City of Oregon City Transportation System Plan
(Ordinance No. 01-1009)

Oregon City, Oregon

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Introduction

The City of Oregon City, in conjunction with Clackamas County, Metro, and the Oregon Department of Transportation (ODOT), initiated a study of the City's transportation system in the summer of 1997. The purpose of this study was to prepare and adopt a transportation system plan (TSP) that accomplishes two broad objectives. First, the plan works as a guide to manage and develop the City's transportation facilities over the 20-year period to 2020. Second, the plan incorporates the vision of the community into an integrated and efficient land use and transportation system that addresses the multi-modal desires of the community.

The Oregon City Urban Growth Boundary (UGB) contains more than sufficient land area to accommodate the City's 20-year growth projection, as developed by Metro. Because of this abundant supply of land within the UGB, there is a potential for low-density development and inefficient development patterns, which could make it difficult to provide utilities and services cost-effectively and efficiently. How and where future development occurs will be important in terms of helping Oregon City maintain its strong identity and character, while improving the relationship between land use and transportation. Careful planning and development review will ensure that both redevelopment and new development alike will actually improve the livability and sustainability of Oregon City.

PLANNING REQUIREMENTS

State of Oregon guidelines stipulate that the TSP must be based on the current comprehensive plan land use map and must provide a transportation system that accommodates the expected 20-year growth in population and employment that will result from implementation of the land use plan. Oregon Revised Statute 197.712 and the Land Conservation and Development Commission (LCDC) administrative rule known as the Transportation Planning Rule (TPR) (Oregon Administrative Rule 660-12) require that all jurisdictions develop a TSP comprised of:

- a road plan for a network of arterial and collector streets;
- a public transit plan;
- a bicycle and pedestrian plan;
- an air, rail, water, and pipeline plan;
- a transportation finance plan; and,
- policies and ordinances for implementing the transportation system plan.

The TPR requires that alternative travel modes be given equal consideration and that reasonable effort be applied to development and enhancement of alternative modes in order to provide a more balanced future transportation system. In addition, the TPR requires that local jurisdictions adopt land use and subdivision ordinance amendments that protect transportation facilities and that provide bicycle facilities and connections between residential, commercial, and employment/institutional areas. It further stipulates that local communities coordinate their respective local transportation system plans with the applicable county, regional, and state transportation plans.

In addition to addressing the policies and requirements outlined in the statewide Transportation Planning Rule, the *Oregon City Transportation System Plan* process focuses on compliance and coordination with Metro's *Regional Transportation Plan* (RTP) and *Regional Framework Plan*. Of specific concern are the projects and strategies presented in Chapter 5 of the 1999 RTP: *Growth and the Strategic System*. This chapter presents strategies and improvement programs generated in an attempt to balance the forecasted future transportation system needs, as Metro implements its *Regional 2040 Growth Concept* with the recognized funding limitations that currently exist.

STUDY AREA

The City of Oregon City is located in Clackamas County, Oregon, at the confluence of the Clackamas and Willamette Rivers. Established in 1829 as a lumber mill near the Willamette Falls, it was later designated as Oregon's territorial capital, the city was incorporated in 1844. Known as the first city in the Oregon Territory and the first city west of the Mississippi, this community has a long and rich history that is reflected in its urban form, historic residential areas, and continuing pioneering spirit. As the community has grown, so has the region around it, such that Oregon City is now a key component of the large Portland metropolitan area and a critical participant in both local and regional planning for this area. Oregon City is home to a population of approximately 23,405 (1999 Portland State University Center for Population Research and Census Data).

PUBLIC INVOLVEMENT

The TSP planning process provided the citizens of Oregon City with the opportunity to identify their priorities for future growth and development. Expressing their vision for the future in terms of goals and objectives for the TSP was a central element of the public involvement process. The goals and objectives identified by the community served as guidelines for developing and evaluating alternatives, selecting and refining a preferred transportation system plan, and prioritizing improvements.

Two committees were formed to facilitate and guide the planning process: the Management Team and the Citizen Advisory Committee (CAC). The Management Team was comprised of representatives of the City of Oregon City, Clackamas County, Metro, ODOT, and the consultant team. The Citizen Advisory Committee included at-large residents of Oregon City, neighborhood association representatives, a City Commissioner, and other key stakeholders in the community.

The two committees convened for meetings, presentations, and work sessions at several key junctures of the study including project inception, goal development, completion of the existing conditions analysis, presentation of the future conditions and alternatives analysis findings, and presentation of the draft and final TSP.

In addition to the established advisory committees, several public outreach and public involvement efforts were initiated to ensure that all residents of Oregon City were informed of the TSP study process, its findings and recommendations, and were given an opportunity to provide their input and feedback throughout the plan's formulation. This public outreach process consisted of public open houses, neighborhood association meetings, presentations to other committees of the City, newsletters and other mailings, and a public hearing process. Through these efforts, the local transportation planning process evolved such that a general consensus was achieved and maintained among all parties in attendance.

TSP STUDY PROCESS

Development of the City of Oregon City's Transportation System Plan began with an inventory of the City's existing transportation system. The inventory included documentation of all major transportation-related facilities within the study area and allowed for an objective assessment of the system's current physical characteristics, general function, operational and safety performance, and deficiencies and recommended mitigations. The two TSP advisory committees provided significant input into this portion of the process, because of their familiarity with the area and the existing transportation system.

Upon completion of the existing conditions analysis, the focus of the project shifted to forecasting future travel demand and the corresponding long-term future transportation system needs. Development of long-term (year 2020) transportation system forecasts relied heavily on population and employment growth projections for the study area, as designated by Metro's *Regional 2040 Growth Concept*, and a review of historical traffic growth trends within the region. By examining the City's *Comprehensive Plan*, reasonable assumptions were drawn as to the potential for and desired location of future development activities. These forecasts formed the basis for the analysis of the future travel demand scenario and the identification of projected system needs within the area, assuming no new transportation facilities were provided beyond what is planned for by the City and the region.

After identifying the projected system needs, a series of transportation system alternatives intended to mitigate the identified transportation system safety and capacity deficiencies, enhance the multi-modal features of the local transportation facilities, and provide a balanced system that accommodates desired growth within the community were evaluated. The process by which future transportation system projects were identified and prioritized included extensive interaction with and cooperation by both TSP advisory committees. Benefits and impacts of each identified alternative were considered on the basis of individual merits (success in supporting plan goals and objectives), conformance with the existing land uses and transportation system, and potential conflicts to implementation and integration with the surrounding transportation system components.

Based on the transportation system alternatives evaluated, a preferred plan was developed that reflects a consensus as to which elements are to be incorporated into the City's long-term transportation system. These recommendations are comprise the actual City of Oregon City ***Transportation System Plan*** that is presented in this document. The plan is summarized by travel mode as the following: Roadway Network and Functional Classification Plan, Pedestrian System Plan, Bicycle System Plan, Public Transportation Plan, and Air/Rail/Pipeline Plan.

Finally, a *Transportation Funding Plan* was developed to support the preferred Transportation System Plan. The funding plan provides an analysis and summary of the alternative funding sources available to finance the identified transportation system improvements. The funding analysis demonstrates the feasibility of the Plan and the needs that extend beyond the 20-year horizon.

It is important to note that this particular document contains only one section, *Section 5: Transportation System Plan***, of the overall transportation system plan, transportation funding plan, and supporting analysis and reference materials. For documentation on the technical and public involvement process used to develop the City of Oregon City's Transportation System Plan, a description of the inventory process, existing conditions analyses and their implications, the analysis of the future travel demand scenario and identified projected system needs, the transportation system alternatives development and evaluation process, and the supporting financial analysis to realize implementation of the proposed improvements over a twenty-year period, the reader is directed to consult the full Transportation System Plan and supporting Background Document that is available from the City of Oregon City.**

Section 5

Transportation System Plan

Transportation System Plan

This section describes the individual elements that comprise the Transportation System Plan (TSP) for the City of Oregon City. The preferred alternative presented in the TSP consists of those transportation and land use improvements endorsed by the citizens of Oregon City as necessary to support the planned, long-term development of the City. The TSP addresses several development components of the future transportation network including:

- Preferred Land Use Plan
  - Roadway System Plan
  - Functional Classification System
  - Street Design Standards
- Access Management Standards
- Pedestrian System Plan
- Bicycle System Plan
- Public Transportation System Plan
- Marine System Plan
- Air, Rail, Water, Pipeline, and Transmission System Plans
- Access Management Plan
- Implementation Plan

The individual plan elements presented in this section were developed specifically to address the requirements of Oregon's Transportation Planning Rule (TPR) and Metro's Regional Transportation Plan (RTP), as well as the needs and desires of the community. Projects associated with each plan element have been identified and their costs have been estimated, as described herein. The commitments set forth by this Plan reflect the findings of the analysis of existing and future conditions, the development and analysis of alternatives, and the concerns expressed by both the citizens of Oregon City and the public agencies that were involved in the planning process.

The premise for selecting the preferred alternative was to develop a transportation system plan that fully supports the established goals and objectives by:

- maximizing the efficiency of the existing transportation system;
- increasing the utility of non-auto modes of travel;
- reducing dependence on the single occupant vehicle;
- enhancing the land use/transportation relationship; balancing infrastructure expansion and pollution impacts; and,
- minimizing adverse economic development, social, environmental, and energy consequences.

Following selection of the preferred alternative, a process for prioritizing the preferred improvements offered another opportunity to refine what would become the list of projects contained in the Oregon City Transportation System Plan. This process afforded the community an additional opportunity to identify infeasible projects, primarily focused on economic, social, environmental, and/or energy consequences.

TRANSPORTATION POLICY GOALS & OBJECTIVES

Policy-based goals and objectives that link the TSP to the Transportation Element of the Comprehensive Plan have been developed and incorporated into this TSP section of the overall document. These goals and objectives are a translation of the community-based goals and objectives established at the outset of the TSP planning process, as presented in Section 1. The purpose, function, and application of these policy-based goals and objectives closely match those contained in the balance of the City's Comprehensive Plan. Each goal provides a particular perspective on the transportation system and is supported by objectives that add specificity and direction.

GOAL 1 – Multi-Modal Travel Options

Develop and maintain a transportation system that incorporates, provides for, and encourages a variety of multi-modal travel options to meet the mobility needs of all Oregon City residents.

Objectives

1. Provide a street classification system that defines public right-of-way by the travel modes and land uses they are intended to serve.
2. Provide an interconnected and accessible street system that minimizes vehicle-miles-traveled and inappropriate neighborhood cut-through traffic, throughout the network *(Please note: A 10-percent reduction in VMT per capita has been assumed within the 20-year horizon consistent with and reflected in the Metro travel demand forecasting model used to evaluate the transportation system and identify needs).*
3. Provide an interconnected and accessible pedestrian system that links residential areas, major pedestrian generators, employment centers, and the arterial and collector roadway network with one another.
4. Provide a well-defined and accessible bicycle network that links residential areas, major bicycle generators, employment centers, and the arterial and collector roadway network with one another.
5. Ensure the adequacy of pedestrian and bicycle connections to local, county, and regional trails.
6. Provide a public transit system that ensures efficient accessibility, mobility, and interconnectivity between travel modes for all residents of the Oregon City community.
7. Provide a truck route network that ensures efficient access and mobility to commercial and industrial areas while minimizing adverse residential impacts.
8. Provide for the possible future extension, connection, and expansion of both rail- and river-based transportation services to and through Oregon City.
9. Ensure the multi-modal transportation system preserves, protects, and supports the environmental integrity of the Oregon City community.

10. Ensure that the City's transportation system is coordinated with regional transportation facility plans and policies of partnering and affected agencies.
11. Preserve and promote the use of the municipal elevator as a pedestrian link to downtown Oregon City.
12. Preserve and enhance the existing Oregon City Local Transit service as an attractive travel option for local trips and as a connection to the regional transit system.
13. The alternative mode share targets that are in Table 1.3 of the 2000 Regional Transportation Plan will be used for working toward implementation of Metro's 2040 Growth Concept at the local level.

GOAL 2 – Safety

Develop and maintain a transportation system that provides adequate safety for the transportation system users.

Objectives

1. Identify transportation improvements to increase the safety of the transportation system for all users.
2. Reduce the frequency and severity of crashes/incidents on the transportation system.
3. Identify ways to minimize conflict points between different modes of travel.
4. Improve the safety of vehicular, rail, bicycle, and pedestrian crossings.

GOAL 3 – Capacity

Develop and maintain a transportation system that provides adequate capacity to serve the system user's needs.

Objectives

1. Provide an adequate transportation system to serve the existing and projected future travel demand.
2. Identify transportation system improvements that mitigate existing and projected future areas of congestion.
3. Ensure the adequacy of travel mode options and travel routes (parallel systems), in areas of congestion.

GOAL 4 – Implementation

Identify and implement needed transportation system improvements using available funding sources.

Objectives

1. Maximize the efficiency of the Oregon City transportation system, thus minimizing the required financial investment in transportation improvements, without adversely impacting neighboring jurisdictions and facilities.
2. Ensure a mutually supportive and interdependent relationship between the land use and transportation systems of the City.
3. Provide transportation system improvements that facilitate the timely implementation of the Downtown Community Plan and protect regional and local access to the End of the Oregon Trail Interpretive Center.

PLAN AND POLICY COORDINATION

The City of Oregon City Transportation System Plan has been coordinated with relevant and appropriate City of Oregon City plans and policies, as well as the plans and policies of the State of Oregon, Metro, Tri-Met, Clackamas County, Gladstone, and West Linn. The consistency that is expected and required by these partnering agencies has been achieved and is fully incorporated into the City of Oregon City Transportation System Plan and the *City of Oregon City Street Design Standards Manual* that will be adopted in the Spring of 2001.

Compliance requirements established under the State of Oregon Transportation Planning Rule and the Metro Regional Transportation Plan have been specifically addressed. A checklist for compliance with the TPR is provided in Section 7 of the TSP document. Three critical RTP issues (Non-SOV Modal Targets, Vehicle Performance Measures, and Street Design Standards) are addressed at the outset of this Plan, because of their influence on the Plan construct and as evidence of compliance. In addition, the system maps (Roadway System and Functional Classification, Pedestrian System, Bicycle System, and Public Transit System) contained within the City of Oregon City Transportation System Plan are developed to be consistent with all system maps of the Regional Transportation Plan (including the 2040 Growth Concept Map, Regional Street Design Classifications, Regional Street Design Map, Regional Motor Vehicle System, Regional Public Transportation System, Regional Freight System, Regional Bicycle System, and the Regional Pedestrian System). The only exception to this consistency is in the designation of the 10th Street-Singer Hill-7th Street-Molalla Avenue corridor as a "Community Boulevard" by the City as opposed to the "Regional Street" designation shown in the 2000 Regional Transportation Plan. The "Community Boulevard" designation for this corridor resulted from the planning and public involvement process conducted for the Oregon City Downtown Community Plan, 7th Street Corridor Study, and the Molalla Avenue Boulevard and Bikeway Improvement Plan projects. The City will coordinate with Metro to revise the designation of the 10th Street-Singer Hill-7th Street-Molalla Avenue corridor in a future RTP amendment.

Regional Transportation Plan Issues

2040 Regional Non-SOV Modal Targets

The City of Oregon City establishes the non-SOV modal targets shown in Table 5-1, for all areas designated by Metro as 2040 Growth Concept design areas in the Regional Transportation Plan. Each modal element of the Oregon City Transportation System has been specifically developed to achieve these modal targets for the designated areas. The City is committed to work with regional agencies, through implementation of the TSP and regional plans, towards achieving the non-SOV modal targets established. These actions are based on RTP modeling assumptions, analysis, and conclusions, and include consideration of the adopted maximum parking ratios, regional street design guidelines, and transportation demand management strategies included in the RTP.

Table 5-1. 2040 Regional Non-SOV Modal Targets

2040 Design Type	2040 Non-SOV Modal Target
Central City	60-70%
Regional Centers Town Centers Main Streets Station Communities Corridors	45-55%
Industrial Areas Intermodal Facilities Employment Areas Inner Neighborhoods Outer Neighborhoods	40-45%
Source: 2000 Regional Transportation Plan, Metro	

Vehicle Performance Measures

The Roadway System Plan within the Oregon City TSP is consistent with the vehicle performance measures outlined in the RTP. Transportation system needs were determined through a capacity evaluation of the City's transportation system using Metro's two-hour p.m. peak period travel demand forecast. Areas of congestion, both regional and local, were identified based on level of service performance measures consistent with those outlined in Table 1-2 of the RTP and in compliance with the requirements outlined for local implementation in Section 6.4.7 of the RTP. Where needs were determined on a Principal Arterial route or on the Regional Freight System, for example the identified needs at the Highway 213/Beavercreek Road intersection, these projects were or will be incorporated into the regional TSP during the next scheduled RTP update.

Specific vehicle performance measures and standards will not be adopted as part of this TSP document. Performance measures for regional facilities and 2040 Growth Concept design areas, consistent with the

standards and policies outlined in the RTP, are more appropriately contained in the *Oregon City Street Design Standards Manual* and will be adopted by the City as part of that document.

Street Design Standards

Specific design and access spacing standards required by the RTP will be incorporated into the City of *Oregon City Street Design Standards Manual* and adopted separately from the Oregon City TSP. All standards will be consistent with the RTP and will support the Regional Street Design System designations contained within the RTP, for streets within Oregon City.

Projects associated with each plan element have been identified and their costs have been estimated as described herein. The recommendations set forth by this Plan reflect the findings of the existing and future conditions analyses, the alternatives analysis, and the concerns expressed by both the citizens of Oregon City and the public agencies that were involved in the planning process from start to finish.

PREFERRED LAND USE PLAN

The Oregon City Transportation System Plan has been developed to support and integrate with implementation of the other key elements of the Comprehensive Plan. Three recent transportation and land use planning efforts undertaken by the City were included in the TSP planning process, as described below.

Elements of the Preferred Alternative

The Urban Growth Boundary for Oregon City is adequate to accommodate the 20-year growth forecast to the horizon year 2020. The Comprehensive Plan Land Use Map and Zoning provide for the appropriate areas and designations to accommodate both the population and employment growth assigned to Oregon City by the region. Nonetheless, modifications to the Comprehensive Plan are appropriate to implement regional growth concepts and achieve a more efficient land use/transportation system.

It will be important for the City to review the Comprehensive Plan and find opportunities to incorporate mixed uses within large residential zones. If neighborhood commercial areas can be established at nodes within residential areas, reduced reliance on motor vehicles and shorter trip lengths are possible. Reduced vehicle miles traveled and demand on the roadway system can thus be achieved.

Implementation of the *Downtown Community Plan, Phase 1*, which was adopted by Oregon City in January 2000, will enable a more efficient land use pattern to emerge. The effect of this improved efficiency is a more vital and vibrant downtown area that is better equipped to capture and serve the traveling public within the area, particularly as pedestrians and transit users.

Implementation of the *7th Street Corridor Plan* and adoption and implementation of the *Molalla Avenue Boulevard and Bikeway Improvements Plan* will enable this corridor to evolve into one that is more pedestrian- and transit- supportive. The 7th Street Corridor Plan was accepted by Oregon City in 1996, and the Molalla Avenue Boulevard and Bikeway Improvements Plan is scheduled for Oregon City adoption in Spring 2001. These plans present improvements that are consistent with Metro's 2040 Corridor designation for this important transportation link. Through the public involvement process for the TSP, wide support was voiced for enhancing the corridor to encourage multi-modal use, preserve historic characteristics and local community needs, and improve economic viability. The existing land uses will continue to integrate effectively with the neighborhoods they serve, while reducing vehicular

demand for local trip making. In addition, the mix and intensity of uses will further support transit on the corridor and promote pedestrian and bicycle activity within the area. The net effect of this is the forestalling or elimination of the need to widen the 7th Street and Molalla Avenue Corridors for vehicular capacity purposes, until beyond the 2020 planning horizon year. The 7th Street-Molalla Avenue corridor is currently designated as a "Transit/Mixed Use" corridor in the 2000 Metro Regional Transportation Plan. In addition, the City of Oregon City will petition Metro to designate the 10th Street-Singer Hill-7th Street-Molalla Avenue corridor (from Highway 99E to Highway 213) as a "Community Boulevard" in future RTP amendments.

ROADWAY SYSTEM PLAN

The roadway system plan reflects the identified existing to year 2020 operational and circulation needs of the City of Oregon City's street network. The roadway system plan identifies new alignments and connections for streets and is a critical component of the overall TSP. The City's roadway system plan provides guidance to best facilitate travel within the community by addressing two key issues:

- the roadway classification system and corresponding street design standards and access management policies; and,
- roadway connectivity, including new and improved streets to meet both existing and future capacity, circulation, and safety needs.

The classification system establishes the relative importance of a facility to the community and the type of transportation activities that are anticipated. The street standards applied to the City's roads, serve to identify right-of-way and multi-modal design requirements for the transportation network. The access management standards adopted for the roadway network dictate the accessibility of the system to and from adjacent land uses. Roadway connectivity requirements address the intent to create stronger circulation patterns, reduce average auto trip lengths and out-of-direction travel, and improvement multi-modal accessibility. In addition, site development review is also addressed in this section in order to identify planning requirements and design standards. Because all transportation modes use public rights-of-way that comprise the street network, all transportation modes were considered and incorporated into this portion of the roadway system plan.

Oregon City Roadway Functional Classification System

The need for a functional street classification system arises from the desire to balance mobility and accessibility for all modes of transportation. A roadway's functional classification defines its intended purpose, the character of traffic that it is expected to serve, commitment to serve and promote non-auto travel, and the standards to which it must be built.

The classification of a given roadway is intended to convey the requirements, capabilities, and capacity of each respective roadway. It is imperative that the classification of a street is considered in relation to adjacent properties, the land uses they serve, and the modes of transportation that can be accommodated. Furthermore, a roadway must be appropriately designed to accommodate the types of travel (i.e., regional, local, passenger cars, heavy trucks, pedestrians, etc.) it is intended to serve. The public right-of-way must also provide sufficient space for the necessary street capacity and potentially for the utilities to serve adjacent land uses. Each classification standard is designed to accommodate the traffic demands that are expected for that facility type and are considered acceptable to the community. The concepts of mobility and accessibility are considered during the development of the functional classification map to ensure that adequate facilities are planned. Planned facilities must provide sufficient access to adjacent land uses and ensure neighborhood livability.

The most important considerations in the classification of street networks are accessibility and mobility. The conflict between providing access to local land uses and serving the through travel demand can be significant because, typically, as accessibility increases, mobility decreases. Finding a balance between the adjacent land use needs and the mobility of regional traffic – and providing long-term system stability – requires increased street connectivity. The classification system reflects multi-modal needs, a system hierarchy, and trip type. For example, long distance trips are facilitated on streets that are

designed for higher speeds, whereas local trips can be accommodated on shorter, slower speed, and lower volume streets. Finally, the system accommodates pedestrian or bicycle travel as well as auto usage.

A transportation system with good connectivity is characterized by a smoothly transitioning, purpose-oriented hierarchy of roadway links that minimize out-of-direction travel and provide users with transportation choices from among multiple travel routes and modes. With good connectivity, an auto trip to a nearby, local destination should be served on local and collector level streets and the user should not have to use an arterial that was designed to serve longer, regional trips or to feed a freeway. The local/collector route, in this case, is likely to be more direct, and the arterial will not have to carry local traffic. Should the same traveler wish to travel by car to a shopping center in a different community, he or she will first travel on local streets that provide little mobility but extensive access to numerous collectors. The collectors, in turn, provide a higher degree of mobility at a slightly decreased level of accessibility to the arterial system. The arterials serve a function of high mobility. The high degree of mobility is preserved only because direct access from local streets and land uses is minimized, wherever practical.

The functional classification system for the City of Oregon City establishes seven classifications of streets to address the City's needs for mobility and accessibility. The functional classification system is summarized in Table 5-2. The Neighborhood Collector designation in included to better represent connectivity at the neighborhood and local residential level.

Neighborhood Collector Classification

The functional class of Neighborhood Collector is for streets that serve as the distributors of traffic from collector or minor arterial streets to the local neighborhood and local streets and properties. Neighborhood Collectors will, therefore, provide a higher level of connectivity and mobility than local streets, as well as slightly higher traffic volumes. The design of neighborhood collectors considers accessibility and mobility functions, as well as neighborhood livability for the areas that they serve.

Intersections between neighborhood collectors and streets of higher classification are controlled to allow all desired turning movements into and out of neighborhoods. The neighborhood collector designation allows traffic control devices to be placed to increase the safety of intersections and street corridors, as traffic control devices may not be so easily placed on local streets. Parking removal or additional right-of-way purchase is not required on neighborhood collectors except in specific problem locations or under special circumstances to accommodate the equally important functions of traffic movement and accessibility to adjacent properties. The neighborhood collector is designed for low speeds similar to a local street; cyclists can share the street with motor vehicles if traffic volumes and speeds are low. Because of the connectivity that these type of streets offer (in both the roadway and pedestrian system networks), pedestrian connections are of primary importance and sidewalks must be constructed on both sides of the roadway.

Table 5-2. Street Functional Classification Descriptions

Functional Classification	Description
Freeway	Full access-control; high level of mobility; widely spaced access points; access limited to interchanges and street crossings with grade separations; primarily serves motorized vehicle traffic; intended to carry high traffic volumes at higher speeds over long distances (regional travel); may contain medians.
Expressway	Mix of full and partial access-control; high level of mobility; mix of grade-separated interchanges and at-grade intersections; high access control with possible frontage roads; regional facility; intended to carry high traffic volumes at higher speeds over long distances, but to a lesser extent than freeways; primarily serves motorized vehicle traffic.
Major Arterial	Carries both local and through traffic to destinations outside the City; connects the minor arterial and collector street system to expressways and freeways; provides access to other cities as well as between communities within the city; provides limited access to adjacent land uses but primary function is mobility for major traffic movements; access control through medians and/or driveway channelization; traffic volumes are typically moderate to heavy and speeds are moderate to high; restricted on-street parking; provides route for public transit service; sidewalks and bicycle facilities are required; bicycle facilities are often associated with the arterial streetscape.
Minor Arterial	Connects principal traffic generators; carries local traffic between neighborhoods and to community and regional facilities within a city; provides a parallel route to major arterials; distributes traffic from major arterials to collector and local streets; trip lengths, traffic volumes, and speeds are lower than on major arterials; limited parking; possible public transit street; and, sidewalks and bicycle facilities required.
Collector	Serve as major streets within neighborhoods and single land use patterns; principal carrier within neighborhoods or between neighborhood local streets and arterials; higher degree of local access than arterials; shares both mobility and access function; typically characterized by 2 or 3-lane sections; low to moderate traffic volumes, trip lengths, and traffic speeds; increased parking opportunities; sidewalks required; bicycle lanes required.
Neighborhood Collector	Serve as major streets within residential neighborhoods; collects traffic from and distributes traffic to local streets within neighborhoods; connect local streets with other collectors and arterials; primary function is to serve access and local circulation; usually longer than local streets; low traffic volumes and speeds; traffic management measures may be implemented to control traffic speed and volumes to ensure livability and safety; may provide direct access to properties; on-street parking required; sidewalks required; bicycle facilities may be exclusive or shared roadways depending on the traffic volumes, speeds, and extent of bicycle traffic; bike lanes should be striped where traffic intensity and speed warrant consideration (per the recommendations in OAR 660-12) or where the street directly connects to a specific land use that generates significant bicycle traffic (i.e. school, park, or shopping uses).
Local Street	Provides direct access to adjacent properties and land uses within neighborhoods; lowest mobility function and highest accessibility function; low traffic volumes and speeds; through traffic discouraged; typically 2-lane sections; on-street parking encouraged; typically stop-sign control at intersections with collector and arterial streets; sidewalks and landscaping are required; and bicycle lanes are optional.

Automobile traffic speeds and volumes on neighborhood collectors will be maintained at the desired levels by narrow roadway widths for travel lanes, horizontal and vertical curvature, curb extensions, and on-street parking; all of which can be used to reduce the perceived width of a street. Non-local (or cut-through) traffic is discouraged on neighborhood collectors with the use of context sensitive design techniques and/or traffic calming measures.

Updated Functional Classification for the Existing Street Network

As part of the TSP process, the existing Oregon City street classification system was reviewed to determine its adequacy in serving the City's transportation needs. Where an existing functional classification was found to be inadequate in accommodating the desired function of a specific roadway, a change in the classification was proposed. The criteria used to determine where a change in facility classification was necessary included:

- frequency of facility type;
- existing and forecast traffic volumes;
- provision of street system connectivity;
- linkages to regional and town center areas; and,
- number and types of travel modes to be served.

Based on these criteria, the reclassified roadway segments are presented in Table 5-3. In some cases local streets have been upgraded to neighborhood collector or collector status. This change in functional classification will not change the amount or nature of the traffic that uses the given facility. The change in functional class is primarily to ensure that the importance of these roadways to the overall roadway network within the city is recognized and to ensure that they are maintained at an appropriate level and standard.

Figure 5-1 illustrates the new functional classification system for all existing and proposed/planned study area roadways.

New Roadway Connections

Also shown conceptually in Figure 5-1, as part of the TSP development process, are several new roadway connections and facilities that have been proposed in order to improve circulation, access, and traffic operations; and, to provide for the long-range system needs of the City's transportation network. These planned street connections are designed to comply with the 2000 Regional Transportation Plan requirements for assuring adequate street connectivity. The planned new roadway connections are shown in a dashed line type. *It should be emphasized that the dashed lines in Figure 5-1 do not represent a definitive alignment for any proposed connection. They are only meant to represent locations where a new connection is anticipated and recommended.* The proposed new roadway connections shown in Figure 5-1 have also been assigned a recommended functional classification, based on the anticipated functional characteristics desired for the facility.

The purpose of identifying these potential future connections is to:

- provide for appropriate future roadway infrastructure to serve areas with future development potential;
- increase the connectivity from new development to existing neighborhoods and infrastructure;
- reduce local access to and/or local traffic on state highway facilities;
- provide access to property through multiple locations; and,
- provide the City with guidelines for roadway alignments as future development occurs.

Table 5-3. Reclassified Roadways

Roadway Segment	1989 Classification	Reclassification	Reasoning
Holmes Lane: Linn Avenue to Molalla Avenue	Collector	Minor Arterial	Segment provides a critical east-west connection between Linn Avenue (minor arterial) and Molalla Avenue (major arterial) north of Warner Milne Road.
Meyers Road: Leland Road to Highway 213	Collector	Minor Arterial	Roadway provides a critical east-west connection from Highway 213 to existing and developing residential areas in the southwest quadrant of the City.
High Street: 5th Street to 7th Street	Local Street	Collector	Roadway provides a direct connection between the 7th Street-Singer Hill Road-10th Street corridor and the 5th Street-Linn Avenue corridor.
Washington Street: 5th Street to 7th Street	Local Street	Collector	Washington Street is currently classified as a minor arterial north of 7th Street; segment provides a direct connection between the 5th Street, Washington Street, and 7th Street corridors.
Lawton Road: South End Road to Madrona Drive	Local Street	Neighborhood Collector	Roadway provides a connection from the neighborhoods west of South End Road to the Warner Parrott Road/South End Road intersection.
Pease Road: McCord Road to Leland Road	Local Street	Neighborhood Collector	Segment provides a direct route from McCord Road (collector) to Leland Road (minor arterial); roadway is likely to ultimately support future residential development and local street connections along both sides of its alignment.
Boynton Street: Warner Parrott Road to Central Point Road	Collector	Neighborhood Collector	Roadway provides a north-south connection between Warner Parrott Road (minor arterial) and Central Point Road (minor arterial); provides access to Chapin Park and residential neighborhoods on both sides of its alignment; on-street parking is needed in the area to support the activities of Chapin Park
Gaffney Lane/Berta Drive: Molalla Avenue to Meyers Road	Collector	Neighborhood Collector	Current alignment provides an east-west connection between Molalla Avenue (major arterial) and Meyers Road (collector, proposed minor arterial); currently Gaffney Lane and Berta Drive are used by motorists as a single, local through route.

Roadway Segment	1989 Classification	Reclassification	Reasoning
Hilda Street/Alden Street/Barclay Hills Drive: Molalla Avenue to the end of Barclay Hills Drive	Local Street	Neighborhood Collector	Alignment currently serves the developing neighborhoods north of the Mountain View Cemetery and east of Molalla Avenue (major arterial); a traffic signal currently exists at the Molalla Avenue/Hilda Street-Holmes Lane intersection making this connection to Molalla Avenue more attractive to motorists than the unsignalized Barclay Hills Drive access.
Barker Avenue/Charman Street: South End Road to Linn Avenue	Local Street	Neighborhood Collector	Corridor serves to provide a reasonably direct neighborhood connection to South End Road
Filbert Drive/Salmonberry Drive – Skellenger Way	Local Street	Neighborhood Collector	Provides connectivity between South End Road and Central Point Road.
Frontier Parkway	Local Street	Neighborhood Collector	Provides connectivity between Meyers Road and Leland Road.

The proposed new connections are separated into two categories: those recommended to accommodate growth and new development, and those recommended as enhancements to the connectivity and operations of the existing roadway network. Table 5-4 outlines the new roadway connections based on these two categories.

The need for each of the facilities identified in Figure 5-1 and Table 5-4 will be driven, in large measure, by future development within the City's Urban Growth Boundary. Where the identified future connections are located outside of the Urban Growth Boundary, improvements will comply with state requirements set forth in OAR 660-012-0065 and 0070 (requirements pertaining to transportation improvements on rural land).

Again, it should be stressed that the location of the potential new roadways shown on Figure 5-1 is only an approximate representation of the recommended connection and that the actual roadway alignment will be determined based on identified constraints and specific development plans for the individual areas.

In addition to the roadway connections identified above, the City is preparing a Conceptual New Street Plan Map that will provide guidance to the City, land owners, and developers on desired street connections that will improve local access and circulation, and preserve the integrity of the regional street system. The map will be prepared for contiguous areas of vacant and redevelopable parcels of five or more acres within Oregon City. This map will be prepared to comply with the Design Standards for Street Connectivity presented in the Metro Regional Transportation Plan (RTP). The map and code language to ensure development compliance will be adopted by the City in the spring or early summer 2001 (RTP compliance deadline in August 2001).

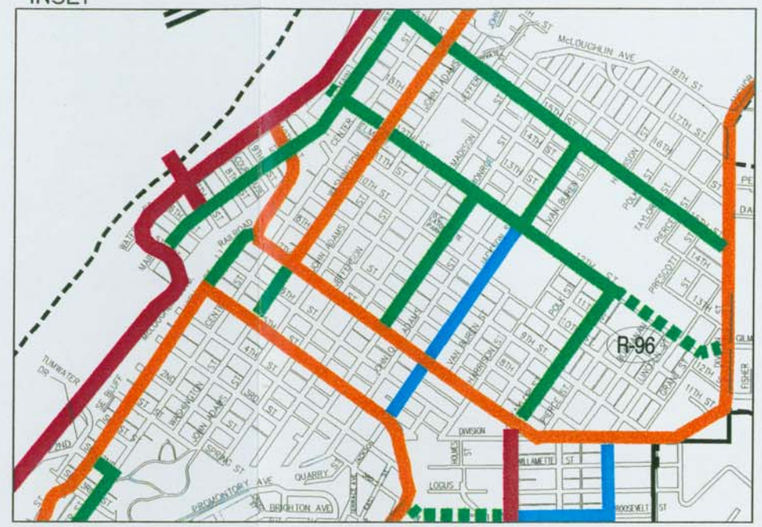
Table 5-4. New Roadway Connections

New Roadway Connections Based on Growth, Development, Enhanced Connectivity, and Operations	
R-79	North-South extension of Spring Valley Dr from Partlow Rd to Salmonberry Dr (*Neighborhood Collector*).
R-80	East-West extension of Shenandoah Drive from Central Point Road to Pease Road (*Collector*) and from Pease Road to Leland Road (*Neighborhood Collector*).
R-81	North-South connection from Leland Rd to Meyers Road (near S Jessie Avenue) (*Neighborhood Collector*).
R-82	East-West extension of Haven Road to Nobel Road (*Neighborhood Collector*).
R-83	North-South connection from South Douglas Loop (C.C.C.) to Glen Oak Road (*Neighborhood Collector*).
R-84	North-South extension of Coquille Drive, north to the proposed Meyers Road extension and south to Henrici Road (*Neighborhood Collector*).
R-85	Southern extension of Pease Road to connect with the new East-West connection in R-97 (*Collector*)
R-86	North-South connection from the end of Caufield Road north to Meyers Road – *Neighborhood Collector*.
R-88	North-South Redland Road extension between Abernethy Road and Washington Street (*Minor Arterial*) (frontage connection complementing the Highway 213 Corridor Phase 1 improvements).
R-91	Refurbished SE 82nd Drive crossing of the Clackamas River (utilizing the existing pedestrian bridge) to connect Gladstone and the Park Place area (*Minor Arterial*).
R-92	East-West extension of Fir Street from Highway 213 (as an overcrossing) to Beavercreek Road (*Minor Arterial*).
R-93	East-West connection from Ethel Street to May Street (south of Holmes Lane) (*Collector*).
R-94	North-South extension of Laurel Lane, from May Street to Warner Milne Road, aligning with Beavercreek Road (*Collector*).
R-95	East-West extension of Roosevelt Street from Molalla Avenue to Linn Avenue (*Collector*).
R-96	East-West extension of 12th Street from Taylor Street to Grant Street (*Collector*).
R-97	East-West connection along the southern edge of Oregon City from Skellenger Way to Meyers Road and Clairmont Way (*Minor Arterial*).
R-98	East-West extension of Meyers Road from Highway 213 to Beavercreek Road (Collector).
R-99	Extension of 12th Street from Main Street to Highway 99E (*Collector*).
R-100	East-West extension of Boynton Road from Central Point Road to Pease Road (*Neighborhood Collector*). **During the course of completing this study, this new connection has been completed as part of the South Hempton Estates subdivision.
R-102	Complete *extension of* Parrish Road *to connect to* Central Point Road *(Neighborhood Collector*).
R-106	Upgrade the East-West Agnes Street connection between Main Street and Highway 213 (*Collector*).

NORTH
(NOT TO SCALE)

SEE INSET

INSET



LEGEND

- FREEWAY
- EXPRESSWAY
- MAJOR ARTERIAL
- LOCAL STREETS

EXISTING	PROPOSED NEW	
		MINOR ARTERIAL
		COLLECTOR
		NEIGHBORHOOD COLLECTOR
		OREGON CITY CITY LIMITS
		URBAN GROWTH BOUNDARY
		POWER LINES

NOTE

NUMBERS FOR PROPOSED NEW ROADWAYS CORRESPOND TO TABLE 5-3

FUNCTIONAL CLASSIFICATION SYSTEM AND NEW ROADWAY CONNECTIONS

FIGURE 5-1

CITY OF OREGON CITY, OREGON
TRANSPORTATION SYSTEM PLAN

APRIL 2001

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It is important to note that the Meyers Road extension (R-98) is designated as and is to be developed as a *Collector* facility consistent with a Letter of Understanding, dated March 21, 2001, by and between the City Commission of Oregon City and the Oregon City Public School District Board of Education. The alignment of the Meyers Road extension, attached as Exhibit "A" to and incorporated into the Letter of Understanding, shall be used to implement the Meyers Road extension along the south property line of the School District Campus, but shall not be considered a final design except as noted in the Letter of Understanding. The final alignment of the Meyers Road extension along the District's campus shall be located to prevent incursion into the existing track and playing fields. The District shall dedicate forty feet (40') of right-of-way for the extension, except as otherwise provided in this Letter of Understanding. The future athletic fields proposed by the District on the north side of the said extension will be carefully considered in the final alignment, realizing that the fields will require some reconfiguration and that the District needs one soccer field to be located on the north side of the roadway. The Meyers Road extension alignment west of the District's property shall be deemed "conceptual."

Street Design Standards

Roadway design standards are based on the functional and operational characteristics of streets such as travel volume, capacity, operating speed, adjacent land use, composition of traffic, and safety. The standards are also established to provide appropriate separation between travel lanes and pedestrian and bicycle facilities. They are necessary to ensure that the street system will be capable of serving the traveling public as it develops, while also accommodating the accessibility and orderly development of adjacent lands.

As a sub-phase of this TSP project, a separate document, *City of Oregon City Street Design Standards*, has been prepared to provide the City with a comprehensive design manual to address the construction of new or improved roadways within the City. This section of the TSP summarizes the recommended design requirements outlined in the Street Design Standards Manual, however, for a more comprehensive discussion of the roadway design components the Street Design Standards Manual should be consulted. This document is scheduled for Oregon City adoption in summer 2001 (RTP compliance deadline is August 2001).

The new street design standards are summarized in Figure 5-2A and 5-2B. These roadway typical sections provide a blueprint for the expected cross section of the existing and future streets and include such information as right-of-way, number of travel lanes, bicycle and pedestrian facilities, and optional amenities such as landscape strips. Detailed design elements, such as cross-slopes, are not shown in these figures and the Street Design Standards manual should be referenced for such information. Also, additional width for turn lanes may be needed at specific intersections based on engineering investigation. This is not shown in the typical street design standards, which address the portions of streets between intersections. The roadway typical sections illustrated in Figures 5-2A and 5-2B are for planning and design purposes for new construction, as well as for those locations where it is physically and economically feasible to improve existing streets.

The roadway typical sections present standards that allow flexibility in defining the roadway width. Where geometric conditions present constraints, right-of-way and road widths can be reduced based on the optional features that are noted on the standard sections. The use of optional components such as on-street parking and planter strips will be subject to the discretion of the City of Oregon City. In the case of facilities not under the jurisdiction of the City, such as Highway 213, representatives from the governing jurisdiction would have ultimate authority over the roadway design. Alignment and

operational characteristics will be considered and thoroughly reviewed when considering a new road or an upgrade of an existing street within the system.

Arterials, such as Beavercreek Road, will have a right-of-way requirement of between 64 and 124 feet and will include two to six 12-foot wide travel lanes. Both major and minor arterial typical sections incorporate seven-foot wide sidewalks separated from the highway by a five-foot wide landscape strip and six-foot bicycle lanes. An eight-foot wide on-street parking strip is an optional feature on the minor arterial cross section design.

Collector streets will have a right-of-way requirement of between 60 and 86 feet and a required typical section consisting of two 11-foot wide travel lanes, striped bicycle lanes, and six-foot wide sidewalks. Optional landscape strips and on-street parking lanes may also be required at the discretion of the City. Neighborhood Collector streets can be designed with a narrower median turn lane to help reduce speeds.

Local streets will have a right-of-way requirement of 42 to 54 feet and should include five-foot wide sidewalks and a five-foot planter strip on both sides of the street. Requirement of adjacent on-street parking will be made at the discretion of the City, and right-of-way should be acquired in any case for utility easements.

Other Considerations

The City will use streetscape treatments such as landscape strips, pedestrian refuges, and bike lanes to influence the character of roadways. In addition, adjacent land uses, natural resources, topography, and the overall surrounding environment will be considered in the design of new roadways and roadway improvements.

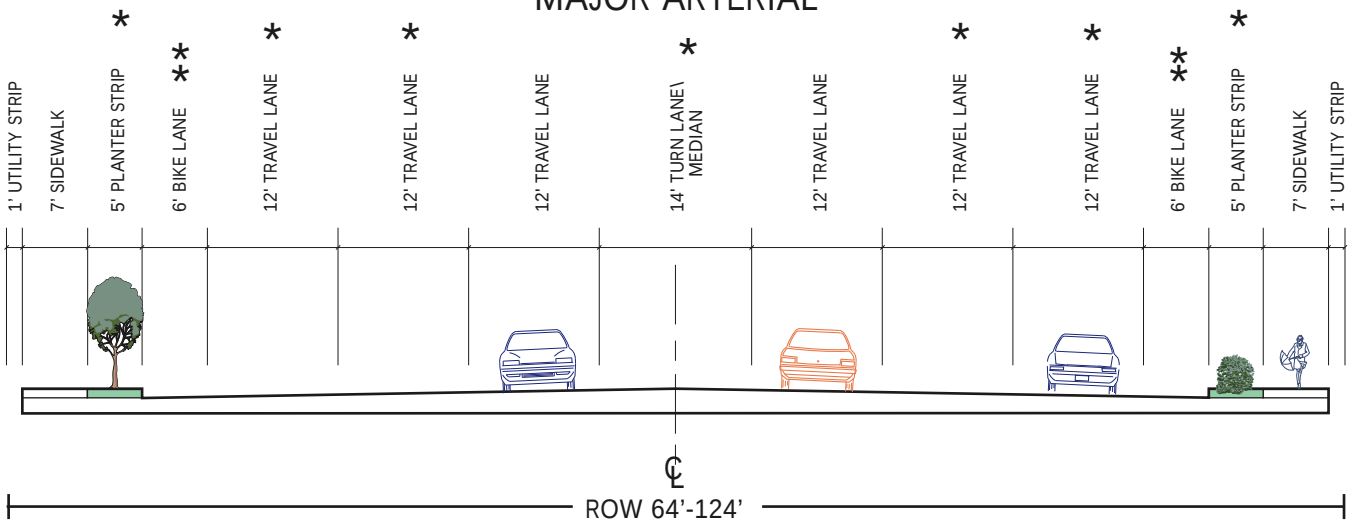
The City will seek public involvement when designing street improvements and new street connections. Input from the affected property owners and neighbors will be gathered through public open houses, meetings with neighborhood associations, local news articles, and/or other public outreach methods.

The City will adopt level of service performance standards for both the local street and regional street systems. The City has recognized the need to adopt performance measure standards for the regional system that are consistent with those in the Metro Regional Transportation Plan (RTP) for 2040 design types. The local and regional vehicle performance measure standards will be adopted as part of the Street Design Standards Manual (scheduled for Oregon City adoption in summer 2001) (RTP compliance deadline in August 2001).

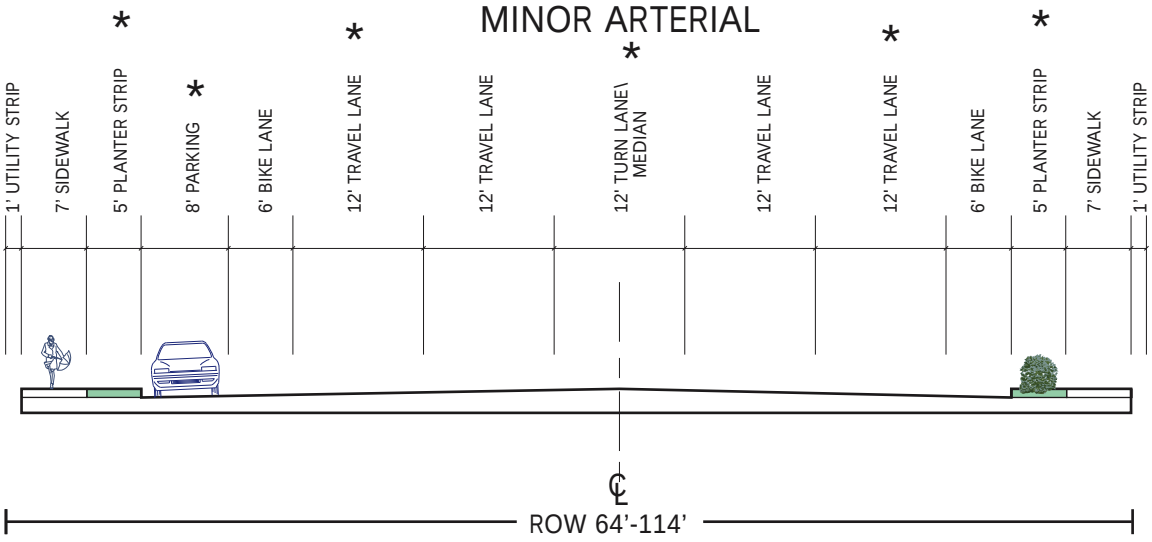
Streetscape treatments such as street trees will be used to reduce the perceived impact a roadway has on the community. Narrower streets or streets that have a “skinny” feel due to the presence of closely spaced trees or buildings that are designed with minimal setback, will also be desirable in some neighborhood areas for use as a deterrent to through or speeding traffic on local streets.

Special consideration for school zones is necessary and requires reduced speed limits during the hours when children are going to and from school and during special events. Usually school speed zone signs are used and complemented by flashing beacons and pavement markings that make drivers aware of the school zone. School speed zoning, as well as all other types of speed zoning throughout the state, is set by the ODOT Traffic Management Section and the Speed Zone Review Panel.

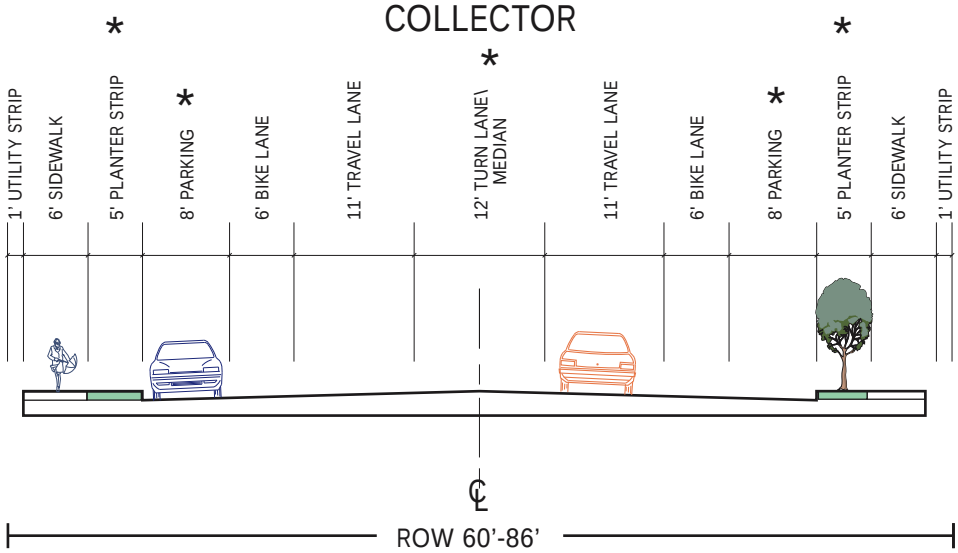
MAJOR ARTERIAL



MINOR ARTERIAL



COLLECTOR



* Optional (See Table 5-2)

** For bicycle facilities on major arterials see Table 5-2.

Note: - 5-foot bike lanes may be provided at locations where an adjacent on-street parking lane is provided.
- ROW: Right-of-Way
- For design standards for commercial districts see figure 5-4

STREET DESIGN STANDARDS TYPICAL SECTIONS

FIGURE 5-2A

TRANSPORTATION SYSTEM PLAN
OREGON CITY, OREGON

APRIL 2001

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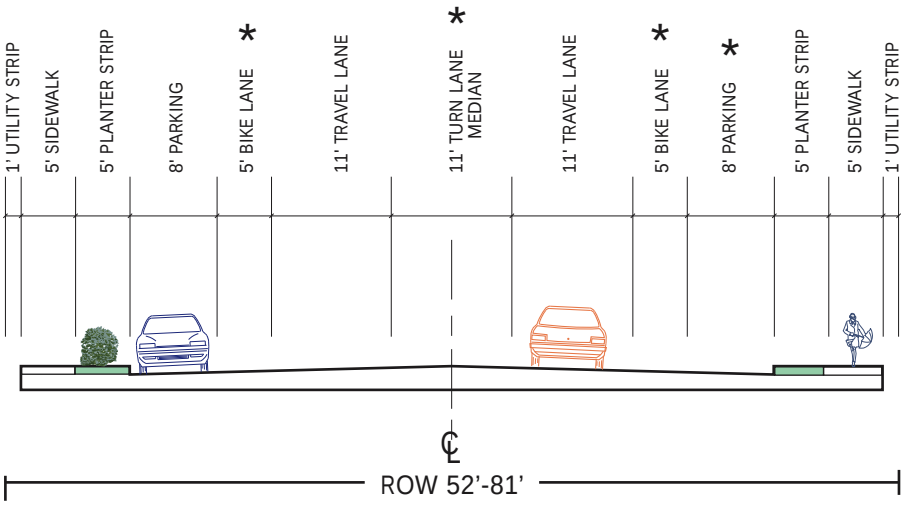
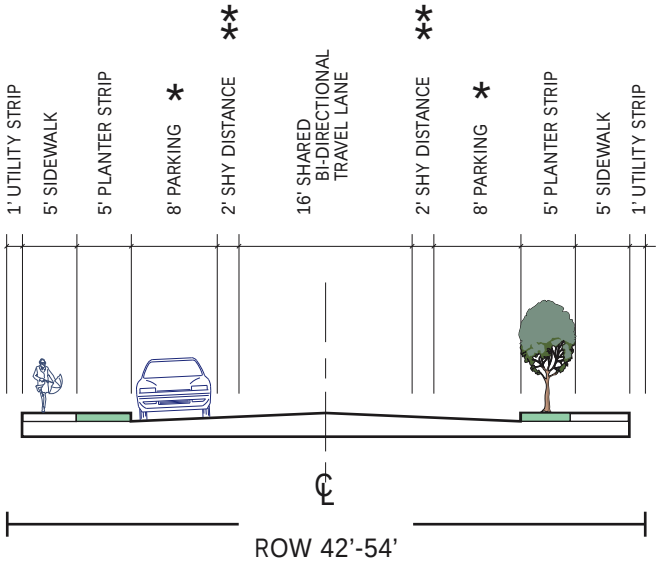
NEIGHBORHOOD COLLECTOR



LOCAL STREET



* Optional (See Table 5-2)

** Not required if adjacent parking lane is provided.

Note:
- 5-foot bike lanes may be provided at locations where an adjacent on-street parking lane is provided.
- ROW: Right-of-Way
- If paved width is less than 28 feet, sign parking for one side of roadway and for passenger vehicles only.
- For design standards for commercial districts see figure 5-4.

FIGURE 5-2B

STREET DESIGN STANDARDS TYPICAL SECTIONS

TRANSPORTATION SYSTEM PLAN
OREGON CITY, OREGON

APRIL 2001

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Neighborhood Traffic Management Program

The City will continue to develop a Neighborhood Traffic Management Program. The most economic approach to achieving safe and friendly neighborhood traffic management is through public education and outreach. The City will continue its public outreach efforts to make the community more aware of the need for safety and adherence to speed limits in neighborhoods. The public outreach program will predominately consist of articles in the City's newsletter and brochures about traffic control and traffic management strategies. In addition, the Oregon City Police Department will provide their speed trailer to neighborhoods that request it so that drivers are made aware of their travel speed. New street designers will be expected to use context sensitive design techniques and/or traffic calming measures.

On existing streets, the City will continue to explore the use of speed bumps and other traffic calming methods. However, funding for this part of the program must first be identified for the associated technical traffic studies and any physical improvements. The City will forward ongoing neighborhood traffic management complaints to the Transportation Advisory Committee for their review and resolution that includes consultation with Public Works and Community Development staff.

On new streets in residential neighborhoods and commercial areas, traffic calming and safety will be considered and context sensitive design techniques incorporated in the design to preclude post-construction complaints and subsequent need for traffic calming improvements.

Guidelines for Arterial and Collector Intersection Improvements

In addition to the typical roadway section standards, the City will adopt standards for intersection improvement design. As such, the Oregon City Street Design Standards manual includes details for the recommended standards for intersection design within the City. As intersection improvements are made at arterial and collector intersections in the City, the following general guidelines will be considered:

- maintain adequate signing of side-streets (stop signs and visible street signs);
- restrict parking and potential sight obstruction in the intersection vicinity;
- provide intersection illumination to increase visibility;
- provide proper channelization (striping, raised medians, etc.) of movements;
- provide a paved apron on unpaved side-street approaches to create a smooth transition to and from the main street; and,
- install right-turn transition tapers at high-speed unsignalized intersections and tapers with storage lanes at signalized intersections on highway approaches (the standard designs identified in the ODOT Design Manual should be used when addressing intersections along state highways).

Again, the new detailed design elements of arterial and collector intersections are outlined in the *City of Oregon City Street Design Standards*.

ROADWAY IMPROVEMENT PROGRAM

The required roadway improvement projects needed in Oregon City over the next 20 years to accommodate future growth and address existing safety deficiencies were identified in the alternatives analysis section. These improvement projects include capacity and safety improvements to existing facilities as well as the construction of new roadways to provide additional capacity and increased connectivity throughout the entire street system network. There will be alternative mode improvements (i.e. pedestrian, transit, and bicycle amenities) associated with these projects, as outlined in the following sections focused on the Pedestrian System, Bicycle System, and Public Transit System Plans.

Table 5-5 outlines the roadway improvement projects identified as part of this Transportation System Plan. The improvement projects are subdivided into two broad categories, by timeframe of need: 0 to 5 years and 6 to 20 years. The near-term improvements (i.e., those in the 0 to 5 year timeframe) are the mitigation needs identified through the existing conditions evaluation, and the long-term program projects (i.e., 6 to 20 year timeframe) correspond to the mitigation needs identified through the future conditions analysis and alternatives development. Within these timeframes, the projects are categorized as follows:

- Roadway Capacity and Operational Improvements
- Intersection Capacity and Operational Improvements
- Intersection Safety and Operational Improvements
- Street Segment Upgrades to City Street Standards
- Upgrades of Poorly Aligned/Offset Intersections
- New Roadways Based on Growth and Development
- New Roadways Based on Enhanced Connectivity and Operations

The Priority Class system for each roadway improvement was developed based on surveys completed by neighborhood representatives, the Transportation Advisory Committee, and participating Planning Commissioners and City Commissioners as well as review of the surveys by staff and technical advisors. The 1 through 3 classification system represents projects prioritized directly using the survey data (1 being highest priority and 3 being lowest). The A, B, C system reflects adjustments to the information collected directly from the surveys based on safety, need, past commitment, funding opportunities, consistency, and/or coordination with other improvements and plans.

Table 5-5. Roadway System Improvements

No.	Location	Project Description	Estimated Cost	Priority Class
Near Term Improvements (1–5 years)				
Roadway Capacity and Operational Improvements				
R-1	HWY 213 - I-205 NB Ramps to Redland Rd	Restriping the existing SB-RT lane between I-205 and Washington as a third travel lane; widening to provide an exclusive SB-RT lane at HWY 213/Washington St; construction of a third SB travel lane on HWY 213 from Washington St terminating as a SB-RT lane at Redland Rd; signal modification at HWY 213/Washington St and HWY 213/Redland Rd.	$1,890,000	1
R-2	Washington Street - Abernethy Rd to 12th St	Restriping of Washington St to provide a 3-lane cross section with striped bike lanes between 16th and 12th St; intersection and signal modification at Washington St and 15th St, 14th St, and 12th St; traffic signal interconnect along the corridor.	$1,400,000	2
R-42	Molalla Avenue – Division Street to Dewey Street	Phase 1 of 2 – Implement Phases 1A and 1B of the Molalla Avenue Boulevard and Bikeway Improvements Plan.	$1,165,675	1
Intersection Capacity and Operational Improvements				
R-3	HWY 213/Washington Street	Modification of existing SB-RT lane into an additional SB Through lane, provision of an exclusive SB-RT lane, signal modification.	Included with R-1 ($338,000)	1
R-4	HWY 213/Beavercreek Road	Widening and restriping to provide dual LT lanes and two through lanes on all intersection approaches, provision of an exclusive WB RT lane, signal modification, redesign pedestrian and bicycle crossings.	$5,450,000	1
R-5	Washington Street/15th Street	Intersection and signal modification to provide exclusive LT lanes with protected phasing on the Washington Street approaches, corridor signal interconnect. *Improvement also serves to mitigate identified safety deficiencies.*	Included with R-2 ($163,000)	2
R-6	Washington Street/14th Street	Intersection and signal modification to provide exclusive LT lanes with protected phasing on the Washington Street approaches, corridor signal interconnect.	Included with R-2 ($163,000)	2

No.	Location	Project Description	Estimated Cost	Priority Class
Intersection Safety and Operational Improvements				
R-8	HWY 99E/Tumwater Drive	Taper Highway 99E to one southbound travel lane prior to the Highway 99E/Tumwater Drive intersection; provide an exclusive southbound left-turn pocket at the Highway 99E/Tumwater Drive intersection; convert Tumwater Drive to one-way eastbound at Highway 99E; improvement will be constructed in conjunction with the improvements to HYW 99E/S 2nd Street intersection.	$500,000 (including improvement R-9-per ODOT estimate)	2
R-9	HWY 99E/S 2nd Street	Signalize, realign, and provide an exclusive southbound left-turn lane at Highway 99E/S 2nd Street; improvement will be constructed in conjunction with the improvements to HYW 99E/Tumwater Drive	$500,000 (including improvement R-8-per ODOT)	2
R-10	Washington Street/12th Street	Signalization, intersection reconstruction and reconfiguration to provide exclusive LT lanes with protected phasing on the Washington Street approaches, corridor signal interconnect.	Included with R-2 ($300,000)	2
Upgrade Street Segments to City Street Standards				
R-103	McLoughlin Boulevard/99E Clackamas River bridge to railroad tunnel	Boulevard improvements from Downtown Community Plan.	$3,700,000	A
R-87	17th Street End of the Trail Area (Washington St/Abernethy Rd) to Main Street extension	Improve roadway (wider lanes, sidewalks) to enhance and preserve connection between the End of the Trail area and Clackamette Cove area. *Designate as a Collector facility*.	$1,300,000	B
R-11	Anchor Way 18th St-Redland Rd	Provide curb, gutter, and sidewalks along both sides.	$350,000	C
R-12	Beavercreek Road CCC to Glen Oak Rd	Provide curb, gutter, and sidewalk along both sides.	$1,000,000	3
R-13	Boynton Street Warner Parrot Rd-Buol St	Provide curb, gutter, and sidewalks along both sides.	$450,000	C
R-14	Central Point Road Shenandoah Dr-UGB	Provide curb, gutter, and sidewalks along both sides.	$1,320,000	C
R-15	Forsythe Rd Clackamas River Dr-Swan Ave	Provide curb, gutter, and sidewalks along both sides.	$700,000	C

No.	Location	Project Description	Estimated Cost	Priority Class
R-16	Gaffney Lane Molalla Ave-Meyers Rd	Resurface and widen to provide bike lanes, curb, gutter, and sidewalks on both sides; remove vegetation to improve sight distance; consider traffic calming measures.	$1,108,800	2
R-17	Glen Oak Road HWY 213-Beavercreek Rd	Provide curb, gutter, and sidewalk along both sides.	$1,200,000	3
R-18	Holcomb Road Redland Rd-UGB	Provide curb, gutter, and sidewalks along both sides.	$1,510,000	C
R-19	Holmes Lane-Hilda St Linn Ave-Alden St	Provide curb, gutter, and sidewalks along both sides.	$800,000	C
R-20	Leland Rd Pease Rd-UGB	Provide curb, gutter, and sidewalks along both sides.	$1,200000	3
R-21	Maplelane Road Beavercreek Rd-UGB	Provide curb, gutter, and sidewalks along both sides.	$628,000	C
R-22	McCord Road Central Point Rd-Leland Rd	Provide curb, gutter, and sidewalks along both sides.	$500,000	C
R-23	Partlow Road South End Rd-Central Point Rd	Resurface and widen to provide bike lanes, curb, and gutter on both sides; provide sidewalk along south side.	$830,000	2
R-24	Pease Road Leland Rd-McCord Rd	Provide curb, gutter, and sidewalks along both sides.	$836,000	C
R-25	Redland Rd Anchor Way-UGB	Provide curb, gutter, and sidewalks along both sides.	$296,000	C
R-26	South End Road Partlow Rd-UGB	Provide curb, gutter, and sidewalks along both sides.	$1,188,000	C
R-27	Swan Avenue Holcomb Rd-Forsythe Rd	Provide curb, gutter, and sidewalks along both sides.	$528,000	C

No.	Location	Project Description	Estimated Cost	Priority Class
R-28	Thayer Road Maplelane Rd-UGB	Provide curb, gutter, and sidewalks along both sides.	$376,000	C
R-29	Washington St/Clackamas River Abernethy Rd-UGB	Provide curb, gutter, and sidewalks along both sides.	$1,670,000	C
Upgrade Poorly Aligned/Offset Intersections				
R-30	Holcomb Rd/Front St-Beemer Jacobs Way	Realign offset intersection.	$500,000(1)	A
R-31	Leland Rd/Pease Rd	Realign offset intersection.	$150,000(1)	3
R-32	Partlow Rd/McCord Rd	Realign offset intersection.	$150,000(1)	A
R-104	Molalla Avenue/Taylor/Division	Realign intersection. Evaluate roundabout application here.	$400,000	B
R-33	Partlow Rd/Lafayette Ave-Oaktree Ave	Realign offset intersection.	$150,000(1)	A
R-34	Warner Milne Rd/Molalla Ave	Realign offset intersection.	$350,000(1)	A
R-35	Warner Milne-Warner Parrott Rd/Leland-Linn/Central Point Rd	Realign offset intersections. Cost assumes a roundabout option.	$600,000(1)	2

(1) – Costs to be refined with separate concept development and evaluation process.

(2) – Costs do not include right-of-way acquisition or unknown regulatory requirements.

N/A – Alignments are undetermined. Roadways will not be constructed without development.

Table 5-5 (continued). Roadway System Improvements

No.	Location	Project Description	Estimated Cost	Priority Class
Long Term Improvements (6-20 years)				
Roadway Capacity and Operational Improvements				
R-37	HWY 213 I-205 – Redland Rd	Phase 1A improvement from HWY 213 Urban Corridor Design Study	$10,000,000	2
R-38	HWY 213 Molalla Ave-Henrici Rd	Provide dual NB and SB LT lanes at HWY 213/Molalla Ave; signal modification at HWY 213/Molalla Ave; widen to provide 1 additional travel lane in each direction from Molalla Ave to Canyon Ridge Dr; widen to provide standard 3-lane cross section from Canyon Ridge Dr to Henrici Rd.	$2,610,000	3
R-40	Washington Street 12th St-7th St	Restripe to standard 3-lane cross section; provide bike lanes on both sides; signalization and intersection modification, widening to provide an NB-RT lane (on Washington St) at Washington St/7th St, signal modification at Washington St/7th St. Evaluate "no-left turns" at 8th, 10th, and 11th St to encourage use of signalized intersections; use landscaped medians to control access at these intersections. Evaluate operations and turning movements at 7th St intersection. Can be phased.	$750,000	2
R-42	Molalla Avenue Dewey Street-HWY 213	Phase 2 of 2 – Implement remaining phases (1C through 3C) of the Molalla Avenue Boulevard and Bikeway Improvements Plan.	$7,102,765	1
R-43	Beavercreek Road Molalla Ave-Maplelane Rd	Widen to provide typical 5-lane cross section; planted median; bike lanes, planter strip, curb, and gutter on both sides; modify Fred Meyer access traffic signal	$2,500,000	1
R-44	Warner Milne Road Beavercreek Rd-Leland/Linn Ave	1 additional travel lane in each direction (4 lane section)	$1,060,000	B
Intersection Capacity and Operational Improvements				
R-48	HWY 99E/I-205 SB Ramps	Provision of dual SB LT lanes (HWY 99E to I-205 SB), signal modification.	$507,000	B

No.	Location	Project Description	Estimated Cost	Priority Class
R-49	HWY 99E/I-205 NB Ramps	Provision of dual SB LT lanes (HWY 99E to I-205 NB), provision of dual WB LT lanes (I-205 to HWY 99E SB), provision of an exclusive NB RT lane (HWY 99E to I-205 NB), signal modification.	$587,000	B
R-50	HWY 99E/Main Street	Provision of exclusive LT lanes on all intersection approaches, signal modification.	$210,000	B
R-51	HWY 213/I-205 Ramps	Phase 1A improvement from Highway 213 Corridor Study.	Included with R-37	2
R-52	HWY 213/Washington Street	Phase 1A improvement from Highway 213 Corridor Study.	Included with R-37	2
R-53	HWY 213/Redland Road	Phase 1A improvement from Highway 213 Corridor Study.	Included with R-37	2
R-105	HWY 213/Beavercreek Road	Single Point Diamond grade separated interchange improvement as described in the Highway 213 Corridor Study.	$20,000,000	B
R-54	HWY 213/Molalla Avenue	Provision of dual NB and SB LT lanes, signal modification.	Included with R-38 ($835,000)	3
R-55	HWY 213/Glen Oak-Caufield Rd	Realign intersection offset; signalization; provision of exclusive EB and WB LT lanes.	Included with R-38 ($550,000)	3
R-56	HWY 213/Henrici Road	Signalization, provision of exclusive WB LT and RT lanes.	Included with R-38 ($300,000)	3
R-57	Washington Street/17th Street	Intersection improvements as detailed in the Abernethy Creek-Washington Street Bridge draft Environmental Assessment.	$375,000	2
R-58	Washington Street/15th Street	Provision of exclusive LT lanes on both 15th St approaches, signal modification.	$165,000	2
R-59	Washington Street/14th Street	Provision of an exclusive RT lane on the SB Washington St approach, provision of exclusive LT lanes on both 14th St approaches, signal modification.	$200,000	2
R-60	Washington Street/7th Street	Provision of an exclusive LT lane and a shared Through-RT lane on the NB Washington Street approach, provision of exclusive LT, Through, and RT lanes on the SB Washington Street approach, signal modification.	Included with R-40 ($166,000)	2
R-61	Main Street/14th Street	Signalization, provision of an exclusive WB LT lane (14th to Main).	$220,000	B

No.	Location	Project Description	Estimated Cost	Priority Class
R-62	Main Street/10th Street	Signalization, provision of an exclusive SB LT lane (Main to 10th).	$250,000	B
R-63	Molalla Avenue/Barclay Hills Dr	Monitor intersection to determine if and/or when intersection geometry and control improvements are warranted. Provision of a 150-foot SB and 50-foot NB left-run storage lane on the Molalla Ave approaches. * Likely to be further evaluated relative to intersection improvements at Holmes/Hilda with the Molalla Avenue Boulevard and Bikeway Improvements Plan phases.	Included with R-42	B
R-64	Molalla Avenue/Clairmont Way	Traffic signal modification and provision of SB and NB left-turn storage as described in the Molalla Avenue Boulevard and Bikeway Improvements Plan.	Included with R-42 ($200,000)	B
R-65	Molalla Avenue/Gaffney Lane	Traffic signal modification and provision of SB and NB left-turn storage as described in the Molalla Avenue Boulevard and Bikeway Improvements Plan.	Included with R-42 ($200,000)	B
R-66	Beavercreek Rd/Warner Milne Rd	Provision of dual NB LT lanes (Beavercreek Road to WB Warner Milne Road), signal modification.	$250,000	B
R-67	Beavercreek Rd/Fir Street	Signalize, provide exclusive LT lanes and protected phasing on all intersection approaches.	$180,000	B
R-68	Beavercreek Rd/Maplelane Rd	Provision of exclusive RT lanes on the SB (Maplelane Rd) and EB (Beavercreek Rd) approaches, signal modification.	$106,000	B
R-69	Beavercreek Rd/Glen Oak Rd	Signalization; provision of an exclusive NB LT lane.	$349,000	3
R-70	Warner Parrott Rd/South End Rd	Realign offset intersection, signalization, provide exclusive LT lanes on all intersection approaches.	$656,000	C
R-71	Warner Parrott Rd/Central Point Rd	Improved intersection and traffic control. Evaluate roundabout applications here.	Included with R-35	2
R-72	Warner Milne Rd/Linn-Leland Ave	Improved intersection and traffic control. Evaluate roundabout applications here.	Included with R-35	2
R-73	South End Rd-High Street/S 2nd St	Signalization, provision of an exclusive LT lane and a shared Through-RT lane on all intersection approaches.	$890,000	C
R-74	South End Rd/Oaktree-Partlow Rd	Realign intersection, signalization, provision of an exclusive LT lane on all intersection approaches.	$446,000	C
R-75	Linn Ave/Davis Rd-Ethel St	Signalization.	$267,000	C

No.	Location	Project Description	Estimated Cost	Priority Class
R-76	Leland Rd/Clairmont Way-Meyers Rd	Signalization (could be development driven).	$552,000	C
R-77	Redland Rd/Abernethy Rd	Provision of an exclusive LT lane on the EB and WB (Abernethy Rd) approaches, provision of an exclusive RT lane on the NB and WB approaches, signal modification. Will be included as part of the long-term HWY 213 improvements.	Included with R-37	B
R-78	Redland Rd/Anchor Way	Signalization (could be development driven).	$582,000	C
New Roadways based on Growth, Development, Enhanced Connectivity, and Operations				
R-79	Spring Valley Dr from Partlow Rd to Salmonberry Dr	New North-South extension of Spring Valley Drive – *Neighborhood Collector*	N/A	C
R-80	Shenandoah Dr from Central Point Rd to Pease Rd and from Pease Rd to Leland Rd	New East-West extension of Shenandoah Drive - *Collector* (Central Point Road to Pease Road), *Neighborhood Collector* (Pease Road to Leland)	N/A	C
R-81	Leland Rd to Meyers Rd near S Jessie Ave	New North-South connection – *Neighborhood Collector*	N/A	C
R-82	Haven Rd to Nobel Rd	New East-West extension of Haven Road - *Neighborhood Collector*	N/A	C
R-83	South Douglas Loop (C.C.C.) to Glen Oak Road.	New North-South connection – *Neighborhood Collector*	N/A	C
R-84	Coquille Drive north to Meyers Road extension and south to Henrici Road.	New North-South extension of Coquille Drive north to Meyers Road extension and south to Henrici Road - *Neighborhood Collector*	N/A	C
R-85	Pease Road	New Southern extension to connect with new East-West connection in R-97 – *Collector*	N/A	C
R-86	Meyers Road to Caufield Road	New North-South connection from the end of Caufield Road north to Meyers Road – *Neighborhood Collector*.	N/A	C
R-88	Redland Road extension between Abernethy Road and Washington Street	Frontage connection complementing the Highway 213 Corridor Phase 1A improvements – *Minor Arterial*.	N/A	C
R-91	SE 82nd Drive crossing of Clackamas River	Refurbished SE 82nd Drive crossing of the Clackamas River utilizing the exiting pedestrian bridge to connect Gladstone and the Park Place area – *Minor Arterial*.	N/A	C
R-92	Fir Street from Highway 213 to Beavercreek Road.	East-West extension of Fir Street from Highway 213 (as an overcrossing) to Beavercreek Road – *Minor Arterial*	N/A	B

No.	Location	Project Description	Estimated Cost	Priority Class
R-93	Ethel St to May St (south of Holmes Lane)	New East-West connection – *Collector*	N/A	C
R-94	Laurel Lane from May St to Warner Milne Rd	New North-South extension of Laurel Lane, aligning with Beavercreek Road – *Collector*	N/A	B
R-95	Roosevelt St from Molalla Ave to Linn Ave	New East-West extension of Roosevelt Street – *Collector*	N/A	C
R-96	12th St from Taylor St to Grant St	New East-West extension of 12th Street – *Collector*	N/A	C
R-97	Skellenger Way to Meyers Road and Clairmont Way	New East-West connection along southern edge of Oregon City – *Minor Arterial*	N/A	C
R-98	Meyers Road from Highway 213 to Beavercreek Road.	East-West extension of Meyers Road – *Collector*	N/A	B
R-99	12th Street	Extension of 12th Street from Main Street to Highway 99E – Collector	N/A	C
R-102	Parish Road to Central Point Road	Complete extension of Parish Road to connect to Central Point Road – Neighborhood Collector	N/A	C
R-106	Agnes Street – Main Street to Highway 213	Upgrade a new East-West connection – *Collector*	N/A	C

(1) – Costs to be refined with separate concept development and evaluation process.

(2) – Costs do not include right-of-way acquisition or unknown regulatory requirements.

N/A – Alignments are undetermined. Roadways will not be constructed without development.

ACCESS MANAGEMENT STRATEGIES

As the City of Oregon City continues to grow, its street system will become more heavily traveled. Consequently, it will become increasingly important to manage access on the arterial and collector street system as development and redevelopment occurs, in order to preserve carrying capacity.

The Oregon Transportation Planning Rule (TPR) defines access management as a set of measures regulating access to streets, roads, and highways, from public roads and private driveways. The TPR requires that new connections to arterials and state highways be consistent with designated access management categories. This TSP has developed an access management policy that maintains and enhances the integrity (capacity, safety, and level of service) of the city's streets. The Oregon Department of Transportation has legal authority to regulate access points along Highway 99E, Highway 43, and Highway 213 within the city's Urban Growth Boundary. The City of Oregon City manages access on other arterial, collector, and local streets within its jurisdiction to ensure the efficient movement of traffic and enhance safety.

Access management standards vary depending on the functional classification and purpose of a given roadway. Roadways on the higher end of the functional classification system (i.e. expressways, major arterial, and minor arterials) tend to have higher spacing standards, while facilities such as neighborhood collectors and local streets allow more closely spaced access standards. These standards apply to new

development or redevelopment allowing existing accesses to remain as long as the land use does not change and no safety problems are revealed. As a result, access management is a long-term process in which the desired access spacing on a street slowly evolves over time as redevelopment occurs. It should be noted that parcels cannot be land-locked and must have some way of accessing the public street system. This may mean allowing shorter access spacing than would otherwise be allowed, but the City will require providing shared access using access easements with a neighboring parcel in areas where roadway capacity preservation is needed, where conflict points must be reduced, or simply to provide vehicles access options.

The following discussion presents the hierarchical access management system for roadways in the Oregon City UGB.

ODOT Access Management Standards

All local transportation system plans adopted after January 1, 2000 are subject to the Access Management Policies outlined in the *1999 Oregon Highway Plan (OHP)*. This plan specifies an access management classification system for state facilities based on a highway classification system. The *1999 OHP* classifies Highway 99E as a Regional Highway and Highway 43 and Highway 213 as District Highways through the study area. Although Oregon City may designate the state highways as expressways and major arterial roadways within their transportation system, the access management categories for these facilities should follow the guidelines of the current *OHP*. Future developments along Highway 99E and Highway 213 (new development, redevelopment, zone changes, and/or comprehensive plan amendments) will be required to meet the *OHP* Access Management policies and standards. Table 5-6 summarizes ODOT's access management standards for regional and district highways under the *OHP*.

Table 5-6. ODOT Access Management Standards

Posted Speed	Spacing Standards (feet)*	Spacing Standards for Areas Designated as UBAs**	Spacing Standards for Areas Designated as STAs***
Regional Highways (Highway 99E)			
≥55 mph	990		
50 mph	830		
40-45 mph	750		
30-35 mph	600	425	****
≤25 mph	450	350	****
District Highways (Highway 43 and Highway 213)			
≥55 mph	700		
50 mph	550		
40-45 mph	500		
30-35 mph	400	350	****
≤25 mph	400	350	****

*Measurement of the approach road spacing is from the center on the same side of the roadway.

** UBA = Urban Business Area
*** STA = Special Transportation Area
****Minimum spacing standards for public road approaches is the existing city block spacing; private driveway spacing is a minimum of 175 feet.

Variance Process

Access variances may be provided to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming permit and would either have no reasonable access or cannot obtain reasonable alternate access to the public road system. In such a situation, ODOT or the Oregon City may issue a conditional access permit, as appropriate, for a single connection to a property that cannot be accessed in a manner that is consistent with the spacing standards.

The permit should carry a condition that the access may be closed at such time that a reasonable alternative access becomes available to a local public street. The approval condition might also require a given land owner to work in cooperation with adjacent land owners to provide either joint access points, front and rear cross-over easements, or a rear access upon future redevelopment. In addition, approval of a conditional permit might require ODOT-approved turning movement design standards to ensure safety and managed access.

Special Transportation Area

Within the *OHP*, provisions have been made to accommodate central business districts and other activity centers oriented to non-auto travel in which growth management considerations outweigh access spacing policy. Specifically, the *OHP* allows for the designation of Special Transportation Areas (STAs) for compact areas on a state highway in which growth management considerations outweigh the need to limit access. Designation of and area as a STA allows redevelopment to occur with access locations at less than standard spacing. STA designations do not apply to whole cities or strip development areas along individual highway corridors.

Within Oregon City, the Highway 99E, between Dunes Drive and Main Street, and Highway 43, from 7th Street to 5th Street, will be considered for potential STA designation. If the STA designation results, the City will work with ODOT to develop a management plan for the STA, as described in the *OHP*.

Urban Business Areas

Alternatively, the section of Highway 99E between Dunes Drive and Main Street could potentially be designated as a future Urban Business Area (UBA). Again, if the City so chooses, it can work with ODOT to develop an access management plan for a UBA along this corridor.

City Standards for Access Management

The *Oregon City Street Design Standards* manual details the recommended City of Oregon City access spacing standards for traffic signal spacing, non-traversable median spacing, public intersections spacing, and private access driveway spacing. Table 5-7 summarizes the minimum public street intersection spacing standards for the City of Oregon City roadway network presented in the *Street Design Standards* manual, as they relate to new development and redevelopment. Table 5-8 summarizes the standards for private access driveway widths. In cases where physical constraints or unique site characteristics limit the ability for the access spacing standards listed in Table 5-7 and Table 5-8 to be met, the City of Oregon City will retain the right to grant an access spacing variance. City facilities

within the City's Urban Growth Boundary will be maintained and reconstructed in accordance with these street design standards.

Table 5-7. Minimum City Street Intersection Spacing Standards

Functional Classification	Major Arterial	Minor Arterial	Collector	Neighborhood Collector	Local Street
Major Arterial	2 miles	1 mile	¼ mile	1,000 feet	500 feet
Minor Arterial	1 mile	½ mile	1,000 feet	800 feet	400 feet
Collector	¼ mile	1,000 feet	800 feet	600 feet	300 feet
Neighborhood Collector	1,000 feet	800 feet	600 feet	500 feet	200 feet
Local Street	500 feet	400 feet	300 feet	200 feet	150 feet

*ODOT access standards supercede these standards on ODOT facilities.

Table 5-8. Private Access Driveway Width Standards

Land Use	Minimum	Maximum
Single Family Residential	12 feet	25 feet
Multi-Family Residential	20 feet	35 feet
Commercial	20 feet	35 feet
Industrial	20 feet	40 feet

A variance process for City Standards, similar to that described above for the ODOT access management plan, should consider land use needs on a case-by-case basis during development review.

Management Techniques

From an operational perspective, the City of Oregon City will implement access management measures to limit the number of redundant access points along roadways. This will enhance roadway capacity and benefit circulation. Improvements to be considered include:

- planning for and developing intersection improvement programs in order to regularly monitor intersection operations and safety problems;
- purchasing right-of-way and closing driveways; and,
- installing positive channelization and driveway access controls as necessary.

Enforcement of the access spacing standards will be complemented with the provision of alternative access points. Purchasing right-of-way and closing driveways without a parallel road system and/or other local access could seriously effect the viability of the impacted properties. Thus, if an access management approach is taken, alternative access should be developed prior to "land-locking" a given property.

As part of every land use action, the City of Oregon City will evaluate the potential need for conditioning a given development proposal with the following items, in order to maintain and/or improve traffic operations and safety along the arterial and collector roadways.

- Crossover easements to be provided on all compatible parcels (considering topography, access, and land use) to facilitate future access between adjoining parcels.
- Conditional access permits to be issued to developments having proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing driveways.
- Conditional access permits to be issued to developments having proposed non-compliant access points, where future roadway connections will provide appropriate access.
- Right-of-way dedications to be provided to facilitate the future planned roadway system in the vicinity of proposed developments.
- Half-street improvements (sidewalks, curb and gutter, bike lanes/paths, and/or travel lanes) to be provided along site frontages that do not have full build-out improvements in place at the time of development.

Transportation System Management

Urban areas such as Oregon City have come to recognize the challenges and limitations of expanding the transportation system, particularly streets, to accommodate increasing travel demand. Public rights-of-way and street corridors are of limited size, with adjoining land uses, urban form, and other physical features constraining the engineering, financial, and social feasibility of widening a roadway facility. Transportation System Management (TSM) offers alternative approaches to addressing the issue of congestion at multiple levels. The strategy behind TSM is to understand and address several key factors that are inherent to the urban environment and contribute to congestion.

- Congestion is more than the sum of the vehicles on a street; having direct ties to personal behavior, institutional attitudes, and land use development patterns.
- There is a direct and fundamental land use/transportation relationship that generates changes in travel demand and can result in congested, unsafe, and environmentally damaging conditions, if not properly planned.
- Solutions to congestion can come from changes to the transportation system (increasing supply/capacity), modifications to travel behaviors and mode choices (managing travel demand), and from a land use perspective, in terms of where we locate uses with respect to one another and how we gain access to the transportation system.

Transportation system management strategies are broad ranging and must be evaluated for their effectiveness, applicability, and appropriateness before being implemented. The City has used several TSM strategies in the recent past and has incorporated many into its policies, ordinances, and standards.

Table 5-9, shown below, is a brief summary of some of the TSM strategies available to Oregon City. These and other strategies will be evaluated each time the City is considering action to address the need/desire to improve the transportation system, particularly in response to traffic congestion.

Table 5-9. Transportation System Management Strategies

Strategy: Tools	Effect	Cost
Roadway Infrastructure Improvement Strategies:		
Traffic Signal Improvements	8 to 25 % travel time reduction	Low
Intersection Improvements	Highly variable capacity increase	Variable; low to medium cost
Restriping for Additional Lanes	35 to 50 % capacity increase	Variable; low to medium cost
Parking Removal for Additional Lanes	25 to 50 % capacity increase	Variable; low to medium cost
Turn Prohibitions	35 to 50 % crash rate reduction	Very low
One-way Streets	Improved flow, safety, & capacity	Variable; low to medium cost
Reversible Traffic Lanes	30 to 50 % directional capacity increase	Variable; higher operating costs
Traffic Control Device Improvements	Improved flow & safety	Very low
Management Strategies:		
Access Management	Improved flow, safety, & capacity	Highly variable; low to high
Parking Management	Increased HOV rates, reduced demand	Very low; increased user costs
Goods Movement Management	Improved flow, safety, & capacity	Variable; typically low
Travel Demand Management	More efficient use of facilities/services	Variable; low to medium
Road Pricing	Peak demand spreading	Could generate revenue
Maintenance & Reconstruction	5 to 30 % capacity restoration	Low, when kept up
Transit/Pedestrian/Bicycle/Communications Strategies:		
Dedicated Transit Corridors	Highest person-capacity system	Highest cost to construct
Surface Bus Service	10 to 25% person-capacity increase	Usually requires public subsidy
Paratransit Service	Mobility for the disadvantaged	High per trip cost; public subsidy
HOV Lanes	Significant person-capacity increase	Low to medium; enforcement
Pedestrian Facilities	More efficient use of facilities	Very low
Bicycle Facilities	More efficient use of facilities	Very low
Telecommunications Facilities	Significant demand reduction potential	Very low public sector cost
Land Use/Policy Strategies:		
Mixed Use/High Density Policies	Reduced auto demand/dependency	Very low; public acceptance
Transit-oriented Policies	Increased transit effectiveness	Very low; agency cooperation
Parking Policies	Balanced access, more multi-modal	Very low; economic impact
Growth Management	Sustainable, balanced, efficient growth	Very low
Trip Reduction Ordinances	Reduced reliance on auto	Very low
Site Design Criteria	Increased efficiency, balanced access	Very low

HOV – High occupancy vehicles (Typically, vehicles with two or more passengers).

The City will continue existing TSM strategies, particularly those established in policies, standards, and ordinances. Additional efforts will be initiated to further develop and integrate land use policies that accomplish more efficient use of land and transportation infrastructures. Implementation of the design standards contained in the TSP and the City's Street Design Standards Manual will further the integration of TSM strategies into daily planning and engineering practice. Incorporating additional management practices with a focus on TSM will further enable the City to achieve greater efficiencies from existing facilities, services, and resources. Finally, as improvement projects are conceptualized, alternatives will be developed that reveal the most effective approach to maintaining and enhancing the integrated land use and transportation system.

PEDESTRIAN SYSTEM PLAN

The key objective in development of the pedestrian system plan is to provide connectivity between major activity centers, such as housing, commercial areas, schools, and recreation areas and to improve the safety of pedestrians throughout the city. Within the City of Oregon City, these activity centers include all elementary and high schools, Clackamas Community College, parks, community centers, government offices, museums, historical landmarks, the municipal elevator, and commercial businesses within the urban downtown core district. The key pedestrian generators identified within the Oregon City TSP study area are illustrated in Section 2, Figure 2-3.

The street design standards (Figures 5-2A and 5-2B) ensure that pedestrian facilities are provided in conjunction with all new or substantially reconstructed local street-level-and-above roadways within the city. It is essential that existing sidewalks are connected to the newly constructed sidewalks as new developments build-out and as road improvements are made. Provision of sidewalks along both sides of key local streets providing direct access to pedestrian generators is a necessity. Finally, all streets designated as transit routes and providing bus stops must be fully served by pedestrian facilities.

Sidewalk Improvements

Maximizing opportunities to increase the number of pedestrian trips throughout the city and improve connectivity in the existing pedestrian system are the key strategies for this plan. Sidewalks and other improvements are identified to increase the ability of pedestrians to safely move about the city and utilize the network.

The most important existing pedestrian system needs in the City of Oregon City, as prioritized by the citizens, city staff, and advisory committees involved in the planning process, is the provision of sidewalks on arterials and collectors that provide connectivity to key activity centers (especially schools and transit facilities). Initial improvements will focus on filling in gaps where sidewalks are discontinuous and improving connections to schools, transit stops, parks, and other prioritized areas. Figure 5-3 shows the Pedestrian System Plan overlaid on the city street system. The Pedestrian System Plan aims to enhance the existing system by improving links and intersections as denoted on the pedestrian plan.

In order to achieve an interconnected walkway network, sidewalks need to be constructed by the city when completing roadway projects and by new development as required in local Transportation Planning Rule regulations. Oregon City desires that sidewalks will be constructed on both sides of the street on local street-level-and-above facilities where pedestrian activity is high and out of direction travel for pedestrians is undesirable. Sidewalks will be built to current City of Oregon City design standards and

in compliance with the Americans with Disabilities Act horizontal and vertical clearance standards (Reference 10).

Other Pedestrian Amenities

Sidewalks in the central business district require additional consideration because of higher pedestrian activity and the presence of street furniture and other amenities. Where pedestrian amenities such as street furniture and other items are located on the sidewalk, widths for the sidewalks should be increased to a ten-foot cross section at a minimum. A design standard for this arrangement is shown in Figure 5-4.

It is also important to maintain facilities that encourage the visibility of the pedestrian in areas where automobile drivers may not expect pedestrians. Pedestrian amenities such as curb extensions (to reduce the exposed crossing distance that pedestrians must walk), street planters, streetlights (to improve the visibility of pedestrians at night), and wide sidewalks all act as buffers and improve the safety of pedestrians throughout the city. Crosswalks will include striped lanes on the street or surface treated sidewalks that positively delineate the pedestrian route and draw motorists' attention to pedestrians. Median crossing treatments, an example of which is shown in Figure 5-5, provide pedestrians with a safe haven at a mid-crossing in large intersections.

NORTH
(NOT TO SCALE)

SEE INSET

INSET

LEGEND

- SIDEWALKS NEEDED ON NEW FACILITIES
- SIDEWALKS NEEDED ON BOTH SIDES OF STREET
- SIDEWALK NEEDED ON ONE SIDE OF STREET
- SCHOOL
- OTHER PEDESTRIAN GENERATORS
- OREGON CITY CITY LIMITS
- URBAN GROWTH BOUNDARY
- POWER LINES

GENERATORS

1. CLACKAMETTE PARK
2. OREGON CITY CENTER
3. PARK PLACE PARK
4. END OF THE OREGON TRAIL CENTER
5. ABERNATHY GREEN
6. OREGON CITY TRANSIT CENTER
7. PARK (JOHN ADAMS/12TH)
8. ATKINSON PARK (JACKSON)
9. OREGON CITY MUNICIPAL ELEVATOR
10. MCLOUGHLIN HOUSE
11. MCLOUGHLIN PROMENADE PARK
12. JACOBS MEMORIAL PARK
13. WATER BOARD PARK
14. WILLAMETTE FALLS HOSPITAL
15. CANEMAH PARK
16. OLD CANEMAH PARK
17. RIVERCREST PARK
18. SINGER CREEK PARK
19. BARCLAY HILLS PARK
20. STAFFORD PARK
21. MOUNTAIN VIEW CEMETARY
22. ST. JOHNS CEMETARY
23. PARK (SOUTH END/OAKTREE)
24. CHAPIN PARK
25. SHENANDOAH PARK
26. HILLENDALE PARK
27. HILLTOP MALL
28. BERRY HILL CENTER
29. JESSIE COURT PARK

PEDESTRIAN SYSTEM PLAN

FIGURE
5-3

CITY OF OREGON CITY, OREGON
TRANSPORTATION SYSTEM PLAN

APRIL 2001

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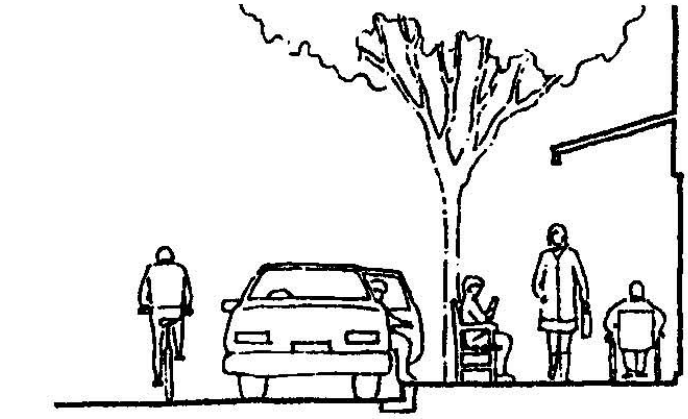

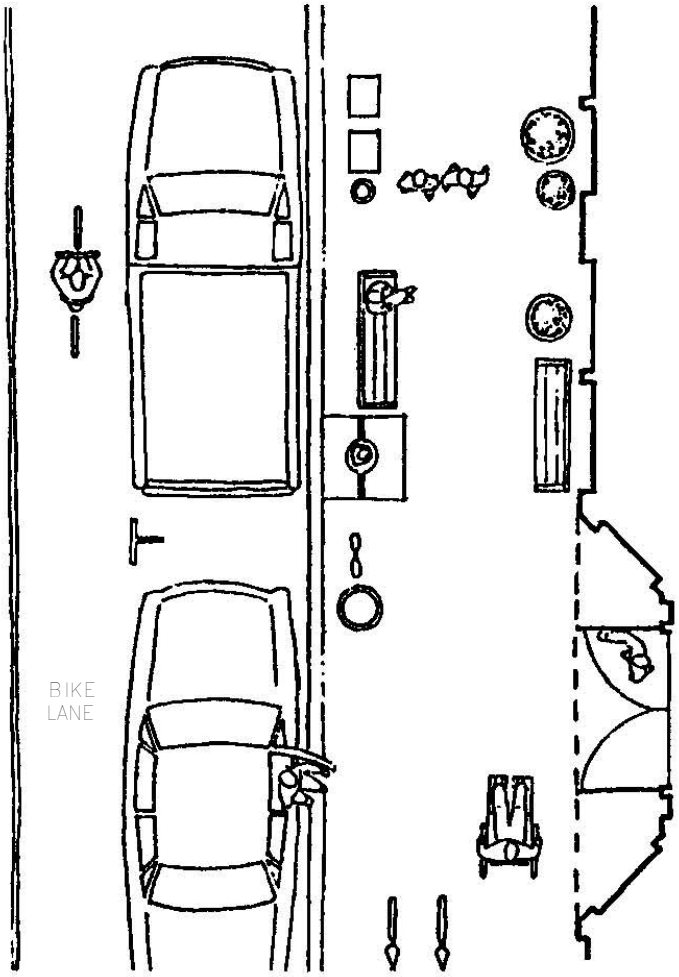

BIKE LANE ONLY IF TRAFFIC VOLUMES WARRANT

SOURCE: METRO – CREATING LIVABLE STREETS

PEDESTRIAN DESIGN FOR COMMERCIAL DISTRICTS

FIGURE 5–4

CITY OF OREGON CITY, OREGON
TRANSPORTATION SYSTEM PLAN

APRIL 2001

EXAMPLES OF MEDIAN CROSSINGS ON ROADWAYS

FIGURE 5—5

CITY OF OREGON CITY, OREGON
TRANSPORTATION SYSTEM PLAN

APRIL 2001

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Table 5-10 provides a summary of the needed pedestrian system projects, with the exception of the sidewalks provided on all newly constructed local street-level-and-above roadways.

Table 5-10. Pedestrian System Plan Sidewalk Projects

No.	Facility	Segment		Project Extent (in feet)	Estimated Cost	Priority Class
		From	To			
Arterial and Collector Street System						
P-1	Highway 213	Molalla Avenue	UGB	5,800 (both sides)	$500,800	C
P-2	Highway 99E	Clackamas River Br	Dunes Drive	1,680 (east side)	$80,000	C
P-3	Highway 99E	I-205 SB Ramps	13th Street	1,920 (east side)	$72,000	C
P-4	Highway 99E	Tumwater Drive	Hedges Street	2,880 (east side)	$150,000	C
P-5	Abernethy-Holcomb Blvd	Washington Street	Winston Drive	10,800 (north)	$450,000	C
P-6	Abernethy-Holcomb Blvd	Redland Road	Winston Drive	8,200 (south side)	$307,500	C
P-7	Beavercreek Road	Warner Milne Road	Kaen Road	1,200 (both sides)	$90,000	2
P-8	Beavercreek Road	Fred Meyer	Highway 213	1,900 (north side)	$71,250	2
P-9	Beavercreek Road	Highway 213	Maplelane Road	720 (north side)	$27,000	2
P-10	Beavercreek Road	Maplelane Road	UGB	10,080 (both)	$756,000	2
P-11	Berta Drive	Clairmont Way	Gaffney Lane	1,440 (north side)	$54,000	2
P-12	Berta Drive	Gaffney Lane	End	960 (south side)	$36,000	2
P-13	Boynton Street	Warner Parrott Road	Buol Street	1,200 (both sides)	$90,000	C
P-14	Center Street	S 2nd Street	Telford Road	2,400 (both sides)	$400,000	C
P-15	Central Point Road	Roundtree Drive	Partlow Road	2,900 (north side)	$110,000	C
P-16	Central Point Road	Skellenger Way	UGB	2,400 (north/ west)	$90,000	C
P-17	Central Point Road	Roundtree Drive	UGB	7,200 (south/east)	$270,000	C
P-18	Clackamas River Drive	Highway 213	UGB	3,850 (both sides)	$450,000	C
P-19	Clairmont Way	Southwood Drive	Leland Road	3,600 (north side)	$200,000	2

No.	Facility	Segment		Project Extent (in feet)	Estimated Cost	Priority Class
		From	To			
P-20	Clairmont Way	Molalla Avenue	Leland Road	4,800 (south side)	$270,000	2
P-21	Division Street	Selma Street	12th Street	720 (south side)	$27,000	C
P-22	Division Street	Gilman Park Drive	Anchor Way	2,400 (west side)	$90,000	C
P-23	Division Street	15th Street	Anchor Way	1,200 (east side)	$45,000	C
P-24	Forsythe Road	Clackamas River Dr	UGB	3,300 (both sides)	$500,000	C
P-25	Front Avenue	Forsythe Road	Holcomb Blvd	Fill in gaps	$500,000	3
P-26	Gaffney Lane	Meyers Road	Lazy Creek Lane	1,920 (both sides)	$144,000	2
P-27	Glen Oak Road	Highway 213	Beavercreek Road	5,280 (both sides)	$400,000	C
P-28	Holmes Lane	Molalla Avenue	Linn Avenue	2,640 (north side)	$100,000	2
P-29	Holmes Lane	Laurel Lane	Reliance Lane	600 (south side)	$18,000	2
P-30	Leland Road	Warner Milne Road	Whitcomb Drive	1,920 (west side)	$72,000	C
P-31	Leland Road	Haven Road	UGB	5,525 (north/west)	$300,000	C
P-32	Leland Road	Hiefield Court	UGB	7,200 (east side)	$270,000	C
P-33	Linn Avenue	Jackson Street	Oak Street	1,200 (east side)	$90,000	C
P-34	Linn Avenue	Charman Street	Holmes Lane	1,920 (east side)	$150,000	C
P-35	Linn Avenue	Jackson Street	Holmes Lane	4,320 (west side)	$162,000	C
P-36	Maplelane Road	Beavercreek Road	Country Village Dr	4,800 (both sides)	$360,000	C
P-37	McCord Road	Daybreak Court	Leland Road	1,920 (north side)	$72,000	C
P-38	McCord Road	Central Point Road	Leland Road	2,880 (south side)	$108,000	C
P-39	Meyers Road	Leland Road	Highway 213	Fill in gaps	$300,000	3
P-40	Meyers Road	Leland Road	Gaffney Lane	3,600 (north side)	$135,000	3
P-41	Partlow Road	South End Road	Central Point Road	2,700 (both sides)	$100,000	3
P-42	Redland Road	Highway 213	Abernethy Road	960 (both sides)	$69,100	C

No.	Facility	Segment		Project Extent (in feet)	Estimated Cost	Priority Class
		From	To			
P-43	Redland Road	Abernethy Road	UGB	9,600 (both sides)	$685,400	C
P-44	South End Road	Warner Parrott Road	UGB	8,280 (both sides)	$621,000	C
P-45	South End Road	Barker Road	Warner Parrott Rd	1,440 (west side)	$39,600	C
P-46	South End Road	Barker Road	2nd Street	5,280 (both sides)	$1,079,400	C
P-47	Swan Avenue	Forsythe Road	Holcomb Blvd	2,880 (both sides)	$216,000	C
P-48	Telford Road	Center Street	Davis Road	2,880 (both sides)	$220,000	C
P-49	Thayer Road	Maplelane Road	UGB	1,920 (both sides)	$150,000	C
P-50	Warner Parrott Road	Linn Avenue	South End Road	4,800 (north side)	$180,000	2
P-51	Washington Street	Abernethy Road	Highway 213	4,320 (both sides)	$325,000	C
P-52	S 2nd Street	Tumwater Drive	Center Street	480 (both sides)	$36,000	3
P-53	15th Street	Highway 99E	Taylor Street	3,360 (varies)	$750,000	C
Connections to Pedestrian Generators						
P-54	Park Place Elem. School	La Rae Street		400 (both sides)	$60,000	1
P-55	Gardiner Middle School	Hood Street		720 (both sides)	$54,000	1
P-56	Gardiner Middle School	Ethel Street		1,080 (both sides)	$81,000	1
P-57	Atkinson Park	Jackson Street		960 (west side)	$36,000	2
P-58	Rivercrest Park	Park Drive		1,200 (both sides)	$90,000	2
P-59	Mountain View Cemetery	Hilda Street		1,200 (both sides)	$90,000	C
P-60	St. John's Cemetery	Warner Street		1,200 (both sides)	$90,000	C

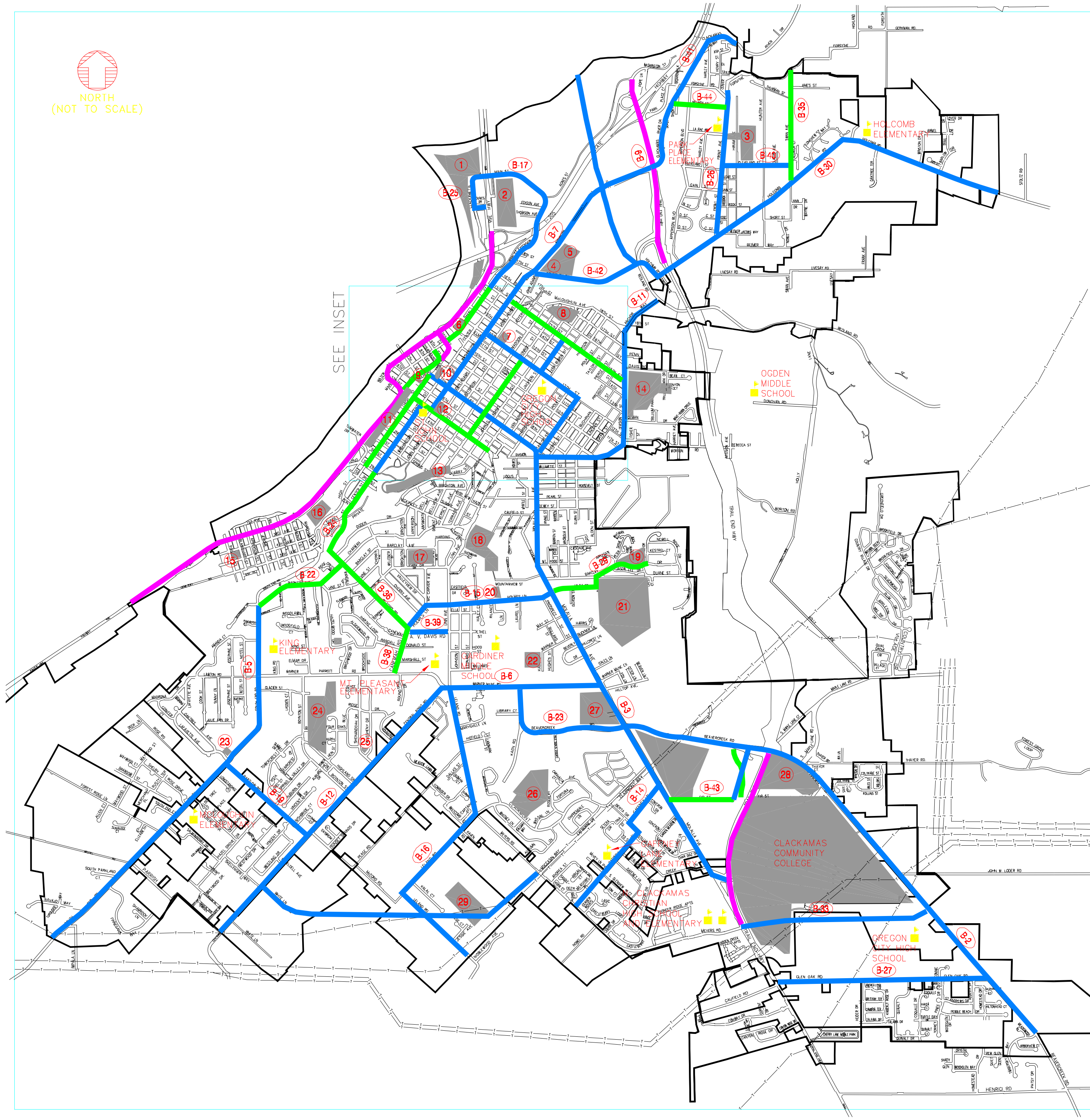
BICYCLE SYSTEM PLAN

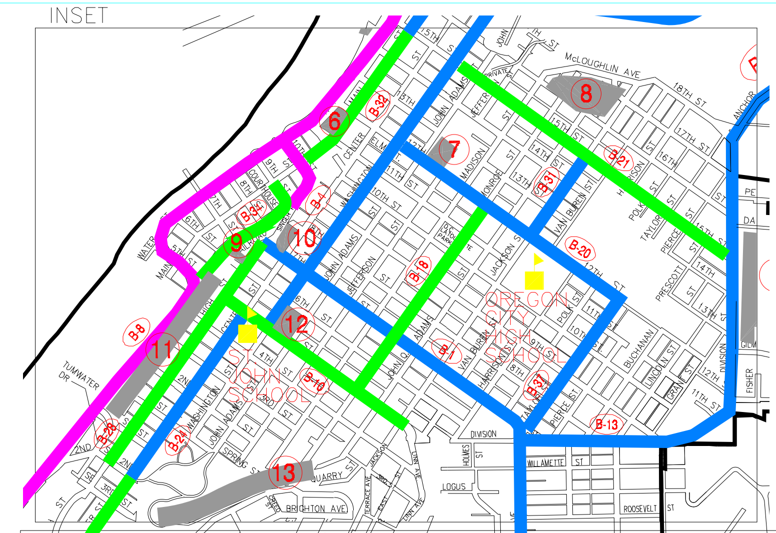
Similar to the Pedestrian System Plan, the Bicycle System Plan is intended to establish a network of bicycle routes that connect the city's bicycle generators and major activity centers and provide a safe and effective system of bicycle facilities. Several of the streets within the City of Oregon City are designated as Regional Bicycle Routes. These corridors will be monitored in the future to ensure that a safe and efficiently mobile environment exists for cyclists. A safe environment for cyclists generally exists where automobile traffic is less than 3,000 vehicles per day and/or where progressed speeds are lower than 25 miles per hour.

Figure 5-6 shows the Bicycle System Plan overlaid on top of the city street system. The Bicycle System Plan has been developed with the understanding that, as traffic increases on the local streets, the provision of striped on-street bike lanes will be required to maintain the perceived safety for bicycles within the system and to promote increased utilization of bicycle travel modes. Washington Street is an example of a facility that will be restriped to include on-street bike lanes by changing the configuration of the on-street parking and revising the street cross section. Some roads have been identified for bicycle route signing only, depending on traffic volumes and need for on-street parking.

The Bicycle System Plan included in this document is primarily based on the *1994 City of Oregon City Bicycle Plan* (David Evans and Associates, Inc., November 1994) (Reference 5). The plan is also intended to complement the *Clackamas County Bicycle Master Plan* (Reference 11) where possible.

Additional improvements to the bicycle system will center around the provision of amenities for cyclists. The city will develop a policy that requires bike racks outside of new developments within the downtown commercial district. Bike racks will also be added and maintained at some of the existing buildings within the city, including the post office, the library, and City Hall. The minimum requirements for bicycle parking spaces presented in the *Oregon Bicycle and Pedestrian Plan* (Reference 12) will be used during development review by the city, to encourage bicycle use and provide opportunity for cyclists to secure their bicycles during trips.





LEGEND

- STRIPED BIKELANES
- STRIPED BIKE LANES ON NEW FACILITIES
- GEOMETRIC IMPROVEMENTS TO ENHANCE BICYCLE ACTIVITY
- SIGN AS BIKE ROUTE
- BICYCLE GENERATORS
- OREGON CITY CITY LIMITS
- URBAN GROWTH BOUNDARY
- POWER LINES

NOTE: BICYCLE SYSTEM IMPROVEMENTS ARE SUMMARIZED IN TABLE 5-10

GENERATORS

1. CLACKAMETTE PARK
2. OREGON CITY CENTER
3. PARK PLACE PARK
4. END OF THE OREGON TRAIL CENTER
5. ABERNATHY GREEN
6. OREGON CITY TRANSIT CENTER
7. PARK (JOHN ADAMS/12TH)
8. ATKINSON PARK (JACKSON)
9. OREGON CITY MUNICIPAL ELEVATOR
10. MCLOUGHLIN HOUSE
11. MCLOUGHLIN PROMENADE PARK
12. JACOBS MEMORIAL PARK
13. WATER BOARD PARK
14. WILLAMETTE FALLS HOSPITAL
15. CANEMAH PARK
16. OLD CANEMAH PARK
17. RIVERCREST PARK
18. SINGER CREEK PARK
19. BARCLAY HILLS PARK
20. STAFFORD PARK
21. MOUNTAIN VIEW CEMETARY
22. ST. JOHNS CEMETARY
23. PARK (SOUTH END/OAKTREE)
24. CHAPIN PARK
25. SHENANDOAH PARK
26. HILLENDALE PARK
27. HILLTOP MALL
28. BERRY HILL CENTER
29. JESSIE COURT PARK

BICYCLE SYSTEM PLAN

FIGURE 5–6

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CITY OF OREGON CITY, OREGON
TRANSPORTATION SYSTEM PLAN

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The *Oregon Bicycle and Pedestrian Plan* provides appropriate guidelines for the planning and design of bicycle and pedestrian facilities. There are many considerations required in the design of a bicycle system. The *Oregon Bicycle and Pedestrian Plan* will be consulted prior to the implementation of any proposed project to address both pedestrian and cyclist issues.

Table 5-11 outlines the recommended Bicycle System Plan improvements.

Table 5-11. Bicycle System Improvements (based on the 1994 Oregon City Bicycle Plan)

No.	Location	Recommended Improvement	Estimated Cost	Priority Class
1994 Oregon City Bicycle Plan High Priority Projects				
B-1	7th Street: High Street to Taylor Street	- striped 5-foot bike lanes in both directions	$30,000	B
B-2	Beavercreek Road: Molalla Avenue to UGB	- striped bike lanes in both directions	$34,300	2
B-3	Molalla Avenue: 7th Street to Highway 213	- striped 5-6-foot bike lanes in both directions	$32,480	2
B-4	Singer Hill: HWY 99E to 7th Street	- railroad crossing warning for the northbound traffic - if street is ever widened, 5-foot bike lanes should be striped	$100 for sign	C
B-5	South End Road: Barker Avenue to UGB	- resurface and widen to accommodate 4-6-foot bike lanes in both directions	$1,795,500	3
B-6	Warner Milne Road: Linn Ave to Molalla Ave	- striped 5-6-foot bike lanes in both directions	$10,150	3
B-7	Washington Street: HWY 213 to 5th Street	- provide striped 5-6-foot bike lanes in both directions (will be included with Washington Street roadway improvements)	$30,000	B
B-8	Highway 99E: I-205 to South UGB	- restripe outside lanes to accommodate bicyclists - build ramps to provide access to the sidewalk facilities on the Clackamas River Bridge	$75,000	C
B-9	Highway 213: I-205 to Molalla Avenue	- redesign pedestrian and bicycle intersection crossings to improve safety, sight distance, separation from traffic, and decrease crossing distance Enhance bicycle use on Hwy 213 between Redland Road and the trail that crosses the old 82nd Avenue bridge connecting Oregon City and Gladstone.	$4,500	2
1994 Oregon City Bicycle Plan Medium Priority Projects				
B-10	5th Street: High Street to Jackson Street	- sign as bike route	$7,000	B

No.	Location	Recommended Improvement	Estimated Cost	Priority Class
B-11	Anchor Way: Redland Road to Division Street	- resurface and widen to accommodate 4-6-foot bike lanes in both directions	$50,000	C
B-12	Central Point Road: Warner Parrott to UGB	- resurface and widen to accommodate 4-6-foot bike lanes in both directions	$3,251,250	3
B-13	Division Street: Anchor Way to Molalla Ave	- stripe 5-6-foot bike lanes in both directions	$10,000	B
B-14	Gaffney Lane: Molalla Avenue to Meyers Road	- resurface and widen to accommodate 5-6-foot bike lanes - remove vegetation to improve sight distance - consider traffic calming measures	$1,551,250	3
B-15	Holmes Lane: Telford Road to Molalla Avenue	- *in interim,* ensure 12' travel lanes by restricting on-street parking to one side of the street *and sign as a bike route* - *widen and provide* striped bike lanes	Signs $1,000 Widening $125,000	B
B-16	Leland Road: Warner Milne Road to UGB	- resurface and widen to accommodate 4-6-foot bike lanes in both directions	$2,058,750	3
B-17	Main Street Extension	- resurface and widen to accommodate 4-6-foot bike lanes in both directions	$800,000	B
B-18	Monroe Street: 12th Street to 5th Street	- *sign as bike route* - consider striped 6-foot bike lanes	$3,000	B
B-19	Partlow Road: South End Road to Central Point Road	- resurface and widen to accommodate 4-6-foot bike lanes in both directions	$830,000	3
1994 Oregon City Bicycle Plan Low Priority Projects (improvements are striped bike lanes unless otherwise noted)				
B-20	12th Street: 99E to Taylor St		$3,000	A
B-21	15th Street: Washington St to Division St	- sign as bike route	$4,000	C
B-22	Barker Ave: South End Rd to Telford Ave	- sign as bike route	$3,000	B
B-23	Beavercreek Road: Warner Milne Rd to Molalla Ave		$4,000	2
B-24	Center Street: 7th St to Telford Ave	- sign as a bike route from Telford Avenue to 2nd Street - provide striped bike lanes from 2nd Street to 7th Street	$6,000	B
B-25	Clackamette Drive: Main St extension to Highway 99E	- striped bike lanes	$1,000	C
B-26	Front Avenue: Forsythe Rd to Holcomb Rd		$4,000	A

No.	Location	Recommended Improvement	Estimated Cost	Priority Class
B-27	Glen Oak Rd: Highway 213 to Beavercreek Rd		$6,000	2
B-28	High Street: 7th St to S 2nd St	- sign as a bike route	$3,000	C
B-29	Hilda Street/Alden Street/Barclay Hills Drive - Molalla Ave to Newell Ridge Drive	- sign as a bike route	$4,000	C
B-30	Holcomb Boulevard: Abernethy Rd to UGB		$15,000	B
B-31	Jackson Street: 15th St to 12th St		$1,000	A
B-32	Main Street: Main Extension to Singer Hill	- sign as a bike route	$3,000	C
B-33	Meyers Road: Highway 213 to Beavercreek Road		$8,000	2
B-34	Railroad Avenue: Main St to HWY 99E	- sign as a bike route	$2,000	C
B-35	Swan Avenue: Forsythe Rd to Holcomb Blvd	- sign as a bike route	$3,000	C
B-36	Telford Road: Center St to Holmes Lane	- sign as a bike route	$2,000	B
B-37	Taylor Street: 12th St to 7th St		$2,000	B
B-38	Canemah Road: Telford Road to Warner Parrott Road	- sign as a bike route	$3,000	B
B-39	Davis Road: Telford Road to Linn Avenue		$2,000	B
B-40	Cleveland Street: Front Street to Swan Avenue		$2,000	C
B-41	Clackamas River Drive: Hwy 213 to UGB		$10,000	C
B-42	Abernethy Road: Washington Street to Redland Road		$5,000	B
B-43	Fir Street: Molalla Avenue to Beavercreek Road	- sign as bike route/provide striped bike lanes	$2,000	C
B-44	Melinda Street: Clackamas River Drive to Front Street	- sign as bike route	$2,000	C

PUBLIC TRANSPORTATION SYSTEM PLAN

Transit service provides mobility to community residents who do not have access to automobiles and provides an alternative mode of transportation to driving for those who do. Transit service should meet the needs both of travelers within the city and those of travelers making trips outside of the community.

Provision of adequate public transit service is growing increasingly important in the study area due to the number of Oregon City residents for whom transit is the primary transportation mode. These residents include those who have no access to automobiles, those who are prevented from driving by some physical condition, and those who prefer transit for environmental reasons or because they do not want to drive on congested roadways. Improved transit service is also important because of the combination of increasingly congested roadway conditions during peak periods and the limitations in obtaining funding for roadway capacity improvements. These factors necessitate a diversion of automobile users to alternative modes of transportation.

Automobile users will not voluntarily switch to an alternative mode of travel unless its service quality is competitive with their existing mode in terms of coverage area, frequency, comfort, and cost, among other factors. All of these qualities are subjective and difficult to describe in a 20-year planning study. Therefore, the transit improvements recommended for the City of Oregon City Transportation System Plan reflect the transit provider's view of service quality – specifically its availability – rather than the passenger's view. Also of interest is the degree to which amenities are provided at station and stops.

Background

As detailed in the **Existing Conditions** section, public transportation within the City of Oregon City is currently provided by Tri-Met, the Oregon City Trolley, South Metro Area Rapid Transit (SMART), the South Clackamas Transit District, and the Oregon City Municipal Elevator. While increased usage of these fixed-route and demand-responsive services is desirable, there are no current or pending plans to expand public transportation services within the area in the short-term. Tri-Met has recommended certain service improvements within the study area as part of their Transit Choices for Livability study.

Discussions with local agency staff and Transportation Advisory Committee members indicated that the available public transportation services are not as well used as they could be, suggesting that there is a need to create greater awareness of the services among community members. Community input stressed the need for improved service on weekends and expanded service on weekday, in addition to more expansive service area coverage in certain areas of the city.

Transit Improvements from Other Studies

Tri-Met, which provides public transit service in the City of Oregon City, and the rest of the tri-county Portland Metropolitan Area, completed its *Transit Choices for Livability* (TCL) (Reference 9) study in July 1998. This study resulted in a list of transit service improvements and funding strategies developed by a committee of citizens and passengers representing the entire metropolitan area. The citizens specifically evaluated how community needs and Metro 2040 planning goals can be achieved by transit over the next ten years. General recommendations of the TCL study were:

- use TCL sketch plans – maps of transit improvements – as the framework for new service decisions;
- implement "community transit," or small-scale, innovative transit services for areas where traditional high-capacity transit may not be appropriate;
- increase Tri-Met's community outreach and marketing efforts;
- increase operating revenues to support implementation of the TCL plan;
- establish a Community Transit Fund for implementation of the TCL plan; and,
- implement the TCL plan as part of a balanced transportation system.

Specific TCL study recommendations relevant to the City of Oregon City TSP are detailed Table 5-12. The TCL recommendations focus on improving transit service in and between growing suburban areas where service is currently nonexistent or deficient. In many cases the recommendations supplement roadway capacity improvements that have already been planned or programmed in other transportation system plans.

Table 5-12. Transit Choices for Livability Ten-Year Service Improvements

No.	Service Improvement	Timeframe	Estimated Annual Cost[(1)]	Priority Class
T-1	Oregon City-Clackamas TC-Gateway: Rapid bus service along I-205 corridor from Oregon City to the Gateway Transit Center and PDX via the Clackamas Town Center.	1-5 years	$800,000	2
T-2	Tualatin-Oregon City: New express service between Oregon City and Tualatin, Tigard, Beaverton in the I-5/I-205/Highway 217 corridor.	1-5 years	$200,000	2
T-3	Highway 43: Rapid bus service between Oregon City, Lake Oswego, and downtown Portland including option for commute service on the Willamette Shore Railway.	1-5 years	$450,000	3
T-4	Berry Hill Neighborhoods: New local service within Berry Hill and Holcomb-Holly areas including Beavercreek Road.	1-5 years	$315,000	2
T-5	McLoughlin Boulevard: Rapid bus service along McLoughlin Boulevard between Clackamas Community College, Oregon City, Gladstone, and Milwaukie to connect with South/North MAX.	1-5 years	$650,000	3
T-6	Park Place Neighborhoods: Local service to improve mobility options and circulation.	5-10 years	$200,000	
T-7	Route 79: Improved frequency and span of service on the existing line serving South End Road.			

(1) Cost estimate obtained from *Tri-Met TCL*.

Transit Improvements for the Oregon City TSP

In addition to the potential service improvements outlined in the Tri-Met TCL report, a series of specific improvement projects for the public transit system have been developed as part of this Oregon City Transportation System Plan. These service enhancements are detailed below in Table 5-13 and illustrated in Figure 5-7.

Overall, the City of Oregon City will continue to monitor the adequacy of the transit service provided to the community and work with Tri-Met to expand service as necessary. In addition, both the City and Tri-Met should promote a greater public awareness of the available public transit services by providing additional information at City Hall and at the bus shelters. Greater awareness of the services provided will likely result in increased usage and ridership. Increased awareness of the park-n-ride locations and availability would also encourage ridership. The addition of distinct signage for the park-n-ride facilities would improve visibility.

Table 5-13. Public Transit System Improvements

No.	Transit Service	Recommended Improvement	Estimated Cost	Priority Class
T-10	Oregon City TMA Startup Program	Implement a Transportation Management Association for businesses in Oregon City.	$225,000	2
T-11	Park Place Neighborhood Service	Expand route to service Park Place neighborhoods; increase frequency of service.	$300,000/yr	2
T-12	Tri-Met *Route 32: Oatfield*	Increase service frequency from 60-minute to 30-minute headways; modify the existing Tri-met Route 32 service to continue straight through the Highway 213/Beavercreek Road intersection and along Beavercreek Road to access Clackamas Community College from the Beavercreek Road entrance as opposed to at Molalla Avenue as it does currently.	$50,000/yr	B
T-13	Tri-Met *Route 33: McLoughlin*	Increase the frequency of the existing Route 33 service (CCC to Oregon City Transit Center) from 30-minute headways to 10 or 15-minute headways.	$50,000/yr	2
T-14	New Local Oregon City Bus Route	Addition of a new local Oregon City bus route that would travel between the Oregon City Transit Center and Clackamas Community College via Highway 99E, Center Street, Telford Avenue, Warner Parrott Road, Boynton Road, McCord Road, Leland Road, and Meyers Road; route would operate at 60-minute headways to service the developing areas of southern Oregon City and provide these locations with connection to downtown Oregon City and transit service to other metropolitan areas.	$200,000/yr	3
T-15	Express Commuter Rail Service	As part of the proposed high-speed rail service between Canby and Portland a stop at the Oregon City Transit Center is recommended.	N/A	C

Close coordination between the City of Oregon City and adjacent communities will occur to increase transit ridership and efficiency through better use of the resources available. Coordinated trips to local community events would likely generate significant interest. Ultimately, if an increased demand for service can be established and documented, additional resources (i.e. funding, equipment) may be pursued through grant applications or other alternative financing sources.

It should be noted that extensive development and evaluation of local transit service alternatives was conducted throughout the course of this planning process. Draft versions of this document contained recommendations for continuing the existing local transit service through the downtown and historical districts of the City, as well as providing an additional local transit service along the 7th Street-Molalla Avenue corridor. However, based on a City Council decision these projects have been taken out of the final plan.

NORTH
(NOT TO SCALE)

SEE INSET

INSET

LEGEND

- MODIFIED TRI-MET ROUTE 32
- MODIFIED TRI-MET ROUTE 33
- NEW HIGHWAY 213 EXPRESS BUS
- NEW LOCAL OREGON CITY BUS ROUTE
- EXISTING TRI-MET ROUTE 79
- EXISTING TRI-MET ROUTE 99X
- PROPOSED COMMUTER RAIL
- TC – OREGON CITY TRANSIT CENTER
- PR-## – EXISTING PARK & RIDE FACILITY-TRIMET NUMER
- PR – FUTURE PARK & RIDE FACILITY
- FUTURE PASSENGER RAIL STOP
- FUTURE MAJOR TRANSIT STOP
- OREGON CITY CITY LIMITS
- URBAN GROWTH BOUNDARY
- POWER LINES

PUBLIC TRANSIT SYSTEM PLAN

FIGURE
5-7

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CITY OF OREGON CITY, OREGON
TRANSPORTATION SYSTEM PLAN

APRIL 2001

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RAIL SYSTEM PLAN

Union Pacific Railroad (UPRR) provides rail service within the City of Oregon City region. The lines within the City of Oregon City Urban Growth Boundary are destined for the Portland terminal area, which is the termination point for 70-percent of all rail traffic destined for Oregon. The *1994 Oregon Rail Freight Plan* (Reference 13) did not identify Oregon City as a "major traffic generator."

The UPRR lines within Clackamas County are Class 1 railroad tracks that allow speeds up to 60 miles per hour for freight traffic and 70 miles per hour for passenger cars. The trains that run throughout the study area operate at lower speeds due to the prevalence of at-grade crossings and in order to maintain adequate levels of safety. The UPRR line includes several passing tracks and house tracks that allow trains to pass one another efficiently. UPRR staff indicated that their rail line in Clackamas County was not considered to be a facility experiencing capacity constraints, although the at-grade crossing were of some concerns in certain cases.

Four Amtrak trains travel daily on the UPRR mainline, providing passenger rail service. The station closest to Oregon City is located in downtown Portland at Union Station. Amtrak provides service north to Seattle, Washington and beyond, south to Eugene, Oregon and beyond, and east on separate lines to Spokane, Washington and Boise, Idaho.

There are currently no rail capacity constraints in the Oregon City area, so the City should direct its future freight and passenger rail involvement to solving the problems associated with at-grade railroad crossings. The City should be involved in maximizing safety wherever other transportation modes cross rail lines, minimizing capacity constraints on roadways that cross rail lines, and minimizing the delay for trains and other modes at railroad crossings. Possible actions that the City of Oregon City can take include:

- discourage residential development in the vicinity of rail lines in order to minimize pedestrian crossings of the rail line and the presence of children in the immediate vicinity of the tracks;
- minimize the number of at-grade roadway crossings;
- grade separating the existing crossings where possible, for example by building pedestrian overpasses; and,
- maintaining adequate active warning devices that control traffic during train crossings.

The key component of the Oregon City Rail System Plan is the potential siting of a passenger rail station associated with development of the Cascadia rail corridor. The probable station siting location is between the existing rail line and Washington Street, east of 17th Street. The Oregon City Rail System Plan supports the City's actions to pursue development of the Cascadia rail corridor and site a passenger rail station within the City Limits.

The City must be prepared to address potential impacts to the circulation system that may result from trains stopping at the station. The most significant impact is when a northbound train stops at the station, blocking the segment of 17th Street between Washington Street and Main Street. Fortunately, the circulation system is presently equipped with redundancies, including the 15th, 14th, and 12th street undercrossings between Washington Street and Main Street, such that the impact of blocking 17th Street is minimized.

Advanced signing, flashing beacons, and other driver communication techniques may be necessary to advise motorists that an alternative route must be used while 17th Street is blocked. In addition, special

treatments at the Washington Street/17th Street, Washington Street/15th Street, and the Main Street/17th Street intersections may be necessary to eliminate the potential for queue spillback and other operational deficiencies that result from the 17th Street being temporarily blocked.

The Oregon City Rail System Plan encourages close coordination between the City and AMTRAK in the development and siting of a passenger rail station in Oregon City, associated with the Cascadia rail corridor.

MARINE SYSTEM PLAN

As previously noted in Section 2: *Existing Conditions*, the Willamette River and Clackamas River are the only navigable waterways within the City of Oregon City UGB. The Clackamas River flows from the east into the Willamette River, which flows northward along the western boundary of the City's UGB to meet the Columbia River, approximately 20 miles northwest of downtown Oregon City. The Columbia River then flows northwest to meet the Pacific Ocean, forming the border between Oregon and Washington states.

The Willamette River carries both recreational and commercial vessels. The Willamette River caters to commercial operations by providing a waterborne through route for commercial vessels from the Willamette Valley to the Columbia River and the Port of Portland. There are no existing commercial dock facilities within the Oregon City study area. From the Columbia River mouth to the Broadway Bridge, the Willamette River is a deep draft channel, maintained by the US Army Corps of Engineers at a depth of 40 feet. Above this point, and notably within the Oregon City area, the channel is maintained at a depth of 8 feet and a width of 150 feet. The Willamette Falls Lock allows river traffic to bypass the Willamette Falls, which act as a natural barrier to water transportation on the Willamette River, beyond the area located south of the Highway 43 Bridge in Oregon City.

There are two recreational boat ramps within the bounds of the study area. One, owned and operated by the City of Oregon City, is located in Clackamette Park, and the other, located under the I-205 Bridge, is a small floating marine facility privately owned and operated by Sportcraft Marina, Inc. Currently, no commuter river-taxi service is provided along the Willamette River to or from Oregon City.

The Clackamas River is a recreational waterway and does not serve commercial traffic, however, it does cater to a variety of leisure craft vessels. Within the study area, there is one boat ramp located in Riverside Park at the end of Water Avenue, approximately one-half mile east of Gladstone.

Oregon City's regional role in the Marine System Plan is to continue its' efforts to ensure adequate commercial access to regional, national, and international marine services through on-going associations with the Port of Portland, Metro, and the Oregon Department of Transportation.

Oregon City's role in the Marine System Plan at the local level will be to facilitate connections between the roadway network and the waterway system for both commercial and recreational operations. The City will actively support the continued presence of boat launches in the area, as an effective means of recreational transportation. The creation of multi-use paths and other facilities that promote the multi-modal use of the recreational areas along the shore of the Willamette and Clackamas Rivers should also be encouraged. Finally, the City will encourage, and participate in any regional study dedicated to the investigation of marine transport as an effective commuter transportation mode.

AIR TRANSPORTATION SYSTEM PLAN

The passenger and freight air transportation demands of the City of Oregon City are primarily serviced by a system of four airports owned and operated by the Port of Portland. These airports are designed to meet the needs of commercial aviation and personal and business aircraft for passenger and freight movement. The airports are:

- Portland International Airport (PDX)
- Hillsboro Airport
- Troutdale Airport
- Mulino Airport

Each airport serves a particular role in the overall air transportation system, and is equipped to cater to different types and volume of aircraft. Regional, national, and international freight cargo and air passenger services are provided at the Portland International Airport (PDX). Located north of the Oregon City study area and primarily accessed via I-205 and Airport Way, PDX provides access for passengers, and cargo from the Portland-Metropolitan area to over 120 cities worldwide, including destinations throughout the Pacific Rim. In 1997, a total of approximately 330,000 operations were flown to or from this airport. That same year, the airport served a total of more than 12,800,000 passengers from regional, national, and international services and 260,000 tons of air cargo were handled.

Near-term improvements to PDX air terminal facility are presently under construction and, once completed, will provide improved facilities for air travelers through the region.

The existing airport facility has two parallel runways. The Port of Portland reports that relocation of a runway may not be necessary until total annual operations reach approximately 500,000. Over the past five years, average annual growth in total operations from Portland International Airport has grown at a rate of just over three percent per annum. Demand projections prepared by P & D Aviation Inc., indicate that by 2020 the airport will be required to serve around 29 million passengers, 823,000 tons of airfreight, and 505,000 aircraft operations annually.

Based on these demand estimates, the relocation of a replacement runway is likely to be required prior to the 2020 design horizon. The Port of Portland is currently undertaking a master planning process for the development of airport facilities to meet the anticipated future demands.

There is significant investment currently in improving ground access to PDX. The airport is planning an expansion of Airport Way and the interchange that services the airport from Interstate 205. In March of 1999, the Port of Portland, Metro, Tri-Met, the City of Portland, and Bechtel Infrastructure Corporation began preliminary construction activities for Airport MAX, a new light rail line that will run between the Gateway Transit Center to PDX. This line is expected to be operational in September 2001.

Hillsboro Airport is located approximately 15-miles west of downtown Portland, south of Highway 26. This airport is equipped with two runways and catered to just over 230,000 operations in 1998, making it the second busiest airport in Oregon behind PDX. The existing features and amenities of the Hillsboro Airport make it particularly attractive to corporate jet operators. Average annual growth in total operations over the last five years has been close to three-percent per annum. Through the rapid development of businesses in the surrounding area, it is anticipated that this growth will continue into the future.

Troutdale Airport is located approximately 15-miles east of downtown Portland, at the western end of the Columbia Gorge near Interstate 84. This facility operates using a single runway and serviced just under 80,000 operations in 1998. Operators at Troutdale Airport provide a variety of services, including scenic flights, helicopter, and fixed-wing airport training, plus a full range of aircraft maintenance services and component repair. Operations have declined from a peak of 110,000 services in 1996.

The Mulino Airport site was selected for development in 1979 after the Port of Portland selected it as the best-suited option for meeting the air service needs of the Clackamas County region. It is located 20 miles south of downtown Portland along Highway 213. Residents within the Clackamas County area are best placed to take advantage of this facility, which offers general aviation resources and plays an important role as an airport for small propeller-driven aircraft.

None of these four airports are located within the City of Oregon City study area, so the residents and businesses within Oregon City require strong supporting ground transportation connections for convenient access to each of the air transportation facilities.

As such, the City will direct its involvement in passenger and freight air transportation to mitigating problems associated with airport ground transportation connections and access. Actions the City will consider include:

- supporting improved connections to Interstate 205, for better access to Portland International Airport, the Hillsboro Airport, and the Troutdale Airport;
- supporting improved connections to Highway 213, from better access to the Mulino Airport;
- working with Tri-Met and other transportation service providers to development airport shuttle services and/or other public transportation connections; and,
- continuing to play an active role in air transportation planning at the regional and statewide level.

TRANSMISSION TRANSPORTATION SYSTEM PLAN

The transmission of natural gas, water, power, and information are all services of critical importance to businesses, industry, and residents of Oregon City.

Natural Gas

Northwest Natural (NWN) is the utility company that pipes natural gas to homes and businesses in the study area. NWN obtains its natural gas from the Northwest Pipeline, owned by Williams Gas Pipeline, via NWN gate stations and high-pressure transmission lines. Four high-pressure transmission pipelines cross the Clackamas County region. NWN's system is sized to support the existing customer base, which has been growing at approximately five to six percent per year. To that end, planning for the future is focused primarily on the supply of natural gas, not on the supply of pipelines. There are no infrastructure capacity constraints with the existing natural gas pipeline system.

Water

The City of Oregon City is supplied with treated water from the South Fork Water Board. The City's water supply is pumped to the 10.5 mg Reservoir No.2 and then fed to the high and intermediate levels of the service area. Reservoir No. 2 shares storage capacity with the South Fork Water Board and part of the water is used to supply portions of the Clackamas River Water (formally Clairmont Water) District. In addition, when the Division Street Pump Station is not pumping, water can backfeed from Reservoir No. 2 to West Linn's Bolton Reservoir. This water is currently not metered separately.

Water supply and demand are evaluated yearly by considering current supply, past demand, projected demand, weather trends, regional policies, conservation activities, and water quality. The City has four functional storage reservoirs with a capacity of 16.0 million gallons. This capacity is adequate to meet the existing demands of the system as well as those projected for the planning horizon, provided that other systems are not supplied. If other systems continue to be supplied, further reservoir space will be required. The primary distribution system is well sized and consists mainly of cast and ductile iron piping, although several main lines are steel. The City will update its Water Master Plan regularly to remain aware of needed improvements for supply, capacity, and distribution

Electrical Power

The Bonneville Power Administration (BPA) is the federal organization that regulates and distributes power from the Columbia River Hydroelectric sources to the Pacific Northwest. Hydroelectric sources provide 67-percent of the regional power every year. BPA also purchases and distributes power from other local sources. Power is distributed throughout the Pacific Northwest via 15,012 circuit miles of high voltage transmission lines that connect to industries and local utilities and make 22,700 megawatts of system capacity available to regional residents and businesses. Capacity has proven to be adequate to date with the purchase of power from California during the peak session, and sources at BPA do not expect future system congestion. High voltage transmission lines managed by BPA carry power to and through the Oregon City area. One line runs roughly east-west and is located just south of Oregon City. On this line, there are a microwave station and four substations. A second BPA line enters Oregon City east of Holly Lane in Newell Canyon and traverses south-west (across Highway 213, Beavercreek Road, and Molalla Avenue) parallel to Clairmont Way, then traverses due west across the southern limit of the city. Currently, there is no capacity limitation in the Oregon City area that would limit industrial or residential expansion.

Information

Emerging technologies, including wireless communications, geographic information systems, and the Internet, have made information transmission a vital component of transportation systems. Such technologies play a role in telecommuting, vehicle monitoring, and the provision of transportation system information through Internet web sites. The growth of such emerging technologies is so rapid that no source exists to document current information transmissions resources, demand, and usage in the study area. Because information transmission resources are federally regulated, the Federal Communications Commission maintains a listing of its Clackamas County licensees, which indicates that all the emerging technologies listed are available to the residents of Oregon City to some degree. Because these resources are typically privately owned – and owned by many companies – it is difficult to locate the transmission lines, towers, and other infrastructure.

The City's role in the transmission transportation system should be focused on disseminating knowledge about transmission resources to City residents and investigating ways in which information technologies can be used to improve the entire transportation system. Tri-Met, for example, already offers programs to match-up carpoolers and to assist businesses in developing telecommuting programs. The City will explore developing similar programs or work with the existing ones. The City will work to bring traffic and travel planning information already available on the Internet to residents of Oregon City who may not have access to it – perhaps through their employers – or incorporate the latest advanced technologies into arterial incident management and monitoring.

PARKING

As previously noted, in addition to addressing the statewide Transportation Planning Rule, the City of Oregon City Transportation System Plan also complies with Metro's *Urban Growth Management Functional Plan*.

The state Transportation Planning Rule calls for the reduction of vehicle miles traveled per capita and restrictions on new parking space construction as a means of responding to the transportation and land use impacts of growth. A compact urban form requires that each land use be carefully considered and that more efficient forms are favored over less efficient ones. Parking can result in less efficient land usage and lower floor space-to-area ratios. Parking also has implications for transportation. In areas where transit is provided or other non-auto modes (walking, biking) are convenient, less parking can be provided and still allow accessibility and mobility for all modes, including autos. Reductions in auto trips when substituted by non-auto modes can reduce congestion and improve air quality.

To be consistent with Metro's *Urban Growth Management Functional Plan* the City shall amend its Comprehensive Plan and implementing regulations to be consistent with the minimum parking standards for certain land uses specified in the *Urban Growth Management Functional Plan: Title 2*. The City has established parking maximums at ratios no greater than those listed in the *Urban Growth Management Functional Plan* for the areas illustrated the Regional Parking Maximum Map. The Parking Maximums Map, contained in the *Urban Growth Management Functional Plan*, designates A and B zones for the City (Table 2 of the *Urban Growth Management Functional Plan*). Zone A areas are those areas within a one-quarter mile walking distance of bus transit service provided at no greater than 20-minute peak hour headways. If 20-minute peak hour transit service is no longer available to an area within one-quarter mile walking distance for bus transit, that area needs to be removed from Zone A. The Zone A parking ratio should, in general, affect areas with good pedestrian access to commercial or employment areas (within 1/3 mile walking distance) from adjacent residential areas. Table 5-14 presents the City of Oregon City minimum and maximum parking ratios. In some instances the City of Oregon City parking standards require less parking than Metro standards, but under no land use code to they permit more parking. As such, the City's standards are consistent with Metro's *Regional Framework Plan Title 2*.

Table 5-14. City of Oregon City Parking Ratios

Land Use	Parking Requirements[1]	
	Minimum	Maximum
Single Family Dwelling	1.00	2.00 per unit
Residential Unit (<500 sq-ft)	1.00	2.00 per unit
Multi-family – 1 bedroom	1.25	2.00 per unit
Multi-family – 2 bedroom	1.50	2.00 per unit
Multi-family – 3 bedroom	1.75	2.00 per unit
Boarding/Lodging House	Case Specific	Case Specific
Mobile Homes	N/A	2.00 per unit
Hotel/Motel	1.00	1.00 per guest room
Club/Lodge	To meet requirements of the combined uses	To meet requirements of the combined uses
Welfare/Correctional Institution	N/A	1 space/5 beds
Nursing Home/Rest Home	N/A	1 space/5 beds
Hospital	N/A	1 space/1.5 beds
Religious Assembly Building	0.25 per seat	0.25 per seat
Library/Reading Room	N/A	2.50
Preschool Nursery/Kindergarten	N/A	2 spaces/teacher
Elementary/Junior High School	N/A	1 space/classroom + 1space/administarative employee + 1 space/4 seats in auditorium/assembly room/stadium
High School	0.20 spaces/# staff and students	0.30/# staff and students
College/Commercial School for Adults	0.20 spaces/# staff and students	0.30/# staff and students
Auditorium/Meeting Room	N/A	1 space/4 seats
Stadium/Arena/Theater	N/A	1 space/4 seats
Bowling Alley	N/A	2 spaces/alley
Dance Hall/Skating Rink	N/A	5.00
Moorages	N/A	1 space/boat berth
Retail Store/Shopping Center	4.10	5.00
Service/Repair Shop/Automotive or Furniture Store	N/A	1.67
Bank	N/A	3.33
Office	2.70	3.33

Land Use	Parking Requirements[1]	
	Minimum	Maximum
Medical or Dental Clinic	N/A	3.33
Fast Food with Drive Thru	N/A	5.00
Other Eating Establishments	N/A	5.00
Drinking Establishment/Pool Hall	N/A	5.00
Mortuaries	N/A	1 space/4 seats
Swimming Pool/Gymnasium	N/A	5.00
Sports Club/Recreation Facilities	4.30	5.40
Tennis/Racquet Ball Courts	1.00	1.30
Movie Theater	0.30 spaces/seat	0.40 spaces/seat
Storage Warehouse/Freight Terminal	0.30 per gross sq-ft	0.40 per gross sq-ft
Manufacturing/Wholesale Establishment	1.60 per gross sq-ft	1.67 per gross sq-ft
Light Industrial/Industrial Park	N/A	1.60

1. Parking ratios are based on spaces per 1,000 square feet gross leasable area unless otherwise stated.

IMPLEMENTATION PLAN

This section has outlined specific transportation system improvement recommendations as well as a corresponding timeline for implementation of the identified improvements. The sequencing plan presented is not detailed to the point of a schedule identifying specific years when infrastructure should be constructed, but rather ranks projects to be developed within the near-term and long-term horizon periods. In this manner, the implementation of identified system improvements has been staged to spread investment in this infrastructure over the 20-year life of the plan.

The construction of roads, water, sewer, and electrical facilities in conjunction with local development activity should be coordinated, if the City of Oregon City is to develop in an orderly and efficient way. Consequently, the plans recommended in the TSP should be considered in light of developing infrastructure-sequencing plans, and may need to be modified accordingly.

SUMMARY

The adoption and implementation of this Transportation System Plan will enable the City of Oregon City to rectify future transportation system deficiencies while facilitating growth in the study area under the year 2020 population and employment levels assigned by the state, county, and regional governments. Updates to the transportation system plan should occur, as necessary, to ensure compliance with the Transportation Planning Rule and verification of growth and expected impacts.