

TRANSPORTATION SYSTEM PLAN

REVIEW OF TRANSPORTATION PLANS AND POLICIES

Existing policies and regulations at the local, regional and, state and federal level were reviewed as part of this plan to ensure that the recommendations would be consistent and coordinated with relevant policies, goals and standards. This section summarizes applicable transportation plans and policies.

Local

Multnomah County planning documents reviewed in the preparation of the West of Sandy River TSP include the following:

- Comprehensive Framework Plan Policies, Volume 2: Policies, April 1998, specifically policies 33A, Transportation System; Policy 33C, Bikeways/Pedestrian System; Policy 34, Trafficways; Policy 35, Public Transportation; and Policy 36, Transportation System Development Requirements.
- Pedestrian Master Plan, April 1996.
- Bicycle Master Plan, December 1990.
- 1998-2002 Transportation Capital Improvements Plan and Program, June 1998. The 1998-2002 Capital Improvements Plan and Program lists six planned roadway improvement projects and 11 planned bikeway projects.
- Rural Transportation System Plan, Technical Memorandum No. 1: Background Information Summaries, prepared for the Multnomah County Transportation Division and the Oregon Department of Transportation by CH2MHill, January 1997.
- Westside Rural Multnomah County Transportation System Plan, prepared for Multnomah County by CH2MHill, July 1998.



Locally, the County's *Comprehensive Plan* addresses street and road policy. *Comprehensive Plan Policy 33A, Transportation System Plan*, is intended to "...implement a balanced, safe and efficient transportation system." Strategies include adoption of Transportation System Plans in all appropriate areas of the county and updating Policy 33 of the Comprehensive Framework Plan to reflect the policies adopted in the Transportation System Plans. *Comprehensive Plan Policy 33C, Bikeways/Pedestrian System*, establishes "the County's policy to implement a bicycle/pedestrian system as an alternative transportation mode, furthering the opportunity for a balanced system."

Comprehensive Plan Policy 34, Trafficways, establishes a functional classification system for county roadways. Trafficway classifications include:

- Local Urban Streets and Rural Roads
- Collector Streets (neighborhood collector streets, major collector streets, rural collector roads)
- Arterial Streets (minor arterial streets, major arterial streets, principal arterial streets, rural arterial roads)
- Expressways
- Freeways
- Overlay Classifications include:
 - Scenic Routes
 - Boulevards (regional boulevards, community boulevards)
 - Streets (regional streets, community streets)

Comprehensive Plan Policy 34, Public Transportation, is intended “to direct the County to consider the effects of land use decision on the efficient provision of public transportation, and to continually review the Tri-Met routes to determine that the County residents are receiving the best possible service.”

Comprehensive Plan Policy 36, Transportation System Development Requirements, is intended “to require the dedication of the additional right-of-way if the development proposal will affect the road system; to reduce the number of ingress and egress points; to ensure the provision of “on-site” parking and loading and, where possible, bus loading areas.”

The County’s adopted *Pedestrian Master Plan* (1996) notes that “in the rural area, less than 15 percent (approximately 28 miles) of the arterial and collector roads have paved shoulders. The County minimum design standards for shoulders on rural local and collectors is 1.5 m (5.0 ft). For arterials, the minimum shoulder width is 1.8 m (6.0 ft), but if the shoulder width exceeds the minimum, only the first 1.5 m (5.0 ft) of shoulder width needs to be paved.

The *Multnomah County 1998-2002 Capital Improvement Plan and Program* (CIP) addresses transportation needs in four categories: roadways, bikeways, pedestrian facilities, and Willamette River Bridges. Table 7 summarizes the CIP projects either partially or entirely within the study area. None of the projects are scheduled for construction within the 1998-2002 Capital Improvement Plan and Program.

Table 7: CIP Projects within the Study Area

Street Name Roadway Projects	From	To	Category	Priority
Division Dr.	268 th Ave.	Troutdale Rd.	Arterial	3
Division Dr./Troutdale Rd.			Signal	2
282 nd Ave.	Powell Valley Rd.	Orient Dr.	Collector	2
Regner Rd.	Butler Rd.	County Line	Collector	2
Bikeway Projects				
Division St.	Urban Growth Boundary	Troutdale Rd.	Bike Lane	
282 nd Ave.	Troutdale Rd.	Orient Dr.	Bike Lane	
Orient Dr.	Welch Rd.	Dodge Park Rd.	Shldr. Bkwy.	
Dodge Park Blvd.	Orient Dr.	County Line	Shldr. Bkwy.	
Oxbow Dr.	Division Dr.	Oxbow Prkwy.	Shldr. Bkwy.	
Troutdale Rd.	Strebin Rd.	282 nd Dr.	Bike Lane	
Division Dr.	Troutdale Rd.	Oxbow Prkwy.	Bike Lane	
Oxbow Park Rd.	Oxbow Prkwy.	Oxbow Park	Shldr. Bkwy.	
Oxbow Prkwy.	Oxbow Dr.	Oxbow Park Rd.	Shldr. Bkwy.	
302 nd Ave.	Division	Oxbow Park Rd. Orient	Shldr. Bkwy.	

Regional

Regional transportation planning and policy documents reviewed include Metro's *2040 Growth Concept Plan*, the *Regional Framework Plan*, the *Regional Transportation Plan (RTP)* and the *Metropolitan Transportation Improvement Program (MTIP)*. These documents address transportation policy, objectives, strategies, and recommended improvement projects throughout the Portland metropolitan region. No projects within the study area are included in the 2000-2004 MTIP list of committed improvements, although the 2000 RTP includes the following designations for facilities within the study area.

- US 26: principal arterial (highway), potential neighbor city transit route, main roadway route for freight, and regional bikeway corridor.
- SE 242nd Avenue: minor arterial, and community connector for bicycle travel.
- SE Orient Drive: rural arterial (farm-to-market), road connector for freight, and community connector for bicycle travel (west of SE 282nd Avenue).
- SE Bluff Road: rural arterial (farm-to-market).
- SE Lusted Road: rural arterial (farm-to-market).
- SE Troutdale Road: collector of regional significance (north of SE Division Drive), and community connector for bicycle travel.
- SE Division Drive: collector of regional significance and community connector for bicycle travel.
- SE Stark Street: rural arterial (farm-to-market) and community connector for bicycle travel.

At the regional level, Metro establishes and implements regional transportation planning policy through the *2040 Growth Concept Plan*, the *Regional Framework Plan* and the *Regional Transportation Plan (RTP)*. These planning documents collectively establish transportation policy for all forms of travel – motor vehicle, transit, pedestrian, bicycle and freight – and include specific objectives, strategies and projects to guide local and regional policy implementation. The *Regional Framework Plan* provides a policy foundation for the specific transportation improvements and strategies identified in the *Regional Transportation Plan*. Recommendations in this West of Sandy River TSP are consistent with policies in the *Regional Framework Plan* that place limits on new roadways or new connections to existing roadways in unincorporated rural areas.

The RTP includes cost estimates for recommended projects throughout the region, and funding strategies to meet these costs. The plan was first adopted by the Metro Council in 1983 and is updated periodically to reflect changing conditions. The RTP was adopted in August 2000 to be consistent with the 2040 Growth Concept. The discussion of improvements near the West of Sandy River study area in the RTP Priority System is limited to Hogan Road/242nd Avenue, which is identified as an eventual four-lane highway link between I-84 and US 26. Improvements to Hogan Road/242nd could facilitate truck movements between the study area and I-84. However, the 2000 RTP also finds that Hogan Road/242nd Avenue will continue to perform adequately in 2020, with congestion limited to certain intersections.

State

Statewide Planning Goal 12 governs transportation planning at the state level, and is implemented through the *Oregon Transportation Plan*. Oregon Administrative Rule 660-012, the *Transportation Planning Rule*, (TPR) provides structure for the transportation system plan.

Goal 12 of the *Oregon Transportation Plan* is intended to provide and encourage a safe, convenient and economic transportation system. Goal 12 specifies that “a transportation plan shall:

- Consider all modes of transportation including mass transit, air, water, pipeline, rail, highway, bicycle and pedestrian;
- Be based upon an inventory of local, regional, and state transportation needs;
- Consider the differences in social consequences that would result from utilizing differing combinations of transportation modes;
- Avoid principal reliance upon any one mode of transportation;
- Minimize adverse social, economic and environmental impacts and costs;
- Conserve energy;
- Meet the needs of the transportation disadvantaged by improving transportation services;
- Facilitate the flow of goods and services so as to strengthen the local and regional economy; and
- Conform with local and regional comprehensive land use plans. Each plan shall include a provision for transportation as a key facility.”

The Oregon TPR (*OAR 660-012-0065*) identifies transportation facilities, services and improvements that may be permitted on rural lands consistent with Goals 3, 4, 11 and 14 without a goal exception. These include: “transportation facilities, services, and improvement other than those listed in this rule that serve local travel needs. The travel capacity and level of service of facilities and improvements serving local travel needs shall be limited to that necessary to support rural land uses identified in the acknowledged comprehensive plan or to provide adequate emergency access.”

Under the TPR, transportation improvements on rural lands must meet different requirements than improvements in urban areas. The TPR lists various types of improvements determined to be consistent with statewide planning goals for rural and agricultural areas including the West of Sandy River study area. Allowable improvement types include:

- minor roadway realignment, intersection channelization and median turn lanes;
- new two-lane roadways intended to reduce local traffic on state highways;
- bikeways, footpaths and recreational trails;
- park-and-ride lots;
- expansion or alteration of public use airports, provided the improvements are not meant to serve a larger class of airplanes; and
- other transportation facilities, services and improvements that serve local needs. These are limited to improvements to provide adequate emergency access or to support land uses identified in the acknowledged comprehensive plan.

For transportation improvements within an exclusive farm use (EFU) or forest zone, design alternatives must be evaluated. The chosen alternative must be the one with the least impact on lands in the immediate vicinity devoted to EFU or forest use.

Transportation facilities and improvements not meeting TPR requirements for rural lands require an exception in order to be allowed. Exceptions are subject to specific standards and criteria for approval described in the TPR. None of the transportation improvements recommended in the West of Sandy River TSP are believed to require an exception.

There are a number of State transportation plans that affect transportation policy throughout Oregon including: *Oregon Transportation Plan* (September 1992), the *Oregon Highway Plan* (June 1999), the *Oregon Bicycle and Pedestrian Plan* (June 1995), and the *Oregon Rail Freight Plan* (August 1994).

The *Statewide Transportation Improvement Program* (STIP) is the Oregon Department of Transportation's (ODOT) short term capital improvement program, providing project funding and scheduling information for the department and the state's metropolitan planning organizations. It is a four-year program developed through the coordinated efforts of the department, federal and local governments, tribal governments and the public. The 2000-2003 Statewide Transportation Improvement Program (STIP) lists one project in the study area, replacement of the Stark Street Viaduct, a bridge project. No other planned improvements within the study area are included in the STIP.

The study area for the *Mt. Hood (U.S. 26) Transit Feasibility Study* extends from west of Rhododendron to the OR 35 junction. Results from the *Mount Hood Corridor Final Environmental Impact Statement* indicate that future travel demand will exceed the existing corridor capacity for an extended period of time during summer and winter weekend days. In order to address this potential capacity shortfall, ODOT has been considering travel options for the corridor, such as transit service to the Mt. Hood area ski resorts. The transit feasibility study considers possible transit service and includes proposed park-and-ride locations in Gresham and Sandy to address seasonal capacity needs.

Recommendations in the West of Sandy River Rural Area Transportation System Plan are consistent with and supportive of the goals, policies, and standards in these various plans.

EXISTING CONDITIONS

This section summarizes existing conditions on Multnomah County's roadway system in the study area, providing a baseline of information from which the evaluation of the County's transportation system will be made. It includes a summary of the current roadway functional classification policy, roadway physical features such as pavement width and condition, bridge inventory and condition, speed zones, truck restrictions, traffic control, traffic crash history and safety conditions, traffic volumes and operation characteristics, and existing bicycle and pedestrian facilities.

Functional Classification

Multnomah County recognizes three rural roadway functional classes within the study area: arterial, collector and local roads. Each are described below, followed by a description of US 26, the only State highway through the study area. Figure 10 summarizes Multnomah County's roadway functional classification for County roads and State highways in the study area.

Rural Arterial Roads

Rural arterial roads are the primary means of access into the County's large rural districts and often connect between counties to accommodate through movements. Rural arterials connect to freeways or highways, and link rural collector and local roads to the urban area and other regions. Rural arterial roads carry greater traffic volumes than rural collector roads. Examples of rural arterials in the study area include portions of Stark Street, Division Street, Orient Drive and 282nd Avenue.

Rural Collector Roads

Rural collector roads serve to distribute automobile traffic over large areas and generally connect to urban streets or rural arterials. Where rural collector streets connect to adjacent counties, through traffic will occur with volumes greater than local rural roads. Rural collectors may also provide for recreational trips by auto, bicycle and equestrian. Primary access is provided to land uses adjacent to the facility and over large rural districts. Examples of rural collectors in the study area include 302nd Avenue, Dodge Park Road, Lusted Road, Oxbow Drive, and eastern portions of Division Street.

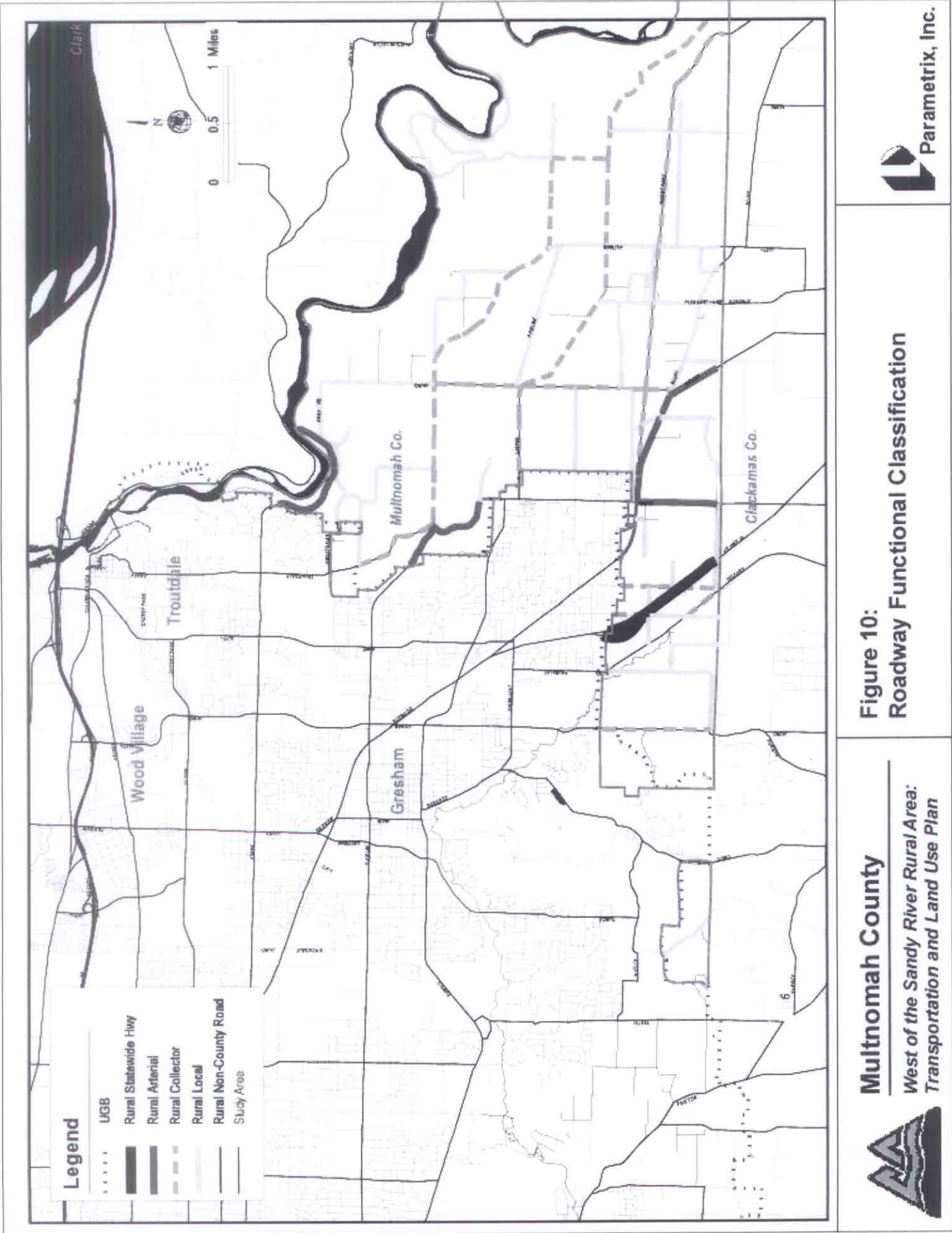
Local Rural Roads

Local roads provide access to abutting land uses on low traffic volume roadways. In rural areas local roads serve automobile and farm circulation, as well as local pedestrian, bicycle and equestrian uses. Examples of local rural roads in the study area include portions of Chase Road, Jackson Road, Altman Road, and Pipeline Road.

State US 26

US 26 is under the jurisdiction of the Oregon Department of Transportation (ODOT). It is a four-lane rural divided highway. In the 1999 Oregon Highway Plan (OHP) under the highway classification system, US 26 is designated as a Statewide Highway on the National Highway System (NHS) and is part of the designated freight route system. It is designated for access management purposes as an expressway. Multnomah County classifies US 26 as a principal arterial.

Figure 10 summarizes Multnomah County's roadway functional classification for County roads and State highways in the study area.



Roadway Inventory

More than 25 miles of roadway in the study area under Multnomah County's jurisdiction are classified as Rural Collector or Arterial. Multnomah County collects and maintains a current database of conditions on these roadways, including pavement width, pavement condition, bridge inventory, and traffic crash history. The following sections summarize the County's roadway database.

Pavement Width

Study area roadways generally have very narrow or no shoulders. Shoulders improve safety for motor vehicles, bicyclists, pedestrians and accommodate slower moving farm equipment. Multnomah County recently updated design standards for rural roadways to include minimum shoulder widths of 1.5 (5.0 ft.) meters for rural local and collector roadways and 1.8 (6.0 ft.) meters for rural arterials. Most roadways in the study area have shoulders narrower than the new standards. Roadways must be a minimum of 7.3 meters (24.0 ft.) wide to accommodate two-way motor vehicle traffic before shoulders can be striped. Figure 11 summarizes roadway widths in the study area. Proposed improvements discussed later in this document include enhancing existing shoulder widths on roads serving recreational and agricultural traffic needs.

Pavement Condition

Multnomah County routinely inventories, tests and then grades the County roadway system pavement conditions using classification grades ranging from *excellent* (no surface or structural damage) to *failing* conditions (significant surface and structural problems). The majority of roadways in rural Multnomah County exhibit *Good*, *Very Good* or *Excellent* conditions as shown in Table 8; none are rated with failing conditions.

Table 8: Pavement Condition Summary

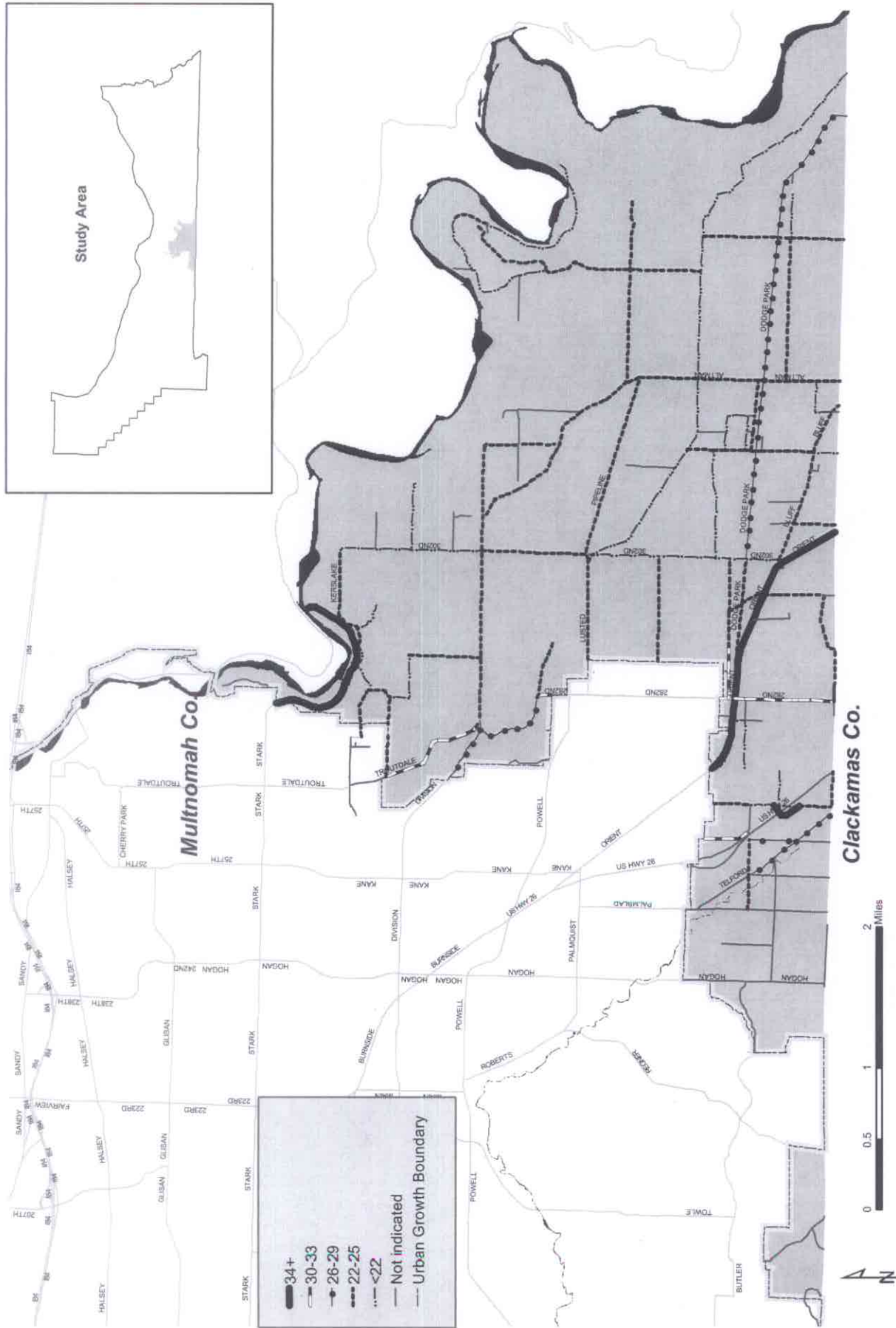
Pavement Rating	Percentage of Study Area Roadways 12/15/00
<i>Excellent</i>	39.2%
<i>Very Good</i>	44.7%
<i>Good</i>	16.0%
<i>Fair</i>	0.2%
<i>Poor</i>	0.0%
<i>Very Poor</i>	0.0%
<i>Failed</i>	0.0%

Bridge Inventory/Condition

Multnomah County maintains three historic bridges in the study area. The following information summarizes information provided by the County concerning the status of these historic bridges.

Stark Street Bridge over Sandy River

The Stark Street Bridge, constructed in 1914, is one of the oldest steel truss highway bridges in Oregon. The bridge is a contributing resource to the Columbia River Highway Historic District, which was listed in the National Register of Historic Places in 1983. National Register-listed resources are protected by the National Historic Preservation Act of 1966 as amended.



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**Figure 11:
Pavement Width**

Multnomah County

*West of Sandy River Rural Area:
Transportation and Land Use Plan*



Currently the bridge can carry traffic up to the legal load limit of 40 tons (25 tons for Type III trucks). The 2000 routine inspection report indicated that the bridge was in good condition with some deterioration noted on the structure and roadway deck. The bridge's 18-foot wide roadway is too narrow for current traffic volumes and does not meet current design standards. The average daily traffic count measured in 1999 was 5800.

Stark Street Viaduct

Constructed in 1915, the Stark Street Viaduct was built in the same period as the Columbia River Highway in the Columbia Gorge and has design elements similar to the structures on that highway.

Stark Street serves as one of the main routes connecting Portland with the scenic Columbia River Highway. The Stark Street Viaduct and the Stark Street Bridge form a vital link across the Sandy River connecting nearby communities.

The 2000 routine inspection report indicated that the viaduct was in good condition. Over the years, however, the deck has been overlaid several times, resulting in approximately 18 inches of asphalt. This excessive wearing surface thickness has reduced the capacity of the bridge from its design load of 40 tons to a recommended load of 24 tons. The bridge has been posted for this reduced load capacity.

Palmblad Road Bridge

This structure is a single-span, 33-foot, two-lane bridge crossing Johnson Creek south of Gresham, Oregon. Built in 1930, it is one of the first bridges constructed across Johnson Creek in this vicinity. Though locally important, the proximity of other bridges on SE Hogan Road in Multnomah County and SE 26th Avenue in Clackamas County allow for alternate detours in case of closures.

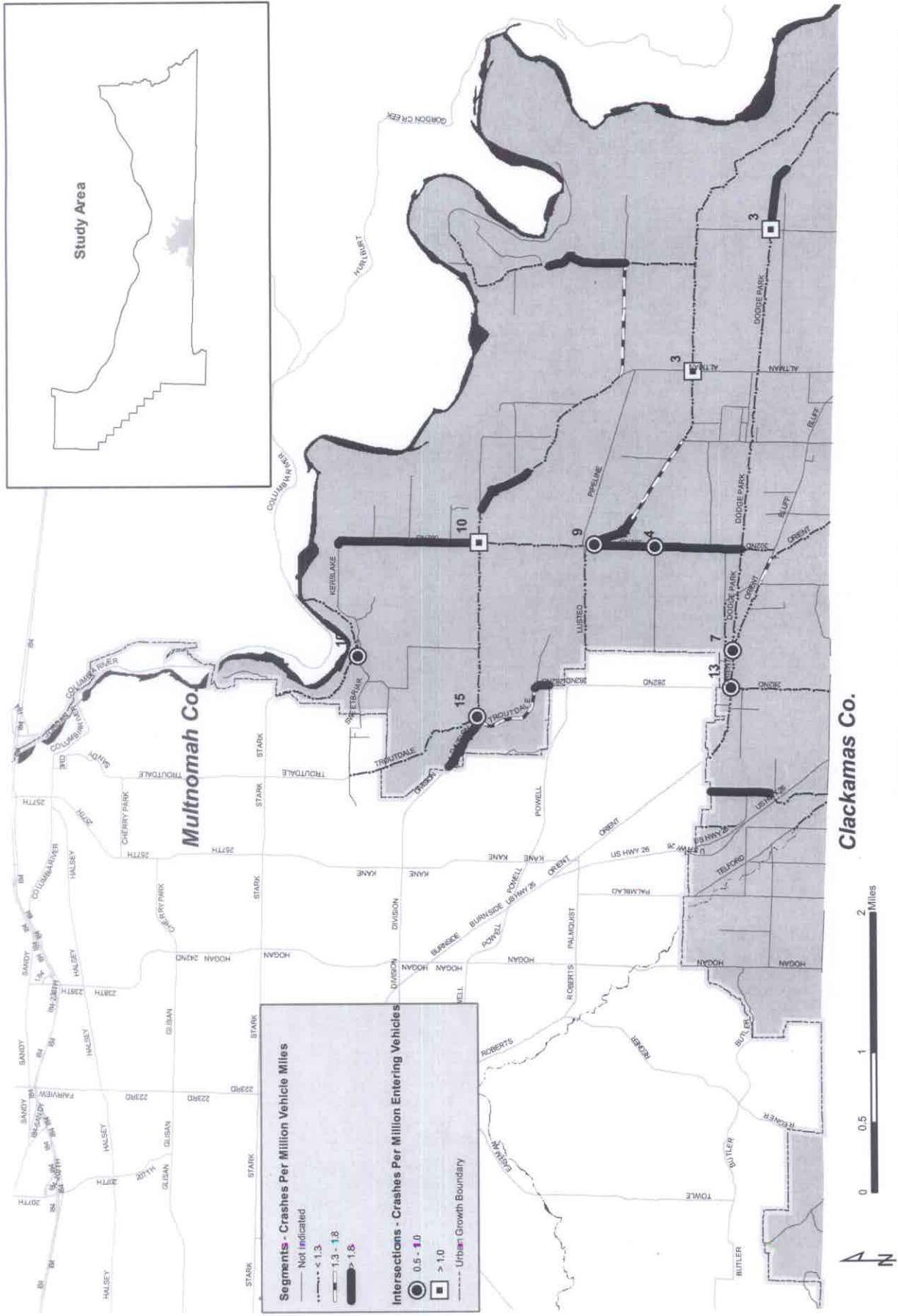
Traffic Crash History/Safety Issues

Crash history plays a critical role in identifying potential traffic safety issues. Multnomah County records and summarizes reported traffic crashes on County roads within the study area.

For a consistent method of measuring crash history, safety experts have devised crash rate parameters for road segments and intersections. For road segments, the rate is calculated as the number of crashes per million vehicle miles traveled. For intersections, the rate is calculated as the number of crashes per million entering vehicles. Figure 12 summarizes the reported traffic crash history on Multnomah County's roadway system within the study area.

Note: These figures are not considered indicators of substandard roadway or traffic control conditions. For example, some intersections show high crash rates due to the low level of background traffic, and the crashes themselves may be due to driver error, rather than improper roadway and traffic control conditions.

Over the three-year period (1996-1998) three separate crashes along Division Street resulted in fatalities - two at Troutdale Road and one at Oxbow Road. In all cases the crashes occurred as a result of excessive speeding, and in two cases alcohol or drug use was also involved. Another fatal crash occurred along Lusted Road between 282nd Avenue and 302nd Avenue as a result of a driver losing control of the vehicle.



Multnomah County
 West of Sandy River Rural Area:
 Transportation and Land Use Plan

**Figure 12:
 Traffic Crash History (1996-1998)**

MULTNOMAH COUNTY OREGON
 Geographic Information Systems
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Multnomah County recently installed parking restrictions and traffic control measures along Lusted Road to help improve safety conditions near Sam Barlow High School. The County also installed no-passing zones on 302nd Avenue both north and south of the high school. Eliminating parking on Lusted Road reduces potential conflict points, which is likely to reduce traffic crash rates in the immediate area.

Traffic Control

Traffic control in the study area predominantly consists of stop signs on minor street approaches at unsignalized intersections, and in some cases all-way stop-control for the intersection approaches. Traffic control at intersections along arterial roads and collectors is generally sufficient. Orient Drive/282nd Avenue and Troutdale Road is the only signalized intersection in the study area. There are also a few intersections posted with flashing signals and advance warning signs.

Speed Zones

Allowable speeds on Oregon's roads are governed by the "basic speed rule." The "basic speed rule" requires a motorist to operate at a speed that is reasonable and prudent considering the conditions present. Where not otherwise posted, a 55-mph speed is the statutory maximum in rural areas. The posting of a lower speed is permitted when authorized by the Oregon Department of Transportation. Multnomah County has requested lower speeds on numerous roads in the study area and has received authorization to post speeds ranging from 30 to 50 mph. The Oregon statutes and administrative rules specify the procedures, including engineering studies and investigations, upon which Department of Transportation may authorize posting of speeds on County roads. Multnomah County works actively with the Oregon Department of Transportation staff and requests speed zone investigations where conditions warrant them. Multnomah County installs the speed signs when approvals are received from the state.

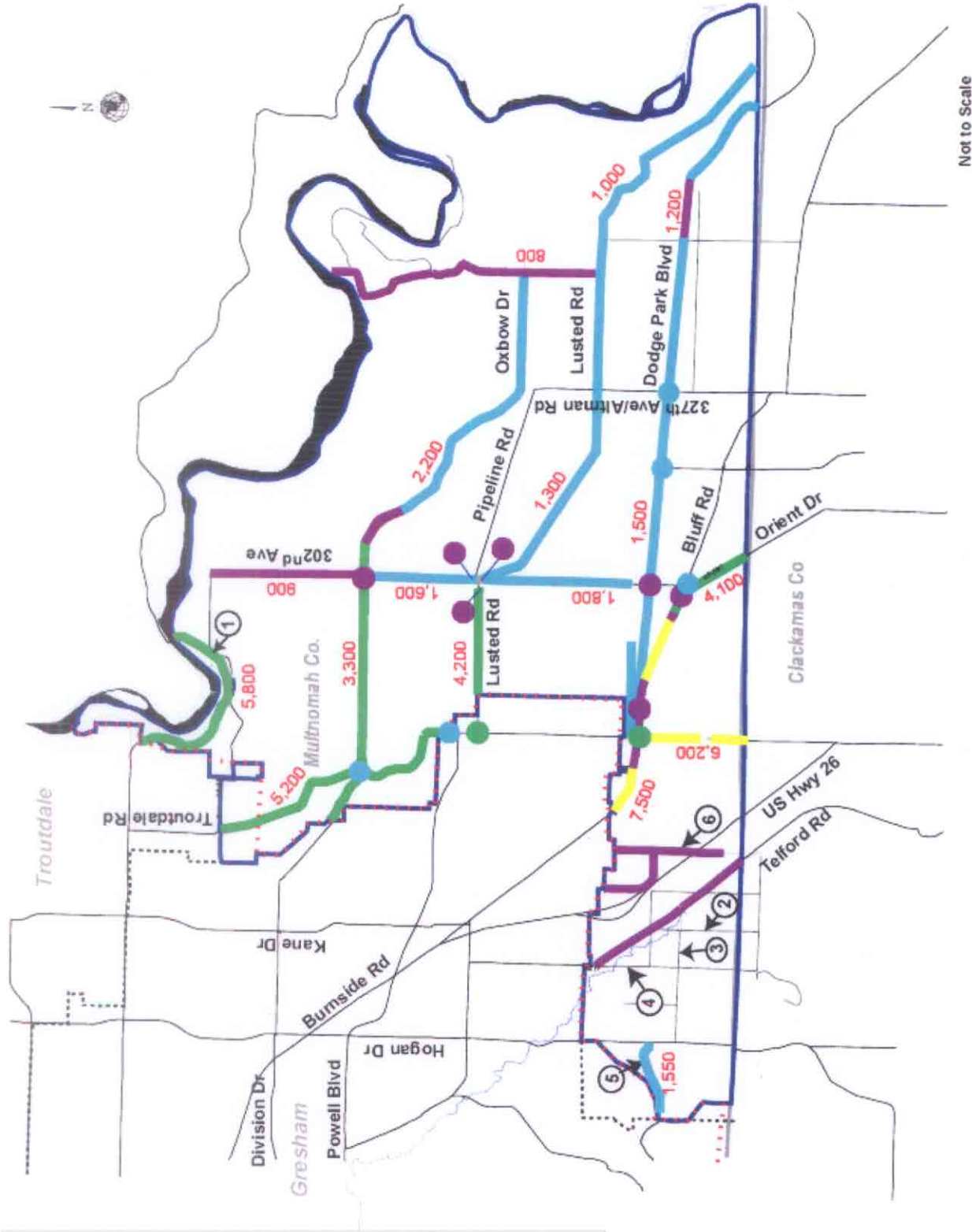
Truck Restrictions

Truck traffic is restricted to statutory requirements as described under ORS 313 for legal weight and size limits when traveling on a road under Multnomah County jurisdiction. Trucks wishing to travel in excess of the legal weight and size requirements may obtain a signal or annual trip permit to travel on certain County roads by contacting the Multnomah County Right-of-Way Permit Section. Truck traffic carrying oversized loads along the US 26 corridor are typically routed along Orient Drive due to overpass size restrictions on US 26.

Traffic Volumes

Multnomah County provided historical and current traffic count data including daily counts for selected roadway segments and p.m. peak hour turn movement counts at key intersections. Historical turn movements were increased to represent estimated 2000 peak hour volumes for analysis purposes.

Figure 13 summarizes the current (1999) daily traffic volumes on the major study area roadways. Traffic conditions range from 4,000-6,000 vehicles per day on Lusted Road, Stark Street, 282nd Avenue and 302nd Avenue. Other roads in the study area experience traffic volumes ranging from 1,000-4,000 vehicles per day.



Multnomah County

West of the Sandy River Rural Area:
Transportation and Land Use Plan

Figure 13:
1999 Daily Traffic and Peak Hour
Levels-of-Service



Parametrix, Inc.

Traffic Operations

Intersections are the locations in the transportation network with the most potential conflicts and thus typically the greatest level of congestion and delay. The concept of “level of service” or LOS is widely used to quantify intersection operations. Levels of service are letter grades A through F based on the level of delay calculated at intersections, with LOS A representing free flowing conditions and LOS F representing jammed conditions. LOS B through E represent increasing levels of delay and congestion. Delay is calculated based on factors including vehicle turning movements, intersection lane geometry, and traffic control. Current p.m. peak hour turning movements were used to calculate p.m. peak hour intersection levels of service at key signalized and unsignalized intersections using the methodology from the 1997 *Highway Capacity Manual* (HCM)¹¹, published by the Transportation Research Board. Figure 13 summarizes the 1999 levels of service (LOS) at the key intersections, with turning movements shown in Figure 14. Figure 13 also shows levels of service for key roadway sections in the study area.

For signalized intersections and those with all-way stop control, the intersection LOS is based upon the delay for all approaches and all turning movements.

For intersections where only the minor road is controlled by the presence of stop signs, the level of service is calculated for the “critical movement.” The critical movement is the one for which motorists experience the longest delays. Typically, this is the left turn from one of the minor road’s approaches onto the major road. Motorists seeking to make left turns from the minor road onto the major road have to wait for gaps in the traffic approaching from both directions, thus accounting for longer delays. In contrast, vehicles making right turns have to wait only for traffic from one direction. Through traffic on the major road has the right of way and is not subject to delays.

No intersection capacity deficiencies were identified based on analysis of existing traffic volumes (i.e., LOS D or worse). All intersections analyzed operated today at LOS C or better in the PM peak hour as shown in Table 9. The table differentiates between those with two-way stop control and those with stop signs on all approaches or traffic signals.

The vast majority of roads in rural Multnomah County are two-lane roads. Rural roadway segment capacities were estimated based on the operations-level methodology in the 1994 *Highway Capacity Manual* (HCM) and account for factors such as lane and shoulder width, percentage of heavy vehicles, general terrain type (level, rolling, or mountainous), percent of no-passing zones, and the directional split of traffic. As with intersections, there are six LOS standards, ranging from LOS A, where traffic is free-flowing, to LOS F, where the system is congested making many, if not all traffic movements very difficult. As shown in Figure 13, all roadway segments operate at LOS D or better with existing traffic volumes.

¹¹ The HCM method calculates both the vehicular capacity and the driver delay associated with various intersection turning movements. For intersections, the procedure bases the level of service on control delay, which accounts for the time required for drivers to slow, stop and pass through an intersection. For two-way stop-controlled intersections, the procedure bases LOS on the amount of control delay experience by the most critical movement, typically a minor street left turn.

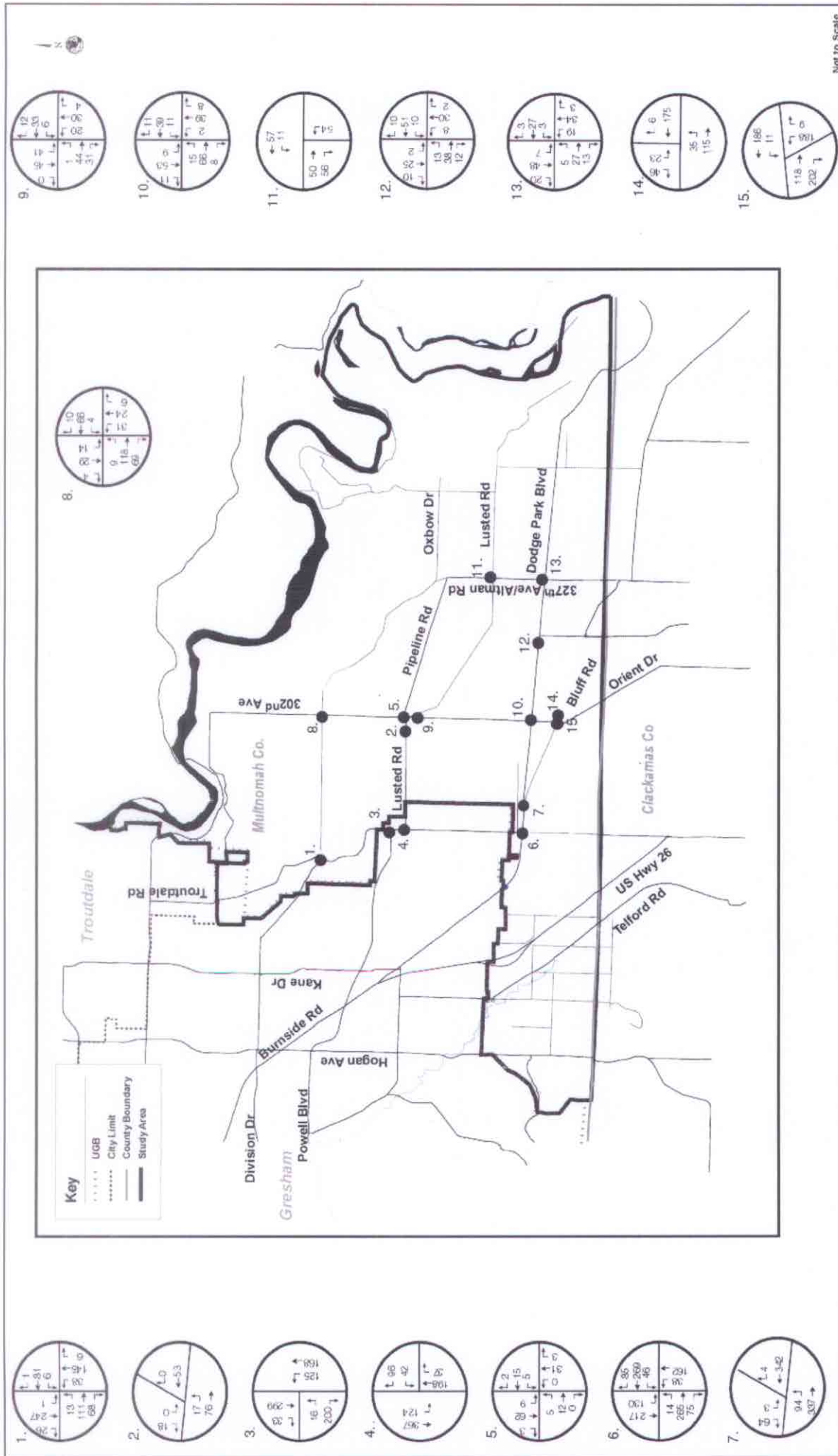


Figure 14:
1999 PM Peak Hour Turning Movements

Table 9: 2000 PM Peak Hour Intersection Levels of Service

Intersection	All-way Stop or Traffic Signal		Two-Way Stop		
	Avg. Delay (sec)	LOS	Critical Mvt.	Delay (sec)	LOS
SE Division Dr / SE Troutdale Rd	11.9	B	--	--	--
SE Powell Valley Rd / SE 282 nd Ave *	13.3	B	--	--	--
SE Lusted Rd / SE 282 nd Ave *	17.1	C	--	--	--
SE Orient Dr / SE 282 nd Ave (Signal)	34.2	C	--	--	--
SE 302 nd Ave / SE Dodge Park Rd (Stop Controlled)	7.9	A	--	--	--
SE 302 nd Ave / SE Lusted Rd	7.4	A	--	--	--
SE 302 nd Ave / SE Pipeline Rd	7.9	A	--	--	--
SE Orient Dr / SE Bluff Rd	--	--	Left from WB Bluff	14.9	B
SE Orient Dr / SE Dodge Park Rd	--	--	Left from WB Dodge Park	12.4	B
SE Lusted Rd / SE Pipeline Rd	--	--	Left from SB Pipeline	7.4	A
SE 302 nd Ave / SE Bluff Rd	--	--	Left from SB 302 nd	11.6	B
SE 302 nd Ave / SE Division Dr	--	--	Left from NB 302 nd	11.6	B
SE Pleasant Home Rd / SE Dodge Park Blvd	--	--	Left from NB Pleas. Home	11.1	B
SE 327 th Ave / SE Oxbow Park Drive	--	--	Left from NB 327 th	9.8	A
SE 327 th Ave / SE Dodge Park Blvd	--	--	Left from NB 327 th	10.3	B

* Both of these are T intersections. Some movements currently experience long delays. Although they are not all-way stop controlled, this analysis assumes they were all-way stop controlled.

Pedestrian and Bicycle Systems

Both residents and visitors make bicycle and pedestrian trips in the study area. Recreational bicyclists from outside the study area are drawn to the area for its beauty and Oxbow Regional Park. Many club bicycle rides are routed through the area. Paved shoulders provide the primary bicycle and pedestrian facilities in the study area.

Few sections of the study area arterial/collector roadway system have sufficient shoulder width and paved surface to serve as pedestrian facilities. Shoulders on most roadways in the study area are less than the County minimum of 1.5 meters (1.8 m on rural arterials). The regional Springwater Corridor multi-use path also runs through the study area near along Telford Road.

Public Transportation System

Transit service in the study area changed in January 2000 with the introduction of SAMS, the City of Sandy's demand-responsive transit service. SAMS' service area extends to ¼ mile outside the City of Sandy boundary, and includes a daily connection to the Gresham MAX station. As of April 2000, after four months, SAMS ridership was up to 6,000 passengers per month, or about 260 to 300 passengers per day. Intercity travel between Sandy and Gresham accounted for approximately 80% of total ridership. With the introduction of SAMS, Tri-Met relocated Routes 26 and 80 outside the study area. Tri-Met Route 84 maintains service through the study area, with five runs daily in each direction between

Gresham and Sandy, including stops on Orient Drive and Powell Valley Road. As of June 2000, Tri-Met's Route 84 carried about 40 passengers per day.¹²

Tri-Met's MAX light rail passenger line runs between Gresham and downtown Portland. The closest MAX station is in the City of Gresham about two miles west of the study area.

Air, Rail, Water, Pipeline and Culvert System

Air Transportation

No public or private airports or airfields are located within the project boundaries. Portland International Airport is less than 15 miles to the northwest and provides a full range of commercial and private flight services. The Troutdale Airport, which serves primarily recreational air travel, is located on the north side of Interstate 84 less than five miles from the study area.

Rail Transportation

No public or private rail lines exist within the study area limits. The nearest rail facilities are the Union Pacific freight rail line, which runs along Interstate 84 north of the study area.

Water Transportation

There are no commercial water transportation uses in the rural area of Multnomah County west of the Sandy River. The Sandy River is used for recreational activities such as fishing, swimming and rafting.

The Columbia River is a significant water transportation route for Oregon and the western United States. Approximately five miles north of the study area, it is a key route for transport of bulk commodities such as grain and wood products between the United States and Pacific Rim nations.

Water Pipelines

The City of Portland Water Bureau maintains several major conduits through the study area from the Bull Run Watershed (the Appendix includes a map of the general conduit alignments). The northernmost conduit runs within the SE Division Drive/SE Oxbow Drive right-of-way west of 327th Avenue. A second conduit is located in the SE Pipe Line Road right-of-way from slightly west of 327th Avenue to slightly east of 302nd Avenue. The other conduits in the study area lie outside public right-of-way.

Gas Pipelines

Williams Gas Pipeline Company operates a natural gas transmission line in the western end of the study area that runs generally along the alignment of NE 242nd Avenue. NW Natural, the area's natural gas provider, does not operate any major transmission pipelines within the study area boundaries.

Culverts

In 1998, ODOT and ODF&W conducted a state-wide inventory of culverts to identify those available to salmonids and potential barriers to salmonid passage. In 2000, Multnomah County responded to ODOT /ODF&W's findings by conducting a more in-depth survey of the identified culverts. Culverts with potential for salmonid passage were ranked as high, medium or low priority for improvements based on a number of factors related to the affects of the culvert on fish passage and habitat. Of the more than 1500 culverts the County owns, 150 pass fish and 45 present fish passage barriers. The County has prioritized culverts with fish barriers based on factors such as environmental impacts, and restoration of fish habitat.

¹² SAMS information provided by Julie Stephens, City of Sandy transit manager, telephone conversation 5/24/00. Tri-Met ridership provided by Steve Callas, Tri-Met, telephone conversation 6/13/00.

Both the County and Metro have cited the Beaver Creek basin as having the greatest potential of re-establishing fish runs in the region.

FUTURE TRANSPORTATION SYSTEM CONDITIONS

Future traffic conditions were determined using output from the Metro regional travel demand forecasting model especially designed for rural areas in Multnomah, Clackamas and Washington Counties. Population and employment projections for the year 2020 were developed by Metro and local jurisdictions and used as inputs to the model. The model calculates future traffic volume forecasts for roadways included in the model network based on these population and employment projections. Moderate traffic growth is projected within the study area, primarily within the rural center and on connecting routes. The Metro model for unincorporated areas does not assume any expansion of the urban growth boundary. With the study area's population and employment forecasts obtained directly from Metro's approved land use forecasts, they reflect regional assumptions consistent with the other TSP's currently being developed for unincorporated Multnomah County.

Future Traffic Conditions

Future Traffic Volume Forecast Methodology

A growth rate was applied to existing traffic volumes to estimate future traffic volumes on study area roadways. Compound growth rates were developed by comparing 1994 and 2020 model projections along a series of screenlines through different regions of the study area. Growth factors were adjusted to account for the difference between the traffic counts and the model's 1994 base year.

Figure 15 summarizes projected 2020 PM peak hour turn movements at the intersections analyzed for existing conditions. PM peak hour traffic is generally projected to increase about 50 percent by 2020 compared to existing conditions.

Intersection levels of service were calculated based on projected 2020 PM peak hour turn movements. The results summarized in Table 10 show five intersections would fall below the County's standard for new and improved facilities of LOS C.

Projected 2020 volume-to-capacity ratios were reviewed for all collector and arterial segments in the study area based on the Metro travel demand model. All roadway segments in the study area were projected to function with an acceptable v/c ratio (less than .80).

282nd Avenue between SE Powell Valley Road and SE Lusted Road, which lies outside the study area, was also included in the review due to its significance to the study area's transportation system. The model projects SE 282nd Avenue between SE Lusted Road and SE Powell Valley Road to have a volume-to-capacity ratio greater than 1.0. This segment of SE 282nd Avenue is recommended for future intersection consolidation and signalization improvement to mitigate the unsatisfactory v/c ratio.

US 26

Future traffic volumes on the one-mile segment of US 26 through the study area are also expected to increase by about 50 percent between 1994 and 2020, based on the Metro travel demand model for unincorporated Multnomah County. The OHP specifies operating performance on state highways using peak hour volume-to-capacity (v/c) ratios rather than levels of service. The v/c ratio standard for US 26 in the study area is 0.70. Calibrated 2020 PM peak hour volume-to-capacity (v/c) ratios on US 26 in the peak southbound direction range 0.55 to 0.61 within the study area.

The projected increase in the v/c ratio is due to increased travel between Gresham and Clackamas County. Future land use development within the West of Sandy River Rural Area would account for only a fraction of overall growth.

Table 10: 2020 No Build PM Peak Hour Intersection Levels of Service

Intersection	All-way Stop or Traffic Signal		Two-Way Stop		
	Avg. Delay (sec)	LOS	Critical Mvt.	Delay (sec)	LOS
SE Division Dr / SE Troutdale Rd	26.3	D	--	--	--
SE Powell Valley Rd / SE 282 nd Ave*	80.9	F	--	--	--
SE Lusted Rd / SE 282 nd Ave*	239.9	F	--	--	--
SE Orient Dr / SE 282 nd Ave (signalized)	46.5	D	--	--	--
SE 302 nd Ave / SE Dodge Park Rd	8.4	A	--	--	--
SE 302 nd Ave / SE Lusted Rd	8.0	A	--	--	--
SE 302 nd Ave / SE Pipeline Rd	8.6	A	--	--	--
SE Orient Dr / SE Bluff Rd	--	--	Left from WB Bluff	31.8	D
SE Orient Dr / SE Dodge Park Rd	--	--	Left from WB Dodge Park	18.4	C
SE Lusted Rd / SE Pipeline Rd	--	--	Left from SB Pipeline	7.4	A
SE 302 nd Ave / SE Bluff Rd	--	--	Left from SB 302 nd	13.0	B
SE 302 nd Ave / SE Division Dr	--	--	Left from NB 302 nd	13.9	B
SE Pleasant Home Rd / SE Dodge Park Blvd	--	--	Left from NB Pleasant Home	12.0	B
SE 327 th Ave / SE Oxbow Drive	--	--	Left from NB 327 th	10.3	B
SE 327 th Ave / SE Dodge Park Blvd	--	--	Northbound Left	10.7	B

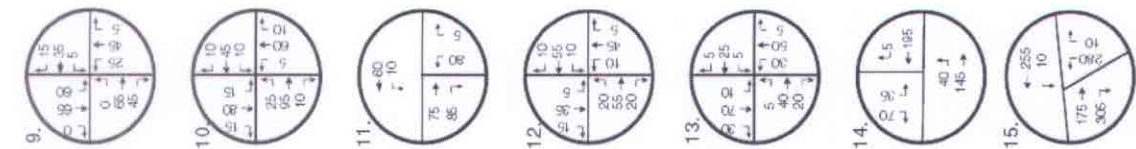
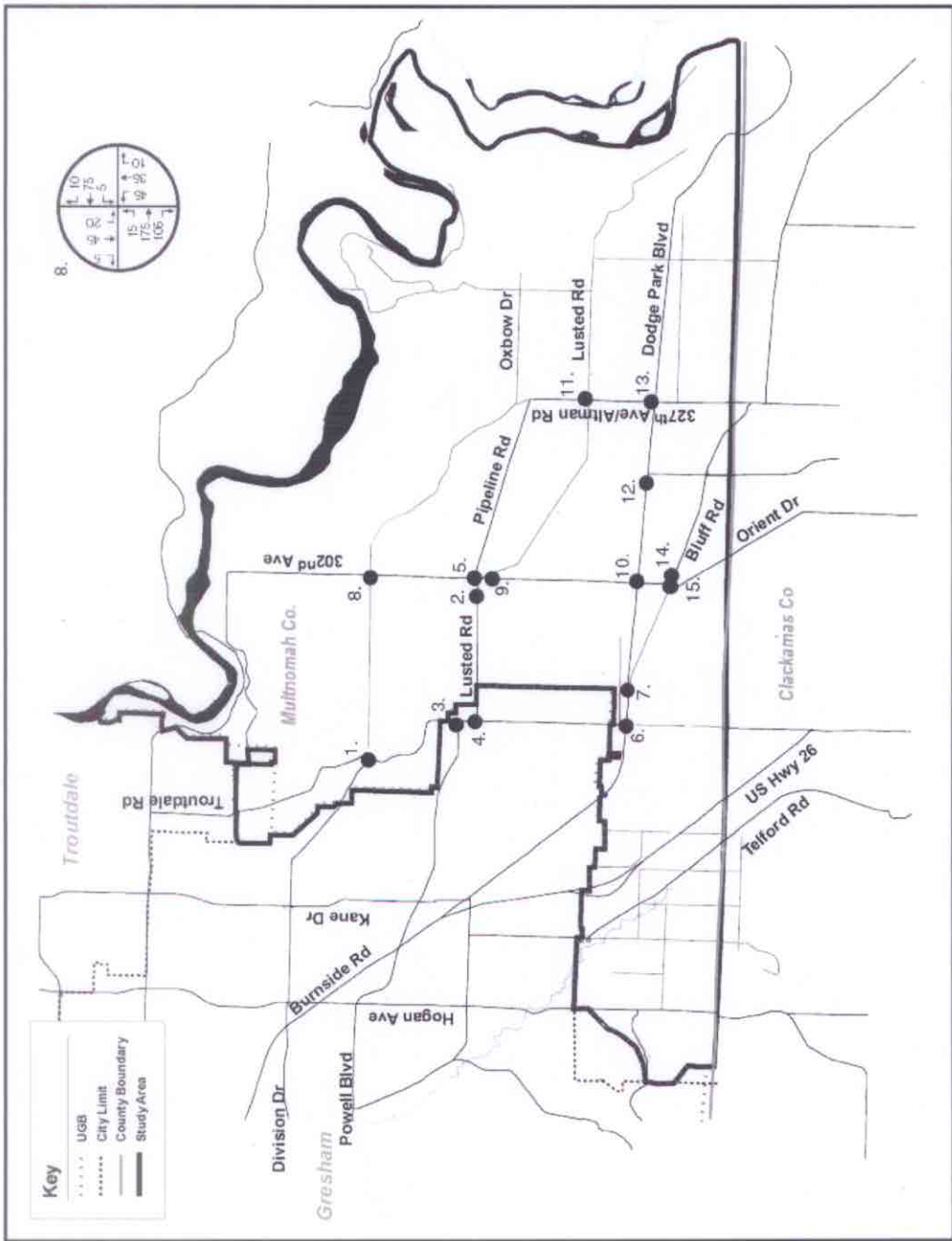
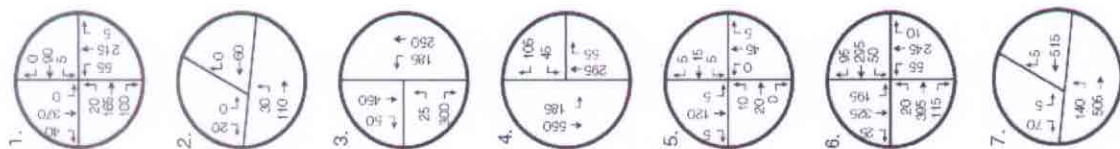
* Both of these are T intersections. Some movements currently experience long delays. Although they are not all-way stop controlled, this analysis assumes they were all-way stop controlled.

Future Public Transportation Conditions

Demand for public transit will likely increase in the future. As the area grows the number of residents commuting to the urban area will also grow. Both residents and farm workers in the area will likely seek more transit options in the future.

Future Bicycle and Pedestrian Conditions

Demand for bicycle and pedestrian facilities is expected to grow in the future. As both the rural area grows in population pedestrian demand will increase for fitness, recreation and for access to schools and businesses in the rural centers. Bicycle demand will increase both as a result of growth in the number of area residents and population growth in the urban area. The area will continue to be an attractive destination for recreational cyclists, and bicycle commuting could increase with employment growth in the surrounding urban area.



Not to Scale

Future Air, Rail, Water, Pipeline and Culvert Conditions

Air and Rail Conditions

No demand is anticipated for a new airport in eastern Multnomah County. Similarly, neither cargo nor passenger rail service is likely to be needed in the study area in the foreseeable future.

Water Conditions

As the urban area grows the Portland Water Bureau anticipates the need for a new conduit in the study area.

Pipeline Conditions

Williams Gas Pipeline Company, which operates a single natural gas transmission line in the western end of the study area, does not plan on constructing additional lines.

Culvert Conditions

No new culverts, beyond replacing those identified with fish passage issues, are anticipated in the right-of-way.

TRANSPORTATION SYSTEM IMPROVEMENTS

Transportation needs were assessed using existing data and input from stakeholders, staff and members of the public. Potential improvement alternatives for the various transportation modes were presented at a series of public and stakeholder meetings and revised in response to feedback obtained at these meetings. Recommended realignments were modified to address stakeholder concerns, primarily to avoid impacts on agricultural lands while still accommodating truck and agricultural vehicle traffic. The resulting transportation system improvements presented in the following section are focused on specific needs identified by users of the area's transportation network, while also meeting the requirements of the TPR for improvements in unincorporated areas.

The purpose of this section is to review design standards for each transportation mode and to identify recommended improvements based upon the preferred transportation system alternative for the West of Sandy River Rural Area. The preferred transportation system is the combination of improvements, strategies and standards to best meet goals and objectives established through the public process, while at the same time addressing State requirements in the *Transportation Planning Rule*.

Roadway System

Roadway System Design Standards

Multnomah County Design Standards (1999) provide minimum, maximum and preferred shoulder widths for the functional classifications of rural roadways, in acknowledgement of the broad range of facility users including agricultural, industrial and recreational vehicles.

In the West of Sandy River Rural Area, implementing the new County road standards will involve trade-offs between design speed, shoulder width, accommodation of non-motorized and agricultural facility users, and potential impacts on drainage ways and productive agricultural lands.

Roadway System Recommendations

Recommended Functional Classification Changes

Most of the functional classifications for roadways in the study area are classified consistently, both with respect to operational characteristics and with the classification used by adjacent jurisdictions. However, SE Bluff Road from SE Orient Drive to the Multnomah/Clackamas county line should be reclassified from a local street to a rural collector. SE Bluff Road and SE Dodge Park Boulevard are the primary connections to the Pleasant Home rural community. SE Bluff Road intersects SE Orient Drive in the Orient rural center area. Approximately half the traffic on SE Orient Drive east of SE Dodge Park Boulevard is to or from SE Bluff Road, which continues as a connecting route to the City of Sandy, where it intersects US 26 immediately west of the City of Sandy's downtown one-way couplet. Clackamas County classifies SE Bluff Road as a rural collector from US 26 to the County line. Reclassifying SE Bluff Road in Multnomah County from rural local street to rural collector would recognize its function in the rural area as a farm-to-market route connecting route between the West of Sandy unincorporated area and the City of Sandy, and would be consistent with Clackamas County's designation.

Recommended Level of Service Change

The County applies a level of service C standard for intersections in unincorporated areas. To strike an appropriate balance between mobility needs and constraints on capacity improvements in unincorporated areas, it is recommended that the standard for roadways in the Orient Rural Center be revised to LOS D.

This change addresses projected 2020 LOS D conditions at the intersections of Orient Drive/282nd Avenue, and allows for a greater range of land use development intensities in the rural center.

Recommended Review of Truck Route Signage

Current truck route restrictions limit the number of roads study area farmers are able to use for farm to market access. In review of the route restrictions, recent roadway improvements may have eliminated the need for the current restrictions. It is recommended that a comprehensive review of the truck restrictions be undertaken and that truck restriction ordinances are updated accordingly.

Intersection Improvements

Six intersection improvements have been identified in the study area. All six focus primarily on safety improvements including improvements to reduce conflicts and to correct sight distance limitations. As a side benefit, two of the six proposed improvements, Division Drive and Troutdale Road, and Orient Drive and Bluff Road, will reduce delays for critical movements.

A seventh project was identified outside the study area. Due to its significance to the study area transportation system, the intersections of 282nd Avenue/ SE Powell Valley Road and 282nd Avenue/Lusted were included in the transportation analysis. The analysis found that consolidating the two intersections would provide improved safety with increased capacity by replacing two stop sign controlled intersections with one signal-controlled intersection. Such an isolated increase in intersection capacity is not expected to noticeably affect route choice or traffic volumes on the intersecting roadways. Projected 2020 PM peak hour traffic volumes would satisfy the peak hour traffic signal warrant.

The projects above present possible solutions for some of the main safety issues recently identified in the study area. Additional projects may be identified in the future as traffic volumes increase and as traffic patterns change. Different solutions to these problems may be identified through further analysis or preliminary engineering. The location of the improvements identified above can be seen on Figure 16.

Bridge Improvements

Stark Street Viaduct

Replacement of the Stark Street Viaduct is necessary to accommodate truck traffic. It is included in the State's draft 2002-2005 *State Transportation Improvement Program* (STIP). Multnomah County began engineering on the viaduct in Fall 2001.

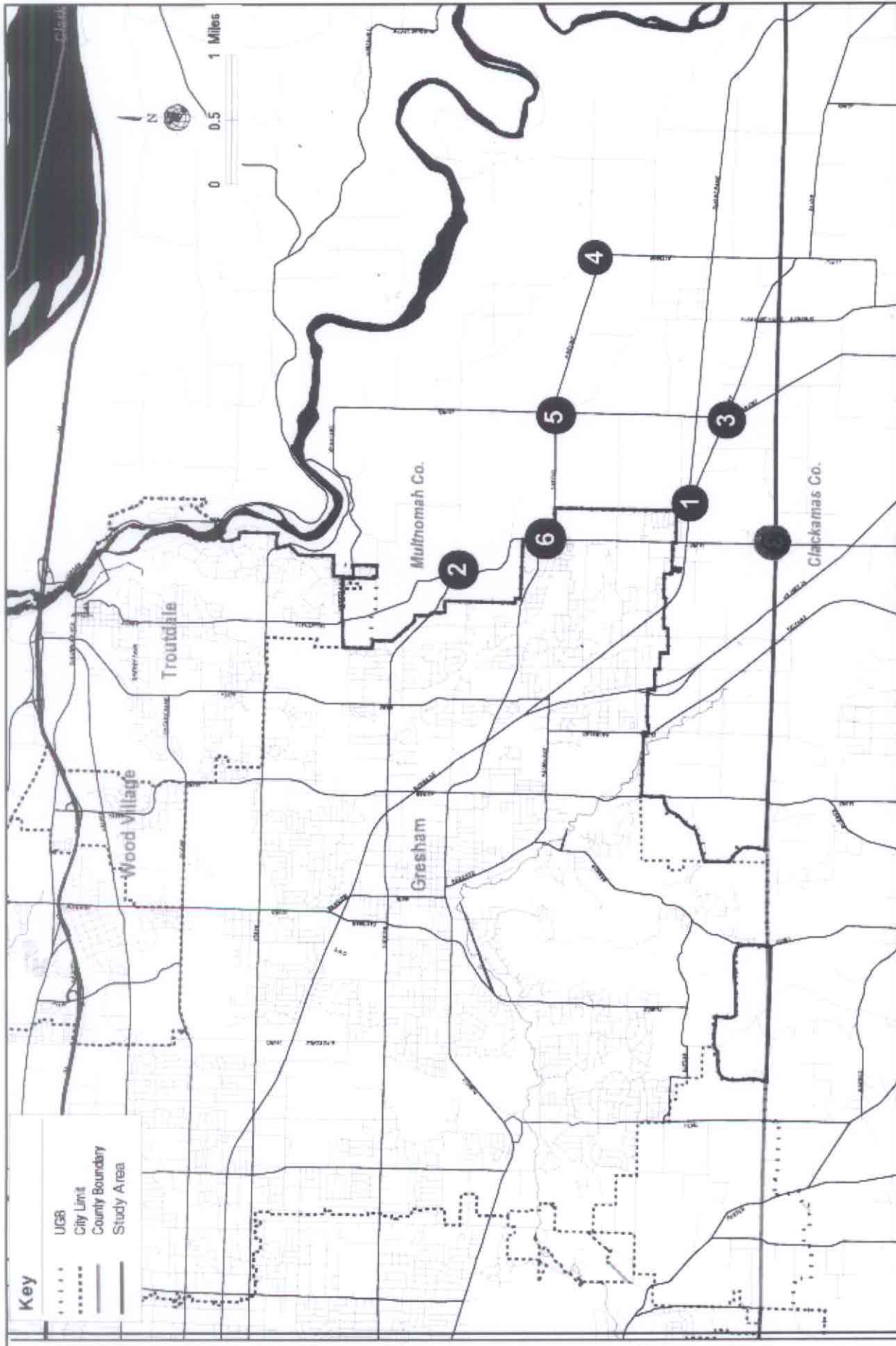


Figure 16:
Recommended Intersection
Improvement Locations

Multnomah County

*West of the Sandy River Rural Area:
Transportation and Land Use Plan*



Bicycle and Pedestrian System

This section identifies types of bikeways and walkways, their design standards and proposes roadways for bicycle and pedestrian facility improvements.

Types of Bikeways and Walkways

Shared Roadways are travel lanes shared by bicyclists and motorists. A motorist usually will have to cross over into the adjacent travel lane to pass a bicyclist on a shared roadway. Shared roadways are common on low volume roadways.

Shoulder Bikeways/Walkways are paved shoulders on rural roadways which provide a suitable area for bicycling and walking, and few conflicts with faster moving motor vehicle traffic. Most rural bicycle and pedestrian travel is accommodated on shoulder bikeways/walkways.

Multi-Use Paths are facilities separated from motor vehicle traffic by open space or barrier, either within the roadway right-of-way or within an independent right-of-way. These paths are typically two-way facilities used by pedestrians, joggers, skaters, and bicyclists. Shared multi-use paths are appropriate in corridors not well served by the street system, to create short cuts that link destination and origin points, and as elements of a community trail plan. The Springwater Corridor Trail, a regional multi-use path, runs through the southwestern portion of the study area.

Bicycle and Pedestrian Design Standards

The County's road design standards (1999) include minimum, maximum and preferred widths for roadway shoulders, which serve bicycle and pedestrian travel in unincorporated areas. The standards call for a minimum paved shoulder width of 1.5 m (5.0 ft.) on rural local and collector streets, and 1.8 m (6.0 ft.) on rural arterial roadways.

Improvements

Residents have requested improved bikeways and walkways for recreational trips and trips to the area's schools and businesses. Arterial and collector roadways in the study area with over 3,000 average daily vehicle trips and roads leading to Oxbow Park that are heavily used by bicyclists have been included on the bicycle and pedestrian system. A bikeway and walkways map is included in the Appendix identifying routes in the study area that need improvement to accommodate bicyclists and pedestrians.

Public Transportation System

The following sections provide definitions for functional classifications and suggested improvements to the public transportation system.

Public Transportation Functional Classification Definitions

These definitions of public transportation were developed by Metro in the Vision 2040 process. Only those pertinent to rural areas are included here.

Secondary Transit Network

This system is made up of secondary bus, minibuses, paratransit and park and ride services. Secondary service is focused more on accessibility, with frequency of service and geographic coverage more critical than the travel speed. Secondary transit is designed to be an alternative to the single-occupant vehicle by providing frequent, reliable service.

Secondary Bus provides coverage and access to a wide range of land uses. Secondary bus service runs as often as every 30 minutes. Weekend service is provided as demand warrants.

Minibus service provides coverage in lower density areas by providing transit connections to a wide range of land use options. Minibus services, which may range from fixed-routes to purely demand-responsive services (including dial-a-ride, employer shuttles, and bus pools), provide at least 60-minute response time on weekdays. Weekend service is provided as demand warrants.

Paratransit service is defined as non-fixed route service that serve special transit markets, including Americans with Disabilities Act (ADA) service throughout the greater metropolitan region.

Park and Ride facilities provide convenient auto access to regional trunk route service for areas not directly served by transit. Bicycle and pedestrian access as well as parking and storage accommodations for bicyclists are considered in the siting process of new park and ride facilities.

Interurban Public Transportation

Functional classification designations for interurban public transportation are as follows:

Intercity Bus provides connection points with the regional to nearby destinations, including neighboring cities, recreational activities, and tourist destinations. Tri-Met and the City of Sandy provide intercity bus service through the study area. Neither currently provides stops within the study area.

Passenger Intermodal Facilities serve as the hub for various passenger modes and the transfer point between modes. These regional facilities are closely interconnected with urban public transportation service and are highly accessible to all modes. They include Portland International Airport, Union Station and intercity bus stations.

Public Transportation Improvements

The cost-effective extension of transit service for local residents in the study area is limited by the area's low-density, rural nature. The benefit of increased public transportation would be a reduction in commuter trips between the rural center area and the Portland metropolitan area. It would service for rural residents accessing jobs in the urban area and urban residents accessing farming jobs in the rural area.

As the rural center area develops, transit stops and facilities such as park and ride lots could become more attractive to commuters. Commuters served by both SAMS and Tri-Met as well as car-poolers with urban destinations could use a small park-and-ride lot in the rural center. If a park-and-ride lot were constructed, it could be served by Tri-Met Route 84. As an alternative, arrangements could be made with the City of Sandy to serve a park-and-ride within the study area.

Air, Rail, Water, Pipeline Systems

This section describes design standards and planned improvements for air, rail, water, and pipelines. The pipeline system is the most likely of the four to affect the west of Sandy River rural area because of the importance of existing facilities already located in the area.

Air, Rail, Water, and Pipeline System Design Standards

Reference is made to the appropriate design standards used within the industry and/or professional practice.

Air Transportation

The design standards used for design of airports are found in the Federal Air Administration's (FAA) advisory circulars. FAA Advisory Circulars 150-5300-13 and 150-5320 are the primary design standards of airports.

Rail Transportation

The design standards used for design of new track are the American Railway Engineering Association design standards.

Pipelines

The design standards used by Northwest Natural Gas are American Society of Testing and Materials (ASTM) and American National Standards Institute (ANSI) design standards.

Air, Rail, Water, Pipeline and Culvert System Improvements**Air Transportation**

Portland International Airport, approximately 15 miles northwest of the study area, plans to provide additional runway capacity in the future.

Water Pipelines

The Portland Water Bureau plans to construct a future conduit within the right-of-way of Dodge Park Boulevard and Orient Drive.

Culverts

Eighteen fish barrier culverts identified for future improvements are within the West of the Sandy River Rural Area, most of which are in the Beaver Creek basin. A map of significant fish passage culverts is included in the Appendix.

Findings and Conclusions for Transportation System Improvements

Most of the proposed roadway improvements are realignment and intersection improvement projects intended to improve conditions that are a result of the rural nature of the area. Shoulder widening improvements would increase motor vehicle safety and benefit pedestrian and bicycle travel. The County will develop project cost estimates and priority rankings for recommended improvements as part of the CIP process, which will evaluate, prioritize and select projects for funding on a countywide basis. The County's CIP is being updated in 2002 and will include projects identified in this plan after it's adopted.

Regulatory changes are also proposed affecting functional classification designations and, for the Rural Center, intersection level of service standards. The functional classification change would reclassify SE Bluff Road from SE Orient Drive to the Multnomah/Clackamas county line. It would provide a closer match between roadway classification and the land use and travel patterns served by the particular roadways.

To balance mobility needs for the Orient Rural Center with constraints on capacity improvements in unincorporated areas, it is recommended that the intersection level of service standard for roadways in the Orient Rural Center be revised to LOS D. This change addresses projected 2020 conditions at the intersections of Orient Drive/282nd Avenue, and Orient Drive and Bluff Road, and allows for a greater range of land use development intensities in the rural center.

Due to the unique geographic character of the County's jurisdiction, the County will be adopting four separate transportation system plans. Once all the transportation system planning is complete the County's Comprehensive Framework Plan and ordinances will be updated with any necessary changes.

These proposed regulatory changes together with the recommended transportation improvements described below will accommodate proposed development plans within the West of Sandy Rural Area, in particular the zoning changes proposed for the Orient Rural Center.

Figure 16 illustrates the general location of the specific roadway improvements in the West of Sandy River Rural Area proposed for inclusion in the County's rural area CIP. Individual improvements are shown in figures included in the *Recommended Transportation Improvements* Appendix, and described in Table 11.

None of the identified improvements are anticipated to impact EFU. If, upon more detailed engineering, a project is identified to impact EFU, compliance with the TPR will be undertaken at that time.

Table 11: Recommended Improvements

Improvement	Description	Jurisdiction
1 (Appendix Figure A-1)	<i>Orient Road/Dodge Park Boulevard Realignment</i> Realign the intersection to create a more perpendicular angle. Driveway modifications would be required to serve the autobody shop in the northwest quadrant of the intersection.	County
2 (Appendix Figure A-2)	<i>Division Drive/Troutdale Road Realignment.</i> Eliminate the northeast leg of the intersection between SE Division Drive and SE Troutdale Road to create one intersection. Realign each end of the segment proposed for closure. While projected 2020 PM peak hour traffic volumes satisfy signal warrants, signalization is not recommended until additional warrants are satisfied. All-way stop control would provide LOS D with projected 2020 PM peak hour traffic volumes, while adding an eastbound right turn lane would provide LOS C.	County
3 (Appendix Figure A-3)	<i>302nd Avenue/Orient Drive/Bluff Road Realignment.</i> Potential options include realigning SE Orient Drive to intersect SE Bluff at a more perpendicular angle or creating a left turn lane for eastbound traffic on SE Orient Drive. Either option may require realignment of SE Teton Drive. Further engineering analysis will be necessary to determine a preferred alignment. Signalize realigned intersection when warranted.	County
4 (Appendix Figure A-4)	<i>Oxbow Drive/327th Avenue Realignment.</i> Channelizing the broad paved area on SE 327 th Avenue at the approach to SE Oxbow Drive to create a more perpendicular intersection is recommended to improve sight distance and reduce the potential for conflict between westbound left turns and northbound left turns.	County
5 (Appendix Figure A-5)	<i>Lusted Road/302nd Avenue/Pipeline Road Realignment/ Intersection Consolidation.</i> Further engineering analysis is recommended to determine if intersection consolidation is feasible given the surrounding vertical grades and the location of a sewage holding tank in the center of the intersection. Recent parking restrictions enacted by the County may be adequate for the near term.	County
6 (Appendix Figure A-6)	<i>Lusted Road/Powell Valley Road/282nd Avenue Consolidation.</i> Realignment to connect SE Lusted Road directly with SE Powell Valley Road is included in the County's Capital Improvement Plan and Program. The project would require further engineering analysis and coordination with the City of Gresham to develop a recommended alignment. A traffic signal is warranted based on projected 2020 PM peak hour volumes, and would provide LOS B operations.	County/City of Gresham
7	<i>282nd Avenue/Stone Road Turn Lanes</i> The addition of turn lanes in the northbound and southbound direction on 282 nd would reduce the high incidence of rear end crashes at this location. Some roadway widening would be necessary.	County
8 (Appendix Figure A-7)	<i>Shoulder Widening to Meet Updated Standards</i> Prioritization for shoulder improvements within the West of Sandy River rural area should be given to roadways connecting to school sites, especially Barlow High School. Proposed shoulder widening should be evaluated based on potential impacts on drainage and adjacent productive lands. For shoulders wider than 1.8 meters, the adopted County standards require paved width of 1.5 meters. The remaining 0.3 meters may be unpaved. Shoulder widening should be incorporated into routine roadway maintenance wherever possible.	County/Metro

POLICIES AND STRATEGIES

Recommended Policies and Strategies for the West of Sandy River TSP

Policy 27

Implement a balanced transportation system that is safe and efficient in meeting the needs of all modes of travel for area residents and those traveling through the area by improving roadways to provide safe conditions for motorized and non-motorized travel.

Strategies:

- 27.1 Monitor crash rates for all modes of travel, and focus safety improvement resources on the locations with high rates and/or severity of crashes.
- 27.2 Implement operational improvements within budgetary constraints.
- 27.3 Apply the County's access management and driveway spacing standards for proposed new access locations.
- 27.4 Implement feasible and cost-effective intersection consolidations to reduce potential conflict points.
- 27.5 Consolidate driveway access points in the rural center through the land development process and other appropriate methods.
- 27.6 Coordinate with Metro to identify potential improvements to the roadways providing direct access to Oxbow Regional Park.
- 27.7 Ensure that the County's Capital Improvement Plan evaluation criteria adequately considers the needs of the West of Sandy River Rural Area.
- 27.8 Update County ordinances to meet the requirements of the Transportation Planning Rule.

Policy 28

Actively support safe travel speeds on the transportation system.

Strategies:

- 28.1 Support speed limit enforcement.
- 28.2 Apply design standards that encourage appropriate motor vehicle and truck speeds.

Policy 29

Provide safe facilities for bicyclists and pedestrians.

Strategies:

- 29.1 Make intersection and minor realignment improvements focusing on safety, sight distance, and efficiency.
- 29.2 Widen and pave shoulders to safely accommodate vehicular, bicycle, and pedestrian needs.

- 29.3 Maintain safe conditions for pedestrians and bicyclists during roadway maintenance and improvement work.

Policy 30

Encourage mobility for the transportation disadvantaged.

Strategy:

- 30.1 Work with public transportation providers and other non-profit groups to monitor and encourage the provision of transportation service for the transportation disadvantaged.

Policy 31

Develop a transportation system that supports the surrounding rural character and land use designations of rural Multnomah County west of the Sandy River by discouraging through traffic on local rural roads.

Strategies:

- 31.1 Reduce conflicts between street classification and street use, by providing appropriate traffic control devices.
- 31.2 Periodically review and update functional classification of trafficways in rural Multnomah County.
- 31.3 Coordinate with ODOT, Metro and Clackamas County in efforts to implement "Green Corridor" policies along US 26.

Policy 32

Balance the need of roadway users with potential impacts to the environment, fish, wildlife and agricultural resources and users when applying roadway design standards.

Strategies:

- 32.1 Develop a program for retrofitting drainage facilities in conformance with requirements adopted by the National Marine Fisheries Service and the U.S. Fish and Wildlife Service.
- 32.2 Secure funding for identification, prioritization and remediation of all deficient stream crossings for fish and wildlife passage.
- 32.3 Develop and adopt drainage system design guidelines and standards to accommodate fish passage where appropriate.
- 32.4 Develop and implement standards for all transportation projects with regard to water quality treatment and detention of runoff from existing and new impervious surfaces to avoid further degradation of water quality as well as fish and wildlife habitats.
- 32.5 Develop and implement standards for all transportation projects with regard to protection of existing, and restoration of deficient, riparian buffers where waters of the state border current and future road and path segments.
- 32.6 Identify and protect critical fish and wildlife migration corridors to prevent the further fragmentation of existing habitats by future project alignments.

Policy 33

Encourage preservation of critical view sheds by placing new pipelines and transmission lines in existing rights-of-way whenever possible.

Strategy:

- 33.1 Enhance and preserve the rural character and scenic qualities of the area by placing utilities underground when possible.
- 33.2 Coordinate street improvements with utility improvements whenever possible to minimize cost, visual impact and disruption to traffic flow.

Policy 34

Coordinate transportation improvements with appropriate regulatory agencies to meet federal, state and regional air, noise and water standards.

Strategies:

- 34.1 Obtain permits as necessary for transportation improvement projects and maintenance activities.
- 34.2 Develop closer working relationships with regulatory agencies by providing opportunities for participation and input at the project development phase of projects.
- 34.3 Encourage transportation staff to attend programs regarding regulatory processes such as the Endangered Species Act, The Clean Water Act and Metro's Green Streets Program.

Policy 35

Provide ongoing coordination with state, regional, and local business interests to assure efficient movement of goods and services to support a healthy rural economy.

Strategies:

- 35.1 Support north/south arterial improvements between I-84 and US-26 in the East County urban area.
- 35.2 Coordinate with ODOT to ensure continued safe access onto and across US-26.
- 35.3 Review truck weight and size restrictions based on new roadway improvements and current state law.

Policy 36

Provide a transportation system that ensures economically viable transportation of goods from farm to market.

Strategies:

- 36.1 Evaluate and implement safety improvements for trucks on rural arterials.
- 36.2 Seek funding for improvements to rural arterials.

Policy 37

Maximize cost-effectiveness of transportation improvements using the Capital Improvement Plan process and maintenance program.

Strategies:

- 37.1 Coordinate intersection improvements as appropriate through the County's Capital Improvement Plan and the County's maintenance program.
- 37.2 Provide minor improvements during maintenance projects where possible.

FINANCING PLAN

The West of Sandy River Rural Area TSP covers one of four subareas of unincorporated Multnomah County. The county assesses transportation system improvement needs on a countywide basis and develops a CIP for the entire County, instead of tracking expenditures or allocating funds by subarea. This section describes the process used to evaluate candidate projects in the West of Sandy River Rural Area for inclusion in the County's CIP.

A list of projects was developed through a public involvement process that included extensive stakeholder input. The projects address existing and future needs while maintaining the rural character of the area and conforming to the requirements for transportation improvements in rural areas under the state Transportation Planning Rule. These projects will compete for funding from a variety of county, state, and federal sources. Multnomah County will develop cost estimates for all projects, and evaluate and compare them with projects from the other regions. Over the next fiscal year the Roadway Project Evaluation Framework that has been used to select projects in the past will be updated to include criteria that weigh the importance of the land use goals of a roadway segment along with its functional efficiency. In a rural area this may mean including criteria that weigh the importance of maintaining the rural character of a roadway and preserving the natural environment and adjacent agricultural lands. Evaluation criteria will be developed through a public process beginning in 2001. The result will be a countywide, 20-year, financially constrained capital improvements plan and program. The time frame for completion of the countywide CIP has not been determined.

Various processes used to allocate funding for transportation projects within Multnomah County are summarized below. Candidate projects compete for funding based on the program amount available.

Capital Improvement Program (CIP)

Description

The Multnomah County CIP is a continuous and open process, allowing citizen input annually. Priorities for the county road system are dynamic, changing in response to land use decisions and infrastructure life cycles. Consequently, the Capital Improvement Plan and Program is updated on a regular basis.

The county holds public meetings in various communities to solicit public input regarding transportation needs. Project proposals are also solicited from each of the four east-county cities (Gresham, Troutdale, Fairview and Wood Village). After assembly by County staff, the project list is reviewed by the East Multnomah County Transportation Committee (EMCTC) and approved by the Board of County Commissioners (BCC).

The Transportation Division reviews the CIP annually, with a full update involving all interested parties occurring every 2 years. The annual review and biennial updates ensure that limited resources for capital projects are allocated to the most critical capital needs. As mentioned above, the criteria used to evaluate candidate projects for inclusion and prioritization within the County CIP will be revised through a public process beginning in 2001.

Regional Transportation Plan (RTP)

Description

The RTP is developed for the three-county metropolitan area including Clackamas, Multnomah, and Washington Counties. Public meetings are held throughout the region to solicit public input regarding transportation needs. Projects are required to meet federal and state air quality and environmental standards. The RTP is updated using a public process and committee review at the technical and policy levels before being sent to the seven-member Metro council.

Funding Potential

The Metro Transportation Improvement Program (MTIP) process, which allocates federal transportation funding to regional projects listed in the RTP, only addresses projects that can be identified as regionally significant. Stark Street, Troutdale Road, Lusted Road, Division Drive, Orient Drive have all been identified in the RTP on the Regional Motor Vehicle System.

State Transportation Improvement Program (STIP)

Description

ODOT manages the STIP update process, reviewing the projects generally in 3-year intervals through an open process that allows citizen input. The STIP update cycle was recently increased to three years due to a lack of new transportation funds at the state level.

Funding Potential

Public meetings are held in various communities around the state to solicit public input regarding transportation needs. Project proposals are also solicited from each of the local jurisdictions and metropolitan planning organizations (MPOs) from around the state. The list of projects is reviewed for air quality conformity and approved by the Oregon Transportation Commission before being sent to the U.S. Department of Transportation in Washington D.C. for approval. The draft 2000-2003 STIP includes a single project in the study area, replacement of the Stark Street Viaduct.

Candidate projects in the West of Sandy River Rural Area that qualify for state funding will be forwarded to the STIP process for funding through ODOT's Region 1. Candidate projects will receive funding based upon statewide priorities and parameters as set forth by the Oregon Transportation Commission for Modernization, Preservation, and Alternative Modes. The most likely projects to be selected for the STIP are bridges and projects for alternative modes. Other projects eligible for federal funds may also be included, such as projects on the segment of U.S. 26 through the study area.

Other Processes

Operations and Maintenance

Description. Multnomah County and ODOT each have operational budgets for ongoing maintenance and operations as allowed by Oregon statute and organizational policy. These budgets are set up to maintain facilities and services at minimum thresholds established by each agency, while being responsive to changing site conditions and customer requests.

Current Application. Operational budgets are applied to routine maintenance for traffic signing, travel lane markings, pavement management, vegetation control, winter weather patrol, and other activities. Each agency is responsible for maintenance and operations of its roadways unless there is an intergovernmental agreement transferring responsibilities.

Aside from the maintenance activities mentioned above, ODOT has a budget set aside for speed zone investigations when recommendations are made to the State Speed Control Board for changes in posted speeds.

Funding Potential. West of Sandy River Rural Area candidate projects that qualify for funding through the operations and maintenance budget will be recommended for funding to the appropriate operations and maintenance department. Minor shoulder improvements in the direction of the County's newly adopted road standards could be funded through operations and maintenance budgets.

Grants

Description. Grant programs are sponsored by various federal and state agencies for special studies and/or improvement projects beyond the processes described above.

Current Application. Grants relating to economic development and growth management-related activities are available. The grants are usually very specific in their evaluation criteria and are usually for specific studies or project types.

Funding Potential. West of Sandy River Rural Area candidate projects will be evaluated as grant funding opportunities arise.

COMPLIANCE WITH TRANSPORTATION PLANNING RULE REQUIREMENTS

Compliance with the Transportation Planning Rule was evaluated for each applicable TPR requirement and summarized in a technical memorandum provided to Multnomah County. Plan adoption and implementation ordinance preparation will follow; all other TPR requirements are addressed in this document.