CHAPTER 12: SUB-AREA PLANS

This section contains plans for areas outside Urban Growth Boundaries, but for which detailed transportation plans are necessary due to high traffic volumes, concentrated trip generation centers, conflicts between uses, community needs, or to set expectations for future developers in the area.

The sub-area plans include three areas: The Brooks Interchange area, the Aurora/Donald Interchange area, and Cordon Road between State Street and Auburn Road. These areas were identified as being the highest priority for this level of planning. Sub-area plans may be appropriate for many other areas, and future updates of this TSP are likely to include additional sub-area plans.

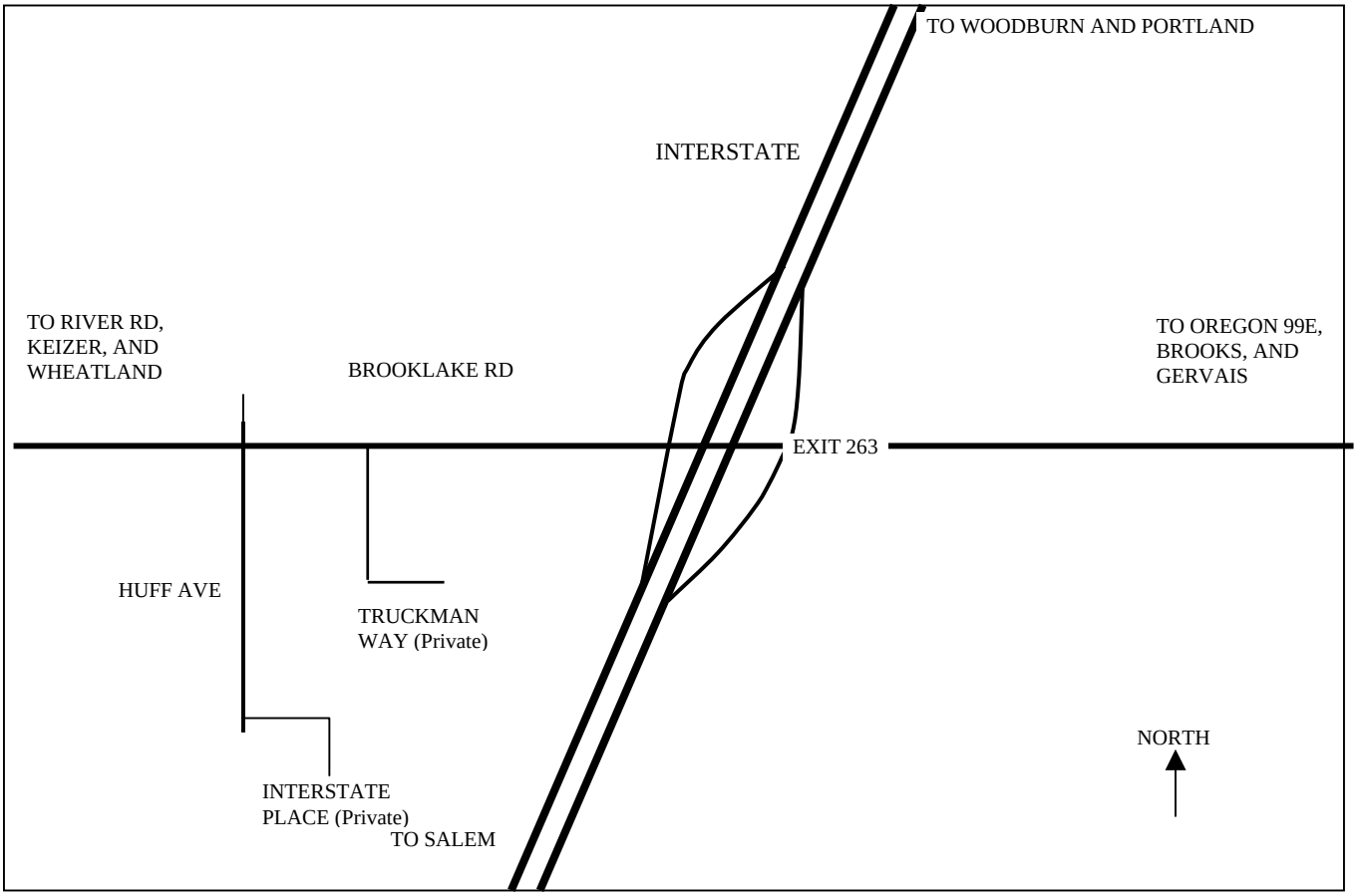
12.1 BROOKS INTERCHANGE AREA

The Brooks Interchange, Exit 263 on Interstate 5, lies approximately three miles north of the Chemawa Interchange (which connects to Keizer and to the Salem Parkway), eight miles south of the Woodburn Interchange, and approximately ten miles northeast of downtown Salem. This sub-area plan covers County Roads within 1,800 feet of the intersection of Interstate 5 with Brooklake Road. This includes 3,600 feet of Brooklake Road, all of Huff Avenue, and intersections with both Interstate 5 ramps and numerous private accesses.

The Brooks interchange serves a large area of very active rural agricultural land, several industrial businesses along the Brooklake Road corridor and the community of Brooks, the cities of Gervais, Keizer, Mt. Angel and St. Paul, Willamette Mission State Park, Marion County's Waste-to-Energy facility, a large truck stop, and a many commercial businesses and attractions in the area. Mobility of traffic to and from Interstate 5 is critical to the economic vitality and quality of life of the region.

Figure 12-1 shows the vicinity of the interchange area:

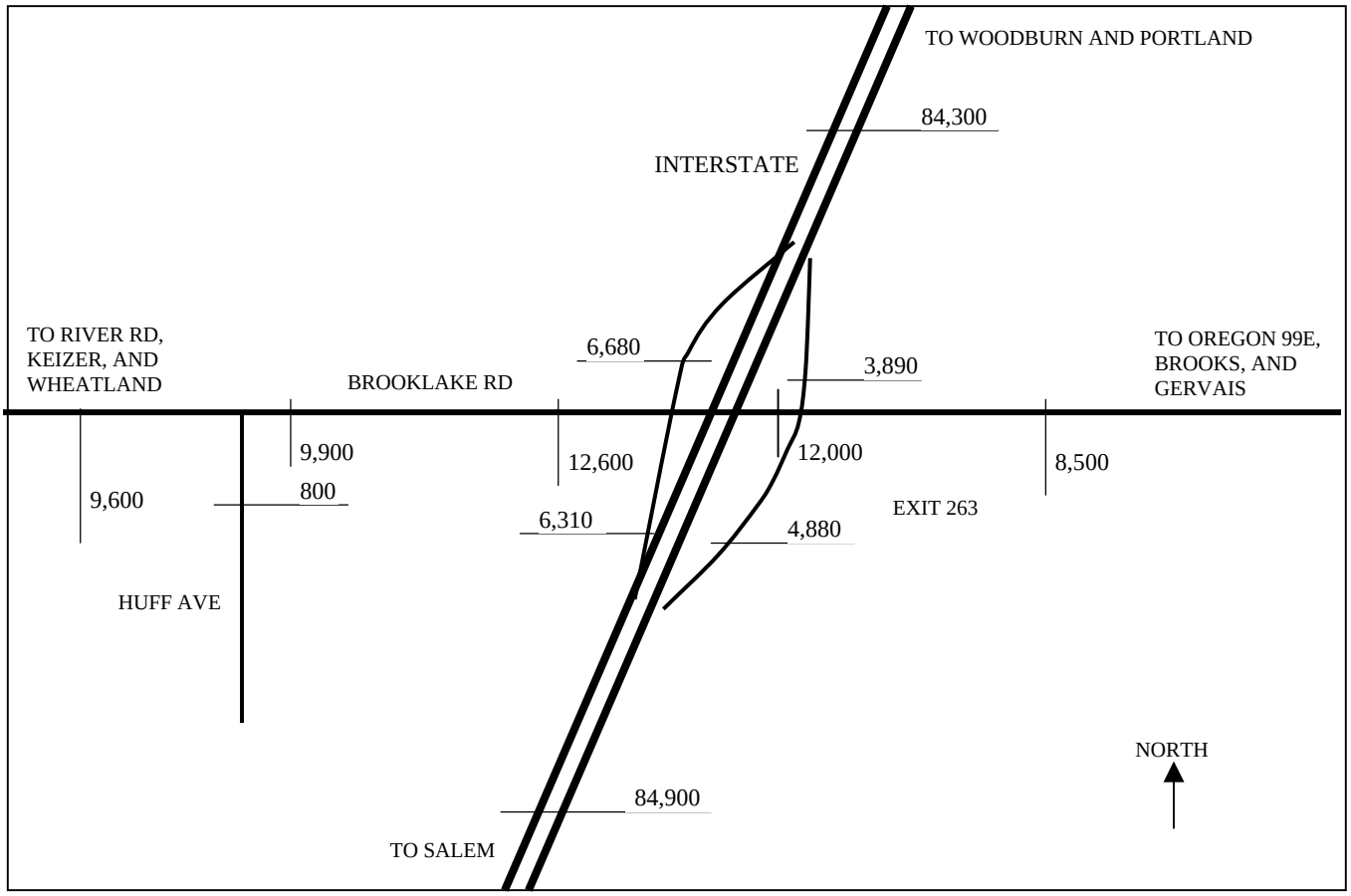
Figure 12-1 Brooks Interchange Area Vicinity Map



Traffic Volumes

Figure 12-2 shows current daily traffic volumes on roadways in the area. Volumes on the Interstate 5 mainline and ramps are from ODOT's 2002 Transportation Volume Tables; other data is from traffic counts taken as part of Marion County's traffic counting program. All volumes are total daily two-direction volume of traffic, except that volumes on freeway ramps are one direction only.

Figure 12-2
Brooks Interchange Area Daily Traffic Volumes



Level-of-Service and Volume/Capacity Analysis

Traffic volumes on both exit ramps from Interstate 5 onto Brooklake Road exceed the intersection capacity at certain hours of the day and are functioning at Level of Service (LOS) F, and meet neither the county's nor Oregon Highway Plan mobility standards (v/c = 0.85). The excessive vehicle delays caused by these capacity deficiencies are highly detrimental to the mobility of freight, agricultural goods, and passengers in the region. It is estimated to cost residents, businesses, and visitors over $1 million per year due to these delays.

Traffic waiting at the stop signs on these off-ramps frequently extends down the ramp into the deceleration area of the off-ramp, and sometimes onto the mainline of the freeway, which creates dangerous situations that need to be corrected.

Traffic is operating at an acceptable level in most other areas on this section of Brooklake Road, although the intersections of Truckman Way with Brooklake Road and the Pilot Auto / May Trucking driveways with Brooklake Road are quite busy and are approaching levels of congestion that warrant attention.

Brooklake Road / I-5 Interchange Management Plan

In 1997, Kimley-Horn and Associates prepared a plan for the Oregon Department of Transportation. The purpose of this plan was to estimate future (year 2015) traffic in the vicinity and assess the impact of this traffic on the interchange and adjacent roadway network. The analysis considered five different alternatives including two different land use scenarios for each alternative. Land Use Scenario A assumed buildout of the Brooklake Road area based on existing zoning. Land Use Scenario B assumed the zoning of some parcels would be changed to more intense uses, such as Interchange District (ID) zoning in some cases. The study found that if this development occurred the following improvements would be required:

- Signalization of the Brooklake Road intersections with the I-5 southbound ramps, the I-5 northbound ramps, and the east and west OAC accesses.
- Construction of a four-lane cross-section on Brooklake Road from the I-5 northbound ramps to the OAC east access, with turn lanes at the accesses.
- Construction of a loop ramp from westbound Brooklake Road to southbound I-5.
- Construction of an additional lane on both the northbound and southbound I-5 off ramps.
- Construction of a free right turn from the I-5 northbound off ramp to eastbound Brooklake Road.
- Improvements at the two OAC access intersections with Brooklake Road, including double left turn lanes on eastbound Brooklake Road.

Most of the alternatives assumed development of the Oregon Agricultural Center (OAC) on the NORPAC property northeast of the interchange. However, as the study was being completed, it grew increasingly unlikely that the OAC would actually be developed, so a sixth alternative without it was formulated. Unfortunately, the overall improvements needed at this interchange really relied on the development of the OAC. Without its development and only that of the remaining property, under Scenario A (which uses existing zoning) the following projects would be necessary to maintain traffic flow:

- Signalization of both ramp terminal intersections.
- Construction of additional exclusive right turn lanes on both Interstate 5 off ramps.
- Construction of a free-right turn lane from eastbound Brooklake Road to the Interstate 5 southbound on ramp. This would require widening of the ramp to allow traffic using the free right turn to merge with other traffic.

Under scenario B without the OAC improvements, but with more intense use of the remaining area, the study concluded that “Attainment of acceptable levels of service at the ramp terminal intersections would require major reconstruction of the interchange, including multiple loop ramps, free right turn movements, and additional lanes on the ramps. One configuration, which would result in LOS D at the ramp terminals in the year 2015, would consist of the following improvements (beyond those needed for scenario A):

- Construction of a loop ramp from westbound Brooklake Road to southbound Interstate 5.
- Construction of a loop ramp from eastbound Brooklake Road to northbound Interstate 5.

- Construction of a free right turn lane from the Interstate 5 southbound off ramp to westbound Brooklake Road.
- Construction of a free right turn lane from eastbound Brooklake Road to the Interstate 5 southbound on ramp.
- Construction of an exclusive right turn lane and dual left turn lanes on the Interstate 5 northbound off ramp, with dual receiving lanes for westbound Brooklake Road.

Even with all of the above improvements, the operation of the interchange may not meet ODOT design operating standards. If not, additional improvements such as a loop ramp from northbound interstate 5 to westbound Brooklake Road and/or widening of the Brooklake Road bridge would also be necessary.

Note that this study considered a horizon year of 2015. An additional ten years must be considered for this plan because the horizon year of this sub-area plan is 2025.

Accident History

Accident history data was obtained from the Oregon Department of Transportation, which was based on accident reports filed with the Department of Motor Vehicles. In this data, seventeen crashes were recorded in this study area in the three years from January 1, 2000 through December 31, 2002.

Eight of these crashes were at the intersection of Brooklake Road with the I-5 northbound ramps. Seven of these eight crashes involved vehicles exiting the freeway, with four of these involving vehicles turning in front of traffic on Brooklake Road, and three rear-end collisions as vehicles waited to turn (or in line waiting for vehicles in front of them to turn) onto Brooklake Road. Sight distance at the ramp terminals may be a contributing factor as well

Three crashes were recorded at the intersection of Brooklake Road with the I-5 southbound ramps. Two crashes were recorded at three different locations on Brooklake Road; at its intersections with Truckman Way (Pilot Truck access), the Pilot Auto / May Trucking driveways, and at the driveway to the NORPAC facility east of the interchange.

Access Management

The Oregon Department of Transportation's 1999 Oregon Highway Plan (OHP), and Oregon Administrative Rule 734-051-0010 ('Division 51') set access spacing requirements for approaches to the cross-street of an Interchange, such as Brooklake Road. In this case the OHP calls for 1,320 feet of spacing between the freeway ramp intersection and the first connection (street or driveway) to Brooklake Road. The intent of these requirements is to facilitate traffic flow to and from the interchange, which is a goal that Marion County supports as well. Access spacing at interchanges is further described in OAR 734-051-0125. Specifically, this section states that spacing standards do not apply to approaches in place prior to April 1, 2000, but that ODOT will work to move closer to achieving spacing standards as redevelopment occurs.

Marion County intends to comply with the spirit of these OHP requirements, while at the same time recognizing that complete compliance with the letter of these requirements is not practical at this time due to existing development patterns, property lines, and land use cases.

Several land use case approvals in this area have specific requirements for access configurations and it is the intent of this sub-area plan to compile these requirements in one document. It is not the intent of this plan to set new policy on access in this area. Any addition of new access or expansion of existing accesses must meet applicable standards and receive approval from Public Works before addition or expansion.

The property located at and behind 4205 Brooklake Road (current taxlot 062W1800100, just north and west of the interchange) was the subject of a land use case in the 1990s. It was determined that access from this property directly to Brooklake Road would not be allowed, because the access would be too close to the interchange. Access for this parcel would be though an easement running north from the intersection of Brooklake Road and Huff Ave along the west property line of current taxlot 062W1800900 (the current May Trucking property) then running east along the north property line of 062W1800900 until it reaches 062W1800100, the subject taxlot. Alternatively, access to this parcel could be granted through 062W1800900 and its current access on Brooklake Road as long as it meets appropriate standards and does not cause traffic problems at its connection with Brooklake Road. However, considering current traffic levels, it would be difficult to add much traffic to this access while still meeting standards. No additional accesses will be permitted to Brooklake Road between Interstate 5 and Huff Avenue.

Access points on the south side of Brooklake Road between I-5 and Huff Avenue exist at the Pilot truck stop; one access for cars opposite May Trucking and another for trucks at Truckman Way. There is some undeveloped land to the west of the Pilot truck stop with access also planned at Truckman Way. These undeveloped properties, along with the Pilot property, were addressed in a November 5, 1995 Traffic Impact Analysis. In this document a specific amount of trip generation due to the development was assumed for these properties. As required in partitioning case # 04-07: development that exceeds this trip generation rate will require a new TIA and mitigation of its traffic impacts on Brooklake Road, the interchange, and other traffic in the area. It is quite possible that increased traffic generation would necessitate extensive mitigation measures. Properties to the south of the above mentioned area would gain access from Huff Avenue via Interstate Place. No additional accesses will be permitted to Brooklake Road between Interstate 5 and Huff Avenue.

To the east of the interchange, access locations have been approved for a development on the NORPAC property including a potential Oregon Agricultural Center. Other access connections to Brooklake Road in this area east of the interchange would have to meet the requirements of the Oregon Department of Transportation and Marion County standards.

A traffic signal would be allowed at the intersection of Brooklake Road with Huff Ave if it meets applicable county criteria (such as MUTCD signal warrants). No signal would be allowed on Brooklake Road between Huff Ave and the Interstate 5 southbound ramps; its effect on traffic movement and safety would be detrimental.

Rideshare

This is a prime location for ridesharing, as it is just north of Salem and adjacent to Interstate 5, a major route from Salem to Portland. Currently, many vehicles are observed parked adjacent to the Pilot truck stop, with their drivers catching rides with other drivers to destinations in the Portland area. There is an

undeveloped park-and-ride area on the east side of the interchange, which essentially is just a wide spot of pavement and gravel. Some drivers had chosen to park near the Pilot, but ODOT has recently decided to not allow this parking.

Provision of a park-and-ride lot near this interchange is highly recommended. This lot should be designed for security (both real and perceived) and user-friendliness. Significant capacity, perhaps for more than 50 vehicles, is recommended.

Bicycle and Pedestrian Issues

Brooklake Road currently has a three-foot paved shoulder through most of the study area, with a five-foot shoulder in front of the Pilot truck stop and Chalet restaurant, from Truckman Way to the southbound ramps of Interstate 5. There are currently no designated bike lanes in the study area.

Sidewalks exist on some portions of Huff Ave and along the south side of the bridge over I-5 between the freeway ramps.

Bike lanes or adequate paved shoulders should be provided on Brooklake Road as a condition of development.

Future Recommendations

The projects recommended in the Brooklake Rd / I-5 Interchange Management Plan for this area (in the absence of the Oregon Agricultural Center (OAC) development) need to be:

- Signalization of both ramp terminal intersections.
- Construction of additional exclusive right turn lanes on both Interstate 5 off ramps.
- Construction of a free-right turn lane from eastbound Brooklake Road to the Interstate 5 southbound on ramp. This would require widening of the ramp to allow traffic using the free right turn to merge with other traffic.

In particular, the projects to signalize and add right turn lanes on the off-ramps need to be constructed as soon as practical. The County will continue to strongly encourage the Oregon Department Of Transportation to fund these projects and construct them quickly to alleviate the crippling economic effects and safety problems inherent in the current situation. The sooner specific projects are identified along with their cost estimates, the easier it will be to identify financial contributions for property owners wishing to develop their property.

It is quite possible that further capacity issues may develop on Brooklake Road within the timeframe of this sub-area plan, which is 2025. In order to address these issues, it is likely to become necessary to construct left turn lanes and install a traffic signal at the intersection of Brooklake Road with Huff Avenue. It is also quite possible that the existing two-lane cross-section of Brooklake Road would no longer be adequate to handle the high volumes of traffic that are anticipated to develop throughout the study area. This is likely to necessitate widening Brooklake Road to three or perhaps five lanes through the study area by the year 2025.

In order to prepare for the widening likely to become necessary to accommodate the traffic demand in this corridor, a special setback is instituted along Brooklake Road through the study area. This special setback will be 100 feet wide, consisting of 50-foot half-widths on either side of the centerline to accommodate the potential five-lane improvement. Additional space may be necessary for slope areas in the future design

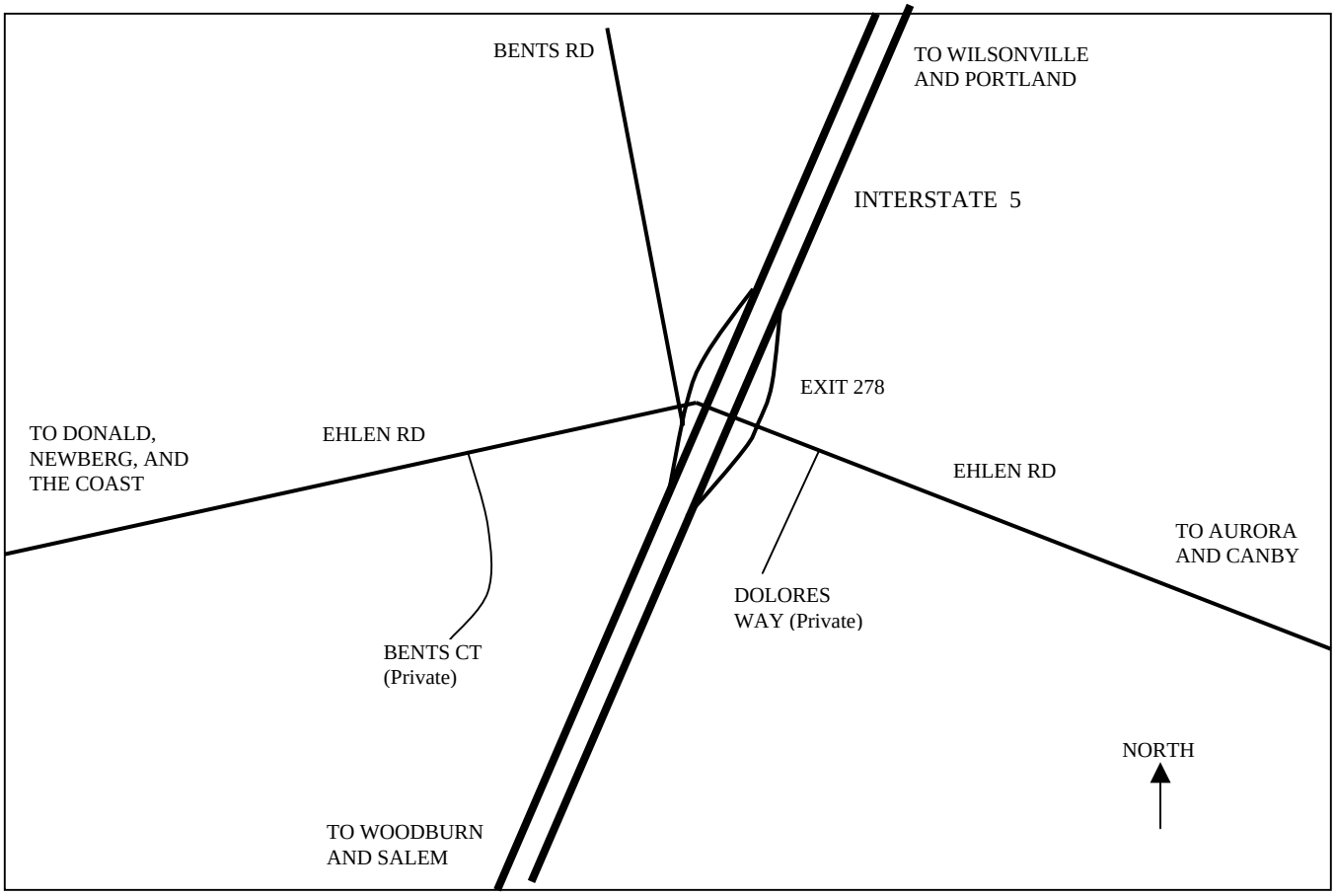
Because of the existing congestion in the vicinity of the interchange, any new access or increase in use of an existing access will necessitate a Transportation Impact Analysis (TIA). If the trip generation of the development (based on ITE or other acceptable data) is less than 600 daily trips, the TIA can be waived if the applicant agrees to the mitigation measures specified by the County. This mitigation will include a fee to pay for the development's proportionate share of the cost to provide traffic signals and turn lanes at the intersections of Brooklake Road with Huff Avenue and with both I-5 northbound and southbound interchange ramps. This fee will be based on the percentage of daily traffic added by the development at each intersection. This calculation will be based on measured existing daily entering volumes of 15,100 daily entering vehicles at the northbound ramps intersection, 19,000 at the southbound ramps intersection, and 10,300 at the Huff Ave intersection. The cost of each of these intersection projects (signals and associated turn lanes) is estimated at $500,000 in 2004 dollars. This cost will be adjusted according to the Seattle Cost of Construction Index as published annually in the December issue of "Engineering News Record." These funds will be used to help defer the costs of the future signals and turn lanes and/or other capacity improvements in the vicinity of the interchange.

12.2 AURORA/DONALD (FARGO) INTERCHANGE AREA

The Aurora/Donald Interchange (also known as the Fargo Interchange) is Exit 278 of Interstate 5, and lies approximately seven miles north of the Woodburn Interchange, four miles south of the Charbonneau Interchange, and six miles southwest of the City of Wilsonville. This sub-area plan covers County Roads within 1,800 feet of the intersection of Interstate 5 and Ehlen Road. This includes 3,600 feet of Ehlen Road, 1,800 feet of Bents Road, and intersections with both Interstate 5 ramps and numerous private accesses. **Figure 12-3** shows the interchange vicinity.

The Aurora/Donald Interchange serves the communities of Aurora and Donald, St. Paul, Canby, Barlow, Butteville, connects to the Aurora State Airport, and provides a good connection to Newberg and the Hwy 18/99W corridor, which connects to Yamhill County and the Coast. This interchange also serves a large area of very active rural agricultural land, Champoeg State Park, several industrial businesses in the vicinity, two large truck stops, and several commercial businesses and attractions in the area. Mobility of traffic to and from Interstate 5 is critical to the economic vitality and quality of life in the region.

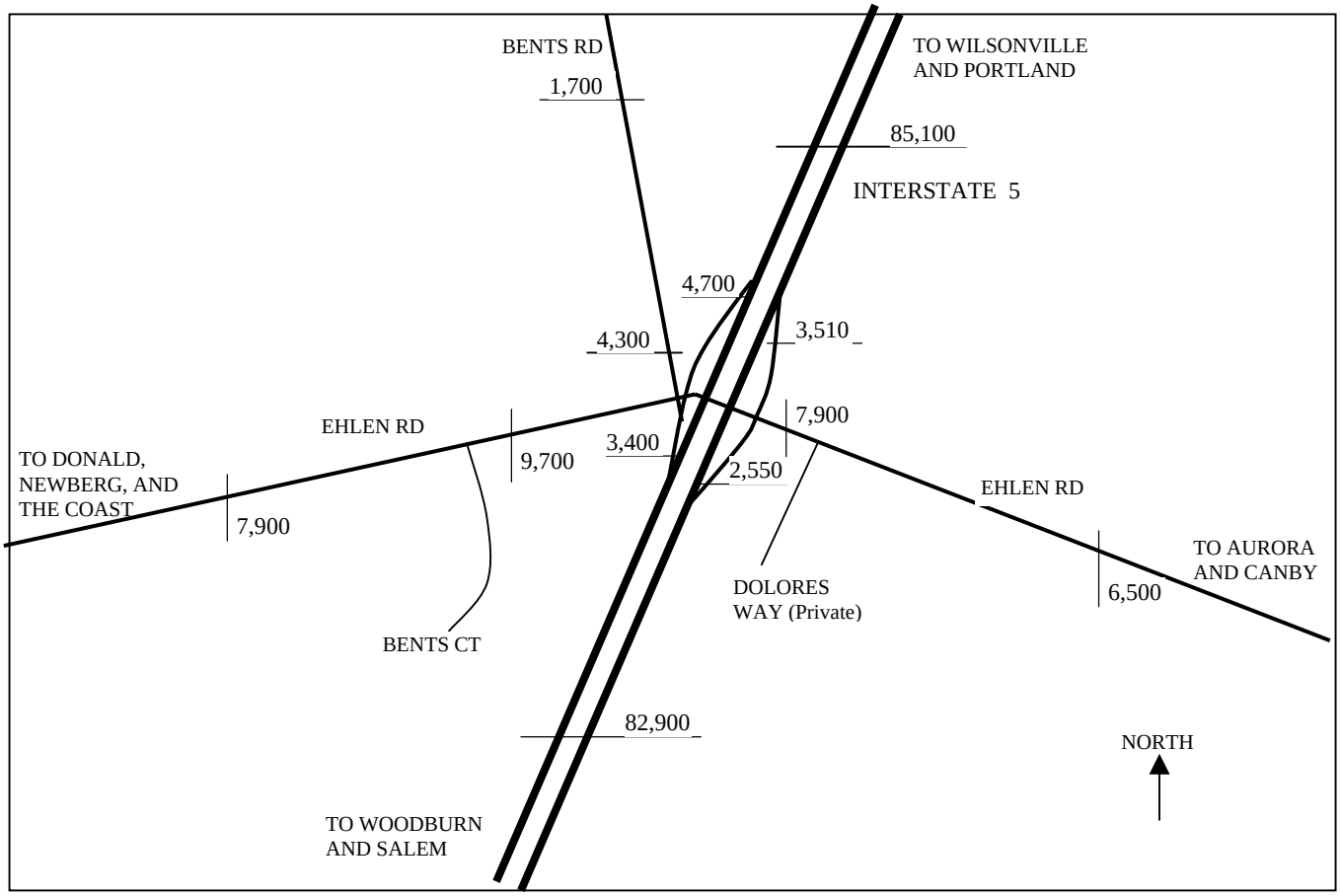
Figure 12-3
Aurora/Donald Interchange Area Vicinity Map



Traffic Volumes

Figure 12-4 shows current daily traffic volumes on roadways in the area. Volumes on the Interstate 5 mainline and ramps are from ODOT's 2002 Transportation Volume Tables; other data is from traffic counts taken as part of Marion County's traffic counting program. All volumes are total daily two-direction volume of traffic, except that volumes on freeway ramps are for one direction only.

Figure 12-4
Aurora/Donald Interchange Area Daily Traffic Volumes



Level-of-Service and Volume/Capacity Analysis

Traffic volumes on the exit ramp from southbound Interstate 5 to Ehlen Road, and on Bents Road approaching Ehlen Road currently exceed the capacity of these intersections at certain hours of the day, and thus these intersections are functioning at Level of Service (LOS) F. Because of these capacity deficiencies, both of these intersections do not meet Marion County's nor Oregon Highway Plan mobility standards (v/c = 0.85). These deficiencies are compounded by the fact that these two intersections are very close to each other (about 50' apart) which forces drivers to watch the other intersection as well as their own to know when it is safe to move. Adding to these capacity deficiencies are frequent slow

turning movements of large trucks, the grade on Ehlen Road westbound at the intersections, and the curve through the intersections. In addition, the lack of a left turn lane for westbound to southbound traffic causes these left-turners to wait in the travel lane of Ehlen Road. This results in delays to through traffic and concerns for the safety of stopped vehicles in a travel lane. It occasionally results in a near-gridlock situation in which eastbound traffic is waiting behind a left-turner at the northbound ramp who is blocked by a line of traffic waiting for a westbound left-turner at the southbound ramp, who in turn is blocked by the line of waiting eastbound traffic. The excessive vehicle delays caused by these capacity deficiencies are highly detrimental to the mobility of freight, agricultural goods, and passengers in the region, as well as considerable added costs associated with these delays.

Traffic backup at the stop sign on the southbound off-ramp frequently extends up the ramp into the deceleration area of the ramp, and sometimes onto the mainline of the freeway, resulting in dangerous situations that need to be corrected. This is compounded by the very high percentage of large trucks using this exit, as these trucks take up more space in the queue than cars

Long traffic queues also develop on Bents Road approaching Ehlen Rd, sometimes blocking the auto entrance to the truck stop, also resulting in unsafe situations that need to be corrected.

Traffic on the exit ramp from northbound Interstate 5 to Ehlen Road is approaching the capacity of this intersection. It is a highly detrimental situation similar to that described for the southbound ramp and it needs to be corrected. In addition, the lack of a left turn lane for eastbound to northbound traffic causes these left-turners to wait in the travel lane of Ehlen Road. This results in delays to through traffic and concerns for the safety of stopped vehicles in a travel lane. It occasionally results in a near-gridlock situation in which eastbound traffic is waiting behind a left-turner at the northbound ramp who is blocked by a line of traffic waiting for a westbound left-turner at the southbound ramp, who in turn is blocked by the line of waiting eastbound traffic.

Traffic is currently operating acceptably at other locations in this area, although the intersection of Bents Court with Ehlen Rd is also busy and approaching levels of congestion that warrant attention.

Accident History

Accident history data was obtained from the Oregon Department of Transportation, which was based on accident reports filed with the Department of Motor Vehicles. In this data, 39 crashes were recorded in this study area in the three years from January 1, 2000 through December 31, 2002. This is a substantial accident history in this area.

Twenty-one of these crashes were at the intersection of Ehlen Road with the I-5 southbound ramps and with Bents Road. Nine of these crashes involved vehicles pulling out southbound (from either the freeway ramp or Bents Rd) when there wasn't adequate space to do so. Six crashes involved westbound vehicles on Ehlen turning left when there wasn't room available. Four crashes were southbound rear-end collisions on the freeway ramp. This is a very 'busy' area from a drivers perspective, as drivers must deal with a curve, a narrow overpass, two busy intersections in an unusual configuration, heavy truck turning movements, grades, and busy private accesses. The 'busy-ness' of this area makes it difficult for drivers to discern when it is safe for them to move, resulting in some drivers waiting a very long time to ensure everything is clear, while some other drivers just go anyway and expect others to avoid them.

Thirteen of these crashes occurred at the intersection of Ehlen Road with the I-5 northbound ramps. Eight of these crashes involved northbound vehicles pulling out when there wasn't adequate space to do so. Three involved eastbound left turners. Visibility for northbound traffic is somewhat limited by the freeway overpass structure and the curve of Ehlen Road through the interchange.

There were five crashes recorded on Ehlen Road in the study area, of which three were recorded at the easternmost access of the Leathers truck stop.

Access Management

The Oregon Department of Transportation's 1999 Oregon Highway Plan, and Oregon Administrative Rule 734-051-0010 ('Division 51') set access spacing requirements for approaches to the cross street of an Interchange, such as Ehlen Road. In this case the plan calls for 1,320 feet of spacing between the freeway ramp intersection and the first connection (street or driveway) to Ehlen Road. The intent of these requirements is to facilitate traffic flow to and from the interchange, which is a goal that Marion County supports as well. Access spacing at interchanges is further described in OAR 734-051-0125. Specifically, this section states that spacing standards do not apply to approaches in place prior to April 1, 2000, but that ODOT will work to move closer to achieving spacing standards as redevelopment occurs.

Marion County intends to comply with the spirit of these requirements, while at the same time recognizing that complete compliance with the letter of these requirements is not practical at this time due to existing development patterns, property lines, and land use cases.

Several land use case approvals in this area have specific requirements for access configurations, and it is the intent of this sub-area plan to compile these requirements in one document. It is not the intent of this plan to set new policy on access in this area. Any addition of new access or expansion of existing accesses must meet applicable standards and receive approval from Public Works before addition or expansion.

Bents Road is the only significant access point on the north side of Ehlen Road to the west of the interchange. This intersection is too close to the freeway ramps for traffic entering Ehlen Road, as is evidenced by the accident data. The plan has been, and continues to be, to realign Bents Road to the west so that it intersects Ehlen Road opposite Bents Court. A signal is planned at this intersection of realigned Bents Road, Bents Court, and Ehlen Road when the intersection meets traffic signal warrants. Developers in this area have contributed some funding toward its installation. No access will be permitted to Bents Road in the queuing area of this future signal. No other access would be permitted to the north side of Ehlen Road between the freeway ramps and the future realigned Bents Road opposite Bents Court, with the possible exception of a right-in access at the existing Bents Road. These plans were in place prior to the adoption of the 1999 Oregon Highway Plan and Oregon Administrative Rule 734-051-0010.

There are several existing accesses to the truck stop south of Ehlen Road west of the interchange between the freeway ramps and Bents Court. The policy governing these has been set previously through various land use cases, and is stated in an August 24, 1998 letter to the property owner as follows:

"As has been previously stated, the long-range plan for this area is for all access to the site to be via Bents Court. This would mean that all current site accesses to Ehlen Road would be closed, with the possible exception of a supplemental right-turn-out only access to Ehlen Road." The existing driveways are considered to be temporary accesses.

There is one access on the north side of Ehlen Road to the east of the interchange. This is a lightly-used field access that is in the freeway Right-Of-Way, and could have some freeway maintenance or emergency usability. This access may remain for these purposes, but may not be used for any commercial or other developments that would increase its usage level. No other access connections will be permitted to the north side of Ehlen Road within 1,320 feet east of the interchange ramps.

Dolores Way intersects Ehlen Road on the south side, approximately 350 feet east of the I-5 northbound ramps. Dolores Way is a private road providing access to an RV Park, a fuel station/mini-mart, and some other businesses in the southeast corner of the interchange. Dolores Way was constructed before the current Oregon access management requirements took effect, and the properties it serves are essentially fully developed. Any redevelopment or increased development of these properties that would significantly increase the trip generation would have to meet the requirements of the Oregon Department of Transportation and Marion County. This would likely necessitate moving Dolores Way to the east. There are two additional accesses to a farm and a farmhouse on the south side of Ehlen Road east of the interchange. These driveways may remain for the existing uses, but any redevelopment or increased development of this property will have to meet the requirements of the Oregon Department of Transportation and Marion County, which would likely mean relocating these driveways to the east.

Rideshare

This is a good location for ridesharing, as it is along the major route from Salem to Portland. This is evident by the number of vehicles often seen parked along Ehlen Road or Bents Court.

Provision of a park-and-ride lot near this interchange is recommended. This lot should be designed for security (both real and perceived) and user-friendliness. After this lot is constructed, parking should be eliminated on Ehlen Road.

Bicycle and Pedestrian Issues

Ehlen Road currently has five-foot paved shoulders through most of the plan area, with the exception of the portion between the two sets of freeway ramps. Provision of sufficient shoulder to be used as a bikeway on this section would be quite costly, as bridge supports occupy the space where the widened shoulder would be, and it would be difficult to fit in a sidewalk under the bridge. This is another factor in support of reconstructing the interchange.

Future Recommendations

Detailed study of this interchange area should be undertaken by the Oregon Department of Transportation to determine how ODOT will address the various issues in this study area. This study will need to consider the current problems in the interchange area:

- Address geometric deficiencies
- Traffic delay and lack of capacity at both freeway ramp intersections with Ehlen Road
- Possible provision of separate left and right turn lanes at both freeway ramp intersections with Ehlen Road, and left turn refuges on Ehlen Road.
- Possible reconstruction of the I-5 bridges over Ehlen Road and widening of Ehlen Road between the interchange ramps.
- Possible realignment of Bents Road to the west to opposite Bents Court, possibly with a traffic signal at this proposed four-way intersection.
- Possible consolidation or closure of accesses along Ehlen Road as it approaches the interchange.
- Extend the off-ramps.

The best long-term solution may involve a complete reconstruction of the interchange area, which would be lengthy, expensive, and require many approvals. Some projects may be necessary in the interim to keep traffic safely moving until the long-term solution can be implemented. The sooner specific projects are identified and planning cost estimates are determined, the easier it will be for development to accurately plan for future conditions, and the easier it will be to identify financial contributions that should be made by new development.

In particular, the projects to signalize and add right turn lanes on the off-ramps need to be constructed as soon as practical. The County will continue to strongly encourage the Oregon Department of Transportation to fund these needed projects and construct them quickly to alleviate the highly detrimental economic effects and safety problems inherent in the current situation.

It is quite possible that further capacity issues may develop on Ehlen Road within the timeframe of this sub-area plan, which is the year 2025. This possibility would be evaluated in the detailed study of the interchange area.

In order to prepare for the widening likely to become necessary to accommodate the traffic demand in this corridor, a special setback is instituted along Ehlen Road from 2,000 feet west of the centerline of Interstate 5 to 1,000 feet east of Interstate 5. This special setback will be 100 feet wide, consisting of 50-foot half-widths on either side of the centerline to accommodate a potential future four-lane improvement.

Because of the existing congestion in the vicinity of the interchange, any new access or increase in use of an existing access will necessitate a Transportation Impact Analysis (TIA). If the trip generation of the development (based on ITE or other acceptable data) is less than 600 daily trips, the TIA can be waived if the applicant agrees to the mitigation measures specified by the County. This mitigation will include a fee to pay for the development's proportionate share of the cost to provide traffic signals and turn lanes at the intersections of Ehlen Road with the realigned Bents Road and with both I-5 northbound and southbound interchange ramps. This fee will be based on the percentage of traffic added by the development at each intersection during an average day. This calculation will be based on measured existing daily entering volumes of 11,500 daily entering vehicles at the northbound ramps intersection, 14,500 at the southbound ramps intersection, and 11,500 at the realigned Bents Rd / Bents Ct intersection. The cost of each of these intersection improvements (signals and associated turn lanes) is estimated at $500,000 each in 2004 dollars. This cost will be adjusted according to the Seattle Cost of Construction Index as published annually in the December issue of "Engineering News Record." These funds will be used to help defer the costs of the future signals, turn lanes and/or other capacity improvements in the vicinity of the interchange.

12.3 CORDON ROAD (FROM STATE STREET TO AUBURN ROAD)

Cordon Road is an important north-south Arterial in Marion County just east of the Salem urban area. It connects with Kuebler Boulevard to provide the primary circumferential route south and east of Salem, and is intended to efficiently move large volumes of traffic. Cordon Road is designated as a Parkway (higher than a Major Arterial) in the Salem Transportation System Plan and a Major Arterial in the Salem-Keizer Area Transportation Study Regional Transportation System Plan. This portion carries about 17,000 vehicles daily with a speed limit of 45 mph. This sub-area plan covers Cordon Road from (and including) State Street to Auburn Road.

This area includes a fire station, soccer fields, baseball fields, several businesses, private residences, and a large undeveloped property (site of the former Pictsweet mushroom processing plant). This area would also be affected by added traffic from future development in the region, including the Salem Regional Employment Center (Mill Creek site) and a potential interchange between Cordon Road and Oregon 22.

Level-of-Service and Volume/Capacity Analysis

Current capacity and traffic flow analysis for this segment of Cordon Road indicates a Level Of Service (LOS) D with a volume capacity (V/C) ratio of 0.57 during the afternoon peak hour. This just meets Marion County's mobility standard of LOS D or better with a V/C of 0.60 or better. However, with future growth in traffic volume, traffic flow is anticipated to deteriorate below minimum standards within the next five years. Due to this anticipated deterioration of mobility, a need has been identified to widen this segment of Cordon Road to provide an additional travel lane each direction. This widening would be done to City of Salem Parkway standards, as they would be most appropriate for this roadway, and in order to provide regional consistency.

The intersection of State Street with Cordon Road currently operates acceptably (LOS C with a V/C ratio of 0.77) during the afternoon peak hour. However, as with the segment of Cordon Road (from Auburn Road to State Street), future growth in traffic volume is anticipated to cause traffic flow to deteriorate below Marion County standards. No separate intersection project is planned here because the larger project to add lanes on Cordon Road would also include turn lanes on Cordon Road and State Street as necessary to address these capacity issues.

The intersection of Auburn Road with Cordon Road is also just above the LOS and V/C thresholds, so the need has been identified for a traffic signal at this intersection. Construction of this traffic signal is programmed in 2008 with funds from the Federal Surface Transportation Program through the regional Metropolitan Planning Organization.

Accident History

Accident history data was obtained from the Oregon Department of Transportation, which was based on accident reports filed with the Department of Motor Vehicles. In this data, 21 crashes were recorded in this study area in the three years from January 1, 2001 through December 31, 2003.

Ten of these crashes occurred on Cordon Road at the various driveways between Auburn Road and State Street, and most of these crashes involved vehicles entering or exiting the driveways, or waiting for others to turn into the driveways. Six of the crashes (typically angle or turning crashes) occurred at the Auburn Road intersection, and five of the crashes (typically rear-end crashes) occurred at the State Street intersection.

Access Management[dlf1]

Due to the significance of Cordon Road in the regional transportation system, it is important to maintain its viability as an efficient route for through traffic. The Board of Commissioners recognized this in 1981 and resolved "that limiting and controlling further access to Cordon Road is necessary for the preservation of public safety and the protection of traffic from the hazards of unregulated and unrestricted entry from adjacent property, and in general, the promotion of public welfare…". Along with this resolution, the Board of Commissioners adopted an Ordinance that limits access to Cordon Road.

The high traffic volumes and accident history on this segment of Cordon Road indicate a need to further limit access to it. Currently many individual properties access directly onto Cordon Road in this area, and the potential exists for much more development. The long-range plan is to close these accesses to Cordon Road and provide access to these properties in other ways, typically from a local road or access easement connecting to either Auburn Road or State Street. Potential locations of these local roads are shown in **Figure 12-5.** It should be noted that all street alignments are conceptual, and could vary depending on development.

An exception to these access restrictions may be considered for fire and emergency vehicles entering Cordon Road from the fire station to respond to emergency calls.

This change in access would typically be made as the property redevelops, as safety conditions indicate a need, or in conjunction with a project to improve mobility on Cordon Road. Provision of these access roads and access reconfiguration will likely be achieved incrementally as parcels redevelop, relocate their access, and construct their portion of the local roads from which their access will be provided. For remaining accesses onto Cordon Road, it may become necessary to limit their use (such as allowing only right turns, for example) for safety reasons. When Cordon Road is widened, the goal is to have all accesses reconfigured before, or in conjunction with, that project.

Marion County
OREGON
Public Works

Rural Transportation System Plan
2005 Update

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Figure 12-5
Potential Access Configuration