# CHAPTER 8: ROADWAY SYSTEM NEEDS AND RECOMMENDED IMPROVEMENTS

The County's rural roadway system is the primary component of the regional transportation system and will continue to serve this function over the next 20 years. To continue in this capacity, a number of enhancements are needed for the safety and mobility of the system. This chapter describes the existing and future needs of the Marion County rural roadway system and the improvements recommended to address those needs. Existing needs include those where projects have already been identified but not completed due to a lack of resources, where current roadway safety or operation standards are not met, and where other issues affect the safety or operation of a County facility.

Future needs are defined as expected deficiencies in capacity or safety that do not warrant immediate attention, but are anticipated to need to be addressed in the next 20 years to preserve mobility and safety.

This chapter also includes transportation improvements that the planning team has identified are necessary to be completed in the next 20 years to maintain the safety and efficiency of the transportation system at an acceptable level.

## 8.1 CRITERIA FOR IDENTIFICATION OF EXISTING NEEDS

Necessary transportation improvements have been identified through a number of sources. One is the 1998 RTSP, which included an in-depth analysis to identify existing needs and deficiencies. It used a list of issues compiled by input from County staff, the Technical Advisory Committee, the Citizens Review Committee, and citizens attending the public open houses. Another source to determine needs was through issues identified in the public involvement process of the Marion County Growth Management Framework planning effort. Additionally, county staff has also identified new needs since the 1998 RTSP. Those issues that have been sufficiently addressed since they were identified are no longer in this plan.

For each of these issues, County staff has reviewed the location and pertinent data (accident histories, traffic volumes, level of service, geometry, traffic flow characteristics, etc.) and developed the conceptual project that, in staff's judgment, best addresses the issues at that location. For each of these potential projects, a planning level cost estimate has been developed and the project evaluated to determine how it would affect traffic safety and flow in the area.

Each of these potential projects was then evaluated using a project selection matrix developed for this plan. This matrix is based on the following categories:

**Safety (45 points)**

- Accident rate and frequency
- Severity of accidents
- Potential for life-threatening accidents
- Project safety benefit

**Mobility (30 points)**

- Benefit to current capacity
- Benefit to future (10-years) capacity
- Reduction of free-flow impedance
- Freight mobility
- Benefit to bicycle and pedestrian mobility

**Functional Classification of Roadway (5 points)**

**Traffic Volume (5 points)**

**Other Factors (15 points)**

- Geometry (curves, skewed intersections, offset intersection approaches, etc.)
- Strategic routes
- Railroad issues
- Road width issues
- Standards not covered elsewhere
- Flooding/road closures
- Effects on other intersections
- Potential emergency use

**Project Cost (up to 30 point deduction)**

Projects are prioritized based on the number of points they receive in this prioritization matrix.

Each of these projects is listed in **Appendix A** in order of the prioritization score each project received. Although the County would ideally like to address all of the needs, we recognize that many needs exist for which the cost and/or impacts of the solution outweigh the needs it would address, meaning that the solution would not be cost-effective. In addition, there are so many legitimate needs with identified cost-effective solutions that it is highly unlikely that the funding levels and resources will be enough to address all these needs even over the next 20 years.

Many of the needs identified in this chapter are shown based on this prioritization rating and listed in the order of prioritization score. In these cases, the needs that appear towards the top of the list are generally more critical than the needs that appear near the bottom of the list. However, it is inappropriate to assume that a specific need has higher priority over another just because it appears one or two places higher on a list.

## 8.2 EXISTING COUNTY ROADWAY NEEDS

The most widely used transportation facility in rural Marion County is the extensive network of arterials, major collectors, minor collectors, and local roads. As a result, the majority of needs and deficiencies occur on the roadway system.

### 8.2.1. Functional Class

The functional classification scheme presented in Section 5 adheres to the principles of the USDOT guidelines and addresses the County's desire to give merit to the idea that people's current travel patterns help determine the function of facilities when viewed in the overall road network. The functional classification system shown in Figure 5-1 has slight revisions to the one adopted with the 1998 Rural Transportation System Plan. **Table 8-1** lists the changes that have been made. Note: this is the same as table 5-2.

**Table 8-1**
**2005 Revisions to Functional Classification System**
(Note: Road segments are listed generally from north to south)

| Road | From | To | Previous Class | New Class |
|---|---|---|---|---|
| Arndt Rd | Wilsonville-Hubbard Hwy | Clackamas County | (map typo) | Arterial |
| Arndt Rd | Butteville | Bents Rd | Major Collector | Minor Collector |
| Oregon 219 | McKay Rd | Yamhill County | Arterial | Principal Arterial |
| Ehlen Rd / Yergen Rd / McKay Rd | Interstate 5 | Oregon 219 | Arterial | Principal Arterial |
| Boones Ferry Rd | Ehlen Rd | Arndt Rd | Minor Collector | Local |
| Boones Ferry Rd | Crosby Rd | Ehlen Rd | Major Collector | Minor Collector |
| French Prairie Rd | Oregon 219 | McKay Rd | Major Collector | Minor Collector |
| Parr Rd | Butteville Rd | Woodburn UGB | Major Collector | Minor Collector |
| French Prairie Rd | River Rd | Oregon 219 | Major Collector | Minor Collector |
| Marquam Rd / Drake Rd | Meridian Rd | Clackamas County | Local | Minor Collector |
| Quinaby Rd | River Rd NE | Oregon 99E | Local | Minor Collector |
| Silverton Rd | Salem UGB | Silverton UGB | Arterial | Principal Arterial |
| Lardon Rd | Cordon Rd | Howell Prairie Rd | Minor Collector | Local |
| Kaufman Rd | Howell Prairie Rd | Cascade Hwy | Minor Collector | Local |
| Center St | Cordon Rd | Hampden Ln | Major Collector | Minor Collector |
| Hampden Ln | Center St | Fruitland Rd | Major Collector | Minor Collector |
| Fruitland Rd | Hampden Ln | 63rd Ave | Major Collector | Minor Collector |
| Skyline Rd | Vitae Springs Rd | Salem UGB | Arterial | Major Collector |
| Liberty Rd | Hylo Rd | Salem UGB | Arterial | Major Collector |
| Mill Creek Rd | Marion Rd | Aumsville UGB | Arterial | Major Collector |
| Mill Creek Rd | Aumsville UGB | Golf Club Rd | Arterial | Major Collector |

| | | | | |
|---|---|---|---|---|
| West Stayton Rd | Shaff Rd | Aumsville UGB | Major Collector | Minor Collector |
| Cloverdale Rd | Parrish Gap Rd | Ridgeway Dr | Minor Collector | Local |
| Belden Dr | West Stayton Rd | Stayton Rd | Minor Collector | Local |
| West Stayton Rd | Stayton Rd | Shaff Rd | Major Collector | Minor Collector |
| Buena Vista Rd | Polk County | Sidney Rd | Local | Minor Collector |
| Talbot Rd | Interstate 5 | Buena Vista Rd | Minor Collector | Major Collector |
| Greensbridge Rd | Jefferson-Marion | Jefferson-Scio Dr | Minor Collector | Local |
| Oregon 22 | Detroit | Linn County | (map typo) | Principal Arterial |

### 8.2.2 Roadway Design Standards

The existing rural roadway design standards (shown in **Table 8-2**) provide geometric guidelines for the planning, design, and construction of roads in Marion County. These standards are included here for reporting purposes only and are not to be considered adopted as part of this plan. Design standards are contained in a separate document that may have been updated since this plan was prepared. For roads adjacent to urban growth boundaries and/or with traffic flow of an urban character, urban geometric design standards can be used. (Urban geometric design standards are not addressed in this rural plan.)

**Table 8-2**
**Existing Rural Geometric Design Standards**

| FUNCTIONAL CLASS | TYPICAL ADT | MINIMUM RIGHT OF WAY WIDTH | MINIMUM PAVEMENT WIDTH | GRAVEL SHOULDERS (both sides) |
|---|---|---|---|---|
| Arterial | 1,000 - 10,000 | 66' | 28' | 2' |
| Collector | 500 - 1,000 | 60' | 22' | 5' |
| Local | 0 – 500 | 60' | 22' | 5' |

From the review of the physical characteristics in subsequent sections (8.2.3 and 8.2.4), it is evident that a substantial portion of the County roadway system does not meet the existing rural geometric design standards. While it is desirable to have all roads conform to these standards, a substantial portion of County roads were built prior to their development. In order to protect valuable farmlands and environmentally sensitive areas, as well as our intention to effectively use the resources we've been entrusted with, the County does not intend to improve all of the roads to the existing standards. Roadways will be improved when it is necessary to improve safety or increase capacity by either reconstructing existing roads or building new ones altogether.

### 8.2.3 Travel Lane Widths

The pavement width information collected in the roadway inventory was compared to the existing rural geometric design standards. It was found that approximately 703 miles, or 71 percent, of rural roads have travel lane widths that do not meet existing standards. **Table 8-3** shows the number of roadway miles (by functional class) that do not meet existing standards.

**Table 8-3**
**Roadway Miles Not Meeting Existing Travel Lane Width Standards**

| FUNCTIONAL CLASS | TOTAL MILES | MILES NOT MEETING EXISTING STANDARDS | PERCENT NOT MEETING EXISTING STANDARDS |
|---|---|---|---|
| Arterials | 89 | 20 | 22% |
| Major Collectors | 109 | 41 | 38% |
| Minor Collectors | 171 | 121 | 71% |
| Locals | 621 | 521 | 84% |

As evidenced in **Table 8-3**, many miles of roads, particularly local roads and minor collectors, do not meet existing travel lane width standards. The vast majority of these roads were constructed before these standards were implemented. On the other hand, the majority of arterial miles and major collector miles have pavement widths that meet existing standards.

On many of the arterial and collector sections not meeting standards, widening has been identified as a need for safety, capacity, or operational reasons. However, for many of these sections of roadway (especially minor collectors and local roads), the cost, disruption, and impact of widening these roads outweighs the benefit that would be obtained by widening them and therefore is not cost-effective. It is still appropriate and beneficial when the county or developers are constructing new roads that they meet these standards.

### 8.2.4 Shoulder Widths

Shoulder width is defined as the width of the area outside the designated travel lanes that is available to be safely traversed for emergency or recovery use by vehicles that have strayed from the travel lanes. Some shoulders are paved, but most are gravel. Existing shoulder widths were measured and compared to those specified in the rural geometric design standards. Again, it was found that most roads do not meet current standards. Approximately 804 miles, or 81 percent, of rural roads have shoulder widths that do not meet the standards. **Table 8-4** shows the number of roadway miles (by functional class) that do not meet existing shoulder width standards.

**Table 8-4**
**Roadway Miles Not Meeting Existing Shoulder Width Standards**

| FUNCTIONAL CLASS | TOTAL MILES | MILES NOT MEETING EXISTING STANDARDS | PERCENT NOT MEETING EXISTING STANDARDS |
|---|---|---|---|
| Arterials | 89 | 10 | 11% |
| Major Collectors | 109 | 72 | 66% |
| Minor Collectors | 171 | 152 | 89% |
| Locals | 621 | 570 | 92% |

In reviewing these numbers, most of the shoulder width deficiencies occur on collectors and local roads. The majority of arterial miles do meet existing shoulder width standards.

On many of these sections not meeting standards, widening has been identified as a need for safety, capacity, or operational reasons. These potential projects will be discussed later in this section and have been considered in the process to determine the fiscally constrained Transportation System Plan. However, for many of these sections of roadway and shoulder, the cost, disruption, and impact of widening or providing these shoulders outweighs the benefit that would be obtained by widening them. Thus, while it would be appropriate and beneficial to construct new roads and shoulders to meet these standards, it would not be beneficial to widen these segments of existing roadways to meet the current standard.

### 8.2.5 Surface Type

Of the 990 miles of rural roads in the County, approximately 197 have gravel surfaces. Gravel roads are not considered to be deficiencies just because they are unpaved and it is not the County's goal to pave all gravel roads.

Many years ago, the County operated a program to pave gravel roads based on their significance to the road network and the feasibility of paving them. This program was discontinued for lack of funding. In the past, the County also operated a Macadam Local Improvement District (LID) program in which the majority of property owners along a road could request Public Works to pave their road and subsidize part of the cost. This program has also been discontinued due to lack of funding. However, it is the County's goal to provide options for residents to pave their road with their resources.

It is the County's goal to pursue paving of some gravel roads but we do not plan to do so at this time due to lack of funding.

### 8.2.6 Right-of-Way Width

Right-of-way width information collected in the roadway inventory was compared to the existing rural geometric design standards. It was found that approximately 630 miles, or 64 percent, of rural roads have right-of-way widths that do not meet existing standards. Right-of-way widening needs are specifically identified in one of two ways. When land use actions such as zone changes or partitionings occur and require dedication to meet the standards for the changed use or when a Capital Improvement Program (CIP) project is initiated. For CIP projects, right-of-way needs are determined on a case-by-case basis and are not necessarily based on existing standards, but rather on the right-of-way a project requires. Right-of-way needs are not specifically identified in this plan.

### 8.2.7 Pavement Condition

Pavement condition deficiencies consist of pavement sections with surface conditions rated "poor" or "very poor." Out of 793 miles of paved rural roads, only 98 miles, or 12.4 percent, of pavement fall into this category. Determining overlay needs, however, are not solely based on the pavement ratings. Other factors are also considered in determining overlay needs such as functional class of the roadway, traffic volume, truck percentage, existing surface width, traffic patterns, special use (recreational use, commercial use, etc.), and available budget.

Pavement maintenance needs are slightly different than overlay needs in that pavement maintenance needs are determined by identifying sections that can be treated to prevent the "poor" condition. In many cases, adding relatively thin (such as two-inch thick) pavement overlays on pavement in 'fair' or even 'good' condition saves money in the long run because it reduces the need for the thicker overlays or reconstruction that becomes necessary when pavement reaches 'poor' or 'very poor' condition. Specific paving and overlay needs are identified separately in Marion County's Pavement Management Program. This Transportation System Plan will include budgeted money necessary for these paving and overlay projects, but will not designate specific projects that it will be spent on. However, any project that significantly alters the 'footprint' of the roadway will be considered a capital improvement project, and thus is appropriate for discussion in this plan.

### 8.2.8 Safety Projects

Locations that represent safety concerns due to accidents, sight distance, configuration, or other safety concerns are listed in **Table 8-5**. These projects are listed in the order of priority with the more critical projects appearing at the top of the table and the less critical needs appearing towards the bottom of the table. Although the County would like to address all of these safety concerns, the limited amount of funding makes it unlikely that all of these safety needs will be addressed over the next 20 years.

Many funding programs award grants for safety projects based on their accident history. In order to take advantage of this type of funding, projects may be completed in an order different than shown, or other projects may be added if, due to their accident history, they become eligible for funding.

**Table 8-5**
**Safety Projects**

| FACILITY | LOCATION | SAFETY ISSUE | NEED |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Cordon Rd | Pennsylvania Ave | Rear-end accidents | Left turn lane on Cordon |
| Ehlen Rd | Boones Ferry Rd and Hwy 551 | Congestion; Traffic queues from State Hwy intersection frequently block Boones Ferry | Left Turn Lane on Ehlen; possible realignment; possible traffic signal at Boones Ferry coordinated with State Hwy signal |
| Cordon Rd | Auburn Rd | Accidents; need more gaps for vehicles pulling out from Auburn | Traffic signal at intersection |
| Cordon Rd | Herrin Rd | Rear-end and Left-turning Accidents | Left turn lane on Cordon; possibly raise Herrin Rd bridge and approach |
| Cordon Rd | Hayesville Dr | Rear-end and left-turning accidents | Left turn lane on Cordon |
| Brooklake Rd | Wheatland Rd | Accidents; vehicles driving off end of road | ITS Safety – speeding (nonstopping) vehicle warning |

| FACILITY | LOCATION | SAFETY ISSUE | NEED |
|---|---|---|---|
| Bents Rd | Ehlen Rd | Congestion; Intersection is very close to intersection with I-5 ramps | Move Bents Rd west and perhaps signalize its intersection with Ehlen Rd; could be combined with a State interchange reconstruction project; may involve access management on Ehlen Rd. |
| Butteville Rd | P & W Railroad | RR crossing without gates on Major Collector | Gates at crossing, possible realignment |
| Cordon Rd | Swegle Rd | Developing need for gaps for traffic pulling out from Swegle | Traffic signal at intersection |
| River Rd South | Orville Rd / BNRR Bridge | Sharp curves, narrow roadway, skewed intersection | Realign roadway to cross railroad at grade (no bridge); reconfigure Orville Rd intersection |
| Butteville Rd | Crosby Rd | Offset Intersection | Cross Intersection |
| Cordon Rd | Ward Dr | Anticipated rear-end and left-turning accidents | Left turn lane on Cordon |
| Cordon Rd | Carolina Ave / Indiana Ave | Rear-end and left-turning accidents | Left turn lane on Cordon |
| Silverton Rd | 64th Place | Rear-end and pull-out accidents | Left turn lane on Silverton Rd and straighten skew of 64th at intersection |
| River Rd South | BNRR Bridge (northern bridge) | Sharp curves, narrow roadway | Realign roadway to cross railroad at grade (no bridge) |
| 54th Ave NE | near Lakeside Dr (across Lake Labish) | Narrow Road | Widen roadway; add gravel shoulder |
| Cordon Rd | Kale St | Rear-end and left-turning accidents | Left turn lane on Cordon |
| River Rd S | Riverdale Rd (Roberts) | Configuration | Reconfigure Intersection |
| Skyline Rd | Vitae Springs Rd | Skewed intersection, poor grade | Vertical and horizontal realignment |
| Howell Prairie Rd | Lardon Rd / Kaufman Rd | Offset Intersection | Cross Intersection |
| Mill Creek Rd | Bishop Rd / Leverman Rd | Configuration | Reconfigure Intersection |
| Yergen Rd | Donald Road | Unusual Y-Intersection; skew at western connection | Realign Intersection |
| Wintercreek Rd | Skelton Rd | Vertical Curve / Visibility | Cut/Fill Raise Intersection |
| Cascade Hwy | Evergreen Rd / Evergreen School | Vertical Curve / Visibility | Flatten vertical curve |
| Delaney Rd | Parrish Gap Rd | Vertical Curve / Visibility | Vertical Realignment; could be combined with Delaney/Battle Creek Project |
| Sublimity Rd | Chemeketa C.C. and Festival Grounds | Rear-end and left-turning accident potential | Left turn lane on Sublimity Rd |

| FACILITY | LOCATION | SAFETY ISSUE | NEED |
|---|---|---|---|
| 65th Ave NE | Across Lake Labish | Narrow Road | Widen roadway; add gravel shoulder |
| 35th Ave | Perkins St | Configuration | Reconfigure Intersection |
| Meridian Rd | Mt. Angel-Scotts Mills Rd / East College Rd | Awkward Y-intersections | Convert to T-intersections, possible horizontal realignment |
| 70th Ave | Mill Creek Rd | Tight turning radius with bridge rail | Move 70th Ave to west |
| Aumsville Hwy | Witzel Rd | Sight distance, vertical curves | Vertical realignment |
| Cascade Hwy | Kaufman Rd | Skewed approach | Reconfigure approach |
| River Rd NE | Waconda Rd | Rear-end, Left turning accidents | Left Turn Lanes on River Rd |
| Butteville Rd | Parr Rd | Grades on approaches | Rebuild Intersection |
| **ADDITIONAL IDENTIFIED NEEDS** | | | |
| Boones Ferry Rd | Broadacres Rd | Vertical and horizontal curves | Vertical and horizontal realignment |
| Riverside Rd | BNRR Bridge | Sharp Curves, Narrow Bridge | Realign roadway and/or rebuild bridge |
| Hylo Rd | Champion Hill Rd | Vertical Curves; Visibility | Vertical realignment |
| Cascade Hwy | Riches Rd | Curvature | Flatten and smooth curves |
| Rees Hill Rd | Rainbow Drive | Visibility; intersection location | Move intersection |
| River Rd S | Riverdale Rd Connector | Low clearance; narrow underpass | Close road section |
| Meridian Rd | Abiqua Rd | Y-intersection | Convert to T-intersection |
| Skyline Rd | Cole Rd | Vertical curve; visibility | Vertical realignment |
| River Rd | Davidson Rd | Vertical curve; visibility | Vertical realignment |
| Riverdale Rd | Vitae Springs Rd | Sight distance, vertical and horizontal curves | Vertical and horizontal realignment |
| Aumsville Hwy | Joseph St | Y-intersection | Convert to T-intersection |
| Ankeny Hill Rd | Wintel Rd | Intersection configuration | Reconfigure intersection |
| Shaw Hwy | Brownell Rd | Accidents, sight distance | Convert to T-intersection, remove wing roads |
| Abiqua Rd | South of Briar Knob Lp | Steep slope near edge of roadway | Install guardrail |

| FACILITY | LOCATION | SAFETY ISSUE | NEED |
|---|---|---|---|
| West Stayton Rd | Shaff Rd | Intersection configuration | Reconfigure intersection |
| Cascade Hwy | Stadeli Ln | Curve; visibility | Excavation work |
| Parrish Gap Rd | Ridgeway | Vertical curve; visibility | Excavation work |
| Riverside Rd | Skyline Rd | Skewed intersection, visibility, vertical curve | Vertical and horizontal realignment |
| Riverdale Rd | Halls Ferry Rd | Vertical and horizontal curves; visibility | Vertical and horizontal realignment |
| Jory Hill Rd | O'brien Rd | Vertical curve; visibility | Vertical realignment |
| Crooked Finger Rd | McKillop Rd | Curvature; visibility; Y-intersection | Reconfigure intersection |
| Lardon Rd | near 55th Ave | Sharp curves | Realign road |

### 8.2.9 Intersection Traffic Control and Modernization

Intersection traffic control needs include signals, turn lanes, reconfiguration of approaches, and changes to through traffic movement. These needs are related more to operational problems than safety problems, even though most of these cases also involve some aspect of safety. These needs are identified in **Table 8-6**. For the most part, these needs are listed in the order of priority with the more critical needs appearing at the top of the table and the less critical needs appearing towards the bottom of the table. Note that all proposed traffic signals meet signal warrants.

**Table 8-6**
**Intersection Traffic Control and Modernization Needs**

| FACILITY | LOCATION | PROBLEM | NEED |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Arndt Rd | Airport Rd | Delay; Poor level of service | Traffic signal at intersection; coordinate with nearby state hwy signal and add lane on Arndt between signals[1] |
| Cordon Rd | MacLeay Rd | Congestion | Traffic signal at intersection |
| Silverton Rd | Howell Prairie Rd | Developing congestion on Silverton Rd; 4-way stop impedes corridor movement | Traffic signal and left turn lanes at intersection |
| Delaney Rd | Battle Creek Rd | Poor alignment, narrow bridge, heavy turning movements | Horizontal realignment and bridge replacement |

[1] This project is programmed for 2005 construction in the Oregon Department of Transportation Statewide Improvement Program (STIP) with some Oregon Transportation Investment Act (OTIA) funding.

| | | | |
|---|---|---|---|
| Hazelgreen Rd | 62nd Ave | Y-intersection on Collector approach to Arterial | Convert to T-intersection |
| Mt. Angel-Gervais Rd | Howell Prairie Rd | Curves and Y-intersections | Horizontal realignment, convert to T-intersection(s) |
| **ADDITIONAL IDENTIFIED NEEDS** | | | |
| Sunnyview Rd | Howell Prairie Rd | Wing roads | Remove wing roads |
| Mt. Angel Hwy | Hook Rd | Wing roads | Remove wing roads |
| Howell Prairie Rd | Rambler Dr | Y-intersection | Convert to T-intersection |
| Howell Prairie Rd | Waconda Rd | Y-intersection | Convert to T-intersection |
| Meridian Rd | Downs Rd | Y-intersection | Convert to T-intersection |
| Woodburn-Monitor Rd | Monitor-McKee Rd | Right turn permitted | Update traffic control |
| 65th Ave | Labish Center Rd | Intersection configuration | Reconfigure intersection |
| West Stayton Rd | Darley Rd | Y-intersection | Convert to T-intersection |
| 54th Ave | Lakeside Dr | Unnecessary all-way-stop | Convert to 2-way stop |
| Parrish Gap Rd | Hennies Rd | Y-intersection | Convert to T-intersection |
| Parrish Gap Rd | Summit Loop | Y-intersection | Convert to T-intersection |

### 8.2.10 Pavement Widening for Modernization

Pavement widening involves increasing the paved surface of the travel lanes or shoulders (or both) to provide better traveling conditions for the public, and to reduce the probability of motorists running off the road or encroaching upon opposing traffic. These locations generally consist of roads with narrow lanes and/or sharp curves that are unsuitable for the volume and speed of traffic. Other locations involve narrow roads with regular truck traffic that present uncomfortable conditions to truck drivers and other motorists. Paved shoulders or wider travel lanes at these locations would reduce the chances of drivers running off the road and reduce the chances of conflict between opposing traffic. Roadway segments in need of wider pavement surfaces are listed in **Table 8-7**.

**Table 8-7**
**Pavement Widening for Modernization Needs**

| FACILITY | FUNCTIONAL CLASS | FROM | TO |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Delaney Rd | Arterial | Battlecreek Bridge | Turner UGB |
| Boones Ferry Rd | Major Collector | Woodburn UGB | Crosby Rd |
| Jefferson-Marion Rd | Arterial | Jefferson UGB | Marion community |
| Stayton Rd | Arterial | Marion community | Stayton UGB |
| Vitae Springs Rd | Major Collector | Skyline Rd | Orville Rd |
| Mill Creek Rd | Major Collector | Marion Rd | Aumsville UGB |
| Vitae Springs Rd | Major Collector | Orville Rd | River Rd S |
| State St | Arterial | 63rd Avenue | Howell Prairie Rd |
| Woodburn-Hubbard Rd | Major Collector | Woodburn UGB | Hubbard UGB |
| **ADDITIONAL IDENTIFIED NEEDS** | | | |
| Meridian Rd | Major Collector | Silverton UGB | County Line |
| River Rd NE | Arterial | Straighten curves .7 mi W of French Prairie Rd | 1.5 mi W of French Prairie Rd |
| Riverside Rd | Minor Collector | Skyline Rd | BNRR Bridge |
| Hobart Rd | Minor Collector | Mt. Angel Hwy | Oregon 214 |
| Arndt Rd | Major / Minor Collector | Butteville Rd | Wilsonville-Hubbard Hwy |
| Shaw Hwy | Minor Collector | Aumsville UGB | Hwy 214 |
| Marion Rd | Major Collector | Shaff Rd | Mill Creek Rd |
| Shaff Rd | Minor Collector | Marion Rd | West Stayton Rd |

### 8.2.11 Truck Routes

The two existing truck routes in the County function fairly well. New truck routes in the County would not be particularly effective because much of the local truck traffic is conducting business

throughout the County. Truck routes are most beneficial in routing that portion of truck traffic that is merely passing through the County en-route to a destination outside of the County. They tend to stay on Principal Arterials such as Interstate 5, Oregon 22, some of the secondary state highways like Oregon 213 and Oregon 211, and County Arterials such as Ehlen/Yergen/McKay Roads, Silverton Road, Cascade Highway, and River Road NE. Another group of trucks that are affected are those that need to use County Roads to bypass restrictions on the State Highway system.

Due to the agricultural nature of Marion County, most of the truck traffic on non-regional routes is conducting business in the local area. Attempts to prohibit these trucks from using County roads, which often run through some of the smaller cities, are not in the best interest of the overall transportation system. There are some exceptions to this. Two such exceptions were addressed in the rural areas by installing "No Through Trucks" postings rather than by creating a specific regulatory truck route. In both cases, the use of the particular roads by trucks was extremely disruptive to the adjacent residential neighborhoods and suitable alternative routes of higher design and classification were available.

There are also many roads, particularly minor collectors and local roads, but some major collectors and arterials, which are not suitable for trucks because of the roadway geometry or topography. These locations have been designated as 'red routes,' with signs posted instructing truckers driving vehicles larger than the limits to avoid them. It is possible for trucks longer than these limits to make local deliveries on these roads if they can show they can make the delivery safely and appropriately. Suitable alternate routes exist for freight traffic to and from most areas.

### 8.2.12 Bridges

Rehabilitation and replacement of deficient bridges is typically done on an as-needed basis. Bridges are inspected regularly (typically every two years), and a sufficiency rating is determined for each bridge. This sufficiency rating (on a scale of 0 to 100) is an assessment of the structural sufficiency of the bridge. Bridge rehabilitation or replacement is typically determined by this rating. Bridges with ratings below 50 (out of 100) are eligible for federal grant funding through the state for replacement. Currently, most of our bridge replacements are done with this grant funding.

Rural bridge deficiencies for purposes of this plan include: bridges with sufficiency ratings below 50; bridges with weight, height, and/or width limitations located on significant regional routes; and bridges with other problems such as poor alignment or narrow width on arterials and major collectors. **Table 8-8** provides a list of rural bridges with sufficiency ratings less than 50. Not all of the bridges listed in **Table 8-8** are being considered for replacement. However, the limitations of these bridges do point out the need for further evaluation.

As the years go by, the sufficiency rating of each bridge tends to decrease, as the bridge wears out from use. Over the next 20 years, it is anticipated that many bridges will require rehabilitation or replacement and funding for this effort will be a serious problem due to the large capital improvement cost.

**Table 8-8**
**Rural Bridges with Sufficiency Ratings Below 50**

| BRIDGE NO. | FACILITY | FEATURE CROSSED | SUFF. RATING | OTHER LIMITATIONS | FUNCTIONAL CLASS |
|---|---|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | | | |
| 1106 | Jefferson-Marion Rd | UP Railroad | 47.5 | Weight 40 Ton | Arterial |
| 5789 | River Rd S | Willamette River | 43.2 | Weight 40 Ton Scour Issue | Arterial |
| 4753 | South Abiqua Rd | Abiqua Creek | 43.1 | | Local |
| 962 | Silverton Rd | Little Pudding River | 45.4 | | Principal Arterial |
| **ADDITIONAL IDENTIFIED NEEDS** | | | | | |
| 5381 | Gallon House Rd | Abiqua Creek | 38.9 | Weight 20 Ton | Local |

**Table 8-9** lists bridges that have sufficiency ratings greater than 50 but have other limitations that need to be evaluated.

**Table 8-9**
**Additional Bridges with Other Limitations (Sufficiency Ratings Greater than 50)**

| BRIDGE NO. | FACILITY | FEATURE CROSSED | LIMITATIONS | FUNCTIONAL CLASS |
|---|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | | |
| 4722 | Mt. Angel-Gervais Rd | Pudding River | Weight Limit 20/38/39 Ton | Minor Collector |
| 1502 | Marion Rd | Mill Creek | Low Sufficiency Rating | Major Collector |
| 47C66 | Delaney Rd | Battle Creek | Narrow Bridge, Poor Horizontal Alignment | Arterial |
| 5387 | Hazelgreen Rd | Pudding River | High Water can go over roadway | Arterial |
| 4711 | Ferry Rd | Stout Creek | Alignment, Width, Operating Rating | Local |
| 47C101 | Sunnyside Rd | Rodgers Creek | Narrow Bridge, Poor Alignment | Local |
| 47C06 | Whiskey Hill Rd | Overflow Pudding River | Narrow Bridge | Major Collector |
| **ADDITIONAL IDENTIFIED NEEDS** | | | | |
| 47C49 | Labish Center Rd | Little Pudding River | Weight Limit 40 Ton | Minor Collector |
| 47C25 | Golf Club Rd | Mill Creek | Narrow Bridge (would be replaced by a capacity widening project) | Arterial |

### 8.2.13 Other Road Restrictions

Height restrictions (below typically legal dimensions) are created on County roads by four railroad bridges. These railroad bridges also have sharp curves to pass under them, which create severe alignment deficiencies at their under-crossings. **Table 8-10** lists the height deficiencies at these bridges.

**Table 8-10**
**Structures Restricting County Roads**

| FACILITY | BRIDGE | DEFICIENCY | NEED |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| River Rd S (near Orville Rd) | BN-Sante Fe Railroad Bridge Undercrossing | Height Restriction 12' 3" Poor Road Alignment | Reconstruct bridge and improve roadway alignment |
| River Rd S (south of Sawmill Rd) | BN-Sante Fe Railroad Bridge Undercrossing | Height Restriction 12' 9" Poor Road Alignment | Reconstruct bridge and improve roadway alignment |
| **ADDITIONAL IDENTIFIED NEEDS** | | | |
| Riverside Rd | BN-Sante Fe Railroad Bridge Undercrossing | Height Restriction 11' 0" Poor Road Alignment | Grade Xing or improve alignment |
| Riverdale Rd (Connector) | BN-Sante Fe Railroad Bridge Undercrossing | Height Restriction 9' 4" Poor Road Alignment | Evaluate closing section of road under bridge |

### 8.2.14 Railroad Grade Crossing Projects

Rural grade crossing recommended projects include arterials and major collectors with no gates or signals, and all roads with no control at a crossing where train traffic exists. Some locations on lightly used local roads function acceptably with stop signs. However, there are many locations where stop signs on collectors and more-heavily-used local roads at railroad crossings cause unnecessary delay and safety concerns that could be reduced by installing gates at these crossings. These deficiencies are listed in **Table 8-11**.

**Table 8-11**
**Grade Crossing Projects**

| FACILITY | CROSSING | DEFICIENCY | FUNCTIONAL CLASS |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Butteville Rd | Portland and Western Railroad | No control and poor alignment | Major Collector |
| St. Louis Rd | Portland and Western Railroad | Stop signs; accidents | Minor Collector |

| FACILITY | CROSSING | DEFICIENCY | FUNCTIONAL CLASS |
|---|---|---|---|
| Broadacres Rd | Portland and Western Railroad | Stop Signs | Local |
| Waconda Rd | Portland and Western Railroad | Stop Signs | Minor Collector |
| Brush Creek Rd | Willamette Valley Railroad | No control | Local |
| Sunnyview Rd | Willamette Valley Railroad | Stop Signs | Minor Collector |
| McKee School Rd | Willamette Valley Railroad | No control | Local |
| Bates Rd | Willamette Valley Railroad | No control | Local |
| Porter Rd | Willamette Valley Railroad | No control | Local |
| MacLeay Rd | Willamette Valley Railroad | Stop Signs | Minor Collector |
| Shaff Rd | Willamette Valley Railroad | Stop Signs | Minor Collector |
| Downs Rd | Willamette Valley Railroad | No control | Local |
| Kaufman Rd | Willamette Valley Railroad | Stop Signs | Local |
| Monitor-McKee Rd | Willamette Valley Railroad | Stop Signs | Local |
| Paradise Alley | Willamette Valley Railroad | No control | Local |
| Hook Rd | Willamette Valley Railroad | No control | Local |
| Talbot Rd | Portland & Western Railroad | Stop Signs | Minor Collector |
| **ADDITIONAL IDENTIFIED NEEDS** | | | |
| Rainwater Ln | Willamette Valley Railroad | No control | Local |
| Perkins Rd | Portland & Western Railroad | Stop Signs | Local |

### 8.2.15 Drainage Deficiencies

Drainage deficiencies include locations where regular widespread high water results in water over the roadway or where surface water accumulates on the roadway during heavy rains. These deficiencies are identified in **Table 8-12.** Projects are prioritized by frequency and severity of drainage issues, importance of the road, detrimental effects of detouring around closures, and cost to address the issue. Drainage deficiencies within urban growth boundaries are not included in this plan. The County also does not work on private property to improve or maintain drainage.

**Table 8-12**
**Drainage Deficiencies**

| FACILITY | LOCATION | PROBLEM | FUNCTIONAL CLASS |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Hazelgreen Rd | East of Torvend Rd (near Pudding River) | Widespread high water results in water over roadway. | Arterial |
| **ADDITIONAL IDENTIFIED NEEDS** | | | |
| Delaney Rd | Locations east and west of Battle Creek | Widespread high water results in water over roadway. | Arterial |
| Jefferson-Marion Rd | East of Skelton Rd | Widespread high water results in water over roadway. | Arterial |
| Meridian Rd | South of Mt. Angel - Scotts Mills Rd | Widespread high water results in water over roadway. | Major Collector |
| River Rd N | South of Brooklake Rd | Widespread high water results in water over roadway. | Arterial |

For many of these identified drainage deficiencies the solution would be costly. Therefore, very few are listed as recommended projects. Some will be considered as part of other projects and addressed at that time.

Section 8-2 has listed the currently identified needs for the Marion County transportation system. Many more needs are expected to develop in the future, and are described in Section 8-5.

## 8.3 BICYCLE AND PEDESTRIAN IMPROVEMENTS

In conjunction with the 1998 RTSP, the County developed a separate *Bicycle and Pedestrian Plan* to address bicycle and pedestrian transportation over the next 20 years. As part of this 2005 update process, that plan was reviewed and found to still adequately address the needs for bicycle and pedestrian travel in rural Marion County. The Bicycle and Pedestrian Plan will remain as the principal document for addressing these needs. This section provides a summary of the key components from that plan.

The plan and this section address goals from the adopted Growth Management Framework to:
1) Encourage use of alternative modes of transportation including mass transit, bicycling, walking, and carpooling.
2) Address transportation needs appropriate to both urban and rural areas throughout the county.

The purpose of the *Bicycle and Pedestrian Plan* is to assess the needs to facilitate bicycling and walking as a viable means of transportation through appropriate policies and improvements. The plan identifies existing and future bicycle and pedestrian needs and contains a prioritization system to rank the needs in order of significance and benefit. In addition, the plan provides descriptions of projects to address the higher priority needs.

### 8.3.1 Bicycle and Pedestrian Needs

With approximately 990 miles of rural roads in the County, it would be extremely costly to provide bicycle and pedestrian facilities on every road. In addition, the County has many miles of urban roadway that generally has a higher demand for bicycle and pedestrian transportation than rural roadways. In order to maximize available resources, the County will focus its efforts towards providing suitable facilities on arterials and collectors that have appreciable existing or potential bicycle and pedestrian traffic, and will particularly focus on facilities in urban areas. Local roads for the most part will continue to be shared roadways where motorists, bicyclists, and pedestrians share the travel lanes. In many instances, gravel shoulders are available for pedestrians on County roads. Even by focusing only on arterials and collectors, the planning team compiled a large collection of locations where bicycle and pedestrian facilities could be beneficial.

To sort through all of the potential locations, the County developed a prioritization system to identify the top candidates for improvements. The prioritization system used to determine bicycle and pedestrian needs considers eleven different criteria and assigns points for each criterion. The eleven criteria used for the prioritization system are described below.

- Trip generation potential of surrounding area
- Trip attraction potential of surrounding area and attractiveness of the route
- Topography of the route
- Connectivity to population centers, existing bicycle/pedestrian facilities, and major transportation links
- Duplication of facilities
- Location of attractive alternate routes
- Pavement condition
- Average daily traffic (ADT)

- Width of existing paved shoulder
- Functional classification
- Strategic Intra-/Inter-County corridors

The total number of points from all of the criteria provides a ranking of the bicycle/pedestrian needs. A total of 112 roadway segments were evaluated based on existing or potential bicycle and pedestrian use. It was determined that of the 112 locations, those that received a rating of 50 points or more would be considered as applicable 20-year bicycle/pedestrian needs. **Table 8-13** lists the recommended improvements based on this prioritization system. This table has been updated for 2005.

**Table 8-13**
**Bicycle and Pedestrian Improvement Needs**

| FACILITY | FROM | TO | ISSUE |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Arndt Rd * | Wilsonville - Hubbard Hwy | Airport Rd | High vehicular traffic volume; little or no shoulder |
| Boones Ferry Rd * | Woodburn UGB | Crosby Rd | High vehicular traffic volume; little or no shoulder |
| Marion Rd * | Turner UGB | Mill Creek Rd | High vehicular traffic volume; little or no shoulder on south side |
| Stayton Rd * | West Stayton Rd | Stayton UGB | High vehicular traffic volume; little or no shoulder |
| State St * | 63rd Ave | Howell Prairie Rd | High vehicular traffic volume; little or no shoulder |
| Woodburn-Hubbard Rd * | Woodburn UGB | Hubbard UGB | Connects trip generators and attractors; High vehicular traffic volume; little or no shoulder |
| Center St / Hampden Ln / Fruitland Rd | Cordon Rd | 63rd Avenue | Connects unincorporated community (Fruitland) to major trip generator (Salem); little or no shoulder |

* These segments have also been identified as safety widening improvements (See Table 8-10). By pursuing these projects, the County can provide benefits to both motorists and bicyclists/pedestrians.

Although the prioritization system is intended to rank the segments based on needs and benefits, some improvements can benefit a larger portion of the community and therefore are more desirable to pursue. The projects identified by an "*" in **Table 8-13** indicate improvements that have also been identified as safety widening projects, which benefit motorists as well as bicyclists and pedestrians. In essence, these projects serve two roles: 1) improving safety for motorists and 2) providing mobility and improving safety for bicyclists and pedestrians. For that reason, these improvements are more cost-effective in serving a greater number of roadway users.

## 8.4 SPECIAL STUDIES AND LOCALIZED PLANS

This Transportation System Plan provides a general picture of the transportation system of Marion County and our vision for this system for the next twenty years. There are several areas for which more detailed planning is warranted, such as unincorporated communities, and areas where significant development activity is expected. There are also several corridors that merit further study to evaluate their viability as transportation corridors, evaluate the potential demand for travel in these corridors, and to determine whether or not these roadways should be improved. This section describes the future planning efforts to be undertaken.

### 8.4.1 Sub-Area Plans

These plans will be smaller and more detailed plans addressing specific areas in the County. They would be adopted upon their completion as part of a future Transportation System Plan amendment or update. The specific areas they will address are outside urban growth boundaries, and thus not covered by urban transportation system plans. However, detailed planning is appropriate in these areas because of such factors as level of transportation system usage (e.g. high traffic volumes), existing or developing transportation system issues (e.g. traffic problems or lack of sidewalks), and current or anticipated land use. These sub-area plans are detailed documents describing specifically what the transportation system of that area is to be in the coming years. These plans would be prepared by County Staff (and/or ODOT staff for locations involving their facilities) along with input from property owners and other parties as appropriate. These plans are prioritized by the anticipated necessity or benefit of having them in place, and listed in **Table 8–14.** Chapter 12 contains Sub-Area plans for the Brooks interchange area and the Aurora/Donald interchange area. Other Sub-Area plans will be included in Chapter 12 as they are completed. The Sub-Area plan for an area should be completed before significant transportation projects are constructed in that particular area.

**Table 8–14**
**Sub–Area Plans**

| SUB - AREA | ISSUES INVOLVED |
|---|---|
| **RECOMMENDED PROJECTS** | |
| Brooks Community | Community Transportation Plan |
| Butteville Community | Community Transportation Plan |
| Mehama Community | Community Transportation Plan |
| Monitor Community | Community Transportation Plan |
| Delaney Interchange Area | Traffic flow on and off interstate; access management |
| Pratum Community | Community Transportation Plan |
| Marion Community | Community Transportation Plan |
| St. Louis Community | Community Transportation Plan |

### 8.4.2 Corridor Studies

Corridor studies will look at corridors where there could be significant demand for future travel, and often a considerable demand for freight mobility. In each of these cases there are aspects of the existing roadway, such as out-of-direction travel, curving alignments, narrow pavement, restrictive structures, and delay that may reduce the ability of the corridor to serve this potential significant demand. The possibility exists to improve the roadway to better facilitate movement of people and goods along that corridor. These studies would attempt to determine the future demand for travel along the corridor, and the cost and potential benefit of improving the roadway to service the corridor. The end result of the study will be to recommend whether or not to improve the roadway and, if so, a conceptual idea of what that improvement would be. These studies are listed in **Table 8-15.**

**Table 8-15**
**Recommended Corridor Studies**

| FACILITY NAME | ENDPOINT | ENDPOINT | CONNECTING | ISSUES |
|---|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | | |
| Cordon Road | Interstate 5 | Hazelgreen Road | North-South Route along east side of Salem | Capacity issues imminent; future signal locations; many locations needing turn lanes; access management |
| Brooklake Road | River Rd NE | Oregon 99E | I-5 interchange, Keizer, Brooks, farmland, and surrounding area | Capacity issues imminent; future signal locations; many locations needing turn lanes; access management |
| Riverside / Sidney / Ankeny Hill Rds | Independence Bridge | Interstate 5 | I-5 to Independence, Monmouth, southern Polk Co. and adjacent farmland | Out-of-direction travel, height and weight restrictions, narrow roads |
| Mt. Angel – Gervais Rd | Mt. Angel | Gervais | Mt. Angel, Silverton, and surrounding area to Gervais, Interstate 5, and points north and west | Out-of-direction travel, weight restrictions, connections in and through cities |
| River S. / Orville / Vitae Springs / Skyline Rds | Independence Bridge | Salem | South Salem to Independence, Monmouth, and points south and west | Topography, curvy roads, height and weight restrictions, intersection issues |
| River Road South | Independence Bridge | Salem | Central Salem to Independence, Monmouth, and points south and west | Connection to river crossing, use as emergency alternate route, Height and weight restrictions, slide area, railroad bridges |
| $55^{th}$ / $54^{th}$ Aves and Quail Rd | Hazelgreen Rd | Oregon 99E | Northeast Salem and Cordon Rd to Oregon 99E, Brooks, Woodburn, and points north | Narrow roads, Lake Labish crossing, traffic control, curves |

## 8.5 FUTURE COUNTY ROADWAY NEEDS

The County's population and thus vehicle travel is expected to grow in the next 20 years. Future roadway needs are based on evaluating the possible impacts of the projected 2025 traffic volumes on the transportation system. (Section 6 provides details on the projected volumes and how they were developed.) These projected traffic volumes were used to identify locations where roadway and intersection capacity deficiencies may develop by the year 2025 if no improvements are made during that time. It should be noted that concepts such as expanded transit service, TSM (Transportation System Management – making more efficient use of the existing system) and TDM (Transportation Demand Management – reducing the demand for vehicle travel) strategies, land use planning, and other strategies could help to reduce some of these potential deficiencies. For that reason, these projects will not be planned in detail until these anticipated future needs become identified as actual current needs.

### 8.5.1 Capacity Needs

Several locations are anticipated to have capacity deficiencies as a result of future growth and may warrant consideration of roadway widening. These possible widening needs consist of adding lanes to increase the capacity of the roadway and are listed in **Table 8-16**. It is understood that a comprehensive study would be needed before any one of these future widening improvements are pursued. Such a study would include looking at public transportation improvements, TSM and TDM techniques, and land use and zoning strategies.

**Table 8-16**
**Future Widening for Capacity Needs**

| FACILITY | FROM | TO | NEED |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Cordon Rd | State St | Center St | Widen to four lanes (with turn lanes at intersections as appropriate) |
| Cordon Rd | Salem UGB (Caplinger Rd) | State St | Widen to four lanes (with turn lanes at intersections as appropriate) |
| Cordon Rd | Center St | Sunnyview Rd | Widen to four lanes (with turn lanes at intersections as appropriate) |
| Cordon Rd | Sunnyview Rd | Silverton Rd | Widen to four lanes (with turn lanes at intersections as appropriate) |
| Arndt Rd | Wilsonville-Hubbard Hwy | Airport Rd | Widen to four lanes (with turn lanes at intersections as appropriate) |
| Cascade Hwy | Stayton UGB | Sublimity UGB | Widen to four lanes (would be part of State interchange project) |
| Silverton Rd | Cordon Rd (Salem UGB) | Indigo St | Widen to four lanes (with turn lanes at intersections as appropriate) |
| Golf Club Rd | Oregon 22 | Stayton UGB | Widen to five lanes (project shown as a need in Stayton TSP). |
| Silverton Rd | Indigo St | Howell Prairie Rd | Widen to four lanes (with turn lanes at intersections as appropriate) |

| | | | |
|---|---|---|---|
| Brooklake Rd | River Rd | I-5 Interchange | Widen to four lanes (with turn lanes at I-5 interchange and other key locations). (See Note 1) |
| Silverton Rd | Howell Prairie Rd | Brush Creek Rd | Widen to four lanes (with turn lanes at intersections as appropriate) |
| Silverton Rd | Brush Creek Rd | Silverton UGB | Widen to four lanes (with turn lanes at intersections as appropriate) |

Note 1: This project is not authorized until its need is identified in a Sub-Area plan for the Brooks-Hopmere community

### 8.5.2 Intersection Traffic Control and Configuration

Projected traffic volumes were also used to identify locations with potential intersection capacity deficiencies and possible traffic control needs. Traffic control needs include signals, turn lanes, and changes to through traffic movement, and are identified in **Table 8-17**. (Intersections with existing needs are not included in this table.)

**Table 8-17**
**Future Intersection Traffic Control and Modernization Needs**

| FACILITY | LOCATION | PROJECTED PROBLEM | PROBABLE NEED |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Brooklake Rd | River Rd | Developing congestion; Traffic control and location of railroad crossing | Signal, move RR gates, left turn lanes, drainage; possible realignment of intersection. |
| Cordon Rd | Hazelgreen Rd / 55th Ave | Developing congestion; approach angles | Traffic signal and left turn lanes at intersection |
| McKay Rd | French Prairie Rd | Future Congestion | Left turn lanes on McKay Rd; Possible Signal |
| Brooklake Rd | Huff Ave | Future Congestion | Left turn lane on Brooklake Rd; possible signal |
| Ehlen Rd | Butteville Rd | Future Congestion | Traffic Signal |
| **ADDITIONAL IDENTIFIED NEEDS** | | | |
| Jefferson-Marion Rd | Parrish Gap Rd | Future Congestion | Eastbound left turn lane |
| 54th Ave NE | Lakeside Rd | Stop impedes movement | Convert to 2-way stop |

### 8.5.3 Connectivity and Modernization Needs Proposed By Cities

In many locations, Marion County's rural transportation system provides critical links to and from the urban transportation systems of the cities within Marion County. There are some

locations where cities have identified revisions to the rural transportation system that would be necessary to meet their identified needs for the urban transportation systems. **Table 8-18** lists projects proposed by cities, including those contained within city Transportation System Plans that would extend into rural areas. These projects would be extensions and/or realignments of existing roads. Each of these projects could encounter many obstacles such as zoning, land use laws, and barriers such as railroads and creeks. It is likely that, for these projects to be realized, funding for them would need to be obtained by the appropriate city.

**Table 8-18**
**Connectivity and Modernization Needs Proposed by Cities**

| FACILITY | FROM | TO | PROJECT | PROPOSING CITY |
|---|---|---|---|---|
| **NEEDS IDENTIFIED BY CITIES** | | | | |
| Crosby Rd | Woodburn – Hubbard Rd | Oregon 99E | Extend Crosby Road (2 lanes) across railroad and along Goudy Gardens Rd to Oregon 99E | Woodburn |
| Woodburn Southern Arterial | Woodburn UGB | Oregon 214 | Extend the Southern Arterial (2 lanes) from Oregon 99E to Oregon 214 | Woodburn |
| 35th Ave | North of Keizer | Keizer UGB | Realign and modernize 35th Ave in correlation with a Keizer project to realign Radiant Drive west of the baseball stadium in the Keizer UGB. | Keizer |
| 9th St | Cascade Hwy | Eastern Sublimity | Extend 9th St east, south of current UGB, as an east-west collector serving eastern Sublimity | Sublimity |
| North-South Collector | Sublimity Rd (Starr St) | Sublimity Blvd | Construct a new north-south collector west of the Sublimity UGB | Sublimity |

## 8.6 STATE HIGHWAY AND REGIONAL TRANSPORTATION NEEDS

As with the County roadway system, the State highway system is also a critical part of the overall transportation system in the region. Many of the key corridors in the County are State Highways. As part of the original 1998 Rural Transportation System Plan, the Oregon Department of Transportation contracted Marion County to determine the 20-year needs on State highways in the County (except I-5 and Oregon 22, and those inside the Salem, Keizer, and Woodburn urban areas). This 2005 update includes projects on or related to Interstate 5 and Oregon 22 because, as Principal Arterials, those are the most important roadways for traffic movement in the Marion County transportation system, and issues on these roads affect the whole system. However, this plan is not intended to include detailed plans for Interstate 5 or Oregon 22. Those planning efforts would be done by the Oregon Department of Transportation.

In addition to the review of State highway facilities by the County, findings from other transportation planning documents involving State highways are included in Section 3 (Background and Existing Issues) of this plan. As anticipated with limited funding, many of the issues identified in the 1998 planning effort have not been addressed. These issues are repeated here in this 2005 Rural Transportation System Plan Update. In addition, some needs and issues have arisen or come to our attention since then. These issues are listed here as well.

State highway needs include safety and modernization improvements, corridor studies, and refinement studies. Needs on State highways were identified that are in or significantly affect rural areas. It should be noted that the planning of roadway maintenance and bridge preservation improvements are under ODOT's control and are not included in this plan.

### 8.6.1 State Highway Safety Needs

In evaluating the State Highways in the County, the planning staff identified a number of safety needs that should be reviewed by ODOT. These needs are listed in **Table 8-19**.

**Table 8-19**
**State Highway Safety Needs**

| FACILITY | LOCATION | PROBLEM | NEED |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| I-5 Ramps | Oregon 214 and 219 (Woodburn Interchange) | High number of accidents; congestion at ramp terminals; congestion on 214; queues extending onto freeway mainline | Reconstruct interchange with longer ramps, more capacity, improve safety, and widen 214.[2] |
| I-5 Ramps | Ehlen Rd / Bents Rd | Accidents; poor alignment between interchange and Bents Rd; Turns from ramps with low capacity and high delay | Widen Ehlen Rd at the interchange, install signals at ramp intersections and turn lanes on ramps, and realign Bents Rd. Or redesign interchange |

[2] Note: though this location is within the Woodburn UGB, transportation to and from rural areas of Marion County is affected by this deficiency

| FACILITY | LOCATION | PROBLEM | NEED |
|---|---|---|---|
| Wilsonville-Hubbard Hwy | Ehlen Rd / Boones Ferry Rd | Accidents; left-turners block through traffic; Boones Ferry intersection very close to State Hwy alignment | Install left turn lanes for eastbound and westbound traffic; perhaps signalize Boones Ferry Rd intersection and/or move it to the west. |
| Oregon 99E | Howell Prairie Rd | Accidents | Left turn lane from southbound Oregon 99E to Howell Prairie Rd[3]. |
| Oregon 99E | Boones Ferry Rd | Rear-end and left-turning accidents | Left turn lane from northbound Oregon 99E to Boones Ferry Rd[1] |
| Oregon 99E | Waconda Rd | Accidents, skewed intersection | Left turn lanes on Oregon 99E; possibly realign Waconda to reduce skew at intersection[1] |
| Oregon 214 | Hobart Rd | Accidents | Traffic signal at intersection. |
| Oregon 99E | Checkerboard Rd | Accidents | Vertical and horizontal realignment; possible left turn lane |
| Oregon 214 | Elliot Prairie Rd | Accidents | Realign horizontal curves near intersection. |
| Oregon 214 | Brownell Rd | Sight distance, vertical curves | Realign vertical curves and intersection. |
| Oregon 219 | French Prairie Rd / St. Paul Hwy | Accidents; Sharp Curve; Y-Intersections | Realign intersection |
| **ADDITIONAL IDENTIFIED NEEDS** | | | |
| Jefferson Hwy | Ankeny Hill Rd | Sight distance, vertical curves | Realign vertical curves north of the intersection. |
| Oregon 214 | Monitor-McKee Rd | Accidents | Vertical realignment |
| Oregon 214 | Industrial Way (Mt. Angel) | Accidents, Left Turns | Left turn lane from northbound Oregon 214 to Industrial Way. |

### 8.6.2 State Highway Modernization Needs

Modernization needs consist of capacity, reconfiguration, and other related improvements that improve the efficiency of highway facilities, but are not made for the primary reason of safety. The modernization needs identified by the County are generally isolated to specific locations, where a change will improve the operation of the transportation system in the vicinity, such as turn lanes, intersection realignment, and shoulder widening. None of these modernization needs involve

[3] This project is programmed for 2005 construction in the Oregon Department of Transportation Statewide Improvement Program (STIP).
[1] These projects are programmed for 2005 construction in the Oregon Department of Transportation Statewide Improvement Program (STIP).

additional lanes on highways, other than turn lanes at key intersections. **Table 8-20** lists the state highway modernization needs in the County.

**Table 8-20**
**State Highway Modernization Needs**

| FACILITY | LOCATION | PROBLEM | NEED |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| I-5 Ramps | Brooklake Rd | Congestion; delay; queues backing up to freeway mainline | Install traffic signals and turn lanes at ramp intersections; may need to adjust location of ramps. |
| Wilsonville-Hubbard Hwy | Arndt Rd | Congestion; long delays; safety concerns with queued traffic near or in travel lanes | Dual left turn lanes from southbound Wilsonville-Hubbard Hwy to Arndt Rd and free right-turn lane from westbound Arndt Rd to Wilsonville-Hubbard Hwy[1]. |
| Oregon 22 | Cordon Road | Major Arterial / Parkway and Principal Arterial not connected | New Interchange to allow road system to function as planned[2] |
| Oregon 22 | Cascade Hwy | Stop signs and sharp curves for on-ramps; off-ramp capacity issues | Reconstruct interchange |
| Interstate 5 | Woodburn Area | Delays and slow traffic through Woodburn getting to existing interchange | Improve regional passenger and freight mobility by constructing new interchange and connector roads |
| Wilsonville-Hubbard Hwy | Oregon 99E to Clackamas County | Narrow Roadway | Widen travel lanes and add shoulder |
| Oregon 214 | Cascade Hwy | Sight distance, inappropriate traffic control for traffic volume splits | Realign intersection and change traffic control. |
| Oregon 219 | Butteville Rd | 90 degree curves impede movement along highway; intersections on sharp curves | Realign Oregon 219 to improve intersection(s) with Butteville Rd. |
| Oregon 213 | Silverton to Clackamas County line | Narrow pavement | Widen pavement (shoulder and/or lanes). |
| Hobart Rd (Truck Route for OR 213) | Oregon 214 to Meridian Rd | Narrow pavement | Widen pavement (shoulder and/or lanes). |

[1] This project is programmed for 2005 construction in the Oregon Department of Transportation Statewide Improvement Program (STIP) with some Oregon Transportation Investment Act (OTIA) funding
[2] Note: though this location is within the Salem UGB, transportation to and from rural areas of Marion County is affected by this deficiency

| FACILITY | LOCATION | PROBLEM | NEED |
|---|---|---|---|
| **ADDITIONAL IDENTIFIED NEEDS** | | | |
| Jefferson Hwy | I-5 to Talbot Rd | Narrow pavement | Widen pavement (shoulder and/or lanes). |
| Oregon 214 | Silverton to Oregon 22 | Narrow pavement | Widen pavement (shoulder and/or lanes). |
| Oregon 214 | Shaw Hwy | Awkward Y-intersection, horizontal curves | Convert to T-intersection, realign Oregon 214. |

### 8.6.3 Connectivity to Interstate and Statewide Highways

Access to Interstate and Statewide Highways (namely Interstate 5 and Oregon 22 for Marion County, as designated by the Oregon Highway Plan) is very important to the economic vitality, freight mobility, and quality of life of the County. The presence of significant congestion, delay, or out-of-direction travel along the Access Route from an area to the Interstate and Statewide Highway system can have significant detrimental effects on that community. This 'Access Route' is defined as the fastest route (that is appropriate to the functional class of a roadway) from that location until one is driving along the Interstate or Statewide Highway in one's intended direction of travel. Travel along this route needs to be quick and efficient. For larger cities, this route needs to be particularly short and quick, while the connection to smaller cities could take longer. Marion County's connectivity to Interstate or Statewide Highways guideline is expressed in **Table 8-21** below, which shows the maximum acceptable travel time between a city and the nearest Interstate or Statewide Highway, based on the population of the city. The acceptable travel time may be increased if the route brings the driver closer to their destination, or reduced if the route requires the driver to travel out-of-direction.

**Table 8-21**
**Connectivity to Interstate or Statewide Highway Guidelines**

| CITY POPULATION | MAXIMUM TRAVEL TIME GUIDELINE |
|---|---|
| Less than 1,000 | 30 minutes |
| 1,000 to 5,000 | 20 minutes |
| 5,000 to 20,000 | 15 minutes |
| 20,000 to 50,000 | 10 minutes |
| Over 50,000 | Access to Arterial within City Limits |

An adjustment may be made to these times if most of the delay occurs within the city in question. If the highway passes through or abuts City Limits and the city has good access to that highway, then that city is considered to have acceptable connectivity to the arterial.

If the travel time is greater than the amount shown in the table, the delay in accessing the Interstate or Statewide Highway is longer than acceptable, and this has detrimental effects on residents, businesses, freight movement, and farms in the area. These detrimental effects may take the form of increased transportation costs, loss of business, increased time spent driving, increased crash risk, increased pollution, decreased property value, higher unemployment, and increased out-of-direction travel. Excess delay also puts added stress on the County Road system or city streets, and an appropriate TSM measure would be to get this long-distance and regional traffic to the Interstate or Statewide Highway where it can be better handled.

The vast majority of the 20 cities in Marion County comfortably meet these guidelines. However, travel time from Silverton to I-5 north is seven minutes over the guideline.

### 8.6.4 Future State Highway Widening for Capacity Needs

Traffic volumes have been increasing throughout Marion County for decades as the County has grown. Because of this growth in traffic volumes, portions of State and Interstate highways in Marion County are developing capacity problems. Volume projections indicate that in addition to the existing problems new capacity issues on some state highways within Marion County will develop over the next 20 years. While improvements at specific locations (Transportation System Management (TSM)), can alleviate some extent of these capacity issues, projections indicate that it will become necessary to add lanes to the following (shown in **Table 8-22)** sections of State Highway in order to maintain adequate traffic flow in the next 20 years.

**Table 8-22**
**State and Interstate Highway Widening Needs for Capacity**

| HIGHWAY | FROM | TO | NEED |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Interstate 5 | Salem | Linn County | Widen to at least three lanes each direction[4] |
| Oregon 22 | Golf Club Rd | Cascade Hwy | Widen to two lanes each direction |
| Oregon 99E | Woodburn | Wilsonville-Hubbard Hwy | Add an additional travel lane in each direction and a center turn lane or median |

[4] Oregon Highway Plan (OHP) mobility standards (based on volume to capacity ratios) are currently exceeded based on 2002 data. It is expected that traffic volumes will continue to grow over the life of the TSP and widening beyond three travel lanes may be justified. When a project is developed, appropriate environmental documentation will be prepared. Through that process, the magnitude of widening necessary will be determined to meet OHP standards. Widening to three lanes in each direction will be the minimum necessary to achieve OHP standards.

| HIGHWAY | FROM | TO | NEED |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Wilsonville – Hubbard Hwy | Interstate 5 | Arndt Road | Widen to two lanes each direction. Note: although this project would be predominantly within Clackamas County, it is adjacent to and significantly affects roadways in Marion County |
| Interstate 5 | Salem | Clackamas County | Additional capacity may become necessary within 20 years |
| Oregon 99E | Salem | Woodburn | Add a center turn lane and/or an additional travel lane in each direction |

### 8.6.5 Corridor Studies

Several State highways provide the 'backbone' of the regional transportation system by making important connections within the County and outside the County. In order to ensure that these highways continue to serve these functions in the future, corridor studies are needed to maintain the accessibility, safety, and mobility along these routes. It is anticipated that findings from these corridor studies will help to identify specific highway improvements that are needed in subsequent updates of the transportation plan. **Table 8-23** lists corridor studies needed for State highways.

**Table 8-23**
**Corridor Studies on State Highways**

| CORRIDOR | DESCRIPTION |
|---|---|
| **RECOMMENDED PROJECTS** | |
| Connections to and from Interstate 5 | I-5 serves as the primary transportation corridor through the County. It provides access between several cities in the County as well as access to places outside the County. Many interchanges within or adjacent to the County have developed capacity issues at the interchange and also in areas leading to the interchange. Additionally, especially in northern Marion County, the wide spacing and long distances between interchanges necessitates considerable out-of-direction travel in order to use the Interstate. This study is needed to look at possible interchange revisions (excluding the Woodburn interchange which is being done separately). |

| CORRIDOR | DESCRIPTION |
|---|---|
| **RECOMMENDED PROJECTS** | |
| Oregon 99E from Salem to Clackamas County | Oregon 99E serves as the major transportation route to and through the communities of Woodburn, Hubbard, Aurora, Gervais, and Brooks, as well as connecting these communities with Salem. This highway also serves as a major farm-to-market route for the significant agricultural businesses and farms in the area. Traffic volumes have increased on this road to the point where delay and poor Level of Service are common occurrences, and capacity problems are worsening quickly. In addition, as this road bisects many of these communities, the high volume of traffic can have a detrimental effect on quality of life in surrounding communities, businesses, and the economy. This study would consider safety, capacity, goods movement, regional traffic movement, community livability, economic vitality, and other issues. This study may be combined with study of Oregon 99E in Clackamas County, as Oregon City or Canby may be logical northern endpoints for this study. |
| Oregon 214 from Silverton to Woodburn | This section of Oregon 214 provides the main connection between Woodburn, Mt. Angel, and Silverton. For people living in Silverton and Mt. Angel, Oregon 214 serves as the primary access route to I-5. There exists a need to look at facilitating transportation between Silverton/Mt. Angel and Woodburn and to look at ways to mitigate safety issues along this stretch of highway. A corridor study would also look at measures for improving access from I-5 to Silverton, Mt. Angel, and other areas in this part of the County. |
| Oregon 219 from Woodburn to Newberg | This corridor connects Woodburn and northern Marion County with Newberg and Yamhill County. Several 90-degree curves and the alignment of the highway make this route inefficient in terms of travel time. Roadway improvements and alignment changes to facilitate mobility need to be looked at along this corridor. There also exists a need to study the feasibility of using Oregon 219 versus other routes, such as the McKay/Yergen/Ehlen Rd corridor. A corridor study would also need to look at the impacts of any new river crossing in the area, if one is considered. |
| **ADDITIONAL IDENTIFIED NEEDS** | |
| Oregon 214 from Silverton to Oregon 22 | This corridor provides access to Silver Creek Falls State Park and is heavily used during weekends and summer months. During these times, the highway experiences significant tourist and RV traffic. The corridor also serves local traffic from many rural residences and farms along the highway. A corridor study is needed to look at safety and traffic control improvements that could facilitate travel along this section of highway. In addition, there exists a need to look at ways to minimize conflicts between tourist traffic, truck traffic, and local traffic. |

### 8.6.6 Regional Planning Efforts and Studies

Regional planning studies are needed to address large-scale projects that will likely involve coordination between several agencies and jurisdictions. The studies that are needed within the next 20 years are described in **Table 8-24**.

**Table 8-24**
**Regional Planning Efforts and Studies**

| LOCATION | PROJECT DESCRIPTION |
|---|---|
| **RECOMMENDED PROJECTS** | |
| Oregon 22 / Cordon Rd Interchange[5] | Currently, there is no direct access from Oregon 22 to Cordon Rd. Gaffin Rd currently provides some connection, but not to current standards. A refinement study is needed to look at the need and impact of a new interchange on Oregon 22 at Cordon Rd and determine the most effective design (if appropriate). The study will also look at other engineering or land use actions as alternatives to building a new interchange at Cordon Rd. In addition, the study would evaluate nearby interchanges on Oregon 22 that could affect the final recommendation. A refinement study would likely be headed by ODOT with Marion County, the City of Salem and other local agency participation. While this interchange would be within the Salem Urban Growth Boundary, the need for it impacts areas outside the urban growth boundary. |
| Willamette River Bridge (Salem area)[6] | Significant capacity issues have developed where Oregon 22 crosses the Willamette River on the Center and Marion Street Bridges in Salem. This is a regional mobility issue because these bridges (at river mile 83) are the only bridges over the river between Independence (river mile 96) and Newberg (river mile 48). The River forms a barrier to East-West traffic across the Willamette Valley, and providing viable means of travel across it is important to the mobility and vitality of the region. Considerable work has been undertaken already towards a third bridge in the Salem urban area, and a potential corridor has been identified. The next step is an Environmental Impact Statement, which involves detailed study of the environmental, community, economic, and other issues involved. The County supports conducting this study. The County is generally supportive of the bridge, provided that environmental, community, economic, and other issues can be reasonably satisfied. |

[5] Note: though this location is within the Salem UGB, transportation to and from rural areas of Marion County is affected by this deficiency
[6] Note: though this location is within the Salem UGB, transportation to and from rural areas of Marion County is affected by this deficiency

| LOCATION | PROJECT DESCRIPTION |
|---|---|
| **RECOMMENDED PROJECTS** | |
| Potential new I-5 interchange in northern Marion County | Northern Marion County (along with southern Clackamas and Yamhill Counties) has grown substantially in the last few decades, and is anticipated to continue growing rapidly. Interstate 5 is a critical piece of the transportation system linking Marion County with the 'outside world,' and thus access to I-5 is critical to the economic vitality and quality of life of this region. Capacity problems currently exist at all three interchanges (Brooks, Woodburn, and Aurora/Donald) in the 20-mile stretch between the Salem/Keizer urban area and the northern Marion County line. The large spacing between interchanges also necessitates a significant amount of local roadway and out-of-direction travel to get to I-5. These capacity and out-of-direction travel issues have a detrimental effect on the region, and this detrimental effect will grow exponentially as the capacity issues become more severe. While potential modifications to the Woodburn interchange are progressing through the assessment process, they will not significantly address the delay issues in getting through Woodburn to this interchange. Therefore, while these modifications will certainly help Woodburn, a deficiency in connectivity to I-5 will still exist for the region. A study is needed to determine the value to the state and regional transportation network of an additional interchange in north Marion County. This would evaluate the value of the interchange to communities such as Mt. Angel, Hubbard, Gervais, Silverton, Molalla, Mulino, Scotts Mills, Newberg, St. Paul, many rural residents, and the plethora of agricultural businesses throughout the region. |
| Willamette River Bridge (North of Salem area) | A refinement study is needed to look at the need and impact of an additional crossing of the Willamette River. Currently, there are three crossings over the Willamette River in Marion County: at Salem, Independence, and Newberg. There is concern that as Polk County, Yamhill County, and northern Marion County continue to grow, there may be a need to provide another crossing north of the Salem area to provide regional mobility. A study is needed to determine whether an additional crossing is appropriate and to identify and evaluate possible crossing locations. This study could also be linked to the Woodburn area new interchange study since a new or expanded interchange could affect the need for an additional river crossing. |

### 8.6.7 State Highway Bridges and Other Restrictions

There are bridges and other restrictions on State Highways that limit the mobility of vehicles, particularly large and/or heavy trucks. Some of these cause loads to be diverted onto County Roads that would otherwise use State Highways. This rerouting of traffic results in significant wear and tear on County Roads and bridges, which will result in additional maintenance and repair costs to the County. These detours also have negative effects on quality of life in their vicinity, as well as resulting in increased delays and costs to truckers and trucking companies and the resulting detriment to the economic vitality of area businesses. State studies have concluded that these types of restrictions will become more prevalent as the State's bridges continue to age. However, some effort and improvement on state roads will be made through the new bridge program that was funded here in Oregon.

**Table 8-25** lists restrictions on State Highways currently in effect within Marion County. These restrictions, and the needs resulting from them, are likely to increase as the State's bridges continue to deteriorate due to lack of funding.

**Table 8-25**
**State Highway Bridge and Other Restrictions**

| HIGHWAY | LOCATION | STRUCTURE | TYPE OF RESTRICTION |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Oregon 22 | Deer Park Road | Bridge | Weight |
| Oregon 22 | Joseph St | Bridge | Weight |
| Oregon 22 EB | Beaver Creek (Near Aumsville) | Bridge | Weight |
| Interstate 5 | Ankeny Hill Road | Overcrossing | Height 15'0" to 15'3" |
| Interstate 5 NB | Jefferson Highway | Overcrossing | Height 15'0" |
| Interstate 5 | Talbot Road | Overcrossing | Height 14'7" to 15'5" |
| Oregon 22 | 72nd Avenue | Overcrossing | Height 14'6" to 15'5" |
| Oregon 22 EB | Albus Road | Overcrossing | Height 14'4" to 14'8" |
| Oregon 22 | Lancaster Drive | Overcrossing | Height 14'6" to 15'0" |
| Oregon 22 | Cordon Road | Overcrossing | Height 15'1" to 15'6" |
| Interstate 5 | D Street | Overcrossing | Height 16'0" |
| Interstate 5 | Center Street | Overcrossing | Height 16'0" |
| Interstate 5 SB | Chemawa Road | Overcrossing | Height 16'2" to 16'3" |
| Interstate 5 | Quinaby Road | Overcrossing | Height 16'3" to 16'7" |
| Interstate 5 | Perkins Road | Overcrossing | Height 16'2" to 16'11" |
| Interstate 5 | St. Louis Road | Overcrossing | Height 16'3" to 16'7" |
| Interstate 5 | Keene Road | Overcrossing | Height 16'6" to 16'11" |
| Interstate 5 | Concomly Road | Overcrossing | Height 16'6" to 17'1" |
| Interstate 5 | Brooklake Road | Overcrossing | Height 16'3" to 16'9" |
| Oregon 214 | Under Oregon 22 | Overcrossing | Height 15'0" |
| Oregon 22 | Whitewater Creek (Marion – Linn County Line) | Bridge | Weight |
| Oregon 219 | Willamette River | Bridge | Weight |
| Mill City Bridge | North Santiam River | Bridge | Weight and Height 14'0" to 15'4" |

In addition to the height deficiencies in Table 8-10 and 8-25, several bridges on Oregon 22 have deficient heights and/or weight-bearing capabilities that require oversize loads and heavy hauls to be detoured onto Aumsville Hwy, which is a relatively narrow and curvy County road. It is preferable that these types of loads returned to using Oregon 22.

In addition, there are several locations where State Highway structures restrict the mobility of vehicles on County Roads. These restrictions, listed in **Table 8-26** also result in detours, increased out-of-direction travel, increased costs to maintain the roadways, and increased costs to transportation companies operating in Marion County.

**Table 8-26**
**County Roads Restricted by State Highway Structures**

| ROAD | LOCATION | STRUCTURE | TYPE OF RESTRICTION |
|---|---|---|---|
| **RECOMMENDED PROJECTS** | | | |
| Arndt Road | Interstate 5 | Overcrossing | Height 14’0” |
| Cascade Highway | Oregon 22 | Overcrossing | Height 15’9” to 15’10” |
| Ehlen Road | Interstate 5 | Overcrossing | Height 16’0” |
| Delaney Road WB | Interstate 5 | Overcrossing | Height 16’0” |
| **ADDITIONAL IDENTIFIED NEEDS** | | | |
| Joseph Street | Oregon 22 | Overcrossing | Height 15’4” |
| Fellers Road | Interstate 5 | Overcrossing | Height 14’0” |

## 8.7 TRANSPORTATION DEMAND MANAGEMENT (TDM) STRATEGIES - TRANSPORTATION OPTIONS PROGRAMS

One of the most promising strategies to address transportation capacity needs is to curb the demand for transportation altogether by providing better options that put less strain on the transportation system than driving alone. Transportation demand management (TDM) strategies attempt to reduce the need to travel, especially in single occupant vehicles during the peak hour commuting periods. This is often done by providing other options (such as transit, carpools, vanpools, walking, cycling, telework, etc.) and/or encouraging use of these options so that people might find one of these options to be a better alternative than driving by themselves. Marion County will pursue and encourage implementation of TDM strategies in the County as an alternative to building new transportation facilities, a way to maintain optimum function of existing facilities, and a way to provide better mobility options for the traveling public. The County will pursue 'positive' options that encourage the use of alternative transportation modes. The County has no plans at this time to pursue 'negative' incentives that discourage or increase the cost of driving.

Employers and developers can, by providing transportation options and incentives, reduce the impact of their development on the road system. At the discretion of the Public Works Department, mitigation measures required of developments may be reduced in proportion to the effect of TDM strategies committed to by the company to reduce their impact on the transportation system. Employers are increasingly recognizing the importance of these measures in recruiting and maintaining quality employees.

These strategies are listed here in five areas:

1. Reduce demand for peak hour travel
2. Provide transit and shuttle services
3. Facilitate rideshare and carpooling
4. Promote bicycle and pedestrian travel
5. Utilize teleworking

### 8.7.1 Reduce Demand for Peak Hour Travel

Many of the capacity issues affecting roads in rural Marion County only develop during one or two hours of the day. Sometimes a road will function well for twenty-two hours of the day and only have capacity issues during the morning and evening rush hours. The goal of this method is to reduce the number of vehicles traveling during the rush hours. This can be done either by spreading the peak hour trips out to other hours of the day or by removing the need for some of the peak hour trips.

A number of strategies can be used to shift peak hour trips to other hours of the day. For example, employers can schedule shift changes to occur at 3pm instead of 5pm. Many truckers make this shift themselves and do most of their driving during off-peak hours to avoid rush hour traffic. Methods to shift rush hour trips to other hours with available capacity are encouraged.

The demand for peak hour trips can also be reduced by removing the need for some of these trips. For example, during a typical 40-hour five-day work week, the worker would need to make ten

peak hour trips to and from work. However, if this same employee were working four ten-hour days, he/she would only need to make eight trips to and from work during the week, and these trips are less likely to be during peak hours. Teleworking (allowing employees to work from home instead of commuting to the office) also has considerable potential in this area. Travel demand can also be reduced through people combining several errands into one trip, rather than separate trips for each task.

Other potential strategies include providing incentives (such as vouchers, coupons, or even monetary rewards) for commuters to travel by means other than their single-occupant vehicle. These incentives could also apply to employers. Congestion issues also often arise around schools, and students and/or parents could also be given incentives if they choose to walk or carpool.

Education is also important, as many people simply don't know about (or don't understand) the other options (such as rideshare, transit, cycling, flexible schedules, or teleworking) available to them. Many also don't understand the true costs of their driving – both their own costs (gas, vehicle repairs and depreciation, insurance, stress, etc) and the costs to society of our collective driving habits.

### 8.7.2 Provide Transit and Shuttle Service

One strategy to encourage alternative modes is to develop an expanded commuter shuttle service and more park-and-ride/pool lots. While this strategy will not reduce the need to travel, it may reduce travel by people in single occupancy vehicles. Many commuters, shoppers, and other travelers might find it better for them to ride a bus or shuttle rather than expend their energy driving. This then frees up more roadway capacity for other users.

The expanded transit service and express service recommended in Chapter 9 will not only provide good service for the transportation-disadvantaged (those who can't drive or can't drive in all conditions), but will also provide a good alternative to the automobile.

### 8.7.3 Rideshare and Car Pooling

One particularly effective current TDM program is the Mid-Valley Regional Ride-Share Program. Often in today's world, two or more commuters will be making similar commutes at similar times of the day, and not know each other. This program introduces these people to each other so that they might carpool together and thus save money, reduce demand on the roads, and perhaps even become friends. The program, administered through Salem Area Transit District, continues to serve all of Marion, Polk, and Yamhill Counties, and interfaces with commuters from the Eugene, Corvallis, Albany, and Portland metropolitan areas. This program has been in existence for thirty years and will continue to be a valuable resource for ride-share matching, as well as formation of vanpools, and working with employers to provide better transportation options for their employees. The program also provides free 'emergency rides home' through participating employers. The rideshare program can be reached at (503) 371-POOL (7665) in the Salem area and (888) 323-POOL outside the Salem area, or online at mvrideshare.net. The program has been quite effective by matching up potential carpools and vanpools, and by helping people become more aware of the options available to them.

Installation of 'Park-and-Ride' lots also helps promote both carpooling and use of Transit or Shuttle Services. These parking lots are located along main commute corridors and allow people to drive themselves part of the way, then join with others in a carpool, van, or bus for the rest of their trip. These lots are usually either publicly owned or made available to the public through a public agreement with the property owner. Figures 7-1 and 13-1 show the location of existing and potential future park-and-ride lots. Pursuit of additional lots is recommended as sites and funding become available.

### 8.7.4 Promote Bicycle and Pedestrian Travel

It is also hoped that improvements to enhance bicycle and pedestrian safety and mobility will encourage people to use these modes more. While it is recognized that bicycle and/or pedestrian travel is not practical for all people making all trips (especially in rural areas), walking or cycling can be an excellent way for some people to make some trips. This then benefits everyone through reduced automobile traffic on the roads.

In the areas classified as Rural (and thus covered by this plan), we especially see potential for bicycle and pedestrian trips within unincorporated communities. Provision of good pedestrian and bicycle mobility within unincorporated communities may encourage residents to do more shopping locally and make fewer long trips to cities to shop.

We also encourage cities to provide good sidewalks, paths, and bike lanes so that city residents might be more inclined to shop locally, rather than making longer automobile trips to larger cities to do their shopping and other activities.

Programs such as bicycle and pedestrian safety education (often taught in schools), 'walking school buses' (a few parents walking with groups of school children), cooperative incentives offered by bike shops and sporting goods stores, and bicycle commute challenges are effective in making this a more viable option. In turn, the presence of additional pedestrians and cyclists often makes a community feel safer and friendlier.

### 8.7.5 Utilize Teleworking

Teleworking occurs when a person works from home and communicates with the office (or the rest of the company) by telephone, computer, or other means, without having to physically go to the office. Teleworking is another option that people could use to significantly reduce their need to commute by automobile, and could change the way transportation is perceived. As our society continues to move forward into what has commonly been referred to as the 'Information Age', more and more jobs require 'transporting' information rather than goods. The Oregon Department of Energy estimates that within the next few years, 70% of the work force will be generating and manipulating information. This represents a dramatic departure from the past when the majority of people commuted to work to produce industrial goods. In today's work environment, it is often more productive and less expensive to move information through telephone and the Internet rather than moving people to work sites. Recent advances in technology make it possible to transport information through phone lines, cable television lines, microwave, and satellites, thus reducing the demand for conventional roadway transportation

systems. In addition, teleworking programs can make a significant contribution in improving air quality by reducing the need to travel altogether. Marion County encourages investigation of teleworking as an alternative to physical commuting.

## 8.8 SCENIC ROUTES AND TOUR ROUTES

To encourage tourism, the County supports the concept of Scenic Routes, Tour Routes, and Scenic Byways, and will consider enhancements that preserve or provide scenic or historic values to the transportation system.

The Silver Falls Tour Route currently starts from exit 248 of I-5, heading east on Delaney Road to Turner, continuing east on Mill Creek Road through Aumsville, and east on Sublimity Road to Sublimity. The route then heads north on Cascade Highway and east on Oregon 214 to Silver Falls State Park. Leaving the park, the route heads north on Oregon 214 through Silverton, Mt. Angel, and Woodburn on its way to rejoin I-5 at exit 271 in Woodburn. This helps visitors see some of the scenery and communities that enhance Marion County's excellent quality of life. Marion County supports the Silver Falls Tour Route for the tourism and economic benefit it brings to the County, and because it helps visitors find some of the wonderful attractions that Marion County has to offer.

The Willamette Valley Scenic Bikeway has recently been designated, and travels from Champoeg State Park to Eugene. Starting in Champoeg, it journeys south along Champoeg, Riverside, Blanchet, River (NE), Matheny, and Wheatland Roads, through Willamette Mission State Park, then across the Wheatland Ferry into Yamhill County. An alternate route south from Salem follows River Road South, Riverside, and Buena Vista Roads. This helps visitors (particularly cyclists) see some of the scenery (including the river) and communities that enhance Marion County's excellent quality of life. Marion County supports the Willamette Valley Scenic Bikeway for the tourism and economic benefit it brings to the County, and because it helps visitors find some of the wonderful attractions that Marion County has to offer.

There are many other wonderful attractions that can also give visitors a glimpse of the beauty and character of Marion County. Several other tour routes could be drawn up that would show off more of the County. Marion County supports further effort toward identifying, designating, and developing additional tour routes, provided that issues and impacts can be reasonably addressed.

## 8.9 SUMMARY

This section has presented many of the existing and future needs of Marion County's transportation system. As one might imagine, sufficient funding does not exist to address all of these needs. Chapter 11 further refines this chapter and presents Marion County's fiscally constrained Transportation System Plan.