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 four areas: The Brooks Interchange area, the Aurora/Donald Interchange area, Cordon Road between State Street and Auburn Road, and the Sublimity Interchange area. 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:

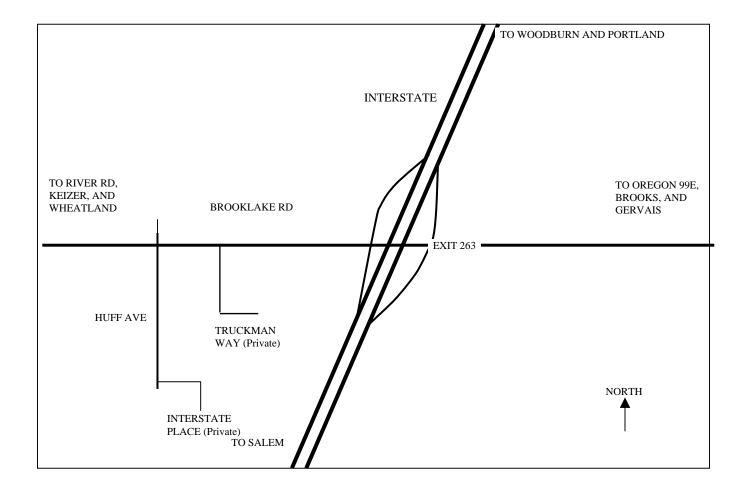


Figure 12-1 Brooks Interchange Area Vicinity Map

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.

TO WOODBURN AND PORTLAND 84,300 **INTERSTATE** TO RIVER RD, TO OREGON 99E, 6,680 KEIZER, AND BROOKS, AND 3,890 BROOKLAKE RD WHEATLAND **GERVAIS** 9,900 12,000 12,600 8,500 800 9,600 **EXIT 263** 6,310 4,880 HUFF AVE NORTH 84,900 TO SALEM

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 - 8

Updated 10/14/2020

12.2 AURORA/DONALD (FARGO) INTERCHANGE AREA - RESERVED

Pages 12-10 through 12-14 have been replaced by the I-5: Aurora-Donald Interchange (Exit 278)

Interchange Area Management Plan

ODOT KN19062:

https://www.oregon.gov/odot/Projects/Project%20Documents/19062_A-D_IAMP_Final.pdf

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.

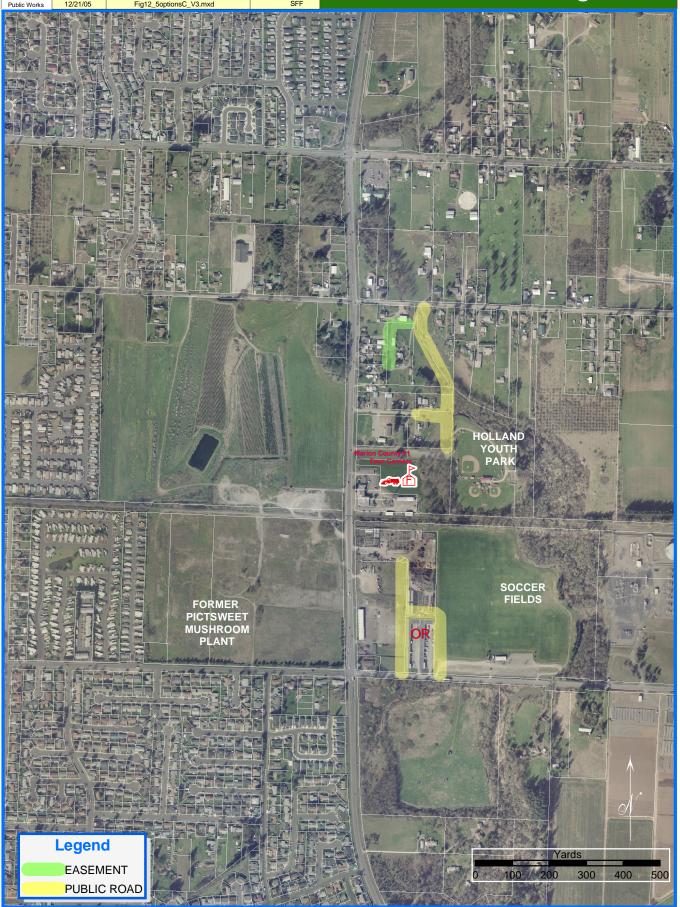
An exception to these access restrictions may be considered for fire and emergency vehicles entering Cordon Road from the fire station to respond to emergency calls.

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

Rural Transportation System Plan 2005 Update

Figure 12-5 Potential Access Configuration



12.4 SUBLIMITY INTERCHANGE AREA

The Sublimity Interchange is located at the junction of Oregon 22 and Cascade Highway in Marion County. It lies between the urban growth boundaries of the cities of Stayton and Sublimity and is roughly 10 miles east of Salem. A Sublimity Interchange Area Management Plan (IAMP) was developed to identify needed improvements to the infrastructure, and to document the land use and transportation strategies that are needed to protect the function of this interchange over the next 20 years.

The IAMP was prepared by a consultant on behalf of ODOT, in collaboration with the cities of Stayton and Sublimity, and Marion County. The study area covered Oregon 22 between the Golf Club Road Interchange and the Mill Creek Bridge, and Cascade Highway between 9th Street in Sublimity and the Shaff Road/Fern Ridge Road intersection in Stayton. The plan addresses needed improvements on City and County roadways within 1320 feet of the interchange, and addresses several private accesses within the area. The full study, under separate cover, should be consulted for detailed information. However, some of the major findings are listed below:

- The interchange ramp and bridge alternatives were evaluated and the design approved through an environmental assessment by FHWA in 1995.
- Traffic analysis determined that the eastbound ramp terminal would require signalization in the future. It also assumed a number of nearby improvements would be in place, such as a signal at Cascade Highway and Whitney Street, and the relocation of Golf Lane to the Whitney Street intersection. Signals in the corridor would need to be synchronized to maintain flow in the corridor.
- Land use analysis determined that the proposed facility could handle proposed and potential land uses in the area.
- Access management was recommended on Cascade Highway both north and south of the interchange. The most notable recommendations include:
 - O A backage road will be built behind the properties located northwest of the interchange. It would extend from a point on Cascade Highway approximately 1,580 feet north of the interchange ramp terminus, to a point on Sublimity Boulevard approximately 470 feet west of Cascade Highway. As the affected parcels redevelop, they would need to relocate their access from Cascade Highway to the backage road, possibly building portions of the backage road as part of their development. Figure 4-9 in the IAMP shows the conceptual location of this backage road.
 - The City of Sublimity has created an "Interchange Overlay Zone" to prohibit future development of parcels along Cascade Highway northwest of the interchange without the presence of an alternate access road.
 - Access control will be purchased in some areas, and some accesses will be allowed to retain access to Cascade Highway.
 - A frontage road will be built from a point on Cascade Highway (approximately 1,580 feet north of the interchange ramp terminus) to connect with driveways for a number of parcels on the east side.
 - ODOT will need to grant access management deviations for the Whitney Street/Golf Lane intersection, the park-and-ride lot, Sublimity Boulevard, and several private driveways north of the interchange.
- In addition to access management recommendations, the IAMP includes a number of recommendations for physical improvements and traffic management. These include:
 - o Reconstructing the Oregon 22 entrance ramps to improve merge operations.
 - Widen Cascade Highway between Sublimity Boulevard and the Shaff/Fern Ridge intersection.
 - o Signalize the ramp terminals with Cascade Highway at such time as signals are warranted

and approved.

- o Realign Golf Lane to meet Whitney Street at Cascade Highway.
- o Signalize the intersection of Whitney Street and Cascade Highway.
- o Coordinate traffic signal operations on Cascade Highway.
- o Install turn pockets on the eastbound Oregon 22 ramp and at the Shaff/Fern Ridge/Cascade Highway intersection when traffic demand requires.

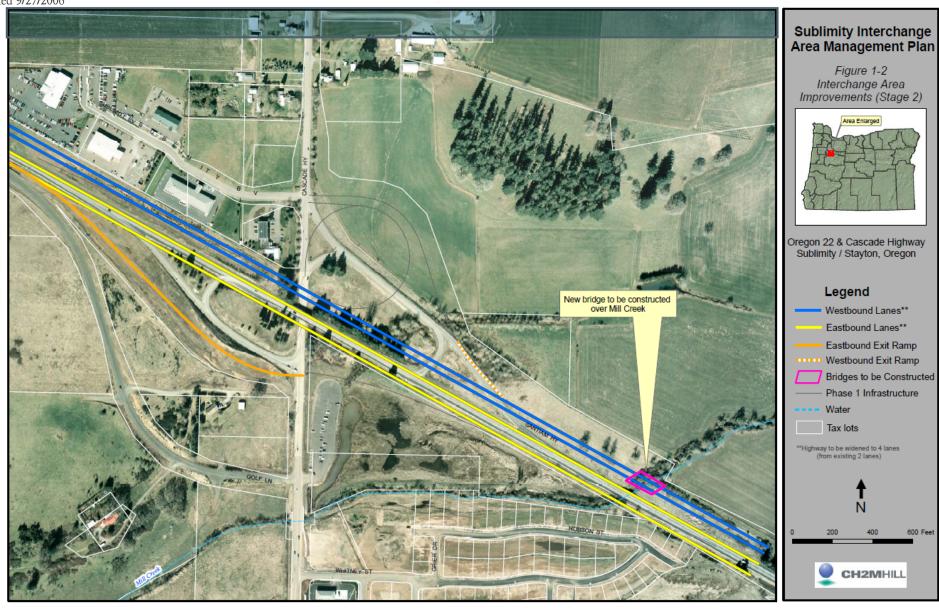
Figures 1-1 and 1-2 from the Sublimity IAMP illustrate the two stages of improvements needed at the interchange and on Oregon 22. Figure 4-9 shows the various access treatments and supporting network improvements that have been identified in the IAMP.

Adoption and Implementation

The Cities of Stayton and Sublimity, and Marion County, must incorporate the elements of the Sublimity IAMP by amending their respective TSPs. After the IAMP has been adopted at the local level, the plan will be presented to the Oregon Transportation Commission (OTC) for review and adoption as an ODOT facility plan. Formal approval is required by the OTC prior to construction. Funds are identified in the current 2006-2009, and the proposed 2008-2011, State Transportation Improvement Plans (STIP) to complete the interchange reconstruction and add a second westbound lane on Highway 22 in the area. The project could be advertised for bids as early as 2008.

By adopting the Sublimity IAMP, each jurisdiction is agreeing to the strategies and actions required to ensure the interchange will function over the long-term (20-plus years). Marion County has no direct responsibilities in the implementation of this plan other than to adopt the IAMP and amend the Rural TSP and Comprehensive Plan.





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