		
Airport Ave., OR 99W to Airport Place – upgrade to urban standards					2020
Independence US 20 – install traffic signal			2020		
Junction US 20 at OR 34 – install traffic signal			2020		
US 20/OR 34 at OR 99W – reconstruct to increase turning radii, add sidewalk, etc			2020		
West Hills Rd. at 53rd St. – install traffic signal			2020		
US 20/OR 34, Newton Creek to 53rd Street - reconstruct to four lanes with left-turn refuges and bike lanes			2020		
US 20/OR 34, Newton Creek to 53rd Street – complete final design, acquire ROW (preliminary engineering only)					2020
US 20, 53rd Street to Western Boulevard - widen			2020		
OR 99W, railroad overcrossing to north of Lewisburg Rd. - widen to four lanes with left turn refuges			2020		
OR 99W, railroad overcrossing to Circle Blvd. - widen to four lanes with left turn refuges					2020
US 20/OR 34, 53rd Street to Western - complete final design and acquire right-of-way					2020
US 20/OR 34, Western Blvd. to OR 99W - widen to four lanes with left turn refuges			2020		
US 20/OR 34 and OR 99W interchange - provide ramps for south to west and west to south movements. – Two lanes each			2020		
US 20 at Western Boulevard – install traffic signal			2020		
OR 99W at either Goodnight or Rivergreen Avenue – install traffic signal			2020		
OR 99W at both Goodnight and Rivergreen Avenue – install traffic signal when warranted					2020
Country Club Dr., 35th to 53rd – widen to add bike lanes sidewalks, improve alignment			2020		2020

West Hills Road, 35th Street /Western Boulevard to 53rd Street – widen to add bike lanes			2020		
West Hills Road, 35th Street /Western Boulevard to 53rd Street – enhance to urban standards					2020
Grant Avenue, Highland to 9th Street – widen to add bike lanes sidewalks, improve alignment			2020		2020
Crystal Lake, Alexander to Park – widen to add bike lanes sidewalks, improve alignment			2020		
Buchanan at 9th Street– construct left turn lanes on Buchanan			2020		2020
Witham Hill Dr., Grant Avenue to Walnut Blvd – widen/improve bike lanes			2020		2020
Plumley Street, - extend Plumley from Airport Ave to extension of Rivergreen			2020		2020
Newton Street, between dead end and 26th Street – extend to 26th Street			2020		
College/Main/Applegate Streets – construct Phase II of the Philomath Couplet with additional capacity, include bike lanes			2020		
Main Street at 9th Street – install traffic signal			2020		
13th Street, Chapel Drive to Main Street – improve for truck route with bike lane			2020		
13th Street, Chapel Drive to Main Street – reconstruct to urban standards to accommodate truck traffic, add bike lanes, "signed and striped."					2020
Chapel Drive, Bellfountain Road to 13th Street - add 6 foot multi-use paths			2020		
Chapel Drive, Bellfountain Road to 13th Street – upgrade to urban standards					2030
South 13th Street, Main Street to Chapel Drive – add bike lanes 'signed and striped'			2020		
US 20, Conifer Avenue to N. Albany Road – widen US 20 from 2 lanes to 4 lanes			2030		
US 20/OR 34, between OR 99W and US 20/OR 34 junction – add two more lanes			2030		
US 20, US 20/OR 34 junction to Woods Creek Road – widen to provide continuous left turn lane on US 20			2030		
OR 99W between railroad over crossing and Walnut Blvd. – widen Highway OR 99W to 4 lanes with left turn lanes at Circle Blvd. and Walnut Blvd.			2030		
Arnold Avenue and OR 99W – install traffic signal			2030		
Chapel Dr. between 19th St. and Bellfountain Rd. – widen this rural section to provide 6-foot multi-use paths in each direction.			2030		
US 20, Circle Blvd. to Albany - widen to four lanes with left turn refuges			2030		
19th St. between US 20/OR 34 and Chapel Dr. – urban section with 6-foot bike lanes in each direction			2030		
Bellfountain Rd. between Airport Rd. and Greenberry Rd. - widen this rural section to provide 6-foot multi-use paths in each direction and extend the existing county bikeway system to Invale Elementary School			2030		
Granger Ave.: Pettibone to US 20 - Widen this rural section to provide 6-foot multi-use paths in each direction and extend the existing county bikeway system to US 20.			2030		
West Hills Road at Reservoir Rd. – install traffic signal			2030		
Harrison Blvd., Kings to 36th, widen (has been partially completed)			2030		
Harrison Blvd., 29th to 36th, - widen to add bike lanes and urban section.					2030
Brooklane Dr., Chintimini to US 20/OR 34 – widen to add bike lanes sidewalks, improve alignment			2030		
Brooklane Dr., Chintimini to US 20/OR 34 – reconstruct and realignment, bring to urban standards					2030
Ponderosa Ave, Glenridge to Skyline – widen to add bike lanes sidewalks, improve alignment			2030		
Alexander from 3rd to Crystal Lake – widen to add bike lanes, sidewalks, improve alignment			2030		2030
OR 99W at Kiger Island Drive – install traffic signal			2030		2030
53rd Street, Philomath Blvd to Nash – widen			2030		
US 20, Downtown Corvallis to Circle Boulevard – widen to 4 lanes			2030		
Circle Boulevard, Hewlett-Packard campus to US 20 – widen to 4 lanes			2030		2030
Clemens Mill Road - relocate road across from 26th Street (Clemens Mill Rd. and 26th Street and Hwy 20/34 to improve access)			2030		2030
US 20 at Highway 34 – install traffic signal			2030		2030
Main Street at 26th Street – install traffic signal			2030		2030
West Hills Road, Wyatt Lane to N. 19th Street – add bike lanes 'signed and striped'			2030		2030
Lester Ave. – extend to OR 99W					2030
Satinwood Drive – extend to Lester Ave.					2030

Table VII-2: Transit, TDM and Land Use Management Projects, Activities and Policies Assumed to Occur Under Each Alternative

	No-build (Committed projects)	TDM	Capacity Expansion	Land Use Mgmt	Multi-prong
Transit Improvements					
Purchase/replace 2 buses[1]	•				
The number of buses will increase from 8 to 12.		2010			
The number of buses will increase from 8 to 11.					2010
The number of buses will increase from 11 to 15.					2020
The number of buses will increase from 15 to 18.					2030
Increase the number of buses from 12 to 20		2020			
Construct a new bus maintenance and operation facility					2010
Route Expansions: o Route #3 will be modified to serve Technology Loop and Research Way. o Route #7 will be expanded to serve the Hewlett-Packard campus. o Route #4 will be modified to serve the hospitals and northeast Corvallis. o Route #2 will be modified to serve 9th Street and the hospital. o Route #8 will be modified to serve south Corvallis and OSU. Routes #1, #5, and #6 that CTS current operate will not be modified		2010	2010		
Modify transit routes regularly to serve the highest number of passengers.					2010
New Routes – o Philomath Circulator, to serve Philomath Blvd and Applegate Street between 19th Street and 26th Street o Adair Village Commuter Route, from transit Mall to Santiam Lane in Adair Village. o Philomath/Bellfountain/ Airport Road. o Downtown Corvallis Circulator o Reservoir Road to Elliot Circle, West Hills, Reservoir, 53rd, Harrison, Circle, Kings, James and Eliot Circle. o Downtown Corvallis to Lewisburg		2010 2020 2020 2020 2030 2030	2010		 2020 2030 2020
Transit service hours will be increased from the current 22,000 hours/yr to 38,000 hours/yr.					2020
Transit service hours will be increased to 83,000 hours/yr					2030
Increase number of buses from 20 to 30 and all routes will have 15 minute headway.		2030			
Annual transit operations[3]	•	•	•	•	•
TDM Improvements and Activities					
New Park and Ride Lots – o Park and Ride lot at S. 15th Street and Applegate Street in Philomath o Park and Ride lot at Highway 99W and Airport Road o Park and Ride lot at Highway 99W and NE Elliot Circle o Park and Ride lot at Harrison Blvd and Walnut/53rd Street o Park and Ride lot at US 20 and OR 34, west of Philomath (TAZ 327) o Park and Ride lot at Pettibone Dr. and Granger Road o Park and Ride lot at Highland Dr. and Lewisburg Ave. o Park and Ride lot at Santiam Lane and Arnold Avenue o Park and Ride lot at West Hills Road at 19th Street o Park and Ride lot at Airport road and Bellfountain Road o Park and Ride lot at Tyler Avenue at 1st Street o Park and Ride lot at Adair Village		2010 2020 2020 2020 2030 2030 2030 2030 2030 2030 2030	 2010 2010 2010		2010 2030 2030 2030 2020

Other TDM Improvements and Activities:[2]					
o Vigorously increase bikeway and pedestrian facilities throughout the Planning Area.		2030			2010
o Provide incentives for ridesharing by the use of transit, carpooling and vanpooling		2030			
o Provide disincentives for the use of single occupancy vehicle		2030			
o Maintain and preserve roadway system.		2030			
o Encourage HP, the hospitals and OSU to charge the true cost of parking		2030			2010
o Increase parking around these establishments to $100 per month.					2010
o Formation of Transportation Management Associations					2020
o Promote carpool and vanpool programs					2020
o Develop on-site carpool/vanpool station					
o Provide communal bicycle program					
Land Use Management Component					
o Higher density residential development					2010
o Mixed land use developments					2010
o In-fill developments					2010
o Access to transit network for new residential developments.					2010
o Implement a minimum density more conducive to a viable transit service					2010
o Implement mixed land use					2020
o Implement grid patterned streets					2020
o Provide for transit service to the development					2020
					2020

[1] Bus purchases under the No-build Alternative are currently programmed.
[2] "Other" TDM activities are assumed to be ongoing after they are initiated.
[3] Transit operations are assumed to occur on an ongoing basis under all of the alternatives.

C. Evaluation Process

The five identified transportation system alternatives were evaluated with a combination of quantitative and qualitative measures. The quantitative measures were analyzed with the Corvallis Area Travel Demand Forecasting Model. This section describes the Travel Demand Forecasting Model and the Evaluation Measures used in this process.

1. Travel Demand Forecasting Model

The travel demand model is a computer mathematical program that simulates travel behavior and travel demands for a specific time frame according to the socio-economic characteristics of the area. The most common use of travel demand models is in forecasting future travel volumes and patterns at corridor levels. As such, the models are most useful in projecting the impacts of adding a new roadway or lane or removing a connection at a corridor level (what if scenarios).

Although recent improvements to travel demand models have increased their usefulness as a tool of transportation decision-making, model outputs are still subject to technical interpretations. The most notable shortcoming of the models are in the areas of demonstrating impacts of land use management techniques, micro (small area) analyses, transportation policies, improvements to local roads (non-arterial and collector), and construction of bike lanes, and pedestrian facilities.

A travel demand model is based on data of the number of households and employees for the planning area. It also includes the existing transportation network, the average traffic volume on roadways and data on the transit system. For this input, the planning area is divided into smaller socio-economic units called Traffic Analysis Zones (TAZs). The data input is often enriched by

the results of a household travel survey that provides empirical data on the area's travel patterns and behavior.

In general, travel demand models compute the volume of demand for any given time through a four-step process that consists of Trip Generation, Trip Distribution, Modal Choice and Trip Assignment.

- **Trip Generation:** Calculates the total number of trips from and to each TAZ by trip purpose, as a function of land uses and household demographics, and other socio-economic factors.

- **Trip Distribution:** This step matches the origins with destinations to develop a "trip table" that displays the number of trips going from one TAZ to another (inter and intra-zonal trips).

- **Modal Choice:** Calculates the proportion of trips between each origin and destination that use a particular mode of transportation.

- **Trip Assignment:** Allocates trips between an origin and destination by a particular mode to a route, whereby each traveler is assigned to the shortest (travel time) path.

The Corvallis Model was developed by the Transportation Planning Analysis Unit (TPAU) of ODOT and the consulting firm of DKS, on a modified EMME2 platform. At the times the model was developed, the Planning Area was divided into 362 TAZs. Using the 2000 US Census data, the population and the number of households for each TAZ were calculated. The Portland State University Certified Population Data was used to develop population projections for each TAZ. Year 2000 was established as the Base Year for the model with future networks built for 2010, 2020 and 2030.

Employment data was obtained from the Oregon Employment Department (OED), Research Center for 2000. The employment data was projected to year 2030 by calculating the historic ratio of employment to population in the area which averaged around 51 percent. This ratio was applied to the projected population to forecast employment. In consultation with the area land use planners and the the adopted land use and zoning maps the projected employment data was allocated to TAZs.

The above methodology produced the following input to the Corvallis Travel Demand Model. It should be noted that Table VII-3 shows the population, number of households, and employment for the 362 TAZs which cover an area slightly larger than the Planning Area.

Table VII –3: Assumptions used in the Corvallis Travel Demand Model

	Population	No. of Household	Employment
2000	70,618	27,396	32,586
2010	77,557	29,185	39,297
2020	81850	31,774	42,167
2030	86,638	33,769	44,249

To interpret the outcome of the model, a description of its terminology is provided below:

- **2000 Network**: A baseline transportation network using Census 2000 demographics, used to portray roughly the present conditions.

- **No-Build (Status Quo) Alternative**: A transportation network using year 2030 demographics with no additional improvements other than the ones programmed for the next three years.

- **Link:** A segment of roadway with similar characteristics.

- **Demand/Capacity ratio:** The demand/capacity ratio is a modeling measure used in transportation planning to analyze the performance of a link or corridor. It is different from the traffic engineering Volume to Capacity (V/C) Ratio that is used to analyze the performance of an intersection. The demand/capacity ratio is determined by dividing the traffic volume on a model link by the capacity of that link.

- **Congestion:** A demand/capacity ratio that is higher than the acceptable level for a particular area.

- **Vehicle Miles of Travel (VMT)**: Total miles traveled by all vehicles which could be measured for a specified transportation facility and during a specified time period.

- **PM Peak**: A measure of the most congested period of traffic. In Corvallis this is generally an hour between 4:00 to 6:30 PM.

- **Lane Miles**: Length of driving lanes multiplied by the number of driving lanes.

- **Trip**: A one-way travel from an origin (e.g. home) to a destination (e.g. work, shop, daycare). Traveling from work to a store and then to home is considered two trips.

- **Mean Travel Time**: A statistical measure of the average length of time required to complete an average trip during a specified period.

2. Evaluation Measures

The evaluation measures developed for weighing and comparing the impacts of the transportation system alternatives are described in this section. These measures were derived from the Plan's Vision and Goals.

a. Accessibility

Accessibility means reaching destinations by the individual's mode of choice with relative ease and within a relatively short time frame. Accessibility not only is desired for person trips, it is also desired for freight movement. Due to the complexity of this concept, the following quantifiable measures were selected to represent various components of accessibility.

- ***Travel Time during PM Peak***

  The amount of time it takes to complete a trip during the PM Peak hours (the most congested time in a 24 hour) is a common measure of traffic flow. The measure could be in terms of the amount of time that it takes to travel certain distances or the mean travel time for the entire transportation system.

- ***Demand over Capacity Ratio***

  Demand over Capacity Ratio is a measure of congestion that describes operational conditions of a roadway. This measure is the ratio of vehicles over the capacity of a roadway. The model has the capability of evaluating overall flow of traffic over the length of a given corridor. The measure is similar to the vehicle/capacity (V/C) ratio that is used for analysis of intersections. Similar to V/C ratio, a Demand/Capacity of less than 0.6 indicates a highly convenient flow of traffic with a great deal of maneuverability, whereas, ratios of higher than 0.8 require modification of driving decisions due to the presence of other vehicles. A Demand/Capacity ratio of 1 indicates significant congestion.

  The Demand over Capacity ratio was measured for the following variables:

  - Percent of lane miles by Demand/Capacity ratio for each Transportation System Alternative
  - The total Vehicle Miles of Travel (VMT) by Demand/Capacity ratio for each Transportation System Alternative
  - Demand/Capacity ratio for nine selected arterials for each Transportation System Alternative.

- ***Availability of all Modes of Transportation***

  Automobiles and trucks that are dependent on an efficient system of roadways predominantly handle the movement of people and goods in our present transportation system. There is, however, a segment of the population who is dependent on public transportation and special transportation modes for their daily trips. Additionally, a considerable number of people use bicycles as a primary mode of transportation for their daily work commute. Other modes of transportation such as walking and rail are also common in the Planning Area. All these modes are integral components of the area's transportation system and the availability of all modes of transportation is a goal of the Plan. The availability of other modes of transportation was analyzed quantitatively.

b. Vehicle Miles of Travel (VMT)

The Travel Demand Model projects the sum of miles driven by all motor vehicles in the Planning Area. Generally, increased VMT has an inverse relation to the desirability of a transportation scenario. The State Transportation Planning Rule requires Transportation Plans to reduce VMT per capita.

c. Energy Consumption

Energy conservation is a goal of the Plan. Certain transportation system scenarios conserve energy more than others. This criterion assesses the level of energy conservation that could be achieved as a result of the implementation of each transportation system alternative. Although the model does not directly generate this data, output from the model was used to calculate energy consumption.

d. Financial Cost

The financial cost of each alternative is a critical criterion in a time of scarce public funds. Furthermore, federal regulations require that the total costs of recommended projects in this plan not exceed reasonably anticipated revenues. Using the best financial and engineering judgment, the cost of implementing each alternative was estimated. The Financial Plan for this document provides additional details on the balancing of the costs with anticipated revenues.

e. Environmental Impacts

Most transportation improvement projects have some level of impact on the natural and built environments. The preservation of the natural environment and its natural resources is a goal of the Plan as is preserving the integrity of neighborhoods. This measure will consider the extent and the type of environmental impacts caused by the implementation of each alternative.

- ***Types of Impacts on the Natural Environment***

  Land - Transportation developments may adversely impact land in many different ways. Among these are the consumption of open and agricultural land for roads and parking, soil contamination due to spills of petroleum products and the creation of impermeable surface due to paving.

  Air - Auto exhaust emissions include carbon monoxide (CO), oxides of nitrogen (NO_x), fine Particulate Matter ($PM_{2.5}$), coarse Particulate Matter (PM_{10}), sulfur dioxide (SO_2), precursors of ozone (O_3) and Volatile Organic Compounds (VOC). These emissions are harmful to human health and to the environment.

  Water - The impacts of transportation on water include contamination of ground water by petroleum products and street runoff. Hard surfaces also prevent replenishment of ground water.

  Natural Habitat - Transportation developments may impact terrestrial and aquatic habitats of plants and animals. New roadway developments may be harmful to rare and endangered species.

- ***Types of Impacts on the Built Environment***

  Transportation developments may adversely impact the built environment. This is reviewed in terms of impacts on:

  Neighborhood Integrity - The physical and social integrity of established neighborhoods as a unit of urban life.

  Historic Sites or Other Significant Structures - Transportation developments could have an adverse impact on historic or other structures or sites important to the community.

D. Evaluation Results

The following is a summary of the evaluation of each of the transportation system alternatives for the horizon year of the Plan:

1. Accessibility

The model provided the following data for the components of the Accessibility Measure. It should be noted that the impacts of Land Use Management techniques have not been incorporated into these tables. The impacts of Land Use Management techniques are shown at the end of this section.

a. Travel Time

Table VII-9 shows projected travel time during the most congested time of the day, in this case during the PM Peak hour, and for selected common trips. Mean travel time is also shown for the base year in the tables below. The model travel time does not include the amount of time spent at each intersection along the selected routes. According to the table below, travel time on selected routes is best reduced by the Capacity Enhancement Alternative. The TDM and the Multi-prong approaches have nearly the same impact on reducing travel time.

Table VII-9: Projected Minutes of Travel Time During PM Peak Hour

	2000 Base Year	2030 No-Build Total and (% Increase over Base Year)	2030 TDM Total and (% Increase over Base Year)	2030 Capacity Expansion Total and (% Increase over Base Year)	2030 Multi-Prong Total and (% Increase over Base Year)
Downtown Corvallis to Hewlett-Packard Campus	4.9	5.5 (12.24%)	5.4 (10.20%)	5.0 (2.04%)	5.4 (10.20%)
Oregon State University Campus to Hewlett-Packard Campus	6.9	7.8 (13.04%)	7.7 (11.59%)	7.1 (2.90%)	7.7 (11.59%)
Downtown Corvallis to Downtown Philomath	10.5	12.1 (15.24%)	12.0 (14.29%)	10.5 (0.00%)	12.0 (14.29%)
Downtown Corvallis to Adair Village	12.2	16.5 (35.25%)	15.4 (26.23%)	12.6 (3.28%)	15.8 (29.50%)

b. Demand to Capacity Ratio

Tables VII-10 shows the ratio of Demand to Capacity, a measure of congestion, for each of the alternatives in selected corridors during the PM Peak hour. The shaded boxes show the best ratios relative to the base year. (D/C of less than 0.7 indicates no congestion, 0.8 may impose changes in driving decisions, 1.0 or greater indicates significant congestion.)

Table VII-10: Demand/Capacity Ratio for Selected Corridors During PM Peak Hour

	2000 Base Year	2030 No-Build	2030 TDM	2030 Capacity Expansion	2030 Multi-Prong
Kings Blvd. Monroe Ave. to Walnut Blvd.	0.71	0.91	0.91	0.85	0.88
9th Street Harrison Blvd. To Walnut Blvd.	0.59	0.94	0.90	0.77	0.86
Walnut Blvd. OR 99W to 29th Street	0.41	0.61	0.50	0.48	0.58
Circle Blvd. OR 99W to 29th Street	0.37	0.46	0.47	0.47	0.49
Western Blvd. Hwy 20/34 to 2nd Street	0.63	1.02	0.99	0.80	0.98
US 20/OR 34 From OR 99W Interchange to US 20/OR 34 Fork	0.88	1.11	1.08	0.84	1.09
OR 99W From S. MPO Boundary to US 20/OR 34/OR 99W Int.	0.44	0.87	0.86	0.75	0.85
OR 99W, From US 20/OR 34/OR 99W Int. to Buchanan Ave.	0.69	1.06	1.02	0.98	1.04
OR 99W Buchanan Ave. to Walnut Blvd.	0.84	1.12	1.09	0.81	0.82

Table VII-11 indicates the number of lane miles that have a D/C ratio of 0.8 or greater during the PM Peak hour. The shading shows the lowest number of congested lane miles.

Table VII-11: Congestion by Lane Miles During PM Peak Hour

	2000 Base Year	2030 No-Build	2030 TDM	2030 Capacity Expansion	2030 Multi-Prong
Total of All Lane Miles	401.8	406.4	414.8	457.0	421.4
Total Congested Lane Miles	23.8	82.2	77.4	52.8	75.2
Percentage of Congested Lane Miles	5.9%	20.2%	18.7%	11.6%	17.8%

Table VII-12 shows the levels of congestion by lane mile for each alternative during the PM Peak hour.

Table VII-12: Percentage of Total Lane Miles by Demand/Capacity Ratio During PM Peak Hour

Demand to Capacity Ratio Range	2000 Base Year		2030 No-Build		2030 TDM		2030 Capacity Expansion		2030 Multi-Prong	
	Lane Miles	% of Total Lane Miles	Lane Miles	% of Total Lane Miles	Lane Miles	% of Total Lane Miles	Lane Miles	% of Total Lane Miles	Lane Miles	% of Total Lane Miles
0.0 - 0.79	366.7	91.2	40.4	75.9	320.2	77.3	375.6	82.3	324.4	76.9
0.80 - 0.99	18.4	4.6	31.1	7.7	36.4	8.8	46.2	10.1	37.2	8.8
≥1.0	16.7	4.2	66.5	16.4	58.2	14	35.3	7.7	59.9	14.2
Total	401.8	100	406.4	100	414.8	100	457	100	421.4	100

Based on the data shown in Tables VII 10 through VII-12, the Capacity Expansion Alternative is the most effective alternative in reducing congestion. The impacts of the TDM and the Multi-prong approach are mixed, although the Multi-prong approach is slightly more effective.

c. Availability of All Modes

Table VII-13 shows the results of evaluating the alternatives by four more evaluation measures. Of particular note is the measure of transit share for each alternative.

Table VII-13: Additional Evaluation Measures

	2000 Base Year	2030 No-Build	2030 TDM	2030 Capacity Expansion	2030 Multi-Prong
Mean travel time during the most congested hour of the day in minutes and (% increase over Base Year)	7.8 (NA)	10.2 (30.76%)	10.0 (28.21%)	8.5 (8.97%)	9.9 (26.92%)
Total number of miles people traveled by during the most congested hour of the day.	83,474	136,786	135,185	133,696	133,144[1]-
Total number of hour's people traveled during the most congested hour of the day.	2,409	4,739	4,577	3,907	4,563
Daily percentage of trips made on transit	0.9%	0.8%	2.2%	1.7%	2.1%

[1] Includes the impact of land use management techniques.

2. Vehicle Miles of Travel

Table VII-14 shows the increased VMT during the PM Peak for each of the alternatives. It also indicates that a higher percentage of the VMT will be driven under higher congestion levels (compared to base year). The smallest increase in VMT will occur with the Capacity Enhancement Alternative while 45.8 percent of the VMT will be driven in conditions where the D/C ratio equals or exceeds 0.80. The TDM and Multi-prong Alternatives show nearly equal increases in VMT, but the TDM Alternative has a slightly lower percentage (59.2 percent) of VMT that are driven in congestion. The No-build Alternative will have the highest increase in VMT and percentage of miles driven under higher D/C ratios. The Multi-prong Alternative in this table does not reflect the impacts of Land Use Management techniques. These techniques will reduce VMT.

Table VII-14: Vehicle Miles of Travel (VMT) by Demand/Capacity Ratio Range during PM Peak Hour

Demand to Capacity Ratio Range	2000 Base Year		2030 No Build		2030 TDM		2030 Capacity Enhancement		2030 Multi-Prong	
	VMT	% VMT	VMT	% VMT	VMT	% VMT	VMT	% VMT	VMT	% VMT
0.0 -0.79	57,181	68.6	52,768	38.6	55,276	40.9	72,468	54.2	53,756	39.7
0.80 - 0.99	12,122	14.5	19,874	14.5	23,327	17.3	31,136	23.3	24,163	17.8
≥1.0	14,170	17.0	64,142	46.9	56,578	41.9	30,090	22.5	57,487	42.5
Total	83,474	100	136,784	100	135,182	100	133,695	100	135,405	100

3. Energy Consumption

The vehicle miles of travel (VMT) was used as a surrogate for the consumption of energy in Table VII-15. The Travel Demand Model produced the following VMT for each alternative:

Table VII-15: Energy Consumption Represented by VMT

	2000 Base	2030 No-Build	2030 TDM	2030 Capacity Enhancement	2030 Land Use Management	2030 Multi-Prong [1]
VMT (% increase from Base)	834,740 (NA)	1,367,840 (63.9%)	1,351,820 (61.9%)	1,336,950 (60.2%)	1,353,939 (63.2%)	1,340,149[2] (60.5%)
Model Assumed Population (% increase from Base) [2]	70,286 (NA)	86,638 (23.26%)	86,638 (23.26%)	86,638 (23.26%)	86,638 (23.26%)	86,638 (23.26%)

[1] Includes the impact of land use management techniques. See Table VII-16

[2] The boundaries of the Planning Area in the model are based on the Traffic Analysis Zones. These zones in some cases extend beyond the actual Planning Area boundaries.

According to the VMT numbers, the energy consumption will be the highest with the No-build alternative and the lowest with the Multi-prong Alternative. The Capacity Expansion Alternative ranks as the second lowest energy consumption, followed by the TDM Alternative.

4. Financial Cost

The No-Build and the Land Use Management Alternatives require the least amount of public investment in transportation. There may be some administrative costs with the implementation of land use policies. The Capacity Enhancement Alternative requires the highest amount of public dollars ($555 million), followed by the TDM Alternative. The cost of implementing all TDM measures will amount to $312 million. It should be noted that the TDM measures would demand a relatively higher portion of local dollars than the Capacity Enhancement Alternative. This is because the federal dollars for transit operation must be matched one to one by local dollars. Also transit capital improvement projects financed through federal funds require a 20 percent local match as opposed to the roadway projects that require 10 percent or less of local dollars.

The total cost of implementing all projects in the Multi-prong Approach is approximately $366 million over the next 30 years ($262 million roadways + $104 million TDM). The reason for the lower cost of the Multi-prong Approach is the placing of high cost projects under the category of Illustrative Projects. Illustrative projects are projects for which no funding sources have been identified, but will be considered if additional funding becomes available.

5. Environment

In general, transportation capacity expansion through roadway construction has greater impacts on the natural and built environment than the implementation of Transportation Demand Management techniques. Roadway construction consumes a considerable amount of land for right of way and parking and creates impermeable surfaces. This conversion adversely affects green space, natural habitats, wetlands, soil, and underground water. Roadway expansions in the built area may require relocation of residents and may damage the integrity of neighborhoods. The motor vehicles using roadways also pollute the ambient air by emitting hazardous pollutants such as, carbon monoxide (CO), oxides of nitrogen (NO_x), ozone (O_3), hydro-carbon (HC), sulfur dioxide (SO) and Particulate Matter ($PM_{10\ \&2.5}$).

TDM techniques, on the other hand, impact land and other natural resources far less. They are mostly designed to work within the context of the existing transportation system. As such, the adverse impacts of the TDM Alternative on air, soil and ground water are almost negligible.

Similar to the TDM Alternative, Land Use Management techniques have the smallest impact on the natural environment. This is due to the fact that these techniques emphasize optimization of existing urban land and prevention of urban sprawl. The Land Use Management Alternative, in most cases, is combined with the implementation of TDM measures. Although some may consider higher density as having a detrimental effect on neighborhoods, land use management techniques in general are designed with respect for the integrity of neighborhoods.

The Multi-prong Approach replaces some of the roadway projects with a host of TDM measures and results in fewer adverse environmental impacts than either the Capacity Expansion or No Build Alternatives.

6. Impacts of Land Use Management Measures

In spite of recent advancements in linking transportation and land use decision-making, the existing travel demand models are still not quite capable of measuring the impacts of land use management policies and municipal requirements. Therefore, the impacts of the land use management approach were calculated by post-processing the outcome of the model. A summary of the results is shown in Table VII-16.

A review of the land use and zoning maps identified candidate residential land for the implementation of land use management techniques. It was assumed that these areas, when developed according to land use management, would show a 15 percent reduction in travel demand. The impacts of land use management was calculated based on the following assumptions:

- The increase in the number of households from 2006 until 2030 = 6,374.
- Half of the new residences (3,187) will be developed according to the Land Use Management measures of the 3Ds (Design, Density and Diversity).
- Each household on average makes 8.85 personal trips per day or 6.15 vehicle trips (based on a 1996 ODOT study).
- Total number of daily trips (3,187 X 6.15 = 19,600).
- Land Use Management techniques reduce single occupancy vehicle trips by 15 percent (19,600 X 15% = 2,940 total trip reduction).
- The average length of a trip in the Planning Area is 4.73 miles (2,940 X 4.73 = 13,906 total vehicle miles (VMT) saved).
- The peak hour VMT is generally 10 percent of daily VMT. 13,906 X 10% = 1,391 PM Peak VMT saved.
- The above savings was subtracted from the No-Build VMT in the table below.

Table VII-16: Reduction of Trips and Vehicle Miles of Travel with Land Use Management Techniques (During PM Peak)

	2030 No-Build	2030 Land Use Management	Percent Change From No-Build
Total Vehicle Miles of Travel	136,784	135,393	1.7%
Total Number of Daily Trips	28,918	25,979	16.5%

The above assumptions and calculations show that the impacts of land use measures in reducing the vehicle miles of travel and the number of daily trips may not be realized unless they are implemented vigorously and hand in hand with TDM techniques.

E. Summary Findings of Evaluation

An overarching issue in the analysis of transportation system alternatives is the depencency of our current transportation system on the availability of crude oil. This dependency and its socioeconomic implications are significant enough to warrant a brief review of the present supply and demand of oil.

Transportation alone consumes about five million more barrels of petroleum daily than are produced domestically[9]. The recent surges in gasoline price have raised serious concerns about the demand and supply equation of crude oil. Most recent studies indicate that with the increased demand by the developing nations, the supply of inexpensive oil is nearly depleted, and we are at the peak of oil supply. The severity of this issue warrants a brief review of the energy outlook.

We are entering a period of uncertainty in oil supply and hence unstable gasoline prices. This will have significant impacts on our way of life, economy, land use, and particularly on our transportation system. Our short term planning must be mindful of higher gasoline prices. The long-term outlook for petroleum supply is much more uncertain, and presents challenges to long range transportation planning. However, there are measures that could be taken to be better prepared for uncertain times. As such, the Policy Section of this document includes recommendations on the use of energy.

1. No-Build Alternative

The Planning Area transportation system will deteriorate under the No-Build Alternative as accessibility decreases due to more frequent and higher levels of congestion, longer travel time and smaller share of transit trips. Congestion will also contribute to higher levels of carbon monoxide emissions. As the arterial roadways become more congested the traffic will spillover into local streets and will begin to disturb the tranquility of neighborhoods. The advantages of this alternative are the minimal financial investment and comparatively little impact on the natural environment. The delivery and movement of goods will be disrupted as well. Finally, this alternative will not help the Planning Area move toward its Vision and Goals.

2. TDM Alternative

The TDM Alternative is friendly to the environment as it produces little pollution and conserves energy, land and other natural resources. Under this scenario, the share of trips made by transit will increase from the current 0.9 percent to 2.2 percent, an increase of 175 percent at the cost of approximately $312 million. The TDM alternative, however, does little in the way of mitigating congestion. The average travel time will be slightly higher under this scenario. Most importantly, the TDM Alternative does not provide for the movement of goods within, to and from the area, as freight traffic relies heavily on a network of roadways. Although, this alternative provides for the availability of mode choices and addresses environmental concerns, it does not help the region move toward all of its goals.

3. Capacity Expansion Alternative

This alternative is the most effective of all alternatives in reducing congestion, travel time and vehicle hours of travel. It also provides for the movement of commerce through and within the

9 US DOT, Bureau of Transportation Statistics. 2004 Pocket Guide to Transportation.

area. However, even with construction of all improvement projects under this alternative, the congestion levels will increase from the 2000 base year levels. Ironically, the vehicle miles of travel will be lower than those projected for the No-build and TDM Alternatives. This is because several of the recommended projects, such as the extension of Circle Boulevard to Harrison Boulevard and the extension of Kings Boulevard to Lester Avenue, will reduce the amount of circuitous driving that currently occurs. This alternative has the greatest adverse impact on the natural and built environment. It also requires the highest amount of energy and other natural resources compared to the other alternatives. Given the current technology of the internal combustion engine, this alternative is also detrimental to air quality. The cost of this alternative is approximately $555 million. Finally, in spite of its congestion reduction benefits, this alternative is associated with heavy environmental and financial costs.

4. Land Use Management Alternative

This alternative showed the lowest positive impacts on most evaluation criteria. The advantages of land use management techniques are low cost, limited environmental impact, and low energy consumption. However, this alternative does not significantly reduce congestion, or provide for the movement of freight. Land use management techniques are more effective when implemented in conjunction with TDM measure than as stand-alone measures. Land use measures can be controversial, as they may be perceived as making changes to people's life styles and choices. Additionally, it will take a long period of time before the impacts of land use measures can be realized. For its slow and steady benefits, this alternative should be used in conjunction with other alternatives.

5. Multi-Prong Alternative

The Multi-prong Alternative represents a combination of necessary roadway projects with an emphasis on a variety of Transportation Demand Management projects and programs and land use management techniques. It provides for a host of transportation needs that were specified in the Plan's Vision and Goals. Due to the shortcoming of the Travel Demand Model, the land use management component of this alternative could not be analyzed. Therefore, the tables above do not truly reflect the impacts of this alternative. However, the qualitative and quantitative analyses of the combined effects of land use management techniques, TDM measures and the construction of most needed roadways showed that this alternative is highly effective in reducing VMT. It is noteworthy that this alternative does not include all the roadway projects included in the capacity expansion alternative.

F. Preferred Alternative

The Multi-prong Alternative for its closest alignment with the Plan's Vision and Goals, its appropriate mixture of projects and the lower VMT was selected as the Preferred Alternative. The Alternative was enhanced with a heavy emphasis on transit, TDM and land use management measures in accordance with the values held by the community and relative to the area's projected financial ability. Some of the findings that led to this selection are listed below:

1. The Planning Area's transportation needs are diverse and therefore, no single alternative is capable of fully delivering the multimodal and multi-faceted transportation system described by the Plan's Vision and Goals.

2. Each alternative has some merits when evaluated by certain measures and negative aspects by other evaluation measures.
3. Achieving the Plan's Vision and Goals requires the optimal use of all transportation system alternatives analyzed.
4. The Multi-prong Approach that uses all techniques described under each transportation system alternative addresses a greater share of the areas transportation need.

VIII. Transportation Sustainability

It is a goal of this Transportation Plan to incorporate sustainability measures into the practice of transportation planning, programming and project implementation to the extent possible.

A. Defining Sustainability

There is no standard definition for Sustainability nor is there a standard definition for Sustainable Transportation. According to the Oregon Transportation Plan Update (2008), sustainability is creating a balance between the economy, social needs, and the environment in order to ensure healthy and equitable lifestyles and resources for future human, plant and animal communities. The Oregon Revised Statutes (ORS 184.421) defines sustainability as follows:

"Sustainability" means using, developing and protecting resources in a manner that enables people to meet current needs and provides that future generations can also meet future needs, from the joint perspective of environment, economic and community objectives.

However, three distinctive characteristics distinguish Sustainable Transportation Planning from the traditional transportation planning. These are Stewardship of the Environment, Social Equity and Economic Vitality of the community.

The Stewardship of the Environment includes:

1. Measures that reduce depletion of non-renewable resources
2. Measures that reduce air pollution, particularly Greenhouse Gases (GHG)
3. Measures that reduce noise pollution
4. Measures that reduce water pollution
5. Measures that reduce hydrologic impacts
6. Measures that reduce habitat and ecological degradation.

The Social Equity includes:

1. Fair and equitable disbursement of transportation services to all people
2. Providing for the mobility of disadvantaged people
3. Affordability of services
4. Community cohesion
5. Aesthetics of built environment.

The Economic Vitality includes:

1. Creation of jobs
2. Considerations of infrastructure costs
3. Consideration of costs to consumers
4. Efforts to reduce traffic congestions
5. Consideration of impacts on non-renewable resources.

B. Existing Local Efforts

The MPO area is among the communities that have pioneered the adoption of Sustainability measures. Since 2007 the City of Corvallis Sustainability Coalition has worked toward the development of an environmentally, socially, and economically sustainable community.

The Coalition operates under the following guiding objectives:

1. Reduce and ultimately eliminate our community's contribution to fossil fuel dependence and wasteful use of scarce metals and minerals. Use renewable resources whenever possible.
2. Reduce and ultimately eliminate our community's contribution to dependence upon persistent chemicals and wasteful use of synthetic substances. Use biologically safe products whenever possible.
3. Reduce and ultimately eliminate our community's contribution to encroachment upon nature, e.g., land, water, wildlife, forests, soil, ecosystems, and Protect natural ecosystems.
4. Support people's capacity to meet their basic needs fairly and efficiently.

In 2008, the Coalition developed the Community Sustainability Action Plan which includes goals, strategies and specific actions to move towards a more sustainable regional transportation network.

C. Recommended Sustainability Strategies

The Sustainability recommendations of this Transportation Plan are mainly derived from the transportation-related measures recommended in the City of Corvallis Community Sustainability Action Plan as well as those recommended by the CAMPO Policy Board. These are:

1. Reduce GHG Emissions

a. Model CO2 emissions with the region’s transportation model to provide information on the CO2 emissions of existing and/or future transportation networks.

b. Consider CO2 emissions when prioritizing transportation projects.

c. Fund pedestrian and bicycling programs and facilities that are likely to result in auto trip reduction.

d. Research successful strategies for reducing GHG emissions to develop best practices for local implementation.

e. Provide reliable transit services to all trip generators to reduce driving.

f. Support maintenance, upgrades and enhanced efficiency of public transit services.

g. Support the expansion of ride-sharing and carpool programs.

2. Promote Fuel-Efficiency and Cleaner Vehicles

a. Support vehicle retrofits and the purchase of cleaner motor vehicles in public transit fleets.

b. Upgrade bridges to lift weight restrictions for freight.

c. Support initiatives to reduce unnecessary idling.

3. Integrate Transportation and Land Use Planning

a. Support and promote Transit-Oriented developments (TODs).

b. Support and promote the "5 D's" of sound land use planning: Density, Diversity, Design and Distance [to transit].

4. Integrate Transit, Cycling, and Walking as Viable Alternatives to the Car

a. Make transit easier to use by decreasing wait times, coordinating fares and creating seamless transfers among transit systems. Also work to create connections to bicycle and pedestrian facilities.

b. Real time information at transit stops and on board transit

c. Traffic signal prioritization for buses

d. Incorporate mid-block connections, and multi-use paths into residential subdivisions.

e. Encourage bicycling and walking through events, commute campaigns and public awareness campaigns.

f. Encourage development of bicycle parking and clothes changing facilities at worksites, transportation terminals and other destinations. Establish standards for bicycle parking including size, number of spots, proximity to entrance and space needed around the parking to adequately fit bicycles.

g. Publish local and regional cycling maps showing recommended cycling routes and facilities, roadway conditions (shoulders, traffic volumes, special barriers to cycling, etc.) hills, recreational facilities, and other information helpful to cyclists.

h. Improve walking and cycling safety through traffic calming, streetscape and complete streets policies. Ensure that sidewalks are ADA-compliant and well-lit.

i. Create safer bicycle and pedestrian crossings. Place pedestrian-activated signals at high-activity mid-block locations and intersections. Realign pathways further from their parallel streets when they approach intersections to help avoid collisions with right-turning cars. Also make bike lane crossings highly visible with pavement paint or signs.

j. Develop and publicize internet tools for bicycling, such as bike route mapping and trip planning.

5. Implement environmentally sound roadway construction standards

a. Reuse existing pavement materials

b. Reduce lifecycle impacts from extraction and production of virgin materials

c. Promote use of locally sourced materials to reduce impacts from transportation emissions, reduce fuel costs, and support local economies.

d. Reduce lifetime energy consumption of lighting systems for roadways

e. Make roadway capital assets last longer and perform better by preserving and maintaining them.

f. Utilizing pavement technologies which reduce environmental impacts (such as long-life pavement, permeable pavement, warm mix asphalt, cool pavement and quiet pavement)

IX. Recommended System

This section includes the recommendations of the Corvallis Area Metropolitan Transportation Plan through the horizon year 2030. These projects and policies were developed within the framework of the Preferred Alternative and are in accord with the Plan's Vision and Goals. Maps VIII-1 through VIII-5 show the locations of the recommended improvements.

A. Committed Funds

Table X-1: Committed Projects in the FY 2010-13 Transportation Improvement Program

Project	Project Description	Total Cost Estimate	Fiscal Year(s)	Funding Source
OR34/US20: South Bypass-Wolcott Road.	Environmental document & ROW Purchase. Construct double right turn lane, frontage road, right-turn lane on US20 onto OR34.	$6,575,000	2010	ODOT
OR99W: Mary's River NB Bridge Work	Increase vertical clearance, MP 84.06 -84.22	$2,834,000	2011	ODOT
US20: Corvallis-Albany	Pavement and bike/pedestrian, MP 0.76 - 11.28	$5,880,533	2011	ODOT
US20:Newton Creek	Pavement improvement, MP 51.31 -55.75	$1,753,000	2010	ODOT
Corvallis-Albany Multi-Use Path	Land Purchase	$550,000	2010	ODOT
Corvallis Regional ITS Plan	Develop Corvallis ITS Architecture and plan	$140,000	2010	ODOT
Corvallis Advanced Transportation System Management	City of Corvallis Downtown ATMS	$402,000	2010	ODOT
US 20 OR34 Newton Creek-Jade Place	Design & Construction, MP 51.03 – 49.81	$269,000	2010	ODOT
Circle Blvd – Manchester Street Multi-Use Path	Construct 1st segment of Multi-Use Path - Adjacent to UPRR	$776,000	2012	ODOT
Irish Bend Covered Bridge (Oak Creek-SW Campus Way)	Fumigate, paint, Fire suppression, load rating. Oak Creek – Campus Way	$62,000	2011	SAFETEA-LU
OR-99W Locke Creek Bridge Replacement	Replace the Bridge, MP 78.73 – 78.931	$1,659,000	2010	SAFETEA-LU

Project	Project Description	Total Cost Estimate	Fiscal Year(s)	Funding Source
Corvallis Airport Industrial Park	Construct Hout St. to improve access to the Industrial Park	$964,000	2010	SAFETEA-LU
UP RR Overpass to Circle	Phase I (Design and Environmental) of adding lane to OR99W	$275,000	2010-13	SAFETEA-LU
Walnut Blvd	Reconstruction of pavement base and restriping, Rolling Green – 25th Street	$561,000	2010-13	STP
West Hills Rd	Overlay the road and pave shoulders to provide space for bikes and pedestrians, Sunset Dr – 53rd St	$164,000	2010-13	STP
Arnold Ave	Overlay the existing road with grind and inlay along curb section. OR 99W – Ryals Ave	$224,000	2010-13	STP
9th Street	Reconstruction of pavement and restriping, Jefferson Ave – Monroe Ave	$657,000	2010-13	STP
West Hills Rd and 53rd Street Intersection	Reconstruct intersection to full urban standard with traffic signal or roundabout, 53rd St & West Hills Rd	$648,000	2010-13	STP
West Hills Rd	Overlay and widen the road. Pave shoulders to provide space for bikes and pedestrians. Some retaining walls and driveway adjustments work, Western Blvd – Sunset Dr	$398,000	2010-13	STP
Transit – Preventative Maintenance	Preventive Maintenance (Replacement of parts, maintenance of the fleet and transit facilities)	$229,000	2010	FTA5307
Transit – Preventative Maintenance	Preventive Maintenance (Replacement of parts, maintenance of the fleet and transit facilities)	$253,750	2011	FTA5307
Transit – Preventative Maintenance	Preventive Maintenance (Replacement of parts, maintenance of the fleet and transit facilities)	$247,500	2012	FTA5307
Transit – Preventative Maintenance	Preventive Maintenance (Replacement of parts, maintenance of the fleet and transit facilities)	$247,500	2013	FTA5307

Project	Project Description	Total Cost Estimate	Fiscal Year(s)	Funding Source
Transit Operation Costs	Transit Operation Costs	$1,639,952	2011	FTA5307
Transit Operation Costs	Transit Operation Costs	$1,142,000	2012	FTA5307
Transit Operation Costs	Transit Operation Costs	$1,142,000	2013	FTA5307
Transit Service	Americans with Disabilities Act (ADA)	$37,485	2011	FTA5307
Transit Service	Americans with Disabilities Act (ADA)	$30,000	2012	FTA5307
Transit Service	Americans with Disabilities Act (ADA)	$30,000	2013	FTA5307
Transit Service	Corvallis Transit JARC 2010	$42,000	2010	JARC
Transit Service	Corvallis Transit JARC 2011	$162,666	2011	JARC
Transit Service	Corvallis –JARC Ops (5316)	$163,076		JARC
Bus Purchases	Bus Purchases (2)	$660,000	2011	FTA5309
City of Corvallis TDM Program	City of Corvallis TDM Program	$48,000	2010	ODOT Discretionary
City of Corvallis TDM Program	City of Corvallis TDM Program	$48,000	2011	ODOT Discretionary
City of Corvallis TDM Program	City of Corvallis TDM Program	$48,000	2012	ODOT Discretionary
City of Corvallis TDM Program	City of Corvallis TDM Program	$48,000	2013	ODOT Discretionary
CTS Radio System Replacement	CTS Radio System Replacement	$832,000	2010	FTA-SGR
CTS Vehicle – Vehicle Information System Replacement	CTS Vehicle – Vehicle Information System Replacement	$948,000	2011	ODOT Flex Funds
Multiuse Path	Philomath SRTS - Construct Shared Multi-use Path, Connection to Applegate & Landscape	$452,000	2011	SRTS

B. Recommended Transportation System Improvements

1. Projects Financed with System Development Charges

These projects will be completed concurrent with neighboring development and will be financed with SDC fees from those developments. SDC fees are one-time fees imposed on new or some types of re-development at the time of development. The fee is intended to recover a fair share of the costs of existing and planned facilities that provide capacity to serve new growth.

1. Kings Boulevard: Extend Kings Boulevard to Lester Avenue
2. Circle Boulevard: Extend to Harrison Boulevard
3. Airport Avenue from Airport Place to OR 99W: Upgrade to urban standards[10], including roundabout
4. Hout Street: Extend from Convil Avenue north to the proposed extension of Rivergreen
5. Lester Avenue: Extend to OR 99W
6. Satinwood Drive: Extend to Lester

2. Complete by 2016

Roadway Projects

1. 53rd Street from Reservoir Road to West Hills: Acquire right of way and conduct environmental study
2. 53rd Street and Philomath Blvd: Improve intersection of 53rd Street and Philomath Boulevard (a component of current ODOT's Facility Study)
3. US 20/OR 34 from Harrison to Van Buren: Construction of N-E right turn lane on 3rd Street onto Van Buren Avenue and extension of bike lane from Jackson to Harrison by removing existing on-street parking (components of the South Bypass-Wolcott Road Project within MPO boundary)
4. West Hills Road from SW Ivy Place to Western Boulevard: Expand shoulder bike lanes
5. Grant Avenue from Highland Street to 9th Street: Add bike lanes
6. Chapel Drive in Philomath, from 13th Street to Bellfountain Road: Add paved shoulders
7. Western and 26th Street: Install traffic signal
8. Separated multi-use path from Marys River to SE Crystal Lake (east side of OR 99W): Phase I: Design
9. Pedestrian cross-walks on NW Walnut Blvd at 13th St and on NW Walnut Boulevard near Jack London
10. Pedestrian cross-walk on Highland near NW Meadow Ridge Dr.

[10] Urban Standards generally includes construction of curbs, drainage, sidewalks and bike lanes

11. Pedestrian cross-walks on 9th Street as identified in 9th Street Improvement Plan (between Reiman and Fremont Ave, between Buchanan Avenue and Garfield Avenue, between Garfield and Circle Boulevard, and between Circle Boulevard and Walnut Boulevard)
12. Pavement preservation and maintenance projects will be identified on an annual basis consistent with prioritization process adopted by CAMPO (Ongoing)
13. Sidewalk infill where curb and gutter exist (Ongoing)
14. ADA ramp installations and retrofitting (Ongoing)
15. Intersection of Applegate and 21st Streets in Philomath: Improve bicycle and pedestrian facilities as outlined in the Philomath Safe Routes to School plan
16. Intersection of Main and 17th Streets in Philomath: Improve bicycle and pedestrian facilities as outlined in the Philomath Safe Routes to School plan
17. Pioneer Street from Adelaide Drive to 9th Street, Improve bicycle and pedestrian facilities as outlined in the Philomath Safe Routes to School plan
18. Pioneer Street from 9th Street to 13th Street, Improve bicycle and pedestrian facilities as outlined in the Philomath Safe Routes to School plan
19. Multi-use path in the vicinity of Willow Lane and Cedar Street as outlined in the Philomath Safe Routes to School plan
20. College Street from 13th Street to 17th Street: Improve bicycle and pedestrian facilities as outlined in the Philomath Safe Routes to School plan
21. Cedar Street and 13th Street to Willow Lane and 15th Street, Improve bicycle and pedestrian facilities as outlined in the Philomath Safe Routes to School plan
22. Applegate from 17th Street to 19th Street and 19th Street from Applegate to Cedar: Improve bicycle and pedestrian facilities as outlined in the Philomath Safe Routes to School plan
23. Applegate Street from 21st Street to 29th Street: Improve bicycle and pedestrian facilities as outlined in the Philomath Safe Routes to School plan

Transit Projects

24. Bus replacements according to Corvallis Transit schedule (Ongoing)
25. Transit facilities improvement, which may include but is not limited to shelters, stops and bike parking (Ongoing)
26. Improve transit service in the Planning Area and according to respective transit plans.

TDM Projects

27. Develop signage for cooperatively established Park and Ride Lot in Adair Village
28. Develop signage for cooperatively established Park and Ride Lot in west Philomath
29. Develop signage for cooperatively established Park and Ride Lot in the vicinity of the Corvallis Airport
30. Develop signage for cooperatively established Park and Ride Lot in the vicinity of the Benton County Fairgrounds
31. Form Transportation Management Associations (Ongoing)

3. Complete by 2025

Roadway Projects

1. 35th Street from Western to Campus Way: Improve to urban standard and improve railroad crossing[12].
2. OR 99W at Goodnight or Rivergreen Avenue: Install traffic signal when warranted
3. OR 99W from Circle Boulevard to railroad overcrossing: Construct two additional travel lanes on railroad over crossing to Circle Boulevard (2012-$5M; 2035-$11.9M)[13]
4. West Hills Road from SW Ivy Place to Western Boulevard: Reconstruct to urban standards
5. 13th Street in Philomath from Main Street (US 20/OR 34) to Chapel Drive: Reconstruct to full urban standards
6. US 20/OR 34 and Alsea Highway Intersection in Philomath: Install traffic signal when warranted
7. US 20/OR 34/Main Street at 26th Street in Philomath: Install traffic signal when warranted
8. Circle Blvd and 29th Street: Install traffic signal
9. OR 99W at Airport Avenue: Install traffic signal, when warranted
10. Conifer Avenue at 9th Street and OR 99W: Reconfigure intersection
11. OR 99W and Walnut Blvd: Add southbound right turn lane on OR 99W onto Walnut
12. 9th Street and Walnut: Add westbound right turn lane on 9th Street onto Walnut
13. 9th Street: Widen bike lanes to 6 feet between Elks and Polk
14. 9th Street: Widen sidewalks to a minimum of 5 feet between Elks and Polk
15. Separated shared use path from Marys River to SE Crystal Lake (east side of OR 99W): Phase II: Construction
16. US 20/OR 34/Applegate Street: Reconstruct, including improvements to bicycle and pedestrian facilities
17. Pavement preservation and maintenance projects will be identified on an annual basis consistent with prioritization process adopted by CAMPO (Ongoing)
18. Sidewalk infill where curb and gutter exist (Ongoing)
19. ADA ramp installations and retrofitting (Ongoing)
20. Rodeo Grounds,11th Street to 13th Street: Improve bicycle and pedestrian facilities as outlined in the Philomath Safe Routes to School plan
21. 11th Street from Quail Glen Drive to Pioneer Street: Improve bicycle and pedestrian facilities as outlined in the Philomath Safe Routes to School plan
22. Arnold Road, Carr Street to Ebony Lane: ADA ramp installations and retrofitting
23. Carr Street, Barberry to Arnold: Upgrade to urban standards
24. Carr Street, Arnold to Vandenberg: Upgrade to urban standards and establish on-street parking

[12] The completion of this project is contingent upon and will coincide with development

[13] 2012 cost estimate is ODOT's estimate before the design project

Transit Projects

25. Construct the City of Corvallis Transit Maintenance and Operations Facility at the Corvallis Public Works complex
26. Bus replacements according to Corvallis Transit schedule (Ongoing)
27. Transit facilities improvement, which may include but is not limited to shelters, stops and bike parking (Ongoing)
28. Improve transit service in the Planning Area and according to respective transit plans.

TDM Projects

29. Form Transportation Management Associations (Ongoing)

4. Complete by 2035

Roadway Projects

1. Crystal Lake Drive from Alexander to Park: Reconstruct to urban standards
2. West Hills Road from SW Ivy Place to 53rd Street: Reconstruct to urban standards
3. Country Club Drive from 45th to 35th: Reconstruct to urban standards
4. Buchanan at 9th Street: Construct left turn lanes on Buchanan (eastbound)
5. Witham Hill Drive from Circle to Grant: Improve bike lanes and construct sidewalks on east side
6. Brooklane Drive from US 20/OR 34 to Chintimini: Reconstruct to urban standards and realign
7. OR 99W at Kiger Island Drive: Install traffic signal when warranted
8. Clemens Mill Road in Philomath: Relocate road to align with 26th Street
9. Chapel Drive in Philomath from 13th Street to Bellfountain Road: Construct to urban standards
10. OR 99W in Adair Village: Install traffic signal on OR 99W at Arnold or Ryals when warranted
11. Pavement preservation and maintenance projects will be identified on an annual basis consistent with prioritization process adopted by CAMPO (Ongoing)
12. Sidewalk infill where curb and gutter exist (Ongoing)
13. ADA ramp installations and retrofitting (Ongoing)

Transit Projects

14. Bus replacements according to Corvallis Transit schedule (Ongoing)
15. Transit facilities improvement, which may include but is not limited to shelters, stops and bike parking (Ongoing)
16. Improve transit service in the Planning Area and according to respective transit plans.

TDM Projects

17. Form Transportation Management Associations (Ongoing)

C. Illustrative Transportation System Improvements

Roadway Projects

1. West Hills Road from Wyatt Lane to N 19th Street in Philomath: Widen and add bike lanes
2. Circle Boulevard from Hewlett-Packard campus to US 20: Add travel lanes
3. Alexander Avenue from 3rd to Crystal Lake: Reconstruct to full urban standards
4. Harrison Boulevard from 36th to 29th: Improve to full urban standards
5. Witham Hill Drive from Walnut to Elmwood: Complete hillside stabilization and improve to urban standards
6. Country Club Drive from 53rd Street to US 20/OR 34: Improve to urban standards and improve alignment
7. US 20 from Steele Avenue (MPO Boundary) to Circle: Widen to 4 lanes with left turn lanes
8. US 20 from Circle Blvd to Downtown: Widen to 4 lanes with left turn lanes
9. US 20/OR34 from SW 35th St to OR 99W overpass - widen to four lanes with left turn refuges
10. US 20/OR 34 from Newton Creek to Country Club: Reconstruct to four lanes with left-turn refuges, bike lanes and sidewalks
11. US 20/OR 34 from Country Club to 53rd Street: Reconstruct to four lanes with left-turn refuges, bike lanes and sidewalks
12. US 20/OR 34 from 53rd Street to SW 35th Street: Reconstruct to four lanes with left-turn refuges, bike lanes and sidewalks
13. OR 99W from Lewisburg Road Conifer Boulevard: Widen to four lanes
14. OR 99W/Circle Drive Intersection: Construct northbound right-turn lane
15. OR 99W from Rivergreen Avenue to Airport: Widen OR 99W from 2 lanes to 4 with left turn lanes at major intersections to 500 ft. south of Airport
16. OR 34 - OR 99W: Construct a north bypass to connect OR34 to OR 99W, including a new crossing over the Willamette River
17. 53rd Street from Reservoir Road to West Hills Road: Construct 53rd Street, including railroad overpass.
18. US 20/OR 34/College/Main/Applegate Streets: Phase II of the Philomath Couplet
19. Ponderosa Avenue from Skyline to Cassia Place: Reconstruct to urban standards and improve alignment ($700K)
20. OR 99W: Multi-use path adjacent to 99W: Elks to Lewisburg Road
21. OR 99W: Multi-use path from Lewisburg Road to Adair Village city limits
22. OR 99W (vicinity of): Multi-use path from Avery to Airport Road adjacent to rail road

Transit Projects

18. Increase number of CTS buses to 19
19. Create new route - increase number of CTS transit routes
20. Establish Downtown Philomath Circulator serving Philomath Blvd and Applegate Street
21. Enhance transit to Adair Village

TDM Projects

22. Construct Park and Ride Lot in Adair Village
23. Construct Park and Ride Lot in west Philomath
24. Construct Park and Ride Lot in the vicinity of the Corvallis Airport
25. Construct Park and Ride Lot in the vicinity of the Benton County Fairgrounds
26. Establish Park and Ride Lot at NE Elliot Circle and OR 99W
27. Construct bicycle and pedestrian bridge across the Willamette River in downtown Corvallis

Projects outside of MPO Boundary impacting MPO transportation system

28. Corvallis to Albany: Construct shared-use path along the WP RR tracks
29. US 20 from MPO Boundary (Steele Avenue) to N. Albany Road: Widen US 20 from 2 lanes to 4 lanes with left turn refuges ($24M)
30. OR 34 at South bypass: Construct an interchange at OR 34 and South Bypass

D. Recommended Studies

The following studies and transportation planning activities are also recommended:

1. Prepare corridor plans for: the US 20/OR 34 corridor from Newton Creek to 35th Street, the US 20/OR 34 corridor from 35th Street to the Willamette River and the US 20 corridor from Steele Avenue south to Van Buren Avenue.

2. Study the role and function of north-south and east-west railroad services through the Urbanized Area to identify more efficient movement of freight and people.

3. Investigate the potential to improve the safety, security, efficiency, cost effectiveness and energy savings through operations and maintenance of the transportation system.

4. Study alternative routes for better connections between south Corvallis (OR 99W) and Philomath (53rd Street).

5. Study the US 20 corridor from western Philomath through the CAMPO Area and toward the City of Albany.

6. Investigate locations and alternative funding options for additional park and ride sites, including at the periphery of downtown Corvallis and on US 20 towards Albany.

E. Recommended Policies

The Transportation Plan includes recommended policies throughout the document that are either implied or explicitly stated. This section provides a summary of the recommended policies. The policies listed below are for implementation throughout land use and transportation decision-making processes, as opportunities arise.

1. Transportation System Management

a. Provide for the safety of motorists, bicyclist and pedestrians.

b. Manage the transportation system to support the economic vitality of the area.

c. Promote alternative modes of transportation and take measures to reduce reliance on SOVs.

d. Preserve, protect and maintain the existing transportation system.

e. Provide for transportation system connectivity to reduce vehicle miles of travel.

f. Provide for movement of people and freight within and to destinations outside of the Planning Area.

g. Construct bike and pedestrian facilities as a component of all arterial and collector construction.

h. Improve gateways to the area and preserve historic transportation structures.

i. Construct trails, bikeways, transit and pedestrian facilities.

j. Allocate the majority of the area's allotment under the Surface Transportation Program (STP) to the maintenance and preservation of the existing transportation system.

2. Transportation Demand Management

a. Provide transportation choices for all people.

b. Support public transportation for both interurban and intra-urban trips.

c. Enhance transit service throughout the Planning Area by adding new bus routes, extending transit routes, extending transit service hours, providing higher service frequencies and better bus stops, shelters and amenities.

d. Develop a coordinated transit service throughout the Planning Area and to neighboring destinations.

e. Monitor and modify, as needed, transit routes to serve the highest number of passengers.

f. Engage with employers to reduce vehicular trips by developing transportation management associations.

g. Seek funding to enhance TDM activities.

h. Promote carpool and vanpool programs.

i. Connectivity of transit, bicycle routes and pedestrian facilities shall be considered in the development review process for new developments.

j. Require planning for a network of bikeway and pedestrian facilities within new developments (internal circulation).

k. Construct Park and Ride facilities on the periphery of the Planning Area and adjacent to transit routes.

l. Support car-share and bike-share programs.

3. Land Use Management

a. Land use and transportation decision making processes should be coordinated.

b. Promote higher residential density standards to make land use compatible with operation of viable public transportation.

c. Promote developments which blend commercial and residential uses.

d. Promote in-fill development.

e. Promote development of grid street pattern.

4. Environment Protection

a. Preserve and protect the natural environment (air, water and soil).

b. Promote sustainability and livability throughout the transportation decision making process.

c. Preserve and protect the natural beauty of the area.

d. Preserve and protect the integrity of neighborhoods.

5. Energy Conservation

a. Remain appraised of the energy outlook and its impacts on the transportation system to update the Transportation Plan every five years.

b. Promote the use of renewable and alternative energy sources/fuels, such as bio-diesel and electricity, to reduce dependency on petroleum-based products.

c. Promote alternative modes of transportation through land use and transportation decision-making processes to reduce demand for vehicular trips and particularly, single occupancy vehicle trips.

6. Parking Management

a. Encourage major employers to use incentives that promote greater use of alternative transportation modes by employees, and disincentives for the use of workplace parking.

b. Give priority to the parking needs of those who carpool or vanpool, while accommodating visitors and persons with disabilities.

c. Limit the number of parking spaces required for new developments.

d. Encourage workplace incentive programs for public transportation, carpooling and vanpooling.

e. New development within or near central business districts should require fewer parking spaces than those in outlying areas.

f. Encourage new developments to locate buildings near the street and provide parking behind buildings.

g. Position parking in a manner that minimizes conflict with bicycle and pedestrian access.

h. Encourage shared parking among neighboring businesses.

i. Encourage telecommuting of employees.

j. Encourage the consolidation of commercial driveways to the degree practicable

Glossary of Acronyms

30 HV	30th Highest Volume (within one hour)
AASHTO	Association of American State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
ATR	Automatic Traffic Recorder
BCTSP	Benton County Transportation System Plan
BETC	Business Energy Tax Credit
CAMPO	Corvallis Area Metropolitan Planning Organization
CBD	Central Business District
CFR	Code of Federal Regulations
CMP	Campus Master Plan
CO	Carbon Monoxide
CTP	Corvallis Transportation Plan
CTS	Corvallis Transit System
D/C Ratio	Ratio of Demand to Capacity
DEQ	Department of Environmental Quality
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	Fiscal Year
HC	Hydro Carbon
HCM	Highway Capacity Manual
HDM	Highway Design Manual
HPPP	High Priority Project Program
IOF	Immediate Opportunity Fund
ITS	Intelligent Transportation System
JARC	Job Access and Reverse Commute
LOS	Level of Service
M&O	Maintenance and Operation
MP	Mile Post
MPO	Metropolitan Planning Organization
MTIP	Metropolitan Transportation Improvement Program
MUTCD	Manual on Uniform Traffic Control Devices
NCAP	North Corvallis Area Plan
NF	New Freedom program
NHS	National Highway System
NO_x	Oxides of Nitrogen
O_3	Ozone
OAR	Oregon Administrative Rule
OBPP	Oregon Bicycle and Pedestrian Plan
OCWCOG	Oregon Cascades West Council of Governments
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
OED	Oregon Employment Department

OHP	Oregon Highway Plan
ORS	Oregon Revised Statutes
OSU	Oregon State University
OTIA	Oregon Transportation Investment Act
OTP	Oregon Transportation Plan
P&W	Portland & Western railroad
PCI	Pavement Condition Index
PDO	Property Damage Only
PE	Preliminary Engineering
PIP	Public Involvement Plan
PM_{10}	Particulate Matter smaller than 10 microns in diameter
PM Peak	The most congested time of traffic during afternoon hours
PNWR	Portland and Western Railroad
R-O-W	Right of Way
SAFETEA-LU	Safe, Accountable, Flexible, Efficient, Transportation Equity Act, A Legacy for Users
SCARP	South Corvallis Area Refinement Plan
SDC	System Development Charges
SO_2	Sulfur Dioxide
SOV	Single Occupancy Vehicle
SPIS	Safety Priority Index System
STA	Special Transportation Area
STF	Special Transportation Fund
STIP	Statewide Transportation Improvement Program
STP	Surface Transportation Program
STP-E	Surface Transportation Program – Enhancement
STP-R	Surface Transportation Program – Rural
STP-S	Surface Transportation Program – State
STP-U	Surface Transportation Program – Urban
TAC	Technical Advisory Committee
TAZ	Traffic Analysis Zone
TDM	Transportation Demand Management
TDR	Transportation Demand Reduction
TEA-21	Transportation Equity Act for the 21st Century
TIP	Transportation Improvement Program
TOD	Transit Oriented Development
TPAU	Transportation and Planning Analysis Unit of ODOT
TPR	Transportation Planning Rules
TRO	Travel Reduction Ordinance
TSM	Transportation System Management
TSP	Transportation System Plan
UGB	Urban Growth Boundaries
USC	United States Code
V/C Ratio	Ratio of Volume to Capacity
VMT	Vehicle Miles of Travel
VOC	Volatile Organic Compounds